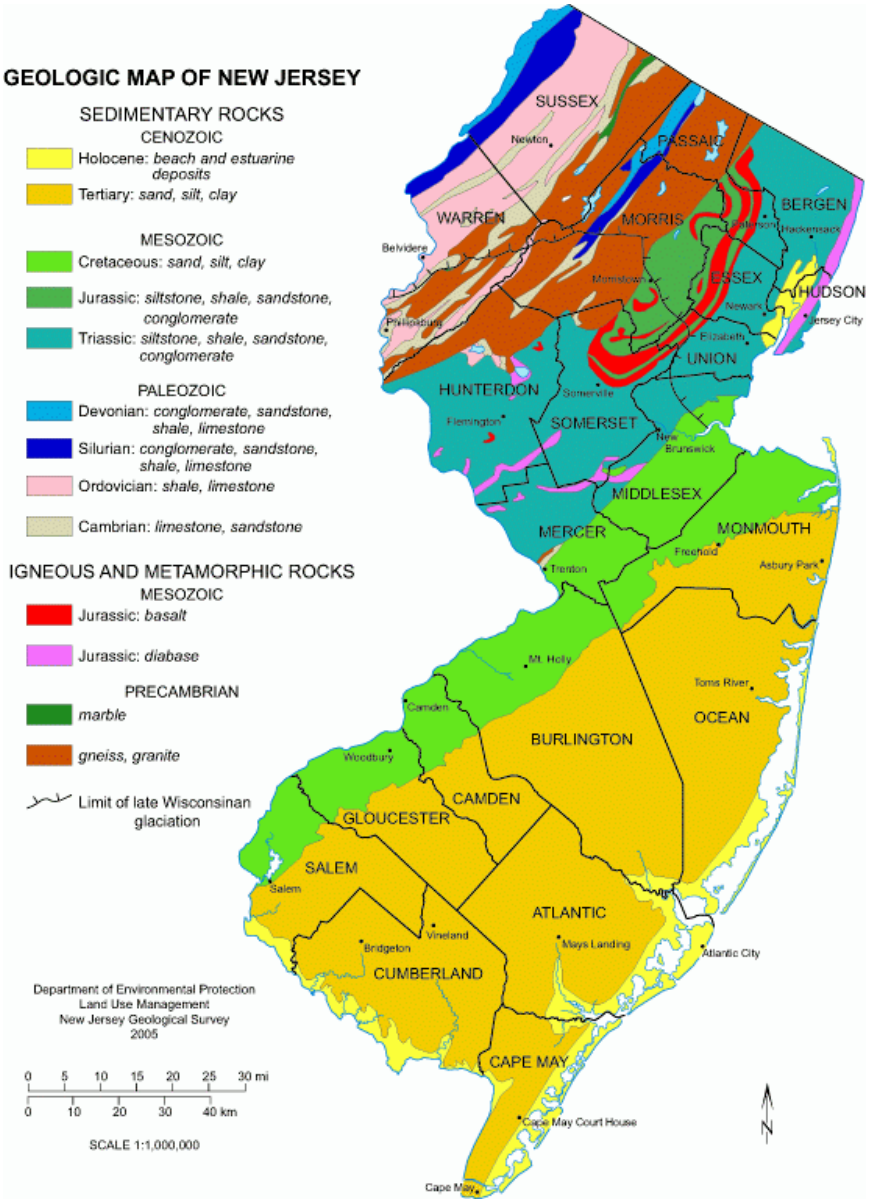
State of New Jersey
Nonpoint Source Report
April 2008



Jon S. Corzine, Governor
State of New Jersey

Lisa P. Jackson, Commissioner
New Jersey Department of Environmental Protection

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New Jersey Department of Environmental Protection
Lisa P. Jackson, Commissioner

Land Use Management
Mark Mauriello, Assistant Commissioner

Division of Watershed Management
Lawrence J. Baier, Director
Kathleen M. Hitchner, Technical Assistant to the Director - Report Editor

New Jersey Department of Environmental Protection
Land Use Management
Division of Watershed Management
401 East State Street
P.O. Box 418
Trenton, NJ 08625-0418

Acknowledgments

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Contributors:

Division of Watershed Management
Lawrence J. Baier, Sandra Blick, Kimberly Cenno, Ambrosia Collier, Mira Gorska, Barbara Greenhalgh-Weidman, Barbara Hirst, Kyra Hoffmann, Patricia Ingelido, Akili Lynn, Bob Mancini, David McPartland, Donna Milligan, Helen Pang, Eileen Thornton, Karen Ward

Communications Office
Erin Brodel

Division of Water Quality
Fred Bowers, Stan Cach, Barry Chalofsky, Brian McLendon, Bruce Freidman

New Jersey's Coastal Management Program
Tali Engoltz, Kim Springer

Green Acres Program
Cecile Murphy

Water Monitoring and Standards
Danielle Donkersloot, Steve Foster, Thomas Harrington, Virginia Loftin, Gigi Mallepalle

Natural Resource Conservation Service
Janice Reid, Nicole Ciccaglione

New Jersey Department of Agriculture
John Showler

New Jersey Farm Service Agency
Nancy Coles

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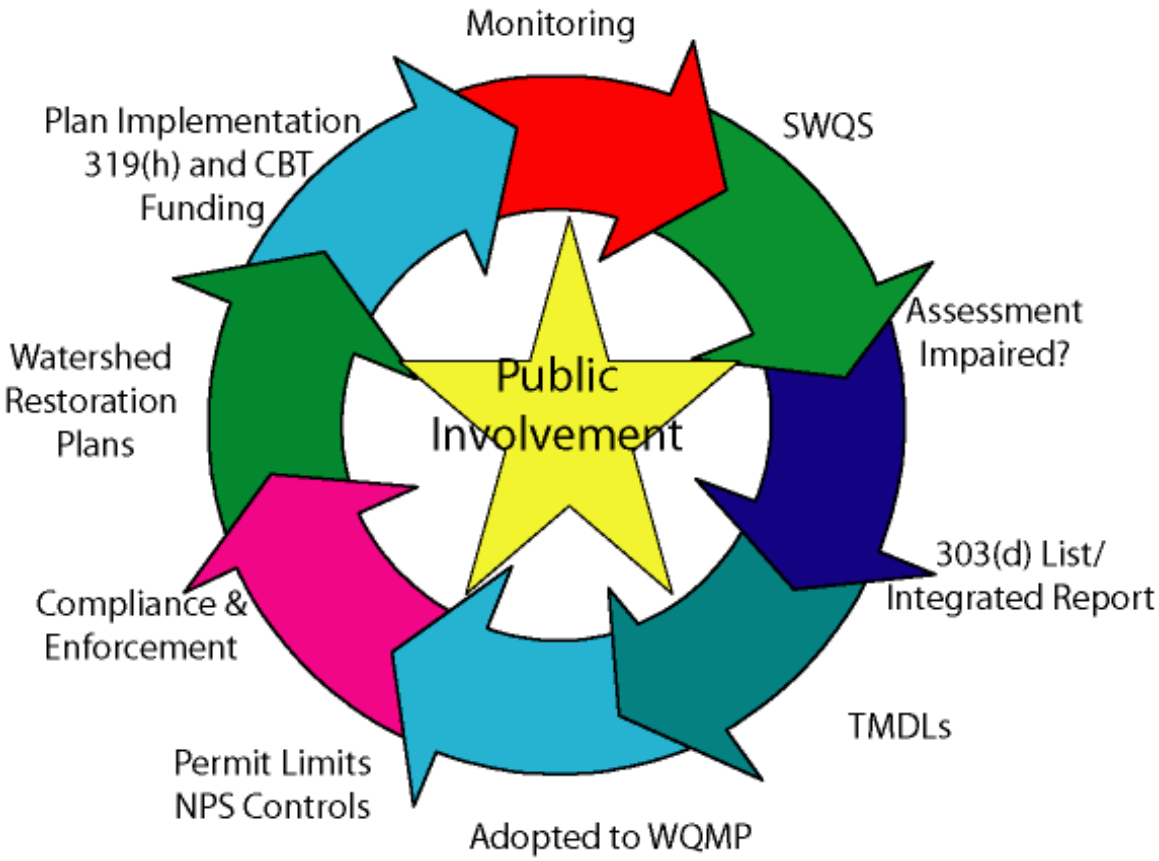
INTRODUCTION

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 year 2007.

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) 2007: Total suspended solids (TSS) reductions = 428.1 tons/yr. Phosphorus reductions = 720.3 lbs/yr, and nitrogen reductions = 2,368.8 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, the fifth smallest state in the nation, contains a wide variety of water resources, geologic characteristics and biota. Within the state's 7,840 square miles are 127 miles of coastline; 15,000 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, and 1,069 square miles of coastal waters. New Jersey has adopted Surface Water Quality Standards (SWQS), N.J.A.C. 7:9B, to protect these water resources.

The Surface Water Quality Standards establish the designated uses to be achieved and specify the water quality criteria necessary to protect the state's waters. Designated uses include potable water, propagation of fish and wildlife, recreation, agricultural and industrial supplies, and navigation. These are reflected in use classifications assigned to specific waters. The criteria applicable to different use classifications are numerical estimates of constituent concentrations, including toxic pollutants, protective of the uses. Narrative criteria describe instream conditions to be attained/maintained or avoided. Waters of the State include, but are not limited to, rivers, lakes, streams, wetlands, estuaries and near shore coastal waters. The SWQS also contain technical and general policies to ensure that the designated uses are adequately protected. To view New Jersey's Surface Water Quality Standards, go to http://www.nj.gov/dep/rules/.

The United States Environmental Protection Agency (USEPA) biennial reporting requirements of the Statewide Water Quality Inventory Report or "305(b) Report" and the List of Water Quality Limited Waters or "303(d) List" are satisfied in the New Jersey Integrated Water Quality Monitoring and Assessment Report (Integrated Report). To view the 2006 Integrated Report, go to www.state.nj.us/dep/wms/bwqsa/generalinfo.html.

USEPA approved New Jersey's 2006 List of Water Quality Limited Waters on December 11, 2007. The 2006 list includes a total of 2,189 impairments (pollutant/waterbody combinations). Almost half of the listed impairments are due to fish consumption advisories for polychlorinated biphenyls (PCBs) (organic compounds used as industrial coolants) Mercury, DDX [which includes dichlorodiphenyltrichloroethane (DDT), a synthetic pesticide, and its degradates, dichlorodiphenyldichloroethylene (DDE) and dichlorodiphenyldichloroethane (DDD)], Dioxin and/or Dieldren. USEPA approved delisting 709 pollutant/waterbody combinations. The Department had new data which demonstrated that 236 of the listed waters, previously listed as impaired, now meet

SWQS. Another 119 were delisted because TMDLs are now in place. The other delistings were based on changes in the terminology or spatial extent of the impairment, duplicate listings, or determined to be errors. No substantial changes were made to the Final 303(d) list. However, the total number of pollutant/waterbody combinations included on the approved 2006 lists includes 236 more listings mostly due to USEPA's request to list DDT and its degradates, DDE and DDD, separately rather than combined as DDX.

The Department is currently compiling data for the New Jersey 2008 Integrated Water Quality Monitoring and Assessment Report (Integrated Report).

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. These results would not be possible without ongoing partnerships and leveraging of resources with local watershed groups, local governments, the New Jersey Department of Agriculture, the Natural Resources Conservation Service and the State Soil Conservation Committee.

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 which established a deadline of March 31, 2011 to address all impairments listed on the 1998 list.

This year, New Jersey established 80 TMDLs, all NPS related. Seventy-five of the TMDLs were for pathogen impairments to lakes that did not fully support primary contact recreation as evidenced by beach closings and water quality data that demonstrate exceedance of the water quality criterion that triggers closings. Since 2000, New Jersey has established a total of 414 TMDLs, 405 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.

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.

Future Efforts

The Division of Watershed Management 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.

The Water Monitoring & Standards Element, in cooperation with the Division of Watershed Management, also recently initiated 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 off of the biological work already being conducted by the Department, the Division of Watershed Management 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.

Several other projects with USGS involve monitoring in the Salem River, Hohokus Brook, and 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.

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 is near completion in the Inner and Outer Coastal Plain southern portion of the state and has commenced in the Raritan River Basin and will be carried through to the Passaic River Basin next year. Natural background levels of arsenic have been found to exceed New Jersey's Surface Water Quality Standards throughout the Coastal Plain. In the future, the Department will pursue delisting these impairments since a TMDL is not the appropriate mechanism to address this parameter. The Division of Watershed Management envisions pursuing Mercury TMDL development statewide following the methodology in the recently approved Northeast Regional Mercury TMDL.

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).

Although there is much more work to be done, 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. But because the nature of stream restoration is a long-term process with tangible results demonstrated through monitoring taking possibly many years to manifest, we can not yet provide for EPA a hard 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. What we can provide is the number of delistings in 2006 as a whole: 709; and the number of delistings that were previously listed on Sublist 5 of pollutants commonly associated with nonpoint source pollution such as pathogens, pH, phosphorus, dissolved oxygen and temperature: 49. The latter 49 delistings are outlined in Appendix II of this report. For a complete list of the total waterbodies delisted in 2006 go to: http://www.state.nj.us/dep/wms/bwqsa/docs/2006AppendixCDelistedWaters.pdf.

Given the work described above, and the progress reported in the sections below, we fully expect to achieve water quality improvements short-term and ultimately restored water bodies in the long-term future as we continue to implement watershed restoration and protection plans and TMDLs through the NJPDES Municipal Separate Storm Sewer System (MS4) program, Wastewater 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. In addition, the three national estuary programs have funding available for implementation projects that address habitat and water quality restoration projects, and endorse those projects that enhance our NPS program efforts and priorities.

This PAM will also 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 form 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).

Grants Reporting and Tracking System (GRTS) entries for the projects that performed implementation work during federal fiscal year 2007 (10/1/06 through 9/30/07) represent a total cumulative load reduction of 428.1 tons/yr of sediment. This continues the trend toward larger reductions as a result of project implementation. See the table in Appendix III for a breakdown by project of the reductions reported.

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

GRTS entries for the projects that performed implementation work during federal fiscal year 2007 represent a total cumulative load reduction of 2,368.8 lbs/yr of nitrogen. Again, the trend toward larger reductions is seen as a result of project implementation. See the table in Appendix III for a breakdown by project of the reductions reported.

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

GRTS entries for the projects that performed implementation work during federal fiscal year 2007 represent a total cumulative load reduction 720.3 lbs/yr of phosphorus. We see the trend toward larger reductions once again as a result of project implementation. See the table in Appendix III for a breakdown by 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.

None of New Jersey's approved watershed-based plans have been *substantially* implemented due to the enormous costs associated with undertaking the numerous measures that are described in the approved plans and the significant funding limitations. However, there are several plans from which implementation has been initiated and the projects are outlined in the chart in Appendix V. The Department's funding priority for the current 319(h) funding cycle is for the funding of implementation measures from those plans listed in Appendix IV. The implementation projects are listed in the table entitled "Project Implementation Initiated for the Watershed-Based Plans" in Appendix V. Funding of these projects in addition to those funded through the 319(h) funds will assist in the overall effort to substantially implement the nonpoint pollution abatement measures from our approved plans. Please also see the "Success Stories" section below.

Success Stories/ Case Studies

Wreck Pond Update

Location

Wreck Pond is an approximately 0.72 mile long tidal impoundment, encompassing approximately 50 acres with an additional 20 acres of impoundment extending into the Black Creek. It is located along the Atlantic Ocean between the Borough of Spring Lake and the Borough of Sea Girt in Monmouth County, New Jersey. Wreck Pond is an important resource for the aesthetic and recreational value that it provides or potentially could provide the residents of New Jersey.

Problem

The pond has been seriously affected by sedimentation, nutrient loading, fecal bacteria contamination, algae and weed growth, all of which impair the use of the pond. Also, very importantly, the Wreck Pond outfall to the Atlantic Ocean negatively affects water quality along the ocean beachfront in the vicinity of the discharge. Due to the long history of elevated pathogen concentrations near the outfall during and after rainfall events, the Monmouth County Health Department has instituted precautionary beach closings immediately adjacent to the discharge when 0.1 inch of rainfall occurs in a 24-hour period. Wreck Pond's discharge is the source of the overwhelming majority of New Jersey's ocean beach closings.

Studies

In 2004, the Department developed a preliminary water quality restoration plan for Wreck Pond centered on four strategies:

1) Extension of the Wreck Pond outfall structure,
2) Management of wildlife in and around Wreck Pond,
3) Implementation of a regional stormwater management plan in the Wreck Pond watershed, and
4) Dredging of Wreck Pond.

Figure 0. Wreck Pond, 2002

The wildlife management portion of the water quality restoration plan is being taken into consideration in the Regional Stormwater Management Plan, the first draft of which was submitted to the Department in March of 2008. The Regional Stormwater Management Plan has been developed in accordance with the requirements of the Stormwater Management Rule, N.J.A.C. 7:8-3.1 et seq. The Regional Stormwater Management Plan Committee (Committee) is chaired by the Monmouth County Planning Board and includes local officials from all four municipalities that make up the watershed and representatives from Monmouth County, the Department and various community and environmental groups. To support plan development, a weather station has been installed in Wall Township and nine monitoring locations have been established at strategic locations throughout the watershed.

Flow data was continuously collected at these stations as well as weekly water samples which are analyzed for Total Suspended Solids, Fecal Coliform and Enterocci. In addition, all streams within the watershed were walked and visually evaluated. This work will provide information for calibrated hydrologic, hydraulic and pollutant models, which are essential for proper planning. Additional nutrient sampling and a survey of farming practices was performed by the Rutgers' Monmouth County Agricultural Extension. This work is being done in close coordination with Najarian Associates, who received a contract from Spring Lake Borough to study Spring Lake and Black Creek.

Figure 0. Wreck Pond and affected Ocean Beaches

As the Committee has been developing a long-term Regional Stormwater Management Plan, it was also asked to identify early implementation projects. To date the Committee has identified nine projects, including riparian buffer replacements and stormwater best management practice retrofits, with a total estimated cost of over $13,000,000. The Wreck Pond Regional Stormwater Management Plan has been funded by the Department with $350,000 from the Corporate Business Tax (CBT) Watershed Fund.

Implementation

The Wreck Pond Outfall Extension was completed in the spring of 2006 along with the Phase I dredging of the lower portion of Wreck Pond between the outlet structure and the main body of Wreck Pond.

Figure 0. Wreck Pond Outfall Extension

Results

There is still much work to do in Wreck Pond, but it is even too soon to see the expected positive results of those projects that have been implemented.

Next Steps

Of the implementation projects identified in the Regional Stormwater Management Plan, funding has been provided for four projects: $1,200,000 to Monmouth County for the installation of 15-25 manufactured treatment devices on the stormwater system discharging into Wreck Pond; $500,000 to Wall Township to restore the old Harris Gravel Pit which is contributing sediment and contaminants directly into Hannabrand

Brook, a tributary to Wreck Pond; $250,000 to Wall Township for the rehabilitation in the headwaters of Wreck Pond Brook to control sediment; and $200,000 to the Spring Lake Golf Course to rehabilitate an existing weir and create sediment traps on the golf course.

State funding for the Phase II dredging of the main body of Wreck Pond was not appropriated, so the completion of the dredging remains a future need for Wreck Pond.

As demonstrated by this case study, water quality restoration requires not only a partnership among various government agencies and interest groups, but also will require a large commitment of capital: $33,000,000 in this one 9,900-acre watershed alone, and that number could increase based on the final Regional Stormwater Management Plan recommendations.

Belcher's Creek

Location

Belcher's Creek is located in West Milford in Passaic County, New Jersey in Watershed Management Area 3.

Stonefly Nymph

Problem

Sediment carried in by stormwater has two negative functions: carrying in nutrients and increasing the rate of sedimentation in lakes. This grant had three main components: stormwater retrofits for storm drain catch basins in the Pinecliff Lake area, macroinvertebrate[1] monitoring and analysis, and public education and outreach regarding the issue of nonpoint source pollution in the Belcher Creek Corridor.

[1] Macroinvertebrates are animals without backbones that are larger than ½ millimeter (the size of a pencil dot). These animals live on rocks, logs, sediment, debris and aquatic plants during some period in their life. Macroinvertebrates include crustaceans such as crayfish, mollusks such as clams and snails, aquatic worms and the immature forms of aquatic insects such as stonefly and mayfly nymphs. Unlike fish, macroinvertebrates cannot move around much so they are less able to escape the effects of sediment and other pollutants that diminish water quality. Therefore, macroinvertebrates can give us reliable information on stream and lake water quality. Their long life cycles allow studies conducted by aquatic ecologists to determine any decline in environmental quality.

Studies

Water quality monitoring of the macroinvertebrate community was performed by Allied Biological to provide an understanding of the overall water quality of Belcher's Creek. The sampling was conducted for four years from 2000 to 2003 at four sampling locations. Water samples for chemical parameters were collected at each site. The parameters included Total Phosphorus, Biochemical Oxygen Demand, Total Dissolved Solids, Total Kjeldahl Nitrogen, Fecal Coliform Bacteria and Total Suspended Solids. At each sampling location, the macroinvertebrate community was evaluated based on: taxa richness; number of EPT taxa[2]; Percent EPT; Percent Dominance; Family Biotic Index; Rapid Bioassessment[3] Score; a Shannon-Weaver Diversity Index was calculated along with a Normalized H'.

Biological and visual assessments were also preformed by the Watershed Ambassador Program as directed by the TDML program.

Implementation

The Township of West Milford received a 319(h) grant in 1999 for $90,000 to achieve water quality improvements through nonpoint source pollution abatement, provided by the USEPA through the Department. West Milford provided an in-kind match of $94,220, focusing on maintenance and education.

The West Milford Engineering Department and Public Works Division designed sedimentation basins to capture increased amounts of sediment. This design was conducted for the purpose of capturing increased amounts of sediment that would have otherwise entered Pinecliff Lake through stormwater runoff. Nineteen sedimentation basins were installed and in six locations cross-drains were installed connecting two sedimentation basins, further increasing the drains' capacity to capture sediment from stormwater runoff.

A total of 340 hours have been devoted to one component of the education part of the project. The High School Environmental Club (20 students) along with Chemistry classes (20 students) and faculty have set up monitoring for 20 sites. A website has been developed which allows the uploading of all the data. The High School faculty will continue to include this monitoring, which will provide information for both the students and township along with other interested parties. The information can be found at www.gismpa.us/wmilford. The data is also being incorporated into the Township's GIS database. Other significant educational components include working in coordination

[2] Ephemeroptera-Plecoptera-Trichoptera. EPT Taxa Richness is the number of Ephemeroptera (mayfly), Plecoptera (stonefly), and Trichopera (caddisfly) taxa in a sample. Values range from 0 to 12, with high values indicating less organic pollution. EPT are most diverse in natural streams and decline with increasing watershed disturbance.

[3] Rapid Bioassessment is an assessment of the environmental degradation of a waterbody based on a comparison between a typical species assemblage in a pristine waterbody and that found in the waterbody of interest.

with the Township Planning Board Master Plan Subcommittee to assist the Planning Board in the preparation of a new Master Plan. This plan incorporates water quality as a goal of the Master Plan. The Environmental Commission also maintains a website for the purpose of disseminating information on environmental issues. The Commission has public information regarding the importance of septic maintenance on water quality (www.westmilford.org). There have been yearly presentations to the science classes from elementary to high school. Overall, there has been a significant effort to provide the residents of the town with important nonpoint source information since 1999.

Results

The estimated sediment removal due to the installation of the sedimentation basins and the cross drains is 2,452 cubic feet per year based on the capacity of the stormdrains and the volume removed. Each sedimentation basin can hold approximately 1.1 cubic yards and each cross-drain can hold 7.1 cubic yards.

As a result of implementation, all sites improved in their overall biological integrity since spring 2002, except one site noted as BC04. Pinecliff Lake was lowered while repair work was completed on the Pinecliff Lake Dam and the corresponding erratic discharge, and probable increase in sediment to the downstream BC04 site were listed as likely causes to the reduced water quality indicated by the macroinvertebrate community (Allied Biological 2003).

Next Steps

Maintenance of the installed BMPs, water quality monitoring and public education and outreach dealing with the prevention of nonpoint source pollution will be ongoing.

Floatables Control

Clean Shores Program

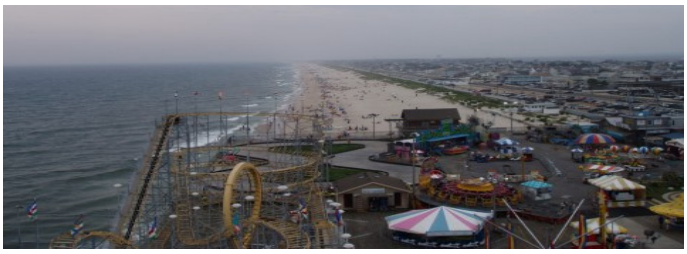
The Clean Shores Program is responsible for the removal of wood, garbage and medical waste from tidal shorelines utilizing state inmate labor. In 2007 the program removed 4.1 million pounds of floatables from 130 miles of shoreline bringing the total amount of wastes removed since 1989 to 118.8 million 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 shore protection motor vehicle registration 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 in turn 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 (CCMP) (the CCMP program, with the participation of local environmental health agencies, assesses coastal water quality and investigates sources of water pollution), 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. [4]

Adopt a Beach Program

Adopt a Beach Program volunteers perform beach clean-ups along the Jersey Coast each spring and fall. 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. There were 414 volunteers who covered 49 miles of coastline to remove 6,825 pounds of debris in 2007. This data is provided to the Ocean Conservancy, which compiles the data on an international level. The spring 2008 clean-up is scheduled for April 12 from the Highlands to Cape May.



[4] 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.

Since the program began in 1993, Adopt a Beach volunteers have removed almost 1,000,000 items of trash and debris from New Jersey's beaches.

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. In the past, these grants have been to counties for the purposes of preparing Water Quality Management Plans (WQMPs), Smart Growth implementation, and on-site wastewater treatment system (OWTS) management plans. The Department continued to emphasize development of OWTS management plans for SFY 2007 and as a secondary priority continued support of WQMP development. In 2007, New Jersey awarded $144,584 to the Burlington County Board of Chosen Freeholders to develop an Onsite Wastewater Management Program for the North Branch Rancocas Creek.

A TMDL for fecal coliform has been adopted for the segment of the North Branch Rancocas Creek between Hanover Street in Pemberton Borough and Mill Dam in Mount Holly. The adopted TMDL has indicated failing septic systems as a potential source. Actual reduction of load from failing septic systems in this stream segment will need comprehensive effort and a combination of strategies to remove, rehabilitate and/or monitor septic systems. This contract will allow Burlington County to develop an OWTS Management Plan to address the impact of these systems on segments of the North Branch of the Rancocas impaired for fecal coliform.

The project includes completion of the following tasks:

- Evaluation of the project area regarding the age and types of onsite systems in use, lot size of the dwelling(s) served by onsite systems for dilution factor, the availability of public sewers, the soil types and location systems relative to the floodplain;

- Population of an OWTS management database and creation of GIS layers of the project area;

- Development of an OWTS management plan and legal framework for implementation;

- Host an OWTS management database seminar to share “lessons learned” regarding use of a database as part of the OWTS management plan.

Coastal NPS Pollution Control (6217) Program Update

On October 15, 2007, the National Oceanic and Atmospheric Administration (NOAA) approved changes to New Jersey's federally-approved Coastal Management Program (CMP). As a result of this approval, the New Jersey Coastal Management Program has been changed to incorporate a listing of federal actions having interstate coastal effects on the uses and resources of New Jersey's coastal zone pursuant to 15 CFR 930 Subpart I. This change became effective on March 17, 2008, the date the notice was published in the New Jersey Register.

The approval results in the Coastal Management Program being changed to add a listing of a limited number of federal actions taking place in the Delaware River and Bay, in the states of Delaware and Pennsylvania, that would affect New Jersey's coastal zone. The effect of the approval is that New Jersey will review the activities listed below on a routine basis for consistency with New Jersey's Coastal Management Program. Additionally, New Jersey can ask NOAA to allow the Department to review any federal activity that is not on this list, or in this geographic area, that is proposed in another state if the proposed activity will have reasonably foreseeable coastal effects on New Jersey's coastal zone. This will primarily affect federal licenses and permits.

The approved New Jersey CMP interstate listing is for permits issued by the Army Corps of Engineers under Sections 9 and 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act for the following activities located below the mean high tide line in the Delaware River in Pennsylvania up to the "Trenton Makes Bridge," or located in the Delaware Bay in Delaware:

- Dredging of 50,000 or more cubic yards of material;
- Subaqueous disposal of 50,000 or more cubic yards of material;
- Subsurface (in water) dredged material disposal or relocation or redistribution of sediments; and
- Confined upland disposal facilities with the capacity to handle at least 50 cubic yards of dredged material.

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[5] 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 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.

[5] 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.

Tier B Municipal Stormwater Permit

The Tier B[6] Municipal Stormwater General Permit authorizes the discharge of stormwater from small MS4s. 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

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 contact between pollutants and stormwater. Other permit conditions may require monitoring stormwater discharges for pollutants, and in some cases, effluent limitations may be imposed.

Individual Discharge to Groundwater Permits:

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.

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.

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

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 into aquifers for future recovery 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. NRCS also administers the conservation programs made available under the Farm Security and Rural Investment Act of 2002 (Farm Bill).

In 2007, New Jersey received $10,230,867 through the Farm Bill for eligible New Jersey landowners and agricultural producers. This was a slight increase from the 2006 funding allocation. For the life of the 2002 Farm Bill, New Jersey has received $60 million in conservation program funding. Following is a brief description of each of the Farm Bill conservation programs followed by program implementation data.

- **Agricultural Management Assistance (AMA)**

AMA reduces the economic risk of adopting conservation measures for limited resource, small scale and beginning farmers. There was no funding available for new contracts in 2007.

- **Conservation Security Program (CSP)**

CSP rewards producers who are currently actively protecting soil and water resources on their farm. Producers in the Maurice-Cohansey and Raritan Watersheds with contracts approved during 2005 and 2006 received $198,769 in program payments in 2007. There was no funding available for new contracts in 2007.

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

EQIP provides financial assistance for permanent measures or management strategies that address existing resource concerns. New Jersey contracted with 90 producers using $3,832,110 in 2007 funds to implement new conservation systems on 9,918 acres across the state.

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

FRPP provides matching funds to purchase conservation easements to keep productive farmland in agricultural uses. New Jersey received $4,616,447 in 2007, which was passed on to two cooperating entities through Cooperative Agreements. The funding will allow the protection of over 3,000 acres.

- **Grassland Reserve Program (GRP)**

GRP offers private landowners the opportunity to protect, restore, and enhance grasslands on their property. With very limited funding available nationally, a special program targeting limited resource and beginning farmers was used to bring $58,155 to one livestock operator in New Jersey in 2007. Also this year, technical assistance was provided to prior-year participants to help them complete their existing contracts.

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

WHIP provides financial assistance to create, enhance or maintain five priority wildlife habitat types on nonfederal lands. New Jersey received $821,839 in WHIP funds for 2007 and signed 40 contracts with landowners and managers to provide wildlife benefits on 1,142 acres in 15 counties. Creation or improvement of wildlife habitat generally has the same effect on NPS pollution as installing a buffer.

- **Wetlands Reserve Program (WRP)**

WRP provides technical and financial assistance to enhance wetlands in exchange for retiring marginal land from agriculture. In 2007, New Jersey received $703,547 that enabled the funding of two new permanent easement projects. Also in 2007, NRCS began the restoration work at the Franklin Parker Preserve, the Northeast's largest WRP project site. The natural function of the soil in 100 acres of abandoned cranberry bogs was improved to allow the regeneration of native wetland species.

All Practices Applied in 2007			
By Program		**By Resource Concern**	
Program	**Number of Practices Applied**	**Resource Concern**	**Number of Practices Applied**
AMA	85	Air	100
CRP	121	Animals - livestock	653
CSP	27	Animals - wildlife	636
CTA - General*	2472	Other	7
CTA - GLC**	231	Plants	47
EQIP	1754	Water quality	1802
GRP	9	Water quantity	370
WHIP	413		
WRP	15		
TOTAL	**5127**	**TOTAL**	**5127**

* CTA - General = Conservation technical assistance that is not related to a farm bill program.

** CTA - GLC = Conservation technical assistance that is not related to a farm bill program and is grazing related falls under the Grazing Lands Coalition, a separate pool of technical assistance funds.

Statewide Planning and Implementation Accomplishments FY 2007		
Accomplishment	**Planned**	**Applied**
Conservation Planning (Acres)	34,900	36,543
Nutrient Management (Acres)	16,328	12,043
Wildlife Habitat Management (Acres)	17,386	7,362
Wetlands Restoration (Acres)	262	209
Grazing Lands (Acres)	5,047	4,055
Comprehensive Nutrient Management Plans (#)	41	34

- **Conservation Effects Assessment Project (CEAP)**

NRCS is also working to capture the benefits of the many conservation practices already implemented throughout New Jersey. Through the new national effort, the Conservation Effects Assessment Project, NRCS is working with NJDEP and other partners to monitor and quantify the effects and benefits of these practices. Being able to quantify the impact of conservation and report those impacts in measurable terms will help the state make

informed decisions about how to best spend the dollars allocated to protect our soil, water and air.

- **Conservation Innovation Grants (CIG)**

The 2002 Farm Bill established the Conservation Innovation Grants as part of the Environmental Quality Incentives Program. In 2007, the Cumberland-Salem Soil Conservation District was awarded $75,000 to implement precision agriculture on over 10,000 acres of cropland in southern New Jersey. The grantee is working with over thirty local growers testing the ability of precision agriculture tools to reduce nutrient and pesticide applications on their operations.

Resource Conservation and Development

The 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 in 2007 includes:

- Launched two new watershed management projects in the Musconetcong and Neshanic Watersheds which include water quality monitoring, modeling, identification of BMPs needed, and identifying funding sources to implement the practices.
- Completed stabilization of 185 feet of streambank along Lopatcong Creek in Warren County.
- Worked with 14 farmers who applied for River-Friendly certification. Of these, 3 became certified. 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. Six farms covering 235 acres are currently certified River-Friendly.
- Completed a riparian restoration project in Lafayette Park, Sussex County in which 100 trees and shrubs were planted.

South Jersey RC&D Council

Work in 2007 includes:

- Implementation began of their Five Year Plan, which focuses on restoration projects.
- Increased Water Conservation efforts through the expansion of their lawn watering program from one to four geographical areas. Lawn irrigation, a potentially major cause of nonpoint source pollution, has been reduced by 25 million gallons in these four areas.
- The council's "Team Habitat", a group of wildlife professionals from federal, state local governments and other non-profits, planted warm season grasses on three sites to create or improve wildlife habitat for ground nesting birds.

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 year 2007, New Jersey farmers received $109,277 in annual rental payments for removing highly erodible land and environmentally sensitive cropland from production. Newly enrolled program participants received $120,397 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 $100,743 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 March 31, 2008, CRP contracts total 199 in New Jersey, providing financial support to 141 farms across the state.

- **Conservation Reserve Enhancement Program**

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. 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 April 15, 2008, 103 NJ CREP contracts have been approved totaling 493.3 acres. This represents 256.3 acres of filter strips, 68.7 acres of grassed waterway, and 168.3 acres of riparian forest buffer.

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.

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 prevent 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 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.

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.

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

Since the inception of the SESC Program, 114,487 applications were received and 111,508 certifications were issued on projects involving more than 831,299 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.

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 NJ Watershed Ambassadors Program

The NJ Watershed Ambassadors Program is a community-oriented AmeriCorps program designed to raise awareness about water issues in New Jersey. Through this program, 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. Through March of 2008, the Ambassadors monitored over 1,000 stream segments and conducted over 100 monitoring training workshops. Watershed Ambassadors also made 627 presentations to community organizations and schools reaching approximately 20,000 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 over 3,000 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 2008.

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 2007, 172 teachers and non-formal educators participated in one of the 19 professional development workshops that the NJ Project WET program conducted. While most of the educators participated in a basic *Project WET* workshop, 25 attended a workshop based on the *Healthy Water, Healthy People* manuals and 20 learned about the *Wonders of Wetlands (WOW!).* These educators, in turn, will reach over 4,500 students this year. In addition, one new workshop facilitator was recruited and trained.

Through the NJ Project WET Water Festival Mini-Grant Program, three school districts held water festivals in 2007, involving a total of 1101 students, 59 teachers, and many volunteers. During these a one-day celebrations of water, students participate in a series of learning stations that examine different water issues, including those that affect their local communities.

In 2007, the activities in the *Project WET Activity Guide,* as well as those in the other associated guides sponsored by the Department (Project WILD, Project Aquatic WILD and Project Learning Tree) were correlated to New Jersey's Core Curriculum Standards through a grant from the Environmental Education and Training Partnership. These correlations were then placed in an on-line searchable database which will make it easier for teachers to use Project WET activities in the classroom.

Urban Watershed Education Program

The Urban Watershed Education Program is designed to educate students living in the Newark Bay Complex and other urban areas about the hazards of eating contaminated fish and 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 2007, the program worked with schools in Bayonne, Carteret, Elizabeth

and Jersey City. Communities in central and southern New Jersey will be included for the first time this coming season. 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 has been 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 because it allows users to run simple statistics, create graphs for visual comparisons or make accessible for download all available data of a particular watershed, water body or geographic location. 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

2007 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.

Jan **Data Management System Training**

Mar **Data Management System Training** (3/14)

Stream School (3/21-22)
Stream School is a two-day training focusing on macroinvertebrate identification and analysis. The analysis is based on the actual assessments used by the Department's Water Assessment Team. The Stroud Water Resource Center's staff is internationally acclaimed for its pioneering research on streams and rivers. The scientists work in interdisciplinary research teams, blending their individual talents in chemistry, microbial ecology, invertebrate biology, watershed ecology, and ecosystem modeling to study the physical, chemical, and biological processes of streams and rivers, the life histories of individual organisms, and the ecology of watersheds. All interested in watershed management are encouraged to take this course as part of the Department requirements for volunteer data credibility.

Apr **Data Management System Training** (4/10)

May **River Rally in WA.** (5/14)
Two Workshops for the National Watershed Community: Watershed Basic Tool and Data Use.

Jun **Stream School** (6/5 and 6/6)
For Land Use Staff

Lake Shawnee Volunteer Training (2 days)

Jul **Great North American Dip-In Training**

The goal of the Dip-In is to increase the number and interest of volunteers in environmental monitoring. A volunteer monitoring program cannot long survive if information flows only from the volunteer to the agency. Volunteers need to be

assured that their efforts are not only appreciated but are also a necessary part of the total monitoring effort. It is the premise of the Dip-In that this assurance is enhanced if the volunteer is a part of a national as well as the local effort.

The Dip-In also provides a national perspective of water quality. It gives a comprehensive glimpse at water transparency at volunteer-monitored sites across the United States, Canada and the rest of the world. Scientists and volunteers can get a sense of how transparency varies according to water type, regional geology and land use. What is more important, these annual Dip-In snapshots can be put together to form a changing picture of transparency over time.

Sep **World Water Monitoring Day Training**
World Water Monitoring Day (WWMD) is an international outreach program that builds public awareness and involvement in protecting water resources around the world. Held annually between September 18 and October 18, the program engages communities in monitoring the condition of local rivers, streams, estuaries and other water bodies. Since its inception in 2002, more than 80,000 people have participated in 50 countries.

Visual and Habitat Assessment Training
Participants learned about stream and watershed ecology, identifying habitat types, and land use assessment techniques. Routine Visual Assessment should be a part of any monitoring program.

Oct **Visual and Habitat Assessment Training** (3 days)
For the AmeriCorps Program staff

World Water Monitoring Day Event
Held at Liberty Science Center

EPA Rapid Bioassessment Training (2 one-day training events)
The purpose of this training is to demonstrate a practical technical reference for conducting cost-effective biological assessments your watershed. The protocols presented are not necessarily intended to replace those already in use for bioassessment nor is it intended to be used as a rigid protocol without regional modifications. Instead, they provide options for agencies or groups that wish to implement rapid biological assessment and monitoring techniques. This training focuses in on the methodology of collecting the data.

Nov **Volunteer Monitoring Summit** (11/29-30)

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 2007, the Department distributed 11,000 Clean Water Raingers Activity Books, 16,000 Clean Water Rainger Coloring Books and 33,000 Clean Water Rainger Stickers.

Publications

Publications are also available for free distribution to municipalities, watershed associations, environmental groups or other organizations. In 2007, the Department distributed over 8,000 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 Division of Watershed Management 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 11 regular meetings plus it's Annual Public Hearing. The Annual Public Hearing on "New Jersey's Water Infrastructure" took place on October 23, 2007 and focused on eight questions related to water supply, wastewater and storm water infrastructure. The Council will provide the Commissioner with recommendations based upon the correspondence and the 5 hours of testimony received.

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)

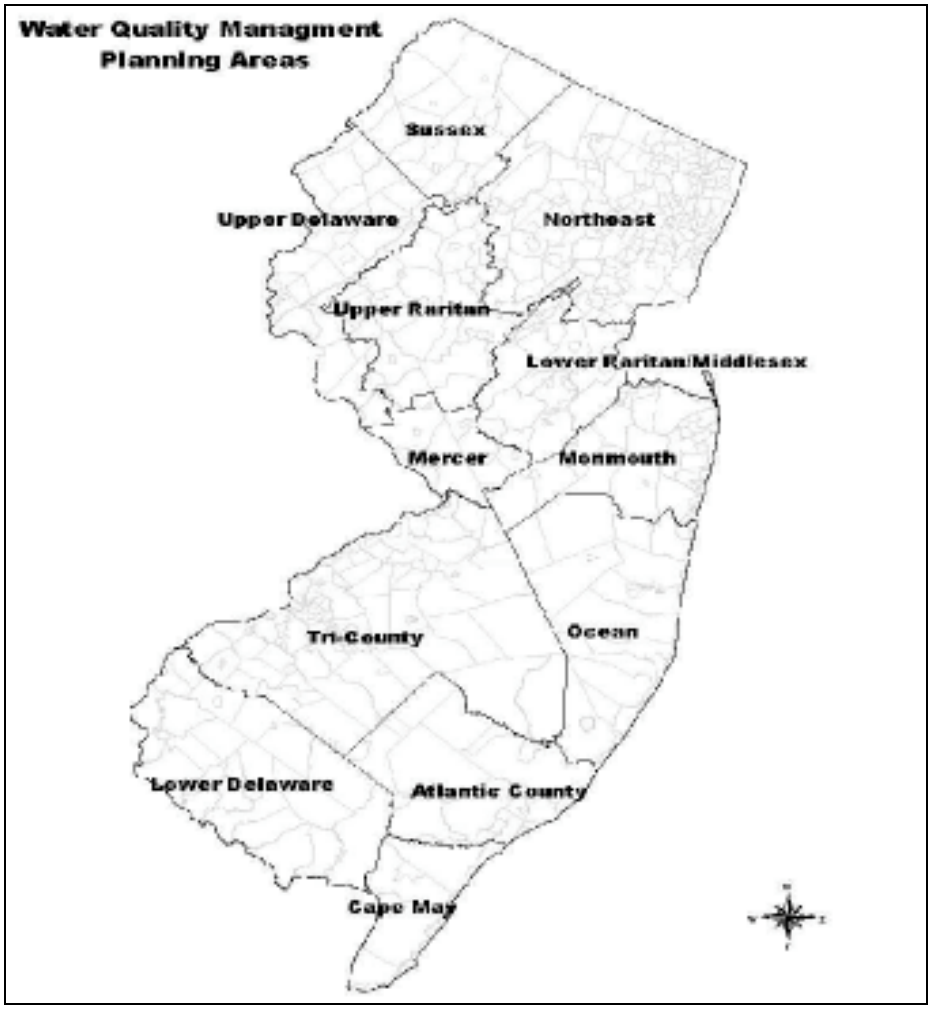
The Highlands Water Protection and Planning Act, N.J.S.A. 13:20-1 et seq. protects drinking water for over 5.4 million people and helps preserve New Jersey's dwindling open space. On December 4, 2006, the Department of Environmental Protection readopted with amendments the Highlands Water Protection 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)

The Department, primarily through the Division of Watershed Management, administers the Water Quality Management Planning rules, N.J.A.C. 7:15. The current rules became effective on October 2, 1989. These rules serve two basic functions: they establish the Department's general regulatory framework for water quality planning and supplement other Department rules pertaining to wastewater management.

An integral component of areawide WQMPs are Wastewater Management Plans (WMPs). WMPs are the vehicle through which the continuing planning process integrates local and regional planning into the areawide WQMPs. The intended purpose of the WMPs is to project future development and estimate the wastewater management needs associated with that development. These plans could also provide the vehicle to ensure that sewer service was not extended into areas inconsistent with State Development and Redevelopment Plan State Planning Area designations and environmentally sensitive areas. 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. To accomplish these objectives, WMPs were to be prepared for the entire state by 1995 and were to have been updated every six years similar to the requirement for municipal master planning in the Municipal Land Use Law.



In the current rules, the assignment of wastewater management plan responsibility occurs along a hierarchy beginning with designated areawide Water Quality Management planning agencies, through the Passaic Valley Sewerage Commissioners, various joint meetings and municipal utilities authorities and ending with municipalities. This hierarchy has resulted in the present designation of 161 wastewater management planning agencies, each with responsibility over a discrete wastewater management planning area. Unfortunately, the overwhelming majority of those planning agencies have not kept the WMPs current, as required by the Water Quality Management Planning rules. As a result, most WMPs cannot be relied upon to ensure that adequate wastewater treatment

exists to support the development contemplated by local land use plans, and to accurately assess the impacts of those wastewater management decisions on water resources.

The existing rules are largely process driven, detailing the procedures for the processing of WMPs and amendments. The existing rules also require the submission of future wastewater estimates, consideration of wastewater management alternatives and mapping of various environmental features, but do not include thresholds for when an application should be adopted or disapproved based on these factors.

New Jersey Gubernatorial Executive Order No. 109(2000) (EO 109) was signed in 2000 to ensure that the Department considers secondary and cumulative impacts of development in the water quality planning process. EO 109 requires the Department to assess alternatives designed to address depletive and consumptive water use, detailed land use, environmental build-out and pollutant loading prior to making a final decision on an application for approval of a WMP, or WMP update. In implementing EO 109, the Department has been evaluating new or expanded discharges to surface water with respect to the antidegradation requirements of the Surface Water Quality Standards, N.J.A.C. 7:9B. In addition, the Department has been evaluating the adequacy of stormwater management and riparian zone protection relative to water quality and quantity impacts of future development. The Department has also evaluated water supply impacts to encourage the selection of an alternative that will allow for future development while minimizing decreases in stream flow resulting from consumptive or depletive water losses. Lastly, the Department has assessed encroachment on habitats for threatened and endangered species as the result of specific projects or activities and future sewer service area designations and has attempted to avoid or minimize encroachment into threatened and endangered species habitats designated as Rank 3, 4 or 5 on the Department's Landscape Project Maps. After gaining experience in implementing EO 109, the Department is ready to promulgate rules on the Department's criteria for conducting these analyses.

In the May 21, 2007 New Jersey Register, the Department proposed to readopt the existing Water Quality Management Planning rules with amendments and new rules. The proposed amendments and new rules will:

- 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 WQMP 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);
- Reassign wastewater management planning responsibility to the county boards of chosen freeholders to reduce WMP agencies to a manageable number and afford a regional approach to water resource planning;
- Withdraw sewer service areas and re-designate as general wastewater service area of less than 2,000 gallons per day (septic service areas) where the applicable WMP is not in compliance with the mandatory update schedule contained in the rules;

- Require municipalities to pass an ordinance designed to assure septic maintenance;
- 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; and
- Improve consistency with the State Development and Redevelopment Plan.

The Department held three public hearings on the rule proposal and accepted comments on the proposal through August 20, 2007. Eighty-nine people provided individual written and/or oral comments. The Department anticipates readoption of the existing Water Quality Management Planning rules on May 21, 2008 and adoption of the proposed new rules and amendments to these rules on July 7, 2008 when the adoption document, including responses to approximately 1262 comments, will be published in the New Jersey Register.

Stormwater

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 expire on February 2, 2009. The Department is in the process of making amendments to the regulations based on the experience of the past four years and the input from those regulated by and regulating through these regulations.

The New Jersey Stormwater Best Management Practices Manual (BMP Manual) Technical Committee continues to meet to provide technical input into the manual. Proposed updates to the BMP Manual were posted in November of 2007 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. 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, 2007, Green Acres has preserved 625,928 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.

New Jersey's statewide system of preserved open space and farmland now amounts to over 1,365,000 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.

2007 Green Acres Purchase, Ocean County

A recent purchase by the Department occurred on October 15, 2007 and included 246 acres of open space in Manchester Township, Ocean County. The Green Acres Program purchased the property from private owners for $1.8 million using State Land Acquisition Program funds. Manapaqua Brook flows into a reservoir on the site that provides habitat for nesting bald eagles and is used for fishing and birding. This addition to Manchester Wildlife Management Area was preserved through a joint acquisition effort with the U. S. Navy and will also serve

to provide a protective buffer to the Lakehurst Naval Air Engineering Station.

Farmland Preservation Program

The State Agriculture Development Committee (SADC) administers New Jersey's Farmland Preservation Program. To date, more than 1,600 farms covering more than 165,000 acres have been permanently preserved. 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 Watershed Management
401 East State Street
P.O. Box 418
Trenton, NJ 08625-0418
(609) 984-0058
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	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
2003	Northwest Water Region: 4 Eutrophic Lakes					
	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					
	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					
	Memorial Lake	TP		930	88	NPS
	Sunset Lake	TP		2500	92	NPS
	Bell Lake	TP		17	94	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**
	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					
	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					
	Deal Lake	TP		580	81	NPS
	Franklin Lake	TP		59	90	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**
	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 Streams	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**
2003	Delaware River: Zones 2-5 (4 TMDLs)	PCBs				PS/ NPS
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
	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
2005	Atlantic Coastal	FC			89-91	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**
	Water Region: 2 Streams					
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					
	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

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**
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					
	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

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**
	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				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
	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

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**
	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
	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

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**
	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
	Creesse Creek Estuary	Total Coliform		1.83E+15	28	NPS
	Great Sound	Total Coliform		7.23E+13	68	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**
	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
	Oranoaken Creek Estuary	Total Coliform		7.89E+11	47	NPS
2006	*Delaware River: Zone 6	PCBs				PS/NPS
*TMDLs established 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
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
	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

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
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					
	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		6.41+03	96.78	NPS
2007	Atlantic Coastal Water Region WMA 12 : 3 Lakes					
	Deal Lake	Pathogens				NPS
	Hook Creek Lake	Pathogens				NPS
	Lake Takanassee	Pathogens				NPS

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
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					
	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					

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
	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
	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 02040105240030-01	Phosphorus	3065.43	2610.39	22	NPS
2007	Lower Delaware Water Region WMA 20: 4 TMDLs					
	Annaricken Brook HUC 02040201100010-01	Phosphorus	581.48	346.75	54.60	NPS

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
	Barkers Brook near Jobstown HUC 02040201100020-01	TP	743.60	409.10	66	NPS
	Doctors Creek at 539 Upper Freehold HUC 02040201060020-01	TP	2479.56	652.52	78.70	NPS
	Doctors Creek at Allentown HUC 02040201060030-01	TP	743.60	409.10	66	NPS

APPENDIX II - 2006 NPS Delistings

2006 303(d) LIST NPS DELISTINGS				
WMA	**SUBWATERSHED**	**WATERBODY**	**STREAM MILES**	**DELISTED**
05	Pascack Brook (below Westwood gage)	02030103170020-01	15.16	Fecal Coliform
05	Tenakill Brook	02030103170040-01	11.08	Fecal Coliform
18	Cooper River (above Evesham Road)	02040202110030-01	12.36	Fecal Coliform
11	Wickecheoke Creek (below Locktown)	02040105200060-01	17.46	Fecal Coliform
11	Wickecheoke Creek (above Locktown)	02040105200040-01	19.56	Fecal Coliform
05	Coles Brook / Van Saun Mill Brook	02030103180010-01	15.45	Fecal Coliform
01	Musconetcong R (I-78 to 75d 00m)	02040105160050-01	21.45	Fecal Coliform, Total Coliform
12	Whale Pond Brook	02030104090010-01	5.36	pH
18	Cooper River NB(above Springdale Road)	02040202110010-01	8.17	pH
08	Lamington R (Hillside Rd to Rt 10)	02030105050020-01	24.17	pH
10	Pike Run (below Cruser Brook)	02030105110100-01	17.78	Phosphorus
12	Manasquan R (Rt 9 to 74d17m50s road)	02030104100020-01	38.17	Phosphorus
03	Ramapo R (above 74d 11m 00s)	02030103100010-01	7.67	Phosphorus
01	Musconetcong R (below Warren Glen)	02040105160070-01	11.30	Phosphorus
09	Raritan R Lwr (Millstone to Rt 206)	02030105080030-01	12.48	Phosphorus
11	Plum Creek	02040105200050-01	7.90	Phosphorus
12	Manasquan R (gage to West Farms Rd)	02030104100050-01	11.17	Phosphorus
18	Big T Ck SB (incl Bull Run to Lakeland Rd)	02040202120040-01	11.77	Phosphorus
18	Oldmans Creek (Kings Hwy to Rt 45)	02040202160030-01	18.47	Phosphorus

12	Matawan Creek (above Ravine Drive)	02030104060020-01	17.02	Phosphorus
10	Stony Bk (Harrison St to Rt 206)	02030105090070-01	8.20	Phosphorus
19	Rancocas Ck NB (NL dam to Mirror Lk)	02040202020040-01	14.95	Phosphorus
03	Pequannock R (above Oak Ridge Res outlet)	02030103050030-01	18.02	Phosphorus
03	Pequannock R Charlotteburg to Oak Ridge)	02030103050050-01	29.32	Phosphorus
03	Pequannock R (below Macopin gage)	02030103050080-01	38.42	Phosphorus
01	Pohatcong Ck (Edison Rd-Brass Castle Ck)	02040105140030-01	20.03	Phosphorus
12	Jumping Brook (Ocean Co)	02030104090050-01	13.38	Phosphorus
02	Wallkill R/Lake Mohawk (above Sparta Sta)	02020007010010-01	16.14	Phosphorus
13	Metedeconk R NB (above I-195)	02040301020010-01	25.31	Phosphorus
02	Papakating Creek (below Pellettown)	02020007020070-01	26.80	Phosphorus
03	Pequannock R (Macopin gage to Charl'brg)	02030103050060-01	16.46	Phosphorus, Dissolved Ox
08	Spruce Run (Reservoir to Glen Gardner)	02030105020020-01	6.34	Phosphorus, Fecal Coliform
08	Raritan R SB (Three Bridges-Prescott Bk)	02030105020100-01	38.41	Phosphorus, Fecal Coliform
11	Assunpink Creek (below Shipetaukin Ck)	02040105240050-01	16.20	Phosphorus, Total Coliform
02	Black Creek (below G. Gorge Resort trib)	02020007040020-01	31.32	Temperature
17	Cohansey R (incl Beebe Run to Hands Pond)	02040206080040-01	16.02	Temperature
12	Poricy Bk/Swimming R (below Swimming R Rd)	02030104070100-01	12.55	Temperature
12	Branchport Creek	02030104080030-01	7.30	Temperature
12	Waackaack Creek	02030104060050-01	21.52	Temperature
12	Navesink R (below Rt 35)/Lower Shrewsbury	02030104070110-01	28.53	Temperature, Dissolved Ox
12	Shark River (above Remsen Mill gage)	02030104090040-01	24.55	Total Coliform
12	Parkers Creek / Oceanport Creek	02030104080020-01	14.76	Total Coliform

12	Shark River (below Remsen Mill gage)	02030104090060-01	12.87	Total Coliform

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

GRTS NPS REDUCTIONS							
Project Number	**Waterbody**	**Location**	**BMP**	**Nitrogen Reduction (lbs/yr)**	**Phosphorus Reduction (lbs/yr)**	**Sediment Reduction (tons/yr)**	**Funding Source**
RP01-062	Neldon's Bk, Lk Musconetcong, Lk Hopatcong, Swayze Mill Pond, Lopatcong Cr, Pequest Rv, and Musconetcong Rv	Netcong Boro, Stanhope Boro, Phillipsburg Town; Stillwater, Jefferson, Hope, Lopatcong, White, and Bethlehem Townships	Vegetated Riparian Buffers	576.2	214	338.5	319(h)
RP01-107	Vreeland Lake, Fox Brook	Bergen County	Shoreline Stabilization, Infiltration Trenches, Porous Pavement	405.1	194.1	35.7	319(h)
RP01-114	Peapack Brook	Peapack-Gladstone Boro	Streambank Restoration	2.4	0.9	1.7	319(h)
RP02-076	Speedwell Lake, Whippany River	Town of Morristown	Vegetated Filter Strips, Settling Basin	4.3	37.3	7.5	319(h)
RP03-006	Warinanco Park Lake	Borough of Roselle, City of Elizabeth	Vegetated Filter Strips	194.4	22	8.3	319(h)
RP03-047	Mountain Lake, Mountain Brook	Liberty Township	Oil & Grit Separator, WQ Inlet Filters	25.9	3	1.2	319(h)
RP04-004	Demarest Park Lake	Borough of Demarest	Vegetated Filter Strips, WQ Inlet Device	29.4	2.3	1.4	319(h)
RP04-009	Lake Mohawk	Sparta Township	Alum Injection	947.5	258.4	34.1	319(h)
RP04-013	Lake Alberta	Neptune Township	Oil & Grit Separator, Vegetated Filter Strips	21.2	3.8	1.4	319(h)
NA*	Swartswood Lake	Stillwater & Hampton Townships	Infiltration Basin	166.7	21.8	5.8	319(h)
		TOTAL Load Reduction for FY 2007		**2368.8**	**720.3**	**428.1**	

APPENDIX IV - Watershed-Based Plans

WATERSHED-BASED PLANS STATUS SFY 2002-2007					
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 January 2005	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	November 2008	Camden and Gloucester County Soil Conservation Districts	637,174
RP04-010	2003	Regional Stormwater Management Plan for Robinson's Branch	Completed December 2007	Rutgers Cooperative Extension	291,124
RP04-011	2003	Stormwater Management Plan for the Cedar Grove (Al's) Brook Watershed	December 2008	Franklin Township	150,000
RP04-012	2002	Urban Stormwater Retrofit in the City of Trenton	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 2008	West Milford Township	152,330
RP04-083	2004	Many Mind Creek Regional Stormwater Management Plan	Completed December	Atlantic Highlands	87,833

			2007	Environmental Commission	
RP04-081	2004	Stormwater Implementation Plan for the NJ End of Greenwood Lake	Completed April 2006	West Milford Township	152,330
RP04-087	2004	Regional Stormwater Management Plan for Pompeston Creek, Burlington County, New Jersey	Completed June 2007	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	October 2006	Deal Lake Commission c/o Borough of Allenhurst	99,400
RP06-071	2006	Modification to RP04-082 above - More funding granted.	October 2008	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	June 2008	East Amwell Township	92,470
RP06-074	2006	Modification to RP04-084 above - More funding granted.	June 2008	East Amwell Township	18,102
RP04-085	2004	A Regional Stormwater Management Plan for the Devils, Shallow, Cedar and Cranbury Brooks Watershed	July 2008	Middlesex Planning Department	286,200
RP04-088	2004	A Regional Stormwater Management Plan for the Pleasant Run Watershed	September 2008	Readington Township	52,560
RP06-065	2006	Modification to RP04-088 - More funding granted.		Readington Township	4,960
RP04-089	2004	Development of a Regional Stormwater Management Plan for the Upper Mantua Creek	March 2009	Camden County Soil Conservation District	503,065
RP05-079	2005	Watershed Restoration Plan for the Upper Cohansey River Watershed	February 2008	Rutgers, The State University	310,640
RP05-082	2005	Watershed Restoration and Protection Plan for Lockatong and Wickecheoke Creek Watersheds, Hunterdon County, New Jersey	August 2008	New Jersey Water Supply Authority	237,290

RP05-084	2005	Watershed Protection Plan for the Alexauken Creek Watershed (including the 9 minimum components)	August 2008	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)	September 2008	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)	March 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
RP07-007	2006	Assiscunk Creek Headwater Restoration and Protection Plan (including the 9 minimum components)	April 2010	Burlington County Bridge Commission	362,230
RP06-068	2006	Neshanic River Watershed Restoration Plan (including the 9 minimum components)	October 2008	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 2009	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)	April 2010	Union Township Environmental Commission	237,362
RP07-001	2006	Tenakill Brook Watershed Restoration Plan (including the 9 minimum components)	August 2009	Rutgers Cooperative Research & Extension Water Resources Program	303,200
RP07-002	2006	Musquapsink Brook Watershed Restoration Plan (including the 9 minimum components)	September 2009	Rutgers Cooperative Research &	317,955

				Extension Water Resources Program	
RP06-073	2006	Watershed Restoration and Protection Plan for the Musconetcong Watershed - Hampton to Bloomsbury (including the 9 minimum components)	October 2009	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	September 2008	Monmouth County	350,000
RP06-069	2006	Demonstration Project to Support TMDL Implementation for the Pequannock River	October 2008	Pequannock River Coalition	24,500
RP07	2007	Watershed Restoration Plan for the Paulins Kill Headwaters to Balesville Phase I	September 2011	Sussex Count 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)
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 (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
	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

* 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.