

**New Jersey Nonpoint Source Management Program Plan
2020 – 2025**

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NJ Nonpoint Source Management Program Plan 2020-2025

The Nonpoint 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.

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A comprehensive watershed management approach provides the context and framework for the water quality standards, monitoring, and assessment which provides the scientific foundation for the protection of New Jersey's water resources and implementation of the CWA, the Water Quality Planning Act (WQPA), and the Water Pollution Control Act (WPCA). Monitoring and assessment of water quality data directs and supports the DEP'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.

INTRODUCTION

New Jersey is one of the most hydrogeologic 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 (DEP) 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 DEP'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.

Clean Water Act

The Clean Water Act (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 discharges from point sources, addressing nonpoint sources of pollution through restoration and protection funding, and protecting wetlands and coastal waters through the National Estuary Program. Through the CWA, WQPA, and WPCA the DEP implements major regulatory measures discussed below to protect the waters of our state.

Continuing Planning Process

The CWA and the WQPA require the DEP to articulate a continuing planning process (CPP) for water quality. The CPP is intended to integrate and unify water quality management planning processes, assess water quality, establish water quality goals and standards, and develop a statewide implementation strategy to achieve the water quality standards and maintain, improve, and protect water quality throughout the State. The document may be found at <https://www.nj.gov/dep/wms/bears/docs/cpp2015-updated%202018.pdf>.

The Water Quality Management Planning (WQMP) rules, N.J.A.C. 7:15, represent one component of the CPP and implement the WQPA, N.J.S.A. 58:11A-1 et seq., whose purpose is to maintain and, where attainable, restore the chemical, physical, and biological integrity of the surface and ground water resources of the State. The WQMP rules integrate wastewater planning with existing permitting programs and provide the framework to identify anticipated municipal and industrial waste treatment needs and any gaps in providing treatment capacity in the future. These rules focus on procedures for adopting new or amended areawide water quality management (WQM) plans, including Wastewater Management Plans (WMPs); lists of water quality limited (impaired) waters; and total maximum daily loads (TMDL) for impaired waters. The CPP describes how these processes, along with other DEP programs, integrate and unify water quality management planning processes, establish and assess attainment of water quality goals and standards, and implement control measures necessary to maintain, improve, and protect water quality throughout the State.

Coastal Zone Management Act Reauthorization and Amendments

The Federal Coastal Zone Management Act Reauthorization and Amendments (CZMA) requires coastal states to identify their coastal zone and develop a program to implement coastal land use management measures to control NPS. Because the entire State of New Jersey lies near or within the coastal zone, 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 https://www.nj.gov/dep/cmp/czm_cnpp.html for more information.

Performance Partnership Agreement

The DEP's Performance Partnership Agreement (PPA) with EPA 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. This Nonpoint Source Management Plan, which includes explicit short- and long-term goals, objectives and strategies to restore and protect surface water and ground water, satisfies the 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: WO-10a**
Number of waterbodies identified by States (in 2000 or subsequent years) as being primarily NPS-impaired that are partially or fully restored. (cumulative)
- **Measure Codes: WO-27**
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.

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, but 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 impairments.

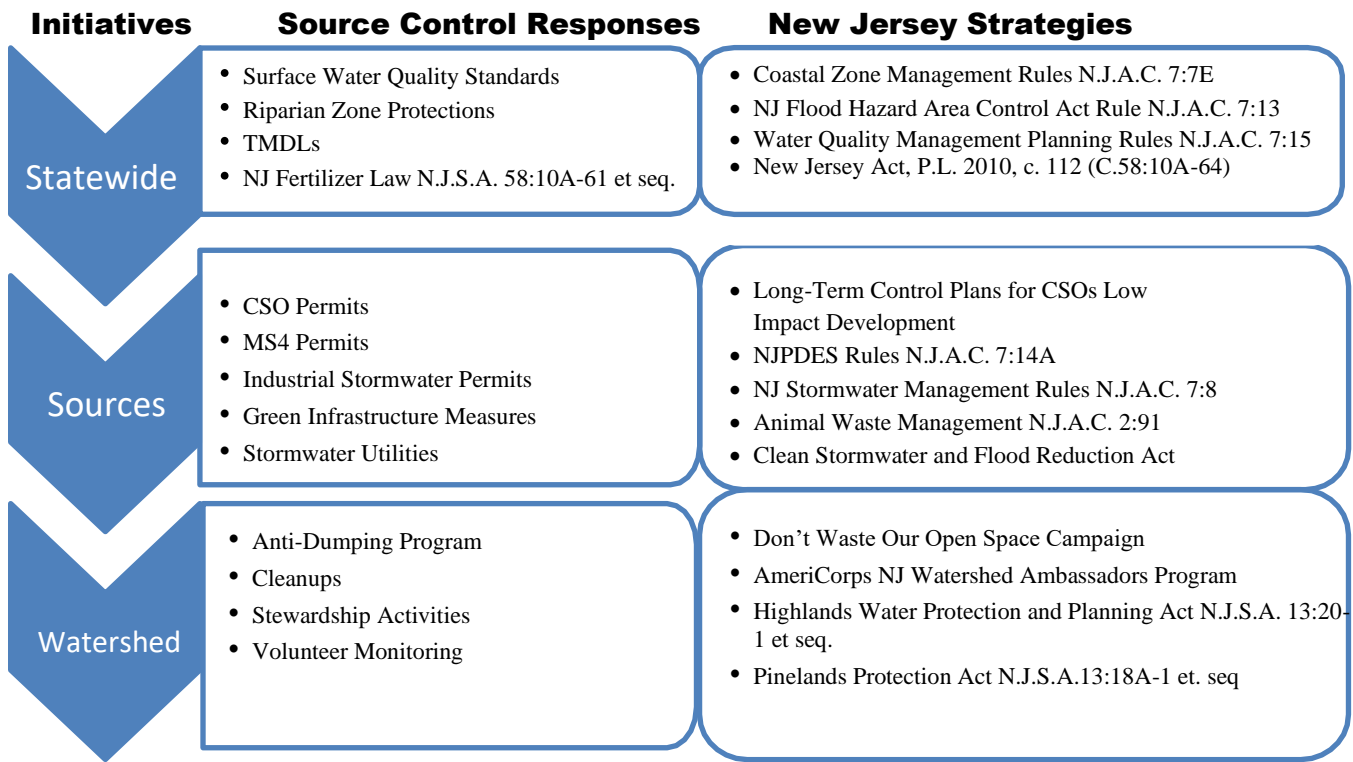
EPA identifies NPS as the nation’s largest water quality problem. In its series of fact sheet on NPS pollution awareness, (<https://nepis.epa.gov/Exe/ZyPDF.cgi/20004PZG.PDF?Dockey=20004PZG.PDF>) EPA states that approximately 40 percent of surveyed rivers, lakes and estuaries are not clean enough for fishing and swimming due to nonpoint sources of sediment and nutrients. More recently, the EPA National Aquatic Resources Survey (NARS) (<https://www.epa.gov/national-aquatic-resource-surveys/data-national-aquatic-resource-surveys>) program reported that 72 percent of streams in the lower 48 states exhibited impaired biota for which the most important stressors were nutrients and excess sedimentation. Moreover, EPA’s Watershed Academy Introduction to Clean Water Act confirms that 35 percent to 45 percent of our Nation’s impairments are due solely to NPS https://cfpub.epa.gov/watertrain/moduleFrame.cfm?parent_object_id=2696&object_id=2700#2700.

In a built-up state such as New Jersey, urbanization increases impervious surfaces, including roads, pavement, and rooftops, which causes rain and snowmelt to remain on the surface where it can become runoff. As runoff moves over the land, it picks up natural and human-made pollutants and deposits them into lakes, rivers, wetlands, ground and coastal waters. These pollutants 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, effective management involves preventing the introduction of pollutants into the environment through source control while taking advantage of natural systems to filter and process pollutants in each watershed. New Jersey’s strategies include regulatory, non-regulatory and targeted funding components to address NPS pollution from existing, past and potential new sources. The DEP, along with its partners, has already invested significant resources in characterizing the causes of water quality impairments and has found that reducing NPS in collaboration with partners is key to meeting water quality objectives. The spatial scale of measures to control NPS pollution ranges from statewide to watershed to source-specific. The graphic on top of page 6 provides a snapshot of New Jersey’s regulatory and non-regulatory measures to address NPS pollution.

NJ's Regulatory and Non-regulatory Measures to Address NPS Pollution



Long-term Initiatives

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 provides 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 DEP 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 support the designated uses assigned to a waterbody. These designated uses 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 (not attaining standards). They also include policies to ensure that high quality waters are protected. It is critical that SWQS reflect the best science so that they serve their intended purpose. 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 due to the significant contribution of nonpoint sources to the nutrient pollutant load in waterbodies.

New Jersey developed its initial Nutrient Criteria Enhancement Plan in 2009 to refine the current criteria and develop new criteria where numeric limits are lacking such as in coastal waters. This is to ensure that restoration efforts are based on water quality targets that are best suited to support designated uses across the various waterbody types. The 2009 Nutrient Criteria Enhancement Plan was updated in 2013 and again in 2018; the documents may be found at <https://www.nj.gov/dep/wms/bears/swqs-overview.htm> under the surface water quality criteria header. The 2018 Nutrient Criteria Enhancement Plan sets forth the tasks and a schedule for moving toward establishing or revising nutrient criteria, as needed, to ensure protection of designated uses.

Recent Updates

Category 1 Waterbodies and Riparian Zones

As a further measure to protect water quality throughout New Jersey, on April 6, 2020 the DEP adopted amendments to the Surface Water Quality Standards to upgrade 600 river miles to Category One (C1) antidegradation designation based on exceptional ecological significance and exceptional fisheries resources. As a result, 47 percent of NJ's waters are classified as C1 or better. C1 designations are designed to protect high quality waters from degradation in that these waters are protected from any "measurable change" to existing water quality and will be afforded 300-foot riparian zones immediately surrounding the waterbody under New Jersey's Flood Hazard Area Control Act Rule (N.J.A.C. 7:13). The riparian zones provide an excellent means to control pollutants carried by stormwater runoff to streams and are an effective best management practice. Any wastewater or other regulated discharges impacting C1 waterbodies will need to meet stringent water quality standards under the New Jersey Pollutant Discharge Elimination System Rules (N.J.A.C. 7:14A). See C1 frequently asked questions for specifics <https://www.nj.gov/dep/wms/bears/docs/FAQ-SWQSC1-Amendments-2020.pdf>.

Monitoring and Assessment

The water quality of a waterbody must support its designated use(s) stipulated in the SWQS. Determinations regarding the status of water quality relative to its designated use are made using water quality data collected through monitoring networks and analyzed using the latest assessment methods outlined in the New Jersey Integrated Water Quality Assessment Methods document (see <https://www.nj.gov/dep/wms/bears/assessment.htm#/>). An assessment is used to pinpoint the causes of water quality impairment, to allocate resources towards addressing the impairment, and to determine the effectiveness of the measures after they have been implemented.

The DEP is currently reassessing its long-term monitoring strategy, which had been set forth in the *New Jersey Water Monitoring & Assessment Strategy (2005-2014)* (<https://www.nj.gov/dep/wms/longtermstrategyreport.pdf>), to ensure that it reflects the best science and prioritizes resources for water quality protection and restoration.

An assessment of water quality to determine 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 DEP reviews its methods for carrying out this assessment each listing cycle. Beginning with the *2014 Integrated Water Quality Monitoring and Assessment Methods* (Methods Document) and presently through the 2016 Methods Document (<https://www.nj.gov/dep/wms/bears/assessment.htm>), the DEP revised its methods in order to increase the confidence in assessment decisions and to better identify areas where targeted monitoring or follow up investigation

is needed. Most notably, the DEP established a “rotating basin approach” to its monitoring and assessment strategy, in which an enhanced assessment is carried out in one of New Jersey’s five water regions (Atlantic Coastal, Raritan, Lower Delaware, Upper Delaware and Northeast) for each assessment cycle, in addition to the required statewide assessment. The rotating basin approach is designed to provide an in-depth assessment of a different water region as part of each biennial assessment.

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 to support decisions that are tailored to the unique circumstances of each region. This enhanced assessment process was applied to the Atlantic Coastal Water Region in 2014 and is subsequently applied for each Integrated Report cycle. The rotating basin approach will produce a comprehensive assessment of the entire state every ten years.

New Jersey’s Water Regions Rotating Basin Approach



Protection and Restoration Strategies

Once the water quality impairments have been identified, the CWA requires that states develop TMDLs for each impairment. A TMDL establishes the maximum amount of a pollutant that a waterbody can receive while still attaining the SWQS. Previous EPA guidance from July 2005 <https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf> suggests TMDLs be developed within 8 to 13 years of being listed as impaired. To access current and historic guidance on TMDLs and impaired waters, please go to the EPA website at <https://www.epa.gov/tmdl/integrated-reporting-guidance-under-cwa-sections-303d-305b-and-314>. New Jersey and other states have been actively developing TMDLs for impaired waters. However, not all impairments benefit from the provision of a TMDL. Because the TMDL process can be resource-intensive, an effective alternative is watershed restoration through watershed-based plans (WBPs). The determination of the load reduction needed to attain SWQS is a required component of an EPA nine-element watershed-based plan; thus, like TMDLs these plans quantify the source of pollutant and target pollution reductions needed to meet SWQS. Please refer to <https://www.epa.gov/nps/handbook-developing-watershed-plans-restore-and-protect-our-waters> for specifics.

Dissemination of previous Section 319(h) NPS pass through grant funds prioritized the development of nine-element WBPs in accordance with EPA issued grant guidance. As a result, the DEP has approved numerous WBPs in many locations throughout the State. Beginning in 2019 using 604(b) planning funds, the DEP's Water Quality Restoration Grants for Nonpoint Source Pollution <https://www.nj.gov/dep/wms/bears/npsrestgrants.html> once again highlighted nine-element WBPs and protection plans as a funding priority. Implementation of these WBPs is anticipated 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 in nature, and non-regulatory measures are the primary means available to reduce pollutant loads, the DEP has pursued restoration and stewardship-building actions 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 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". This long-term vision approach allows for flexibility to use existing programs and other available tools beyond TMDLs to achieve water quality objectives in accordance with the state's priorities, with an emphasis on results. See <https://www.epa.gov/tmdl/new-vision-implementing-cwa-section-303d-impaired-waters-program-responsibilities>.

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; and
- Identify the TMDLs and alternative approaches, such as a WBPs, that would be targeted for completion by 2022, as part of an EPA water quality measure (WQ27).

In keeping with the long-term vision, beginning in the 2014 Integrated Assessment, the DEP added Sublist 5R to the list of impaired waters for water quality impairments that it deemed were not well-suited for a TMDL. This is consistent with EPA's 2015 guidance for the 2016 303(d) and Integrated Report development which suggested the creation of a new subcategory 5-alternative to report out on new alternative approaches (see https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf). There are currently 19 approved WBPs in New Jersey, which are available at [https://www.nj.gov/dep/wms/bears/npsrestgrants.html#/. Additional WBPs under development are identified in the DEP's WQ27 performance measure commitment to EPA. Implementation of TMDLs and WBPs has been a priority for use of 319\(h\) grant funds, as well as focusing on 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](https://www.nj.gov/dep/wms/bears/npsrestgrants.html#/)

through both the DEP and its partner agencies as described under the Funding section below.

Funding

Since 2017, the DEP has prepared a comprehensive Request for Proposals (RFP) for Water Quality Restoration Grants for Nonpoint Source Pollution <https://www.nj.gov/dep/wms/bears/npsrestgrants.html> that provides funding from a myriad of funding sources described below. The annual RFP focuses grant funding on priority areas; projects that implement TMDLs; climate change resiliency projects that promote green infrastructure and living shorelines; combined sewer overflow abatement measures; harmful algal bloom (HAB) mitigation; watershed restoration, as well as enhancement and protection strategies.

Funding Sources

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 a 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 319(h) dollars are used efficiently and consistently with its legal obligations, and manages the funds to maximize water quality benefits, as evidenced by Success Stories. Section 319(h) funds complement and leverage funds available for technical and financial assistance from other Federal sources and agencies to mitigate NPS.

Each year the State of New Jersey receives funds from EPA under Section 604(b) of the federal CWA to carry out water quality management planning activities required under the sections 205(j) and 303(e). At least 40 percent of a state's 604(b) must be allocated as pass through grants to regional public comprehensive planning organizations or interstate organizations. The DEP also receives a portion of its annual funding from the New Jersey Corporate Business Tax (CBT) pursuant to Article VIII, Sec. 2, para. 6 of the New Jersey Constitution. The amount received by the DEP is dependent on the amount of CBT receipts collected. The DEP earmarks a portion of that funding for water quality restoration through its annual RFP.

New Jersey Water Bank and Green Infrastructure

Established in 1988, New Jersey's Clean Water State Revolving Fund (CWSRF) program, now called the NJ Water Bank, is included in the Environmental Infrastructure Financing Program (EIFP). The EIFP is a partnership between the DEP 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 \$8.07 billion for approximately 1,380 funded projects for water quality and public health related environmental infrastructure projects, totaling \$2.58 billion in interest savings for taxpayers and rate payers. The Water Bank 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 <https://www.nj.gov/recovery/infrastructure/cwsrf.html> and <https://nj.gov/dep/dwq/mface.htm>.

Green infrastructure (GI) refers to methods of stormwater management that reduce wet weather/stormwater volume of 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 20 percent of the annual Federal allocation for New Jersey Water Bank 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 combined sewer overflows. The DEP maintains a GI in New Jersey web page at <https://www.nj.gov/dep/gi/> to promote sound stormwater management practices.

Farm Bill Programs

The DEP 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 <https://www.nj.gov/agriculture/grants/farmland.html>). This is an important component of New Jersey's nonpoint source pollution control strategy.

One of the key programs that aid in control of agricultural nonpoint sources is the Environmental Quality Incentive Program (EQIP), which 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. Other key programs are the Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP), which 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. Additionally, as part of the National Water Quality Initiative (NWQI), the DEP collaborates with USDA-NRCS in the identification of priority agricultural watersheds for targeted planning, monitoring, and best management practice implementation.

Open Space and Farmland Preservation

The preservation of open space prevents potential sources of NPS by protecting 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 by increasing the volume and the speed of stormwater runoff and increasing NPS pollutant loading and stream bank erosion rates. Consequently, a higher percentage of impervious cover generally results in a higher percentage of degraded waterbodies. Preserving open space prevents these land-disturbing impacts and is a key 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 New Jersey's Open Space Preservation fact sheet at <https://www.nj.gov/dep/dsr/trends/Open%20Space.pdf> for more information.

Harmful Algal Blooms (HABs)

A growing global problem, HABs are not caused by true algae but rather by cyanobacteria that resemble and behave like algae. They naturally occur in fresh water and can proliferate to unhealthful levels in sunlight and hot weather, forming dense mats resembling pea soup or spilled paint. The proliferation of excess nutrients contributes to the development of HABs. The implementation of NJ's **HAB Initiative** as detailed in the short-term goals of Appendix Table 1 is truly a multipronged approach to address NPS. The breadth of which spans numerous partnerships to implement.

It includes:

- Recreational Response Strategy
- Monitoring
- Alert Index
- Interactive Mapping Tool
- Grant Funding Research
- Stakeholder Involvement

The DEP HAB Interactive Map Reporting and Communication System see <https://www.nj.gov/dep/hab/> will be used by the DEP department to gather initial information such as: location coordinates, photos, known recreational activities, and extent of the waterbody. This information will be used to inform DEP to initiate appropriate response actions. Once the DEP completes the investigation of the suspected HAB, results and any recommendations for public alerts or advisories will be communicated through the HAB System. All information and HAB data will be accessible by clicking the location on the interactive map in the HAB System.

Partnership Initiatives

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 DEP, along with its partners, has already invested significant resources in characterizing the causes of water quality impairments in several watersheds to reduce NPS and achieve water quality objectives in those watersheds. This has allowed the DEP 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.

Key partnership programs to mitigate NPS spearheaded by the DEP in collaboration with partnering organization and the residents of New Jersey include the DEP's HAB initiative, New Jersey Protecting Against Climate Threats (NJPACT) and continuation of the Barnegat Bay Restoration, Enhancement and Protection (REP) Strategy. These measures to control NPS pollution range from statewide (NJPACT) to watershed-specific (Barnegat Bay REP) to source control (HABs). Details are provided in the ensuing sections.

As discussed previously, the DEP 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.

Major Partnerships and Stewardship Long-term Initiatives:

Statewide Programs

Climate Resilience

New Jersey is working to address and mitigate the impacts of climate change. The causes of climate change and their relative contributions continue to be debated and models that project future trends and impacts continue to be refined. However, the likely effects of climate change on New Jersey's water resources are well understood. More intense precipitation events are likely to exacerbate existing stormwater runoff issues such as the transport of NPS to surface waters and flash flooding leading to streambank erosion and increased sedimentation. Warmer summers may increase surface water temperatures, combining with NPS nutrients to lower dissolved oxygen levels.

While the full extent and nature of climate change impacts remains to be seen, New Jersey does not have to wait for better models or more data to implement responsible changes to its water management programs. Common-sense initiatives can be undertaken while awaiting improvements in predictive modeling. So far, New Jersey's efforts have been successful with attainment of the 2020 greenhouse gas reduction goal years ahead of schedule. New Jersey is now looking ahead to its 2050 Goal and is accelerating its transition to a low carbon economy through reducing its carbon pollution, expanding its clean energy infrastructure and building resilient communities. In a continuous effort towards a stronger New Jersey, Governor Phil Murphy signed Executive Order No. 89 in October 2019, appointing a Chief Resilience Officer, and establishing a Climate and Flood Resilience Program within DEP. This executive order also establishes an Interagency Council on Climate Resilience to develop a Statewide Climate Change Resilience Strategy to promote the long-term mitigation, adaptation and resilience of New Jersey's economy, communities, infrastructure and natural resources (<https://www.nj.gov/dep/climatechange/resilience-council.html>). This strategy includes promotion of long-term water resource security and identification of methods to strengthen resilience of New Jersey's communities, infrastructure, economic sectors, and natural resources to climate change impacts.

New Jersey Protecting Against Climate Threats (NJPACT)

As a national leader in environmental protection, over the next two years, the DEP will create a regulatory roadmap to reduce emissions, build resilience, and adapt to a changing climate. The DEP will:

- Complete a comprehensive accounting of greenhouse gas emissions that will enable New Jersey to focus on priority pollutants and limit them aggressively to meet our goals of reducing emissions to 80 percent below 2006 levels by 2050.
- Enact new air pollution regulations that achieve critically needed reductions in carbon dioxide and short-lived climate pollutants (methane, hydrofluorocarbons, and black carbon) – technology forcing measures that pave the way for a new clean energy economy.

- Reform environmental land use rules to help New Jersey better plan and build resilient communities by avoiding flood-prone areas, reestablishing chronically inundated wetlands, revegetating riparian areas, and encouraging green building and green infrastructure.

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 freshwater quality.

In 2007, the DEP began working with the lawn care industry to voluntarily reduce the content of phosphorus in fertilizer by 50 percent. *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 DEP'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 New Jersey Department of Agriculture (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 state law. The New Jersey Fertilizer Law, P.L. 2010, c. 112 (N.J.S.A. 58:10A-61 et seq.), for which the DEP, in conjunction with NJDA and Rutgers University, prepared the basis and background, is implemented in three phases. Phase I went into effect in 2011 and requires the use of best management practices to reduce the impacts of fertilizers on waterways along with 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 University. 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.

As a short-term action item of this long-term improvement, the DEP will determine if the water quality data reflects nutrient reductions realized from implementation of New Jersey's fertilizer law (2011), Stormwater Management Rules (2004), TMDLs (2000 - 2008) and ongoing state funded nutrient reduction BMPs. These multiyear stormwater monitoring initiatives will calculate the nonpoint source loadings of nutrients, bacteria, and suspended solids from various land use areas in the watersheds.

Source Control Programs

Harmful Algal Blooms

Cyanobacteria, also known as blue-green algae (although not true algae) are naturally present in lakes and streams in low numbers that can form dense blooms under suitable environmental conditions such as optimal sunlight, elevated nutrients from stormwater runoff or other sources, warm temperatures and calm water. These Cyanobacterial Harmful Algal Blooms (HABs) can discolor the water and produce floating mats or "scums" on the surface. Under the right conditions these HABs can produce cyanotoxins, that can be dangerous for humans, pets, livestock and wildlife. In 2019, New Jersey experienced an unprecedented number of HABs in its freshwater waterbodies, resulting in advisories

to limit direct contact and closure of several freshwater recreational bathing beaches to protect public health. Some of these advisories and recreational bathing beach closures had a negative impact on local economies and limited NJ residents and visitors' enjoyment of these natural resources.

Exposure to cyanobacteria cells can cause a range of mild to moderate health effects, incidental ingestion of water containing the toxins, known as cyanotoxins, can result in more serious health effects such as liver toxicity and neurological effects. To protect public and animal health, the recreational and potable uses of the State's waters, and local economies, the DEP has set both short- and long-term objectives for HAB mitigation and treatment. Short-term objectives implement improvements on funding, science, and communication to move towards attaining long-term objectives. Long-term objectives, in turn, include restoring, enhancing and maintaining the chemical, physical, and biological integrity of New Jersey waters, protecting public health, safeguarding fish and aquatic life and scenic and ecological values, and enhancing the domestic, municipal, recreational, industrial and other uses of water. As one step towards these goals, in 2020 the DEP issued two Request for Proposals (RFP) to seek applications for grants of up to a total of \$6 million, funding eligible applicants in implementation of innovative or proven methods to prevent, mitigate and/or control freshwater HABs (<https://www.nj.gov/dep/wms/bears/npsrestgrants.html>). Results from funded projects will be used to inform future endeavors.

To address HABs, New Jersey Governor Phil Murphy launched a new initiative in November 2019. The initiative is broken up into three components:

1. Funding: Provides more than \$13 million (of which the aforementioned \$6 million in grants is a portion) in funding to local communities to reduce harmful algal blooms.

- \$2.5 million was made available as matching funds for lakes and harmful algal bloom (HAB) management grants, including treatment and prevention demonstration projects.
- Up to \$1 million in Watershed Grant funding will be available for planning and projects that reduce nonpoint source pollution, including nutrients, an important limiting variable in bloom growth.
- \$10 million in principal forgiveness grants through the Clean Water State Revolving Fund for sewer and stormwater upgrades that reduce the flow of nutrients to affected waterbodies.

2. Enhancing Science and Response: Focus on enhancing scientific expertise and building the state's capacity for HAB response, including internal and external monitoring and testing. The DEP and NJ Sea Grant Consortium is also establishing and coordinating a HAB and Lakes Management Expert Team to:

- Evaluate and address prevention and mitigation strategies, review HAB and water quality data and complete a literature review on best management practices (BMPs) for HAB prevention, mitigation, and management in NJ lakes.
- Develop New Jersey HABs and Lakes Management Guidance Materials and provide technical advice and reviews on proposed mitigation technologies for NJ lakes. Guidance documents will produce a resource guide of HAB BMPs and develop and conduct training sessions on lake management for HABs.
- Provide technical HAB education and training to assist local partners and others with the development of HAB action plans for NJ lakes. Sessions will include a HAB lake management training program for DEP and interested stakeholders.

3. Improving Communications: Develop and expand outreach to all stakeholders. Provide compliance and technical support to stakeholders and use summits and online tools to better inform them and connect them with experts and government officials.

- Host regional HAB summits (north and central/south) to gather and share information on HAB BMPs with experts, government officials, businesses, and members of the public.
- Enhance web tools, improving the website and building an interactive HAB reporting/mapping app <https://njdep.maps.arcgis.com/apps/opsdashboard/index.html#/49190166531d4e5a811c9a91e4a41677>.
- Assist affected local governments with compliance and technical support. This includes:
 - 1) Providing municipalities with compliance assistance to help with stormwater and septic discharges;
 - 2) Investigating facilities surrounding waterbodies to ensure compliance with discharge permits and identify not-permitted facilities;
 - 3) Working with local governments to map and maintain essential stormwater infrastructure,
 - 4) Assisting locals to develop and implement long-term capital improvement plans to upgrade storm and sewer infrastructure; and
 - 5) Helping municipalities and local health agencies regarding risk communication and protection of ground water sources of potable water supplies.

Stormwater Utilities

In March 2019, New Jersey Governor Phil Murphy signed into law the Clean Stormwater and Flood Reduction Act (Act) https://www.njleg.state.nj.us/2018/Bills/S1500/1073_R2.PDF, which empowers local government entities in New Jersey to create stormwater utilities. New Jersey joined more than 40 other states where stormwater utilities were already authorized. New Jersey's law allows, but does not require, local governments to establish stormwater utilities to collect fees that are based on a fair and equitable approximation of the proportionate contribution of the stormwater runoff from any real property. Funds generated from these fees are to finance the improvement of stormwater infrastructure, better control water pollution and flooding, restore and enhance the quality of the State's waters and protect the public health, safety, and welfare and environment. In New Jersey's older cities, combined-sewer systems can be overwhelmed by stormwater runoff, causing them to discharge raw sewage into waterways and to back up into streets and basements. A stormwater utility is a mechanism to raise enough funds for NPS pollution control, allocate its costs more fairly, and help ensure that less polluted runoff reaches our streams and rivers.

Stormwater Regulation

The Stormwater Management Rules (N.J.A.C. 7:8) https://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 total suspended solids (TSS) and nutrients in stormwater. The New Jersey Stormwater Best Management Practices Manual https://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) <https://www.nj.gov/dep/dwq/714a.htm> implement 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.

In March 2020, the DEP adopted changes to its stormwater management rules including replacing the current requirement that major developments incorporate nonstructural stormwater management strategies to the “maximum extent practicable” to meet groundwater recharge standards, stormwater runoff quantity standards, and stormwater runoff quality standards, with a requirement that green infrastructure be utilized to meet these same standards.

Combined Sewer Overflow (CSO) Long-Term Control Permits

Combined Sewer Overflows (CSOs) are direct discharges of combined sewage and stormwater which occur when stormwater runoff exceeds the capacity of a community’s combined sanitary and storm sewer system. The stormwater portion of CSO outfalls also introduces significant NPS pollution into receiving waterbodies. CSOs are regulated as point sources subject to the Clean Water Act and New Jersey Pollutant Discharge Elimination System permit requirements. Although CSOs are regulated as point source, CSO reduction through long term control plans is an important component of New Jersey’s Nonpoint Source Management Program. Through NJPDES permits, the NJDEP 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 the Federal CSO Control Policy.

The DEP has issued permits for the over 200 CSO discharge points, or outfalls, in the state. The permits require operators, including municipalities and regional sewerage authorities, to develop long-term control plans and a schedule to reduce or eliminate CSOs. Strategies may include gray water capture infrastructure projects, such as storage tanks and wastewater treatment plant expansions as well as green infrastructure 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 as well as other public notification requirements. More information may be found at <http://www.nj.gov/dep/dwq/cso.htm>. Financing is made available through the New Jersey Water Bank a partnership between the DEP and the New Jersey Environmental Infrastructure Trust to provide low cost financing for the design, construction, and implementation of projects that help protect and improve water quality and help ensure safe and adequate drinking water.

Cooperative Coastal Monitoring Program

If the DEP identifies persistent water quality problems at a recreational bathing beach, the Coastal Cooperative Monitoring Program will implement a source track down strategy in partnership with the Division of Water Monitoring and Standard’s Bureau of Marine Water Monitoring, the local health agency and municipality. Background information is collected beginning with a review of existing water quality results and supplemented with monitoring studies to address data gaps and provide additional water quality data. Results from the monitoring studies allow the DEP to understand the spatial extent of any issues and identify areas of concern, which more efficiently directs resources. Additional investigation of infrastructure using techniques such as video surveillance and dye testing may be necessary. This strategy allows the responsible entity to locate problems and fix them. When infrastructure repair or replacement is necessary, additional funding is typically required.

Watershed Initiatives

Estuary Programs

Three National Estuary Programs (NEPs) include New Jersey waters: Delaware, NY/NJ Harbor and Barnegat Bay. Each program is hosted at a non-profit organization that receives annual funding from

EPA to host and manage the day to day operations of their NEP. The organizations are The Partnership for the Delaware Estuary (PDE), the Barnegat Bay Partnership (BBP) and the NY/NJ Harbor Estuary Program. Each NEP has a Comprehensive Conservation and Management Plan (CCMP) that addresses the water quality, natural resources, 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 DEP is a partner in implementing the CCMP actions, including those that address NPS pollution. In 2018, the NY/NJ Harbor Estuary's CCMP was updated, <https://www.hudsonriver.org/article/core-hep-documents>. In 2019, the Partnership for the Delaware Estuary's CCMP was updated, <http://www.delawareestuary.org/our-plan-2/>. Currently, the Barnegat Bay Partnership's CCMP update is in the process of being finalized, <https://www.barnegatbaypartnership.org/about-us/ccmp/>.

The DEP has supported all New Jersey NEPs in a variety of ways related to NPS pollution mitigation, monitoring, and outreach. Activities include, but are not limited to, promoting water pollution research and monitoring efforts, supporting research to establish benchmarks for contaminants of concern, partnering in development and recruitment for citizen scientist wetlands/shoreline monitoring programs, supporting oyster management and shell planting, working collaboratively to improve the management of key species in the Estuary and development of TMDLs for areas listed on the 303(d) list of impaired waterbodies.

Barnegat Bay

The DEP is moving science into action within the Barnegat Bay watershed in support of the DEP's priority of using the best available science to protect New Jersey's waters. The Barnegat Bay Restoration, Enhancement, and Protection (REP) Strategy is built upon the data, modeling results, and research that emerged from the 2010 Ten Point Plan, also known as Barnegat Bay: Phase One. Please see <https://www.nj.gov/dep/barnegatbay/index.htm>. The DEP is building upon the accomplishments of Phase One by identifying restoration, enhancement, and protection actions as part of the Phase Two REP Strategy with the continued goal of improving the ecological health of Barnegat Bay and its watershed. The REP Strategy provides four major components: Restoration, Enhancement, Protection and Assessment. Each component includes short-term, mid-term, and long-term objectives and actions.

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 DEP 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, administered by the New Jersey Pinelands Commission, sets forth the regulations and standards designed to promote orderly development of the Pinelands to preserve and protect the region's significant and unique ecology and natural resources. 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 DEP 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 DEP 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 DEP has recruited and trained almost 400 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, DEP employees, directors of nonprofits and scientists at watershed and other environmental organizations aimed at promoting clean water in New Jersey.

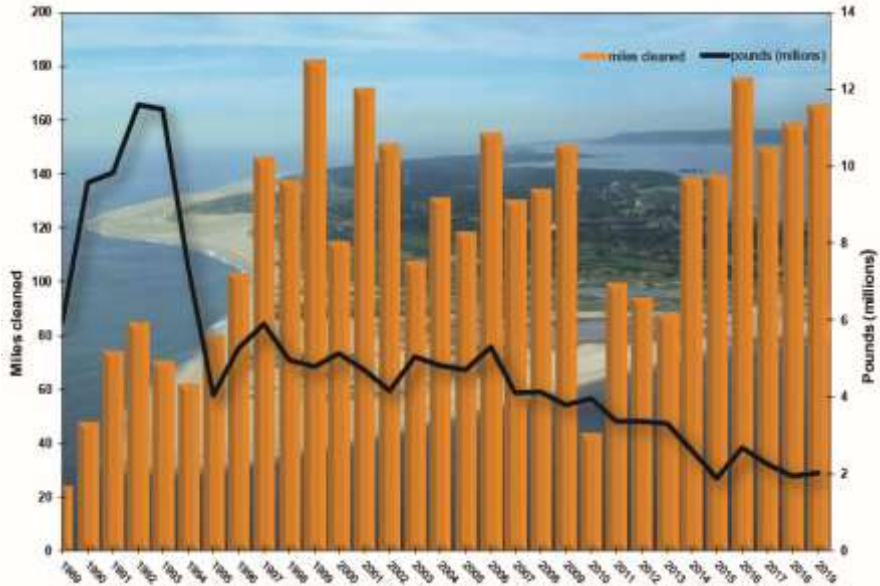
The Program proudly celebrated its 20th year in 2020, channeling awareness into action engaging within their local communities and serve as the DEP's "boots on the ground". Each year, the Watershed Ambassadors complete a set of objectives that serve to raise awareness of the importance of individual 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 <https://www.nj.gov/dep/wms/bears/amicorps.htm> for details.

Dumping Prevention and Cleanups

The DEP conducts and collaborates with partners in conducting large scale cleanup projects to control debris reaching waterbodies. The Barnegat Blitz was initiated in 2011 and has become an annual event. The 660-square-mile Barnegat Bay watershed includes all or parts of 37 municipalities in Ocean and Monmouth counties and because the Bay is shallow and narrow with limited flow to the ocean, it is susceptible to the impacts of stormwater runoff and accumulations of trash and debris along its shorelines and in its wetlands. Throughout the years, over 32,000 volunteers have collected some 4,600 cubic yards of trash, recyclables, and debris from areas within the watershed, including wetlands, forests, parks, storm drains, docks and creeks and the bay itself. The Barnegat Blitz and partnership model served as the basis for a Delaware Estuary South Jersey Scrub in 2019, resulting in clean-ups in 22 municipalities in the watershed, with over 1,000 volunteers, 300 bags of trash and 20 bags of recyclables collected, and a total of roughly 40 tons of debris collected. The 2020 Barnegat Bay Blitz and several other cleanups were postponed due to COVID-19. The 2020 South Jersey Scrub, focused cleaning litter in the Delaware River Watershed, was also cancelled due to COVID-19. The DEP will continue to follow guidance of public health experts and plan cleanups in accordance with best practices for public safety.



In addition, the DEP administers both the Adopt-A-Beach and Clean Shores Programs to address coastal debris. The Clean Shores program began in 1989 and works daily throughout the year to maintain debris free shorelines and prevent these items from ending up along public recreational beaches. Between 1989 and 2019, over 153 million pounds of debris was removed and 3,629 miles of New Jersey’s tidal shorelines have been cleaned/recleaned. As the graph above demonstrates, that more miles are able to be covered annually by the program resulting in less trash accumulation year to year and a net overall reduction in trash needing to be removed each year.



The DEP has launched a new campaign to help municipalities and communities manage fill material, consisting of soils trucked in for developments under construction, landscape projects or for use on private residential properties. This program is called, “Guard Your Backyard” with a dedicated website www.guardyourbackyard.nj.gov to provide local guidance and a model ordinance that municipal leaders can download and modify to suit their local needs. Enacting ordinances can give local governments the authority to determine what kind of fill material may be brought into their communities. Guard Your Backyard is one part of the DEP’s strategy to reduce illegal dumping in multiple forms across the state. New Jersey residents and others are encouraged to report illegal dumping through its mobile app and “Don’t Waste Our Open Space” campaign. The Stop Illegal Dumping website <https://stopdumping.nj.gov/> is aimed at preventing public lands all over New Jersey from being used as dumping grounds.

These large-scale cleanups are 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 as well as the DEP’s Barnegat Bay Initiative, Clean Shores, Open Space and AmeriCorps New Jersey Watershed Ambassadors programs, to name a few.

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. Interim objectives, which include standards development, assessment, monitoring network design and restoration, 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 DEP has entered into its next three-year performance partnership agreement with EPA that covers the period from July 1, 2019 through to June 30, 2022 and 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 listed are the projected commitment and the X's are an acknowledgement of the continuation of existing DEP activities as anticipated commitments.

Appendix TABLE 1: Short Term Nonpoint Source Objectives

Objective	Actions	Output Milestones	2020	2021	2022	2023	2024	2025
Approve Watershed Protection Plans and/or nine-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 nine-element WBPs Identified as a priority for funding in the 2019 RFP	1 X	1	1	1	1	1
Fully or partially restore NPS impaired waterbodies; Prepare NPS Success Stories that document the restorations	-Provide 319 funding and technical support 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 2. WQ10 success stories 3. Initiate land use loading monitoring in Whippany River and Toms River watersheds 4. Compare loading coefficients from 1990’s reports to present day	1 X	X 1 X	1 1 X	X 1 X	1 X	X
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. Propose and Adopt TMDL 3. Implement Barnegat Bay Restoration, Protection and Enhancement Strategy	X	X	X X	X	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		
Stormwater Utility	Develop rule guidance in support of Clean Stormwater and Flood Reduction Act	Develop Guidance Release Guidance		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: a. 40 assessments b. 50 presentations c. 5 partnership projects d. 3 CS/VM trainings e. 5 Acres of parks (state, county, local) improved f. 3 tons of materials collected and recycled g. 5 miles of rives improved h. Reduce 25 lbs of phosphorus from 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" state parks	X	X	X	X	X	X
Fund NPS reduction	--Operate 319(h) grant program to maximize effective use of funds provided to achieve measurable water quality outcomes -Work with DEP 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 4. Identify eligible NPS projects and priorities in annual Priority System/Project Priority List 5. Attend meetings as active partner in NJ	X	X	X	X	X	X
Statewide HABs Strategy	Update and Implement statewide HAB Strategy	1. Monitoring and Verification of HABs 2. Conduct HAB Summits 3. Develop Fact Sheets 4. Update Lake TMDLs	X	X	X	X	X	X
Partnership with NJ DEP of Agriculture	Focused outreach and follow-up	Participate State Technical Committee Implement Animal Waste Management Plans	X	X	X	X	X	X
Stormwater Studies	Conduct multiyear stormwater monitoring in Toms River and Whippany River watersheds	1. Initiate monitoring in Toms River 2. Initiate monitoring in Whippany River		X	X	X	X	X
Develop NPS Trading Program	Investigate Feasibility of Developing NPS Trading Program	Prepare an Options Paper				X		

Since the last iteration of the Nonpoint Source Program Plan (2014-2019), the DEP has commenced several new initiatives that address nonpoint source pollution, as described below.

Stormwater Studies to Evaluate the Effects of the Fertilizer Law

In the 1990s, the DEP conducted two multiyear stormwater studies that documented water quality prior to the implementation of concerted Best Management Practices (BMP) efforts. Both studies quantified loading associated with specified land uses resulting in unique loading coefficients for the Toms River and Whippany River watersheds, respectively. Moving forward, a new Toms River Stormwater Study will be designed to replicate the study conducted by USGS and DEP from 1994-2000. A similar stormwater study conducted in the Whippany River 1997-2000 by a consultant to the DEP, will also be a candidate for replication. Repeating these sentinel studies will allow DEP to determine if the water quality data reflects nutrient reductions realized from implementation of New Jersey's fertilizer law (2011), Stormwater Management Rules (2004), TMDLs (2000 - 2020) and ongoing state funded nutrient reduction BMPs. These multiyear stormwater monitoring initiatives will calculate the NPS loadings of nutrients, bacteria, and suspended solids from various land use areas in the watersheds. Original monitoring sites representative of unique land uses will be replicated in both.

Exploration of Potential for NPS Trading

The DEP currently runs a wetland mitigation bank program (<https://nj.gov/dep/opi/mitigation-banks.html>) to compensate for impacts resulting from activities regulated under Land Use Management's rules. In this program, mitigation bank operators use the bank for restoring, creating, enhancing, or preserving wetlands, uplands, riparian zones, and/or other aquatic resources in advance of any specific need for compensatory mitigation. Bankers receive credits for mitigation projects that can then be sold to public or private entities to fulfill mitigation requirements. Mitigation takes several forms, including mitigation bank credit purchase, monetary contribution, or a land donation. The potential exists for expanding the existing wetland mitigation banking credit concept to create nutrient banks and credits and allow for NPS trading. NPS trading is being incorporated in many regions of the country, such as the Chesapeake Bay and allows for innovative ways to address NPS impairments. In doing so, the DEP could potentially support public/private partnership efforts to reduce NPS pollution.

Conclusion

Because of the diffuse nature of NPS pollution, progress in achieving long-term objectives is gradual. The complications due to climate change further exacerbate the problem. Monitoring and assessment of water quality provides the clearest measure of success, but it can take years of NPS management to produce measurable improvement in water quality. The short-term objectives articulated during 2020 – 2025 cycle represent discrete, trackable steps, their progress will be reflected through the annual NPS program updates, EPA's 319(h) grant reporting and tracking system, the biennial Integrated Report and PPA commitment updates. Innovative approaches such as the implementation of NJPACT and the exploration of NPS trading will create more tools for the NPS "toolbox" and promote an iterative process that will be informed by regular assessment of water quality status and evaluation of effectiveness monitoring of implementation measures. The DEP will continue to work closely with its 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 NPS reduction and prevention measures, stewardship-building and environmental education intended to enhance local initiatives to reduce and prevent NPS pollution, which would include adoption of ordinances related to riparian zone and steep slope protection. Through this approach, the DEP 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.