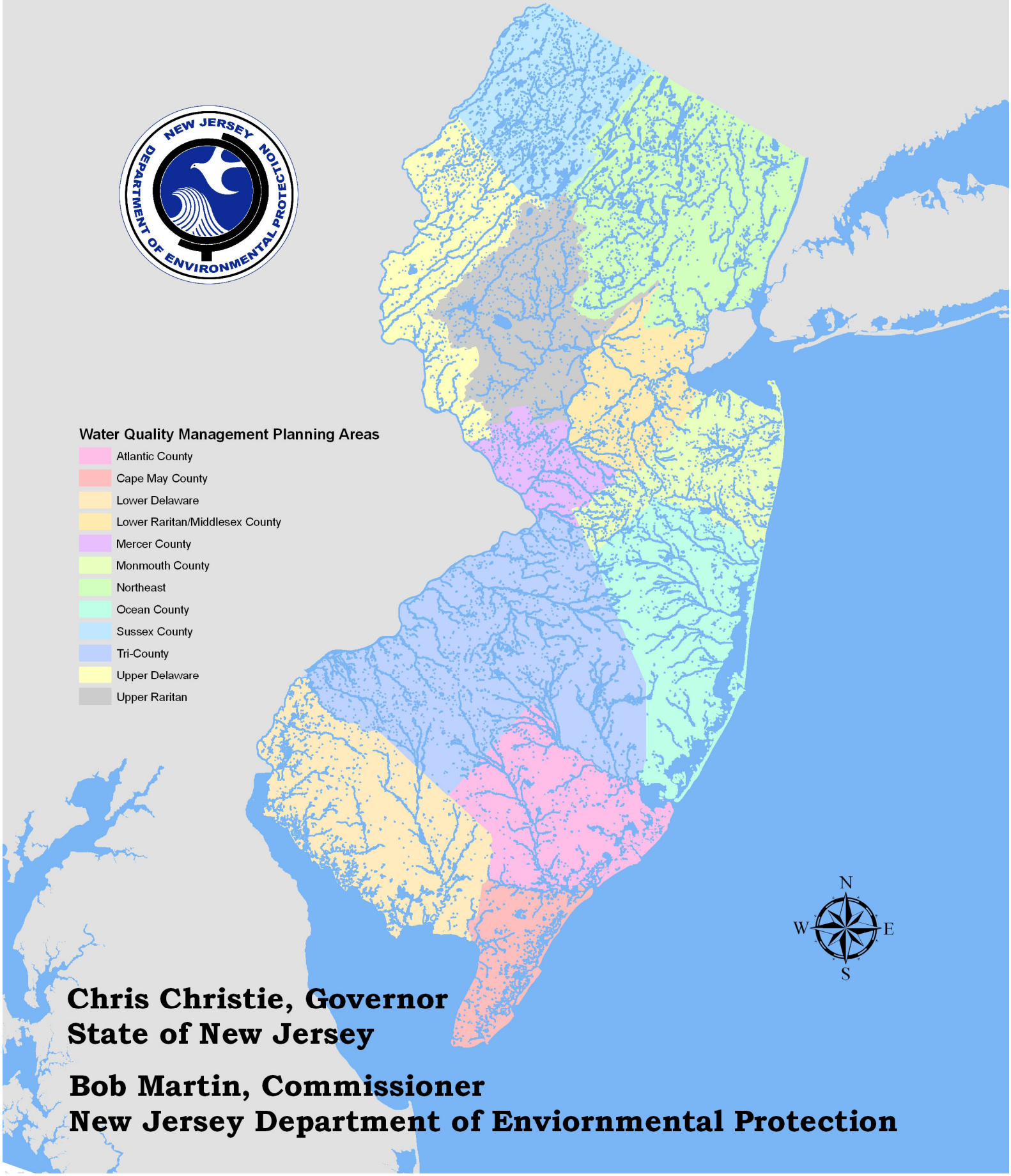
State of New Jersey
2009 - 2010 Nonpoint Source Report



Chris Christie, Governor
State of New Jersey

Bob Martin, Commissioner
New Jersey Department of Enviornmental Protection

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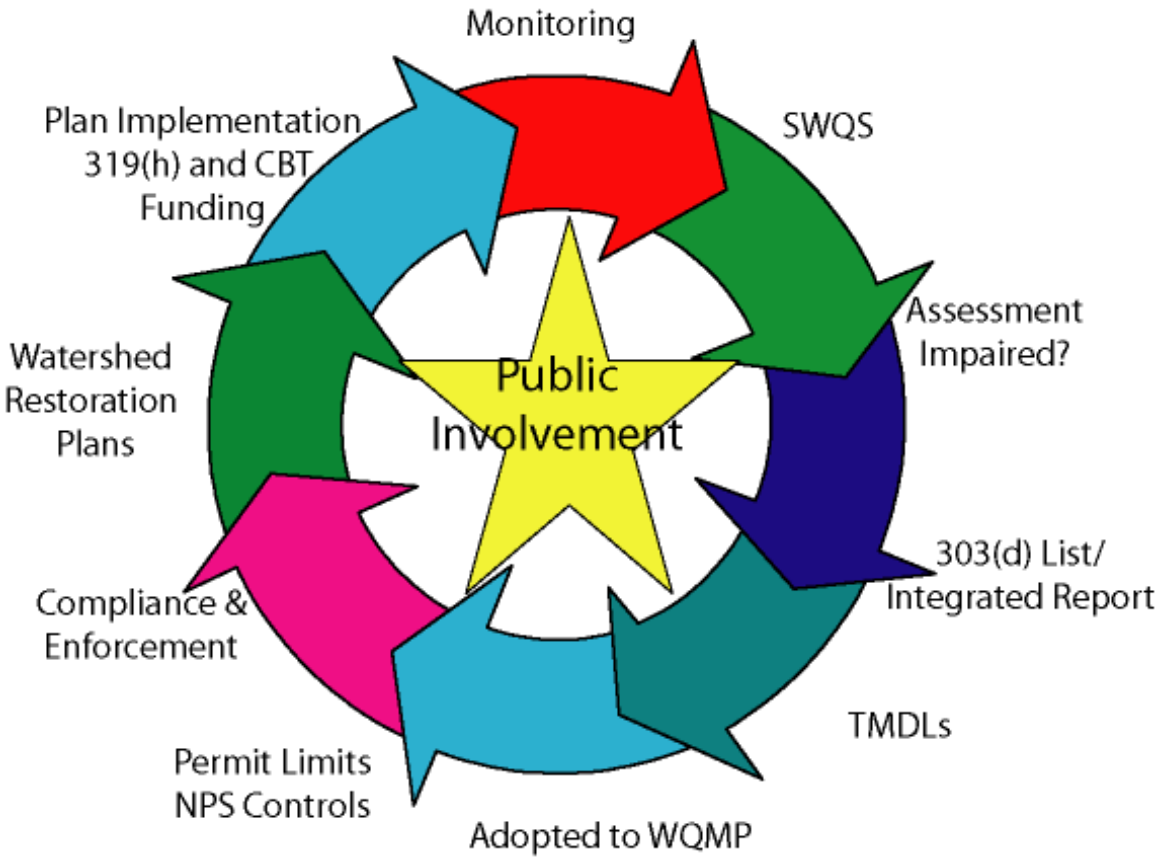
INTRODUCTION

The New Jersey Department of Environmental Protection (Department) is the Executive Branch Agency charged with the formulation of comprehensive policies for the conservation of the natural resources of the state, the promotion of environmental protection and the prevention of pollution of the environment of the state (see N.J.S.A. 13:1D-9). Among the Department's water resource goals is the restoration and maintenance of the chemical, biological and physical integrity of New Jersey's surface waters and the attainment of fishable and swimmable water quality in those surface waters. This report captures statewide nonpoint source (NPS) pollution prevention and abatement activities and initiatives occurring in or showing results in calendar years 2008 and 2009.

Integral to achieving the Department's water resource goals, the implementation of the Department's Total Maximum Daily Loads (TMDLs) and Watershed Restoration and Protection Plans, which have been approved by the United States Environmental Protection Agency's (USEPA) Region 2, have resulted in additional pollutant loading reductions. Grants Reporting and Tracking System (GRTS) entries attribute the following reductions to the projects that performed implementation work during federal fiscal year (FFY) 2008: Total suspended solids (TSS) reductions = 64.5 tons/yr, nitrogen reductions = 1,570.2 lbs/yr, and **phosphorus reductions = an unprecedented 172,007.6 lbs/yr,** which is the result of New Jersey's first fertilizer initiative with the fertilizer industry, called Healthy Lawns Healthy Water. (See TMDLs and Program Activity Measure #4 under *Nonpoint Source Program Activity Measures* in the "Restoration" section of this report for more information about this important initiative.) GRTS entries for projects implemented during FFY 2009 include: TSS reductions = 135.2 tons/yr, nitrogen reductions = 390.6 lbs/yr, and phosphorus reductions =1,157.5 lbs/yr. These outcomes constitute the culmination of the regulatory and voluntary stages of the cycle that the Department follows to achieve its water resource goals and signal the shift from Watershed Restoration Plan development to plan implementation.

The picture below illustrates the cycle through which the Department proceeds in attaining water resource goals. Through research and applied science, Surface Water Quality Standards (SWQS) are established, and water bodies that do not meet these standards are added to the state's List of Impaired Waters. TMDLs are then established for these impaired waters and adopted as amendments to the area-wide Water Quality Management Plans (WQMPs). Under the Statewide Water Quality Management Planning Rules, no permit shall be issued that conflicts with the area-wide WQMP. In addition, out of the TMDLs come permit limits for dischargers as well as the implementation of nonpoint source control measures. The Clean Water Act, the primary federal law in the United States governing water pollution, is a comprehensive statute aimed at restoring and maintaining the chemical, physical and biological integrity of the nation's waters. This act makes a clear distinction between point source and nonpoint

source pollution and authorizes issuing National Pollution Discharge Elimination System (NPDES) permits for point source discharges. Under the federal program, nonpoint pollution is addressed through non-permit mechanisms. However, the New Jersey State Water Pollution Control Act does not limit issuance of permits to point sources, and subsequently the Department also issues permits that control nonpoint sources of pollution, through authority of the New Jersey Pollution Discharge Elimination System (NJPDES) rules. When necessary, Compliance and Enforcement are dispatched to stop permit violators. Concurrent with TMDL adoption into the WQMPs, Watershed Restoration and Protection Plans get developed, which also implement the TMDLs. Clean Water Act Section 319(h) and Corporate Business Tax (CBT)-funded projects implement the Watershed Restoration and Protection Plans, with subsequent monitoring to see what improvements have been made in water quality or to see if the water body is still impaired, in which case, the cycle begins again. Public involvement is solicited and often necessary throughout each step in the process.



Water Quality

New Jersey is the fifth smallest state in the nation, yet is one of the most ecologically and hydrologically diverse. The State contains a wide variety of water resources, geologic characteristics and biota. Within the state's 8,204 square miles are 127 miles of coastline; 18,126 miles of rivers and streams; and 69,920 acres of lakes and ponds that are larger than 2 acres. In addition, there are 1,482 square miles of fresh and saline marshes and wetlands, 260 square miles of estuaries and 1,069 square miles of coastal waters. New Jersey has adopted Surface Water Quality Standards (SWQS) at N.J.A.C. 7:9B, to protect this unique diversity of water resources.

New Jersey's Surface Water Quality Standards establish the designated uses and antidegradation categories of the State's surface waters, classify surface waters based on those uses (i.e., stream classifications), and specify the water quality criteria and other policies and provisions necessary to attain those designated uses. Designated uses include drinking water supply, fish consumption, shellfish resources, propagation of fish and wildlife, recreation, and agricultural and industrial water supplies. In addition, the SWQS specify general, technical, and interstate policies, and policies pertaining to the establishment of water quality-based effluent limitations. Under the SWQS, all existing and designated uses shall be maintained and protected for all surface waters of the State. To view New Jersey's Surface Water Quality Standards, go to http://www.nj.gov/dep/rules/rules/njac7_9b.pdf.

The federal Clean Water Act mandates that states submit biennial reports to the United States Environmental Protection Agency (USEPA) describing the quality of their waters. The biennial Statewide Water Quality Inventory Report or "305(b) Report" must include the status of principal waters in terms of overall water quality and support of designated uses, as well as strategies to maintain and improve water quality. The biennial List of Water Quality Limited Waters or "303(d) List" identifies waters that are not attaining designated uses because they do not meet surface water quality standards despite the implementation of technology-based effluent limits. States must prioritize waters on the 303(d) List of Water Quality Limited Waters and identify those waters for which they anticipate establishing TMDLs in the next two years. The Integrated Water Quality Monitoring and Assessment Report (Integrated Report) satisfies the reporting requirements of both Sections 303(d) and 305(b) of the federal Clean Water Act. To view the 2008 Integrated Report, go to http://www.state.nj.us/dep/wms/bwqsa/2008_final_IR_complete.pdf.

RESTORATION

New Jersey's commitment to restoring its watersheds and water quality include the issuance of NJPDES permits that contain effluent limits for point sources and require stormwater best management practice (BMP) implementation for nonpoint source pollution control, the development of TMDLs and Watershed Restoration and Protection Plans for impaired water bodies, and the implementation of these plans, which includes on-the-ground projects funded through the federal 319(h) and 604(b) Grant Programs and State Corporate Business Tax Watershed Funds. This year continues the trend in increased pollutant loading reductions in the Grants Reporting and Tracking System (GRTS) resulting from project implementation, including the Healthy Lawns Healthy Water fertilizer initiative. These results would not be possible without ongoing partnerships and leveraging of resources with local watershed groups, local governments, other state agencies, and industry.

For the last few years, the emphasis of this Department's restoration efforts has shifted from restoration plan development to plan implementation. As discussed in the Introduction section of this report, this shift is evident in the increase in GRTS-reported pollutant load reductions compared to years when planning was the focus. Also highlighting implementation are New Jersey's success stories for the reporting period, beginning on page 10.

TMDLs

Development

The state is required to establish total maximum daily loads (TMDLs) for all impaired waters [303(d) listed or 305(b) sublist 5] in accordance with a priority ranking. To ensure New Jersey meets its obligation to restore water quality to impaired water bodies, EPA Region 2 and the Department signed a Memorandum of Agreement (MOA) which established a deadline of March 31, 2011 to address all impairments listed on the 1998 list.

This year, New Jersey established 27 TMDLs to address total phosphorus impairments in the Passaic River Basin. Nutrients such as phosphorus are essential to plants and animals, but too much fosters excessive algae growth, impairing water quality, diminishing recreational experiences, making treatment of drinking water more costly, and depriving water of dissolved oxygen that fish and other aquatic life need to survive. The TMDLs affect more than 50 sewage treatment plants. The TMDL for Phosphorus

for Pompton Lake and Ramapo River Basin established 3 TMDLs for the impaired waterbodies.

Critical locations where phosphorus is causing excessive primary productivity were identified as the Wanaque Reservoir and Dundee Lake. As part of the TMDL, the Department adopted watershed criteria in accordance with N.J.A.C. 7:9B-1.5(g)3 in these locations, as the best means to ensure protection of the designated uses. The watershed criteria are expressed in terms of a seasonal average concentration (June 15-September 1) of the response indicator, chlorophyll-*a*. The criteria are tailored to the unique characteristics of each critical location and are expressed as a seasonal average of 9.2 µg/L chlorophyll-*a* in the Wanaque Reservoir and a seasonal average of 18 µg/L chlorophyll-*a* in Dundee Lake.

The Non-Tidal Passaic River Basin TMDL report is based on a watershed approach to address phosphorus impairments in 2 critical locations and 22 HUC 14s listed for phosphorus on the 303(d) list. This watershed TMDL includes reductions in phosphorus throughout the watershed including sources within the 303(d)-listed waterbodies. The 2 critical locations were not listed on the 303(d) list but were found to be impaired through this TMDL study. The numeric in-stream criteria for total phosphorus is 0.1 mg/l unless it can be demonstrated that phosphorus is not a limiting nutrient and will not otherwise render a water unsuitable for its designated use. The 22 HUC 14s on the 303(d) list were listed due to an exceedance of the 0.1 mg/l total phosphorus criteria. Through this TMDL study and based on careful evaluation of monitoring and modeling data, it was determined that phosphorus is not a limiting nutrient in most locations and does not render the 303(d)-listed waters unsuitable for their designated uses. The reductions required in these waters to achieve the watershed criteria at the critical locations will further ensure that the phosphorus standards in these listed waters will continue to be met.

Since 2000, New Jersey has established a total of 519 TMDLs, 483 of which were for impairments where nonpoint sources are the predominant problem. The table in Appendix I summarizes TMDLs that have been approved by EPA. New Jersey continues to meet the schedule for TMDL development laid forth in the MOA with EPA.

Implementation

Significant load reductions from nonpoint sources are needed in order to attain water quality criteria and designated uses. Each TMDL includes an implementation plan, which identifies a suite of completed, on-going and planned activities needed to achieve the identified load reductions. In many cases, the completed and on-going projects have been made possible through EPA 319(h) grant awards. This funding is used in conjunction with state CBT funds, other federal funds (EQIP, CRP and CREP), and local funds to address nonpoint sources of pollutants. New Jersey will continue to rely on 319(h) funding as a key element for accomplishing NPS reductions through TMDL implementation and thereby restoring water quality and designated uses. The implementation plans for the Passaic River and Pompton Lake-Ramapo River Watershed

TMDLs required municipalities in the contributory drainage area of the TMDL to adopt an ordinance consistent with a model ordinance provided by the Department as an additional measure of the Municipal Stormwater Permit. The model ordinance can be viewed at www.state.nj.us/dep/watershedmgt/rules.htm under the section heading, "Water Quality Management Planning Rule".

During a 2008 Earth Week event, the Commissioner of the Department signed a memorandum of understanding (MOU) with members of the fertilizer industry, who pledged to reduce the amount of phosphorus released by fertilizers in the Garden State by 50 percent by 2010. This initiative is called Healthy Lawns Healthy Water. In signing the MOU, members of the Lawn Care Product Manufacturing Industry agreed to establish technical groups to work with the DEP and Rutgers University's Agricultural Experiment Station in developing a stewardship program to foster better public education and to review strategies to reduce the levels of phosphorus in fertilizers. The Department is confident that this endeavor along with municipal adoption of the fertilizer ordinance will begin to address the urban stormwater contribution of nutrients to waterbodies in the state.

Future Efforts

The Department is also currently developing Stormwater and Stormwater Pollutant TMDLs, which will address biologically impaired sites listed on Sublist 5 of the biennial Water Quality Inventory Report. Nonpoint source pollutant loadings and the stormwater runoff that transports them are believed to be a driving force in the degradation of aquatic communities and their habitats. In order to develop empirical data to inform nonpoint source TMDL development, the Nonpoint Source Storm-Monitoring Study was performed. This multi-year surface water quality investigation conducted by the United States Geological Survey (USGS) NJ Science Center and the NJDEP-Water Monitoring & Standards Element, was designed to estimate the NPS loads of nutrients, bacteria, and suspended solids from various land use areas in Watershed Management Area (WMA) 17, 18, and 20. The study objectives were to (1) document current water quality before NPS and stormwater management strategies were initiated, and (2) develop a water quality model to estimate unit NPS loads of selected constituents associated with different land uses in WMA 17, 18, & 20. Recently developed and innovative modeling applications will be used to identify a suite of hydrologic indicators that most strongly correlate with these impairments in order to promote the most effective remediation plans, for example, stormwater best management practices (BMPs), to reduce runoff and minimize nonpoint source pollution.

Water Monitoring & Standards, in cooperation with the Bureau of Environmental Analysis and Restoration, continues with the Stressor Identification Program Pilot, to identify the principal stressors of impaired aquatic communities in the state's waterways. Studies are presently underway in three watersheds (Drakes Brook, Beaver Brook and Holland Brook). This pilot program is expected to produce a refined investigative methodology that can eventually be used statewide to identify aquatic community stressors. Initial results give some indication that nearsite stormwater discharges may

have a dominant role in the identified degradation of stream biota and their habitat. Some of the data for these watershed studies has been supplemented by both the Watershed Ambassador Program and the New Jersey Watershed Watch Network monitoring programs. These programs continue to assist in the on the ground monitoring efforts as needed.

The Department has embarked on several ongoing initiatives with the USGS to address remaining impairments on the Integrated List. Building upon the biological work already being conducted by the Department, the Bureau of Environmental Analysis and Restoration, has engaged the USGS to support TMDL development using stormwater runoff as a surrogate to address aquatic life impairment. This method is being developed for the Raritan River Basin to first determine its viability as a surrogate that represents the cumulative affects of multiple stressors contributing to aquatic life impairment. As a directly measurable and quantifiable surrogate parameter, a remedial response may be developed to address these impairments. A summary report will be available in 2012.

Several other projects with USGS involve monitoring in the Salem River, Hohokus Brook, Hammonton and Crosswicks Creeks, the purpose of which is to identify and estimate sources and evaluate impacts of nutrients and other conventional impairments for either TMDL development or delisting by the Department. Also, the Department's Water Monitoring Program will embark on a water quality monitoring project for TMDL evaluation in the non-tidal portion of Raccoon Creek.

In addition, ongoing studies with USGS involve completion of the metals evaluation monitoring project and study aimed at establishing a baseline for natural background levels for arsenic and water column mercury in surface waters to discern impairments attributed to anthropogenic sources from those that are due to natural conditions, e.g. geologic. This evaluative monitoring has been completed in the Inner and Outer Coastal Plain southern portion of the state as well as the central Raritan River Basin. In 2009, monitoring will commence in the Passaic River Basin. Natural background levels of arsenic have been found to exceed New Jersey's Surface Water Quality Standards throughout the Coastal Plain and Piedmont. In the future, the Department will pursue delisting these impairments since a TMDL is not the appropriate mechanism to address this parameter.

The Bureau of Environmental Analysis and Restoration is currently developing a statewide Mercury TMDL document that utilizes the methodology from the December 2007 EPA-approved Northeast Regional Mercury TMDL. New Jersey has approximately 200 mercury fish tissue listings in its proposed 2008 303d list/sublist 5 and 48 water column listings. The Statewide TMDL is for listings where air deposition of mercury is the major source and will cover about 100 listed HUC 14s. Listings in the Delaware River and Bay will be handled in cooperation with the Delaware River Basin Commission, the New York/New Jersey Harbor Estuary Program will address listings in their study area and the water column listings and listings with sources other than air deposition will be addressed on an individual basis. The statewide TMDL is expected to be proposed for public comment before the end of 2009.

Nonpoint Source Program Activity Measures

The EPA has created Program Activity Measures (PAMs) for all states to report progress and document the success of their nonpoint source pollution control programs. PAMs 1-5 below articulate the federal reporting requirements and New Jersey's progress to date for the reporting period.

PAM 1: Waterbodies identified by the State of New Jersey (in 2000 or subsequent years) as being primarily nonpoint source-impaired that will be partially or fully restored (cumulative).

Number of waterbodies identified by the State of New Jersey as being partially or fully restored as a direct result of 319(h) project implementation is five. Please see the Success Stories section below for details.

New Jersey continues to be a leader in environmental protection through ground-breaking legislation; partnerships with other state agencies, watershed associations, volunteer monitoring groups, and local government agencies; and on-the-ground implementation of watershed restoration plans and TMDL implementation plans.

The number of delistings that were previously listed on Sublist 5 of pollutants commonly associated with nonpoint source pollution such as dissolved oxygen, nitrate, pathogens, pH, phosphorus, temperature, total dissolved solids and total suspended solids are 303. These delistings are outlined in Appendix II of this report. For a complete list of the total assessment units delisted, see Appendix C in the *2008 New Jersey Water Quality Monitoring and Assessment Report* at: http://www.state.nj.us/dep/wms/bwqsa/2008_final_IR_complete.pdf.

We fully expect to achieve additional water quality improvements and restored water bodies in the future as we continue to implement watershed restoration and protection plans and TMDLs through the NJPDES Municipal Separate Storm Sewer System (MS4) program, Water Quality Management Planning program, the 604(b) grant program, and 319(h) and CBT watershed funding programs. Restoration and protection also depend on continued enforcement of the Stormwater Management and Water Quality Management Planning rules, work with stakeholder groups and other partners, and outreach and education across the State of New Jersey.

This PAM will also continue to be addressed through New Jersey's implementation of the EPA's "2006-2011 Strategic Plan: Charting Our Course, EPA, September 29, 2006" (for more information, see http://www.epa.gov/ocfopage/plan/plan.htm). Below is an excerpt from the Strategic Plan.

Goal 2: Clean and Safe Water
"Ensure drinking water is safe. Restore and maintain oceans, watersheds, and their aquatic ecosystems to protect human health, support economic and recreational activities, and provide healthy habitat for fish, plants and wildlife."

Objective 2.2: Protect Water Quality
"Protect the quality of rivers, lakes, and streams on a watershed basis and protect coastal and ocean waters."

Subobjective 2.2.1: Improve Water Quality on a Watershed Basis
"By 2012, use pollution prevention and restoration approaches to protect the quality of rivers, lakes, and streams on a watershed basis".

Under Subobjective 2.2.1, measures for the Strategic Targets for the entire United States are listed. Those that apply to New Jersey are:

- **Full Restoration Measure** - *"By 2012, attain water quality standards for all pollutants and impairments in more than 2,250 water bodies identified in 2002 as not attaining standards."*
  New Jersey's 2012 commitment for the Full Restoration Measure is 40-50.
- **Partial Restoration Measure** - *"By 2012, remove at least 5,600 of the specific causes of water body impairment identified by states in 2002."*
  New Jersey's 2012 commitment for the Partial Restoration Measure is 80-100.
- **Watershed Improvement Measure** - *"By 2012, improve water quality conditions in 250 impaired watersheds nationwide using the watershed approach."*
  New Jersey's 2012 commitment for the Watershed Improvement Measure is 10.

PAM 2: Reduction in amount of total sediment loadings (in tons/yr).

Grants Reporting and Tracking System (GRTS) entries for the projects that performed implementation work during federal fiscal year 2008 (10/1/07 through 9/30/08) represent a total cumulative load reduction of 64.5 tons/yr of sediment. GRTS entries for the projects that performed implementation work during federal fiscal year 2009 (10/1/08 through 9/30/09) represent a total cumulative load reduction of 135.2 tons/yr of sediment. These figures add to the total annual GRTS reductions in total sediment loadings resulting from project implementation. See the table in Appendix III for a breakdown by year and project of the reductions reported.

PAM 3: Reduction in amount of total nitrogen loadings (in pounds/yr).

GRTS entries for the projects that performed implementation work during federal fiscal years 2008 and 2009 represent a total cumulative load reduction of 1,570.2 lbs/yr and 390.6 lbs/yr of nitrogen, respectively. Again, these figures add to the annual GRTS reductions in total nitrogen loadings seen as a result of project implementation. See the table in Appendix III for a breakdown by year and project of the reductions reported.

PAM 4: Reduction in amount of total phosphorus loadings (in pounds/yr).

GRTS entries for the projects that performed implementation work during federal fiscal year 2008 represent a total cumulative load reduction of a **whopping 172,007.6 lbs/yr** of phosphorus (In comparison, last year's total phosphorus reduction was 720.3 lbs/yr). This substantial reduction is in large part the result of the "Healthy Lawns Healthy Water" fertilizer initiative in New Jersey, combined with implementation projects along the Cooper River in Wharton Boro and the Morris Wetlands in Cherry Hill Township. GRTS entries for the projects that included implementation work during federal fiscal year 2009 represent a total cumulative load reduction of 1,157.5 lbs/yr of phosphorus. See the table in Appendix III for a breakdown by year project of the reductions reported.

PAM 5: Number of watershed-based plans supported under State Nonpoint Source Management Programs since the beginning of FY '02 that have been substantially implemented.

While there are enormous costs associated with undertaking the numerous measures that are described in the approved plans, coupled with significant funding limitations, there are several plans for which implementation has been initiated. Some of these projects have resulted in 5 delistings reported in the *2008 New Jersey Water Quality Monitoring and Assessment Report* for New Jersey. (Please see the "Success Stories" section below, which documents these delistings as a result of 319 restoration project implementation.) All of the projects that have been implemented are listed in the table entitled “Project Implementation Initiated for the Watershed-Based Plans” in Appendix V. The Department’s funding priority for the current 319(h) funding cycle is for implementation measures from those plans listed in Appendix IV. Funding more of these of these projects through 319(h) will assist in the overall effort to substantially implement the nonpoint pollution abatement measures from our approved plans.

Success Stories

Stony Brook-Millstone Watershed

Location

The Stony Brook-Millstone Watershed encompasses 265 square miles in central New Jersey including portions of 26 municipalities. The Stony Brook, the largest tributary of the Millstone River, has headwaters in East Amwell Township, Hunterdon County and

flows 21 miles eastward until it joins the Millstone River at Carnegie Lake in Princeton, Mercer County. The 38-mile long Millstone River begins in Millstone Township, Somerset County and flows north until it joins the Raritan River in Manville Borough, Somerset County. The project area is located in the 12th Congressional District of New Jersey.

Problem

Extensive development over the last two decades converted significant rural portions of the Stony Brook Watershed to commercial and residential land uses. The increases in stormwater runoff volume and intensity resulted in severely eroded stream banks and compromised floodplain habitats leading to increased total suspended solids (TSS) concentrations. The TSS impairment was identified during the Stony Brook-Millstone Watershed Association's (SBMWA) watershed-wide characterization and assessment of all streams and riparian habitats in 1997. The TSS impairment was confirmed by concurrent and continuing monitoring under NJDEP's ambient monitoring network. TSS concentrations exceeded the NJ Surface Water Quality Standard of 40 mg/l, with a maximum recorded value of 152 mg/l. (See Figure 1 below.) Therefore, in 2002, NJDEP added the stream segment 'Stony Brook at Princeton' 01401000 to the 303(d) List of Impaired Waters for TSS.

Due to a change in the basis for defining assessment units from stream segments to HUC 14 subwatersheds, this impaired stream segment translated into the listing of three HUC 14 assessment units as impaired for TSS on the 2006 303(d) list. The TSS impairments were deemed partially responsible for the assessment units not supporting the aquatic life designated use. Arsenic and total phosphorus were also listed as the basis for non-support of designated uses. The impaired HUC 14 subwatersheds of the Stony Brook include 02030105090050 (Province Line Road to 74d46m dam), 02030105090060 (Rt. 206 to Province Line Road), and 02030105090070 (Harrison St. to Rt. 206, located in Princeton and Hopewell Townships.

Studies

In 1997, the SBMWA conducted a watershed-wide characterization and assessment (C&A) of all streams and riparian habitats within the Stony Brook-Millstone Watershed. The study indicated that the Stony Brook-Millstone Watershed is characterized by a mix of urban, forest and agricultural land uses. The Stony Brook is classified as Freshwater 2, Non-Trout (FW2-NT), with portions designated as Category One (C1). For more information about these classifications, see http://www.state.nj.us/dep/wms/bwqsa/swqs.htm#2.

The graph below illustrates the water quality monitoring results and shows the huge TSS standard exceedances in winter 1996/ spring 1997. These results were the basis for the

2002 listing of the stream segment 'Stony Brook at Princeton' 01401000 on EPA's 303(d) List of Impaired Waters for TSS.

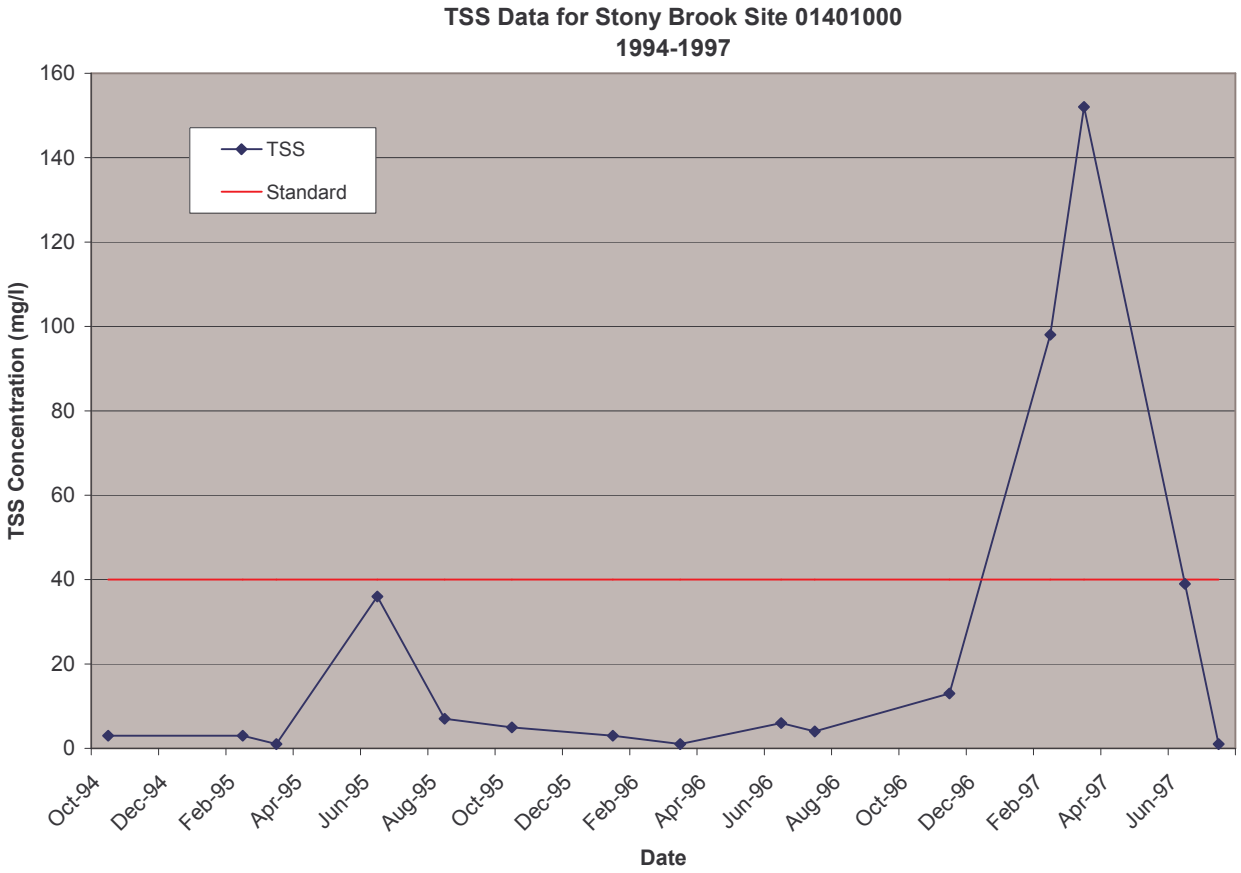


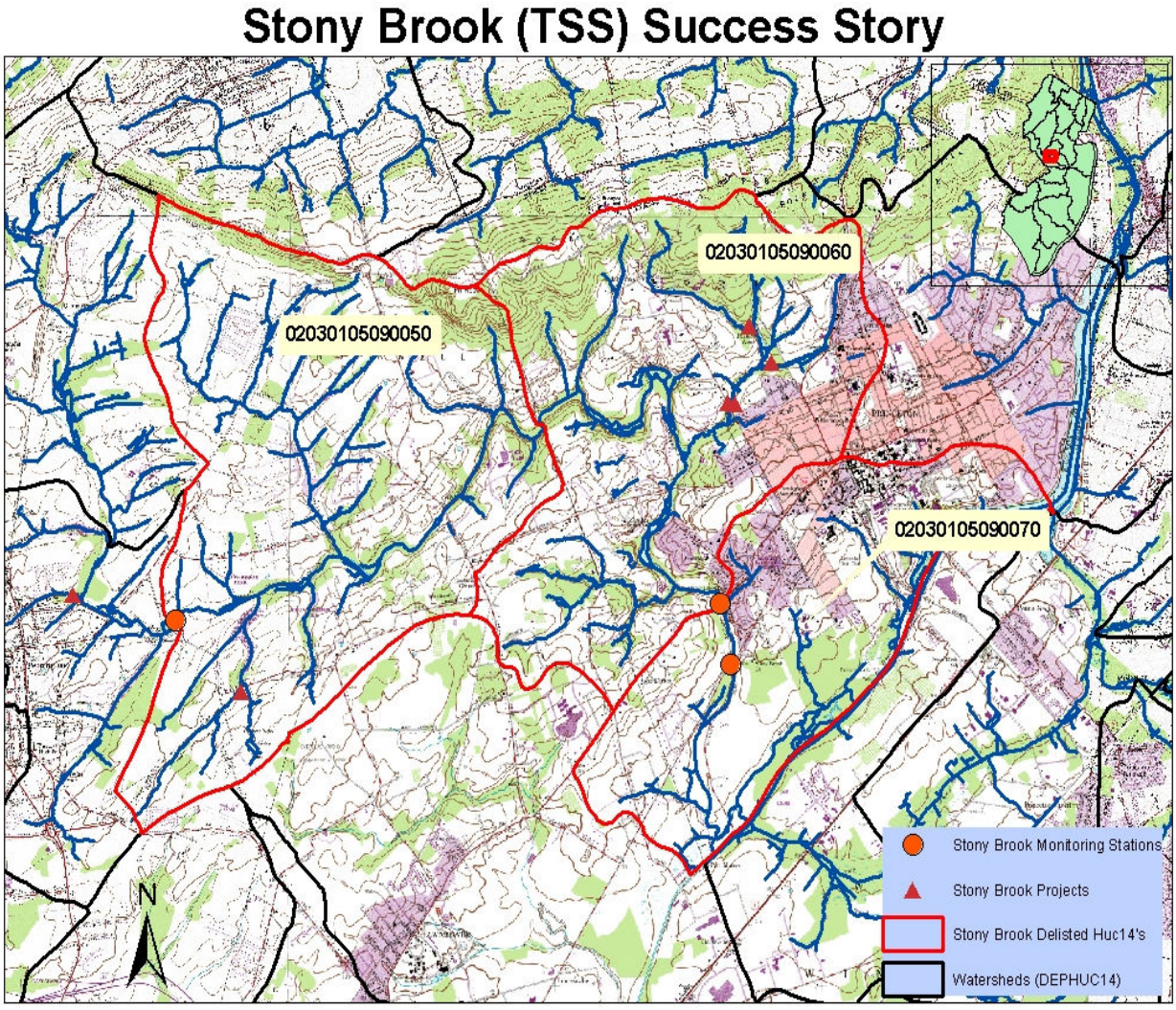
Figure 1: TSS Concentrations at Stony Brook, 1994-1997

In response to the problems determined in the C&A, the SBMWA worked with the Natural Resource Conservation Service (NRCS) and township engineers to identify sites throughout the watershed in need of restoration, erosion control, and reforesting.

Implementation

The New Jersey Department of Environmental Protection (NJDEP), in partnership with the Stony Brook-Millstone Watershed Association (SBMWA), initiated numerous watershed management and educational projects throughout the watershed in the mid - 1990s. Building on these stewardship activities, NJDEP awarded Section 319(h) grant funds to the SBMWA for six streambank restoration/stabilization and floodplain reforestation projects in three specific HUC 14 subwatersheds within the Stony Brook-Millstone Watershed between 1999 and 2002. Four of these restoration projects were implemented in the Mountain Brook section of the Stony Brook Watershed (HUC 14

02030305090060), and two within the Upper Stony Brook (HUC 14s 02030105090040 and 02030105090050). (See Map 1 below.)



Map 1: **Stony Brook Project Locations, Monitoring Stations, Delisted HUC 14s**

The projects were implemented using volunteers who had been trained by the SBMWA with assistance from the NRCS, the NJ Forestry Service, and the Delaware Riverkeeper Network. The projects included bioengineering technologies, which were employed to stabilize streambanks, minimize erosion, and provide a substrate for native species planting. Among these technologies were biologs and coir erosion mats (made from coconut fiber), and wattle cuttings. The coir mats provided temporary stability for native species seedlings and wetland herbaceous plants on the streambank to help curtail erosion and to restore the riparian ecosystem. At Great Road Easement, Mountain Brook and

Princeton Community Park, various tree, shrub and herbaceous species were planted to provide a diverse, site-appropriate plant community. Species include: cardinal flower, blue flag iris, soft rush, yellow iris, red-osier dogwood, pussy willow, black chokeberry, winterberry holly, silver maple, sweetbay magnolia, sweet flag, tussock sedge, riverbank wild rye, bonest, summersweet, tussock sedge, boneset, red chokeberry, inkberry, holly, blue lobelia, monkey flower, arrow arum, swamp azalea, 'banker's dwarf' willow, swamp aster, marsh milkweed, crested sedge, fox sedge, white turtlehead, Joe-pie weed, queen of the prairie, bottle gentian, fowl manna grass, swamp rose mallow, dense blazing star, obedient plant, mountain mint, showy black-eye Susan, soft stem bulrush, swamp goldenrod, Ohio goldenrod, prairie dropseed, and elderberry.

Mountain Brook, Pre-implementation

Mountain Brook, July 2003
Post implementation

Results

The six stream bank restoration and stabilization projects implemented addressed several problem locations resulting in measurable water quality improvement according to data collected downstream. Following implementation, stream monitoring data from downstream monitoring stations showed TSS concentrations consistently attaining the TSS surface water quality standards. (See Figures 2 and 3 below.)

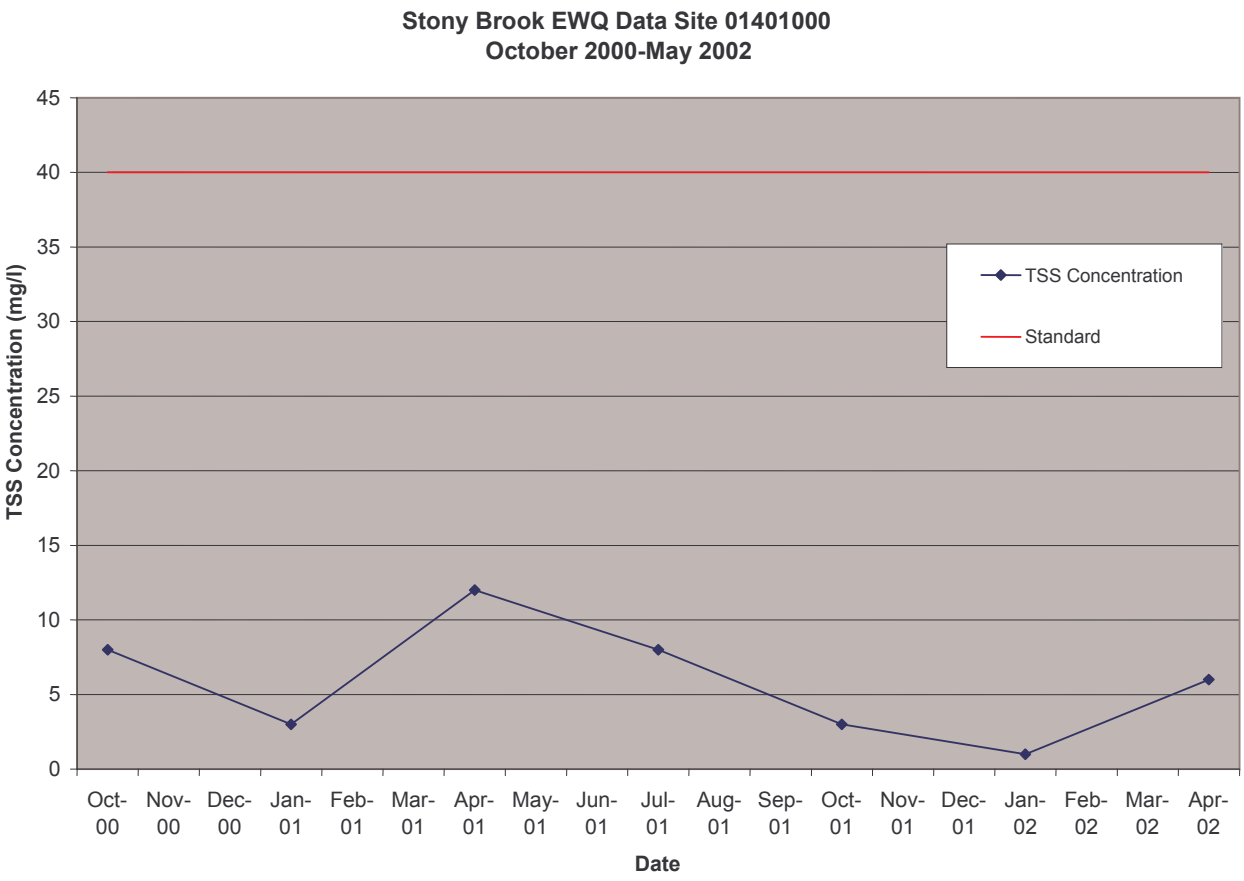


Figure 2: TSS Concentrations at Stony Brook, 2000-2002

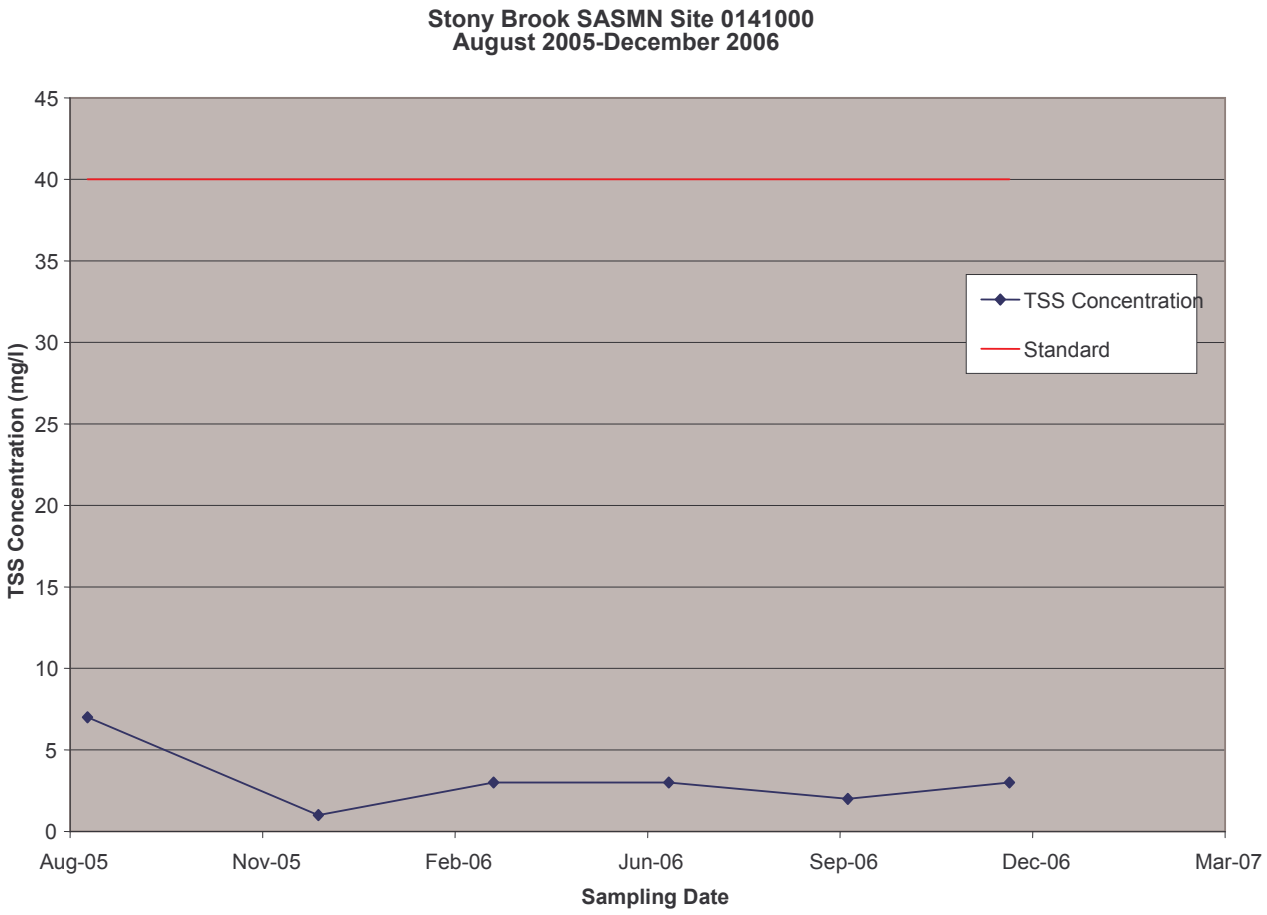


Figure 3: TSS Concentrations at Stony Brook, 2005-2006

The subsequent TSS reductions associated with these implementation projects resulted in the attainment of the TSS surface water quality standard in these assessment units. Based on this data, the Department proposed to remove TSS from the 2008 303(d) list as a cause of impairment in these three HUC 14 assessment units.

Partners and Funding

In 1998 the SBMWA was awarded $132,000 under the Section 319(h) grant program, GRTS tracking number: 992488991. The partners provided in-kind services valued at $54,000 in the form of labor. The 319(h) grant funds provided by the New Jersey Department of Environmental Protection were used for equipment and materials.

Partners for the projects include the Stony Brook-Millstone Watershed Association, Natural Resources Conservation Service and the Townships of Hopewell and Princeton

Funding for the earlier characterization and assessment study were obtained from the Mercer County Green Links Program, the Fund for New Jersey, Princeton Township, the Schumann Fund for New Jersey, and the William Penn Foundation.

Next Steps

Continuing efforts are planned in the Stony Brook-Millstone Watershed under an EPA Targeted Watershed Grant for the Raritan Basin. The New Jersey Water Supply Authority, the SBMWA and NJDEP were awarded $1 million for restoration, pollution prevention, and reforestation projects in the Lower Raritan Basin. This federal government grant was matched by an additional $1 million from other funding sources.

Lake Hopatcong

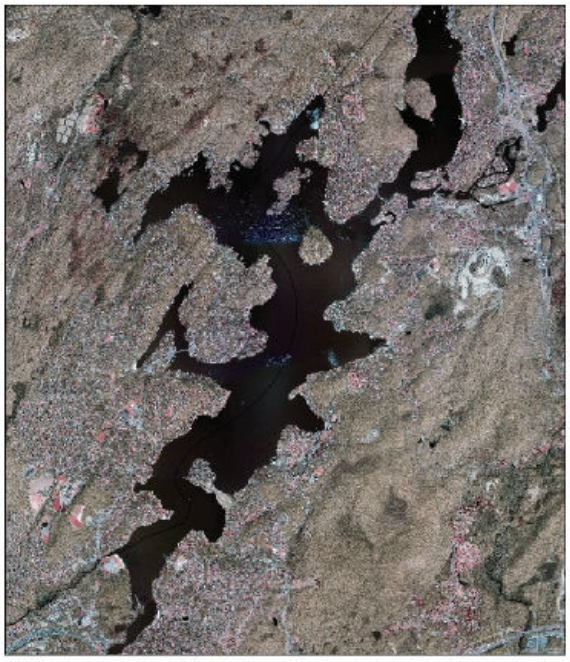
Location

Lake Hopatcong and its associated tributaries, Lake Shawnee and its sub-watersheds, form the headwaters of the Upper Musconetcong River and its watershed. At nearly 2,700 acres in size, Lake Hopatcong is New Jersey's largest inland (non-tidal) lake, with 38 miles of shoreline. New Jersey's *2008 Integrated Water Quality Monitoring and Assessment Report* identifies 24,000 acres of significant publicly owned lakes/ reservoirs/ ponds (NJDEP August 2008) therefore Lake Hopatcong accounts for more than 10% of this total.

Not only is the lake a major year-round recreational center for 500,000 annual visitors, but its watershed also hosts a resident population of over 65,000 people in 2 counties (Sussex and Morris) and four municipalities (Hopatcong and Mt. Arlington Boroughs and Jefferson and Roxbury Townships).

Problem

The recreational use, water quality and the ecological condition of the lake are impaired by excessive aquatic weed growth and algal blooms. These conditions are the result of high phosphorus loads entering the lake from surrounding land uses. The lake has been listed on the Department's *Integrated Water Quality Monitoring and Assessment Report* as impaired for Aquatic Life, Aquatic Life-Trout, and Fish Consumption.



Aerial View of Lake Hopatcong

Figure 1: Lake Hopatcong, Sussex and Morris Counties, NJ

Studies

The Department's TMDL to address Total Phosphorus in Lake Hopatcong identified the major sources of phosphorus loading to Lake Hopatcong as stormwater surface runoff, failing septic systems and internal loading; accounting for 38 percent, 33 percent and 12 percent of the load respectively. The TMDL establishes a target phosphorus load for Lake Hopatcong, which will require a 41% reduction in phosphorus loading (3,297 kg/yr; 7,268.6 lbs TP/year) to the lake. A Refined TMDL and a municipal-based Restoration Plan (Princeton Hydro, 2009) was developed for the Lake Hopatcong Watershed, which outlined best management practices to be implemented in those sub-drainage areas with the highest manageable phosphorus loads and disentangled the loads further.

Implementation

In State Fiscal Year (SFY) 2006, the Department provided a federal Clean Water Act Section 319(h) grant to the Lake Hopatcong Commission to address the highest priority stormwater "hot spots" as identified in the refined TMDL and Restoration Plan. The funding ($844,500) was provided to implement stormwater Best Management Practices (BMPs) and to install retrofits in the two municipalities contributing the largest stormwater load (Borough of Hopatcong and Jefferson Township), estimated to reduce a minimum of 18.4 kg TP/yr (40.57 lb TP/yr) and achieve a 2.4% reduction in the phosphorus originating from stormwater. Pre- and post-monitoring has been and will

continue to be conducted to provide background concentrations and calculated loads, and to provide details in the reduction achieved through this implementation project. The first project was implemented in December 2008. Utilizing the EPA STEP-L model, load reductions for phosphorus were calculated for this project at 7.8 lbs TP/year, based on the closest representative Best Management Practice (BMP) available for the model (water quality inlet). This provides a conservative reduction estimate as this does not include the filters which are the main primary phosphorus reduction components. Therefore this modeled estimate is considered a conservative reduction. Further monitoring will provide a better estimate of the reductions achieved through the use of this stormwater BMP.

Figure 2: Overland flow from residential area also drains to the stormwater system

Figure 3: Installation of the Aquafilter Manufactured Treatment Device

a. **b.**

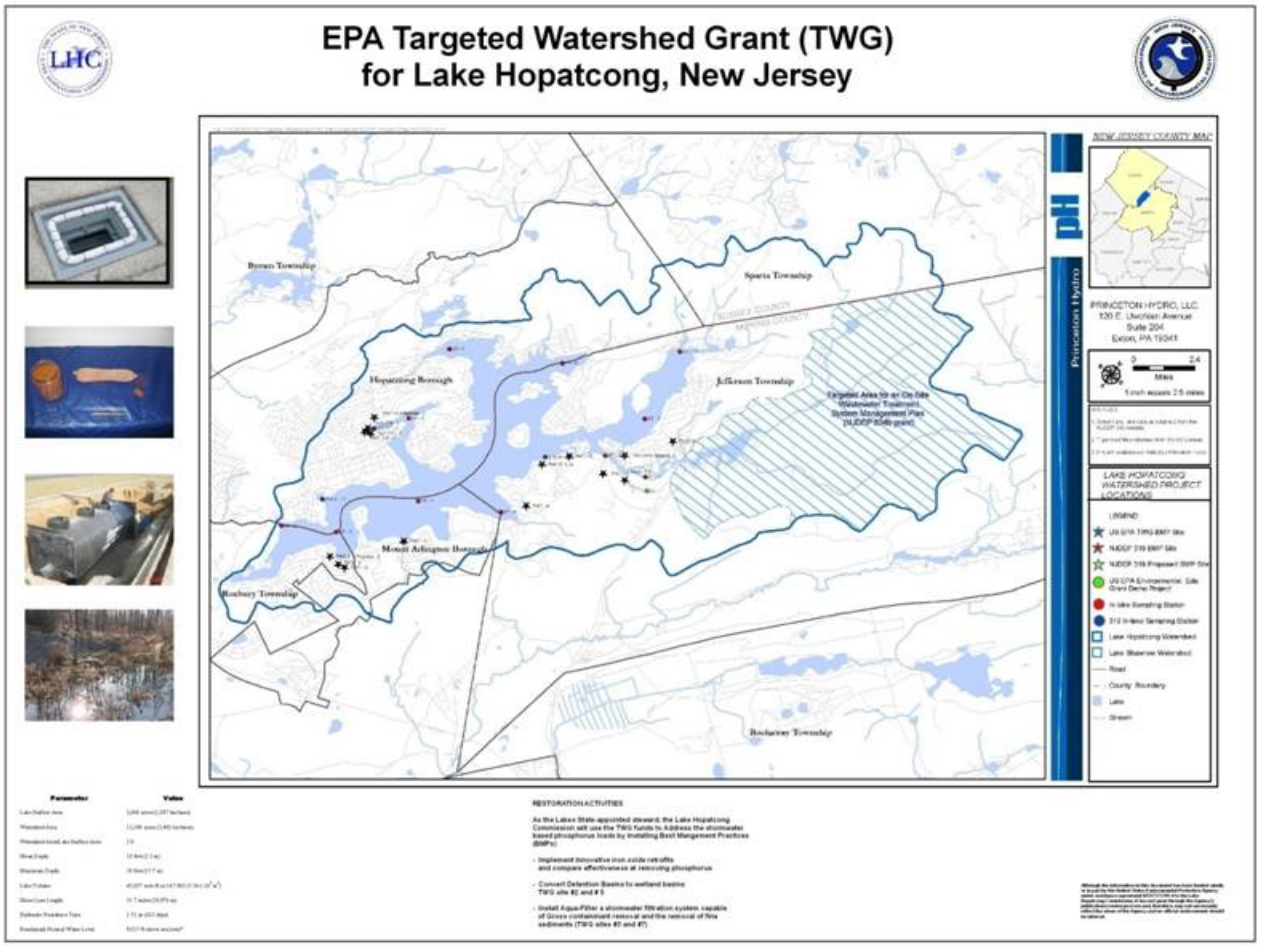
Figure 4: Stormwater entering the treatment device (a.) and moving over the filters (b.)

Another MTD has been installed at Castle Rock Rd in Jefferson in the summer of 2009. This area has experienced severe runoff/erosion issues and was a high priority. The project is expected to provide benefits from reduced phosphorus and sediment loads. Estimated phosphorus reduction based on the STEP-L model is 0.7lb TP/yr, related to the small treatment area, but it will provide a more significant Total Suspended Solids (TSS) reduction (4 tons/year) in one of the shallow areas of the lake.

Figure 5: Castle Rock Road site

The Lake Hopatcong Commission also received a USEPA Targeted Watershed Initiative Grant (TWIG) for $744,500 in 2006 to address stormwater, septic innovation and fertilizer initiatives and education.

Jefferson Township Department of Public Works is installing a Nutrient Separating Baffle Box at two locations to treat the stormwater flow and capture a wide variety of pollutants including total suspended solids (TSS), sediment, debris, organic material, hydrocarbons, and trash. The third project will retrofit an existing detention basin near the intersection of Edison Road and Espanong Road. The retrofit is designed to maximize the removal of pollutants from stormwater through settling and filtering through vegetation. Jefferson Township employees have done the installation and will provide maintenance as an in-kind contribution. Several catch basins in the Borough of Hopatcong have been fitted with "iron-oxide sausages" (Map 1) as a demonstration project developed by Princeton Hydro to determine if iron-oxide filings will help bind phosphorus, thus increasing the removal rate. Iron filings were obtained from Pennsylvania as waste from mining operations. Depending on the success of this BMP, this practice may become a worthwhile means to reduce phosphorus while simultaneously eliminating the need to dispose of mining waste.



Map 1: EPA Targeted Watershed Grant sites. Iron-oxide "sausages" can be seen in the top left insert picture.

The TWIG grant is also providing for an educational initiative to homeowners to assist them to connect water quality with the quality of life within their community and the economic value of their homes. To this end the Department developed *The Economic Significance of Lake Hopatcong*, November 2008, to help make the connections between water quality and community and economic values.

The fertilizer campaign to provide education on the use of non-phosphorus fertilizer continues. A project is underway to collect data from 3 lawns over one season applying fertilizer with phosphorus as directed and the following year applying non-phosphorus fertilizer to provide the homeowners with actual data from their area. Capture bottles have been designed by Princeton Hydro and capture the runoff from the lawn.

Figure 6: Lake-Friendly Fertilizer campaign

The results from the first year provide a mean total phosphorus concentration (N=5) of 2.45 mg TP/L from runoff over the lawn. The second year monitoring is underway.

Jefferson Township has received funding in the amount of $84,265 through the Clean Water Act Section 604(b) for septic management for Lake Shawnee residents. The Township has passed a septic maintenance ordinance, requiring registration and pump-out of systems the first year. This is protective of the Lake Hopatcong Watershed, originating in the Lake Shawnee Watershed. The Refined TMDL and Restoration Plan provides a break-out of the Lake Shawnee contribution (7% of the phosphorus load) and the septic contribution (376 kg TP/year accounting for the phosphorus retention within the lake). An Access database has been set up to assist with administrative tracking. Additionally a GIS project has been developed that overlays the environmental constraints with the age of the system to provide a georeferenced list of priority areas. The GIS project will be linked with appropriate types of alternative systems based on lot sizes and the types of environmental constraints. Along with this funding, a component of the EPA TWG grant includes a demonstration project at a daycare center, where their cesspool system is in close proximity to their well. A peat biofiltration system will be installed to treat the cesspool effluent (Figure 7). The daycare center has been provided with hook-up to city water after the issues with fecal coliform had been identified.

Figure 7: Septic system in proximity to well Township of Jefferson. Site of proposed peat biofilter installation as part of an EPA Targeted Watershed Initiative Grant, to treat the effluent from the septic system.

Sampling of the aquatic vegetation was conducted in 2006 and 2007, with macrophytes identified to species, weighed, and analyzed for phosphorus concentration. Based on species-specific and community-specific phosphorus concentration data collected and utilizing the tonnage removed for the years of 2006 and 2007 it is estimated that the weed harvesting program removed between 6-7% of the required total annual phosphorus load (Figure 8). This is a short-term measure that does not address the phosphorus loadings to the lake, but does provide relief in the near-term and for recreational use while long-term measures are applied. Weed harvesting also helps ensure the vegetation does not add to the internal load.

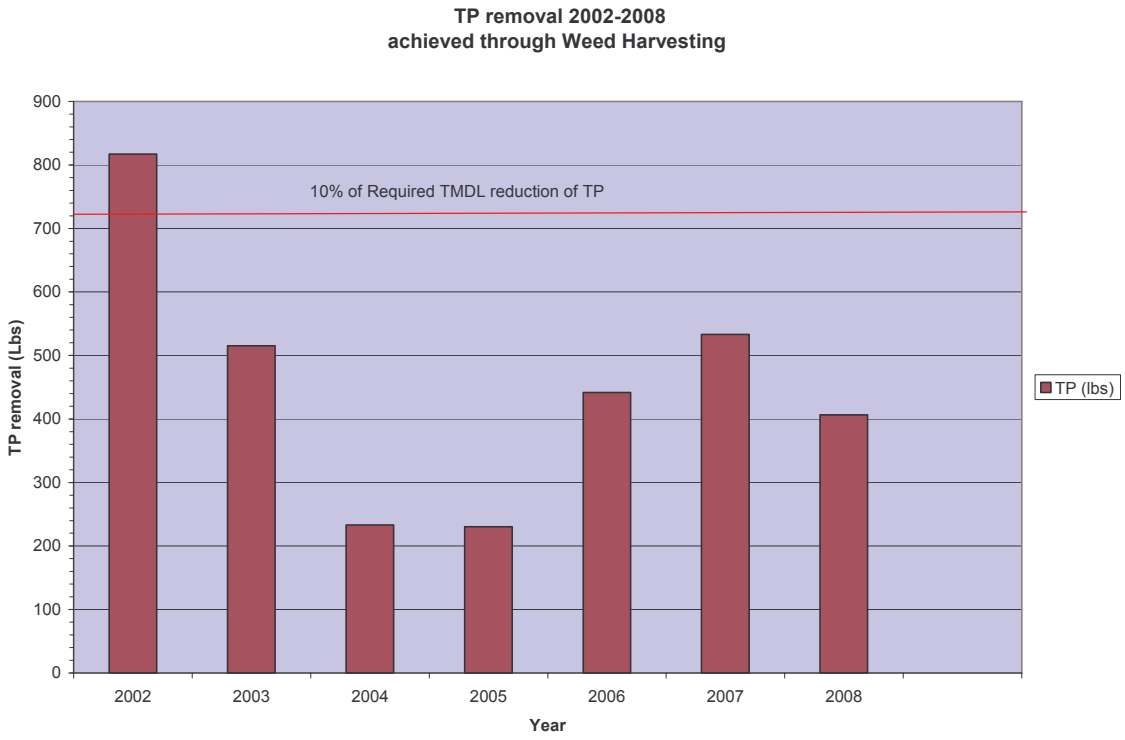


Figure 8: Reduction in lbs of Total Phosphorus achieved through weed harvesting

The Department also funded $1,055,502 in Corporate Business Tax funds in 2007 for Watershed Restoration and Bridge Funding, and this provided assistance in various restoration projects.

Results

The various projects that have been implemented in identified and prioritized problem locations resulted in the attainment of the Pathogens and Phosphorus surface water quality standards in these assessment units:

Lake Hopatcong – Delisted for Pathogens
Musconetcong River (Waterloo to and including Wills Brook) – Delisted for Phosphorus

Based on this data, the Department removed Pathogens and Phosphorus from the 2008 303(d) list as a cause of impairment in these two HUC 14 assessment units.

Partners and Funding

EPA, NJDEP, the Borough of Hopatcong and Jefferson Township, the Lake Hopatcong Commission (LHC) are the partners in the projects described above. The Lake

Hopatcong Commission was created in 2001 by the Lake Hopatcong Protection Act (N.J.S.A. C58:4B). The LHC works cooperatively with governmental bodies and the public in the Lake Hopatcong watershed to monitor, protect and restore the lake and to educate the community on lake restoration efforts. All members are dedicated to improving the water quality in the lake.

Funding sources include federal Clean Water Act Sections 319(h) and 604(b) grants, EPA Targeted Watershed Initiative Grant (TWIG), Sate Corporate Business Tax (CBT) funds, and in-kind contributions.

Next Steps

Continued implementation of the BMPs identified and prioritized in the refined TMDL and Restoration Plan, continuing water quality monitoring to illustrate further delistings from the 303(d) List.

Floatables Control

Clean Shores Program

Clean Shores is a statewide program that removes floatables such as wood, garbage, medical waste and recyclables from tidal shorelines with the use of state inmate labor. The program removed 4.1 million pounds of floatables in 2008 and in 3.9 million pounds of floatables in 2009 from 135 miles of shoreline, bringing the total amount of wastes removed since 1989 to 129 million pounds. Cleaning up these wastes helps prevent the deleterious effects of marine debris upon recreational ocean bathing beaches and the coastal environment. In an average year cleanups are completed on the shorelines of over 50 municipalities, two state parks and one federal park. The program also builds dune fencing and plants dune grass in several oceanfront communities. Funding for the program comes entirely from the sale of the "Shore to Please" shore protection motor vehicle license plates.

The sponsoring municipalities and state/federal parks provide support to the program and provide advance payment for the cost of the cleanup. The program reimburses the sponsors for the cost of waste disposal and contracted services incurred during cleanup activities.

The Clean Shores Program is also responsible for data collection, analysis and documentation

for the Recreational Bathing Lakes program. Like the Cooperative Coastal Monitoring Program that works with local environmental health agencies to assess coastal water quality and investigate sources of water pollution at public ocean and bay recreational bathing beaches, the Clean Shores Program collects bacteriological sampling data from statewide recreational bathing lakes. Annually, the program coordinates with 28 local health agencies and 12 state parks. [1]

Adopt A Beach Program

For the past 16 years, the Department has been a catalyst in having volunteers from across the state help keep New Jersey's famed beaches clean for better maintenance, preservation, and recreation through this special project.

This program not only removes debris from beaches but also enhances public awareness of the marine debris' negative impact on the economy, the environment and tourism. Work done in recent years is a wonderful example of the program's success. During the spring and fall cleanups conducted in 2008 and 2009, more than 2,000 volunteers removed over 15,000 pounds of trash covering over 80 miles from Atlantic Highlands to Cape May.

This data is provided to the Ocean Conservancy in Washington, DC, which compiles the data on an international level.

The Department's Adopt A Beach Program represents our longtime and enthusiastic commitment and support to keep New Jersey's beaches clean, safe and beautiful.

[1] Additional floatables controls are being implemented through the state's Combined Sewer Overflow (CSO) Long Term Control Plans and the NJPDES Phase II municipal separate storm sewer system (MS4) programs. CSOs are combined sanitary and storm sewer systems. Under dry conditions all effluent is conveyed to a sewage treatment plant. However, under certain wet weather conditions, such as during heavy rain, there is too much water to be treated by the sewage treatment plants resulting in sewer overflows. There are approximately 280 CSO outfalls in New Jersey in 30 municipalities located primarily in the New York metropolitan, Camden and Trenton areas. As part of the long term control strategy for these CSOs, solids and floatables controls have been designed and are being installed at each CSO discharge, thus reducing the amount of floatable material entering the state's surface waters. Under the NJPDES Phase II MS4 permits, a systematic replacement of catch basin grates with smaller openings will reduce the amount of floatable materials conveyed by storm drains to surface waters.

604(b) Grant Program

The Department receives federal funds to be passed through to county and regional planning entities for water quality management related planning, including wastewater management planning. On July 7, 2008, amendments to the Water Quality Management Planning rules at N.J.A.C. 7:15 became effective. Under these rules, the Department revised its approach to the development of wastewater management planning to include an expanded environmental assessment of proposed wastewater treatment and land use scenarios, as key methods to protect water resources through the development of updated wastewater management plans (WMPs). This is accomplished by examining alternative land use development patterns and treatment technologies to minimize adverse environmental impacts associated with development. Additionally, the rules required the transition of wastewater management planning responsibility from the previously designated 161 wastewater management planning agencies to New Jersey's 21 counties.

Department allocated the SFY08 and SFY09 604(b) pass-through grants and funds from New Jersey's Corporate Business Tax (CBT) to support County WMP development that meets the new requirements. The contracts for WMP development and actual WMP preparation under the pass-through grants are ongoing. Additional information regarding the WMP requirements under the amended rules can be found under the Legislation and Regulation section of this report.

Coastal NPS Pollution Control (6217) Program Update

Adoption of updated New Jersey Coastal Management Program Goals

On April 7, 2008 the Department adopted amendments to N.J.A.C. 7:7E that update the goals of the New Jersey's Coastal Management Program. The coastal goals express results that the New Jersey Coastal Management Program strives to attain. Each goal is supplemented by related policies that set forth the means to realize that goal. By providing greater detail, state and local government agencies as well as the general public, will have a better understanding of each goal and the means that may be employed to attain the goal.

The amended Coastal Management Program goals represent a refinement of the "eight basic coastal policies" presented in New Jersey's original federally approved Coastal Management Program.

The eight Coastal Management Program Goals are:

1. Healthy coastal ecosystems;
2. Effective management of ocean and estuarine resources;
3. Meaningful public access to and use of tidal waterways and their shores;
4. Sustained and revitalized water-dependent uses;
5. Coastal open space;
6. Safe, healthy and well-planned coastal communities and regions;
7. Coordinated coastal decision-making, comprehensive planning and research; and
8. Coordinated public education and outreach.

These goals and the supplemental related policies set forth in the rules collectively enable the Coastal Management Program to protect, preserve, and enhance the coastal environment while managing and balancing the needs of human element within coastal communities. For example, the coastal zone has historically been home to large human populations because of the abundance of resources available for supporting human habitation. However, experience has shown that as coastal resources attract large populations, the resources themselves can become threatened. Therefore, the need to maintain healthy and diverse coastal systems in the face of coastal development is a primary goal of the Coastal Management Program. Additionally, coastal dependent activities such as recreational and commercial fishing, shipping, alternative energy technology, boat repair and maintenance, and sand mining must be balanced with protection and restoration of marine and coastal ecosystems. Competition among various user groups must be managed in order to encourage water-dependent uses and yet ensure that resources are utilized in an efficient and appropriate manner. Protecting marine and coastal resources, promoting safe navigation and providing both commercial and recreational opportunities are key policies that must be employed to attain the second coastal goal. The natural, scenic, historic, and ecologically significant landscapes often encompassed by open space are central to effective coastal management. Coastal open space is a fundamental aspect of a viable, healthy, attractive and productive coastline and promotes water-dependent economic activity and coastline protection

Each of the coastal goals and supporting policies is part of a coordinated and comprehensive strategy to protect New Jersey's natural resources and environment while promoting multiple uses and balancing competing stakeholder interests in the state's coastal areas.

Boat Wash Wastewater Permit-by-Rule

On November 14, 2008 the NJDEP adopted amendments to the Coastal Permit Program rules, N.J.A.C. 7:7 to add a new permit-by-rule for the construction and/or installation of boat wash wastewater systems and associated infrastructure that prevent any discharge of boat wash wastewater to the waters of the State at marinas, boatyards and boat sales facilities. This new permit-by-rule, codified at N.J.A.C. 7:7-7.2(a)11, is available to any marina, boatyard or boat sales facility that installs a boat bottom wash wastewater system, including those necessary to comply with the equipment and vehicle washing provisions of the Basic Industrial Stormwater General Permit (5G2) under the NJPDES

rules and those that are not subject to this general permit but that wish to voluntarily install such systems.

The new permit-by-rule authorizes the construction of boat wash wastewater systems, including collection systems, reclaim/recycling systems, and connections to existing sanitary sewers. The components of such systems include impervious wash pads, sumps or some other mechanisms to collect the wash wastewater, treatment systems to remove contaminants from the water, sheds to house the treatment system, and tanks to store the treated water for reuse or the wash wastewater for collection. The systems must be located on the upland portion of the site and outside of any wetlands in order to minimize impacts to special areas and the water body.

Under this permit-by-rule, each wash pad must be bermed or pitched to allow the wastewater to flow to a central or main collection bin located beneath the pad and prevent the wastewater from flowing off the pad onto the ground or directly back into surface waters. Each pad must be connected to a reclaim/recycling system, a storage system, or a sanitary sewer. These requirements ensure that the boat wash wastewater system will effectively wash boat bottoms, collect the wash wastewater, and treat or dispose of the wash wastewater so that it is not discharged into the surface or ground water. Further, this permit-by-rule will facilitate compliance with the Stormwater General Permit as applicable, while minimizing affects of these systems on the coastal environment.

Permit Programs

The Department issues permits that control nonpoint sources of pollution through authority of the New Jersey Pollution Discharge Elimination System (NJPDES) rules. Permits require the implementation of certain appropriate BMPs. The enforcement of these permits contributes to restoring watersheds by reducing or eliminating the sources of pollutants entering a water body. Permits are an important first line of defense in addressing sources of pollution. There are many different types of permits issued by the Department, but the following touch on some aspect of controlling NPS pollution.

GENERAL PERMITS

General permits are used by the Division of Water Quality to streamline processing time for specific classes of wastewater discharges, including industrial site stormwater runoff and municipal stormwater runoff from municipal separate storm sewer systems (MS4s). In issuing general permits, processing time is greatly reduced because a standard set of conditions specific to a discharge type are developed and issued at one time (rather than issuing individually tailored permits for each discharger). After a general permit has

undergone the required draft, public comment, and final issuance stages, it becomes available to dischargers that meet the established discharge requirements.

Basic Industrial Stormwater Permit (5G2)

This general permit is available to regulated industrial facilities that have eliminated or can eliminate within 18 months of authorization, all exposure of industrial materials or activities to stormwater (rainfall and snowmelt waters). Exposure may be eliminated by covering the materials or activities or by moving materials or activities indoors.

Concentrated Animal Feeding Operation (R8)

This general permit authorizes new and existing discharges from concentrated animal feeding operations (CAFOs) and designated animal feeding operations required to obtain a permit pursuant to N.J.A.C. 7:14A-2.13.

Construction Activities (5G3)

This general permit authorizes point source discharges from certain construction activities. Regulated entities are required to develop a soil erosion and sediment control plan aimed at eliminating the flow of contaminated rainwater into streams and rivers. This general permit is issued through the local Soil Conservation Districts. In addition, the 5G3 also requires site waste management controls for such things as litter, construction debris, sanitary waste, hazardous materials, concrete washout, and spills and leaks. Post-construction requirements are implemented through the Stormwater Management rules, N.J.A.C. 7:8.

Sanitary Subsurface Disposal (T1)

This general permit authorizes the discharge of sanitary sewage from facilities to a subsurface disposal (septic) system with a design volume in excess of 2,000 GPD. Any changes to these systems would require a permit modification that would disqualify them for a T1permit and require a new DGW permit application that would need WQMP consistency review. The only exception is for 1:1 replacement of a broken or failing system.

Tier A Municipal Stormwater Permit

The Tier A[2] Municipal Stormwater General Permit authorizes the discharge of stormwater from small municipal separate storm sewers. The permit was issued in response to USEPA's Phase II rules. Tier A municipalities are generally located within the more densely populated regions of the state or along or near the coast. The Tier A permit addresses stormwater quality issues related to both new and existing development. It requires the development of a stormwater management plan and the adoption of a stormwater control ordinance in accordance with N.J.A.C. 7:8-4. It also requires compliance with the residential site improvement standards that are also linked to

[2] Tier A municipalities are defined as one of the following: 1.) are located entirely or partially within an urbanized area as determined by the 2000 census and have a population of at least 1,000; 2.) have a population density of at least 1,000 per square mile, and a population of at least 10,000 as determined by the 2000 census; or 3.) have a stormwater sewer system discharging directly into the salt waters of Monmouth, Atlantic, Ocean or Cape May Counties.

N.J.A.C. 7:8 as well as implementation of ongoing operation and maintenance of BMPs. The other Statewide Basic Requirements for the Tier A Permit are:

- Developing a local public education program
- Storm drain labeling
- Adoption and enforcement of a pet waste ordinance
- Adoption and enforcement of a litter ordinance
- Adoption and enforcement of an improper waste disposal ordinance
- Adoption and enforcement of a wildlife feeding ordinance
- Adoption and enforcement of a yard waste ordinance
- Adoption and enforcement of an illicit connection ordinance
- MS4 outfall pipe mapping
- Monthly street sweeping of predominantly commercial streets
- Storm drain inlet retrofitting
- Stormwater facility maintenance
- Road Erosion Control maintenance
- Maintenance yard operations BMPS such as de-icing material storage, fueling operations, vehicle maintenance, and equipment and vehicle washing
- Annual Report certification
- Public Notice

Both the Watershed Ambassador Program and the Watershed Watch Network have been documenting the locations of pipes or ditches entering into the streams they are assessing. This information will be made available through the Department's Geo-web and DataMiner systems in the near future. Both programs also spend a great deal of time performing public education programs through schools and local events. They also work with local residents on storm drain labeling.

Tier B Municipal Stormwater Permit

The Tier B[3] Municipal Stormwater General Permit authorizes the discharge of stormwater from small municipal separate storm sewers. Tier B municipalities are generally located in more rural areas and in non-coastal regions. The Tier B permit focuses on new development and redevelopment projects and public education. It requires the development of a stormwater management plan and the adoption of a stormwater control ordinance in accordance with N.J.A.C. 7:8-4. It also requires compliance with the Residential Site Improvement Standards that are also linked to N.J.A.C. 7:8, as well as implementation of ongoing operation and maintenance of BMPs. The other Statewide Basic Requirements for the Tier B Permit are:

- Developing a local public education program
- Storm drain labeling
- Annual Report certification

[3] Every municipality not assigned to Tier A is assigned to Tier B.

INDIVIDUAL PERMITS

Individual Stormwater Permit

Individual NJPDES permits are issued to facilities that cannot eliminate exposure of pollutants to stormwater. These facilities have to develop and implement Stormwater Pollution Prevention Plans to minimize or eliminate contact between pollutants and stormwater. Other permit conditions may require monitoring stormwater discharges for pollutants, and in some cases, effluent limitations may be imposed.

Ground Water Sanitary Wastewater Permit

For discharges of sanitary wastewater over 2,000 GPD from various disposal methods, such as septic systems lagoons, spray irrigation, or overland flow, a sanitary wastewater permit provides the necessary management practices and monitoring requirements to ensure conformance with the NJDPES regulations and the Ground Water Quality Standards.

Groundwater Industrial Permit

Discharges of industrial wastewater, such as cooling water, process wastewater, and boiler blowdown require a permit for the particular disposal method employed by the facility (lagoon, spray irrigation, overland flow, etc.) to ensure conformance with the NJPDES regulations and the Ground Water Quality Standards through management practices and monitoring.

Underground Injection Control (UIC)

Systems classified as underground injection systems dispose of wastewater directly into the subsurface. These subsurface disposal systems include disposal beds or trenches, dry wells and seepage pits and can receive sanitary or industrial wastewater. UIC discharges are regulated via permits to protect underground sources of drinking water and ensure compliance with state performance standards as well as the Ground Water Quality Standards.

Aquifer Storage and Recovery

The injection of potable water for future recovery into aquifers requires a permit to ensure compliance with management practices of the injection process and with the Ground Water Quality Standards.

Agriculture

The Department continues to foster a partnership with the New Jersey Department of Agriculture (NJDA), the United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) and other agricultural organizations to achieve New Jersey's water quality goals. In some of New Jersey's more rural watersheds, agricultural land uses have been identified as a major nonpoint source of pathogens (fecal coliform) and nutrients (phosphorus). Therefore, implementing best management and conservation practices on agricultural lands, which will improve water quality, conserve water and energy, prevent soil erosion and reduce the use of nutrients and pesticides, is an important component of New Jersey's nonpoint source pollution control strategy.

Natural Resources Conservation Service

The United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS) provides technical and financial assistance to private landowners and land managers to promote quality soils, clean and abundant water, healthy plant and animal communities, and working farm lands. Much of the NRCS conservation technical assistance (CTA) is provided in cooperation with New Jersey's 21 counties and 15 Soil Conservation Districts. In 2008, a new Farm Bill, the Food, Conservation, and Energy Act of 2008 (2008 Farm Bill) was passed. NRCS administers the conservation programs made available under the Farm Bill.

New Jersey received over $15 million each year in 2008 and 2009 through the 2008 Farm Bill for eligible New Jersey landowners and agricultural producers. This was a nearly a $5 million increase over the 2007 funding allocation. Since the passing of the 2002 Farm Bill, New Jersey has received over $90 million in conservation program funding that has been transferred directly to New Jersey landowners and managers. Following is a brief description of each of the Farm Bill conservation programs followed by program implementation data.

- **Agricultural Management Assistance (AMA)**

AMA provides cost share assistance to voluntarily address issues such as water management, water quality and erosion control. In New Jersey, the program specifically targets beginning and limited resource farmers, small farms, and producers who have had limited participation in other USDA financial assistance programs. Producers may construct or improve water management structures or irrigation structures; plant trees for windbreaks or to improve water quality; and mitigate risk through production diversification or resource conservation practices, including soil erosion control, integrated pest management, or transition to organic farming. There were 9 contracts awarded in 2008 with $255,681 in allocated AMA funds on 217 acres of land. In 2009, there were 10 contracts awarded with $268,101 in allocated AMA funds on 623 acres of land.

- **Agricultural Water Enhancement Program (AWEP)**

AWEP is a new voluntary conservation program under the 2008 Farm Bill available only in approved watersheds across the country. In New Jersey, a partnership between the North Jersey Resource Conservation & Development Council (RC&D), the New Jersey Water Supply Authority (NJWSA) and NRCS was approved in 2009 to provide financial and technical assistance to owners and operators of agricultural lands in the Raritan River basin to protect water quality. In 2009, 6 contracts were awarded with $90,256 in allocated AWEP funds on 594 acres.

- **Conservation Security Program (CSP)**

CSP rewards producers who have demonstrated high levels of conservation and management on their farms by protecting soil and water quality. Producers in the Maurice-Cohansey and Raritan Watersheds with contracts approved during 2005 and 2006 received $174,182 in program payments in 2008. In 2008 there were 2 contracts awarded in the Lower Delaware Watershed that earned $1,512. There were no new contracts in 2009, but New Jersey continues to implement practices on active contracts that were funded in previous years.

- **Environmental Quality Incentives Program (EQIP)**

EQIP provides financial assistance for permanent measures or management strategies to address existing resource concerns related primarily to water quality and soil quality. In 2008, New Jersey contracted with 108 producers using $5,172,888 to implement new conservation systems on 12,246 acres across the state. In 2009, New Jersey contracted with 106 producers using $4,611,171 to implement new conservation systems on 20,672 acres throughout the state.

- **Conservation Innovation Grants (CIG)**

CIGs are funded through the Environmental Quality Incentives Program. These grants foster the development and adoption of new and innovative technologies and approaches to natural resource management and conservation that benefit both environmental protection and agricultural production. New Jersey NRCS funded four CIG projects in 2008:

- Development of a local pelletizing facility to provide an alternate market for the warm-season grass crops in northern New Jersey. These pellets provide winter heating for agricultural structures. Laine Farms, Somerset County - $75,000.
- Development of audit tools for use in energy-intensive horticultural and floricultural operations to discover energy conservation measures that will reduce total energy use, reduce greenhouse gas emissions and improve agricultural efficiency. Rutgers University - $61,193.
- Development of a local source of black-oil sunflowers for a "Jersey-Grown" bird seed mix in partnership with New Jersey Audubon. The farm will use an innovative boi-char product to enhance the soil condition in the sunflower fields in an effort to improve water quality and carbon sequestration. Mark Kirby of Derwood farms - $52,934.
- Conducting on-farm energy audits for 4 farms, on which energy-saving strategies will be implemented. EnSave - $18,090.

In 2009, the following four CIG projects were funded:

- Developing Science-Based Pollinator Restoration Protocols for use in Farm Bill Conservation Programs. Entomologists will examine selected native plants for use by native pollinators for various New Jersey agricultural crops. Rutgers University - $32,204.
- No-till Pumpkin Production Demonstration Project. No-till plots and conventional till plots will be established and results compared on two farms for the no-till pumpkin production demonstration project. South Jersey Resource Conservation and Development Council - $18,600.
- Protection of Environmental Resources through the Implementation of Feed Management Best Management Practices on Equine Farms. The project will demonstrate feed management at two horse farms in targeted watersheds. Rutgers University - $74,907.
- New Jersey Pine Barrens Ecological Forest Management. The project will develop a new specialty wood product from forest biomass produced as a result of forest improvement activities in the Pine Barrens. A fact sheet on the new product will be produced. Avian and vegetation responses to forest management activities will be analyzed and reported. New Jersey Audubon - $75,000.

- **Farm and Ranch Lands Protection Program (FRPP)**

FRPP provides matching funds to state government and non-profit organizations that purchase conservation easements to keep productive farmland in agricultural uses. In 2008, New Jersey received $8,065,074 for 2008, which was passed on to two cooperating entities through Cooperative Agreements. The funding will allow the protection of over 900 acres. NRCS partnerships with the state and conservation organizations continue to "bear fruit" in preserving agricultural lands in key areas of the state. The Wickecheoke Creek area of Hunterdon County, the Highlands of Warren County, and the Oldmans and Alloway Creek areas of Salem County have been targeted by the New Jersey Conservation Foundation, D&R Greenway, Hunterdon Land Trust, and the State of New Jersey for the excellent soils and rich agricultural and cultural history of the areas. In 2009, NRCS participated in providing the financial piece to complete transactions to protect seven family farms in these areas.

- **Grassland Reserve Program (GRP)**

GRP offers private landowners the opportunity to protect, restore, and enhance grasslands on their property. The maximum acreage limit was reached nationwide by the end of

2007, with approximately 2 million acres enrolled in GRP since the program started. New Jersey continues to implement practices on the 14 active contracts that were funded in previous years.

- **Wildlife Habitat Incentives Program (WHIP)**

WHIP provides financial assistance to create, enhance or maintain five priority wildlife habitat types on nonfederal lands. Creation or improvement of wildlife habitat generally has the same effect on NPS pollution as installing a buffer. In 2008, New Jersey received $1,135,298 in WHIP funds and signed 31 contracts with landowners and managers to provide wildlife benefits on 2,491 acres in 15 counties. In 2009, New Jersey received $704,234 in WHIP funds to provide wildlife benefits on 2,166 acres.

- **Wetlands Reserve Program (WRP)**

WRP provides technical and financial assistance to enhance wetlands in exchange for retiring marginal land from agriculture. In 2008 and 2009 no new funding was received for this program for New Jersey. However, in 2009, NRCS broke ground with phase 1 of a dam breach and wetland restoration project located in Hamilton Township, Atlantic County on the Watering Race Branch of the Egg Harbor River. NRCS had previously entered into a WRP contract with the U.S. Fish and Wildlife Service. The project goal is to restore natural stream flow and wetland habitat through a controlled stable dam breach and supplement natural regeneration with plantings of native trees, shrubs, and herbaceous vegetation.

Resource Conservation and Development

New Jersey's two Resource Conservation and Development (RC&D) Councils work with local and regional partners to address issues related to: water quality and water resource protection, sustainable farming and farm communities, and managing natural hazards.

North Jersey RC&D Council

Work for the reporting period includes:

- Development of the NJDEP-funded Musconetcong Watershed Restoration and Protection Plan continued, including water quality monitoring targeting fecal coliform bacteria contamination and Microbial Source Tracking (MST).
- Neshanic Watershed water quality monitoring, modeling over 30 square miles has been conducted, with necessary BMPs identified, and a feasibility study is underway for a regional manure composting facility.
- Fourteen farms have been certified as River-Friendly and additional farms are working toward meeting the River-Friendly criteria. The River-Friendly Program provides recognition to farmers who assess the potential water quality impacts of their existing operation and implement best management practices on their farms to reduce any negative impacts or enhance any positive impacts.
- The Council is nearing the completion of their "Riparian Buffers on Agricultural Land in the Raritan Basin Plan", for which they have developed a GIS-based riparian health analysis model to determine priority areas for buffer replacement. The model

uses soil erodibility, runoff potential, wildlife habitat and impervious surface coverage to prioritize areas for buffer placement. This model was presented at the Watershed Science & Technology Conference.

- Stream restoration projects in which riparian buffers were planted were completed along the following water bodies:
  - Musconetcong River in Mansfield Township, Warren County
  - Clove Acres Lake in Sussex Borough, Sussex County
  - Wallkill River in Station Park, Sparta Township, Sussex County
  - At the new Musconetcong Watershed Association River Resource Center on the Musconetcong River in Asbury, Hunterdon County
  - Walnut Brook in Raritan Township, Hunterdon County, which in addition to buffers, also included the installation of various innovative bioengineering and bank stabilization practices.
- For the past ten years, North Jersey RC&D Council has hosted one of the state's twenty AmeriCorps Watershed Ambassadors. During the reporting period, the North Jersey RC&D Watershed Ambassador assisted with implementing riparian restoration projects, performed stream visual assessments and conducted numerous educational programs using the Enviroscape watershed model.

South Jersey RC&D Council

Work for the reporting period includes:

- Friendly Farms, an outreach program to agricultural producers in the Annaricken-Assiscunk-Barkers Brook Watersheds, was launched in 2008 and through it each farmer in these watersheds has been or is being contacted to discuss implementation of BMPs that will help reduce the fecal coliform and phosphorus loads in the streams. So far 145 farms have been assessed and of as a result of these assessments, many one-on-one meetings were arranged with interested farmers to plan implementation of the identified BMPs. The Friendly Farms Outreach Project is funded by a grant from Burlington County as part of a larger project to monitor and improve water quality in the Annaricken Brook Watershed.
- Working in partnership with United Water Company, the Council's EvapoTranspiration Index Program continued to reduce lawn irrigation in 4 communities by an estimated 2 million gallons in 2008 alone. Due to the use of fertilizers, lawn irrigation is potentially a major cause of nonpoint source pollution.
- The council's "Team Habitat", a group of wildlife professionals from federal, state local governments and other non-profits, has created 40.8 acres of new habitat for ground nesting birds and other wildlife in 2008. Since its inception, Team Habitat has created more than 240 acres of new wildlife habitat in 9 locations throughout southern New Jersey. Many types of wildlife habitat have the added benefit of acting as a vegetated buffer to filter pollutants out of stormwater runoff.

Farm Service Agency (FSA) Programs

NRCS provides technical assistance to applicants and contract holders working with the FSA Programs, which include the following:

- **Conservation Reserve Program (CRP)**

CRP is USDA's largest environmental improvement program on private lands. In fiscal years 2008 and 2009, New Jersey farmers received $143,000 and $122,000, respectively in annual rental payments for removing highly erodible land and environmentally sensitive cropland from production. These newly enrolled program participants received $274,000 (FY2008) and $348,000 (FY2009) in CRP cost-share payments. Cost-sharing is provided to cover part of the cost to establish conservation measures on the land. This may include re-establishing native or perennial grasses, planting trees or fencing animals out of streams. Incentive payments totaling $247,000 (FY2008) and $283,000 (FY2009) were paid out under CRP. Incentive payments are offered in some cases to encourage participation and to protect highly sensitive land surrounding waterways. As of September 30, 2009, CRP contracts total 244 in New Jersey, providing financial support to 174 farms across the state.

- **Conservation Reserve Enhancement Program (CREP)**

The New Jersey Department of Environmental Protection, the New Jersey Department of Agriculture and the United States Department of Agriculture's Farm Service Agency jointly developed a Conservation Reserve Enhancement Program (CREP) proposal for New Jersey. The New Jersey CREP is designed to help farmers reduce nonpoint source pollution caused by agricultural runoff in an effort to improve water quality in New Jersey. Under NJ CREP, farmers receive financial incentives from the USDA's Farm Service Agency and the New Jersey Department of Agriculture to voluntarily remove marginal pastureland or cropland from agricultural production and convert the land to native grasses, trees and other vegetation. The vegetation can then serve as a buffer to filter or contain agricultural runoff and prevent polluted stormwater runoff generated by farms from reaching neighboring water bodies.

New Jersey seeks to enroll 30,000 acres of agricultural lands into the program. The four NJ CREP practices will improve the quality of runoff from these lands.

Multiple rows of trees and shrubs, as well as native grass strips, combine in a riparian buffer to protect the creek that flows through it from nutrient runoff loads, temperature extremes, and also provides habitat.

NJ CREP encourages farm owners and operators to voluntarily implement one or more of these conservation practices on their land by offering financial incentives. The program provides a 10-year enrollment period and targets the installation of riparian buffers, filter strips, contour buffer strips and grass waterways. Farmers will be able to enroll their land into NJ CREP by installing conservation practices under 10-15 year rental agreements and/or permanent easement contracts.

As of September 30, 2009, 135 NJ CREP contracts have been approved totaling 602.9 acres. This represents 289.2 acres of filter strips, 98.3 acres of grassed waterway, and 215.4 acres of riparian forest buffer.

Soil Erosion and Sediment Control Act Implementation

The State of New Jersey adopted the Soil Erosion and Sediment Control (SESC) Act, Chapter 251 Program on January 1, 1976, to be administered by the state's 15 Soil Conservation Districts (SCDs) as a means to minimize soil erosion from construction sites, reduce nonpoint source pollution from sediment, and enhance water quality and stormwater quality. The SCDs review development and site plans to ensure that they are in compliance with SESC Standards. Once the plans satisfy the Standards, they are

certified by the district. When work begins on a project, staff routinely inspect the site to make sure the soil erosion and sediment control measures in the plan are carried out in the correct construction sequence on the site. When construction is finished, SCD inspectors perform a final site inspection to ensure that the site has been properly and permanently stabilized.

Conservation practices such as stormwater inlet protection, silt fencing, stabilized construction access, and temporary soil stabilization are just a few of the many measures that help reduce soil erosion on active construction sites. Districts also conduct a detailed review of stormwater management runoff designs to ensure runoff will not contribute to long term stormwater quality degradation.

The table below shows the number of plan applications received and, of those, the number of plans that were certified by the districts and the number of acres represented in all of the certified plans for all of New Jersey's 15 Soil Conservation Districts by State Fiscal Year. Since the inception of the SESC Program, 124,226 applications were received and 121,961 certifications were issued on projects involving more than 864,707 acres of land.

Through the implementation of the State Soil Conservation Committee Standards for Soil Erosion and Sediment Control in New Jersey on all projects in the Chapter 251 Program since 1976, tens of millions of tons of soil were prevented from causing damage to streams, lakes and downstream properties. Thus it is important to acknowledge the vital role of the Chapter 251 Program in New Jersey's NPS pollution control strategy to protect water quality.

SESC PLAN APPLICATIONS

SFY	# of Applications Received	Certifications Issued	Acres Under Development
2003	4,478	4,360	33,843
2004	4,752	4,686	32,378
2005	5,225	4,832	36,372
2006	5,908	6,016	28,648
2007	5,877	6,067	31,565
2008	5,408	5,386	19,927
2009	4,269	4,539	13,150

EDUCATION

The Department of Environmental Protection has many programs and tools for stormwater, nonpoint source pollution and watershed education. These include printed materials and brochures for the community at large as well teacher workshops, free classroom presentations throughout New Jersey, the Watershed Watch Volunteer Monitoring Program, and free publications for students and teachers.

AmeriCorps New Jersey Watershed Ambassadors Program

The NJ Watershed Ambassadors Program is a community-oriented AmeriCorps program designed to raise awareness about nonpoint and point source pollution and other water issues in New Jersey. Through this program, twenty AmeriCorps members are placed across the state to serve their local communities. Watershed Ambassadors monitor the rivers of New Jersey through Visual Assessment and Biological Assessment volunteer monitoring protocols. As of March 31, 2009, the Ambassadors monitored approximately 500 stream segments and conducted over 57 monitoring training workshops to local citizens, schools and volunteers.

Watershed Ambassadors also made 564 presentations to community organizations and schools reaching approximately 13,300 people. These interactive presentations provide information about water and watershed issues in New Jersey.

The Ambassadors also worked with community organizations on various watershed partnership projects such as stream clean-ups, water festivals and storm drain labeling events. The Ambassadors worked with volunteers to generate approximately 2,000 volunteer hours through these partnership projects and other community service events and will continue to work on projects throughout New Jersey until the end of their term in July of 2009.

Project WET (Water Education for Teachers)

Project WET is a nationally renowned program that offers teachers a better understanding about the world's water resources through hands-on, multi-disciplinary lessons. NJ Project WET is a well-rounded program that focuses on water supply, water quality, water conservation, watershed management, land use planning and wetlands. Project WET provides educators with accurate insight into critical water issues while offering a large selection of creative teaching strategies.

In 2008, the number of workshops conducted more than doubled compared to the last few years. A total of 360 teachers and non-formal educators participated in 17 basic *Project WET* workshops and 11 *Wonders of Wetlands (WOW!)* workshops, for a total of 28 professional development workshops conducted by the NJ Project WET program. These educators, in turn, will reach over 9,000 students next school year. In 2009, 17 workshops were held for 190 teachers and non-formal educators, enabling these educators to reach nearly 5,000 students.

Urban Watershed Education Program

The Urban Watershed Education Program is designed to educate students living in urban areas about the hazards of eating contaminated fish and to help them to discover the beauty of the great natural resource. Students who participate in the program sample recreational opportunities that the bay has to offer while learning how to be responsible citizens within the estuary. The students experience 4 days of intense yet enjoyable instruction related to the local watersheds. In 2008, the program worked with over 160 students in communities with fish consumption advisories across the state including Elizabeth, Lacey, Nutley, Passaic, Point Pleasant Beach, Seaside Heights, and Trenton. In 2009, the program worked with over 170 students in communities with fish consumption advisories including Elizabeth, Carteret, Fairlawn, Jersey City and Seaside Heights. The program has educated thousands of students over the past decade.

Watershed Watch Network

The Watershed Watch Network is a service provider network for all of the volunteer monitoring programs within New Jersey. The Watershed Watch Network has two advisory committees: Data Users and Water Resource Managers make up the Internal Advisory Committee and Volunteer Monitoring Program Managers throughout the State make up the Watershed Watch Network Council. A four-tiered approach has been developed to allow for volunteers to pick their level of involvement based on the purpose of their monitoring program, the intended data use and the intended data users. The goal of the program is to provide acceptable protocols and quality assurance/quality control (QA/QC) requirements for volunteers if they choose to submit their data to the Department, to assist volunteers in designing and building upon their existing programs and to assist data users in gathering sound data for their uses. This Network has helped to develop a strong connection between the watershed associations, schools and the Department allowing for data exchange and greater data use.

NJ Electronic Data Management System

The NJ Electronic Data Management System was created because the Department recognizes the challenges associated with collecting and managing data. Conducting assessments, defining the current water quality conditions and getting the numbers and scores to actually mean something to an audience can be both time-consuming and

frustrating. Yet, volunteer monitors want the data they collect to be translated to the public in meaningful ways. The science behind "getting the numbers to talk" is not only a challenge, but an art form.

Although there is no one formula to cure all the issues associated with translating and interpreting the data, Department staff, a consulting firm or two, and the volunteer program coordinators from around the state have created the first NJ public data management system. This online data management system is designed to help alleviate the burden of data management and allow for volunteer-collected data to be comparable and compatible with other available data. The system is a powerful tool for the volunteer community and the Department because it allows users to have access to many different data sources, documents the quality of the data and can produce simple charts and data plots for comparisons. This new system allows the data to be effectively managed, analyzed and reported for use by the Department, other interested organizations and the general public.

To begin using the NJ Electronic Data Management System as a volunteer organization, one must register for an ID and PIN at: http://www.nj.gov/dep/online. Training, individual group assistance and support is available. For more information, please continue to check the Water Monitoring and Standard's website at http://www.state.nj.us/dep/wms/bfbm/vm or request to be on our data system user group email list at volunteermonitoring@dep.state.nj.us

Training Schedule for the Watershed Watch Network

Watershed Watch Network is the volunteer monitoring program for the Department. Our goal is to assist agency staff, watershed partners, and volunteer monitoring programs with mentoring assistance, technical assistance, and program development. We are accomplishing this through the data management system, trainings, conferences, service provider contracts, and equipment loan outs.

A list of the training opportunities available to the public is available on the web at http://www.state.nj.us/dep/wms/bfbm/vm

Clean Water Raingers Program

The Clean Water Raingers Program offers educators a number of teaching materials for their students as well as background information on watersheds and nonpoint source pollution. Educators who participate in the Clean Water Raingers program are provided with free booklets and associated materials for their elementary school age students. The booklets and stickers are

also popular at family-oriented events and festivals. In 2008, the Department distributed 13,000 Clean Water Raingers Activity Books, 18,000 Clean Water Raingers Coloring Books and 28,000 Clean Water Raingers Stickers. In 2009, the Department distributed 6,000 Clean Water Raingers Activity Books, 18,000 Clean Water Raingers Coloring Books and 15,000 Clean Water Raingers Stickers.

Publications

Publications are also available for free distribution to municipalities, watershed associations, environmental groups or other organizations. In both 2008 and 2009, the Department distributed over 9,000 copies of the "What's A Watershed?" Brochure. Additionally, the New Jersey Stormwater Best Management Practices Manual is electronically available through www.njstormwater.org or through the Department's Office of Maps and Publications. These publications and numerous others are also available on the Department's website.

Clean Water Council

The Clean Water Council advises the Department on water issues. As DEP liaison to the Clean Water Council, the Division of Water Quality coordinated its 10 regular meetings in 2008, plus the Council's Annual Public Hearing. The Annual Public Hearing on "Sustainable Funding for New Jersey's Water Infrastructure" took place on December 8, 2008. The objective of the hearing was to hear public testimony on water infrastructure financing, specifically the issues of funding for capital investments, rehabilitation, operations and maintenance for water supply, wastewater and stormwater infrastructure. The Council provided the Commissioner with a 4-page letter containing identified critical issues and key recommendations based upon the correspondence and the 3 hours of testimony received at the hearing.

In 2009, the Division of Water Quality coordinated the Clean Water Council's 10 regular meetings and the Council's Annual Public Hearing on "Water Policy and Climate Change" which took place on December 7, 2009. The Council heard public testimony on the risks posed to water quality and water infrastructure by climate change and on effective means to adaptively manage the risks, and provided the Commissioner with the key issues identified from the testimony and recommendations.

PROTECTION

This section serves to highlight New Jersey's water quality protection measures through regulations designed to protect the state's declining water supply and to ensure water quality for all New Jersey's residents, and the state's open space preservation programs.

Legislation & Regulation

Highlands Water Protection and Planning Act Rules (N.J.A.C. 7:38)

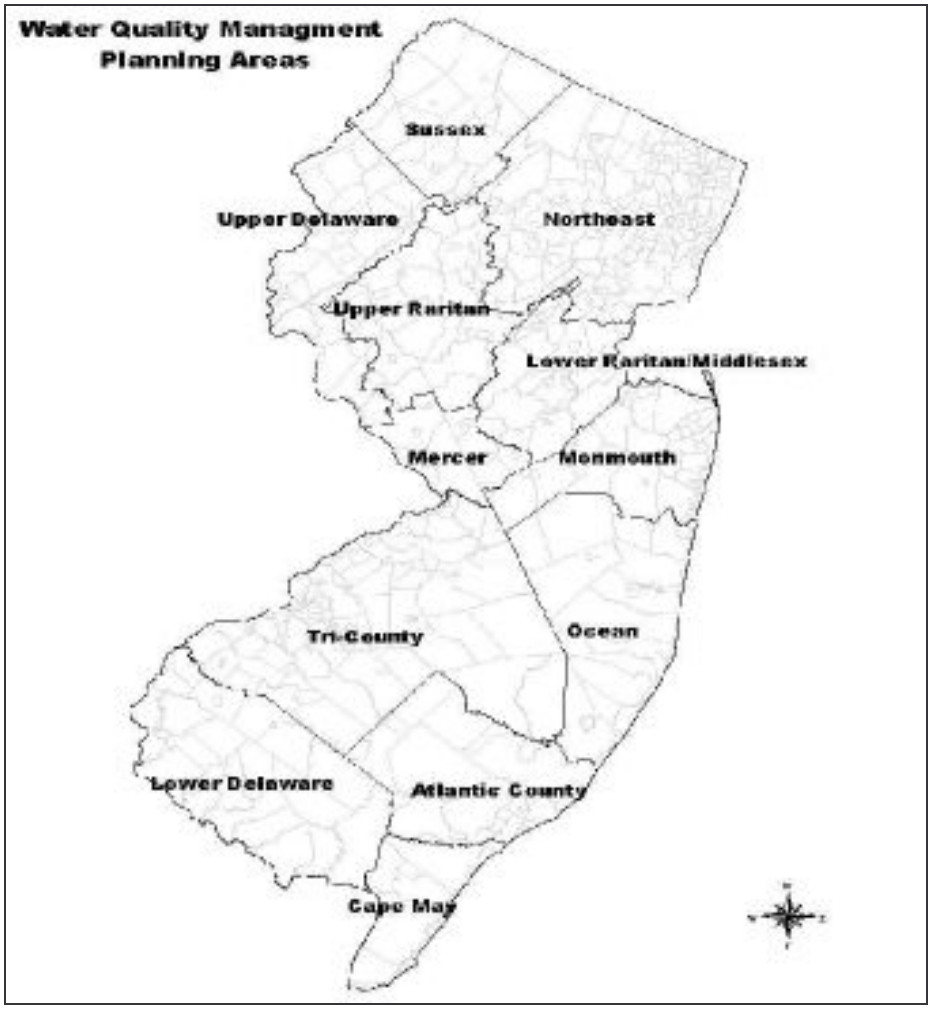
The Highlands Water Protection and Planning Act, N.J.S.A. 13:20-1 et seq. protects drinking water for over 5.4 million people and helps preserve New Jersey's dwindling open space. On December 4, 2006, the Department of Environmental Protection readopted with amendments the Highlands Water Protection and Planning Act rules, N.J.A.C. 7:38. The rules incorporate the requisite standards of various land use, water resource and environmental protection statutes and establish a consolidated Highlands permitting review and approval process for activities constituting 'major Highlands development' proposed in the Highlands preservation area. The Department made several agency initiated changes on adoption, all of which either clarify or make consistent provisions of the rules.

Water Quality Management Planning Rules (N.J.A.C. 7:15)

One of the tools the Department utilizes to attempt to assure that both current decision making and future planning adequately take into account protection of water quality and quantity is the Water Quality Management (WQM) Planning rules, N.J.A.C. 7:15. The Department develops and administers the WQM Planning rules in conjunction with the Statewide WQM Plan, which is also part of the continuing planning process required pursuant to the Water Quality Planning Act (WQPA), N.J.S.A. 58:11A-1 et seq. and as required by Sections 303(e) and 208 of the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. §§ 1251 et seq., commonly referred to as the Clean Water Act). Accordingly, the WQM Planning rules prescribe water quality management policies, procedures and standards which protect public health; safeguard fish, aquatic life, and scenic and ecological values; and enhance domestic, municipal, recreational, industrial and other uses of water.

In accordance with the WQPA and Section 208 of the Clean Water Act, the governor designated twelve areawide WQM planning areas in New Jersey: Atlantic County, Cape

May County, Lower Delaware, Lower Raritan-Middlesex County, Mercer County, Monmouth County, Northeast, Ocean County, Sussex County, Tri-County Area, Upper Delaware and Upper Raritan. Areawide WQM planning requires the identification of areas that are suitable for growth due to their low environmental sensitivity and existing land use patterns and plans. The areawide WQM plans, (formerly known as 208 plans) are umbrella plans, each with various adopted components that address different aspects of water resource planning. For example, wastewater management plans (WMPs), which assess the cumulative water resource impact of future development, are a component of the areawide WQM plans. Total maximum daily loads, which address existing water quality impairment and establish an implementation plan to restore the water quality of those waters, are another component of the areawide plans. The individual components are adopted into the appropriate areawide WQM plan in order to give them effect.



An integral component of areawide WQM plans are Wastewater Management Plans (WMPs). The Department relies on the WMP components of the areawide WQM plans to provide a comprehensive evaluation of the cumulative effects of existing and future

land use on the water resources of the State and to ensure that the WQM plans integrate related Federal, State, regional and local comprehensive, functional and other relevant land use planning activities through a continuing planning process. The intended purpose of the WMPs is to project future development and estimate the wastewater management needs associated with that development. These plans also provide the vehicle to ensure that sewer service is not extended into areas inconsistent with State Development and Redevelopment Plan State Planning Area designations and environmentally sensitive areas. WMPs also identify public water supply service areas of water purveyors and identify the water supply needs associated with proposed development. Lastly, because WMPs project future land use and shape the pattern and density of development through the wastewater management alternatives selected within given areas, these plans are instrumental in quantifying existing and future nonpoint source pollution loads and in implementing best management practices to reduce those pollutant loads. WQM plans must be updated periodically by WMPs in order to reflect and respond to changes in municipal zoning, State and regional planning activities and regulatory standards, and to ensure that the most up to date information is fully incorporated into decisions concerning wastewater management choices. To accomplish these continuing planning process objectives, WMPs are not static and are required to be updated every six-years, similar to the schedule established in the Municipal Land Use Law for the periodic examination of municipal master plans and development regulations (N.J.S.A. 40:55D-89).

The Department readopted the Water Quality Management Planning rules on May 20, 2008, with the rule readoption effective May 21, 2008 and adopted rule amendments, repeals and new rules effective July 7, 2008 (see 40 N.J.R. 4000(a)). The rule amendments and new rules provide the following:

- Establish clear standards for delineating appropriate sewer service areas to protect environmentally sensitive areas as well as clear, environmentally protective standards for the review of WQM plan amendments;
- Set forth clear standards to require identification of adequate wastewater management alternatives, address water supply, and control nonpoint source pollution (including controls related to stormwater, riparian zones and steep slopes);
- Reassigned wastewater management planning responsibility to the county boards of chosen freeholders which reduced WMP agencies to a manageable number and afforded a regional approach to water resource planning;
- Makes provisions to allow the withdrawal of sewer service areas and re-designate these areas as general wastewater service area of 2,000 gallons per day or less (restricted septic service areas) where the applicable WMP is not in compliance with the mandatory update schedule contained in the rules;
- Require municipalities to ensure that septic systems are functioning properly through a mandatory maintenance program;
- Require updated WMPs to address septic density in a manner that demonstrates compliance with a 2 mg/L (ppm) nitrate planning target on a HUC 11 watershed basis or as required by development type and location on a HUC 14 basis in Highlands preservation areas; and

- Improve consistency with the State Development and Redevelopment Plan.

Stormwater

The Department is in the process of making amendments to the Stormwater Management rules at N.J.A.C. 7:8 and the New Jersey Pollutant Discharge Elimination System (NJPDES) rules at N.J.A.C. 7:14A – 24 and 25 are being amended based on the experience of the past five years and the input garnered from those regulated by and those regulating through these regulations.

The New Jersey Stormwater Best Management Practices Manual (BMP Manual) Technical Committee continues to meet regularly to provide technical input into the manual. Proposed updates to the BMP Manual are posted at www.njstormwater.org. An amended Special Water Resources Protection Area (SWRPA) Functional Value Analysis, required for proposed encroachments into the 300-foot area adjacent to Category One waters and their tributaries within the same subwatershed, has been posted. Administrative Order (AO) No. 2008-02 was signed by Department Commissioner, Lisa P. Jackson, on January 24, 2008, which improved upon the Functional Value Analysis to allow enhancements to the water quality benefits of a SWRPA where encroachments are proposed. In addition, the amended AO provides applicants the option of utilizing other scientifically-based methods to demonstrate that the functional value of the SWRPA has been maintained.

The Department has also provided reports of compliance with the NJPDES Municipal Stormwater Regulation Program. According to the Municipal Stormwater Regulation Program Status Report Summary 2004-2007, 95% of New Jersey's municipalities adopted stormwater management plans and 92% adopted municipal stormwater control ordinances. Over half a million catch basins have been inspected and cleaned statewide, resulting in the removal of 291,546 tons of sediment. Over 450 illicit discharges have been eliminated from direct discharge to waterways and public education continues to promote the values of pollution prevention. The Municipal Stormwater Regulation Program Status Report Summary 2004-2007 is available at http://www.nj.gov/dep/dwq/msrp-report.htm.

Open Space Preservation

The preservation of open space prevents some causes of NPS pollution by protecting those areas from development. The more developed a watershed becomes, the more paved surface, or impervious cover, there is within that watershed. Various studies have concluded that impervious cover has a direct negative impact on the health of a watershed. This impact includes increasing the volume and the speed of stormwater runoff, increasing NPS pollutant loading and stream bank erosion rates. Consequently, a

higher percentage of impervious cover generally results in a higher percentage of degraded water bodies. Preserving open space prevents this impact from occurring in the first place and so is a great preventative tool in controlling NPS pollution.

Green Acres Program

The Department's Green Acres Program was created in 1961 to meet New Jersey's growing recreation and conservation needs. Lands that are acquired or developed with Green Acres funds must be used solely for recreation and conservation purposes.

As of December 31, 2009, Green Acres has preserved almost 640,000 acres since its inception. This includes open space lands the State directly purchased through Green Acres' State Land Acquisition Program as well as properties for which the program provided cost share funding through its Local and Nonprofit Assistance Program.

2008 Green Acres Program purchase:
176 acres of open space in Pilesgrove Township, Salem County

New Jersey's statewide system of preserved open space and farmland now amounts to over 1,384,700 acres. Open space preservation and conservation is of inestimable value in preventing and abating nonpoint source pollution and the Green Acres Program plays a pivotal role in New Jersey's nonpoint source control strategy.

A recent purchase by the Department (pictured above) occurred on March 18, 2008 and included 176 acres of open space in Pilesgrove Township, Salem County. The Green Acres Program purchased the property directly from private owners using State Land Acquisition Program funds. This acquisition expands the Harrisonville Lake Wildlife Management Area and provides a buffer for Harrisonville Lake, which is part of Oldmans Creek. Trout and many warm water fish species are found in Harrisonville Lake, which provides opportunities for fishing, birding, and other recreational activities. Uplands on the site provide habitat for threatened and endangered grassland birds.

Farmland Preservation Program

The State Agriculture Development Committee (SADC) administers New Jersey's Farmland Preservation Program. To date, more than 1,800 farms covering more than 176,000 acres have been permanently preserved.

Clayton Farm in Freehold Township, Monmouth County, preserved October, 2008

One in every five acres of New Jersey farmland is protected from development - the highest rate of any state in the nation. The landowners who made the commitment to

preserve their farms for future generations played a key role in this preservation accomplishment.

Preserved farmland enhances the quality of life in New Jersey, the "Garden State", in so many ways: maintaining green and livable communities, providing seasonal habitat for native animals, helping towns hold the line on property taxes, and providing for a locally grown, secure food supply. The SADC is working toward a goal of ultimately preserving 600,000 acres to ensure an adequate land base for agriculture in New Jersey well into the future.

Additional Information

New Jersey Department of Environmental Protection
Division of Policy Implementation and Watershed Restoration
401 East State Street
Mail Code 401-07D
P.O. Box 420
Trenton, NJ 08625-0420
(609) 633-2201
www.state.nj.us/dep/watershedmgt

APPENDIX I - TMDLs

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2000	8 TMDLs Established Before 2003					
	Delaware River: Zones 2-5	VOCs (2 parameters)				PS
	Strawbridge Lake	TP	2162	787	67	NPS
	Sylvan Lake	TP	137.6	65.8	58	NPS
	Whippany River (2 TMDLs)	FC			58	NPS
	*Hackensack River	Ni	13.86 lb/day	4.88 lb/day		PS
	TMDL TOTAL: 8					
2003	Northwest Water Region: 4 Eutrophic Lakes TMDLs					
	Cranberry Lake	TP		400	85	NPS
	Ghost Lake	*TP*		*33*	*0 (protective TMDL)*	*NPS*
	Lake Hopatcong	TP		4800	42	NPS
	Lake Musconet-cong	TP		2200	41	NPS
2003	Northeast Water Region: 3 Eutrophic Lakes TMDLs					
	Lincoln Park Lake	TP		33	86	NPS
	Overpeck Lake	TP		850	90	NPS
	Verona Park Lake	TP		190	85	NPS
2003	Lower Delaware Water Region: 13 Eutrophic Lakes TMDLs					
	Memorial Lake	TP		930	88	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Sunset Lake	TP		2500	92	NPS
	Bell Lake	TP		17	94	NPS
	Burnt Mill Lake	TP		290	91	NPS
	Giampietro Lake	TP		300	90	NPS
	Mary Elmer Lake	TP		380	91	NPS
	Bethel Lake	TP		540	85	NPS
	Blackwood Lake	TP		1200	88	NPS
	Harrisonville Lake	TP		500	92	NPS
	Kirkwood Lake	TP		380	84	NPS
	Woodbury Lake	TP		350	85	NPS
	Imlaystown Lake	*TP*		*390*	*0 (protective TMDL)*	*NPS*
	Spring Lake	*TP*		*11*	*0 (protective TMDL)*	*NPS*
2003	Raritan Water Region: 6 Eutrophic Lakes TMDLs					
	Echo Lake	TP		140	93	NPS
	Davidson Mill Pond	TP		690	92	NPS
	Devoe Lake	TP		200	75	NPS
	Lake Manalapan	TP		1100	93	NPS
	Lake Topanemus	TP		110	82	NPS
	Round Valley Recreation Area	TP		64	46	NPS
2003	Atlantic Coastal Water Region: 9 Eutrophic Lakes TMDLs					
	Deal Lake	TP		580	81	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Franklin Lake	TP		59	90	NPS
	Hooks Creek Lake	*TP*		*12*	*0 (protective TMDL)*	*NPS*
	Pohatcong Lake	TP		910	49	NPS
	Lake Absegami	TP		210	54	NPS
	Hammonton Lake	TP		210	81	NPS
	New Brooklyn Lake	TP		900	96	NPS
	Dennisville Lake	TP		240	83	NPS
	Lily Lake	TP		77	28	NPS
2003	Lower Delaware Region: 27 Streams	FC			86-99	NPS
2003	Raritan Water Region: 48 Streams	FC			69-97	NPS
2003	Atlantic Coastal Water Region: 31 Streams	FC			51-98	NPS
2003	Northeast Water Region: 32 Streams (34 Segments)	FC			37-98	NPS
2003	Northwest Water Region: 28	FC			47-99	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Streams					
2003	Delaware River: Zones 2-5 (4 TMDLs)	PCBs				PS/ NPS
	2003 TMDL TOTAL: 172					
2004	Clove Acres Lake and Papakating Creek					
	Clove Acres Lake	TP		2675.9	77	NPS
	Papakating Creek	TP		7190.9	31	NPS
2004	Cooper River Watershed: 4 Streams and 2 Lakes					
	Kirkwood Lake (from 2003 TMDL)	*TP*		*380*	*84*	*NPS*
	Evans Pond and Wallworth Lake	TP		532	92.9	NPS
	Cooper River Lake	TP		2110	89	NPS
	North Branch Cooper River	TP		693	88	NPS
	Cooper River Mainstem	TP		505	88	NPS
2004	Greenwood Lake	TP		3895	43	NPS
2004	Pequannock River: 9 Segments	Temperature		Passing flow, reservoir release temperatures and riparian restoration specified		NPS
2004	Wallkill River and Papakating Creek					
	WAL 1	Arsenic	7.3	0.030		NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	WAL 2	Arsenic	8.3	0.035		NPS
	WAL 3	Arsenic	3.4	0.041		NPS
	WAL 4	Arsenic	6.2	0.053		NPS
	WAL 5	Arsenic	10.8	0.126		NPS
	PAP	Arsenic	2.0	0.033		NPS
	2004 TMDL Total: 24					
2005	Atlantic Coastal Water Region: 2 Streams	FC			89-91	NPS
2005	Northwest Water Region: 10 Streams	FC			69-95	NPS
2005	Northeast Water Region: 2 Streams	FC			92-96	NPS
2005	Lower Delaware Water Region: 3 Streams	FC			80-98	NPS
2005	Raritan Water Region: 3 Streams	FC			46-98	NPS
2005	Swartswood Lake	TP		1461	57	NPS
	Swartswood Lake	Fish Community				
2005	Manasquan River Watershed: 2 Streams					
	Long Brook	TP		207.6	57.1	NPS
	Manasquan	TP		4392	61.3	NPS
2005	Atlantic Coastal Water Region: 3 Streams					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Shark River-Tinton Falls	TP		244.4	54.1	NPS
	Shark River-Neptune	TP		464.3	73.7	NPS
	Metedeconk River	TP		358.4	84.9	NPS
2005	Northeast Water Region: 3 Streams					
	Coles Brook	TP		2566.41	46	NPS
	Pascack and Musquapsink	TP		5871.02	21.43	NPS
2005	Northwest Water Region: 7 Streams					
	Black Creek (2 segments) and Wallkill	TP		1795	50	NPS
	Wawayanda	TP		5170	73	NPS
	Lockatong Creek	TP		1114	86.9	NPS
	Wickecheoke Creek (2 segments)	TP		3409	56	NPS
2005	Lower Delaware Water Region: 5 Streams					
	Barrett Run	TP		380	91	NPS
	Cohansey River (defer to Sunset Lake reductions)	TP		2500	92	NPS
	Big Timber Creek (defer to Blackwood Lake reductions)	TP		1200	88	NPS
	Oldmans Creek	TP		1874.5	80	NPS
	Blacks Creek	TP		1489.8	67.4	NPS
2006	Watershed Management Area 12: 5 TMDLS For Shellfish Impaired Waters					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Manasquan River Estuary	Total Coliform		3.60E+15	77	NPS
	Navesink River Estuary	Total Coliform		1.26E+15	92	NPS
	Shark River Estuary	Total Coliform		1.20E+15	81	NPS
	Shrewsbury River Estuary	Total Coliform		2.42E+15	74	NPS
	Waackaack Creek-Tidal	Total Coliform		1.81E+15	34	NPS
2006	Watershed Management Area 13: 14 TMDLS					
	Barnegat Bay	Total Coliform		See Table 4 in TMDL		NPS
	Beaverdam Creek Estuary	Total Coliform		1.99E+15	41	NPS
	Cedar Creek Estuary-13	Total Coliform		1.38E+15	48	NPS
	Cedar Run-Tidal	Total Coliform		8.24E+13	75	NPS
	Manahawkin Bay	Total Coliform		9.01E+14	16	NPS
	Metedeconk River Estuary	Total Coliform		2.07E+15	87	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Mill Creek-Tidal	Total Coliform		2.67E+15	16	NPS
	Toms River Estuary (12)	Total Coliform		7.04E+15	74	NPS
	Tuckerton Creek Estuary (13)	Total Coliform		1.60E+14	86	NPS
	Westecunk Creek Estuary (14)	Total Coliform		1.01E+14	87	NPS
	Double Creek Estuary	Total Coliform		3.02E+15	50	NPS
	Forked River Estuary	Total Coliform		3.02E+15	50	NPS
	Kettle Creek-Tidal	Total Coliform		3.54E+15	23	NPS
	Oyster Creek Estuary	Total Coliform		3.02E+15	50	NPS
2006	Watershed Management Area 14: 5 TMDLS					
	Bass River Estuary	Total Coliform		3.10E+14	55	NPS
	Coastal Tributary to Great Bay	Total Coliform		4.51E+13	39	NPS
	Mullica River Upper Estuary	Total Coliform		4.63E+15	67	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Nacote & Mott Rivers Estuary	Total Coliform		1.01E+15	68	NPS
	Wading River Estuary	Total Coliform		5.91E+14	80	NPS
2006	Watershed Management Area 15 : 6 TMDLS					
	Absecon Bay	Total Coliform		1.26E+14	86	NPS
	Great Egg Harbor River Middle Estuary	Total Coliform		1.21E+16	46	NPS
	Great Egg Harbor River Upper Estuary	Total Coliform		1.21E+16	46	NPS
	Great Egg River Tidal	Total Coliform		1.21E+16	46	NPS
	Lakes Bay	Total Coliform		2.57E+14	94	NPS
	Reeds Bay	Total Coliform		1.15E+14	52	NPS
2006	Watershed Management Area 16: 10 TMDLS					
	Atlantic Ocean	Total Coliform		2.00E+15	71	NPS
	Bidwell Ditch-Tidal	Total Coliform		1.32E+14	74	NPS
	Cape May Canal	Total Coliform		2.00E+15	71	NPS
	Coastal Tributaries to Jarvis Sound	Total Coliform		2.00E+15	71	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Creesse Creek Estuary	Total Coliform		1.83E+15	28	NPS
	Great Sound	Total Coliform		7.23E+13	68	NPS
	Jarvis Sound (formerly James Sound)	Total Coliform		2.00E+15	71	NPS
	Jenkins Sound	Total Coliform		1.83E+15	28	NPS
	Jones/ Stites/ Carino/ Taylor Creek Estuary	Total Coliform		2.00E+15	71	NPS
	Richardson Sound	Total Coliform		1.83E+15	28	NPS
2006	Watershed Management Area 17: 6 TMDLS					
	Cedar Creek Estuary-17	Total Coliform		4.47E+14	22	NPS
	Cohansey River Estuary	Total Coliform		2.46E+15	72	NPS
	Maurice River Estuary and Cove	Total Coliform		7.36E+15	78	NPS
	Middle Marsh Creek Estuary	Total Coliform		3.25E+13	22	NPS
	Nantuxent Creek Estuary	Total Coliform		2.43E+14	46	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Oranoaken Creek Estuary	Total Coliform		7.89E+11	47	NPS
2006	*Delaware River: Zone 6	PCBs				PS/NPS
	2006 TMDL TOTAL: 47					
2007	Northwest Water Region WMA 1: 7 Lakes					
	Forest Lake	Pathogens		5.58E+02	98.42	NPS
	Fox Hollow Lake	Pathogens		1.69E+03	98.00	NPS
	Furnace Lake	Pathogens		5.76E+03	93.00	NPS
	Green Valley Beach Campground	Pathogens		2.40E+02	90.50	NPS
	Lackawanna Lake	Pathogens		2.95E+04	92.96	NPS
	Lake Hopatcong	Pathogens		4.96E+04	96.79	NPS
	Lake Winona	Pathogens		1.11E+03	98.10	NPS
2007	Northwest Water Region WMA 2: 4 Lakes					
	Crystal Springs Pond	Pathogens		5.28E+03	75.32	NPS
	Deer Trail Lake	Pathogens		3.24E+03	74.25	NPS
	Lake Mohawk	Pathogens		5.68E+03	98.27	NPS
	Sleep Valley Lake	Pathogens		3.48E+03	95.00	NPS
2007	Northeast Water Region WMA 3: 9 Lakes					
	Bubbling Springs	Pathogens		8.34E+02	90.50	NPS
	Crystal Lake	Pathogens		4.86E+04	94.86	NPS
	Erskine Lake	Pathogens		2.30E+03	96.48	NPS
	Forest Hill	Pathogens		5.91E+02	94.86	NPS
	Kitchell Lake	Pathogens		2.11E+03	94.84	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Lake Edenwold	Pathogens		3.53E+04	84.17	NPS
	Lake Ioscoe	Pathogens		1.17E+04	75.32	NPS
	Lionhead Lake	Pathogens		8.46E+03	95.13	NPS
	Skyline Lakes	Pathogens		7.43E+03	95.96	NPS
2007	Northeast Water Region WMA 4: 1 Lake					
	Toms Lake	Pathogens		1.95E+03	93.00	NPS
2007	Northeast Water Region WMA 6: 15 Lakes					
	Camp Lewis Lake	Pathogens		7.52E+02	89.00	NPS
	Cold Spring Lake	Pathogens		5.20E+03	80.21	NPS
	Cozy Lake	Pathogens		3.27E+03	96.83	NPS
	Foxs Pond	Pathogens		3.96E+03	97.68	NPS
	Indian Lake	Pathogens		3.05E+04	95.37	NPS
	Intervale Lake	Pathogens		3.32+03	96.35	NPS
	Lake Swannanoa	Pathogens		4.62E+04	92.08	NPS
	Mountain Lake	Pathogens		4.56E+03	95.87	NPS
	Parsippany Lake	Pathogens		5.05E+03	97.43	NPS
	Powder Mill Pond	Pathogens		5.90E+03	96.48	NPS
	Rainbow Lakes	Pathogens		7.30E+03	76.83	NPS
	Sunrise Lake	Pathogens		6.42E+02	95.48	NPS
	Telemark Lake	Pathogens		6.10E+03	94.24	NPS
	West Lake	Pathogens		5.90E+03	83.04	NPS
	White Meadow Lake	Pathogens		5.43E+03	96.04	NPS
2007	Raritan Water Region WMA 8: 4 Lakes					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Budd Lake	Pathogens		3.88E+03	98.94	NPS
	Randolph Park Lake	Pathogens		4.84E+02	98.10	NPS
	Ravine Lake	Pathogens		5.25E+04	94.57	NPS
	Sunset Lake	Pathogens		6.41E+03	96.78	NPS
2007	Atlantic Coastal Water Region WMA 12: 3 Lakes					
	Deal Lake	Pathogens		1.09E+05	89.01	NPS
	Hook Creek Lake	Pathogens		1.54E+02	94.57	NPS
	Lake Takanassee	Pathogens		7.83E+03	87.82	NPS
2007	Atlantic Coastal Water Region WMA 13: 9 Lakes					
	Bamber Lake	Pathogens		1.25E+04	92.91	NPS
	Carasaljo Lake	Pathogens		1.53E+04	99.05	NPS
	Deer Head Lake	Pathogens		1.68E+04	92.15	NPS
	Holiday Lake	Pathogens		8.68E+03	97.16	NPS
	Lake Barnegat	Pathogens		9.55E+03	92.15	NPS
	Manahawkin Lake	Pathogens		4.67E+04	95.49	NPS
	Ocean County Park Lake	Pathogens		6.91E+02	95.68	NPS
	Ocean Township Bathing Beach (Waretown Lake)	Pathogens		4.77E+03	95.25	NPS
	Pine Lake	Pathogens		3.70E+04	98.64	NPS
2007	Atlantic Coastal Water Region WMA 14: 1 Lake					
	Hammonton Lake	Pathogens		1.15E+04	96.21	NPS
2007	Atlantic Coastal Water Region WMA 15: 3 Lakes					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Braddock Lake	Pathogens		1.35E+05	81.00	NPS
	Buena Vista Campground Lake	Pathogens		4.82E+03	78.89	NPS
	Cushman Lake	Pathogens		1.30E+05	81.00	NPS
2007	Atlantic Coastal Water Region WMA 16: 2 Lakes					
	Lake Laurie	Pathogens		1.22E+03	70.77	NPS
	Ludlams Pond	Pathogens		6.33E+03	90.00	NPS
2007	Lower Delaware Water Region WMA 17: 10 Lakes					
	4 Seasons Campground Pond	Pathogens		2.39E+02	93.62	NPS
	Cedar Lake	Pathogens		1.46E+04	91.36	NPS
	Eastern Gate Lake	Pathogens		1.61E+04	95	NPS
	Franklinville Lake	Pathogens		7.40E+04	90.26	NPS
	Holly Green Campground Pond	Pathogens		5.82E+02	89.44	NPS
	Iona Lake	Pathogens		3.89E+05	68.24	NPS
	Malaga Lake	Pathogens		4.30E+05	70.59	NPS
	Parvin Lake	Pathogens		1.40E+05	91.36	NPS
	Sunset Lake	Pathogens		8.84E+03	97.93	NPS
	Wilson Lake	Pathogens		3.43E+04	95.00	NPS
2007	Lower Delaware Water Region WMA 18: 1 Lake					
	Lake Silvestro	Pathogens		3.16E+02	86.81	NPS
2007	Lower Delaware Water Region WMA 19: 5 Lakes					
	Lake Coxtoxen	Pathogens		9.13E+05	70.14	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Lake James	Pathogens		7.74E+02	99.05	NPS
	Mirror Lake	Pathogens		1.53E+04	98.81	NPS
	Sturbridge Lake	Pathogens		5.43E+03	96.78	NPS
	Timber Lake	Pathogens		9.33E+04	85.38	NPS
2007	Lower Delaware Water Region WMA 20: 1 Lake					
	Upper Sylvan Lake	Pathogens		1.16E+03	94.57	NPS
2007	Northwest Water Region WMA 11: 1 TMDL					
	Miry Run at Rt 33 HUC 0204010524 0030-01	Phosphorus	3065.43	2610.39	22	NPS
2007	Lower Delaware Water Region WMA 20: 4 TMDLs					
	Annaricken Brook HUC 0204020110 0010-01	Phosphorus	581.48	346.75	54.60	NPS
	Barkers Brook near Jobstown HUC 0204020110 0020-01	Phosphorus	743.60	409.10	66	NPS
	Doctors Creek at 539 Upper Freehold HUC 0204020106 0020-01	Phosphorus	2479.56	652.52	78.70	NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Doctors Creek at Allentown HUC 02040201060030-01	Phosphorus	743.60	409.10	66	NPS
	2007 TMDL TOTAL: 80					
2008	TMDL Report to Address Phosphorus Impairment in Pompton Lake and Ramapo River in the Northeast Water Region WMA 3: 3 TMDLs					
	Ramapo R (Crystal Lk Bridge to Bear Swamp Brook) HUC 02030103100050	Phosphorus	17.9 kg/day	17.4 kg/day	80	PS/NPS
	Ramapo R (below Crystal Lake Bridge) HUC 02030103100070	Phosphorus	17.9 kg/day	17.4 kg/day	80	PS/NPS
	Ramapo R (above 74d11m005) HUC 02030103100010	Phosphorus	17.9 kg/day	17.4 kg/day	80	PS/NPS
2008	Amendment to the Northeast, Upper Raritan, Sussex County and Upper Delaware Water Quality Management Plans Total Maximum Daily Load Report For the Non-Tidal Passaic River Basin Addressing Phosphorus Impairments Watershed Management Areas 3, 4 and 6 Northeast Water Region WMA 3: 4 TMDLs**					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Wanaque R /Posts Bk (below reservoir) HUC14 0203010307 0070	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Lincoln Park tribs (Pompton River) HUC 14 0203010311 0010	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Pompton River HUC 14 0203010311 0020	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Ramapo R (above 74d11m005) HUC 14:02030103 100010	Phosphorus				PS/NPS
2008	Amendment to the Northeast, Upper Raritan, Sussex County and Upper Delaware Water Quality Management Plans Total Maximum Daily Load Report For the Non-Tidal Passaic River Basin Addressing Phosphorus Impairments Watershed Management Areas 3, 4 and 6 Northeast Water Region WMA 4: 4 TMDLs***					
	Passaic R Lwr (Fair Lawn Ave to Goffle) HUC 14 0203010312 0070	Phosphorus	549 kg/day	187 kg/day	66	PS/NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Passaic Riv Lwr (Goffle Brook to Pompton River) HUC 14 02030103120100	Phosphorus	549 kg/day	187 kg/day	66	PS/NPS
	Passaic Riv Lwr (Dundee Dam to F.L. Ave) HUC 14 02030103120080	Phosphorus	549 kg/day	187 kg/day	66	PS/NPS
	Dundee Lake-04	Phosphorus	127 kg/day	53 kg/day	58	PS/NPS
2008	Amendment to the Northeast, Upper Raritan, Sussex County and Upper Delaware Water Quality Management Plans Total Maximum Daily Load Report For the Non-Tidal Passaic River Basin Addressing Phosphorus Impairments Watershed Management Areas 3, 4 and 6 Northeast Water Region WMA 6: 15 TMDLs					
	Passaic Riv Upper (Pompton R to Pine Bk) HUC 14 02030103040010	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Rockaway R (Passaic R to Boonton dam) HUC 14 02030103030170	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Whippany R (Rockaway R to Malapardis Brook) HUC 14 02030103020100	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Passaic Riv Uppr (Pine Bk Bridge to Rockaway) HUC 14 02030103010180	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Passaic Riv Upper (Rockaway to Hanover RR) HUC 14 02030103010170	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Whippany R (Lake Pocahontas to Wash Val Road) HUC14 02030103020040	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Whippany R (Malapardis to Lake Pocahontas) HUC 14 02030103020050	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Passaic Riv Upper (Hanover RR to Columbia Road) HUC 14 02030103010160	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Passaic Riv Upper (Columbia Rd to 40d 45m) HUC 14 02030103010150	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
2008	Black Brook (Great Swamp NWR) HUC 14 02030103010060	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Passaic Riv Upper (40d 45m to Snyder Ave) HUC 14 02030103010130	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Dead River (above Harrisons Brook) HUC 14 02030103010080	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Passaic Riv Uppr (Snyder to Plainfield Rd) HUC 14 02030103010120	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	Passaic Riv Upper (Plainfield Rd to Dead River) HUC 14 02030103010110	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
2008	Dead River (below Harrisons Brook) 02030103010100	Phosphorus	170 kg/day	71 kg/day	58	PS/NPS
	2008 TMDL TOTAL: 32					
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Northwest Water Region WMA 1: 11 TMDLs					
	Clove Brook (Delaware R) HUC 14: 02040104090020	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Little Flat Brook (Beerskill and above) HUC 14: 02040104130010	Mercury				NPS
	Big Flat Brook (above Forked Brook) HUC 14: 02040104140010	Mercury				NPS
	Swartswood Lake and tribs HUC 14: 02040105030020	Mercury				NPS
	Trout Brook HUC 14: 02040105030030	Mercury				NPS
	Yards Creek HUC 14: 02040105050040	Mercury				NPS
	Mountain Lake Brook HUC 14: 02040105090040	Mercury				NPS
	Merrill Creek HUC 14: 02040105140040	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Pohatcong Ck (Springtown to Merrill Ck) HUC 14: 02040105140060	Mercury				NPS
	Lake Hopatcong HUC 14: 02040105150020	Mercury				NPS
	Cranberry Lake/Jefferson Lake & tribs HUC 14: 02040105150060	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Northwest Water Region WMA 2: 1 TMDL					
	Highland Lake/ Wawayanda Lake HUC 14: 02020007040040	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Northeast Water Region WMA 3: 8 TMDLs					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Pacock Brook HUC 14: 02030103050020	Mercury				NPS
	Pequannock R (above OakRidge Res outlet) HUC 14: 02030103050030	Mercury				NPS
	Clinton Reservoir/Mossmans Brook HUC 14: 02030103050040	Mercury				NPS
	Pequannock R(Macopin gage to Charl'brg) HUC 14: 02030103050060	Mercury				NPS
	Pequannock R (below Macopin gage) HUC 14: 02030103050080	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Wanaque R/ Greenwood Lk (above Monks gage) HUC 14: 02030103070030	Mercury				NPS
	Wanaque Reservoir (below Monks gage) HUC 14: 02030103070050	Mercury				NPS
	Pompton River HUC 14: 02030103110020	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Northeast Water Region WMA 6: 11 TMDLs					
	Passaic R Upr (Rockaway to Hanover RR) HUC 14: 02030103010170	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Whippany R(Lk Pocahontas to Wash Val Rd) HUC 14: 02030103020040	Mercury				NPS
	Troy Brook (above Reynolds Ave) HUC 14: 02030103020080	Mercury				NPS
	Rockaway R (above Longwood Lake outlet) HUC 14: 02030103030030	Mercury				NPS
	Rockaway R (Stephens Bk to Longwood Lake) HUC 14: 02030103030040	Mercury				NPS
	Rockaway R (74d 33m 30s to Stephens Bk) HUC 14: 02030103030070	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Rockaway R (BM 534 brdg to 74d 33m 30s) HUC 14: 02030103030090	Mercury				NPS
	Beaver Brook (Morris County) HUC 14: 02030103030110	Mercury				NPS
	Rockaway R (Stony Brook to BM 534 brdg) HUC 14: 02030103030140	Mercury				NPS
	Rockaway R (Boonton dam to Stony Brook) HUC 14: 02030103030150	Mercury				NPS
	Rockaway R (Passaic R to Boonton dam) HUC 14: 02030103030170	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Raritan Water Region WMA 8: 9 TMDLs					
	Raritan River SB (above Rt 46) HUC 14: 02030105010030	Mercury				NPS
	Raritan River SB(74d 44m 15s to Rt 46) HUC 14: 02030105010040	Mercury				NPS
	Raritan R SB (LongValley br to 74d44m15s) HUC 14: 02030105010050	Mercury				NPS
	Raritan R SB (Califon br to Long Valley) HUC 14: 02030105010060*	Mercury				NPS
	Spruce Run Reservoir/ Willoughby Brook HUC 14: 02030105020040	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Prescott Brook /Round Valley Reservoir HUC 14: 02030105020090	Mercury				NPS
	Raritan R SB (Three Bridges-Prescott Bk) HUC 14: 02030105020100	Mercury				NPS
	Raritan R SB(Pleasant Run-Three Bridges) HUC 14: 02030105040010	Mercury				NPS
	Raritan R SB (NB to Pleasant Run) HUC 14: 02030105040040	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Raritan Water Region WMA 9: 10 TMDLs					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Raritan R Lwr (Rt 206 to NB/ SB) HUC 14: 02030105080020	Mercury				NPS
	Raritan R Lwr (Millstone to Rt 206) HUC 14: 02030105080030	Mercury				NPS
	South Fork of Bound Brook HUC 14: 02030105120080	Mercury				NPS
	Bound Brook (below fork at 74d 25m 15s) HUC 14: 02030105120100	Mercury				NPS
	Raritan R Lwr(I-287 Piscatway-Millstone) HUC 14: 02030105120140	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Lawrence Bk (Church Lane to Deans Pond) HUC 14: 02030105130050	Mercury				NPS
	Lawrence Bk (Milltown to Church Lane) HUC 14: 02030105130060	Mercury				NPS
	Manalapan Bk (incl Lk Manlpn to 40d16m15s) HUC 14: 02030105140020	Mercury				NPS
	Manalapan Brook (below Lake Manalapan) HUC 14: 02030105140030	Mercury				NPS
	Duhernal Lake /Iresick Brook HUC 14: 02030105160030	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Raritan Water Region WMA10: 6 TMDLs					
	Stony Bk (Province Line Rd to 74d46m dam) HUC 14: 02030105090050	Mercury				NPS
	Bear Brook (below Trenton Road) HUC 14: 02030105100130	Mercury				NPS
	Millstone R (Heathcote Bk to Harrison St) HUC 14: 02030105110020	Mercury				NPS
	Millstone R (Blackwells Mills to Beden Bk) HUC 14: 02030105110110	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Millstone R (AmwellRd to Blackwells Mills) HUC 14: 02030105110140	Mercury				NPS
	Millstone River (below Amwell Rd) HUC 14: 02030105110170	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Atlantic Coastal Water Region WMA12: 7 TMDLs					
	Matawan Creek (above Ravine Drive) HUC 14: 02030104060020	Mercury				NPS
	Matawan Creek (below Ravine Drive) HUC 14: 02030104060030	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Swimming River Reservoir/ Slope Bk HUC 14: 02030104070070	Mercury				NPS
	Nut Swamp Brook HUC 14: 02030104070090	Mercury				NPS
	Deal Lake HUC 14: 02030104090030	Mercury				NPS
	Wreck Pond Brook (below Rt 35) HUC 14: 02030104090080	Mercury				NPS
	Manasquan R (gage to West Farms Rd) HUC 14: 02030104100050	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Atlantic Coastal Water Region WMA13: 13 TMDLs					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Metedeconk R SB (Rt 9 to Bennetts Pond) HUC 14: 02040301030040	Mercury				NPS
	Dove Mill Branch (Toms River) HUC 14: 02040301060050	Mercury				NPS
	Shannae Brook HUC 14: 02040301070010	Mercury				NPS
	Ridgeway Br (Hope Chapel Rd to Harris Bridge) HUC 14: 02040301070030	Mercury				NPS
	Ridgeway Br (below Hope Chapel Rd) HUC 14: 02040301070040	Mercury				NPS
	Manapaqua Brook02040301070080	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Union Branch (below Blacks Br 74d22m05s) HUC 14: 02040301070090	Mercury				NPS
	Davenport Branch (above Pinewald Rd) HUC 14: 02040301080030	Mercury				NPS
	Cedar Creek (GS Parkway to 74d16m38s) HUC 14: 02040301090050	Mercury				NPS
	Mill Creek (below GS Parkway) Manahawkin Creek HUC 14: 02040301130030	Mercury				NPS
	Westecunk Creek (above GS Parkway HUC 14: 02040301130050	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Mill Branch (below GS Parkway) HUC 14: 02040301140020	Mercury				NPS
	Tuckerton Creek (below Mill Branch) HUC 14: 02040301140030	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Atlantic Water Region WMA 14: 9 TMDLs					
	Batsto R (Batsto gage to Quaker Bridge) HUC 14: 02040301150080	Mercury				NPS
	Mullica River (Rt 206 to Jackson Road) HUC 14: 02040301160030	Mercury				NPS
	Mullica River (39d40m30s to Rt 206) HUC 14: 02040301160140	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Mullica R (Pleasant Mills to 39d40m30s) HUC 14: 02040301160150	Mercury				NPS
	Oswego R (Andrews Rd to Sim Place Resv) HUC 14: 02040301180060	Mercury				NPS
	Oswego River (below Andrews Road) HUC 14: 02040301180070	Mercury				NPS
	Wading River WB (Jenkins Rd to Rt 563) HUC 14: 02040301190050	Mercury				NPS
	Beaver Branch (Wading River) HUC 14: 02040301200010	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Bass River EB HUC 14: 02040301200050	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Atlantic Coastal Water Region WMA15: 4 TMDLs					
	GEHR (AC Expressway to New Freedom Rd) HUC 14: 02040302030020	Mercury				NPS
	Collings Lakes trib (Hospitality Branch) HUC 14: 02040302040050	Mercury				NPS
	GEHR (Lake Lenape to Mare Run) HUC 14: 02040302040130	Mercury				NPS
	Middle River / Peters Creek HUC 14: 02040302050120	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Atlantic Coastal Water Region WMA16: 2 TMDLs					
	Savages Run (above East Creek Pond HUC 14: 02040206210050	Mercury				NPS
	East Creek HUC 14: 02040206210060	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Lower Delaware Water Region WMA17: 10 TMDLs					
	Salem River (above Woodstown gage) HUC 14: 02040206030010	Mercury				NPS
	Canton Drain (above Maskell Mill) HUC 14: 02040206070030	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Cohansey R (incl Cornwel Run - Beebe Run) HUC 14: 02040206080050	Mercury				NPS
	Cohansey R (Rocaps Run to Cornwell Run) HUC 14: 02040206090030	Mercury				NPS
	Nantuxent Creek (above Newport Landing) HUC 14: 02040206100060	Mercury				NPS
	Scotland Run (above Fries Mill) HUC 14: 02040206130010	Mercury				NPS
	Scotland Run (below Delsea Drive) HUC 14: 02040206130040	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	MauriceR(Blkwtr Br to/incl Willow Grove Lake) HUC 14: 02040206140010	Mercury				NPS
	Muddy Run (incl ParvinLk to Palatine Lake) HUC 14: 02040206150050	Mercury				NPS
	Menantico Creek (below Rt 552) 02040206180050	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Lower Delaware Water Region WMA18: 15 TMDLs					
	Pennsauken Ck NB (incl Strwbrdg Lk-NJTPK) HUC 14: 02040202100020	Mercury				NPS
	Cooper River (above Evesham Rd) HUC 14: 02040202110030	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Cooper R (Wallworth gage to Evesham Rd) HUC 14: 02040202110040	Mercury				NPS
	Cooper River (Rt 130 to Wallworth gage) HUC 14: 02040202110050	Mercury				NPS
	Big Timber Creek NB (above Laurel Rd) HUC 14: 02040202120010	Mercury				NPS
	Big Timber Creek NB (below Laurel Rd) HUC 14: 02040202120020	Mercury				NPS
	Big Timber Creek SB (above Lakeland Rd) HUC 14: 02040202120030	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
2009	Big T Ck SB(incl Bull Run to Lakeland Rd) HUC 14: 02040202120040	Mercury				NPS
	Big Timber Creek SB (below Bull Run) HUC 14: 02040202120050	Mercury				NPS
	Almonesson Creek HUC 14: 02040202120060	Mercury				NPS
	Newton Creek (LDRV-Kaighn Ave to LT Ck) HUC 14: 02040202120090	Mercury				NPS
	Woodbury Creek (above Rt 45) HUC 14: 02040202120100	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Chestnut Branch (above Sewell) HUC 14: 02040202130030	Mercury				NPS
	Raccoon Ck (Rt 45 to/incl Clems Run) HUC 14: 02040202150020	Mercury				NPS
	Raccoon Ck (Russell Mill Rd to Rt 45) HUC 14: 02040202150040	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Lower Delaware Water Region WMA19: 5 TMDLs					
	Bucks Cove Run / Cranberry Branch HUC 14: 02040202030050	Mercury				NPS
	Friendship Ck (below/incl Burrs Mill Bk) HUC 14: 02040202050050	Mercury				NPS

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
	Rancocas Creek SB(above Friendship Ck) HUC 14: 02040202050060	Mercury				NPS
	Rancocas Creek SB (Vincentown - Friendship Ck) HUC 14: 02040202050080	Mercury				NPS
	Rancocas Ck SB (Bobbys Run to Vincentown) HUC 14: 02040202050090	Mercury				NPS
2009	**Total Maximum Daily Load for Mercury Impairments Based on Concentration in Fish Tissue Caused Mainly by Air Deposition to Address 122 HUC 14s Statewide** Lower Delaware Water Region WMA20: 1 TMDL					
	LDRV tribs (Assiscunk Ck to Blacks Ck) HUC 14: 02040201090030	Mercury				NPS
	2009 TMDL TOTAL: 122					

NEW JERSEY TMDLS APPROVED BY EPA						
Federal Fiscal Year	**Waterbody or Water Region**	**Parameter**	**Current Load (kg/yr unless indicated)**	**Target Load (kg/yr unless indicated)**	**% Reduction Required from Reducible Sources**	**Predominant Source: PS/NPS**
TMDL TOTAL TO DATE: 519						

*TMDLs established by EPA
**Impaired HUC is addressed by TMDL Target set at Wanaque Reservoir Endpoint
***Impaired HUC addressed by TMDL Target set at Dundee Lake Endpoint

APPENDIX II - NPS Delistings

WMA	Assessment Unit ID	Assessment Unit Name	Parameter Delisted
2	02020007010030-01	Deer Trail Lake-02	Pathogens
2	02020007010040-01	Wallkill River (Hamburg SW Body to Ogdensburg)	Phosphorus
2	02020007010050-01	Crystal Springs-02	Pathogens
2	02020007010070-01	Wallkill River (Martins Rd to Hamburg SW Body)	Phosphorus
2	02020007020070-01	Papakating Creek (below Pellettown)	Nitrate
2	02020007030010-01	Sleep Valley Lake	Pathogens
6	02030103010060-01	Black Brook (Great Swamp NWR)	Phosphorus
6	02030103010080-01	Dead River (above Harrisons Brook)	Phosphorus
6	02030103010100-01	Dead River (below Harrisons Brook)	Phosphorus
6	02030103010110-01	Passaic River Upr (Plainfield Rd to Dead R)	Phosphorus
6	02030103010120-01	Passaic River Upr (Snyder to Plainfield Rd)	Phosphorus
6	02030103010130-01	Passaic River Upr (40d 45m to Snyder Ave)	Phosphorus
6	02030103010150-01	Passaic River Upr (Columbia Rd to 40d 45m)	Phosphorus
6	02030103010160-01	Passaic River Upr (Hanover RR to Columbia Rd)	Phosphorus
6	02030103010170-01	Passaic River Upr (Rockaway to Hanover RR)	Phosphorus
6	02030103010180-01	Passaic River Upr (Pine Bk br to Rockaway R)	Phosphorus
6	02030103020010-01	Whippany River (above road at 74d 33m)	Temperature
6	02030103020020-01	Whippany River (Wash Valley Rd to 74d 33m)	Temperature
6	02030103020020-01	Sunrise Lake-06	Pathogens
6	02030103020030-01	Powder Mill Pond-06	Pathogens
6	02030103020040-01	Whippany R (Lk Pocahontas to Wash Val Rd)	Phosphorus
6	02030103020050-01	Whippany R (Malapardis to Lk Pocahontas)	Phosphorus
6	02030103020080-01	Mountain Lake-06	Pathogens
6	02030103020080-01	Parsippany Lake-06	Pathogens
6	02030103020080-01	Rainbow Lakes-06	Pathogens
6	02030103020100-01	Whippany River (Rockaway R to Malapardis Bk)	DO
6	02030103020100-01	Whippany River (Rockaway R to Malapardis Bk)	Phosphorus
6	02030103030020-01	Lake Swannanoa-06	Pathogens
6	02030103030030-01	Cozy Lake-06	Pathogens
6	02030103030090-01	Foxs Pond-06	Pathogens
6	02030103030100-01	Telemark Lake-06	Pathogens
6	02030103030110-01	Camp Lewis-06	Pathogens
6	02030103030110-01	White Meadow Lake-06	Pathogens
6	02030103030120-01	Indian Lake-06	Pathogens
6	02030103030130-01	West Lake-06	Pathogens
6	02030103030170-01	Rockaway River (Passaic R to Boonton dam)	Phosphorus
6	02030103040010-01	Passaic River Upr (Pompton R to Pine Bk)	Phosphorus
3	02030103050070-01	Lake Edenwold-03	Pathogens
3	02030103050080-01	Pequannock River (below Macopin gage)	Temperature
3	02030103050080-01	Forest Hill Lake-03	Pathogens
1	02030103070010-01	Green Valley Beach Campground	Pathogens
3	02030103070010-01	Bubbling Springs-03	Pathogens
3	02030103070020-01	Belcher Creek (Pinecliff Lake & below)	Temperature
3	02030103070030-01	Greenwood Lake-03	TSS
3	02030103070030-01	Greenwood Lake-03	DO
3	02030103070040-01	Kitchell Lake-03	Pathogens
3	02030103070050-01	Wanaque Reservoir (below Monks gage)	Phosphorus
3	02030103070060-01	Skyline Lakes-03	Pathogens

3	02030103070070-01	Wanaque River /Posts Bk (below reservoir)	Phosphorus
3	02030103070070-01	Lake Ioscoe-03	Pathogens
3	02030103100010-01	Ramapo River (above 74d 11m 00s)	Phosphorus
3	02030103100060-01	Crystal Lake-03	Pathogens
3	02030103100070-01	Ramapo River (below Crytal Lake bridge)	Phosphorus
3	02030103100070-01	Lionhead Lake-03	Pathogens
3	02030103110010-01	Lincoln Park tribs (Pompton River)	Phosphorus
3	02030103110020-01	Pompton River	Phosphorus
4	02030103120030-01	Toms Lake-04	Pathogens
4	02030103120070-01	Passaic River Lwr (Fair Lawn Ave to Goffle)	Phosphorus
4	02030103120070-01	Passaic River Lwr (Fair Lawn Ave to Goffle)	Pathogens
4	02030103120080-01	Passaic River Lwr (Dundee Dam to F.L. Ave)	Pathogens
4	02030103120080-01	Passaic River Lwr (Dundee Dam to F.L. Ave)	Phosphorus
4	02030103120090-01	Passaic River Lwr (Saddle R to Dundee Dam)	Pathogens
4	02030103120100-01	Passaic River Lwr (Goffle Bk to Pompton R)	Pathogens
4	02030103120100-01	Passaic River Lwr (Goffle Bk to Pompton R)	Phosphorus
4	02030103140040-01	Saddle River (above Rt 17)	pH
4	02030103140050-01	Saddle River (Rt 4 to Rt 17)	TDS
4	02030103140050-01	Saddle River (Rt 4 to Rt 17)	pH
4	02030103150030-01	Passaic River Lwr (Second R to Saddle R)	Phosphorus
4	02030103150040-01	Passaic River Lwr (4th St br to Second R)	Pathogens
4	02030103150050-01	Passaic River Lwr (Nwk Bay to 4th St Br)	Pathogens
4	02030103150050-01	Passaic River Lwr (Nwk Bay to 4th St Br)	pH
5	02030103180030-01	Hackensack River (Ft Lee Rd to Oradell gage)	Phosphorus
5	02030103180030-01	Hackensack River (Ft Lee Rd to Oradell gage)	TSS
5	02030103180050-01	Hackensack River (Bellmans Ck to Ft Lee Rd)	Pathogens
12	02030104060010-01	Cheesequake Creek / Whale Creek	DO
12	02030104060010-01	Hooks Creek Lake-12	Pathogens
12	02030104060020-01	Matawan Creek (above Ravine Drive)	pH
12	02030104060030-01	Matawan Creek (below Ravine Drive)	DO
12	02030104060040-01	Chingarora Creek to Thorns Creek	DO
12	02030104060060-01	Pews Creek to Shrewsbury River	DO
12	02030104060060-01	Pews Creek to Shrewsbury River	Pathogens
12	02030104070020-01	Willow Brook	Pathogens
12	02030104070050-01	Mine Brook (Monmouth Co)	pH
12	02030104070070-01	Swimming River Reservoir / Slope Brook	Pathogens
12	02030104070070-01	Swimming River Reservoir / Slope Brook	pH
12	02030104070080-01	Pine Brook / Hockhockson Brook	pH
12	02030104070110-01	Navesink River (below Rt 35)/Lower Shrewsbury	pH
12	02030104090010-01	Whale Pond Brook	pH
12	02030104090010-01	Lake Takanassee-12	Pathogens
12	02030104090010-01	Lake Takanassee-12	Phosphorus
12	02030104090030-01	Deal Lake-12	Pathogens
12	02030104090060-01	Shark River (below Remsen Mill gage)	pH
12	02030104090080-01	Wreck Pond Brook (below Rt 35)	pH
12	02030104100030-01	Manasquan River (West Farms Rd to Rt 9)	pH
12	02030104100040-01	Marsh Bog Brook	pH
12	02030104100050-01	Manasquan River (gage to West Farms Rd)	pH
12	02030104100060-01	Mingamahone Brook (above Asbury Rd)	pH
12	02030104100080-01	Manasquan River (74d07m30s to Squankum gage	pH
12	02030104100090-01	Manasquan River (Rt 70 Br to 74d07m30s)	DO
12	02030104920010-01	Atlantic Coast (Sandy H to Navesink R) inshore	Pathogens
12	02030104920010-02	Atlantic Coast (Sandy H to Navesink R) offshore	Pathogens

12	02030104920020-01	Atlantic Coast (Navesink R to Whale Pond) inshore	Pathogens
21	02030104920020-02	Atlantic Coast (Navesink R to Whale Pond) offshore	Pathogens
8	02030105010030-01	Budd Lake-08	Pathogens
8	02030105010050-01	Raritan River SB (Long Valley Br to 74d44m15s)	Phosphorus
8	02030105010060-01	Raritan River SB (Califon Br to Long Valley)	Phosphorus
8	02030105010070-01	Raritan River SB (Stone Mill gage to Califon)	Phosphorus
8	02030105020060-01	Cakepoulin Creek	Phosphorus
8	02030105020080-01	Raritan River SB (Prescott Bk to River Rd)	pH
8	02030105020100-01	Raritan River SB (Three Bridges-Prescott Bk)	pH
8	02030105050010-01	Randolph Park Lake-08	Pathogens
8	02030105050070-01	Lamington R (Halls Br Rd-Pottersville gage)	Phosphorus
8	02030105050100-01	Rockaway Creek SB	Temperature
8	02030105060040-01	Ravine Lake-08 (Sommerset Lake)	Pathogens
8	02030105070010-01	Raritan River NB (Rt 28 to Lamington R)	Phosphorus
8	02030105070010-01	Sunset Lake-08	Pathogens
8	02030105070030-01	Raritan River NB (below Rt 28)	Phosphorus
10	02030105090050-01	Stony Brook (Province Line Rd to 74d46m dam)	TSS
10	02030105090060-01	Stony Brook (Rt 206 to Province Line Rd)	TSS
10	02030105090070-01	Stony Brook (Harrison St to Rt 206)	TSS
10	02030105100010-01	Millstone River (above Rt 33)	pH
10	02030105100020-01	Millstone River (Applegarth Road to Rt 33)	pH
10	02030105100050-01	Rocky Brook (below Monmouth Co line)	pH
10	02030105100060-01	Millstone River (Cranbury Bk to Rocky Bk)	pH
10	02030105100070-01	Cranbury Brook (above NJ Turnpike)	pH
10	02030105100090-01	Cranbury Brook (below NJ Turnpike)	pH
10	02030105110060-01	Rock Brook (above Camp Meeting Ave)	Pathogens
9	02030105130040-01	Ireland Brook	Pathogens
9	02030105140010-01	Manalapan Brook (above 40d 16m 15s)	pH
9	02030105140020-01	Manalapan Brook (incl Lk Manalpan to 40d16m15s)	pH
9	02030105140030-01	Manalapan Brook (below Lake Manalapan)	pH
9	02030105150010-01	Weamaconk Creek	pH
9	02030105150020-01	McGellairds Brook (above Taylors Mills)	Phosphorus
9	02030105150020-01	McGellairds Brook (above Taylors Mills)	pH
9	02030105150030-01	McGellairds Brook (below Taylors Mills)	pH
9	02030105150060-01	Matchaponix Brook (below Pine Brook)	pH
9	02030105160010-01	Deep Run (above Monmouth Co line)	pH
9	02030105160020-01	Deep Run (Rt 9 to Monmouth Co line)	pH
9	02030105160040-01	Deep Run (below Rt 9)	pH
1	02040104090020-01	Clove Brook (Delaware R)	Temperature
1	02040104130010-01	Little Flat Brook (Beerskill and above)	Phosphorus
1	02040104130020-01	Little Flat Brook (Layton to Beerskill)	Phosphorus
1	02040104130030-01	Little Flat Brook (Confluence to Layton)	Phosphorus
1	02040104140020-01	Forked Brook/Parker Brook	Temperature
1	02040104140030-01	Big Flat Brook (Kittle Rd to Forked Bk)	Temperature
1	02040104140040-01	Big Flat Brook (Confluence to Kittle Rd)	Temperature
1	02040104240020-01	Dunnfield Creek (incl UDRV)	pH
1	02040105040050-01	Fox Hollow Lake-01	Pathogens
1	02040105070020-01	Forest Lake-01	Pathogens
1	02040105090050-01	Furnace Lake-01	Pathogens
1	02040105100020-01	Honey Run	Temperature
1	02040105150020-01	Lake Hopatcong-01	Pathogens
1	02040105150020-01	Lake Winona-01	Pathogens
1	02040105150050-01	Lackawanna Lake-01	Pathogens

1	02040105150070-01	Musconetcong River (Waterloo to/incl Wills Bk)	Phosphorus
11	02040105230030-01	New Sharon Branch (Assunpink Creek)	pH
11	02040105240030-01	Miry Run (Assunpink Cr)	pH
11	02040105240030-01	Miry Run (Assunpink Cr)	Phosphorus
20	02040201040050-01	South Run (North Run to Jumping Brook)	pH
20	02040201050040-01	Crosswicks Creek (Walnford to Lahaway Ck)	pH
20	02040201050040-01	Crosswicks Creek (Walnford to Lahaway Ck)	TSS
20	02040201050050-01	Crosswicks Creek (Ellisdale trib - Walnford)	pH
20	02040201050050-01	Crosswicks Creek (Ellisdale trib - Walnford)	TSS
20	02040201060020-01	Doctors Creek (Allentown to 74d28m40s)	pH
20	02040201060030-01	Doctors Creek (below Allentown)	Phosphorus
20	02040201070020-01	Crosswicks Creek (below Doctors Creek)	TSS
20	02040201080020-01	Blacks Creek (Bacons Run to 40d06m10s)	pH
20	02040201090010-01	Crafts Creek (above Rt 206)	pH
20	02040201090020-01	Crafts Creek (below Rt 206)	pH
20	02040201100010-01	Assiscunk Creek (above Rt 206)	pH
20	02040201100010-01	Assiscunk Creek (above Rt 206)	Phosphorus
20	02040201100020-01	Barkers Brook (above 40d02m30s)	pH
20	02040201100020-01	Barkers Brook (above 40d02m30s)	Phosphorus
20	02040201100040-01	Assiscunk Creek (Jacksonville Rd to Rt 206)	pH
20	02040201100050-01	Assiscunk Creek (Neck Rd to Jacksonville Rd)	pH
20	02040201110010-01	Upper Sylvan Lake-20	Pathogens
19	02040202030020-01	Mount Misery Brook NB (above 74d27m30s dam)	Pathogens
19	02040202030030-01	Mount Misery Brook MB/NB (below 74d27m30s)	Pathogens
19	02040202030040-01	Mount Misery Brook SB	Pathogens
19	02040202030090-01	Greenwood Brook (below Country Lk & MM confl)	Pathogens
19	02040202040010-01	Rancocas Creek NB (Pemberton Br to NL dam)	Phosphorus
19	02040202040030-01	Rancocas Creek NB (Rt 206 to Pemberton Br)	pH
19	02040202040030-01	Rancocas Creek NB (Rt 206 to Pemberton Br)	TSS
19	02040202040040-01	Rancocas Creek NB (Smithville to Rt 206)	pH
19	02040202040050-01	Rancocas Creek NB (below Smithville)	pH
19	02040202050090-01	Rancocas Creek SB (Bobbys Run to Vincentown)	Pathogens
2	02040202060030-01	Lake Mohawk-02	Pathogens
19	02040202060030-01	Timber Lake-19	Pathogens
19	02040202060040-01	Sturbridge Lake-19	Pathogens
19	02040202060050-01	Lake James-19	Pathogens
19	02040202060070-01	Little Creek (above Bear Swamp River)	Pathogens
19	02040202060070-01	Little Creek (above Bear Swamp River)	pH
19	02040202060100-01	Lake Coxtoxen-19	Pathogens
19	02040202080030-01	Mill Creek (Willingboro)	Phosphorus
18	02040202100020-01	Pennsauken Creek NB (incl Strwbrdg Lk-NJTPK)	Phosphorus
18	02040202100020-01	Strawbridge Lake-18	Pathogens
18	02040202100030-01	Pennsauken Creek NB (below Strawbridge Lk)	Phosphorus
18	02040202110010-01	Cooper River NB (above Springdale Road)	pH
18	02040202110020-01	Cooper River NB (below Springdale Road)	pH
18	02040202110030-01	Lake Silvestro-18	Pathogens
18	02040202110060-01	Cooper River (below Rt 130)	Phosphorus
18	02040202120090-01	Newton Creek (LDRV-Kaighn Ave to LT Ck)	Temperature
18	02040202160010-01	Oldmans Creek (above Commissioners Rd)	pH
18	02040202160020-01	Oldmans Creek (Rt45 to Commissioners Rd)	pH
18	02040202160050-01	Oldmans Creek (Center Sq Rd to Kings Hwy)	Phosphorus
17	02040204910030-01	Gandy's Beach	Pathogens
17	02040206030010-01	4 Seasons Campground Pond-17	Pathogens

17	02040206070060-01	Stow Creek (Canton Road to Jericho Road)	DO
17	02040206070070-01	Raccoon Ditch (Stow Creek)	DO
17	02040206070080-01	Stow Creek (below Canton Rd)	DO
17	02040206080010-01	Cohansey River (above Beals Mill)	pH
17	02040206080020-01	Cohansey River (incl Hands Pond - Beals Mill)	pH
17	02040206080040-01	Cohansey River (incl Beebe Run to Hands Pond)	pH
17	02040206080050-01	Cohansey River (incl Cornwell Run - Beebe Run)	pH
17	02040206090030-01	Sunset Lake-17	Pathogens
17	02040206100040-01	Cedar Lake-17	Pathogens
17	02040206100060-01	Nantuxent Creek (above Newport Landing)	pH
17	02040206110030-01	Oranoaken Creek	DO
17	02040206120020-01	Eastern Gate Lake-17	Pathogens
17	02040206120020-01	Franklinville Lake-17	Pathogens
17	02040206120040-01	Holly Green Campground Pond-17	Pathogens
17	02040206120050-01	Still Run (Willow Grove Lk - Silver Lake Rd)	pH
17	02040206120050-01	Iona Lake-17	Pathogens
17	02040206130010-01	Wilson Lake-17	Pathogens
17	02040206130030-01	Indian Branch (Scotland Run)	pH
17	02040206130040-01	Malaga Lake-17	Pathogens
17	02040206140010-01	Maurice River (Blkwtr Br to/incl Willow Grove Lk)	pH
17	02040206140040-01	Blackwater Branch (above/incl Pine Br)	pH
17	02040206140050-01	Blackwater Branch (below Pine Branch)	pH
17	02040206140060-01	Maurice River (Sherman Ave to Blackwater Br)	pH
17	02040206150030-01	Palatine Branch (Muddy Run)	pH
17	02040206150030-01	Palatine Branch (Muddy Run)	Phosphorus
17	02040206150050-01	Parvin Lake-17	Pathogens
17	02040206160030-01	Maurice River (Union Lake to Sherman Ave)	pH
17	02040206170020-01	White Marsh Run (Millville)	pH
17	02040206180050-01	Menantico Creek (below Rt 552)	pH
16	02040206220030-01	Dennis Creek (Jakes Landing Rd to Rt 47)	pH
16	02040206220040-01	Dennis Creek (below Jakes Landing Rd)	pH
16	02040206230040-01	Green Creek (Norburys Landing to Pierces Pt)	pH
16	02040206230050-01	Fishing Creek / Fishing Mill Stream	pH
13	02040301020010-01	Metedeconk River NB (above I-195)	pH
13	02040301020020-01	Metedeconk River NB (Rt 9 to I-195)	pH
13	02040301020020-01	Metedeconk River NB (Rt 9 to I-195)	Phosphorus
13	02040301020030-01	Haystack Brook	pH
13	02040301020030-01	Haystack Brook	Phosphorus
13	02040301020040-01	Muddy Ford Brook	pH
13	02040301020050-01	Metedeconk River NB (confluence to Rt 9)	pH
13	02040301020050-01	Ocean County Park Lake-13	Pathogens
13	02040301030010-01	Metedeconk River SB (above I-195 exit 21 rd)	pH
13	02040301030020-01	Metedeconk River SB (74d19m15s to I-195 X21)	pH
13	02040301030030-01	Metedeconk River SB (Bennetts Pond to 74d19m15s)	pH
13	02040301030040-01	Metedeconk River SB (Rt 9 to Bennetts Pond)	pH
13	02040301030040-01	Metedeconk River SB (Rt 9 to Bennetts Pond)	Phosphorus
13	02040301030040-01	Carasaljo Lake-13	Pathogens
13	02040301030050-01	Metedeconk River SB (confluence to Rt 9)	pH
13	02040301040020-01	Metedeconk River (Beaverdam Creek to confl)	pH
13	02040301060010-01	Toms River (above Francis Mills)	pH
13	02040301060060-01	Toms River (Hope Chapel Rd to Bowman Rd)	pH
13	02040301060070-01	Toms River (Rt 70 to Hope Chapel Road)	pH
13	02040301060080-01	Toms River (Oak Ridge Parkway to Rt 70)	pH

13	02040301070040-01	Ridgeway Brook (below Hope Chapel Rd)	pH
6	02040301070040-01	Pond at Conference Center (Left & Rt.)	Pathogens
13	02040301070090-01	Pine Lake-13	Pathogens
13	02040301080050-01	Wrangel Brook (below Michaels Branch)	pH
13	02040301080060-01	Toms River Lwr (Rt 166 to Oak Ridge Pkwy)	pH
13	02040301090030-01	Bamber Lake-13	Pathogens
13	02040301090060-01	Cedar Creek (below GS Parkway)	pH
13	02040301110020-01	Deer Head Lake-13	Pathogens
13	02040301110020-01	Lake Barnegat-13	Pathogens
13	02040301110050-01	Oyster Creek (below Rt 532)	DO
13	02040301120010-01	Waretown Creek / Lochiel Creek	pH
13	02040301120010-01	Ocean Twp Bathing Beach-13	Pathogens
13	02040301130010-01	Holiday Lake-13	Pathogens
13	02040301130030-01	Manahawkin Lake-13	Pathogens
13	02040301130040-01	Cedar Run	pH
13	02040301140020-01	Mill Branch (below GS Parkway)	pH
13	02040301140040-01	LEH Bay tribs (Westecunk Ck-Tuckerton Ck)	DO
6	02040301150030-01	Intervale Lake-06	Pathogens
14	02040301170010-01	Hammonton Lake-14	Pathogens
14	02040301170080-01	Mullica River (Lower Bank Rd to Rt 563)	Pathogens
14	02040301200020-01	Wading River (Rt 542 to Oswego River)	DO
14	02040301200030-02	Wading River (below Rt 542)	DO
17	02040301200050-02	Albert Giampietro-17	Phosphorus
14	02040301200110-02	Mattix Run (Nacote Creek)	pH
15	02040302030030-01	Four Mile Branch (GEHR)	pH
15	02040302040070-01	Braddock Lake-15	Pathogens
15	02040302040070-01	Cushman Lake-15	Pathogens
15	02040302040120-01	Buena Vista CG-15	Pathogens
15	02040302050010-01	Watering Race Branch (Babcock Creek)	pH
15	02040302060010-01	Mill Brook (above Cardiff-Bargaintown Rd)	pH
15	02040302060020-01	Maple Run/Mill Brook (Zion Rd to Cardiff rd)	pH
15	02040302070050-01	Tarkiln Brook (Tuckahoe River)	pH
16	02040302080080-01	Lake Laurie-16	Pathogens
Zone 1	Delaware River 11	Delaware River 1E2	Pathogens
Zone 1	Delaware River 12	Delaware River 1E3	Pathogens
Zone 1	Delaware River 13	Delaware River 1E4	Pathogens
Zone 1	Delaware River 14	Delaware River 1E5	Pathogens
Zone 2	Delaware River 15	Delaware River 2	Pathogens
Zone 1	Delaware River 5	Delaware River 1D2	TDS
Zone 1	Delaware River 6	Delaware River 1D3	Pathogens
Zone 1	Delaware River 7	Delaware River 1D4	TDS
Zone 1	Delaware River 8	Delaware River 1D5	TDS
Zone 1	Delaware River 9	Delaware River 1D6	Pathogens

DO = Dissolved Oxygen
TSS = Total Suspended Solids
TDS = Total dissolved solids

APPENDIX III - Grant Reporting and Tracking System (GRTS) Reductions

2008 GRTS NPS REDUCTIONS							
Project Number	**Waterbody**	**Location**	**BMP**	**Nitrogen Reduction (lbs/yr)**	**Phosphorus Reduction (lbs/yr)**	**Sediment Reduction (tons/yr)**	**Funding Source**
RP07-050	Cooper River	Cherry Hill Township	Urban Catch Basin	1,554	232	63	319(h)
RP04-113	Morris Wetlands	Wharton Boro	Wetland Enhancement	15.8	5.6	1.5	319(h)
Healthy Lawns/ Fertilizer MOU	Statewide	Statewide	Low-Phosphorus Fertilizer	0	171,770	0	CBT
		TOTAL Load Reduction for FY 2008		**1,570.2**	**172,007.6**	**64.5**	

2009 GRTS NPS REDUCTIONS

Project Number	Waterbody	Location	BMP	Nitrogen Reduction (lbs/yr)	Phosphorus Reduction (lbs/yr)	Sediment Reduction (tons/yr)	Funding Source
RP04-002 (Grant Agreement completed)	Wallkill River	Wallkill River National Wildlife Refuge, Sussex County	Riparian buffer-vegetation & streambank/shore line protection	21.2	8.2	13.3	319(h)
RP04-081	Greenwood Lake	Passaic County	Weed harvesting	0	360	0	319(h)
RP05-080 (More BMPs anticipated SFY10 - 11)	Lake Hopatcong	Hopatcong & Mt. Arlington Boros; Jefferson & Roxbury Twps.	Two manufactured treatment devices	116.6	9.6	5.0	319(h)
RP05-087	Jackson Brook, Rockaway River	Hurd Park, Town of Dover	Riparian buffer & streambank restoration	153.5	59.1	112.9	319(h)
RP07-015 (More BMPs anticipated SFY10 - 11)	Delaware & Raritan Canal	Franklin Twp. & South Bound Brook Boro	Urban wet pond	61.1	9.8	2.1	319(h)/CBT
RP08-051 (More BMPs anticipated SFY10 - 11)	Lake Musconetcong	Morris & Sussex Counties	Weed harvesting	0	705.2	0	319(h)
RP08-056 (More BMPs anticipated SFY10 - 11)	Troy Brook (Passaic River Basin)	Morris County	Rain garden (bioretention) and pervious pavers	38.2	5.6	1.9	319(h)
		TOTAL Load Reduction for FY 2009		**390.6**	**1,157.5**	**135.2**	

APPENDIX IV - Watershed-Based Plans

WATERSHED-BASED PLANS STATUS SFY 2002-2009					
RP #	**SFY**	**Project Title**	**Anticipated Completion Date**	**Grantee**	**Amount ($)**
RP02-074	2002	Beaver Brook/Hibernia Brook Stormwater Management Plan	Completed January 2006	Morris County Planning	74,840
RP02-085	2002	Delaware and Raritan Canal Tributary Assessment and NPS Management	Completed July 2005	New Jersey Water Supply Authority	61,215
RP03-018	2002	Phase 1 Diagnostic –Feasibility Study of Lake Carasaljo	Completed April 2006	Dover Township	100,000
RP04-003	2003	Pequannock River Temperature Impairment: Characterization, Assessment and Management Plan	Completed November 2006	Pequannock River Coalition	23,105
RP04-005	2003	Regional Stormwater Management Plan for Troy Brook	Completed December 2007	Rutgers Cooperative Extension	213,400
RP04-008	2003	Development of a Regional Stormwater Management Plan for the Raccoon Creek	Completed October 2008	Camden and Gloucester County Soil Conservation Districts	637,174
RP04-010	2003	Regional Stormwater Management Plan for Robinson's Branch	Completed March 2008	Rutgers Cooperative Extension	291,124
RP04-011	2003	Stormwater Management Plan for the Cedar Grove (Al's) Brook Watershed	September 2010	Franklin Township	150,000
RP04-012	2003	Urban Stormwater Retrofit in the City of Trenton	Completed June 2006	City of Trenton	75,000
RP04-014	2003	Ramanessin Brook NPS Source Assessment and Stormwater Impact Study	Completed August 2007	Monmouth County Planning Board	177,500
RP04-016	2003	Watershed Restoration Plan for the Upper Salem River - Phase I	January 2010	Salem County Soil Conservation District	63,220
RP04-081	2004	Lake Characterization and Restoration Plan for Greenwood Lake, Passaic County, New Jersey	November 2011	West Milford Township	152,330

RP04-083	2004	Many Mind Creek Regional Stormwater Management Plan	Completed March 2009	Atlantic Highlands Environmental Commission	87,833
RP04-087	2004	Regional Stormwater Management Plan for Pompeston Creek, Burlington County, New Jersey	Completed June 2008	Rutgers, The State University	249,570
RP04-082	2004	Regional Stormwater Management Plan for the Deal Lake Watershed for the Purpose of Managing Existing and Future Stormwater Impact	Completed December 2009	Deal Lake Commission c/o Borough of Allenhurst	99,400
RP06-071	2006	Modification to RP04-082 above - More funding granted.	Completed December 2009	Deal Lake Commission c/o Borough of Allenhurst	10,781
RP04-084	2004	A Proposal to Prepare a Regional Stormwater Management Plan for the Sourland Mountain Watershed	Completed January 2009	East Amwell Township	92,470
RP06-074	2006	Modification to RP04-084 above - More funding granted.	Completed January 2009	East Amwell Township	18,102
RP04-085	2004	A Regional Stormwater Management Plan for the Devils, Shallow, Cedar and Cranbury Brooks Watershed	March 2011	Middlesex Planning Department	286,200
RP04-088	2004	A Regional Stormwater Management Plan for the Pleasant Run Watershed	May 2010	Readington Township	52,560
RP06-065	2006	Modification to RP04-088 - More funding granted.	May 2010	Readington Township	4,960
RP04-089	2004	Development of a Regional Stormwater Management Plan for the Upper Mantua Creek	Completed October 2008	Camden County Soil Conservation District	503,065
RP05-079	2005	Watershed Restoration Plan for the Upper Cohansey River Watershed	September 2009	Rutgers, The State University	310,640
RP05-082	2005	Watershed Restoration and Protection Plan for Lockatong and Wickecheoke Creek Watersheds, Hunterdon County, New Jersey	Completed September 2009	New Jersey Water Supply Authority	237,290
RP05-084	2005	Watershed Protection Plan for the Alexauken Creek Watershed (including the 9 minimum components)	February 2010	West Amwell Environmental Commission	239,300

N/A		Refined Phosphorus TMDL and Restoration Plan for Lake Hopatcong and Lake Musconetcong (CBT-funded)	Completed July 2006	Princeton Hydro, LLC	94,000
RP05-088	2005	Watershed Restoration Plan for the Papakating Creek and the Surrounding Watershed (including the 9 minimum components)	Completed January 2009	Wallkill River Watershed Management Group	168,850
RP05-090	2005	Watershed Restoration Plan for Clove Acres Lake and the Surrounding Lakeshed (including the 9 minimum components)	Completed December 2008	Wallkill River Watershed Management Group	138,050
RP07-024	2005	Watershed Restoration Plan for the Upper Salem River Watershed (including the 9 minimum components)	January 2010	Rutgers, the State University	316,925
RP07-071	2006	Assiscunk Creek Headwater Restoration and Protection Plan (including the 9 minimum components)	May 2011	Burlington County Bridge Commission	362,230
RP06-068	2006	Neshanic River Watershed Restoration Plan (including the 9 minimum components)	March 2011	New Jersey Institute of Technology (NJIT)	435,715
RP07-016	2006	Mingamahone and Marsh Bog Brook Watershed Restoration and Protection Plan (including the 9 minimum components)	June 2010	Manasquan River Watershed Association	178,500
RP07-003	2006	Development of a Watershed Protection Plan for the Sidney Brook Watershed (including the 9 minimum components)	June 2011	Union Township Environmental Commission	237,362
RP07-001	2006	Tenakill Brook Watershed Restoration Plan (including the 9 minimum components)	September 2011	Rutgers Cooperative Research & Extension Water Resources Program	303,200
RP07-002	2006	Musquapsink Brook Watershed Restoration Plan (including the 9 minimum components)	September 2011	Rutgers Cooperative Research & Extension Water Resources Program	317,955

RP06-073	2006	Watershed Restoration and Protection Plan for the Musconetcong Watershed - Hampton to Bloomsbury (including the 9 minimum components)	January 2012	North Jersey Resource Conservation and Development Council, Inc.	297,191
N/A		Upper Rockaway River Priority Stream Segment Plan	Completed January 2006	Rockaway River Watershed Cabinet	25,000
N/A		Wreck Pond CBT-funded Regional Stormwater Management Plan	Completed September 2008	Monmouth County	350,000
RP07-070	2006	Watershed Restoration Plan for the Paulins Kill Headwaters to Balesville Phase I	June 2011	Sussex County MUA	74,000

APPENDIX V - Project Implementation

PROJECT IMPLEMENTATION INITIATED FROM THE APPROVED WATERSHED-BASED PLANS					
RP #	**SFY**	**Project Title**	**Grantee**	**Amount ($)**	**Funding Source**
RP05-087	2004	Hurd Park Goose Management and Shoreline Restoration Project (goose management plan and implementation, approximately 3,000 linear feet of shoreline stabilized, approximately 1.5 acres of buffer installed)	Rockaway River Watershed Cabinet	210,000	319(h)
RP05-080	2005	*Implementation of Nonpoint Source Management Measures to Reduce the Phosphorus and Sediment Loads Entering Lake Hopatcong (installation of stormwater BMPs in Hopatcong and Jefferson) (Lake Hopatcong)	Lake Hopatcong Commission	844,500	319(h)
RP06-069	2006	Demonstration Project to Support TMDL Implementation for the Pequannock River	Pequannock River Coalition	24,500	319(h)
RP07-022	2006	Implementation of Golf Course Best Management Practices at Bey Lea Municipal Golf Course (construction of vegetative buffers along four in-line ponds) (Barnegat Bay National Estuary Program)	Ocean County College	290,490	319(h)
RP07-021	2006	Wetland Enhancement and Riparian Corridor Restoration at the Ocean County Vocational Technical School, Dover Township Campus (reestablishment of vegetative buffer and enhancement of previously disturbed wetland) (Barnegat Bay National Estuary Program)	Ocean County College	144,843	319(h)
RP04-001 MOA	2006	Swartswood State Park Implementation Project (Parking lot retrofit to reduce runoff, including stormwater BMPs such as biofiltration islands)	Division of Parks and Forestry - Swartswood State Park	255,000	319(h)
RP06-069	2006	**Demonstration Project to Support TMDL Implementation for the Pequannock River (bypass of impoundment at Westbrook, project to address temperature impairment) (Pequannock River Temperature TMDL)	Pequannock River Coalition	24,500	319(h)
N/A	2006	Wreck Pond CBT-funded Stormwater Retrofit Project	Monmouth County	1,000,000	CBT

RP07-015 MOA	2006	Phase 1 Implementation Project from the Delaware and Raritan Canal Tributary Assessment and NPS Management Watershed Restoration and Protection Plan	New Jersey Water Supply Authority	175,000	319(h)
RP07-015 MOA	2006	Phase 2 Implementation Project from the Delaware and Raritan Canal Tributary Assessment and NPS Management Watershed Restoration and Protection Plan	New Jersey Water Supply Authority	175,000	319(h)
RP07-050	2007	Cooper River Stormwater Basin Retrofit and Renovation	Camden County Soil Conservation District	$171,185	319(h)
RP07-052	2007	Initiate Stormwater Implementation Projects for Greenwood Lake	West Milford Township	$913,600	319(h)
RP07-053	2007	Installation of Stormwater Quality Management Structures in the Beaver Brook Watershed	Rockaway Township	$158,200	319(h)
RP07-049	2007	Restoration of Petty's Run Segment at Magic Marker, City of Trenton	City of Trenton	$1,273,563	319(h)
RP07-051	2007	Saddler's Woods Restoration Project Phase I	Delaware Riverkeeper Network	$302,260	319(h)
RP07-015	2007	Implementation of the D&R Canal Watershed Restoration Plan MOA - Phase II (10 outfalls), Amendment #1	New Jersey Water Supply Authority	$72,450 319(h) plus $1,738,348 CBT	319(h) & CBT
RP07-056	2007	Implementation of a Bathymetric Survey for Lake Musconetcong	Lake Musconetcong Regional Planning Board	$96,360	319(h)
RP07-054	2007	Ramanessin Brook Stormwater Mgt and Stream Restoration Projects Phase I	Monmouth County (Planning Board)	$300,000	319(h)
RP07-057	2007	Sub-Watershed Action Project – Long Swamp Creek	Ocean County Soil Conservation District	$256,150	CBT
RP07-064	2007	Implementation of the Lake Hopatcong Nonpoint Source Management Plan	Lake Hopatcong Commission	$1,055,502	CBT

N/A	2007	Pequannock River Restoration Project	City of Newark	$1,000,000	CBT
RP08-022	2007	Wreck Pond Restoration	Township of Wall	$750,000	CBT
RP08-010	2007	Wreck Pond Restoration	Spring Lake Golf Club	$200,000	CBT
RP08-051	2008	Implementation of Weed Harvesting as a Management Measure	Lake Musconetcong Regional Planning Board	$45,000	319(h)
RP08-052	2008	Pequannock River Dam Removal Project	Pequannock River Coalition	$ 32,000	319(h)
RP08-053	2008	Watershed Based Plan Implementation Project - Loantaka Brook/Kitchell Pond Shoreline Stabilization and Restoration Projects	Ten Towns Great Swamp Watershed Committee	$ 209,140	319(h)
RP07-054	2008	Ramanessin Brook Restoration Projects - Phase 2 (MOA) Stormwater Basin Retrofits and Bioretention Projects	Monmouth County Planning Board	$ 1,083,900	319(h)
RP08-054	2008	DeCou Run Stream Restoration	Camden County Soil Conservation District	$ 266,437	319(h)
RP08-056	2008	Implementation of the Troy Brook Watershed Plan Stormwater Basin Retrofit Projects	Rutgers University	$ 471,856	319(h)
NA	2008	Planning, Design and Implementation of Priority Projects in the Metedeconk Watershed	Brick Township MUA	$ 666,000	CBT
NA	2008	Rain Gardens/Wreck Pond	Monmouth County Planning Board	$ 24,000	CBT
NA	2008	Implementation of the Seven Top Priority Projects of the Mulhockaway Creek Watershed Plan (Stormwater Retrofit and Stream Bank Restoration Projects)	New Jersey Water Supply Authority	$ 300,000	CBT

NA	2008	BMP Implementation Cost Share (Mini-grant Program) Stream Buffers and Agricultural BMPs	State Cost Share to Support Federal Programs	$ 450,000	CBT
RP07-057	2008	Long Swamp Creek Action Projects (Stormwater Basin Retrofits in Lower Metedeconk and Toms River subwatersheds)	Ocean County Soil CD	256,150	CBT
RP09-059	2009	Implementation of Mantua Creek Implementation Plan	Camden County SCD	312,500	319(h)
RP09-060	2009	City of Newark-Stormwater Ed & BMP Implementation to Control CSO Discharges	Rutgers the State University	200,000	319(h)
RP09-065	2009	Implementation of the Cooper River Stormwater Education and Implementation Plan	Camden County SCD	200,000	319(h)
RP09-066	2009	Implementation of Pompeston Creek Watershed Implementation Plan	Rutgers the State University	1,000,000	319(h)
RP09-067	2009	Implementation of Clove Acres/Papakating Creek Watershed Plans	Sussex County MUA	1,400,000	319(h)
RP09-068	2009	Molly Ann Brook Rain Barrel Initiative	Passaic County Planning Dept.	100,000	319(h)
RP09-076	2009	Barnegat Bay Estuary Retrofit and Restoration of Stormwater Basins and Control Facilities	Ocean County	371,482	319(h) Discretionary
RP09-036	2009	Creation of 32-Mile Canoe & Kayak Trail, Passaic River (Vegetated Swales and Stream Bank Restorations)	Passaic Valley Sewerage Commissioners	260,000	CBT
RP10-002	2009	Agricultural NPS in Priority Watersheds Raritan River Basin	NJ Water Supply Authority	750,000	CBT

* The expansion of the sewer service area in Lake Hopatcong was halted due to treatment plant capacity and cost issues, pending finding a more feasible and cost-effective solution to the failing septic systems, which were identified as major sources in the TMDL.

** Regulatory implementation was also initiated by placing the Pequannock River temperature and passing flow requirements, recommended by the TMDL, in the allocation permit.