

**New York State
Nonpoint Source
Management Program**

**Annual Report
April 1, 2012 to March 31, 2013**

**Division of Water
New York State Department of
Environmental Conservation**

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1.0 INTRODUCTION

This report describes progress in implementing the state's Nonpoint Source Management Program and is intended to satisfy the requirement of the work plan for the Performance Partnership Grant (PPG) Base Program between the New York State Department of Environmental Conservation (NYSDEC) Division of Water (DOW) and the United States Environmental Protection Agency (EPA), Region 2. This report addresses progress and accomplishments for the period from April 1, 2012 through March 31, 2013. This report also includes discussion of progress and accomplishments in previous years to provide a context for more recent program activities, and to establish continuity in the annual reporting.

The New York Nonpoint Source Management Program was established in 1990 and revised in 2000. The program's mission comprises three major components: (1) to control, reduce or treat polluted runoff through structural, operational or vegetative management practices; (2) to conduct local implementation, coordination and evaluation on a watershed basis; and (3) to coordinate all agencies and partners involved in managing nonpoint sources of pollution.

Toward this mission, the 2000 New York Nonpoint Source Management Program defined long-term goals which placed special emphasis on three principal activities: (1) establishing and fostering partnerships to coordinate and implement county and local nonpoint source management; (2) assisting counties, local governments, landowners, and other organizations with incentives and funding to implement nonpoint source pollution controls and outreach; and (3) identifying approved nonpoint source management practices and supporting nonpoint source outreach and education activities.

The 2000 Nonpoint Source Management Program identified four priority categories of nonpoint source pollution to focus the development and implementation of controls. These categories are the basis of defining key areas of nonpoint source management:

- Stormwater Management ("Urban, Construction and Roadway Runoff");
- Agricultural Environmental Management.
- Onsite Wastewater Systems Management; and
- Hydrologic Habitat Modification.

Section 2 of this report presents a summary of accomplishments during the reporting period for these categories of the Nonpoint Source Management Program. In addition, Section 2 also summarizes accomplishments for two additional nonpoint source initiatives in New York:

- Coastal Nonpoint Source Management; and
- Watershed Management

Section 3 of this report presents information from New York's Watershed Assessment Program that addresses water quality issues related to nonpoint sources.

During the reporting period, New York initiated an update of the 2000 Nonpoint Source Management Program to address the recommendations included in EPA's Nonpoint Source Program and Grants Guidelines for States and Territories.

1.1 NATIONAL PROGRAM ACTIVITY MEASURES

States are required to report on the status of the following measures of program activities, as defined by EPA. This section does not include EPA Program Activity Measures (PAMs) that are reported in the Grants Reporting and Tracking System (GRTS).

A. **Waterbodies identified by the State as being primarily nonpoint source-impaired that will be partially or fully restored during the reporting period.**

No additional waters that were identified by New York as being primarily nonpoint source-impaired were removed from the 303(d) list during the reporting period.

Progress toward restoration is being evaluated for a number of waters across the state, including Conesus Lake, Orange Lake, Cayuga Lake, Mattituck Pond, Keuka Lake, and various shellfish waters on Long Island.

Additional evaluations were made during the reporting period for potential Section 319 Nonpoint Success Stories for the above waters and for the following five waterbodies that were removed from the 303(d) list in the previous reporting period. A Section 319 Success Story was completed for Upper Tonawanda Creek. Success story documentation is currently being evaluated for the remaining restored waters below:

- Tonawanda Creek, Middle (0102-0002) Assessment shows partial restoration of uses in the segment previously impaired by silt/sediment; segment was delisted for this pollutant in the 2012 Section 303(d) List cycle;
- Tonawanda Creek, Upper, and Minor Tribs (0102-0003) Assessment shows full support of uses, considered restored (minor impacts); segment was delisted for silt/sediment in the 2012 Section 303(d) List cycle;
- Little Tonawanda Creek, Lower, and Minor Tribs (0102-0001) Assessment shows full support of uses, considered restored (minor impacts); segment was delisted for silt/sediment in the 2012 Section 303(d) List cycle;
- Onondaga Lake Outlet (0702-0020) Assessment shows full support of uses, considered restored (minor impacts); segment was delisted for this oxygen demand in the 2012 Section 303(d) List cycle; and

- Cumberland Bay (1001-001) Assessment shows partial restoration of uses in the segment previously impaired by Oxygen Demand; segment was delisted for this pollutant in the 2012 Section 303(d) List cycle.

Definitions for Part A (EPA) :

"Partially restored" includes either of the following:

- a) A water that is impaired for more than one use, but is restored for one or more (but not all) of those uses, and
- b) A water that has a use that is impaired by more than one pollutant, but meets the criteria for one or more (but not all) of those pollutants.

"Fully restored" means that all uses for the waterbody are now being met.

"Restored waters" means any waterbody that has been restored. These waters may be counted regardless of whether the restoration was supported with or without Section 319(h) funding. States do not need to show which nonpoint management actions took place to restore the water, but simply verify that the water is primarily nonpoint source-impaired, and that it has been "partially" or "fully" restored. However, a waterbody cannot be counted simply because it was delisted from a state's 303(d) list for reasons other than actual restoration (e.g., it is determined that it was inappropriately listed from the start, it has a TMDL done for it, etc.).

The definition of a "primarily" nonpoint source-impaired waterbody is left to the states' professional judgment. EPA does not expect a state to do a detailed analysis when deciding on whether a waterbody is "primarily" nonpoint source-impaired. A precise determination is difficult especially when considering a listed water flowing through both permitted MS4 areas and non-permitted areas."

B. Number of watershed-based plans (and water miles/acres covered), supported under State Nonpoint Source Management Programs since the beginning of FY '02 that have been substantially implemented.

Number: None

Comment: Although both the Skaneateles Lake Watershed Plan and the West-of-Hudson NYC Water Supply Watershed Plan have been substantially implemented, they pre-date 2002 and were developed for water quality protection, not to remove water quality impairments. Watershed-based planning in New York State may focus on water quality protection, and is not limited to the following EPA definition: "*Substantially-implemented* means that only those actions called for in the initial plan specifically geared towards removing the impairment(s) have been implemented".

Although this definition limits the scope of watersheds qualifying as "substantially implemented", New York has achieved recognition for a Section 319 Nonpoint Source Success Story during the reporting period, based upon the results of NPS watershed project

implementation. The Upper Tonawanda Creek Watershed has been recognized for its restoration accomplishments through implementation of agricultural best management practices.

Significant implementation progress has been made for many priority watersheds across the state under state-based watershed project funding for NPS best management practices through the New York Environmental Protection Fund and the Clean Water State Revolving Fund. Progress continued during the reporting period for entering information on watershed project implementation in the GRTS database.

2.0 SUMMARY OF ACCOMPLISHMENTS FOR THE REPORTING PERIOD

The following six sections briefly describe key components of New York's Nonpoint Source Management Program (2000) and summarize principal accomplishments for the reporting period from April 1, 2012 through March 31, 2013, including some discussion of progress and accomplishments in previous years to provide a context for more recent program activities. Certain activities that were in progress at the conclusion of the reporting period, but not yet completed, have also been included.

New York initiated the update of the Nonpoint Source Management Program during the reporting period. The update reflects the EPA Nonpoint Source Program and Grants Guidelines for States and Territories, which were issued as a review draft in November 2012. The development of New York's updated NPS Program included coordination and review with all of the key state agency NPS partners (Health, Agriculture & Markets, State, Transportation, the State Soil and Water Conservation Committee, and the Environmental Facilities Corporation).

2.1 STORMWATER MANAGEMENT

The Stormwater Management Program is a principal priority of New York's Water Management Program and a key component of the Nonpoint Source Management Program. The program's comprehensive approach places special emphasis on consistent implementation of technical standards for management of stormwater from construction sites, development of local legal authority, and on project review during the local land use planning process. Continuing education to professionals involved with development projects and municipal stormwater management and outreach to local officials are also important elements of the program. Finally, the program provides grant assistance to localities for the development of municipal stormwater management programs.

The principal goal of the Stormwater Management Program is to reduce the impacts of stormwater discharges that preclude, impair or stress New York's waters, as reported in the NYS Priority Waterbodies List. Another key objective is to prevent stormwater impacts from causing future water quality impairments. The program is intended to prevent or correct such stormwater-related problems as closed beaches and shellfish beds, spoiled fishing and swimming, excessive weed growth, destruction of aquatic habitat, soil erosion, and flooding.

Accomplishments for the Reporting Period:

1. Permit Restrictions and Requirements

In fiscal year (FY) 2012/2013, 1,243 new construction projects were authorized under the construction stormwater permit.

2. Grants to Regional Planning Agencies for Stormwater Management Program Support

Despite declining Clean Water Act funding, the NYSDEC continued to provide mini-grants to Regional Planning Boards to assist in MS4 program development and oversight including outreach to MS4s and interested parties as well as assistance to MS4s developing their Stormwater Management Plans (SWMPs). This funding will be used to assist with MS4 program development for the approximately 50 newly designated entities that will require coverage based on the urbanized area defined by the 2010 Census.

3. Support of Soil and Water Conservation District Involvement in Stormwater Program

NYSDEC continues to work with SWCDs as partners in training interested parties in stormwater concepts, rules and regulations. NYSDEC developed and endorsed its 4-hour course titled "Protecting New York's Natural Resources with Better Construction Site Management." This course was developed in response to the requirements for training set forth in GP-0-08-001 (and continued in GP-0-10-001) and is delivered through county SWCDs across the State. Administrative procedures (attendance sheets, scanable trainee forms, certificate/wallet card templates, access database, and training number system) are used to track training information. During FY2012/2013, SWCDs held numerous 4-hour ESC training events across the state.

4. Other Technical Training for the Stormwater Program

During FY 2012/2013, NYSDEC and the NYS Builders Association (NYSBA) continued to support an on-line version of the 4-hour course to train contractors. The feedback on this training has been positive. During FY 2012/2013, 3,319 contractors and inspectors have completed training through the SWCD sponsored training (above) or the on-line course. Since the inception of the training programs, over 20,274 contractors and inspectors have been trained.

5. New York State Stormwater Design Manual

On August 1, 2010, the updates to the New York State Stormwater Management Design Manual were finalized. The revisions to the manual incorporated planning and design requirements for incorporation of green infrastructure into Stormwater Pollution Prevention Plans. The Construction General Permit requires that owners/operators must begin using the updated manual within 6 months of finalization (March 1, 2011). The Department developed Excel worksheets that act as a companion to the NYS Stormwater Management Design Manual. They were developed to aid in the sizing of practices, determination of runoff reduction and reporting requirements contained in the updated NOI (release scheduled in summer 2013). During FY

2012/2013, training workshops on the worksheets and Design Manual updates were held at several locations throughout the State.

6. New York State Standards and Specification for Erosion and Sediment Controls (the Blue Book)

“The Blue Book” provides the technical standards for management of stormwater at construction sites during construction. It provides the standards and specifications for selection, design and implementation of erosion and sediment control practices that must be used in the development of Stormwater Pollution Prevention Plans for projects seeking coverage under the Construction General Permit. The last update to this document was August 2005. During FY 2012/13, the Department executed a contract to update the Blue Book to include: new language and content regarding the non-numeric effluent limitations contained in EPA’s Construction General Permit; addition of a section that identifies and discusses unique construction activities such as pipelines, transmission lines, wind farms and steep slope construction; new standards for site management activities and operations; and, review of all existing standards for technical adequacy and performance and revise as appropriate. A draft of the updates is expected to be released for comment in 2014.

7. Multi-Sector General Permit - Notice of Intent or Termination (NOIT)

The Multi Sector General Permit (MSGP) renewal permit became effective on October 1, 2012. Covered entities were required to submit a new NOI to continue coverage under the renewal permit. At the end of FY 2012/13, approximately 93% of covered entities renewed coverage in addition to 132 NOIs from new facilities not previously permitted. At the end of FY 2012/2013 (scheduled report for May 1, 2013), the Integrated Compliance Information System (ICIS) database reported 1,647 effective Multi Sector General Permits (MSGPs). In addition, 704 facilities reported “No Exposure” certifications and received waivers from the stormwater permitting requirements.

2.2 AGRICULTURAL ENVIRONMENTAL MANAGEMENT

The Agricultural Environmental Management (AEM) Program, under the direction of the NYS Soil and Water Conservation Committee (NYS SWCC) and the Department of Agriculture and Markets (NYSDAM), coordinates state and local agencies and the private sector to provide technical and financial assistance to address environmental and nonpoint source issues on farms. AEM is based on a tiered planning and implementation approach on individual farms, and is most effective where accomplished on a comprehensive basis across a priority watershed. AEM assesses farm practices related to water quality and other environmental concerns, develops management plans to address those concerns, implements Best Management Practices to reduce environmental impacts, and evaluates resulting environmental improvements. AEM is the umbrella initiative used to fund the implementation of BMPs through New York’s Agricultural Nonpoint Source Control and Abatement and Program (ANSCAP) and the Conservation Reserve Enhancement Program (CREP). The primary goal of the AEM Program is

to enhance and grow a voluntary program by encouraging proactive environmental stewardship through adequate technical assistance and incentives.

The NYS SWCC provides coordination and direction for the AEM Program. Its voting and advisory members represent a broad range of agricultural and community interests, and state Nonpoint Source Program partners (federal, state and local agencies and academic institutions). The AEM partnership also includes other organizations and citizen groups, such as the American Farmland Trust and the Citizens Campaign for the Environment.

The overall priority for funding AEM related projects is to support planning at both the watershed level and farm level, and BMP implementation and evaluation projects on individual farms. Additionally, a key funding priority is supporting AEM training. AEM planning projects, based on initial water quality and watershed strategic plans, typically address farm environmental assessments or individualized Comprehensive Nutrient Management Plans. Implementation projects cover a wide range of BMPs, including manure storage, barnyard runoff and pasture management, erosion control and waste management. Evaluation projects focus on achievements and stewardship at individual farms. The significant majority of funding for planning and implementation activities is from the NYS Environmental Protection Fund (EPF). In 2005, the AEM Base program was established to provide non-competitive funding to Districts to carry out annual AEM priorities. This has been continued to provide a stable and reliable level of funding for AEM at the county level.

Principal Accomplishments from Previous Reporting Periods:

1. Round 15 of the Agricultural Nonpoint source Abatement and Control Grant Program: New York awarded **\$8,441,907** from the EPF for 26 contracts that support the AEM Program by funding conservation practices on 85 farms. The vast majority of projects include multiple farmers and BMPs.

2. Round 16 of the Agricultural Nonpoint source Abatement and Control Grant Program: New York awarded **\$9,662,418** from the EPF for 37 contracts that support the AEM Program by funding conservation practices on 168 farms. The vast majority of projects include multiple farmers and BMPs.

3. Round 17 of the Agricultural Nonpoint source Abatement and Control Grant Program: New York awarded **\$12,068,124** from the EPF for 52 contracts that support the AEM Program. The vast majority of projects include multiple farmers and BMPs. Over 269 farmers will receive assistance to employ BMPs for the protection of New York State's watersheds.

4. Non-competitive funding source for AEM: With AEM participation exceeding 25 percent of the state's 36,000 farms, the NYSDAM, in partnership with the United States Department of Agriculture's Natural Resource Conservation Service (NRCS), the NYSSWCC and County Soil and Water Conservation Districts (SWCD), accelerated AEM efforts at the local level by establishing a noncompetitive funding source for AEM activities. This program provides SWCDs with non-competitive funding through the EPF to develop and implement five-year

strategic plans. Funded activities include Tier 1, Tier 2, Tier 3a (Conservation Plan), Tier 4 (implementation projects) and Tier 5. In addition to enabling more farms to participate, this initiative has increased conservation planning activities statewide and protected past investments through conservation plan updates and BMP evaluation. As of this date, seven years of this program have been completed. A total of 53 out of 58 County Districts have participated in the base program.

Principal Accomplishments for the Current Reporting Period:

1. Round 18 of the Agricultural Nonpoint source Abatement and Control Grant Program:

New York awarded **\$11,600,209** from the EPF for 45 contracts that support the AEM Program by funding conservation practices on 169 farms. The vast majority of projects include multiple farmers and BMPs.

2. Round 19 of the Agricultural Nonpoint source Abatement and Control Grant Program

The Division continued to build on the momentum of the last round with another highly prescribed request for funding. Pursuant to the Round 19 RFP opening on December 10, 2012, 76 proposals were received requesting approximately \$22 million in Environmental Protection Funding. Of these proposals, 45 received funding awards totaling **\$12,644,285** for conservation practices on 208 farms across New York State.

3. Non-competitive funding source for AEM: In 2012, Year 8 of the AEM Base Funding Program was launched utilizing \$ 2.2 million from the EPF. Most Districts had the opportunity to earn \$40,000. Select Districts were given the opportunity to pilot an enhanced funding level of up to \$75,000. Districts could apply for the pilot if they had a full time AEM or NRCS Certified Nutrient Management Planner on staff, and earned at least 75% of the funds requested in AEM Base Program Year 6. Year 8 concluded on May 6, 2013 and Year 9 commenced on May 7, 2013 and runs through May of 2014.

4. Agricultural Environmental Management (AEM):

- AEM is codified in law (2000)
- Over 12,000 farms are participating in AEM, with local programs established in 54 counties.
- Over \$110 million has been allocated to local AEM programs to assess, plan, and implement BMPs on NYS farms.
- Growing AEM Certification program with 46 planners certified to develop Comprehensive Nutrient Management Plans (CNMP) and over 350 resource professionals have received training on conservation planning by the SWCC since 1999.
- AEM Tier II Worksheets expanded to address NYS's diverse agricultural industry (including: equine operations, irrigation management, greenhouses, fruits and vegetables, and Long Island agricultural operations). Worksheets have also been expanded to meet ecological based management principles including, biodiversity, air, and human resources.

- AEM is recognized as part of USDA-NRCS planning policy in NYS. AEM is recognized in the NYS Nonpoint Source Management Program and the NYS Source Water Assessment Program as the program to address nonpoint source pollution originating from agriculture.
- AEM addressed objectives of the NPS Management Program by funding the development and implementation of County AEM Strategies that provide an analysis of the problems in priority watersheds caused by agricultural NPS pollution from agriculture.
- In 2008, AEM is issued the Environmental Excellence Award by DEC
- Produced and distributed AEM Annual Reports, brochures, CREP marketing materials, Ag. NPS Brochure and CNMP Fact Sheet to Federal, State, and local stakeholders.
- Developed and made available AEM and CREP Display for statewide and local use.
- Produced a national television broadcast on five different states, featuring an AEM segment for NYS.
- Numerous articles published including recognition in EPA's Nonpoint Source Success Stories Volume III.

2.3 ONSITE WASTEWATER TREATMENT SYSTEMS MANAGEMENT

The Onsite Wastewater Treatment Systems (OWTS) component of the NPS Program is a coordinated effort involving state, local and inter-municipal agencies, academic institutions and the private sector which is intended to improve the performance and reduce the environmental impacts of onsite systems. Special emphasis is placed on encouraging periodic inspections and maintenance of onsite systems, improved guidance and continuing education for regulators and other OWTS professionals, and the updating of design standards. Additional OWTS-related activities have placed emphasis on green infrastructure, energy efficient upgrades, and innovative and sustainable decentralized options for wastewater treatment. Local projects have historically included sponsoring OWTS inspection programs, support of pump-out efforts, sampling programs, and feasibility studies. The Onsite Wastewater Treatment Training Network (OTN), an independent and self-supporting partner in New York's overall OWTS effort, has continued its training activities during the reporting period. New York's OTN training program has included more than 2,300 OWTS professionals since its establishment.

Accomplishments for the Reporting Period

1. NYSDEC Design Standards for Intermediate-sized Wastewater Treatment Systems

The revision of the Design Standards for Intermediate-sized Wastewater Treatment Systems (Design Standards) continued during the reporting period, including a comprehensive DEC response to a 60-day public comment period that ended on April 30, 2012. Follow-up meetings were held with four major commenting members of the engineering community in NYS: NYSDOH engineering staff, NYWEA member engineers, NYCDEP engineering staff and the Westchester County Board of Legislators Septic System Subcommittee members. A final version

of the Design Standards was delayed to SFY 2013 – 2014 due to seeking further input from DEC Regional engineering staff and Central Office review.

The Design Standards provide a technical design manual for the planning, permitting, design and technology implementation of sanitary wastewater treatment facilities in the State of New York. These Design Standards are applicable for wastewater treatment facilities that range from small residential systems greater than 1,000 gallons per day, to high strength wastewater systems serving facilities such as restaurants, to any size wastewater treatment plant treating sanitary wastewater only. The Design Standards apply to private, commercial, and institutional systems, and municipal systems discharging to groundwater. The principal goal of the Design Standards is to provide design criteria for building wastewater treatment systems that protect water quality of groundwater and surface water, along with the ecosystems associated with them. The Design Standards are also intended to aid designers in the preparation of complete project submissions and improve the efficiency of project review by regulatory agencies.

2. OWTS Workgroup

The OWTS Workgroup is comprised of the Onsite Wastewater Treatment Training Network members and interested parties. During the reporting period, DEC and the OWTS Workgroup incorporated Intermediate Design Standards concepts and examples into training courses, developed new technology review assistance, and promoted management and financing of onsite and decentralized systems. Together, the DEC, the OWTS Workgroup and the OTN seek to maintain consistency between DEC and DOH guidance documents and concepts conveyed at training courses on the NYSDOH Design Handbook and the NYSDEC Design Standards.

2.4 HYDROLOGIC AND HABITAT MODIFICATION

The Hydrologic and Habitat Modification (HHM) component of the NPS Program addresses a wide range of physical modifications to rivers and streams. These physical alterations affect stream-bank erosion, interfere with the water cycle, generate pollutant loadings, impact water quality, reduce or degrade wetlands and other riparian habitat, exacerbate flooding, and change stream hydrology and hydraulics (including extremely low flows). HHM goals are to promote stakeholder collaboration to: (1) facilitate the protection and restoration of rivers and streams; (2) promote needed institutional and administrative improvements; (3) cultivate local stewardship; (4) provide training of stream professionals in appropriate stream restoration and protection methods and practices; and (5) advance education at the local level on sound land use and floodplain management. The HHM activities promote the implementation of scientifically supported measures to reestablish the structure, function and dynamics of river and stream ecosystems within watersheds.

Previously completed HHM related products include: (1) the USGS regionalizing the geomorphology characteristics for New York State streams; (2) Cornell University's development of stream corridor health maps; (3) Hudson River Estuary Program establishment of riparian buffers; (4) Cornell University research on roadside ditch management; (5) USFWS

screening tool for identifying candidate dams for removal and mitigation; (6) “Stream Processes, A Guide to Living In Harmony with Streams” (prepared by the Chemung County Soil and Water Conservation District and distributed throughout DEC and its partners through the HHM Workgroup); (7) professional training curriculum on applied river and stream morphology (available for use from Greene County Soil and Water Conservation District); and (8) “The Plan To Restore And Protect New York Rivers And Streams From The Impacts Of Hydrologic And Habitat Modifications” (May 2005).

Accomplishments for the Reporting Period

1. Dam Removal and Barrier Mitigation Guide

The “Draft Dam Removal and Barrier Mitigation Guide for Dam Owners and Project Applicants in New York State” was posted through the Hudson River Estuary Program website during the reporting period. The guide addresses a wide range of topics, including research, planning and design of projects, in addition to permitting and project implementation issues.

2. Floodplain Management

The NYSDEC Flood Protection Community Assistance Program: More than 1,400 New York communities participate in the Federal Emergency Management Agency’s (FEMA) National Flood Insurance Program (NFIP). The DEC administers the State Flood Protection Community Assistance Program, to reduce flood risk to life and property, by assisting local communities in implementing NFIP regulations and maintaining State and local participation in the national program. Each year, NYSDEC staff visits over 60 communities. Since the 2011 flooding, NYSDEC staff provided 240 direct technical assistance to 74 municipalities in the Susquehanna Basin. In addition, there have been 14 detailed Community Assistance Visits, and 11 visits or detailed telephone interviews known as Community Assistance Contacts.

Floodplain Managers Training: NYSDEC helps to support the NYS Floodplain and Stormwater Managers Association (NYSFSMA). The NYSFSMA is a state chapter of the Association of State Floodplain Managers. NYSFSMA has an annual conference, newsletters and training activities. In addition, NYSDEC conducts floodplain management training, with at least twelve workshops across the state each year. Generally, over 200 people each year attend the training sessions. NYSDEC and NYSFSMA promote the Certified Floodplain Manager exam in New York. The number of CFMs in New York at the conclusion of the reporting period exceeds 85 and that number is growing annually.

Modernization of Floodplain Maps: The Federal Emergency Management Agency (FEMA) and NYS Department of Environmental Conservation (DEC) have partnered in the development of modernized Digital Flood Insurance Rate Maps throughout the state. Modernized final or draft digital flood maps now cover about 90% of the population of New York State, though only about 50% of the state’s total land area. Maps were completed for Dutchess County during the reporting period. FEMA is entering a new phase known as RiskMAP (Mapping, Assessment and Planning), in order to provide communities with mapping products to supplement traditional

flood maps which only show flood zones and flood elevations. The new products will contain more detailed risk information, including flood depths, and an analysis of property values at risk from flooding. NYSDEC continues to partner with FEMA to engage local communities with flood mapping outreach associated with the final Map Modernization projects and the new Risk MAP projects. DEC is currently engaged with mapping coordination and planning in over 200 communities.

2.5 WATERSHED MANAGEMENT

The Watershed Management Program evaluates and assesses monitoring data and other information to determine the quality of water resources in the state. A key element of the program is the development of specific watershed management plans and recommendations for priority watersheds in New York State. These plans are designed to coordinate the actions of the Division of Water, other DEC divisions and state agencies, along with federal and local partners to restore and protect the designated use of New York's waters. The intent is to provide direction to the nonpoint source management program and other water programs, so that individual actions can be assessed in the context of their importance to water quality. By reviewing plans, providing technical assistance, and other actions, DEC seeks to ensure that new or revised NPS watershed based plans which are specifically developed or funded by DEC (e.g., within the Susquehanna, Chemung, and Lake Champlain watersheds) include the requisites set forth in the Section 319 NPS Program and Grant Guidelines, and that such DEC-developed plans should be consistent with established Watershed Implementation Plan (WIP) targets, TMDL allocations, local TMDLs, and local planning efforts, where applicable.

The primary objective of watershed management is to analyze the assimilative capacity of all water bodies to maintain their designated uses. For commonly monitored pollutants, this objective would be to quantify loads from point and nonpoint sources through a watershed-based plan or, where warranted, a more formal Total Maximum Daily Load (TMDL). Ideally, the water quality impact on all downstream water bodies could be assessed for any action that would guide regulatory and voluntary incentive-based programs. The federal government, primarily through the Natural Resource Conservation Service (NRCS) and EPA, is a significant funding source for nonpoint source actions directed by water quality management. State funding programs, notably the Environmental Protection Fund and the State Revolving Fund, also provide substantial support of watershed implementation projects. The state's water quality management activities establish the need for action and set priorities that address federal mandates and state objectives. Local governments help to identify water quality problems, and opportunities to protect or restore water quality while leveraging local resources to achieve broader natural resource and community benefits.

Coordination of New York's Watershed Management Program activities is achieved through several mechanisms. First, the New York Water Management Advisory Committee provides for general coordination and communication among state, federal and local agencies, along with academic institutions, citizen and community groups and the business and private sector. Additional coordination regarding nonpoint source and watershed management activities

is provided by the New York Nonpoint Source Committee. Coordination is enhanced through Division of Water interactions with regional programs, including the Hudson River Estuary Program, the Oceans and Great Lakes Program, the NYC Watershed Program, and the Lake Champlain Basin Program. Coordination for activities for specific watersheds and basins is provided by participation in various watershed or basin commissions, coalitions and workgroups. Examples include the Delaware River Basin Commission, the Susquehanna River Basin Commission, the Great Lakes Basin Commission, and the following watershed coalitions:

- Mohawk River Watershed Coalition of Conservation Districts
- Upper Hudson Coalition of Conservation Districts
- Lower Hudson Coalition of Conservation Districts
- Upper Susquehanna Coalition of Conservation Districts
- Finger Lakes - Lake Ontario Watershed Protection Alliance
- Champlain Watershed Improvement Coalition of New York
- Lake Erie Watershed Protection Alliance (LEPWA)
- St. Lawrence River Watershed Partnership (SLRWP)

The funding priority for watershed management focuses on achieving nonpoint source reductions to support the reasonable assurance provisions of TMDLs, and resolve other impairments on the 303(d) list. This priority is balanced with the state commitment to address lesser impacts or protection concerns expressed on the Priority Waterbodies List, and provide the groundwater protection and remediation directed by the Brownfields legislation. An example of a watershed based plan that has substantially addressed the nonpoint source concerns from agriculture, is the Skaneateles Lake Watershed, where the City of Syracuse has successfully leveraged its resources to protect its source of drinking water with Farm Bill and EPF funds.

Watershed planning and implementation activities generally continue through a number of years. Therefore, the following summary of accomplishments for a wide range of watersheds across the state includes important highlights from previous reporting periods to provide a context for current watershed management activities.

Additional watershed planning accomplishments for the reporting period which were funded through the Local Waterfront Revitalization Program are described in Section 2.6 of this Annual Report.

Accomplishments for the Reporting Period

1. Long Island Sound (LIS)

Two Total Maximum Daily Loads (TMDLs) have been developed for Long Island Sound (LIS) waters:

- A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen Standards in Long Island Sound, December 2000;
- Shellfish Pathogen TMDL for 27 Section 303(d)-Listed Waters, September 2007

As a result of these TMDLs, local watershed groups have developed and implemented watershed management plans to mitigate affected areas. Additionally, local governments have also taken legislative actions to mitigate nitrogen pollution. The following actions were taken to address non-point source pollution:

- Both Nassau and Suffolk Counties have implemented fertilizer laws that restrict the use of fertilizer on County properties and prohibit the application of fertilizer in the winter month
- The Long Island Sound Study (LISS) Nonpoint Source Workgroup continued to actively promote public awareness of nonpoint source pollution. This workgroup also worked with the National Fish and Wildlife Federation (NFWF) to implement the Long Island Sound Future Fund (LISFF) grant program. In the federal fiscal year 2011/2012, approximately \$1,500,000 was allocated through the large grant program and \$85,000 through the small grant program.
- As part of the nitrogen TMDL reassessment, the five states involved in the TMDL reassessment agreed to develop an Enhanced Implementation Plan (EIP). The purpose of this EIP is to qualitatively assess the NPS reduction activities required as part of the 2000 LIS N TMDL. The states have completed their individual sections and the New England Interstate Water Pollution Control Commission (NEIWPC) is currently compiling and summarizing the individual state sections into a comprehensive document.

2. Peconic Estuary

The Peconic Estuary Program (PEP) continued to work with towns, citizens, civic associations and various other parties during the reporting period to address necessary structural and non structural improvements on the watershed scale. A major focus of the PEP has been on nitrogen pollution entering the Peconic Estuary Reserve. The Peconic Nitrogen TMDL identified groundwater as a major contributor of nitrogen to the Peconic Estuary. Groundwater entering the Peconic Estuary has elevated levels of nitrogen due to agriculture (fertilizer) and on-site wastewater treatment systems. The PEP is actively working with Suffolk County to evaluate options for mitigating groundwater contamination from on-site wastewater treatment systems.

3. Long Island South Shore Estuary Waters

The Western Bays: The area of the South Shore Estuary Reserve (SSER) known as the Western Bays was placed on the 303(d) list in 2008 as being impaired for nutrients based on perceived excessive macro algae (*Ulva*) growth. EPA provided funding (approximately \$500,000) for a study of “Nutrient Assessment and Management in Shallow Coastal Embayments in Hempstead Bay”. The DEC provided funding (approximately \$250,000) to the USGS for a new water quality and tide gage monitoring station at Hog Island, an inner bay of the Western Bays. Additionally, SUNY SoMAS has also received funding of approximately \$600,000 from the New York State Department of State (DOS) to compliment the Battelle study to better understand the role of nutrient enrichment in shallow embayments. These studies have been completed, and the USGS station continues to operate. However, additional work is required to assess the NPS nitrogen load to the Western Bays.

Great South Bay: Based on data collected through 2009 and the formation of brown tides during the summer of 2009, the Great South Bay (GSB) was listed on the 2010 303(d) list (Part 3b). The cause of this impairment has not yet been verified.

4. Forge River (Suffolk County)

The Town of Brookhaven is continuing to move forward with the development of a TMDL for the Forge River to address nutrient related impairments. The major point source of nutrients to the Forge River, a duck farm at the head of the river, has been closed. However, nitrogen contaminated groundwater from the high density of cesspools located on the western side of the Forge River continues to be a significant source of nutrients to the Forge River. Completion of the TMDL has been delayed due to the need for a resolution of a hydrodynamic model for the Forge River to meet Army Corps of Engineers specifications.

5. Bronx River Watershed

County staff attended meetings of the basin-wide advisory board for the Bronx River Drainage Basin, answering questions and updating the board on the status of the reconnaissance plans. Staff began to focus efforts on development of a reconnaissance plan for the Bronx River Drainage Basin after completion of the Saw Mill-Pocantico plan.

6. Saw Mill River Pocantico River

The basin-wide advisory board for the Saw Mill River Watershed focused on working with the New York State Department of Transportation to clear the Saw Mill River of debris and obstructions. As the Saw Mill River Watershed is a component of a larger major drainage basin, the County has included the additional municipalities within the Pocantico River watershed and the Lower Hudson River watershed in the scope of the reconnaissance plan and the outreach efforts. The additional municipalities have been encouraged to join the Saw Mill River group. Completed questionnaires have been received from all but one of the municipalities. Two drafts of the reconnaissance plan were reviewed by the County Stormwater Advisory Board.

7. Westchester Coastal Long Island Sound

Westchester County continued to work with the Long Island Sound Watershed Intermunicipal Council (LISWIC) and its consultant, primarily on the gathering and assembly of data and studies. Once the reconnaissance plan for the Bronx River Drainage Basin is finalized, staff efforts will focus on preparing the Coastal Long Island Sound Drainage Basin reconnaissance plan.

8. Croton Reservoir (NYC Drinking Water Supply)

The 2009 Croton Watershed Phase II Phosphorus TMDL Implementation Plan assigned phosphorus reductions to MS4s in the New York City East of Hudson (EOH) Watershed, to be achieved by implementing stormwater retrofit programs as required by the MS4 General Permit. Twenty MS4s in Westchester, Putnam and Dutchess County formed an EOH Watershed Corporation (EOHWC) in 2011 to administer the Department-approved retrofit plans and to

comply with the retrofit requirement of the MS4 General Permit. The mission of the Corporation is to reduce the levels of phosphorus in stormwater runoff in the New York City EOH watershed to protect the quality of the waters and to achieve compliance with the MS4 heightened requirements in the MS4 permits applicable to the EOH municipalities. The cumulative phosphorus reduction requirement for the EOHWC MS4s is 460 kg/yr over the five year permit cycle. The design and construction of retrofit projects has been ongoing since 2011 and to date approximately 90 kg/yr of phosphorus reductions have been realized from these projects.

9. Hudson River

Watershed groups are actively planning and implementing watershed conservation projects in tributary watersheds. There are now 11 watershed management plans for tributaries to the estuary watershed. In 2012, a watershed management plan for the Quassaick Creek watershed was being developed. Various watershed initiatives were supported by grants in partnership with New England Interstate Water Pollution Control Commission (NEIWPCC), including projects in the Catskill Creek, Lower Esopus, Kromma Kill, Moodna Creek, and Wawayanda Creek watersheds.

In 2012, the Hudson Estuary Trees for Tribes program planted over 5,300 shrubs and trees on over 11,190 feet of streambank, engaging over 840 volunteers on 50 projects. Three green infrastructure retrofit projects were funded in Poughkeepsie, Kingston, and Orange County (Middletown and Warwick), in partnership with NEIWPCC. These will improve stormwater management and reduce pollution to the Fall Kill, Lower Esopus, and Wallkill River, respectively. Projects will be completed in 2013 and 2014.

A project to identify the biologically important aquatic barriers in the Hudson River Estuary watershed was completed in 2012. The project combined a GIS prioritization framework with field assessment methods to identify and prioritize culverts and dams that are of biological importance in the watershed. The goal of this project was to identify a suite of barriers whose removal would provide a meaningful biological benefit in the Hudson River Estuary watershed. Through a grant to The Nature Conservancy, biologically important aquatic barriers (dams and culverts) were prioritized in the Hudson River Estuary watershed. The barriers were then evaluated, with associated location, ownership, and impact data assembled for each barrier. And lastly, the location and condition of each priority barrier was field verified.

10. Great Lakes

The Lake Erie LaMP 2008 Report includes information about Remedial Action Plans in Areas of Concern and watershed implementation projects; assessment and monitoring; and significant emerging issues. The 2008 Report also initiated an intensive focus on the state of nutrient science within the lake and development of strategies to improve the management of nutrient loadings to the lake. During the reporting period, DEC staff provided input to an International Joint Commission draft Scientific and Policy Recommendations to Reduce Nutrient Loadings and Harmful Algal Blooms.

The Lake Ontario LaMP partners continued work to understand changes to the lower food web, including a detailed science investigation of the entire lake focusing on:

- the lower food web and its relationship to declining populations of fish, including impacts of invasive species and low nutrient levels;
- understanding altered lake dynamics that have led to relatively low nutrient levels in offshore waters coupled with much higher nutrient levels in the nearshore zone; and
- the status of legacy and new chemical pollutants and their impact on the lake.

11. Genesee Watershed

The Department worked with Cornell University to draft a Total Maximum Daily Load to address phosphorus impairment in the Upper Black Creek Watershed. As part of New York's Nutrient Framework, the Department has begun to work in this high priority watershed with local governments, SUNY Brockport, and watershed NGOs to get public input into a Water Quality Restoration Strategy which will include preparation of nine-element watershed based plans in key watersheds. Funding was secured for a "Trees for Tribs" program, and to support volunteer monitoring.

12. Chesapeake Bay/Upper Susquehanna River Watershed

On January 7, 2013, after extensive negotiations, New York submitted its Final Phase II Watershed Implementation Plan (Phase II WIP) to EPA. The Phase II WIP was widely circulated among the affected stakeholder communities prior to submission, including sharing draft permit language and expected limits with the 30 significant municipal and industrial wastewater treatment facilities. In the final submission, DEC acknowledged that compliance with water quality standards in the Chesapeake Bay must ultimately be achieved and committed to doing its fair share. DEC also outlined a non-exclusive list of options EPA can explore to achieve additional pollution reductions (air emission controls, innovative management practices, bio-harvesting, etc.).

The Phase II WIP focuses on wetland restoration, effective management of nutrients from agriculture, stormwater, and stream buffers to address nonpoint sources of nutrients and sediment. Implementation of practices that support the Phase II WIP and enable NY to meet the Chesapeake Bay TMDL are on-going as reported through the annual progress submissions to EPA.

13. Black River Watershed

The Black River Watershed Management Plan was published in May 2010, including recommendations and strategies identified as priorities for management of the Black River Watershed. During the reporting period, the Lewis County Soil and Water Conservation District and the Lewis County Water Quality Coordinating Committee continued to conduct the Annual Black River Watershed Conference, with attendance by local officials and interested citizens. Implementation activities included watershed BMP projects under the Agricultural Nonpoint

Source Program funded by the State Soil and Water Conservation Committee through the NYS Environmental Protection Fund.

14. Small Lakes Nutrient Reduction Plans

DEC continued to collect nonpoint source and lake water quality data to assess nonpoint source contribution to lake impairments and work with EPA provided contract support to calibrate watershed models for NY watersheds, and to draft TMDLs for DEC proposal. Two additional lake TMDL's for phosphorus were completed and submitted to EPA for approval.

2.6 COASTAL NONPOINT POLLUTION CONTROL PROGRAM

New York's Coastal Nonpoint Pollution Control Program (Coastal Nonpoint Program) was fully approved by NOAA and EPA in December 2006. New York's coastal nonpoint area covers over 60 percent of the state, including the watersheds of Lake Ontario, Lake Erie, the Finger Lakes, the St. Lawrence River, the Hudson River, the Atlantic Ocean and Long Island Sound.

The primary goal of New York's Coastal Nonpoint Program is to protect and restore coastal water quality by preventing and reducing pollution. This is advanced through the implementation of a suite of nonpoint source management measures and practices (BMPs) known to be effective in significantly reducing and preventing pollution. New York's approach builds upon existing regulatory and incentive based programs that collectively address nonpoint sources of pollution from agriculture, forestry, urban areas, marinas and boating, and hydrologic modification. A key objective of the program is to enhance coordination of New York's many nonpoint related programs and leverage technical and financial assistance to municipalities.

Funding priorities for coastal nonpoint source pollution control efforts in New York include the support of watershed management planning, and providing technical and financial assistance to municipalities for specific projects in key watersheds to implement these plans. Watershed management planning priorities include education and outreach, technical assistance and direct financial support for the preparation of specific watershed management plans. The priorities for municipal technical assistance include assistance in planning and design for streambank stabilization, stormwater treatment system retrofits, acquisition of land, and assessment of local laws and practices related to pollution management.

The framework for locally developed watershed management plans described in the guidebook "*Watershed Plans: Protecting and Restoring Water Quality*" summarizes and builds on a shared approach to watershed management planning as a means to reduce nonpoint source pollution and protect water resources. The guidebook advances implementation of New York's Coastal Nonpoint Program. By continuing education, outreach, technical assistance, and other actions (including the development of nonpoint source pollutant load reduction goals to support watershed plan development and the Nutrient Framework), DEC encourages the enhancement of

watershed planning undertaken by local watershed coalitions and other planning entities to be consistent with the Section 319 NPS Program and Grant Guidelines.

The New York Department of State (DOS) provides technical assistance to prepare watershed management plans, and financial assistance through the Local Waterfront Revitalization Program, Title 11 of NYS Environmental Protection Fund. Funds have been provided for specific projects across the state, including the Great Lakes Basin, Long Island's South Shore Estuary, the Long Island Sound, the Lake George Watershed, the Finger Lakes Watershed, and the Hudson River Basin.

These watershed based plans include characterization of watersheds, identification of water quality and quantity and habitat impairments or threats, as well as known or suspected causes of pollution. The plans have identified and mapped stormwater outfalls, identified and set priorities for protective and corrective actions to protect and improve water quality and aquatic habitats. Recommendations include capital projects that implement best management practices to reduce point and nonpoint sources of pollution, and strengthening local controls, through new or modified local laws and municipal operations, advanced through implementation strategies. DOS works with state and local (city, town, village and county) agencies, soil and water conservation districts, local watershed groups, and other community groups to prepare and implement watershed management plans.

Accomplishments for the Reporting Period

1. Preparation and Implementation of Watershed based Management Plans

Across New York State, there are 573 communities covering over 16,700 square miles of watersheds that have prepared or are working on intermunicipal watershed management plans in partnership with the DOS. This represents nearly 23% of New York's land mass and 56% of the communities eligible for funding from DOS through the NYS Environmental Protection Fund's Local Waterfront Revitalization Program (LWRP). Since 1994, the DOS has awarded over \$41.5 million to prepare and implement watershed management plans, with over \$3.5 million having been awarded in 2012.

In 2012, work progressed on LWRP awards focused on watershed management plans which implement the Coastal Nonpoint Pollution Control Program including Mohawk River Watershed Quassaick Creek Watershed; Rondout Creek Watershed; Town of Shelter Island-and Village of Dering Harbor Watershed; Tuthills Creek Watershed; Seneca Lake Watershed; Black Creek Watershed and Oatka Creek Watershed; Third Brook Watershed and; Alley Creek Watershed.

Throughout 2012, the DOS worked with municipalities to continue the planning process:

- Quassaick Creek Watershed Plan- This initiative has had significant progress on the development of Project Advisory Committee; a community outreach plan; vision and watershed goals; a description and assessment of local laws, programs and practices; and the draft watershed characterization, and preliminary recommendations.

- Tidal Rondout Creek Watershed- In the 2012 reporting period, the City of Kingston selected and entered into contract with a consultant to prepare a watershed management plan for the Tidal Rondout Creek.
- Black and Oatka Creek Watersheds- The City of Geneva, in cooperation with the Genesee/Finger Lakes Regional Planning Council, Southern Tier Central Regional Development Board and Hobart and William Smith Colleges made progress towards completing the assessment of local laws, programs and practices affecting water quality for the watershed plan. The Town of Wheatland, in conjunction with Genesee/Finger Lakes Regional Planning Council, completed characterizations for both the Black and Oatka Creek Watersheds, and have made progress evaluating the regulatory and programmatic environment.
- Third Brook Watershed- The Village of Walton, in cooperation with the Delaware County Soil and Water Conservation District, has completed a draft watershed management plan for the Third Brook Watershed, which primarily focuses on flood mitigation strategies.
- Forge River Watershed - The Forge River Watershed Management Plan was completed at the end of the previous reporting period (2011). The plan defines the problems affecting the Forge River, and recommends prioritized actions in order to improve and protect water quality. One goal of this watershed planning effort was to plan for the development of a voluntary Total Maximum Daily Load (TMDL) for nitrogen for the Forge River. Now that the watershed management plan and analyses applicable to the development of the nitrogen TMDL are complete, the Town of Brookhaven has moved forward with the TMDL development, and in 2012, completed a draft Quality Assurance Plan and Endpoint Technical Memorandum.
- Dering Harbor Watershed – A watershed plan for Dering Harbor is being developed by the Town of Shelter Island and the Village of Dering Harbor. The watershed management plan will advance the goals of the Peconic Estuary Program Comprehensive Conservation and Management Plan by reducing nonpoint source pollution that will lead to increasing the harvest of hard clams and other estuarine shellfish species, protecting and restoring coastal habitats, and preserving open space. A consultant has recently been selected and draft characterization is in preparation.
- Significant progress was made on preparation of a management plan for the 3,560 square mile Mohawk River watershed, led by the Mohawk Watershed Coalition of Conservation Districts and funded through the DOS's Environmental Protection Fund Local Waterfront Revitalization Grant Program. Progress included a draft watershed characterization, draft municipal nonpoint source assessment, development of an interactive web-based GIS application, with the web address: <http://mohawkriver.stone-env.net> and draft subwatershed assessments prepared by Soil and Water Conservation Districts, including preliminary recommendations.

Several implementation projects are underway, including streambank, shoreline and roadbank stabilization projects, stormwater mitigation or remediation projects:

- Conesus Lake Watershed- The Town of Livonia has completed site reconnaissance, data collection and topographic surveys for 7 priority streambank locations in preparation for remediation in the Conesus Lake Watershed.
- Canandaigua Lake Watershed- Shoreline stabilization was completed at one location on Canandaigua Lake, two eroding streambanks were stabilized along Grimes Creek, and a steep road bank along Coats Road was stabilized.
- Hashamomuck Pond Watershed- Two stormwater remediation projects were completed in the Hashamomuck Watershed, including a grass channel, bioretention system, dry swale and oil/grit separator at Laurel Avenue; and a grass channel and bioretention system at Long Creek Drive.
- The Town of Southold commissioned 2 stormwater drainage projects on Town roadways and public lands adjacent to TMDL and/or 303d listed waterbodies. The New Suffolk Drainage Project at the New Suffolk Beach parking lot and the Lake Mobil project on Fishers Island included the preparation of design drawings, engineered plans and specifications for permitting and implementation of the construction projects. The completion of these projects has minimized the quantity of surface water runoff entering Peconic Bay and West Creek.
- The City of Glen Cove advanced phase 2 of its planning and engineering design for storm water quality improvements at Mill Pond through the completion of the site reconnaissance, schematic designs and maintenance plans.
- Healthy Niagara-Strategic Watershed Management Planning and Implementation- The Town of Tonawanda, through the Buffalo Niagara Riverkeeper and other project partners prepared draft sections of the plan and GIS maps for the Niagara River Watershed.

2. Additional Management Measures

Work, in 2012, also progressed on a number of projects which implement additional management measures as described in the CNPCP:

- No-Discharge Zones (NDZ) were established in Lake Ontario, Jamaica Bay, and all waters of Long Island Sound. NDZs are established to reduce discharge of on-board sewage into designated waterbodies. It is now illegal for boaters to discharge into these areas. Work also progressed in the development of NDZs for the St. Lawrence River and Lake Erie. Drafts are currently under review at EPA.

- The Department of State in coordination with the Department of Environmental Conservation updated the existing Hudson River Significant Coastal Fish and Wildlife Habitat narrative language which included boundary extensions for 13 of the habitats and the combination of 4 habitats combined into 2, as well as adding the designation of 7 new Significant Coastal Fish and Wildlife Habitats to the river. The Department of State received concurrence from the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management on the new and updated habitat designations of Significant Coastal Fish and Wildlife Habitats as part of the Routine Program Change to the New York Coastal Management Program.

3.0 WATERSHED ASSESSMENT AND NONPOINT SOURCES

New York's Watershed Assessment Program addresses water quality issues related to nonpoint sources within the context of its comprehensive Statewide Waters Monitoring and Assessment Program. This program, described in more detail in the following section, includes rotating drainage basin studies which form the basis of the analysis for this annual report, as presented in Section 3.2.

3.1 STATEWIDE WATERS MONITORING AND ASSESSMENT PROGRAM

New York's Watershed Assessment Program evaluates water quality issues related to nonpoint sources within the context of its Statewide Waters Monitoring and Assessment Program (SWMP). The Watershed Assessment Program is coordinated with EPA and is evaluated and revised to ensure consistency with overall federal goals and objectives. The components of this monitoring program include:

- Rotating Integrated Basin Studies (RIBS) Program for rivers, streams and lakes;
- Citizens Statewide Lake Assessment Program (CSLAP), a volunteer-based program;
- Stream Biomonitoring Program and Toxicity Testing Program; and
- Monitoring activities by other DEC Programs and other state and local agencies.

The primary objectives of the SWMP are to provide a comprehensive assessment of water quality of all waters of the state (including the documentation of *good* quality waters), and an analysis of long-term water quality trends. Other objectives include integrated multi-media sampling, characterization of naturally occurring or background conditions, and the establishment of baseline conditions for measuring the effectiveness of site-specific restoration and protection activities. New York is currently exploring an additional objective to focus on specific water quality gains in targeted watersheds (potentially including those in the NRCS National Water Quality Initiative) as a way to verify water quality improvement and document restoration of uses.

The SWMP includes three types of monitoring activities. Water quality screening is conducted to provide a qualitative assessment of water quality at a large number of sampling

sites (e.g., on-site biological sampling and visual lake surveys). Intensive basin monitoring employs more frequent, comprehensive and integrated multi-media sampling to provide more detailed water quality information for a smaller number of waterbodies in selected drainage basins. Routine trend monitoring provides continuous (annual) sampling at fixed sites across the state to monitor basic water quality characteristics, establish baseline conditions and evaluate long-term trends.

New York's Comprehensive Assessment Strategy emphasizes a continuous water quality assessment process. A public participation and outreach effort is made to ensure consideration of all available information. The strategy employs a rotating schedule, covering all basins in the state within a five year cycle. For each basin, a multi-year assessment process is implemented.

The first year focuses on identification of water quality issues and water quality screening, with a goal to identify waters that support uses and waters that require further study. The second year develops more intensive basin monitoring plans for selected waters in the target watersheds. The Intensive/Chemical Network monitoring component incorporates a wide range of water quality monitoring, including chemical analyses of contaminants in water, bottom sediment, whole organisms (benthic macro-invertebrates) and fish flesh samples, as well as more detailed biological assessments and ambient toxicity.

In the third year, the water quality evaluation and assessment culminates in an update for the basin study area of the Waterbody Inventory/Priority Waterbodies List (WI/PWL), the state's inventory of water quality information for all waterbodies. The methodology for evaluating monitoring data and information against specific indicators, to determine the level of use support and an assessment of water quality, is integral to Section 303(d) List updates, including proposed additions and removals from the Section 303(d) List.

All monitoring activities, from many sources, are linked with the WI/PWL. The WI/PWL incorporates input from the public, along with state and local agencies, through the Water Management Advisory Committee, the Nonpoint Source Coordinating Committee, County Water Quality Coordinating Committees, citizen advisory committees for Remedial Action Plans and Lake Management Plans, and other means. The WI/PWL also serves as a basis for setting NPS management priorities to guide the selection of BMP implementation projects for state financial assistance.

New York has continued to update both the WI/PWL and the Section 303(d) List, which identify waters impaired or threatened by nonpoint sources. Updates to the Section 303(d) list have been published biannually since 2000. Individual WI/PWL segments are updated continually as appropriate. Basin assessments are updated on a rotating basis aligned with the SWMP, covering the entire state every five years and identifies the primary categories and subcategories (including nonpoint sources) causing the water quality impairments, threats, and risks.

3.2 UPDATED DRAINAGE BASIN STUDIES - NONPOINT SOURCE FACTORS

Summary water assessment results for drainage basins are presented in Tables 3-1 through 3-12 to provide a perspective on water restoration and protection progress from earlier reporting periods. No additional basin updates have been completed during the April 1, 2012 through March 31, 2013 reporting period. An evaluation and re-design of the water assessment program has delayed routine basin assessments and updates for the remaining basins (Genesee River Basin, Delaware River Basin and Atlantic/Long Island Sound Basin) are expected to be completed in 2014.

These tables show measures of improvements, no change, or decline in water quality in waters of the targeted basin. These are summarized according to different categories of nonpoint sources and also reflect different levels of water quality impacts.

The information presented in the tables shows the number of waterbody segments in each basin which have shown improvements (change from one level of impact to a lower level of impact, such as "stressed/threatened >NKI (no known impact)"). These improved segments are associated with major sources of impacts, which are primarily nonpoint sources. The source categories are abbreviated in the tables as follows:

Ag -	agriculture
Atm -	atmospheric
Spill -	petroleum spills
Constr -	construction
Deicer -	winter deicing salts & abrasives
HHM -	hydrologic habitat modification
Sed -	contaminated sediments
Landfill -	solid waste disposal sites
OWTS -	onsite wastewater treatment systems
SBE -	streambank erosion (distinguished from contaminated sediments)
SW -	stormwater
UKN/Other -	unknown or other categories
Urban -	urban sources

The results in Tables 3-1 through 3-12 only present information on waterbody segments for which data were available from earlier rounds of studies, i.e. only those segments for which a baseline assessment was available and for which some change or trend could be assessed.

The specific observations from the results shown in each of the tables vary somewhat from basin to basin. However the primary observation from the combined results is that the assessed waterbody segments show a significant trend toward improvement, with 221 waterbody segments showing improvement, as compared with 70 showing some decline (while 218 segments showed no change). Of the 221 segments showing improvements, 100 experienced improvement that reflected the restoration of uses; while approximately one-half as many (49)

had loss of use. The principal categories of nonpoint source pollution associated with improvements in the basins assessed are agriculture, hydrologic habitat modification, streambank erosion, and onsite wastewater treatment systems.

The overall trend from these results is toward improvement, based on the system of defined waterbody impacts. These improvements are generally associated with the priority categories of nonpoint sources that are the emphasis of New York's Nonpoint Source Management Program. Additional rounds of rotating drainage basin studies are expected to affirm a continuation of these trends into the future.

Note: Tables 3-1 through 3-12 do not include 45 segments where acid rain is the source of impact/impairment. Changes in the assessment for these segments are largely the result of modifications to the assessment methodology and not reflective of improved water quality

Additional information regarding the quality of New York State Waters, including trends in water quality improvement, is available through the state Section 305(b) water quality reporting effort. This assessment information is located on the NYSDEC website at: <http://www.dec.ny.gov/chemical/66532.html>.

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Table 3-1: NPS Update December 2004 (from 2000 Baseline) -Mohawk

Change in Assessment		All Sources	Agr	Spill	Cons	Deice	HHM	Con Sed	Land fill	OWTS	SBE	SW	Unk/Oth	Urb
Stressed/Threatened>NKI		14	7		1	1					2	1		2
Precluded/Impaired>NKI	Restored	3									1		2	
Impair/Precl>Stress/Threat	Restored	11	1		1		5		1		1	1		1
Stressed>Threatened		4				1	1			2				
Precluded>Impaired		0												
TOTAL IMPROVED		32	8		2	2	6		1	2	4	2	2	3
Precluded/Impaired>No Change		4	2				1							1
Stressed/Threaten>No Change		21	10				3			4	1			3
TOTAL NO CHANGE		25	12				4			4	1			4
Stress/Threat>Precl/Impair	Degraded	8	2	2	1					2				1
Threatened>Stressed		4					3				1			
Impaired>Precluded		1											1	
TOTAL DECLINED		13	2	2	1		3			2	1		1	1
Total Segments		70	22	2	3	2	13		1	8	6	2	3	8

Table 3-2: NPS Update December 2004 (from 2000 Baseline) -Niagara

Change in Assessment		All Sources	Agr	Spill	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb
Stressed/Threatened>NKI		9	3								6			
Precluded/Impaired>NKI	Restored	0												
Impair/Precl>Stress/Threat	Restored	3	2							1				
Stressed>Threatened		0												
Precluded>Impaired		2						2						
TOTAL IMPROVED		14	5					2		1	6			
Precluded/Impaired>No Change		8	1					2	1	1	1		2	
Stressed/Threaten>No Change		8									6			2
TOTAL NO CHANGE		16	1					2	1	1	7		2	2
Stress/Threat>Precl/Impair	Degraded	5					1	2		1			1	
Threatened>Stressed		7	3								3		1	
Impaired>Precluded		0												
TOTAL DECLINED		12	3				1	2		1	3		2	
Total Segments		42	9				1	6	1	3	16		4	2

Table 3-3: NPS Update December 2006 (from 2000 Baseline) -Allegheny

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landf ill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		6	2	3							1				
Precluded/Impaired>NKI	Restored														
Impair/Precl>Stress/Threat	Restored	3	2	1											
Stressed>Threatened															
Precluded>Impaired															
TOTAL IMPROVED		9	4	4							1				
Precluded/Impaired>No Change		5	4							1					
Stressed/Threaten>No Change		8	6								1		1		
TOTAL NO CHANGE		13	10							1	1		1		
Stress/Threat>Precl/Impair	Degraded														
Threatened>Stressed		2	1		1										
Impaired>Precluded															
TOTAL DECLINED		2	1		1										
Total Segments															

Table 3-4: NPS Update December 2006 (from 2000 Baseline) -Black

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landf ill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		1								1					
Precluded/Impaired>NKI	Restored														
Impair/Precl>Stress/Threat	Restored	1									1				
Stressed>Threatened		1								1					
Precluded>Impaired															
TOTAL IMPROVED		3								2	1				
Precluded/Impaired>No Change		7	1							1			5		
Stressed/Threaten>No Change		7	1				1			4			1		
TOTAL NO CHANGE		14	2				1			5			6		
Stress/Threat>Precl/Impair	Degraded	1								1					
Threatened>Stressed															
Impaired>Precluded															
TOTAL DECLINED		1								1					
Total Segments		18													

Table 3-5: NPS Update December 2006 (from 2000 Baseline) -Chemung

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		4	2				1				1				
Precluded/Impaired>NKI	Restored														
Impair/Precl>Stress/Threat	Restored	11		2					1	5	2		1		
Stressed>Threatened		2	1										1		
Precluded>Impaired															
TOTAL IMPROVED		17	3	2			1		1	5	3		2		
Precluded/Impaired>No Change		1											1		
Stressed/Threaten>No Change		6	2							1	3				
TOTAL NO CHANGE		7	2							1	3		1		
Stress/Threat>Precl/Impair	Degraded														
Threatened>Stressed		1									1				
Impaired>Precluded															
TOTAL DECLINED		1									1				
Total Segments		25													

Table 3-6: NPS Update December 2006 (from 2000 Baseline) -Oswego/Finger Lakes

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		13	6	1	2				1		3				
Precluded/Impaired>NKI	Restored	5	3				1			1					
Impair/Precl>Stress/Threat	Restored	20	5					1	1	3		1	6	3	
Stressed>Threatened		1	1												
Precluded>Impaired															
TOTAL IMPROVED		39	15	1	2		1	1	2	4	3	1	6	3	
Precluded/Impaired>No Change		5		1				2		1			1		
Stressed/Threaten>No Change		12	5				2		1	1	1		1	1	
TOTAL NO CHANGE		17	5	1			2	2	1	2	1		2	1	
Stress/Threat>Precl/Impair	Degraded	4					1				1			2	
Threatened>Stressed		5	5												
Impaired>Precluded		0													
TOTAL DECLINED		9	5				1				1			2	
Total Segments		65	25	2	2		4	3	3	6	5	1	8	6	

Table 3-7: NPS Update December 2006 (from 2000 Baseline) - Upper Hudson

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		10	2	1	1	4					1		1		
Precluded/Impaired>NKI	Restored	3				1		1		1					
Impair/Precl>Stress/Threat	Restored	11	1				5	1		2			2		
Stressed>Threatened		2								1			1		
Precluded>Impaired		2			1		1								
TOTAL IMPROVED		28	3	1	2	5	6	2		4	1		4		
Precluded/Impaired>No Change		2						1					1		
Stressed/Threaten>No Change		12			2	2	1		1	3	1		1	1	
TOTAL NO CHANGE		14			2	2	1	1	1	3	1		2	1	
Stress/Threat>Precl/Impair	Degraded														
Threatened>Stressed		2	1		1										
Impaired>Precluded															
TOTAL DECLINED		2	1		1										
Total Segments		44													

Table 3-8: NPS Update December 2007 (from 2000 Baseline) -Lake Ontario Tribs

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		6	3				1		1				1		
Precluded/Impaired>NKI	Restored	1								1					
Impair/Precl>Stress/Threat	Restored	6	1		1				1	3					
Stressed>Threatened		1	1												
Precluded>Impaired		0													
TOTAL IMPROVED		14	5		1		1		2	4			1		
Precluded/Impaired>No Change		4						2						2	
Stressed/Threaten>No Change		12	8							2			1	1	
TOTAL NO CHANGE		16	8					2		2			1	3	
Stress/Threat>Precl/Impair	Degraded	7	1		2				1	3					
Threatened>Stressed		6	2		1		1		1	1					
Impaired>Precluded		0													
TOTAL DECLINED		13	3		3		1		2	4					
Total Segments		43	16		4		2	2	4	10			2	3	

Table 3-9: NPS Update December 2008 (from 2000 Baseline) – Lower Hudson Basin (incl. Ramapo)

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		12	3							2				6	1
Precluded/Impaired>NKI	Restored	1												1	
Impair/Precl>Stress/Threat	Restored	8	1				3			2				2	
Stressed>Threatened		3			1		1				1				
Precluded>Impaired		1							1						
TOTAL IMPROVED		25	4		1		4		1	4	1			9	1
Precluded/Impaired>No Change		25						6	1	1	2			14	1
Stressed/Threaten>No Change		24	2	1	1				1	6			3	9	1
TOTAL NO CHANGE		49	2	1	1			6	2	7	2		3	23	2
Stress/Threat>Precl/Impair	Degraded	8	1		2					4				1	
Threatened>Stressed		0													
Impaired>Precluded		0													
TOTAL DECLINED		8	1		2					4				1	
Total Segments		82	7	1	4		4	6	3	15	3		3	33	3

Table 3-10: NPS Update December 2008 (from 2000 Baseline) –St. Lawrence Basin

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		3	2												1
Precluded/Impaired>NKI	Restored	1	1												
Impair/Precl>Stress/Threat	Restored	2								1			1		
Stressed>Threatened		1					1								
Precluded>Impaired		0													
TOTAL IMPROVED		7	3				1			1			1		1
Precluded/Impaired>No Change		9						2		2			5		
Stressed/Threaten>No Change		17	8				1			4			3	1	
TOTAL NO CHANGE		26	8				1	2		6			8	1	
Stress/Threat>Precl/Impair	Degraded	4	1							2					1
Threatened>Stressed		1		1											
Impaired>Precluded		0													
TOTAL DECLINED		5	1	1						2					1
Total Segments		38	12	1			2	2		9			9	1	2

Table 3-11: NPS Update December 2009 (from 2000 Baseline) – Lake Champlain

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI															
Precluded/Impaired>NKI	Restored														
Impair/Precl>Stress/Threat	Restored	3	2										1		
Stressed>Threatened															
Precluded>Impaired															
TOTAL IMPROVED		3	2										1		
Precluded/Impaired>No Change		2	1										1		
Stressed/Threaten>No Change		5				1				1			2	1	
TOTAL NO CHANGE		7	1			1				1			3	1	
Stress/Threat>Precl/Impair	Degraded														
Threatened>Stressed															
Impaired>Precluded															
TOTAL DECLINED															
Total Segments		10	3			1				1			4	1	

Table 3-12: NPS Update December 2009 (from 2000 Baseline) – Susquehanna

Change in Assessment		All Sources	Agr	Rex	Cons	Deice	HHM	Con Sed	Landfill	OWTS	SBE	SW	Unk/Oth	Urb	ATM*
Stressed/Threatened>NKI		19	9		1		1		1	4	3				
Precluded/Impaired>NKI	Restored	2	1										1		
Impair/Precl>Stress/Threat	Restored	6	4							1	1				
Stressed>Threatened		3	2							1					
Precluded>Impaired															
TOTAL IMPROVED		30	16		1		1		1	6	4		1		
Precluded/Impaired>No Change		1	1												
Stressed/Threaten>No Change		13	5		3		1			4					
TOTAL NO CHANGE		14	6		3		1			4					
Stress/Threat>Precl/Impair	Degraded	2								1			1		
Threatened>Stressed		2	2												
Impaired>Precluded															
TOTAL DECLINED		4	2							1			1		
Total Segments		48	24		4		2		1	11	4		2		