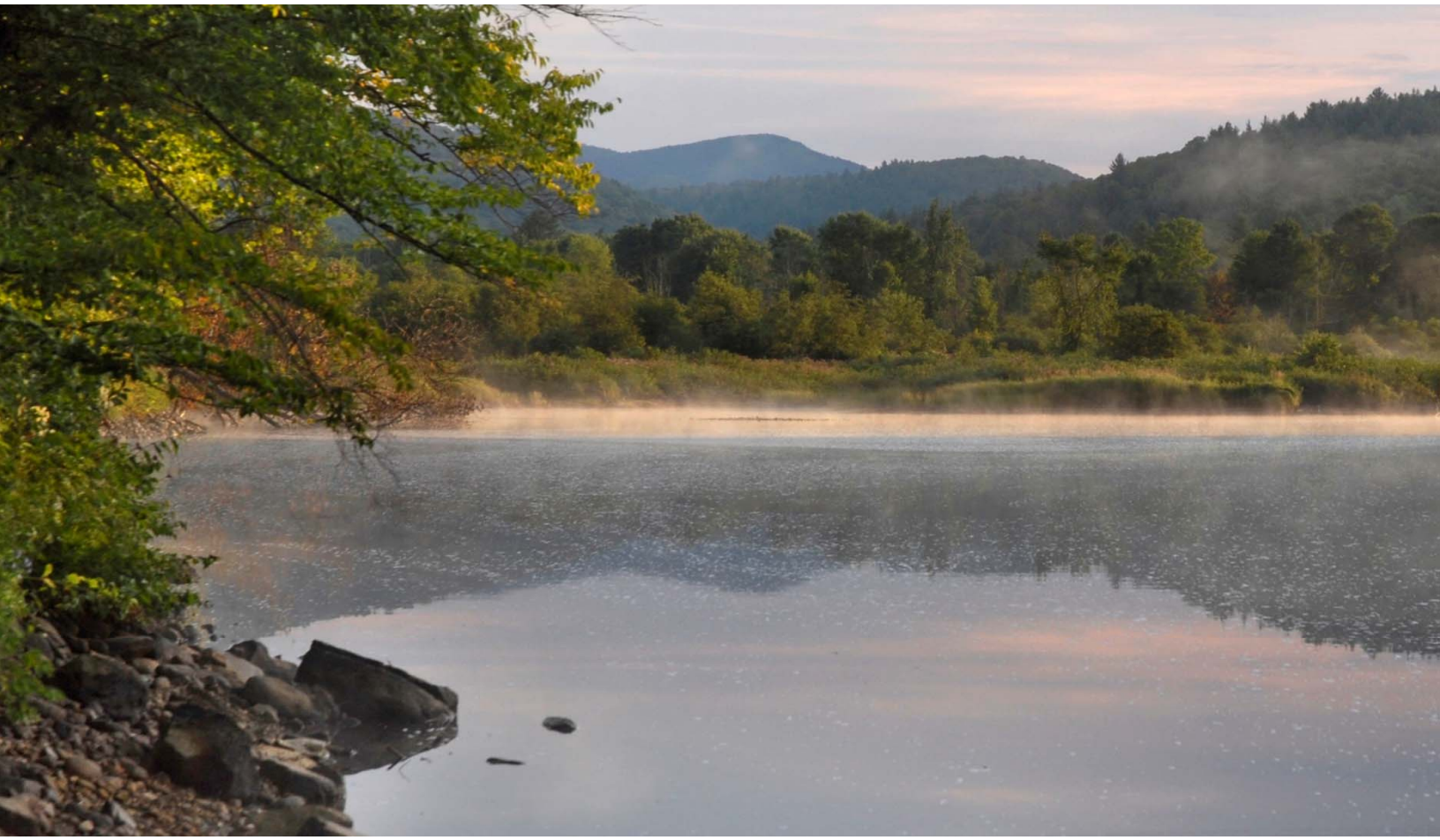
NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

NONPOINT SOURCE POLLUTION MANAGEMENT PROGRAM

Annual Report for April 1, 2016 to March 31, 2017



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Nonpoint Source Pollution Program Mission

The goals of New York's Nonpoint Source Program are to control pollution from nonpoint sources to the waters of the state and to protect, maintain and restore waters of the state that are vulnerable to, or are impaired by nonpoint source pollution.

About the Nonpoint Source Pollution Program

New York's NPS Program is established under the leadership of the New York State Department of Environmental Conservation (NYSDEC), as NYSDEC is the state lead agency for the Federal Clean Water Act Section 319 Program and many other closely related programs. Significant state agency partnerships and program roles are shared with:

- New York State Department of Agriculture and Markets (NYSDAM)
- New York State Soil and Water Conservation Committee (NYSSWCC)
- New York State Department of State (NYSDOS)
- New York State Department of Health (NYSDOH)
- New York State Environmental Facilities Corporation (NYSEFC)
- New York State Department of Transportation (NYSDOT)

These state agency partnerships are complemented by regional and local partnerships, with special emphasis on county Soil and Water Conservation Districts (SWCD), county health agencies, county and regional planning agencies, and watershed coalitions. Key federal agency partnerships include the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Agriculture (USDA). New York's NPS program places highest priority on the management of sources of nutrients in the landscape, with significant priorities also assigned to management of pathogen and sediment sources. The program was updated in 2014 in accordance with EPA's nonpoint source program guidance.

Objectives of the Nonpoint Source Pollution Program

Objective 1: Develop watershed management plans, and other comprehensive and strategic plans to improve the management of nonpoint pollution sources on a watershed basis

Objective 2: Implement watershed projects to reduce nonpoint source pollution of waters of the state

Objective 3: Assess the quality of waters of the state related to nonpoint source pollution

Objective 4: Protect and maintain unimpaired waters of the state from additional nonpoint source pollution, and restore or prevent further degradation of waters of the state impaired by nonpoint source pollution

Objective 5: Integrate management of nonpoint pollution sources into applicable state and local agency programs (including both regulatory and non-regulatory programs), and provide overall policy coordination among state, local and federal agencies

Objective 6: Develop and maintain the capacity of state, regional and local agencies and organizations to provide nonpoint source management assistance to communities and landowners through assessment, planning, technical support and education

Major Accomplishments

During the annual reporting year (April 1, 2016 to March 31, 2017), NYSDEC and its partners initiated and completed a variety of nonpoint source projects and reduced the amount of NPS pollutants entering New York lakes, streams, and rivers through implementation of state programs. Projects initiated during the reporting period will result in a reduction of **6,517** pounds of nitrogen, **1,084** pounds of phosphorus, and **3,056** tons of sediment per year. **$ 36,771,555** of state funding was dedicated, within the reporting period, to projects that implement best management practices (BMPs) to reduce nonpoint source pollution. This report describes New York's reporting measures and accomplishments for each of the nonpoint source program's six objectives.

Objective 1: Develop watershed management plans, and other comprehensive and strategic plans to improve the management of nonpoint pollution sources on a watershed basis

Watershed management planning is conducted directly by, or through the support and guidance of, several NPS Program partner agencies, including NYSDOS and the NYSSWCC. Partnerships for watershed planning have also been established through the state's major basin and estuary programs (e.g. Chesapeake Bay Program, Hudson River Estuary Program, NYC Watershed Program, Lake Champlain Basin Program). The Great Lakes Basin Program has completed two Nine Element Watershed Plans for the Black and Genesee Rivers. The Chesapeake Bay Program has completed several watershed implementation plans (WIP) to meet the goals and objectives of the Chesapeake Bay total maximum daily load (TMDL).

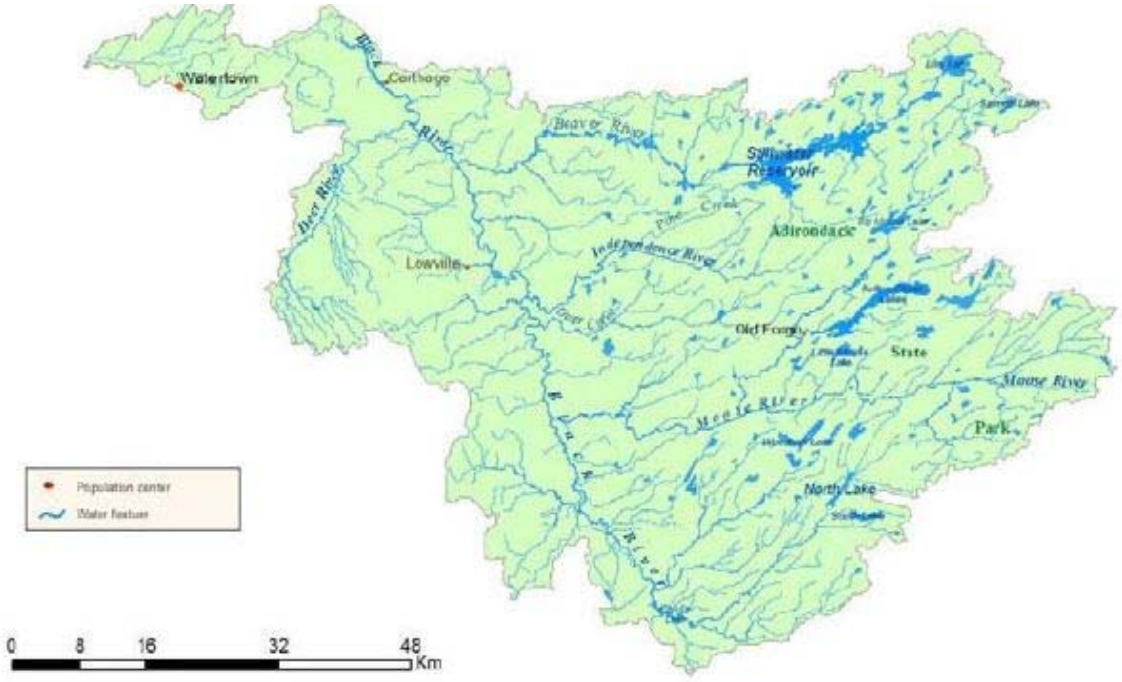
At the local level, watershed planning is conducted by regional and county planning agencies, watershed coalitions (Appendix A), and Soil and Water Conservation Districts (SWCDs). County Water Quality Coordinating Committees (CWQCC) develop and update County Water Quality Strategies that address NPS issues at the local level. Watershed plans are also developed through partnerships with regional basin planning commissions and other states for New York's significant interstate and international waters. Development of watershed management plans by local governments has also been supported through the New York Coastal Nonpoint Pollution Control Program and funded through the Local Waterfront Revitalization Program (LWRP). Approximately 23,195 square miles of watershed area in New York State are now covered by watershed plans completed by watershed coalitions or other planning entities.

Objective 1: Reporting Measure Accomplishments

Reporting Measure	Accomplishment
Watershed area (cumulative statewide) covered by watershed plans which are consistent with the Section 319 NPS Program and Grant Guidelines	The Black River Nine Element Watershed Plan was completed within the reporting period, which covers a cumulative 1,902 square miles of watershed area. Nine Element plans that are in the beginning stages of development inlcude the Owasco Lake, Wappingers Lake, St. Lawrence River, and Lake Erie/Niagara River watersheds.
Watershed area (cumulative statewide) covered by watershed plans completed by watershed coalitions and other planning entities	New plans were completed for Keuka Lake watershed (176 square miles), Salmon River watershed (380 square miles), and Tidal Rondout Creek Watershed (1190 square miles). The Cayuga Lake Watershed Restoration and Protection Plan was also updated during the reporting period. 24,765 cumulative square miles are now covered by watershed plans across New York State. In addition, two NY Department of State funded watershed plans to address water quality and flooding issues were completed within the Chesapeake Bay watershed: Upper Susquehanna and Delaware River Watershed (Broome County) mitigation strategies. The Town of Big Flats is working with Chemung, Steuben, and Schuyler counties in preparation of a flood resistant strategy.
Number of updated County Water Quality Strategies	Four counties are in the process of updating their county water quality strategies. These strategies will be finalized in the next reporting period (Cattaraugus, Tioga, Warren and Washington Counties).
Number of Agricultural Environmental Management (AEM) Strategic Plans updated or revised through the AEM Framework	50 Soil and Water Conservation Districts participated in the AEM Base Program. All 50 Districts revised their AEM 5-Year Strategic Plans during this fiscal year, as well as their tactical, Year 12 AEM Annual Action Plans designed to implement their AEM Strategy.
Watershed area (cumulative statewide) addressed by TMDLs or other specific NPS pollutant load reduction goals	TMDLs were completed during the reporting period for Lake Carmel and Engleville Pond, covering a total cumulative watershed area of 13.7 square miles. The cumulative watershed area addressed by TMDLs for nutrients, acid rain, and pathogens statewide is 6,250 square miles.

Objective 1 Highlight: Black River Nine Element Plan

A Nine Element Watershed Plan for the Black River watershed was completed by the NYSDEC Great Lakes Program in cooperation with the Tug Hill Commission, and the Jefferson and Lewis County Soil and Water Conservation Districts. The plan was approved by NYSDEC in June 2016. The Black River watershed encompases 1,920 square miles within five counties between the Tug Hill and Adirodack region. The Black River is an important drinking water souce for 65,000 people in the City of Watertown and surrounding areas. Nonpoint sources include agriculture runoff and sediment pollution due to stream bank distubances from development, storms, floods and ice. Proposed BMPs include cover crops, riparian buffers, no till crops, livestock exclusion, comprehensive nutrient management plans, and green infrastructure practices (e.g. tree planting, raingardens permeable pavement). The 9 Key Element Watershed Plan prioritzes areas within the major sub-basins where conservation efforts should be focused. Annual reporting on implementation of actions identifed in the plan will be achieved through the existing Black River Initative Newsletter.



Objective 2: Implement watershed projects to reduce nonpoint source pollution of waters of the state.

New York continued to implement watershed projects to support NPS Program objectives using state funds. The primary programs used to implement nonpoint source projects include:

- Agricultural Nonpoint Source Control and Abatement (AgNPS) Program, providing support to producers for implementation of agricultural NPS watershed projects; and
- Water Quality Improvement Program (WQIP), providing support to municipalities and SWCDs for implementation of non-agricultural NPS watershed projects.

Both programs are fully supported through New York's Environmental Protection Fund. BMPs initiated through both programs can be found in Appendix B. Other programs used to implement nonpoint source projects include but are not limited to: Local Waterfront Revitalization Program (LWRP), Finger Lakes-Lake

Ontario Watershed Protection Alliance (FLLOWPA) Grants, Hudson River Estuary Program Grants, Mohawk River Watershed Grants and New York City Department of Environmental Protection Green Infrastructure Grant Program.

New York leverages state dollars to receive grant funding from federal agencies to implement multiple programs, including but not limited to the following programs:

- Clean Water State Revolving Fund (CWSRF), providing low-cost financing to communities to implement water quality infrastructure projects with funding from EPA;
- Green Innovation Grant Program (GIGP), providing support for implementation of NPS watershed projects with funding from EPA;
- Regional Conservation Partnership Program (RCPP), a partnership between USDA Natural Resource Conservation Program (NRCS) and other agencies to help producers install and maintain conservation activities through existing NRCS conservation programs; and
- Chesapeake Bay Implementation Grant (CBIG), a grant provided by EPA to states located in the Chesapeake Bay watershed for restoration activities that will reduce nutrient pollution.

A full list of funding programs and program descriptions can be found in Appendix C.

Objective 2: Reporting Measure Accomplishments

Reporting Measure	Accomplishment
Number of cost-shared watershed projects initiated	62 projects
Number of specific cost-shared BMPs initiated	58 BMP types (See Appendix B for list of initiated practices)
Estimated load reductions for initiated projects through AgNPS & non-AgNPS	Nitrogen: 6,516.76 pounds Phosphorus: 1084.31 pounds Sediment: 3,056 tons
Funding provided to support cost-shared watershed projects (through AgNPS and WQIP programs)	**$36,771,555** in State Fiscal Year 2016
Number cost-shared watershed projects completed	71 projects were completed during the reporting period (see Appendix D for list of completed projects). The total estimated load reductions per year for the completed projects are 213,897 pounds of nitrogen, 90,826 pounds of phosphorus, and 86,618 pounds of sediment.
Number of specific cost-shared BMPs completed	401 BMPs (36 BMP types)
Number of GRTS entries for AgNPS & non-AgNPS	62

Objective 2 Highlight: Compost Based Stormwater Best Management Practices

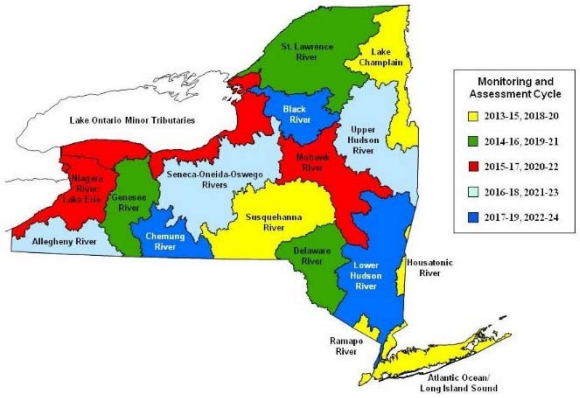
The Tompkins County “Compost Based Stormwater Best Management Practices” project was completed during this reporting period. The project was funded through New York’s Water Quality Improvement Project (WQIP) program. In SFY 2015, $77,700 of state funding was allocated for the project. Thompkins County Soil and Water Conservation District partnered with Cornell Waste Management Institute and Barton and Loguidice engineering firm to demonstrate the use of compost products to implement stormwater best management practices. The project included road ditch line stabilization, ditch slope stabilization and stream slope stabilization that reduced sediment and pollutants entering Cayuga Lake, Owasco Lake and the Susquehanna River.

Cornell Waste Management Institute produced seven posters describing applications of compost for BMPs (e.g. erosion control, street trees, slope stabilization) to improve the chemical, physical and biological characteristics of soil. Installation of compost and woodchip “socks” at the toe of an eroding stream bank can provide stabilization. Compost socks can act as a filter to prevent and slow runoff pollution during storm events, preserve topsoil and prevent erosion.

Before and after photos of compost socks installed in November 2016 on a slope above waterway in Brooktondale, NY. The socks prevented erosion and reduced roadside pollutants from reaching surface water by acting as a filter

Objective 3: Assess the quality of waters of the state related to nonpoint source pollution

New York evaluates water quality issues related to nonpoint sources within the context of its Statewide Waters Monitoring and Assessment Program (SWMP). The components of this monitoring program include:



- Rotating Integrated Basin Studies (RIBS) program for rivers and streams;
- Lake Classification and Inventory (LCI) program for lakes and ponds;
- Stream Biomonitoring Program and Toxicity Testing Program;
- Citizens Statewide Lake Assessment Program (CSLAP), a volunteer-based lake assessment program;
- Water Assessments by Volunteer Evaluators (WAVE), a volunteer-based stream assessment program; and
- Monitoring activities by other DEC Programs and other state and local agencies.

Monitoring program descriptions can be found in Appendix C. The SWMP includes three types of monitoring activities:

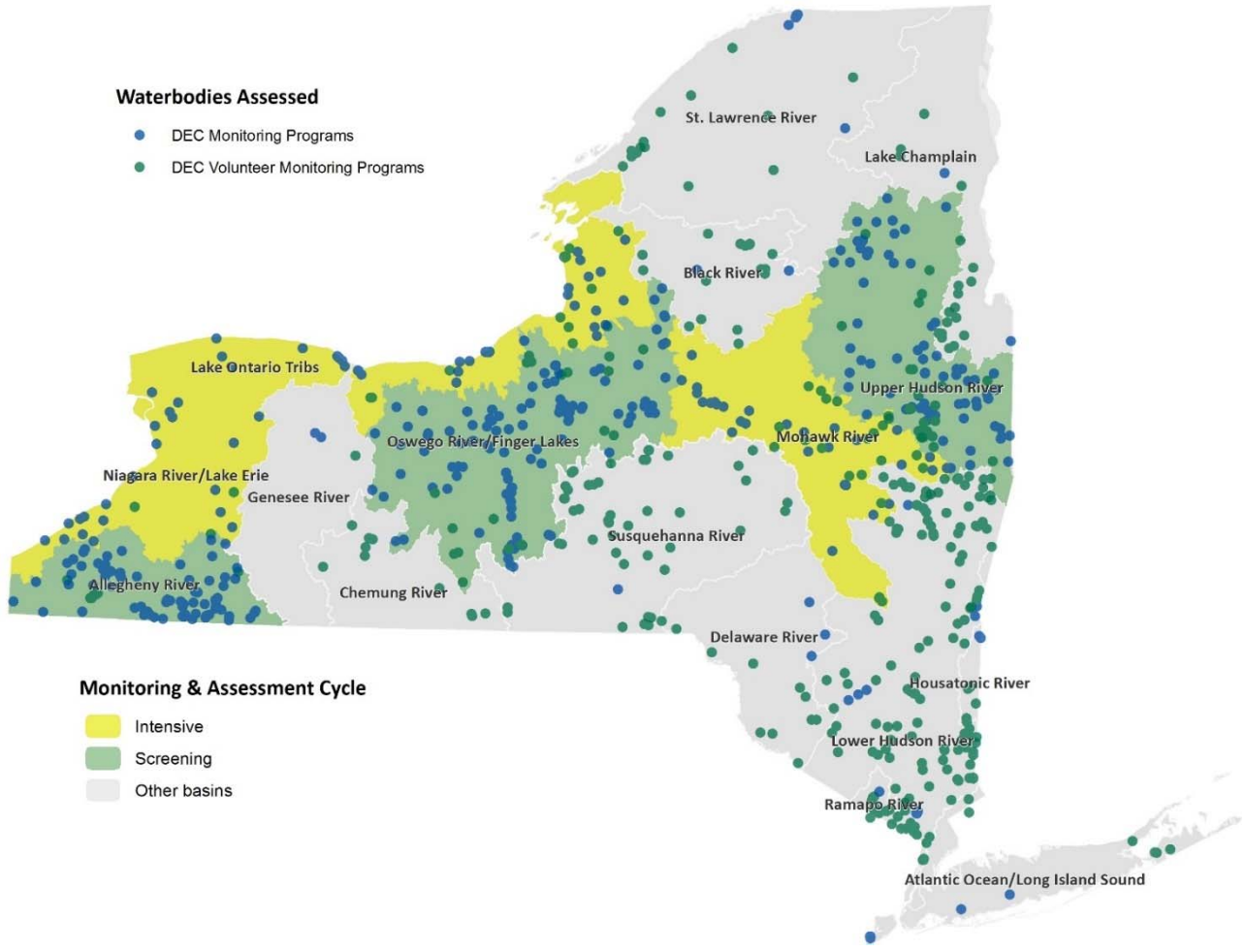
1. Water quality screening is conducted to provide a qualitative assessment of water quality at a large number of sampling sites (e.g., on-site biological sampling and visual lake surveys).
2. Intensive basin monitoring employs more frequent, comprehensive and integrated multi-media sampling to provide more detailed water quality information for a smaller number of waterbodies in selected drainage basins.
3. 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.

All monitoring activities, from the multiple programs, are linked with the Waterbody Inventory/Priorities Waterbodies List (WI/PWL). The WI/PWL is a compilation of water quality information for all individual waterbodies (lakes, rivers, streams, estuaries and coastlines) in the state. The WI/PWL includes waterbody fact sheets that outline the most recent assessment of the waterbody, identification of water quality problems and sources, and summary of activities taken to restore and protect each individual waterbody. The WI/PWL incorporates input from the public, along with state and local agencies and serves as a basis for setting NPS management priorities to guide the selection of BMP implementation projects for state financial assistance.

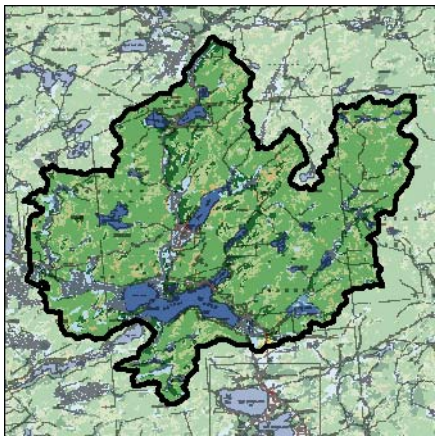
Objective 3: Reporting Measure Accomplishments

Reporting Measure	Accomplishment
Percent of waterbodies assessed (cumulative statewide)	55%

Major drainage basins are monitored on a five-year rotating schedule. Screening basin monitoring was conducted in the Allegheny River, Oswego River/Finger Lakes, and Upper Hudson River basins during the reporting period. Intensive basin monitoring was conducted in the Niagara River/Lake Erie, Lake Ontario Tribs, and Mohawk River basins. During the reporting year, 700 locations on 491 waterbodies were assessed through DEC programs (points shown on map below).



Objective 3 Highlight: Canada Lake Report



Canada Lake is one of 230 lakes that participate in NY's Citizen Statewide Lake Assessment Program (CSLAP). Canada Lake is located in the Mohawk River Basin in Fulton County. Water quality data was collected by trained volunteers following standardized methods. This data is evaluated by NYSDEC to help detect water quality changes over time. The Canada Lake watershed is 26,828 acres and is more than 80% forested. The lake is mesotrophic with low susceptibility to harmful algal blooms and moderate vulnerability to invasive species. However, Canada Lake is listed on the 303(d) list as impaired for fish consumption. The report concluded that water quality have not changed significantly and is fully supporting swimming, recreation, aquatic life and habitat in 2016. The report (http://www.dec.ny.gov/docs/water_pdf/cslrpt16canadal.pdf) is posted on NYSDEC's website.

Objective 4: Protect and maintain unimpaired waters of the state from additional nonpoint source pollution, and restore or prevent further degradation of waters of the state impaired by nonpoint source pollution

The fundamental priority of New York's NPS Program is to protect and restore all waters of the state, including both surface and ground waters, for beneficial uses. Impaired waters, as identified on the WI/PWL and the federal Section 303(d) list of impaired waters, may be "fully restored" and/or "partially restored" by the strategic implementation of watershed projects selected by priority ranking procedures established in state funding program protocols, and other actions, leading to their removal from the 303(d) list.

"Partially restored" includes either of the following:

- A water that is impaired for more than one use, but is restored for one or more (but not all) of those uses, and
- 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.

The Section 303(d) list is updated every two years. The review and update of the WI/PWL assessment information is a continuous process. Waterbody assessment fact sheets are updated as sampling results and/or other water quality information becomes available. Updates typically align with the DEC's five-year rotating basin schedule; however, fact sheets may be revised more frequently if needed.

2016 Delisted Waterbodies

The Final NYS 2016 Section 303(d) List was approved by EPA during November, 2016. The following waterbodies were delisted from the 2014 list:

- Great Valley Creek, Middle, and minor tributaries (0201-0012) was delisted due to reassessment indicating that uses are fully supported.
- Tunungwant (Tuna) Creek and tributaries (0201-0002) was delisted due to reassessment indicating that uses are fully supported.

- Olean Creek, Upper, and tributaries (0201-0050) was delisted due to reassessment showing only minor impacts.
- Cuba Lake (0201-0016) was delisted due to reassessment indicating that uses are fully supported.
- Upper Cassadaga Lake (0202-0001) was delisted due to reassessment indicating that uses are fully supported.
- Genesee River, Lower Main Stem and Middle Main Stem (0401-0001 and 0401-0003), was delisted due to reassessment showing only minor impacts. The Lower Genesee River continues to be listed on the 303(d) list in Part 2b and Part 3a as an impaired water for fish consumption. for PCBs, dioxin and mirex contamination.
- Bradner Creek and tributaries delisted due to inadequate justification of the original listing.
- The completion of the TMDL for Acid Impaired Lakes in the Adirondack Park in 2014 caused the delisting of 51 lakes for acid/base (pH) pollution from atmospheric deposition in the Black River, Saint Lawrence River, and Upper Hudson River Drainage Basins in Lewis, Hamilton, Herkimer, and St. Lawrence Counties. For complete list https://www.dec.ny.gov/docs/water_pdf/303ddelisted2016.pdf

Objective 4: Reporting Measure Accomplishments

Reporting Measure	Accomplishment
Percent of waters identified as having a significant nonpoint source contribution to an impairment, based on the NYS Waterbody Inventory/Priority Waterbodies List (WI/PWL)	42% of impaired waterbodies
Number of newly identified as "impaired" waters and added to the final Section 303(d) list of impaired waters due to nonpoint sources	The 2016 NYS Section 303(d) list identified 12 (new) waterbodies as “impaired” due to nonpoint sources. The Final 2016 Section 303(d) list was approved/partially approved to EPA on November 18, 2016.
Percent of waters assessed as having "No Known Impact" (fully supporting), and thus needing protection	43%

List of newly impaired waterbodies added to the Final NYS 2016 Section 303(d) list:

Waterbody Name	County	Type	Cause/Pollutant	Suspected Source
Beaver Lake/Alma Pond (0201-0073)	Cattaraugus	Lake	Phosphorus	Other (internal loading)
Hulburt/Clymer Pond (0202-0079)	Chautauqua	Lake	Phosphorus	Agriculture
Dean Pond (0602-0077)	Cortland	Lake	Phosphorus	Agriculture
Reeder Creek and tributaries (0705-0074)	Seneca	River	Phosphorus	Unknown
Evens Lake (1402-0004)	Sullivan	Lake	Phosphorus	Municipal
The Lake in Central Park (1702-0105)	New York	Lake	Phosphorus	Urban/Storm Runoff
Harlem Meer (1702-0103)	New York	Lake	Phosphorus	Urban/Storm Runoff
Meadow Lake (1702-0030)	Queens	Lake	Phosphorus	Urban/Storm Runoff

Waterbody Name	County	Type	Cause/Pollutant	Suspected Source
Willow Lake (1702-0031)	Queens	Lake	Phosphorus	Urban/Storm Runoff
Kissena Lake (1702-0258)	Queens	Lake	Phosphorus	Urban/Storm Runoff
Massapequa Cove and tidal tributaries (1701-0391)	Nassau	Estuary	Pathogens	Urban/Storm Runoff
Prospect Park Lake (1701-0196)	Kings	Lake	Phosphorus	Urban/Storm Runoff

Objective 5: Integrate management of nonpoint pollution sources into applicable state and local agency programs (including both regulatory and non-regulatory programs), and provide overall policy coordination among state, local and federal agencies

New York's NPS Program includes statewide and targeted voluntary and regulatory management approaches. Coordination between NPS partner agencies and other relevant environmental quality programs is facilitated through the New York Nonpoint Source Committee and through NPS Program participation in other relevant advisory and technical committees (such as the New York Water Management Advisory Committee, the State Soil and Water Conservation Committee, and the NRCS State Technical Committee).

Notable partnership activities during the reporting period included the following:

- Long Island Nitrogen Action Plan: DEC, in partnership with the Long Island Regional Planning Council, Suffolk County and Nassau County, revised and responded to public comments on the Scope for the Long Island Nitrogen Action Plan. The LINAP Fertilizer Management Workgroup was established, and the first meeting was in December 2016. This workgroup will advise the Project Management Team (DEC, the Long Island Regional Planning Council, and Suffolk and Nassau counties) as it develops fertilizer management recommendations.
- Long Island Aquifer Groundwater Sustainability Study: USGS, in partnership with DEC, is conducting a regional assessment of the groundwater sustainability of the Long Island Aquifer System. This six-year study began in the spring of 2016 and includes installation of coastal monitoring wells to characterize the hydrogeologic conditions and a three-dimensional, island-wide groundwater flow model. The model will be used to evaluate the potential risk for wells susceptible to saltwater intrusion and water-quality degradation from anthropogenic sources.
- Finger Lakes Water Hub: DEC to oversee a multi-regional watershed team to address Finger Lake water quality issues and undertake pollution reduction projects. In fall of 2016, DEC announced an initiative with Cayuga Community College and others to study algal blooms and implement pollution reduction projects in the Owasco Lake watershed.
- National Water Quality Initiative (NWQI): Regular consultations were conducted with both NRCS to determine water restoration priorities for the NWQI and plan for DEC contributions to assess water quality benefits related to NWQI projects.
- New York State Soil and Water Conservation Committee Strategic Plan (2014 – 2018): Implementation of the updated strategic plan began during the reporting period. The strategic plan, which guides the Agricultural Environmental Management (AEM) Framework and the implementation of Ag-NPS watershed projects, was previously updated to support the goals and objectives of the New York State Nonpoint Source Management Program through interagency coordination to enhance consistency with the Clean Water Act Section 319 requirements and guidelines.

NPS Program staff and NPS Committee representatives also routinely communicated and consulted on a variety of interagency NPS issues:

- Routine coordination meetings with DOH were conducted to review water supply protection and water quality management concerns
- Watershed planning coordination meetings were conducted with DOS, which funds watershed planning by localities
- Coordination meetings with the EFC were conducted to review CWSRF and GIGP issues
- NPS Program staff routinely participated in the Technical Advisory Committee (TAC) of the State Soil and Water Conservation Committee to review AEM Framework issues and implementation of the AgNPS Program.
- NPS partner agencies participated in regular meetings of other advisory and technical committees closely related to NPS management, notably the New York State Water Management Advisory Committee, the NYSSWCC State Committee and the NRCS State Technical Committee.
- NPS Program staff and other NPS partner agency staff participated in numerous interstate and federal meetings and conference calls which address national or regional coordination for NPS issues, notably the Coastal States Organization Coastal NPS Workgroup, the New England Interstate Water Pollution Control Commission (NEIWPCC) Nonpoint Source Management Workgroup; the Association of Clean Water Administrators (ACWA) Section 319 Workgroup; the ACWA Watersheds Committee; and the ACWA TMDL Committee.

These state and federal level coordination activities were complemented by the participation of NPS Program staff and NPS partner agency staff in local coordination meetings of County Water Quality Coordinating Committees and meetings of watershed coalitions and local watershed planning and management committees.

Objective 5 Highlight: Lake Champlain Opportunities for Action Management Plan

In 2017, Lake Champlain Opportunities for Action Management Plan was developed for managing the Lake Champlain watershed. The plan outlines priority goals, objectives, and strategies for the Lake Champlain Basin Program established by the Champlain Watershed Improvement Coalition of New York (CWICNY) Steering Committee. The Steering Committee is made up of state and provincial government staff from Vermont, New York and Quebec, advisory committee chairs, local government representatives, and U.S. federal agency representatives The plan supports the following four goals for the Lake Champlain watershed:

- Clean Water: Sustain diverse ecosystems, support vibrant communities and working landscapes, and provide safe recreation opportunities.
- Healthy Ecosystems: Provide clean water for drinking and recreating, and intact habitat that is resilient to extreme events and free of aquatic invasive species where diverse fish and wildlife populations will flourish.
- Thriving Communities: Have an appreciation for natural and cultural resources, and the capacity to implement actions that will result in sound stewardship of these resources while maintaining strong local economies.
- Improved & Involved Public: Basin Residents and visitors will understand and appreciate Lake Champlain Basin resources, and will possess a sense of personal responsibility that results in behavioral changes and actions to reduce pollution.

Objective 6: Develop and maintain the capacity of state, regional and local agencies and organizations to provide nonpoint source management assistance to communities and landowners through assessment, planning, technical support and education

A key emphasis of the NPS Program has been to support local agency outreach to municipalities and landowners. Local partners providing outreach include County Water Quality Coordinating Committees, Soil and Water Conservation Districts (SWCDs), watershed coalitions, and planning and health agencies. Contributions from Cornell Cooperative Extension, Cornell Pro-Dairy, public water suppliers, and citizen groups complement this network to provide nonpoint source-related technical assistance and guidance to municipalities and landowners.

Trainings and technical guidance documents created to support local agencies' outreach efforts included:

- The NYS Standards and Specifications for Erosion and Sediment Control (Blue Book) was updated in November 2016.The Blue Book provides standards and specifications for the selection, design and implementation of erosion and sediment control practices for the development of Erosion and Sediment Control Plans for the SPDES General Permit for Stormwater Discharges from Construction Activity.
- The NYS Annual Water Quality Symposium, conducted through a partnership with the New York State Conservation District Employees Association, provides an important forum for delivering nonpoint source technical guidance to local agencies. Nonpoint source management topics addressed during the 2016 Symposium included: Ag nonpoint source, algal blooms, climate resilient farming, floodplain management, cropware training, soil health, water control structures, stormwater, erosion & sediment control, nine element plan, WQIP, and waste storage structures.
- Dairy Acceleration Program, coordinated through Cornell University services to dairy farmers to create more economically viable and environmentally sustainable operations. Pro-Dairy and Cornell University Cooperative Extension, provides education and planning
- Conservation Skills Workshops, conducted through a partnership with New York State Conservation District Employees Association, USDA NRCS, and NYSSWCC, provide class and field trainings annually on various agricultural nonpoint source topics. Topics covered in 2016 workshops included: Erosion & sediment control manual review, total collection & irrigation of silage leachate, cropland conservation, hydroseeding, stream corridor assessment, soil health, aquatic connectivity, forestry inventory, and aquatic invasive species & boat washing stations.
- Post-Flood Emergency Stream Intervention Trainings were given by DEC staff, in cooperation with Soil and Water Conservation Districts. Trainings are geared toward municipal employees, local contractors, district staff, environmental organizations, and county legislators.
- Concentrated Animal Feeding Operation (CAFO) Roadshow, DEC, NYSDAM and USDA-NRCS and their partners (Cornell PRO-DAIRY, NEDPA, NYFB, and Farm Credit East) hosted a series of seminars across NYS to learn about ways to prevent runoff and water well problems and how their farms can comply with the CAFO SPDES permit.
- "Look for Zero Phosphorus Lawn Fertilizer" educational video featuring "devil ducks" on DEC's YouTube channel promotes checking for 0% phosphorus when purchasing fertilizer and proper lawn fertilizing techniques to protect water quality by reducing harmful runoff.

- Beach Restoration Practices technical guidance and resources factsheet was developed to support WQIP applicants. The factsheet provides background information

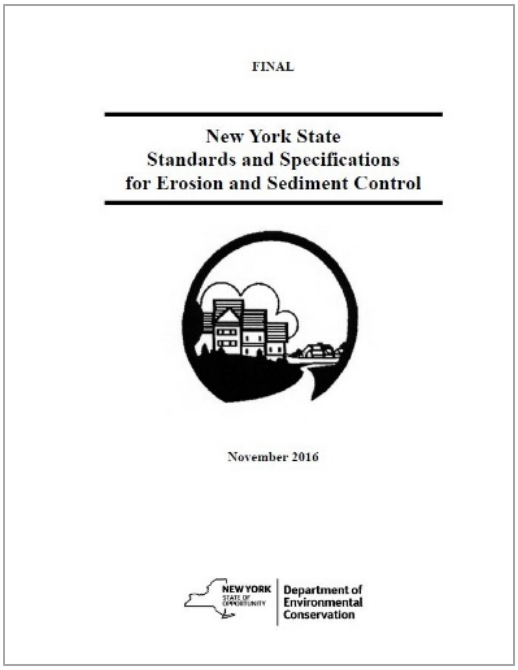
about beach restoration best management practices and identifies technical resources that detail priority best management practices.

- NPS staff work to provide the most current technical guidance through practice design manuals that are available for free on various state agency websites.

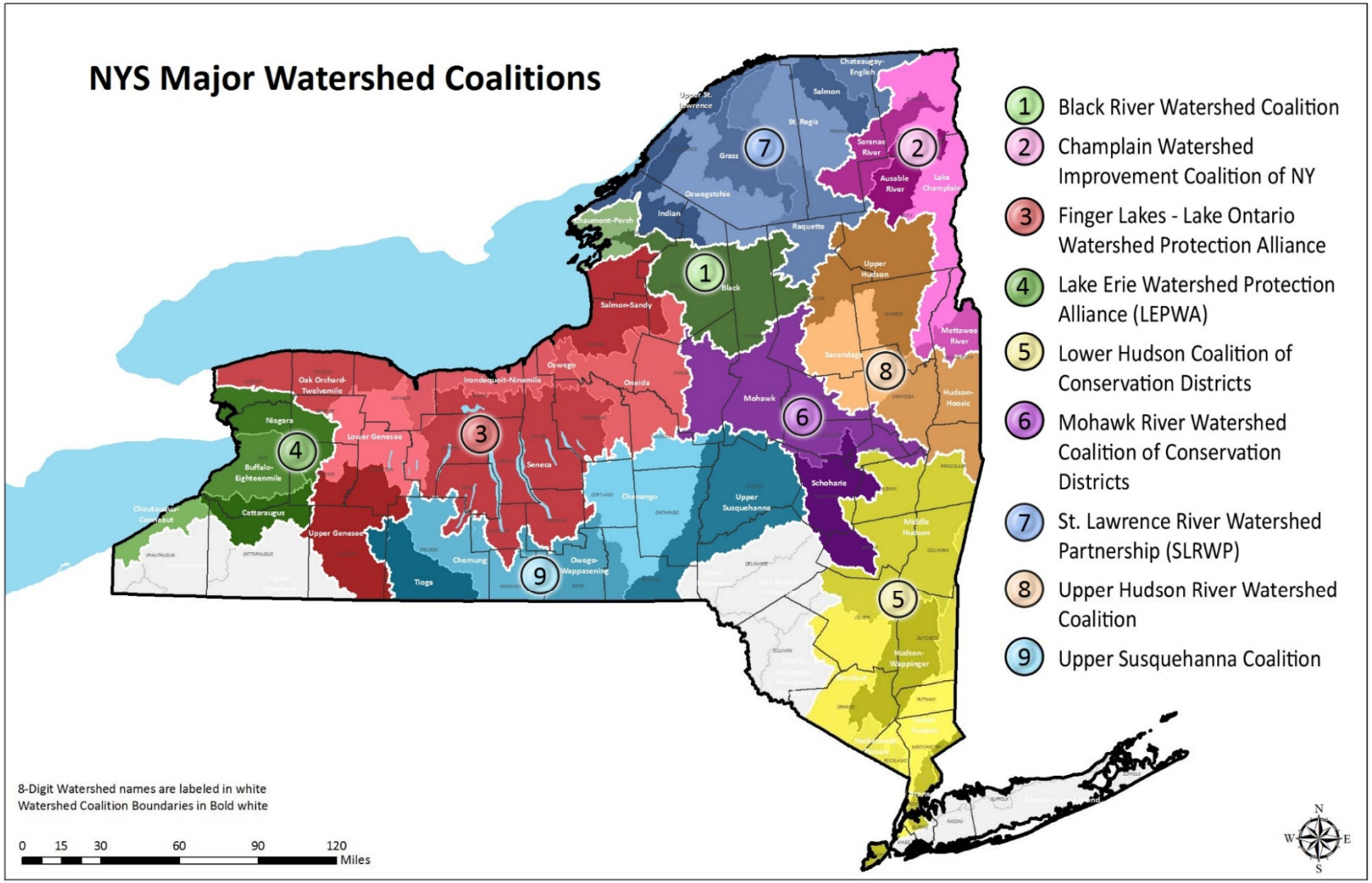
Objective 6 Highlight: New York State Standards and Specifications for Erosion and Sediment Control (Blue Book)

In November, 2016, DEC released the updated New York State Standards and Specifications for Erosion and Sediment Control. The Blue Book, first released in 2005, provides standards and specification for the selection, design and implementation of erosion and sediment control practices to protect water quality. The Blue Book is used in preparing Erosion and Sediment Control Plans for the SPDES General Permit for Stormwater Discharges from Construction Activity. Proper use of these standards protects the waters of the state from sediment loads during runoff events. The 2016 version is updated to address EPA's effluent limitation guidelines, advancements in technology and issues that had been identified by stakeholders that use the document.

Shown above: A live stake installed to create a living root mat that stabilizes the soil after construction along a raw streambank. Live stakes are one of the many erosion and sediment control techniques found in the New York State Standards and Specifications for Erosion and Sediment Control (shown right).



Appendix A: Watershed Coalition Map



Appendix B: Initiated Cost Shared BMPs

BMP Type	Units to be Installed	
Access Control	27	acres
Access Road	20,066	feet
Agrochemical Mixing Facility	3	units
Animal Trails and Walkways	4	acres
Baffle Box	1	acres
Bioretention/Raingarden	2	acres
Bioswale	0.2	acres
Composting Facility	3	units
Contour Buffer Strip	0.24	acres
Cover Crop	3,109	acres
Critical Area Planting	30	acres
Dike	250	feet
Ditch/Channel Stabilization	29	acres
Diversion	7,952	feet
Fence	261,866	feet
Filter Strip	1	acres
Forage and Biomass Planting	422	acres
Grassed Waterway	2	acres
Heavy Use Area Protection	825.04	acres
Hydroseeding (Sediment and Erosion Control)	71.7	acres
Irrigation System Surface and Subsurface	3	units
Land Smoothing	2.5	acres
Lined Waterway or Outlet	1,240	feet
Livestock Pipeline	53,160	feet
Mulching	39	acres
On-Farm Secondary Containment Facility	57	units
Pathogen Management	1	units
Pond Sealing or Lining - Flex Membrane	2	units
Prescribed Grazing	241	acres
Pumping Plant	310	units
Residue Management, Mulch Till	1,050	acres
Riparian Forest Buffer	40.5	acres
Riparian Herbaceous Cover	59	acres
Roof Runoff Management	274	units
Waste Facility Cover	26	units
Sediment Forebay	24	acres
Spring Development	7	units
Stream Crossing	26	units

BMP Type	Units to be Installed	
Streambank and Shoreline Protection	3,115	feet
Streambank and Shoreline Protection	9	acres
Strip Cropping	61	acres
Subsurface Drain	21,183	feet
Tree/Shrub Establishment	13	acres
Underground Outlet	13,505	feet
Wastewater Vegetated Treatment Strip	6	acres
Waste Facility Closure	1	units
Waste Management System	3	units
Waste Storage Facility	34	units
Manure Transfer	51	units
Waste Treatment Lagoon	400	units
Water & Sediment Control Basin	4	units
Water Well	202	units
Watering Facility	117	units
Wet Ponds	0.25	acres
Wetland Creation	1	acres
Wetland Restoration	1	acres
Windbreak, Shelterbelt Establishment	0.25	feet
Vegetated Swale/Grassed Swale	1	acres

Appendix C: Nonpoint Source Funding Program Descriptions

STATE AND LOCAL FUNDING SOURCES

New York State Agricultural Environmental Management (AEM) Program

Eligible applicants:	County Soil and Water Conservation Districts administer and implement AEM at the local level through. SWCDs engage local partners such as Cooperative Extension, NRCS, AEM Certified Planners, Certified Crop Advisors, USDA Technical Service Providers, and agri-businesses
Summary of program:	The New York State Agricultural Environmental Management (AEM) Program supports farmers in their efforts to protect water quality and conserve natural resources, while enhancing farm viability. New York's AEM Program helps farmers protect water quality by providing a framework to assess environmental stewardship and coordinate technical and financial assistance from the Federal, State, and local levels to address priority water quality issues on the farm.
Website:	http://www.nys-soilandwater.org/

Agricultural Nonpoint Source Abatement and Control Program (ANSACP)

Eligible applicants:	Soil and Water Conservation Districts
Summary of program:	Competitive financial assistance program available to Soil and Water Conservation Districts that provides funding to plan, design, and implement priority BMPs, as well as cost-share funding to farmers to implement BMPs.
Website:	www.nyssoilandwater.org/aem/nonpoint.html

Water Quality Improvement Project (WQIP) Program

Eligible applicants:	Municipalities, municipal corporations, soil and water conservation districts
Summary of program:	Provides funding statewide for non-agricultural nonpoint source projects implementing best management practices
Website:	http://www.dec.ny.gov/pubs/4774.html

Clean Water Act Section 604(b) Funding

Eligible applicants:	Regional public comprehensive planning organizations in New York State and interstate planning organizations working in New York State
Summary of program:	Provides funding for to regional planning organizations for planning activities
Website:	http://www.dec.ny.gov/lands/53122.html

Finger Lakes – Lake Ontario Watershed Protection Alliance (FLLOWPA)

Eligible applicants:	25 counties in the Finger Lakes and Lake Ontario watershed receive FLLOWPA funding. Those eligible to receive a portion of the funding distributed to the 25 counties varies by county.
Summary of program:	Provides funding for to regional planning organizations for planning activities
Website:	http://www.fllowpa.org/county.html

Hudson River Estuary Program Grants

Eligible applicants:	Municipalities and not-for-profit corporations with a 501©(3) designation. Projects must be within the Hudson River estuary geographic boundaries.
Summary of program:	In prior years, funds have been awarded for green infrastructure improvements for stormwater management.
Website:	http://www.dec.ny.gov/lands/5091.html

Environmental Justice Community Impact Grant Program

Eligible applicants:	Community-based organizations that must also meet several other criteria, as explained on the below website.
Summary of program:	Previously awarded projects have included green infrastructure demonstration projects. In the 2012 grant cycle, smaller “Green Gems” projects must involve education, stewardship, and/or monitoring activities related to parks, open space, community gardens or green infrastructure.
Website:	http://www.dec.ny.gov/public/31226.html

Urban & Community Forestry Program Cost Share Grants

Eligible applicants:	Municipalities and not-for-profit corporations acting on behalf of a public ownership interest in the property or acting on behalf of a public property owner.
Summary of program:	Street tree planting, one eligible project type, may fit well with green infrastructure projects.
Website:	http://www.dec.ny.gov/lands/5285.html

Environmental Facilities Corporation Green Innovation Grant Program (GIGP)

Eligible applicants:	Any county, city, town, village, district corporation, county or town improvement district, Indian reservation wholly within NYS, any public benefit corporation, public authority and certain New York State agencies, as well as other organizations empowered to develop a project, as described on the below website.
Summary of program:	Provides funding for eight specific green infrastructure practices: permeable pavement; bio-retention; green roofs and green walls; stormwater street trees/urban forestry programs; riparian buffers, floodplains and/or wetlands; downspout disconnection; stream daylighting; and stormwater harvesting and reuse.
Website:	http://www.efc.ny.gov/Default.aspz?tabid=461

Department of State Local Waterfront Revitalization Program (LWRP) Grants

Eligible applicants:	Villages, towns, or cities, and counties which are located along New York's costs or inland waterways designated pursuant to Executive Law, Article 42.
Summary of program:	The LWRP grant program provides matching grants on a competitive basis to revitalize communities and waterfronts. Funding is available for both planning and implementation, and funded projects may include green infrastructure components.
Website:	http://www.dos.ny.gov/opd/grantOpportunities/epf_lwrpGrants.html

NYS Energy, Research and Development Authority Cleaner Greener Communities Program Phase II Implementation Grants

Eligible applicants:	Local governments, private companies, non-governmental organizations, and other entities with projects in NYS.
Summary of program:	This program is an effort to fund implementation of large-scale, high-profile projects that support the goals of each region's sustainability planning efforts. Category 2 (Planning Initiatives) Projects may include green infrastructure planning. Some

	Category 3 (Community-Scale Sustainability) Projects are required to meet green infrastructure prerequisites.
Website:	http://www.nyserda.ny.gov/All-Programs/Programs/Cleaner-Greener-Communities/Implementing-Smart-Development-Projects

NYS Homes & Community Renewal Community Development Block Grant – Public Infrastructure Funds

Eligible applicants:	Town, City or Villages with population less than 50,000, counties with a population less than 200,000 designated principal cities of Metropolitan Statistical Areas.
Summary of program:	Funding is available for drinking water, clean water and stormwater; and public works. Green infrastructure components may be a part of these larger public infrastructure projects.
Website:	http://www.nyshcr.org/AboutUs/Offices/CommunityRenewal/FundingOpportunities.htm

Greenway Communities Grant Program

Eligible applicants:	Municipalities that have adopted a resolution stating the community's agreement with the Greenway criteria.
Summary of program:	Site planning/design projects may include green infrastructure.
Website:	http://www.hudsongreenway.ny.gov/GrantFunding/CommunityGrants.aspx

New York City Department of Environmental Protection Green Infrastructure Grant Program

Eligible applicants:	Private property owners in combined sewer areas of New York City
Summary of program:	Funds are available for design and construction of green infrastructure projects such as blue or green roofs, rain gardens, porous pavement, and rainwater harvesting.
Website:	http://www.nyc.gov/html/dep/html/stormwater/nyc_green_infrastructure_grant_program.shtml

City of Binghamton Green Stormwater and Landscaping Management Fund

Eligible applicants:	Residential property owners, non-profits, and small business owners in the City of Binghamton.
Summary of program:	This grant was created to help homeowners and businesses pursue small green infrastructure projects that will contribute to the City's resilience to flooding and help improve water quality. Total project area must be less than 5,000 square feet.

Website:	http://www.binghamton-ny.gov/grant-opportunities

Onondaga County "Save the Rain" Program: Green Improvement Fund (GIF)

Eligible applicants:	Owners of a commercial business or not-for-profit facility located within the Green Improvement Fund boundary.
Summary of program:	The grant is intended to offer assistance to applicants installing GI technologies as an aspect of the development, and/or retrofitting of certain classes of privately owned properties (commercial, business, and not-for-profit owned properties) in specific geographical locations within the Clinton, Harbor Brook, and Midland combined sewer system, as outlined in the Green Improvement Fund Program Boundary Map, and generally located in the City of Syracuse.
Website:	http://savetherain.us/green-improvement-fund-gif/

Onondaga County "Save the Rain" Program: Suburban Green Infrastructure Program (SGIP)

Eligible applicants:	Municipal entities within Onondaga County that are planning projects to reduced inflow and infiltration to the sanitary sewer system. Projects must be on municipal property within the Onondaga County sewer system.
Summary of program:	The program is designed to support the development of green infrastructure and stormwater mitigation techniques on public property within the Onondaga County sanitary sewer district but outside of the City of Syracuse.
Website:	http://savetherain.us/sgip/

City of Binghamton 50/50 Stormwater Management Fund & Green Stormwater and Landscaping

Eligible applicants:	Landowners and developers
Summary of program:	An incentive program for landowners and developers to implement green infrastructure practices that exceed the requirements of the City of Binghamton Erosion Control and Stormwater Management Ordinance. Approved projects are eligible for a 50 percent match, not to exceed $25,000, toward the cost of installation of green infrastructure. Developments funded through this program will function as case studies to demonstrate the cost, construction techniques and maintenance requirements of green infrastructure.
Website:	http://www.binghamton-ny.gov/grant-opportunities

FEDERAL FUNDING SOURCES

EPA Urban Water Small Grants

Eligible applicants:	States, local governments, territories, Indian Tribes, and possessions of the U.S., public and private universities and colleges, public or private nonprofit institutions/organizations, intertribal consortia, and interstate agencies.
Summary of program:	Grants are available to fund research, investigations, experiments, training, surveys, studies, and demonstrations that will advance the restoration of urban waters by improving water quality through activities that also support community revitalization and other local priorities. Depending on each fiscal year's Request for Proposals, this may include green infrastructure.
Website:	https://www.epa.gov/urbanwaters/urban-waters-small-grants

EPA Great Lakes Shoreline Cities Green Infrastructure Grants

Eligible applicants:	Cities with shoreline that directly touches one of the Great Lakes or a connecting channel, with a population greater than 25,000 and less than 50,000.
Summary of program:	Grants to eligible shoreline cities to fund green infrastructure projects that will improve Great Lakes water quality. Green infrastructure projects must be within ½ mile of the shoreline of a Great Lake or connecting channel. Available funding for each application was capped at $250,000. Project stage funded: Implementation
Website:	https://www.epa.gov/great-lakes-funding/great-lakes-shoreline-cities-grants

EPA Great Lakes Restoration Initiative (GLRI)

Eligible applicants:	Non-federal governmental entities, including state agencies, interstate agencies, federal-recognized Indian tribes and tribal organizations, and local governments; institutions of higher learning; and nonprofit organizations. In 2014, green infrastructure projects conducted by a municipality located directly on the shore of a Great Lake or a Great Lakes connecting channel are ineligible. Green infrastructure projects conducted by other eligible applicants are eligible.
Summary of program:	Green infrastructure projects that improve habitat and other ecosystem functions in the Great Lakes are eligible for funding.
Website:	https://www.epa.gov/great-lakes-funding/great-lakes-restoration-initiative-glri

EPA Challenge Cost Share Grant Program

Eligible applicants:	U.S. non-federal organization and tribal agencies
Summary of program:	Green infrastructure projects that improve habitat and other ecosystem functions in the Great Lakes are eligible for funding.
Website:	https://www.epa.gov/great-lakes-funding/great-lakes-restoration-initiative-glri

National Fish and Wildlife Foundation Chesapeake Bay Stewardship Fund

Eligible applicants:	Non-profit 501© organizations, local governments and agencies, state government agencies and academic institutions. Projects must be implemented entirely within the Chesapeake Bay watershed.
Summary of program:	Nonpoint source best management practices meeting Chesapeake Bay priorities
Website:	http://www.nfwf.org/chesapeake/Pages/2014-chesapeake-rfp.aspx#.Vdbe1FOZ1gq

National Fish and Wildlife Foundation Delaware River Restoration Fund

Eligible applicants:	Non-profit organizations and local governments. Projects must be implemented entirely within the Delaware River watershed.
Summary of program:	Nonpoint source best management practices to benefit the Delaware River basin.
Website:	http://www.nfwf.org/delaware/Pages/2014-Delaware-RFP.aspx#.VDbhG1OZ1gp

National Fish and Wildlife Foundation Urban Waters Restoration

Eligible applicants:	Any entity that can receive grants. While partnerships are encouraged to include state and federal agencies as partners, those entities **may not** serve as the grantee **unless** the community partners demonstrate that the state or federal agency is best suited to coordinate the community-based project.
Summary of program:	In 2014, project priorities include addressing developing educational programs to provide training to schools, businesses, community groups and homeowners on how to implement green infrastructure practices including sustainable forestry practices; or designing projects intended to control rain water though green infrastructure tools such as tree canopy, permeable pavement, green street designs, bioswales, planter

	boxes and green roofs, to reduce stormwater flow, controlling flooding and slowing run-off into surface water.
Website:	http://www.nfwf.org/fivestar/Pages/home.aspx#.VDblP1OZ1gp

National Fish and Wildlife Foundation Long Island Sound Futures Fund

Eligible applicants:	Non-profit 501© organizations; state, tribal, and local governments; and academic or educational institutions. Nonpoint source or stormwater management, education, and fish passage projects may be in any portion of the Long Island Sound and its watersheds within the states of Connecticut and New York, but must demonstrate a quantifiable and measurable impact on improving Long Island Sound or its ecosystem.
Summary of program:	Funding priorities include planning and implementing green infrastructure projects.
Website:	http://www.nfwf.org/lisff/Pages/home.aspx#.VdbnIlOZ1gp

FEMA Hazard Mitigation Grants

Eligible applicants:	States, local governments, tribes, private non-profit organizations
Summary of program:	Provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration. FEMA Hazard Mitigation grants will fund green infrastructure if a benefit-cost analysis shows that the damages saved from the project exceed the cost of the project.
Website:	https://www.fema.gov/hazard-mitigation-grant-program

USDA-FSA Conservation Reserve Program (CRP)

Eligible applicants:	Landowners with eligible land
Summary of program:	CRP is a voluntary program for agricultural landowners. Through CRP, farmers can receive annual rental payments and cost-share assistance to establish long-term, resource conserving covers on eligible farmland.
Website:	ttp://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index

USDA-FSA Conservation Reserve Enhancement Program (CREP)

Eligible applicants:	Landowners with eligible land

Summary of program:	The Conservation Reserve Enhancement Program (CREP) is an offshoot of the Conservation Reserve Program (CRP). CREP targets high-priority conservation issues identified by local, state, or tribal governments or non-governmental organizations. In exchange for removing environmentally sensitive land from production and introducing conservation practices, farmers, ranchers, and agricultural land owners are paid an annual rental rate and incentive payments.
Website:	http://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-enhancement/index

USDA-FSA Debt for Nature (DFN) Program

Eligible applicants:	Landowners with eligible FSA loans and land
Summary of program:	Debt for Nature (DFN) is available to persons with Farm Service Agency (FSA) loans secured by real estate. These individuals may qualify for cancellation of a portion of their FSA indebtedness in exchange for a conservation contract with a term of 50, 30, or 10 years. The conservation contract is a voluntary legal agreement that restricts the type and amount of development that may take place on portions of the landowner's property. Contracts may be established on marginal cropland and other environmentally sensitive lands for conservation, recreation, and wildlife purposes.
Website:	https://www.fsa.usda.gov/Internet/FSA_File/debtfornature07.pdf

USDA-FSA Farmable Wetlands Program (FWP)

Eligible applicants:	Landowners with eligible land
Summary of program:	The Farmable Wetlands Program (FWP) is a voluntary program is designed to restore previously farmed wetlands and wetland buffer to improve both vegetation and water flow. Participants must agree to restore the wetlands, establish plant cover, and to not use enrolled land for commercial purposes.
Website:	http://www.fsa.usda.gov/programs-and-services/conservation-programs/farmable-wetlands/index

USDA-NRCS Agricultural Conservation Easement Program (ACEP)

Eligible applicants:	Landowners with eligible land

Summary of program:	The Agricultural Conservation Easement Program (ACEP) provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits. Under the Agricultural Land Easements component, NRCS helps Indian tribes, state and local governments and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect and enhance enrolled wetlands.
Website:	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/

USDA-NRCS Agricultural Management Assistance (AMA) Program

Eligible applicants:	Landowners with eligible land
Summary of program:	The Agricultural Management Assistance (AMA) provides financial and technical assistance to agricultural producers to voluntarily address issues such as water management, water quality, and erosion control by incorporating conservation into their farming operations.
Website:	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/ama/

USDA-NRCS Conservation Stewardship Program (CSP)

Eligible applicants:	Landowners with eligible land
Summary of program:	The Conservation Stewardship Program (CSP) helps agricultural producers maintain and improve their existing conservation systems and adopt additional conservation activities to address priority resources concerns.
Website:	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/csp/

USDA-NRCS Environmental Quality Incentives Program (EQIP)

Eligible applicants:	Landowners with eligible land
Summary of program:	The Environmental Quality Incentives Program (EQIP) is a voluntary program that provides financial and technical assistance to agricultural producers to plan and implement conservation practices that improve soil, water, plant, animal, air and related natural resources on agricultural land and non-industrial private forestland. EQIP may also help producers meet Federal, State, Tribal, and local environmental regulations.
Website:	http://www.nrcs.usda.gov/wps/portal/nrcs/main/ny/programs/financial/eqip/

USDA-NRCS Healthy Forests Reserve Program (HFRP)

Eligible applicants:	Landowners with eligible land
Summary of program:	The purpose of the Healthy Forests Reserve Program (HFRP) is to assist landowners, on a voluntary basis, in restoring, enhancing and protecting forestland resources on private lands through easements, 30-year contracts and 10-year cost-share agreements.
Website:	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/forests/

Regional Conservation Partnership Program (RCPP)

Eligible applicants:	Agricultural or silvicultural producer associations, farmer cooperatives or other groups of producers, state or local governments, American Indian tribes, municipal water treatment entities, water and irrigation districts, conservation-driven nongovernmental organizations and institutions of higher education
Summary of program:	The Regional Conservation Partnership Program (RCPP) promotes coordination between Natural Resource Conservation Service (NRCS) and its partners to deliver conservation assistance to producers and landowners. NRCS provides assistance to producers through partnership agreements and through program contracts or easement agreements.
Website:	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmbill/rcpp/

USDA-NRCS Watershed and Flood Prevention Operations (WFPO) Program

Eligible applicants:	States, local governments and Tribes
Summary of program:	The Watershed and Flood Prevention Operations (WFPO) Program provides technical and financial assistance to plan and implement authorized watershed project plans for the purpose of: watershed protection, flood mitigation, water quality improvements, soil erosion reduction, rural, municipal and industrial water supply, irrigation, water management, sediment control, fish and wildlife enhancement, and hydropower.
Website:	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/wfpo/

Appendix D: Completed Projects and Reductions

Project Title	Nitrogen Reduction (lbs./yr.)	Phosphorus Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)
Ag Waste Management in Southern Jefferson County	5,071	6,338	20,773
Black Ash Project Streambank Stabilization	0	203	0
Black River Watershed Agricuture Planning Phase III	5,071	6,339	20,733
BMP Implementation Dutch Hollow Farm	210	210	0
Broome County Soil and Water Conservation District (SWCD) Continued Critical Area Seeding and MS4/non-MS4 Stormwater Phase II Assistance	1	1	0
Butternut Creek Leachate Treatment Project	28	35	0
CAFO Sileage Leachate Implementation	235	294	0
Campbell Plaza Monhagen Brook Improvement Project	3	217	108
Canajoharie Creek	810	1,013	2,152
Canandaigua Lake Watershed Agricultural Program Phase VIII	109	136	25
Cayuga County Critical Area Stabilization Project	8,076	4,038	4,752
Cayuga Lake	88	110	14
Cayuga Lake Prescibed Grazing	58	7	9
Cayuga Lake Prescribed Grazing	507	634	5,000
Chesapeake Bay Intensive Grazing Project	186	234	47
Chesapeake Bay Intensive Grazing Project # 2	120	150	19
Conesus Lake Watershed Phase I	4,271	5,338	667
Cortland Otselic Watershed Agricultural Waste Management	728	910	0
Cover Crop - Cayuga County	266	332	230
Cowaselon Creek Watershed Ag NPS Reduction Project	1,089	1,361	122
Dutchess County SWCD Hydroseeding Equipment Purchase	0	0	465
Enhanced Stormwater Treatment Through Street Sweeping	0	0	2,505
Essex County Soil and Water Conservation District Lake Champlain Stormwater Reduction	44	5	3

Project Title	Nitrogen Reduction (lbs./yr.)	Phosphorus Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)
Evergreen Farm AEM Imp Tier IV Ag Waste System CAFO Project	78	98	0
Factory Brook WS and Aquifer Protection-EZ Acres	20,099	3,056	29
Gage Barnyard Improvement Project	67	84	0
Glen Meadows	605	756	61
Great Sodus Bay Agricultural Program - Phase 3	4,721	5,962	1,484
Hydro-Seeding Road Ditches/Banks and Other Critical Areas	0	1100	1100
Leicester Salt Storage Barn	0	0	0
Lewis County SWCD Black River Watershed Ag Imp Project Phase II	899	1,146	2,708
Little Nanticoke Watershed Ag Protection Project	528	660	39
M. A. P. for W. Q.	61,244	7,885	60
Manhole 13 Stormwater Abatement and Reconstruction	131	26	1
Maxwell Park Stream Channel Stabilization and Restoration	460	230	230
Mid Owasco Lake Prescribed Grazing	314	392	3,500
Mohawk Basin Agricultural BMP Project	42,387	6,559	58
Monroe County Civic Center Plaza Green Roof	0	0	1
Montgomery County Fonda Reservoir	164	205	456
Moodna Creek Farm Runoff Control Project	1,119	1,399	108
Northern Watersheds Agricultural Program Phase V	4,604	5,755	61
Oneida Lake Watershed (Limestone and Butternut Creeks) Ag NPS Reduction Project	2,180	2,725	308
Otsego County Waterpoint Farms Wastewater Treatment Project	1,425	1,781	3,582
Otselic River WS Project	250	314	0
Owasco Lake Watershed	110	138	17
Pathogen and Pasture Management BMPs in the Skaneateles Lake Watershed	202	252	35
Phased Prescribed Grazing Management Implementation	1,143	85	18
Precision Feed Management for the Upper Susquehanna/Chesapeake Bay Watershed and AEM Program	0	0	0

Project Title	Nitrogen Reduction (lbs./yr.)	Phosphorus Reduction (lbs./yr.)	Sediment Reduction (tons/yr.)
Precision Feed Mgt for Uppper Susquehanna/Chesapeake Bay WS Farms	512	639	0
Rensselaer County Grandview Enterprise Farm	213	266	583
Rensselaer County UNC Brick Ag Waste & Clean Water Exclusion Project	1,163	1,454	3,399
Sangerfield River Watershed Ag NPS Reduction Project	1,162	1,453	108
Schuyler County Stormwater BMP Implementation and Education	1	0	0
Sediment, Nutrient, and Pathogen Reduction on 8 Farms in the Greater Seneca River Watershed	5,890	7,363	921
Silage Leachate for 2 CAFOs in Salmon River Watershed	1,936	2,421	130
Southern Owasco Lake Prescribed Grazing	290	362	4,000
Susquehanna River Basin Precision Mgmt for Prescribed Grazing 2	1,585	1,982	5,458
Tonawanda Creek Barnyard Water Management	764	956	0
Town of Altona-Salt Storage Facility	0	0	0
Town of Amherst Engineering Department Water Garden and Pavement Reduction	0	0	1
Town of Sparta Salt Storage Barn	0	0	0
Treadwell Implementation Project	2,722	658	16
Tri-County Unadilla Watershed Project	781	976	103
Upper Hudson River Watershed Erosion Control Program	17	34	7
Upper Tioughnioga Cover Cropping	18,050	248	70
Upper Tioughnioga Watershed Agricultural Implementation	248	310	39
Upper Unadilla Manure Storage Project	3,813	1,314	7
Van Nostrand Manure Management	209	261	0
Village of Port Jefferson Mill Creek Infrastructure Improvements and Habitat Restoration	136	17	10
Warren County Soil and Water Conservation Sediment Abatement Project	3,930	632	174
Young Farm Nutrient Management Project	774	967	112

Appendix E: Monitoring Program Descriptions

Citizens Statewide Lake Assessment Program (CSLAP): CSLAP is a volunteer lake monitoring and education program managed by DEC and the New York Federation of Lake Associations (NYSFOLA). The data collected through the program is used to understand lake conditions and develop lake management plans. To participate in the program, lakes first need to be a member of the NYSFOLA (http://www.nysfola.org/). More information about the program can be found at: http://www.dec.ny.gov/chemical/81576.html.

Lake Classification and Inventory (LCI) Program: DEC conducts water quality sampling of lakes, ponds, and reservoirs through the LCI program. The LCI monitoring program collects data that supports water quality assessments and management activities including: updating the WI/PWL, identifying water bodies not meeting their designated uses for inclusion on the New York State Section 303(d) List, preparing the New York State 305(b) Water Quality Report, supporting the development of TMDL plans and evaluating the effectiveness of TMDL implementation, supporting the development of nutrient criteria in New York State, expanding the inventory of waterbodies infested with aquatic invasive species, and aiding in the identification of and response to harmful algal blooms. For more information about the program can be found at: http://www.dec.ny.gov/chemical/31411.html.

Rotating Integrated Basin Studies (RIBS) Program: The objectives of DEC's RIBS program are program are to assess water quality of all waters of the state, including the documentation of good quality waters and the identification of water quality problems; identify long-term water quality trends; characterize naturally occurring or background conditions; and establish baseline conditions for use in measuring the effectiveness of site-specific restoration and protection activities. The program is designed so that all major drainage basins in the state are monitored every five years. RIBS program water quality data and information are used to support assessment and management functions within NYSDEC Division of Water (DOW), including the Waterbody Inventory/Priority Waterbodies List (WI/PWL), New York State's Clean Water Act Section 305(b) Water Quality Report, and Section 303(d) List of Impaired Waters of the state. For more information about the program can be found at: http://www.dec.ny.gov/chemical/30951.html.

Stream Biomonitoring Monitoring Unit: DEC's Stream Biomonitoring Unit Department of uses aquatic macroinvertebrates to monitor the water quality of the State's rivers and streams. Biomonitoring surveys are primarily assessed by collecting benthic (bottom dwelling) macroinvertebrate samples from riffle habitats in streams and rivers. Fish and algae communities are also used in intensive surveys to assess the magnitude and type of environmental stress or impact in waterbodies. More information about the program can be found at: http://www.dec.ny.gov/chemical/23847.html.

Toxicity Testing Unit (TTU): DEC's Toxicity Testing program is a component of the RIBS program. Bioassays are used to identify toxicity in surface waters and sediments. Tests on ambient surface waters are conducted using the water flea (*Ceriodaphnia dubia*), to identify toxic effects on survival and reproduction. Collected sediments are also analyzed using the Microtox® toxicity testing system, which uses the bioluminescent bacterium, *Vibrio fischeri*, to look for the presence of toxicity in bottom sediments. The TTU also provides technical oversight of Whole Effluent Toxicity (WET) testing programs required at some industrial, municipal and remediation facilities as part of the State Pollutant Discharge Elimination Systems (SPDES) permit program. More information about the program can be found at: http://www.dec.ny.gov/chemical/29854.html.

Water Assessments by Volunteer Evaluators (WAVE) Program: WAVE is a citizen-based water quality assessment developed by DEC. The purpose of WAVE is to enable citizen scientists to collect biological data for assessment of water quality on streams in New York State. The WAVE data augment the professional monitoring conducted by DEC's Stream Biomonitoring Unit. WAVE data classified as "Possibly Impaired" serve as a red flag for sites that may deserve further investigation at the professional level.