New Jersey Nonpoint Source Management Program Plan
2015 – 2019

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New Jersey Nonpoint Source Management Program Plan 2015-2019

The Nonpoint Point Source Management Program Plan highlights the key actions that New Jersey with its partners will use to address water quality issues caused by nonpoint source pollution (NPS) to achieve water quality objectives. The U.S. Environmental Protection Agency (EPA) requires states to have an updated NPS Management Program in place to qualify for Federal Section 319 grant awards under the Clean Water Act (CWA). In 2013, EPA issued 319 program guidelines describing key components to be included in an effective state NPS management program see http://water.epa.gov/polwaste/nps/cwact.cfm. This plan in part fulfills the CWA continuing planning process by identifying New Jersey's strategies to protect, maintain and improve water quality.

INTRODUCTION

New Jersey is one of the most geologically and hydrogeologically diverse states, with over 18,000 miles of rivers and streams; over 50,000 acres of lakes, ponds, and reservoirs; 950,000 acres of wetlands; 260 square miles of estuaries; 127 miles of coastline; and over 450 square miles of ocean under its jurisdiction. New Jersey is the fifth smallest and most densely populated state in the Nation, with approximately 8.9 million people living within 7,500 square miles of land area. The combination of population density, diversity of natural resources, and a wide range of land uses, presents unique challenges to protecting New Jersey's water resources.

The New Jersey Department of Environmental Protection (Department) is 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. The Federal Clean Water Act (CWA), New Jersey's Water Quality Planning Act (WQPA) and Water Pollution Control Act (WPCA) provide the foundation for the environmental programs that protect New Jersey's water resources through water quality standards, monitoring, and assessment. The Nonpoint Source Management Program Plan outlines the Department's strategies for meeting this responsibility with respect to nonpoint source pollution (NPS) control.

NJ Water Quality Objectives

The New Jersey Water Quality Planning Act, N.J.S.A. 58:11A-1, et seq., requires the State to restore, maintain, and preserve the quality of New Jersey's waters, including both surface and ground water, for the protection and preservation of the public health and welfare, food supplies, public water supplies, propagation of fish and wildlife, agricultural and industrial uses, aesthetic satisfaction, recreation, and other beneficial uses.

The objective of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., is to prevent and control pollution of waters in the State.

Sources of Pollution

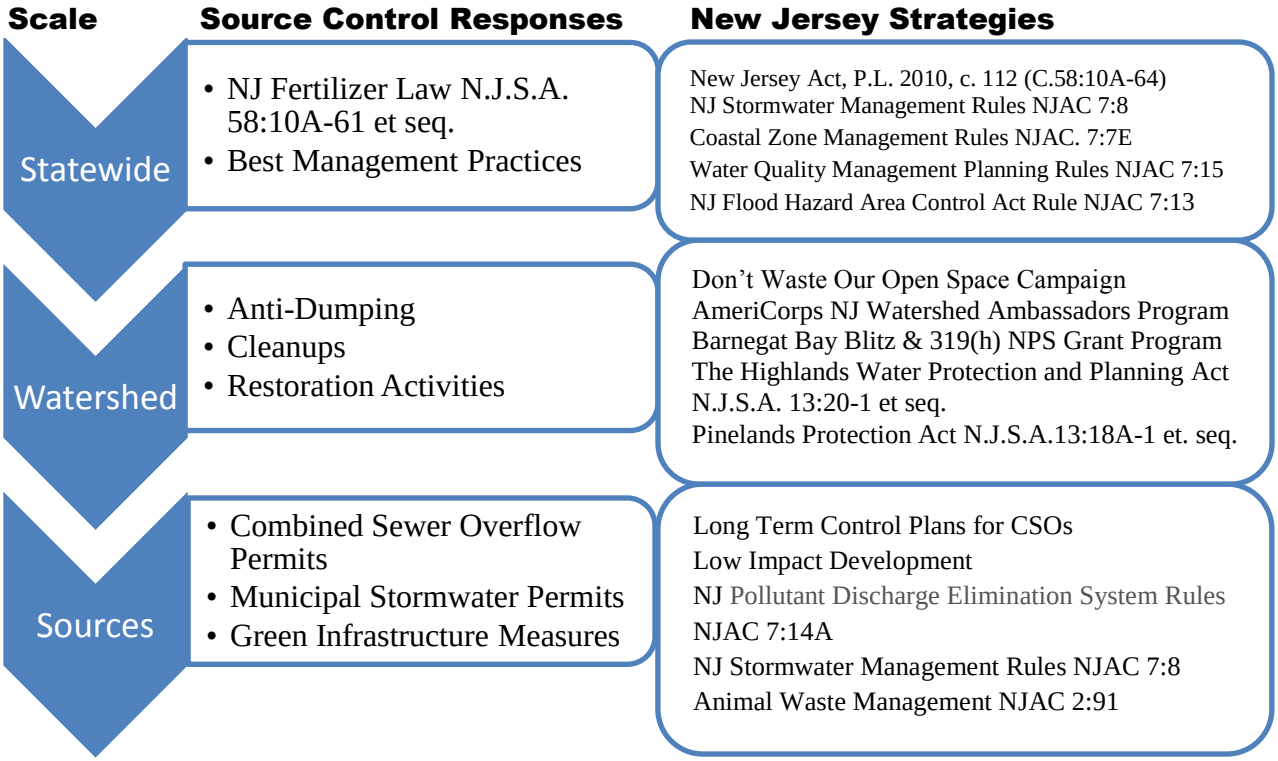
Water quality improvement has made great strides since the 1970s. The initial focus of water quality management efforts was on achieving better treatment of wastewater at wastewater treatment plants, which resulted in improved water quality throughout the 1980s and 1990s. Much has been accomplished in New Jersey, with all wastewater treatment plants at secondary or advanced treatment levels. Water quality still does not fully support the original "fishable and swimmable" goals of the CWA and the water quality mandates of New Jersey's WQPA and WPCA. Nonpoint sources, which are harder to control than point sources, are responsible for a significant portion of the remaining challenge. These diffuse and for the most part unregulated nonpoint sources are the subject of several fact sheets posted on the United States Environmental Protection Agency's (EPA) Water: Outreach and Communication website http://water.epa.gov/polwaste/nps/outreach/facts_index.cfm.

Moreover, EPA identifies nonpoint source pollution as the nation's largest water quality problem, in their lead off fact sheet http://water.epa.gov/polwaste/nps/outreach/point1.cfm stating that approximately 40% of surveyed rivers, lakes and estuaries are not clean enough for fishing and swimming due to nonpoint sources of sediment and nutrients. The Department, along with its partners, has already invested significant resources in characterizing the causes of water quality impairments and has found that reducing nonpoint sources of pollution as key to meeting water quality objectives.

Urbanization increases impervious surfaces of the land due to the building of roads, pavement, and rooftops which cause rain and snowmelt to remain on the surface. The nonpoint source runoff then moves over the land and picks up natural and human-made pollutants depositing them into lakes, rivers, wetlands, ground and coastal waters. These include:

- Excess fertilizers, herbicides, and insecticides from agricultural and residential areas;
- Oil, grease, and toxic chemicals from vehicles, urban and developed land and energy production facilities;
- Sediment from improperly managed construction sites and other disturbed land uses;
- Excess salt from winter road management;
- Bacteria and nutrients from livestock, pet wastes, and faulty septic systems;
- Atmospheric deposition; and
- Consequences of hydromodification, such as bank and channel erosion.

Because NPS pollution is diffuse, control is most effective at the source, in contrast to the collect/treat/discharge approach used with point sources. Source control includes strategies that prevent the introduction of pollutants to the environment as well as taking advantage of natural systems to filter and process pollutants in each watershed. Strategies include both those that remedy existing and past practices and those that ensure best management practices are applied from the outset. New Jersey's strategies include regulatory, non-regulatory and targeted funding components to address NPS pollution. The spatial scale of measures to control NPS pollution ranges from statewide to watershed to source specific. A snapshot of both regulatory and non-regulatory measures are depicted in the graphic on top of Page 3 which highlights many of New Jersey's strategies and response measures to address NPS pollution.



Water Quality Standards

New Jersey's long term water quality objectives are set forth in New Jersey's WQPA and WPCA, which mirror the CWA's fishable and swimmable objectives. Establishing and refining water quality standards that will support designated uses of the State's waters, measuring water quality through various monitoring networks, and assessing the data collected relative to the standards, provide the scientific foundation for the protection of New Jersey's water resources in accordance with State law and the Federal CWA. Through this work, the Department identifies high quality waters for protection and impaired waters for restoration and evaluates the effectiveness of restoration and protection actions.

New Jersey Surface Water Quality Standards

The New Jersey Surface Water Quality Standards (SWQS) are established at levels that are intended to be consistent with support of the designated uses assigned to a waterbody. Uses can include public water supply, recreation, aquatic life, shellfish harvesting and fish consumption. The SWQS provide the metrics for evaluating water quality data to determine where waters are 1) high quality (better than standards), 2) attaining, or 3) impaired (below standards). They also include the policies that will be employed to ensure that high quality waters are protected. It is critical that SWQS reflect the best science so that they serve the intended purpose. As a result, SWQS are reviewed periodically and iteratively refined as new information becomes available through the Triennial Review process envisioned in the CWA. Nutrient criteria have been the

national focus for SWQS enhancement, which is relevant to NPS management, because nonpoint sources are a significant contributor to the nutrient pollutant load to waterbodies. New Jersey has developed a Nutrient Criteria Enhancement Plan (2013) http://www.nj.gov/dep/wms/bears/nutrient_criteria.htm, which sets forth the tasks and schedule for moving toward establishing or revising nutrient criteria, as needed, to ensure they align with protection of designated uses. An updated and revised Nutrient and Criteria Enhancement Plan is being developed by the Department and will be available at the same website.

Monitoring and Assessment

An important objective for designing monitoring networks to gather water quality data and assessment methods to analyze water quality data is to produce reliable determinations as to the status of water quality relative to designated use support. It is important to have a high degree of confidence in the assessment determinations so that resources can be most effectively and efficiently allocated to protect and restore water quality. Other objectives for monitoring design are to pinpoint the causes of water quality impairment so that effective measures can be implemented and then to determine the effectiveness of the measures after they have been implemented, which in turn informs management responses.

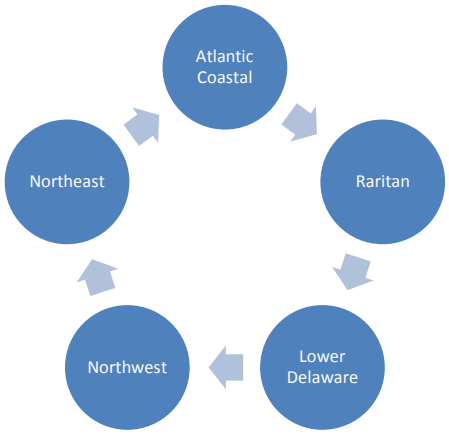
The Department is currently reassessing its long term monitoring strategy, which had been set forth 10 years ago in the *New Jersey Water Monitoring & Assessment Strategy (2005-2014)* (http://www.state.nj.us/dep/wms//longtermstrategyreport.pdf), to ensure they reflect the best science and prioritize resources to maximize effectiveness in achieving water quality protection and restoration.

Assessment of water quality to determine status in terms of designated use support is carried out every two years as part of the integrated water quality assessment, which produces the Water Quality Inventory, required under Section 305(b) of the CWA, and the List of Water Quality Limited Waters, required under Section 303(d) of the CWA. The Department reviews its methods for carrying out this assessment each listing cycle. In preparing its *2014 Integrated Water Quality Monitoring and Assessment Methods* document (http://www.state.nj.us/dep/wms/), the Department has revised the methods in order to increase the confidence in assessment decisions and to better identify areas where targeted monitoring or other follow up investigation is needed to develop and implement management responses to address water quality impairment. To do this, in addition to the required statewide assessment, the Department will carry out an enhanced assessment process in a selected water region in each assessment cycle. The enhanced assessment considers all available lines of evidence within the selected region such as hydrology, geology, natural conditions, land uses, data from upstream and downstream stations, tidal influences and restoration activities. This results in a comprehensive re-examination of past designated use support decisions in addition to considering how new data informs assessment.

New Jersey has five water regions (Atlantic Coastal, Raritan, Lower Delaware, Northwest and Northeast). The rotating basin approach will produce a comprehensive assessment of the entire state every 10 years. This approach will support development of measures to restore, maintain

and enhance water quality uses that maximize effectiveness and efficiency in achieving positive environmental outcomes that are tailored to the unique circumstances of each region. The Department has applied the enhanced assessment process in the Atlantic Coastal Region for the 2014 listing cycle and is planning to address the Raritan Water Region in the 2016 cycle.

New Jersey's Water Regions Rotating Basin Approach



Protection and Restoration Strategies

Once actual water quality impairments have been identified, the CWA envisions that the response will be to develop TMDLs for each impairment. EPA guidance from July 2003 http://www.epa.gov/owow/tmdl/tmdl0103/2004rpt_guidance.pdf suggested that total maximum daily loads (TMDLs) be developed within 8 to 13 years of being listed as impaired. Since that time, New Jersey and other states have been actively developing TMDLs for impaired waters. This experience has made it clear that not all impairments benefit from having a TMDL prepared. A TMDL is essentially a calculation of the loading of a pollutant that can be sustained by a waterbody and still attain SWQS. It has regulatory implications that are important with respect to point sources, as these are defined by the CWA. However, where sources are not subject to regulation under the CWA, like nonpoint sources, and because the TMDL process has resource intensive administrative requirements that do not add to the science of determining what needs to be done to restore water quality. Watershed restoration through watershed based plans (WBPs) is an effective alternative. Additionally, the determination of load reduction needed to attain standards is a required element of an EPA 9 element WBP; please refer to http://www.epa.gov/region9/water/nonpoint/9elements-WtrshdPlan-EpaHndbk.pdf for specifics.

Previous section 319(h) NPS grant funds prioritized the development of 9 element WBPs in accordance with EPA issued grant guidance. As a result, the Department has approved WBPs in several locations throughout the State (see appendix). Similar to a TMDL, a WBP identifies the sources of a pollutant and their relative contribution and load reduction needed to attain SWQS. A WBP identifies strategies to accomplish load reductions needed to reduce the pollutant of concern to levels that comport with attaining SWQS. Implementation of these WBPs is expected to improve water quality without the need for a TMDL. The WBP load reduction measures

depend largely on actions that could be accomplished using 319(h), Farm Bill and other funding sources and/or stewardship activities. Therefore, in locations where the sources are nonpoint or stormwater in nature and non-regulatory measures are the primary means available to reduce the loads, the Department will opt to pursue restoration and stewardship building actions directly as the preferred path to reduce loads and attain water quality standards.

Recognizing that TMDLs are not the only appropriate response to identified impairments, in December 2013, EPA issued new guidance entitled, *A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program*, which states that "The Clean Water Act Section 303(d) Program provides for effective integration of implementation efforts to restore and protect the nation's aquatic resources, where the nation's waters are assessed, restoration and protection objectives are systematically prioritized, and Total Maximum Daily Loads and alternative approaches are adaptively implemented to achieve water quality goals with the collaboration of States, Federal agencies, tribes, stakeholders, and the public". The vision approach allows for flexibility so that states can align existing programs and work within the current regulatory framework to achieve water quality objectives in accordance with the state's priorities, with an emphasis on results achieved through both restoration and protection efforts. See http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/programvision.cfm

Development of the vision was driven by the desire of the states and the Federal government for *greater efficiency* and more success in *achieving water quality protection and restoration*. Under the vision States would:

- Prioritize waters or watersheds for restoration and protection
- Assess the quality of all priority waters or watersheds
- Identify protection planning priorities and approaches
- Use alternative approaches, in addition to TMDLs, to achieve water quality
- Engage stakeholders and the public in water quality protection and restoration efforts
- Foster integration across CWA programs, other programs, and other agencies
- Identify the TMDLs and alternative approaches, such as a WBPs, that would be targeted for completion by 2022, as part of a new EPA water quality measure (WQ27)

In keeping with the new vision, in the 2014 Integrated Assessment, the Department will be proposing a component of the impaired waters list known as Sublist 5R to recognize that not all impaired waterbodies are most effectively addressed through a TMDL. There are currently 17 approved WBPs in New Jersey (see appendices) that will posted to http://www.state.nj.us/dep/wms/bears/319_grant_program.htm (or are available upon request to the Division of Water Monitoring and Standards) and additional WBPs under development or envisioned as part of the Department's WQ27 performance measure commitment to EPA. Implementation of TMDLs and WBPs has been a priority for use of 319(h) grant funds and to focus the activities of partners in funding and stewardship to achieve environmental results. Additional funding initiatives that support the mitigation of nonpoint source pollution are available through both the Department and its partnering agencies as described under the Funding section.

The Department has a Performance Partnership Agreement (PPA) with EPA that lays out jointly-developed priorities and protection strategies of how EPA and New Jersey will work together to

address priority needs for water pollution control. The PPA outlines performance measures for evaluating environmental progress, the articulation of explicit short- and long-term goals, objectives and strategies to restore and protect surface water and ground water through a Nonpoint Source Management Program Plan satisfies a requirement set forth in the PPA.

Excerpts of several performance measures are provided below that are referred to in this document. A complete list of performance measure descriptions may be found at the EPA website http://water.epa.gov/resource_performance/planning/FY-2015-NWPG-Measure-Definitions-Water-Quality.cfm.

Measure Code: WQ-10

Measure Language: Number of waterbodies identified by States (in 2000 or subsequent years) as being primarily NPS-impaired that are partially or fully restored. (cumulative)

Measure Code: WQ-SP12.N11

Measure Language: Improve water quality conditions in impaired watersheds nationwide using the watershed approach. (cumulative)

Measure Codes: WQ-27

Measure Language: Extent of priority areas identified by each State that are addressed by EPA-approved TMDLs or alternative restoration approaches for impaired waters that will achieve water quality standards. These areas may also include protection approaches for unimpaired waters to maintain water quality standards.

Measure Code: WQ-28

Measure Language: State-wide extent of activities leading to completed TMDLs or alternative restoration approaches for impaired waters, or protection approaches for unimpaired waters.

TMDLs and WBPs fulfill measures identified above; moreover, they define the path to water quality attainment. In addition, the Department conducts several direct regulatory programs and promotes stewardship activities through non-regulatory means, all aimed at achieving water quality goals as described in the long term and short term objectives presented on the subsequent pages.

LONG TERM AND SHORT TERM OBJECTIVES

New Jersey's long term objectives for water quality are set forth in the WQPA and the WPCA presented on Page 1. With these long term objectives of protection and restoration in mind, there are interim objectives that can be described in terms of standards development, assessment, monitoring network design as well as restoration that can be articulated to steer and track progress toward attainment of those long term objectives. These are reflected in the PPA, the

Nutrient Criteria Enhancement Plan, the Long Term Monitoring Strategy, and the biennial Integrated Water Quality Assessment Report and associated Methods Document. The current PPA is a three-year agreement through to June 30, 2016 between the Department and EPA, which is linked to Federal funding provided to carry out the commitments within the agreement. A summary of short term objectives is provided in Table 1 below. Actions with an asterisk * have a number identified under a specific year that refers to the quantification of the deliverable associated with New Jersey's current PPA commitment. Since, the PPA is negotiated each year the numbers for 2017-2019 are the projected commitment and the X's for 2017-2019 are an acknowledgement of the continuation of existing Departmental activities as anticipated commitments.

TABLE 1: Short Term Nonpoint Source Objectives

Objective	Actions	Output Milestones	2015	2016	2017	2018	2019
Approve Watershed Protection Plans and/or 9-element Watershed Based Plans	*Develop Protection Plans and/or WBPs, or provide technical and when possible, financial support to partners to develop Plans focus on WQ27 priority areas.	Protection Plan and/or 9-element WBPs	1	2	2	2	2
Fully or partially restore NPS impaired waterbodies; Prepare NPS Success Stories that document the restorations	-Provide technical support and funding through 319 grant program and encourage prioritization of Farm Bill funds to support implementation of WBPs; focus on WQ27 and NWQI priority areas. -*Collect data to determine the effectiveness of implementation efforts -* Evaluate available data to determine if SWQS have been met or if there has been substantial incremental improvement in water quality and/or ecological condition.	1. Full attainment achieved for NPS relevant parameters for one or more AUs		X		X	
		2. WQ10 success stories	1	1	1	1	1
		3. SP12 success stories	1	1	1	1	1

Objective	Actions	Outcomes	2015	2016	2017	2018	2019
Enhance nutrient SWQS—estuaries	-Make progress on identifying role of water quality in Barnegat Bay - Develop numeric nutrient criteria or narrative criteria translators of nutrient criteria in Barnegat Bay	1. Identify potential water quality targets for nutrients in Barnegat Bay 2. Test water quality targets in water quality model of Barnegat Bay		X X			
Revise Long Term Monitoring Strategy	Identify monitoring objectives that will align resources to better support assessment, source identification and restoration effectiveness re: water quality protection and restoration	Long Term Monitoring Strategy Update	X				
Integrated Water Quality Assessment	Conduct enhanced water quality assessment on a rotating basin basis to prioritize development of TMDLs/WBPs and implementation measures	Integrated Water Quality Assessment—305(b) Water Quality Inventory and 303(d) List of Water Quality Limited Waters		X		X	
Promote Stewardship to reduce NPS	-Conduct AmeriCorps NJ Watershed Ambassador Program throughout the State -Support citizen science and volunteer monitoring groups and partner with them to identify NPS sources and implement solutions -Carry out and partner with others in programs aimed at debris control	1. NJWAP Members complete annually: 40 assessments 50 presentations 5 partnership projects 3 CS/VM trainings 5 Acres of parks (state, county, local) improved 3 tons of materials collected and recycled 5 miles of rives improved Reduce 25 lbs of phosphorus from	X	X	X	X	X

		entering waterways 2. Conduct Stream School training for CS/VM 3. Maintain web based tool kit for CS/VM 4. Reduce debris through continuation of Clean Shores program; Barnegat Bay Blitz/other regional "blitz" initiatives; "Don't Waste Open Space Initiative" in State parks	 X X X	 X X X	 X X X	 X X X	 X X X
Fund NPS reduction projects	-Operate 319(h) grant program to maximize effective use of funds provided to achieve measureable water quality outcomes -Work with Department of Agriculture and NRCS to prioritize award of Farm Bill funds to reduce NPS -Make CWSRF funds available for NPS reduction measures -Work with partners to leverage State resources to increase NPS available funding	1. Timely awards in accordance with RFP priorities; proper management of grants; update GRTS for load reduction data for N, P and sediments upon project completion 2. Attend State Technical Committee meetings 3. Carry out effectiveness monitoring with EPA assistance in Upper Salem watershed 3. Identify eligible NPS projects and priorities in annual Priority System/ Project Priority List 4. Attend meetings as active partner in NJ NEPPs	X X X X X	X X X X X	X X X X X	X X X X X	X X X X X

BARNEGAT BAY

An example of the comprehensive water resource management approach is found in the Barnegat Bay Action Plan at: http://www.nj.gov/dep/barnegatbay/docs/bb_yr1_final_low.pdf

Through this action plan, the Department launched both long term efforts, such as research and model development aimed at problem identification setting relevant standards and formulating restoration strategies, and short term actions like storm water basin retrofits.

The Department will continue to evaluate the water resource management issues of a region to ensure that identified problems are addressed comprehensively and holistically, with the most efficient and effective use of both regulatory and non-regulatory tools and partnerships to achieve measurable environmental outcomes.

1. **Close Oyster Creek Nuclear Power Plant**
2. **Fund Stormwater Runoff Mitigation Projects**
3. **Reduce Nutrient Pollution from Fertilizer**
4. **Require Post-Construction Soil Restoration**
5. **Acquire Land in the Watershed**
6. **Special Area Management Planning**
7. **Adopt More Rigorous Water Quality Standards**
8. **Educate the Public**
9. **Fill in the Gaps on Research**
10. **Reduce Water Craft Impacts**

Working Partnerships

A comprehensive water resource management approach provides the context and framework for the water quality standards, monitoring, and assessment which in turn provides the scientific foundation for the protection of New Jersey's water resources and implementation of the CWA and the WQMPA and WPCA. Monitoring and assessment of water quality data directs and supports the Department's efforts to develop and refine water quality standards that provide measurable targets for identifying and protecting high quality waters, identifying and restoring impaired waters, issuing and enforcing discharge permits, managing nonpoint sources of pollution, setting priorities for water resource management, and evaluating the effectiveness of restoration and protection actions.

Success of the NPS program depends on maintaining existing and forging new partnerships with state, interstate, tribal, regional and local entities; private sector groups; citizens groups; and Federal agencies. These partners and their affiliated programs have goals that align or overlap with the goals of the NPS Program, thus providing mutual benefits. Partnerships strengthen the program by attracting new ideas and input, increasing understanding of NPS problems, and building commitment to implementing solutions. Partnerships are paramount to implementing short and long term objectives. The Department will work closely with our partners to implement the broad range of available NPS reduction and prevention strategies. These include development of watershed restoration plans, prioritization of available funding to implement nonpoint source reduction and prevention measures, stewardship building and environmental education intended to enhance local initiatives to reduce and prevent nonpoint source pollution, which would include adoption of ordinances related to riparian zone and steep slope protection.

The Department, along with its partners, has already invested significant resources in characterizing the causes of water quality impairments in several watersheds in an effort to reduce nonpoint sources to meet water quality objectives in those watersheds. This has allowed the Department to better address overarching issues, such as combined sewer overflows and improving resiliency to storm events like Superstorm Sandy, that require cross-programmatic integration of

expertise and authority to implement innovative solutions like green infrastructure and living shorelines. Through this approach, the Department will be able to address stressors that affect water flow, quality, and quantity within a defined area; determine the regional priorities; and identify and implement solutions. The Department's wide-ranging water quality management programs all play an important role in achieving their individual and collective environmental objectives. Major regulatory measures are stated on the following pages.

As discussed previously, the Department carries out several state-wide initiatives and collaborates on multiple levels to implement its overall program for NPS pollution control. Collaboration involves several inter- and intra- state agencies, as well as partnerships with local government units, non-governmental units, academic institutions and other entities. Major partnership and stewardship efforts are presented below. The Barnegat Bay comprehensive action plan and partnership effort highlighted in the text box on the previous page illustrates an all-inclusive strategy to restore ecological health to the bay.

Major Partnerships and Stewardship Initiatives:

Estuary Programs:
There are three National Estuary Programs that include New Jersey waters: Delaware, NY/NJ Harbor and Barnegat Bay. Each program has a Comprehensive Conservation Master Plan (CCMP) that addresses the water quality, natural resource and other issues of concern in the estuary and the associated watershed. The CCMPs include specific short and long term actions intended to address the identified issues. The Department is a partner in implementing the CCMP actions, including those that address NPS pollution.

Highlands and Pinelands: The Highlands Act established a Highlands Preservation Area and a Highlands Planning Area, each of roughly 400,000 acres in size. The Department directly regulates land use in the Highlands Preservation Area and there are several standards within the implementing regulations that advance the objective of NPS pollution control, such as those regarding steep slope disturbance, riparian buffers, impervious surface ratios and septic density.

The Pinelands Comprehensive Management Plan sets forth the regulations and standards designed to promote orderly development of the Pinelands so as to preserve and protect the region's significant and unique ecology and natural resources. The Plan is administered by the New Jersey Pinelands Commission. The Pinelands Comprehensive Master Plan and regulations contain standards that support NPS pollution control, including riparian buffers and septic density requirements.

AmeriCorps New Jersey Watershed Ambassadors Program:

The Department began hosting the AmeriCorps New Jersey Watershed Ambassadors Program in September of 2000 under an AmeriCorps State contract with the Corporation for National and Community Service. The AmeriCorps New Jersey Watershed Ambassadors Program is an environmental community service program administered by the

Department to raise public awareness about water and watershed issues and to promote watershed stewardship through direct community involvement. AmeriCorps members are assigned to different watersheds throughout the State to serve as "Watershed Ambassadors" to their watershed communities. Since its beginning, the Department has recruited and trained over 280 AmeriCorps members as Watershed Ambassadors to serve New Jersey communities. Many have continued to reside in New Jersey and have become teachers, outdoor educators, conservation officers, Department employees, directors of nonprofits and serve as scientists at watershed and other environmental organizations aimed at promoting clean water in New Jersey.

Each year, the Watershed Ambassadors complete a set of objectives that serve to raise awareness of the importance of individual actions in controlling NPS pollution, build stewardship capacity at the local level to assess water quality and directly accomplish source control projects. The objectives may be revised from year to year, but remain focused on NPS pollution control. See http://www.nj.gov/dep/wms/bears/americorps.htm for details.

Dumping Prevention and Cleanups:

The Department conducts and collaborates with partners in conducting large scale cleanup projects to control debris reaching waterbodies. The Department administers both the Adopt-A-Beach and Clean Shores Programs to address coastal debris. An example of partnership effort is with the New Jersey Clean Communities Council, which reported 760 projects in 2014 across the state that removed 1,930 tons of debris from waterways, beaches, greenways and roads.

Major cleanups in 2014 included the Barnegat Bay Blitz, the Raritan River Cleanup in Somerset County, the Great Falls Cleanup in Paterson and the Beach and Bay Cleanups in Brigantine. The services of 18,181 volunteers were rallied who collected 11,310 large bags of litter and 34 tons of recyclables across 131 miles in 2014. In addition, volunteers were able to collect 8,300 tires that had been illegally dumped on public property. These major cleanups were made possible due to a host of volunteers, including Adopt-a-Beach volunteers, New Jersey Clean Communities Coordinators, the Passaic Valley Sewerage Commissioners River Restoration Program and the Department's Barnegat Bay Initiative, Clean Shores, Open Space and AmeriCorps NJ Watershed Ambassadors programs.

Funding:

319(h) NPS grant program:

The State of New Jersey receives funds under Section 319(h) of the CWA. Under the Federal guidelines, each state may pass through a portion of 319(h) funds to other entities to reduce water quality impairment through implementation of NPS pollution control projects. The funds are awarded annually through a competitive process to accomplish the priority tasks identified in an RFP. The bulk of the funds are used for projects that implement NPS reduction measures. The State employs appropriate programmatic and financial systems that ensure section 319 dollars are used efficiently and consistent with its legal obligations, and manages all section 319

funds to maximize water quality benefits, as evidenced by Success Stories, meeting other EPA Measures, successfully leveraging funds with conservation and water quality partners, etc. The State ensures that section 319 funds complement and leverage funds available for technical and financial assistance from other Federal sources and agencies.

Clean Water State Revolving Fund (CWSRF) and Green Infrastructure:
Established in 1988, New Jersey's CWSRF program is included in the Environmental Infrastructure Financing Program (EIFP). The EIFP is a partnership between the Department and the New Jersey Environmental Infrastructure Trust providing low-interest loans for environmental infrastructure projects. Since 1988 the clean water and drinking water components of the EIFP have awarded more than $5.7 billion in loans throughout the State. As of March 27, 2015, 1004 of the 1183 funded projects totaling more than $4.9 billion in construction costs have been completed, have initiated operations, and have been administratively closed out; 179 projects totaling slightly less than $1 billion in project costs are actively contracting or under construction. This is the largest funding source of water quality protection that addresses both point and NPS control to prevent pollution of the waters of the State. See http://www.nj.gov/recovery/infrastructure/cwsrf.html and http://nj.gov/dep/dwq/mface.htm.

Green infrastructure (GI) is a method of stormwater management that reduces wet weather/stormwater volume, flow, or changes the characteristics of the flow by allowing the stormwater to infiltrate, to be treated by vegetation or by soils; or to be stored for reuse. The use of green infrastructure encourages the idea that stormwater is a resource that can be reused, rather than simply conveyed elsewhere. The approved Federal Budget beginning with FFY 10 CWSRF includes provisions to promote 'green' technologies and requires States to establish a Green Project Reserve (GPR). The GPR provision generally requires States to reserve not less than 20% of the annual Federal allocation for CWSRF capitalization grants to address green infrastructure, water or energy efficiency improvements, or other environmentally innovative activities. New Jersey also provides further enhanced financing for GI projects by providing 50 percent Principal forgiveness for GI projects in the Barnegat Bay and areas that contribute to CSOs. The Department maintains a green infrastructure in New Jersey web page at http://www.nj.gov/dep/gi/ to promote sound stormwater management practices.

Farm Bill Programs:
The Department continues to foster a partnership with the New Jersey Department of Agriculture (NJDA) and the Natural Resources Conservation Service (NRCS) to achieve New Jersey's water quality goals. In some of New Jersey's more rural watersheds, agricultural land uses can generate sources of pathogens and nutrients. Implementing best management and conservation practices on agricultural lands can improve water quality, conserve water and energy, prevent soil erosion and reduce the use of nutrients and pesticides see http://www.nj.gov/agriculture/grants/farmbill.html. This is an important component of New Jersey's nonpoint source pollution control strategy. Some of the key programs that aid in control of nonpoint sources include:

> Environmental Quality Incentive Program (EQIP) is designed to provide technical, financial, and educational assistance to farmers/producers for conservation practices that address natural resource concerns, such as water quality. Practices under this program include integrated crop management, grazing land management, well sealing, erosion

control systems, agri-chemical handling facilities, vegetative filter strips/riparian buffers, animal waste management facilities and irrigation systems.

The Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP) are designed to provide technical and financial assistance to farmers/producers to address the agricultural impacts on water quality and to maintain and improve wildlife habitat. CRP practices include the establishment of filter strips, riparian buffers and permanent wildlife habitats.

Open Space and Farmland Preservation:

The preservation of open space prevents some sources of nonpoint pollution by protecting those areas from development. Generally, the more developed a watershed becomes, the more impervious cover there is within that watershed. Various studies have concluded that impervious cover has a direct negative impact on the health of a watershed. This impact includes increasing the volume and the speed of stormwater runoff, increasing NPS pollutant loading and stream bank erosion rates. Consequently, a higher percentage of impervious cover generally results in a higher percentage of degraded water bodies. Preserving open space prevents these land disturbing impacts from occurring in the first place and so is a great preventative tool in controlling NPS pollution. The State provides funds under the Green Acres and Farmland Preservation programs to acquire open space pursuant to a constitutional dedication of a portion of the state corporation business tax, as well as monies derived from the issuance of general obligation bonds, please refer to http://www.state.nj.us/nj/green/opensp/ for more information.

Clean Water Act

The CWA is the nation's primary tool to regulate pollution control by establishing water quality standards, identifying polluted waters and plans to restore them, permitting of discharges from point sources, addressing nonpoint sources of pollution through restoration funding, and the protection of wetlands and coastal waters through the National Estuary Program. Through the CWA, WQPA, and WPCA the Department implements major regulatory measures discussed below to protect the waters of our state.

Major Regulatory Measures

Stormwater Regulation:

The Stormwater Management Rules (N.J.A.C. 7:8) http://www.nj.gov/dep/rules/rules/njac7_8.pdf contain provisions to protect against impacts of development. These rules contain standards related to stormwater volume and peak flow rates, requirements to maintain recharge at pre-development rates and quality requirements for TSS and nutrients in stormwater. The New Jersey Stormwater Best Management Practices Manual http://www.njstormwater.org/bmp_manual2.htm provides guidance to address the standards in the Stormwater Management Rules. The New Jersey Pollutant Discharge Elimination System rules (N.J.A.C. 7:14A) http://www.state.nj.us/dep/dwq/714a.htm are an implementing mechanism for the Stormwater Management rules and help to control impacts from existing development. Requirements include development of stormwater management plans, use of best practices and adoption of ordinances related to sources such as pet waste and yard waste.

Combined Sewer Overflow (CSO) Long Term Control Permits:

Combined Sewer Overflows (CSOs) are direct discharges of untreated sewage which occur when stormwater runoff is too much for a community's combined sanitary and storm sewer system to handle. CSOs are point sources subject to Federal National Pollutant Discharge Elimination System permit requirements. Although a regulated point source, CSO reduction through long term control plans is an important component of New Jersey's Nonpoint Source Management Program. The Department is implementing a Statewide CSO Control Strategy consistent with the national policy. New Jersey has required owners and operators of CSOs to develop and implement the Nine Minimum Control Measures and to develop Long Term Control Plans as specified in the national policy.

The Department has issued permits for the 217 CSO discharge points, or outfalls, in the state. The new permits require operators, including municipalities and regional sewerage authorities, to develop long-term control strategies that include gray and green infrastructure projects, such as holding tanks or lagoons, rain gardens, or green roofs, to capture or store stormwater for later release. To improve public awareness, permit holders are required to post identification signs at discharge points stating the possibility that contact with the water may cause illness. Details of which may be found at http://www.nj.gov/dep/dwq/cso.htm. Financing is made available through the New Jersey Environmental Infrastructure Financing Program.

Coastal Zone Management Act Reauthorization and Amendments:

The Federal Coastal Zone Management Act Reauthorization and Amendments requires coastal states to identify their coastal zone and develop a program to implement coastal land use management measures to control NPS. By virtue of the fact that the entire State of New Jersey lies within close proximity to the coast, there is increased likelihood that water pollution in any part of the State could contribute to coastal water quality deterioration. In 2010, EPA and National Oceanic and Atmospheric Administration (NOAA) approved New Jersey's Coastal Nonpoint Pollution Control Program and found that New Jersey met its septic management requirement by applying its TMDL development and implementation process to ensure that nitrogen loads from both existing and new septic systems are reduced as needed to attain State water quality standards. See http://www.state.nj.us/dep/cmp/ web site for more information.

Fertilizer Law:

The Department, in conjunction with the NJDA and Rutgers University, prepared the basis and background for New Jersey's fertilizer law. One of the primary sources of nutrients in New Jersey's waters is stormwater runoff from residential and commercial lawns containing fertilizer. Typically, excess nitrogen is a threat to estuarine and marine water quality while excess phosphorus is a greater concern for fresh water quality.

In 2007, the Department began working with the lawn care industry to voluntarily reduce the content of phosphorus in fertilizer by 50%. *New Jersey's 2009-2010 Annual Nonpoint Source Report* documented a statewide phosphorus reduction of 172,000 lbs/yr in Federal fiscal year 2008, which is mainly attributed to the Department's "Healthy Lawns Healthy Water" campaign, see http://www.nj.gov/dep/healthylawnshealthywater/, in conjunction with 319(h) nonpoint source pollution control grant projects. The NJDA also reported a declining trend in tons of fertilizer used between 2008 and 2012, based on New Jersey fertilizer sales data.

On January 5, 2011 the fertilizer reduction initiative was elevated to a new level when one of the most restrictive fertilizer content standards in the nation for nitrogen and phosphorus became law. The New Jersey Fertilizer Law, P.L. 2010, c. 112 (N.J.S.A. 58:10A-61 et seq.) is implemented in three phases. Phase I went into effect in 2011and requires the use of best management practices to reduce the impacts of fertilizers on waterways, and public education regarding correct fertilizer use. Phase II commenced in 2012 with the creation of a certification program for professional fertilizer applicators and lawn care providers. To date, over 1,500 professionals have been tested and are certified through the New Jersey Agricultural Experiment Station at Rutgers, the State University of New Jersey. An additional 700 staff and seasonal employees have been trained by a certified professional. Phase III began in 2013 and requires manufacturers to reformulate fertilizers with reduced nitrogen and zero phosphorus content, except in certain situations such as when establishing a new lawn or turf, or when a soil test indicates a need for additional phosphorus.

Riparian buffers:

New Jersey's water quality protection programs guard against further degradation of the State's waters in part through protections of riparian buffers. Riparian buffers provide an excellent means to control pollutants carried by stormwater runoff to streams, thus are considered an effective best management practice. Riparian zones are established by the Flood Hazard Area Control Act rule (N.J.A.C. 7:13) and vary in width. Both the Flood Hazard Area Control Act rule and the Stormwater Management Act rule (N.J.A.C. 7:8) regulate certain activities proposed within or impacting riparian zones to help maintain the water quality functions of the buffers. Additional information on these rules and associated programs are available on the Department's web site at http://www.nj.gov/dep/landuse and http://www.nj.gov/dep/stormwater.

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Conclusion

Because of the nature of NPS pollution, progress in achieving long term objectives will be slow. Monitoring and assessment of water quality provides the clearest measure of success, but it may take many years to produce measureable improvement in water quality. The short term objectives articulated for the upcoming 5 year period represent discrete, trackable steps towards the long term objectives. Progress on the short term objectives will be reflected through the annual NPS program updates, EPA's 319(h) grant reporting and tracking system, the biennial Integrated Water Quality Assessment and PPA commitment updates, which articulate many of the NPS control strategy objectives summarized here. Planning the next set of implementation strategies will be an iterative process that will be informed by regular assessment of water quality status and evaluation of effectiveness monitoring of implementation measures.

Appendix

NJ's Approved Watershed Based Plans that meet EPA's 9 Minimum Elements

Alexauken Creek Watershed Plan
Assiscunk Creek Watershed Plan
Cedar Grove Watershed Plan
Clove Brook Watershed Restoration Plan
Long Swap Creek Watershed Restoration Plan
Manalapan Watershed Restoration Plan
Metedeconk Watershed Plan
Mulhockaway Creek Watershed Restoration Plan
Neshanic River Watershed Restoration Plan
Papakating Creek Watershed Restoration Plan
Pleasant Run and Holland Brook Watershed Restoration Plan
Sidney Brook Protection Plan
Sourland Mountain Watershed Plan
Tenakill Brook Watershed Restoration
Troy Brook Watershed Plan
Upper Cohansey River Watershed Plan
Upper Salem River Watershed Plan