

New Jersey Department of Environmental Protection



New Jersey's Vision Approach for Assessment, Restoration and Protection of Water Resources under the Clean Water Act Section 303(d) Program

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New Jersey's Vision Approach for Assessment, Restoration and Protection of Water Resources under the Clean Water Act Section 303(d) Program

Purpose

This document explains New Jersey's "vision approach" or strategy for managing the Clean Water Act (CWA) Section 303(d) Program in accordance with guidance issued by the U.S. Environmental Protection Agency (USEPA) in December 2013 entitled: "A Long-term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program" (Vision Document). This is a "living document" that initially focuses on the engagement and prioritization goals articulated in the USEPA Vision Document that must be completed prior to the 2016 Integrated Reporting Cycle but will be expanded and refined through an iterative process as part of the biennial integrated water quality assessment and prioritization, to include new and updated information, public engagement, priorities, strategies and measures necessary to address subsequent USEPA program goals.

Introduction

The New Jersey Department of Environmental Protection (Department) is charged with formulating 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. Water quality standards, monitoring, and assessment provide the scientific foundation for the protection of New Jersey's water resources and are implemented through the federal Clean Water Act (CWA), the New Jersey Water Quality Planning Act (WQPA) and the New Jersey Water Pollution Control Act (WPCA) through New Jersey's Continuing Planning Process for water quality management planning and implementation. The goal of this regulatory framework is to protect, restore and maintain the chemical, physical and biological integrity of New Jersey's waters.

Water quality standards, monitoring, and assessment programs provide the scientific foundation for restoration and protection of New Jersey's water resources and serve to direct and support the Department's water quality programs and activities designed to protect, maintain and enhance water quality for all waters of the State in accordance with federal and state statutes and regulations. These efforts include regulatory (e.g., permits), non-regulatory (e.g., environmental education, local stewardship), and funding activities. The Department has integrated these programs into a comprehensive monitoring, assessment, and restoration program implemented on through a rotating basin approach that will produce a comprehensive assessment of the entire State every ten years. This approach will support public engagement and prioritization of waters for the development of measures to restore, maintain, and enhance water quality and maximize effectiveness and efficiency in achieving positive environmental outcomes that are tailored to the needs of each water region. Communication and partnership with the public in all facets of these programs is critical to ensuring

¹ USEPA. A Long-Term Vision for Assessment, Restoration, and Protection under the Clean Water Act Section 303(d) Program.

December 2013. https://www.epa.gov/sites/production/files/2015-07/documents/vision-303d-program-dec-2013.pdf.

that New Jersey's waters are safe for swimming and recreation, fish and shellfish harvested from our waters are safe for eating, water supply sources are safe for drinking, and aquatic life is healthy and sustainable.

Section 303(d) of the federal Clean Water Act or "CWA" (33 USC § 1251 et seq.) requires each state to identify those waters for which effluent limitations are not stringent enough to attain applicable water quality standards; establish a priority ranking for such waters based on extent of water quality impairment and designated use non-support; establish a total maximum daily load (TMDL) for each pollutant causing water quality impairment, based on their priority ranking, at a level necessary to attain applicable water quality standards; and submit a list to USEPA of all impaired waters and their pollutant causes (i.e., the 303(d) List), along with a schedule of TMDLs to be established within the next two years. USEPA allows states to combine their 303(d) List with the biennial water quality assessment reports submitted under CWA Section 305(b) and submit one "integrated" report that assesses water quality and designated uses support for all waters of the State along with the 303(d) List and Two-Year TMDL Schedule that is submitted to USEPA by April 1st of every even-numbered year. Thus, USEPA combined the functions of water quality assessment, 303(d) List development, and TMDL development under one national "303(d) Program".

USEPA's Vision Document establishes a new vision and national goals for administering the 303(d) Program. The Vision Document was prepared to provide relief to states struggling to restore impaired waters under USEPA's emphasis on TMDLs as the sole means to attain designated uses and water quality standards. The Vision Document provides additional flexibility under the 303(d) Program for states to identify and prioritize waterbodies for restoration and protection through whatever means are appropriate under existing programs regulatory frameworks, and achieve water quality objectives in accordance with the state's priorities, so long as national water quality goals are also met. USEPA's new approach is intended to improve collaboration between USEPA and states, efficiency in administering the 303(d) Program, and success in achieving water quality protection and restoration.

The new USEPA Vision Document articulates a set of six goals, re-arranged below to reflect the sequential deadlines set by USEPA, to be implemented in collaboration with state CWA Section 303(d) Program managers and the public and evaluated in 2022:

- 1. "Engagement" By 2014, USEPA and the states should actively engage the public and other stakeholders to improve and protect water quality, as demonstrated by documented, inclusive, transparent, and consistent communication; requesting and sharing feedback on proposed approaches; and enhanced understanding of program objectives.
- "Prioritization": For the 2016 Integrated Reporting Cycle and beyond, states should review, systematically prioritize, and report priority watersheds or waters for restoration and protection in their biennial Integrated Reports to facilitate state strategic planning for achieving water quality goals.
- 3. "Protection": For the 2016 Integrated Reporting Cycle and beyond, in addition to the traditional TMDL development priorities and schedules for waters in need of restoration, states should identify protection planning priorities and approaches along with schedules to help prevent impairments in healthy waters, in a manner consistent with each state's systematic prioritization.

- 4. "Integration": By 2016, USEPA and states should identify and coordinate implementation of key point source and nonpoint source control actions that foster effective integration across CWA programs, other statutory programs (e.g., CERCLA, RCRA, SDWA, CAA), and the water quality efforts of other federal departments and agencies (e.g., Agriculture, Interior, Commerce) to achieve the water quality goals of each state.
- 5. "Alternatives": By 2018, states should use alternative approaches, in addition to TMDLs, that incorporate adaptive management and are tailored to specific circumstances where such approaches are better suited to implement priority watershed or water actions that achieve the water quality goals of each state, including identifying and reducing nonpoint sources of pollution.
- 6. "Assessment": By 2020, States should identify the extent of healthy and impaired waters in each state's priority watersheds or waters through site-specific assessments.

Under this new approach, USEPA has directed states to expand their statutory responsibilities, as established under CWA Section 303(d) to also include the following:

- 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 watershed based plans for water quality restoration (WBPs), that will be targeted for completion by 2022 and track progress under new USEPA water quality measure WQ-27 (see https://www.epa.gov/sites/production/files/2015-10/documents/fy/2016/ nwpg measure definitions water quality copy.pdf).

USEPA has encouraged states to adopt the new CWA 303(d) Program Vision and implement it at two levels: 1) working directly with USEPA to measure collective progress in achieving the overall vision and goals articulated in the Vision Document; and 2) identifying and employing strategies to achieve the overall program vision through state-specific goals that are defined in collaboration with the public. USEPA allows states to develop their own vision strategy that "outlines a comprehensive, integrated, and iterative approach to achieving and communicating water quality improvements" by developing state-specific strategies to achieve the national vision and goals and ultimately attain state water quality standards.

The New Jersey Department of Environmental Protection (Department) has a long history of coordinating and integrating its numerous water resource management programs through a strategic planning and results-oriented approach to comprehensive water resources management that engages stakeholders in the development, prioritization and implementation of strategies to protect, restore and maintain New Jersey's water resources on a local, regional and statewide basis. The Department's current approach mirrors USEPA's new Vision for meeting national water quality goals and state water quality standards under CWA Section 303(d); however, New Jersey's "Vision Approach" also integrates programs implemented to satisfy other statutory mandates and regulatory requirements, including CWA Sections 104(a), 106(d), 201, 208, 303(d), 303(e), 305(b), 319(h) and 402(p); New Jersey Water Pollution Control Act (WPCA), N.J.S.A. 58:10A-1et seq.; New Jersey Water Quality Planning

Act (WQPA), N.J.S.A. 58:11A-1 et seq.; federal Water Quality Planning And Management regulations, 40 CFR 130; federal Water Quality Standards regulations, 40 CFR Part 131; New Jersey Surface Water Quality Standards rules, N.J.A.C. 7:9B; New Jersey Ground Water Quality Standards rules, N.J.A.C. 7:9C; New Jersey Water Quality Management Planning rules, N.J.A.C. 7:15; and New Jersey Pollutant Discharge Elimination System Regulations, N.J.A.C. 7:14A, among others.

New Jersey's Vision Approach is designed to accomplish both federal and State water quality goals through statewide ambient water quality monitoring (biological and chemical) of fresh and marine waters, developing water quality standards that protect and support designated uses of New Jersey's waters; assessment of water quality to determine support of designated uses and attainment of water quality standards; and development, implementation and funding of strategies to protect and restore water resources. This approach is consistent with USEPA's Vision Document and will continue to be refined and enhanced in subsequent assessment cycles to address federal, state and local water quality concerns and goals.

New Jersey's Vision Approach for Assessment, Restoration and Protection of Water Resources – Prioritization and Engagement

The first deadlines established under the USEPA Vision Document are for implementation of the Engagement and Prioritization Goals:

By 2014, USEPA and the states will actively engage the public and other stakeholders to improve and protect water quality, as demonstrated by documented, inclusive, transparent, and consistent communication; requesting and sharing feedback on proposed approaches; and enhanced understanding of program objectives

By 2016, states will review, systematically prioritize, and report priority watersheds of water for restoration and protection in their biennial integrated report to facilitate state strategic planning for achieving water quality goals.

New Jersey has a long history of public and stakeholder engagement in developing and implementing its water quality protection and water resource management programs, and in prioritizing such efforts to meet federal and state water quality goals. Since its creation in 1970, the Department has engaged stakeholders and the general public in the identification and prioritization of watersheds and waterbodies for restoration or other management actions in response to various concerns that ranged from local public health (e.g., potential release or resuspension of toxic pollutants from breached dams) to regional and statewide legislative initiatives (e.g., water quality restoration and flood control for the Passaic River Basin, statewide fertilizer law) to inter- and intra- state efforts directed by federal agencies (proposed dredging in the Delaware River, New York/New Jersey Harbor Estuary TMDL).

As these examples indicate, public engagement in water quality improvement and protection efforts occurs on statewide, regional and local watershed levels. Public input on statewide water quality issues is sought through the public comment period provided for the draft Integrated Water Quality Monitoring and Assessment Methods Document (Methods Document) as well as the draft Integrated List of Waters (Integrated List) and the draft 303(d) List of Impaired Waters (303(d) List) published as components of the draft Integrated Water Quality Assessment Report (Integrated Report) every

two years in accordance with CWA Sections 303(d) and 305(b) as well as N.J.A.C. 7:15. Additional input is sought from the New Jersey Water Monitoring Council² which serves as a statewide body to promote and facilitate the coordination, collaboration and communication of scientifically sound, ambient water quality and quantity data to support effective environmental management. The Council is well represented by the diverse water quality interests across New Jersey from government to academic, to nonprofit to municipal utilities authority.

New Jersey first articulated a vision of a "comprehensive, integrated, and iterative approach to water quality protection" in the Statewide Water Quality Management Program Plan (December 1985)³, which was designed to serve as the "foundation for unifying" programs implemented under CWA Sections 201, 208, and 303(e) and to satisfy State requirements for water quality planning and the continuing planning process pursuant to the New Jersey Water Quality Planning

Statewide Water Quality Management Program Plan 1985-2015

Act (WQPA), N.J.S.A. 58:11A-1 et seq. This vision was subsequently refined and enhanced "to respond to the changing issues, needs and priorities of the State" by 1987 Continuing Planning Process (CPP).^{4, 5}

In accordance with CWA Section 303(e), states are required to have a continuing planning process (CPP) for water quality planning, management, and implementation that serves to maintain, improve, and protect water quality. Under federal regulations at 40 CFR 130, states are required to not only establish and maintain a CPP but also implement the programs and processes required under the CWA as part of the CPP. The CPP is intended to ensure the necessary programmatic infrastructure is in place at the state level to identify critical water bodies where water quality is impaired or threatened, develop and implement plans and actions to restore and maintain water quality, and identify and specify additional data collection, planning or control measures.

New Jersey
Continuing Planning
Process
1987-present

New Jersey's 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" and to satisfy the requirements of both federal and state statutes, including assessing water quality and identifying priority water quality problems. The

1985 Statewide Plan, as amended by the 1987 CPP, articulated the Department's overall water quality strategy, objectives, priorities, policies and procedures⁷. The water quality priorities articulated in these

² See http://www.nj.gov/dep/wms/wmcchome.html.

³ NJDEP. New Jersey Statewide Water Quality Management Program Plan. December 2015.

⁴ NJDEP. The New Jersey Continuing Planning Process for Water Quality Management-Descriptions of Selected Management Processes. March 1987.

⁵ New Jersey's first Continuing Planning Process (CPP), submitted to USEPA on April 23, 1976, articulated the Department's strategy for preventing and controlling water pollution through implementation of the various programs subsequently integrated under the 1985 Statewide Water Quality Management (WQM) Program Plan and the 1987 CPP.

⁶ NJDEP. *New Jersey's Continuing Planning Process.* December 18, 2015. Executive Summary. http://www.nj.gov/dep/wrm/docs/cpp.pdf.

⁷ The Statewide WQM Program Plan and NJCPP were subsequently revised via amendments to the New Jersey Water Quality Management Planning (WQMP) rules, N.J.A.C. 7:15, which incorporated the Statewide WQM Program Plan, the NJCPP and the WQMP rules by reference. More recent amendments to the WQMP rules removed references to the

documents focused on implementation of wastewater management planning, effluent limitations, and point source permitting. Specifically, the Statewide Plan states: "The main emphasis of the Plan is on water quality, and wastewater treatment and conveyance facilities."

Whippany River Watershed Project 1993-2004 In response to USEPA's "Watershed Approach" (1991)⁸ and the Department's desire to reform the WQMP program to a more comprehensive and effective water resources management program, the Department initiated the Whippany River Watershed Project in 1993 as a pilot project for developing a comprehensive watershed management process that could be replicated throughout the State. The 70-square mile Whippany River Watershed⁹ served as the focal point for stakeholders with varied interests and backgrounds who came

together to develop a plan that would address the water resource issues and concerns of their watershed. Stakeholders included local and county government, watershed organizations, academics,

business, industry, consultants, purveyors, dischargers, and interested citizens. By 1999, this watershed management pilot project succeeded in producing New Jersey's first stakeholder-engaged, watershed-based TMDL¹⁰ (TMDLs adopted prior to 1999 were prepared by USEPA or consisted only of wasteload allocations), followed by a short-term implementation strategy¹¹, a nonpoint source pollution control guidance manual¹², and a comprehensive Watershed Management Plan

Whippany River Watershed TMDL Established 1999

for the Whippany River Watershed. The Watershed Management Plan continues to be implemented by the stakeholder-led Whippany River Watershed Action Committee with a focused effort on stormwater management and stream restoration (see http://www.wrwac.org/).

Statewide Watershed Management Initiated 1997 The success of this pilot project allowed the Department to expand its watershed management approach throughout the State, including a collaborative process for identifying priority waters and priority projects on both a statewide and regional basis. Under this statewide framework¹³, New Jersey partnered with USEPA and others in the

private and public sectors to promote a watershed management approach as a means to restore and maintain the physical, chemical and biological integrity of our waters. Using sustainable management principles, the Department moved towards a more holistic, rather than site-specific approach to effectively manage and protect water resources. New Jersey's watershed management approach was based on three key components: 1) a geographic focus; 2) continuous improvement based on sound

Statewide WQM Program Plan and the NJCPP; however, an updated NJCPP is published on the Department's website at http://www.nj.gov/dep/wqmp/guidance.html.

⁸ USEPA. The Watershed Protection Approach – An Overview. 1991. EPA 503/9-92-001. Office of Water. See also Watershed Protection: A Statewide Approach. August 1995. EPA 841-R-95-004/Office of Water (4503F) and The Watershed Approach Framework. June 1996. EPA 840-S-96-001/Office of Water (4501F). https://www.epa.gov/sites/production/files/2015-06/documents/watershed-approach-framework.pdf.

⁹ Whippany River Watershed Action Committee website. http://www.wrwac.org/About-Us.html

¹⁰ NJDEP. Report on the Establishment of a Total Maximum Daily Load for Fecal Coliform and an Interim Total Phosphorus Reduction Plan for the Whippany River Watershed. December 1999. http://www.nj.gov/dep/wms/bears/docs/whippany tmdl.pdf.

¹¹ NJDEP. Whippany River Watershed Action Now Strategy. January 2000.

¹² NJDEP. A Cleaner Whippany River Watershed – Nonpoint Source Pollution Control Guidance Manual for Municipal Officials, Engineers, and Departments of Public Works. May 2000.

¹³ NJDEP. Draft Statewide Watershed Management Framework Document for the State of New Jersey. January 1997.

science; and 3) partnerships and stakeholder involvement. Under this approach, water resources management was conducted on a watershed basis by dividing New Jersey into a set of nested, hydrologically connected units that resulted in 20 watershed management areas within five water regions for the implementation of watershed management activities on a targeted, cyclical basis, including water quality and watershed management planning, water quality monitoring and assessment, TMDL development, water quality restoration, and watershed-based permitting. This approach allowed the Department to prioritize waters for restoration and protection on the appropriate scale necessary to address the causes and sources or impairment, from statewide stormwater management minimum requirements to basin-wide TMDL development to localized nonpoint source pollution control projects.

Statewide Nonpoint Source Management and 319(h) Grant Program 1997 - present Around the same time as New Jersey's statewide watershed management program was emerging, USEPA was expanding its pollution control programs to include CWA Section 402(p) stormwater permitting requirements and CWA Section 319(h) nonpoint source (NPS) pollution assessment and management plan requirements and the establishment of a NPS pollution control grant program. The Department first received CWA Section 319(h)

NPS grant funds in the mid-1990s to address localized NPS pollution problems and to initiate local education and outreach initiatives. The Department initially convened a stakeholder group to identify grant fund priorities and to vet and rank grant applications. Once the statewide watershed management program was underway, funding priorities were identified in consultation with public advisory committees and technical advisory committees formed in each of New Jersey's 20 watershed management areas based on local, regional and state water quality issues. Priorities at that time included implementing NPS best management practices (BMPs) and other strategies identified in stormwater management plans or watershed management plans, implementing load allocations or NPS strategies identified in established TMDLs, and implementing agricultural best management practices throughout the State.

USEPA requires states to have an updated NPS Pollution Management Program in place to qualify for CWA Section 319(h) grant funds. New Jersey's NPS Program Plan is designed to satisfy these federal requirements and serves as a key component of New Jersey's CPP. Beginning in State Fiscal Year (SFY) 2006, the Department prioritized 319(h) grant funds for development of Watershed Restoration and Protection Plans, also referred to as Watershed Based Plans (WBPs), that focused on reducing NPS pollution. These grants were issued to fund planning and implementation of projects that would address water quality impairment through implementation of NPS pollution controls, including those specifically identified in approved total maximum daily load (TMDL) implementation plans, or necessary to address pollutants identified on an adopted 303(d) List of Water Quality Limited Waters. WBPs initiated after June 30, 2007 were required to include the nine minimum components of a watershed based plan set forth in the USEPA's *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*¹⁴ to be eligible for Section 319(h) grant funds. In 2013, USEPA issued updated

¹⁴ USEPA. *Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. EPA 841-B-08-0022005. 2005, updated March 2008. https://www.epa.gov/nps/handbook-developing-watershed-plans-restore-and-protect-our-waters.

New Jersey's NPS Program Plan was updated in 2015 to comply with the new USEPA guidance. ¹⁵ guidelines describing key components to be included in an effective state NPS management program. ¹⁶

National and state water quality priorities shifted back to point source controls in the late 1990's in response to lawsuits filed against USEPA and some states over failure to establish TMDLs for impaired waters as required under CWA Section 303(d). A lawsuit brought by the Widener Environmental Law Clinic against USEPA Region 2 resulted in a Consent Order requiring implementation of CWA Section 303(d) within a specified timeframe. As a result, the Department executed a memorandum of

TMDL MOA 1998-2008

agreement (MOA) with USEPA creating an eight-year schedule to produce TMDLs for all water quality-limited segments remaining on New Jersey's 1998 Section 303(d) List¹⁷. This MOA and subsequent modifications established the TMDL priorities for New Jersey. The first TMDLs required to be completed, and thus afforded the highest priority, were for New York/New Jersey Harbor Metals (June 30, 1999)¹⁸, Delaware Estuary Volatile Organics (September 30, 1999)^{19, 20} and the Whippany River Watershed (December 31, 1999)²¹.

The MOA was subsequently amended to give higher priority to TMDLs that could be established and implemented in a relatively short time while allotting more time to complete work on more complex and comprehensive TMDLs, including basin-wide TMDLs for the Passaic and Raritan Rivers. This resulted in 18 TMDLs established between 2000 – 2004 that addressed mostly fecal coliform in streams and total phosphorous in lakes throughout the State, followed by an additional 24 TMDLs between 2005 – 2007 that focused on pathogens in lakes, total phosphorus in streams, and total coliform in shellfish waters. During this time, stakeholder processes were initiated to engage the public in the development of regional, nutrient TMDLs for the Passaic and Raritan Rivers, which were prepared with assistance and direct input from stakeholders in Watershed Management Areas (WMAs) 3, 4, 5, and 6 for the Passaic TMDL and WMAs 8, 9 and 10 for the Raritan TMDL. The Department conducted 21 stakeholder meetings between 2004 and 2009 on the Raritan TMDL alone.

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¹⁵ NJDEP. New Jersey Nonpoint Source Management Program Plan, 2015-2019. October 2015. http://www.state.nj.us/dep/wms/bears/docs/nps_plan_2015.pdf.

¹⁶ USEPA. Nonpoint Source Program and Grants Guidelines for States and Territories. April 12, 2013. http://water.epa.gov/polwaste/nps/cwact.cfm.

¹⁷ NJDEP. Memorandum of Agreement between U.S. Environmental Protection Agency Region II and New Jersey Department of Environmental Protection Schedule to Establish Total Maximum Daily Loads for all Waterbodies Listed on the State of New Jersey's 1998 303(d) List. May 12, 1999.

¹⁸ USEPA. Final Withdrawal of Total Maximum Daily Loads (TMDLs) for Copper in the Arthur Kill and the Kill Van Kull and Final Establishment of a TMDL for Nickel in the Hackensack River. Public Noticed in the October 28, 1999 Federal Register (64 FR 58058). Final EPA Decision in the January 14, 2000 Federal Register (65 Fr 2398). https://ofmpub.epa.gov/waters10/attains impaired waters.show tmdl document?p tmdl doc blobs id=74615.

¹⁹ NJDEP. Adoption of The Amendment to The Tri-County and Lower Delaware Water Quality Management Plans to Establish Total Maximum Daily Loads for Volatile Organic Compounds in The Delaware River. May 27, 2003. http://www.nj.gov/dep/wms/bears/docs/Delaware%20VOC%20Adoption%205-21-03.pdf.

²⁰ Note: The deadline for the Delaware TMDL was subsequently extended to February 2000. See http://www.nj.gov/dep/wqmp/docs/wqmp/lowerdelaware/20030527.pdf

²¹ NJDEP. Whippany River Watershed Total Maximum Daily Load Amendment to the Northeast WQMP Adoption Notice for NJR. June 5, 2000. http://www.nj.gov/dep/wms/bears/docs/whippany-tmdl.pdf.

Passaic Basin TMDL Established 2008 In 2008, New Jersey adopted its first complex TMDL to address nutrients in the non-tidal waters of the Passaic River Basin, which set load allocations for 56 NJPDES permitted dischargers. This TMDL also required the adoption of a low phosphorus ordinance as an additional measure to the Municipal Separate Storm Sewer System Permit (MS4) for 72 municipalities in the basin. With the adoption of the Passaic River Nutrient TMDL²², New Jersey completed its obligations and the established TMDL priorities under the

TMDL MOA with USEPA. Since then, TMDL priorities are re-evaluated during each listing cycle in accordance with the corresponding Integrated Water Quality Assessment Methods (Methods Document)²³. Public involvement is provided for both the process used to rank and prioritize TMDLs, through the public comment period for the draft Methods Document published prior to development of each cycle's 303(d) List, and the outcome of the ranking process, through public comment on the draft 303(d) List and the draft Two-Year TMDL Schedule as components of the biennial Integrated Report. Priority concerns factored into TMDL ranking have included key water quality issues identified in the Integrated Water Quality Assessment Report (Integrated Report), such as human health concerns regarding mercury in fish tissue and coastal pathogens, schedules for renewing NJPDES discharge permits on a regional basis, and stakeholder concerns regarding the impact of temperature on trout aquatic life.

Barnegat Bay Action Plan Watershed 2010 - present On December 9, 2010, Governor Chris Christie announced the comprehensive Barnegat Bay Ten-Point Action Plan²⁴. The Department was directed to develop an Action Plan to address the ecological health of the 660-square-mile Barnegat Bay watershed. A series of public meetings were held to engage stakeholders in the collaborative development of the Barnegat Bay Action Plan. Stakeholders collaborated with the Department on an inventory of prior scientific research related

to the health of Barnegat Bay, an inventory of prior actions taken to restore and improve the ecological health of the bay, and identifying problems, causes, goals and actions necessary to restore water quality of the Bay. The resulting Action Plan identified ten objectives including targeted scientific research, intensive water quality monitoring and in-depth analysis, and implementation of stewardship projects that ranged from localized stormwater management efforts and purchase of watershed lands for open space protection to statewide legislation limiting the use of chemical fertilizers. Key accomplishments under the Action Plan include:

- Tens of millions of dollars made available to local governments for stormwater infrastructure upgrades;
- Ten research projects resulting in the most comprehensive compilations of research on any estuary, including studies on water quality, harmful algae blooms, assessments of fish and crabs, and ways to reduce stinging sea nettles;

²² NJDEP. Total Maximum Daily Load Report for the Non-Tidal Passaic River Basin Addressing Phosphorus Impairments. July 21, 2008. http://www.nj.gov/dep/wms/bears/docs/passaic tmdl.pdf.

²³ See the Department's website at http://www.state.nj.us/dep/wms/bears/generalinfo.htm.

²⁴ See http://www.state.nj.us/dep/barnegatbay/index.htm.

- New Jersey's first comprehensive water monitoring network for both fresh and marine water quality;
- Preservation of more than 3,000 acres of open space in the watershed and a state commitment to acquire 30,000 acres over the next several decades;
- Green boater sweeps to educate boaters about the need to protect ecologically sensitive areas, such as shellfish growing areas, shorebird nesting areas and submerged aquatic vegetation;
- The Nation's toughest law regarding restrictions on lawn fertilizers that cause runoff that degrades water quality across the state; and
- A commitment by Exelon Corp. to decommission the Oyster Creek nuclear reactor in Lacey Township by the end of 2019.

While the Department's research, monitoring and outreach resources were focused on the Barnegat Bay, the water quality assessment program was actively refining its statewide assessment methods for the 2012 Integrated Report to include a more comprehensive assessment that would confirm water quality conditions by considering water chemistry, physical, and biological data along with other factors such as hydrology, geology, land use, habitat, and other relevant environmental considerations. This allowed the Department to address multiple water resource concerns based on an assessment of the specific environmental conditions affecting the focus areas. Unfortunately, insufficient resources were available to implement a comprehensive assessment process on a statewide basis and still meet federal deadlines, resulting in significant delays in completing the 2012 Integrated Report and initiating the 2014 Integrated Report cycle. To address this dilemma, the Department transitioned to a rotating basin approach that would focus the comprehensive assessment process on one of New Jersey's five Water Regions (see Figure 1) in each integrated reporting cycle, following the example of some other states, specifically New York and West Virginia.

New Jersey's Comprehensive Regional Assessment Using a Rotating Basin Approach Initiated 2014

New Jersey's Comprehensive Regional Assessment Using a Rotating Basin Approach was initiated for the 2014 Integrated Report and was modeled after the intensive, collaborative data collection conducted for the Barnegat Bay Action Plan combined with the comprehensive assessment methods developed for the 2012 Integrated Report. These enhanced methods were used to generate a comprehensive assessment of the Atlantic Coastal Water Region that was based on multiple lines of evidence to confirm water quality conditions, including water quality monitoring data and other factors including hydrology, geology, land use, biological habitat conditions, meteorology, restoration activities, point and nonpoint sources, use designation, stream classification, and other environmental considerations relevant to determining overall water quality, resulting in a high degree of confidence in the assessment decisions. This new comprehensive assessment method is explained in more detail

in the 2014 Methods Document²⁵. The results of the comprehensive assessment of the Atlantic Coastal Region are presented in the 2014 Integrated Report²⁶ along with an overall assessment of statewide water quality conditions, as required under CWA Section 305(b).

Under the rotating basin approach to comprehensive regional water quality assessment, the Department is conducting a streamlined assessment of statewide water quality along with a more comprehensive, detailed assessment of water quality in one of New Jersey's five water regions, Atlantic Coastal, Raritan, Lower Delaware, Upper Delaware and Northeast (see Figure 1) each assessment cycle (see Figure 2), beginning with the Atlantic Coastal Region for the 2014 Integrated Report.

NJDEP. Water 2014 Integrated Quality Monitoring Assessment Methods. February 2015. http://www.nj.gov/dep/wms/bears/docs/2014 final methods document and response to comments.pdf. 2014 New Jersey Integrated Water Quality Assessment Report. December 2015. http://www.state.nj.us/dep/wms/bears/docs/2014 draft integrated report with appendices.pdf.

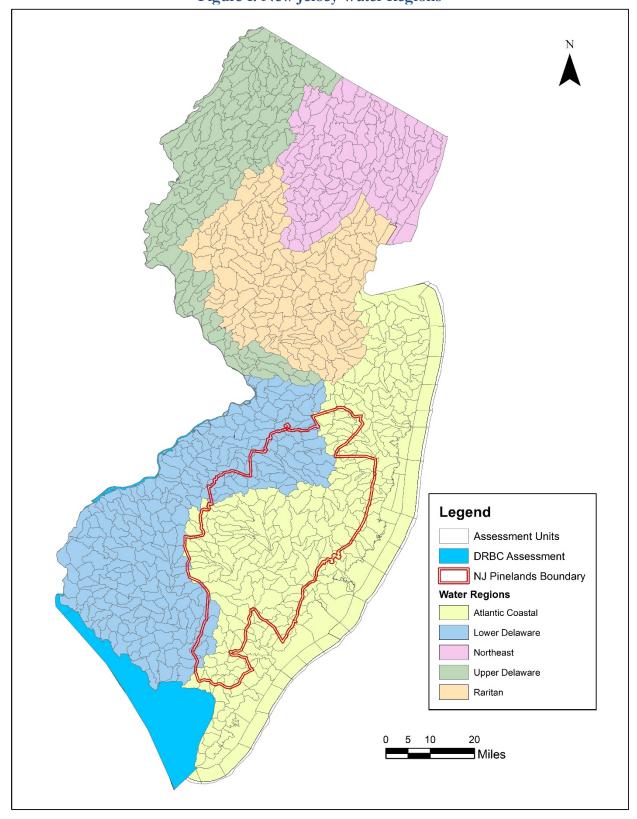
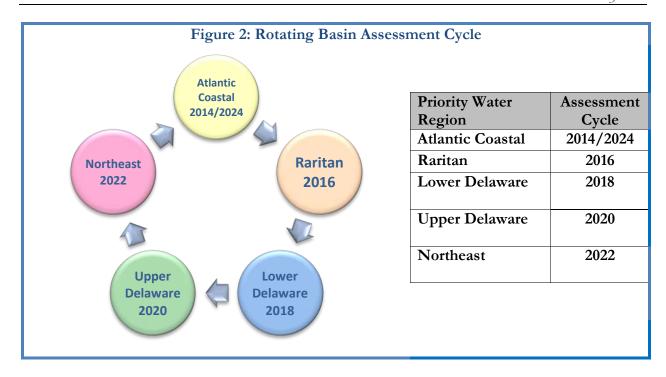


Figure 1: New Jersey Water Regions



This rotating basin approach will produce a comprehensive assessment of the entire state every ten years and will support development of measures to restore, maintain, and enhance water quality tailored to the unique circumstances of each regions. Rotating basin monitoring designs provide a "focused approach in smaller geographic areas allowing for a more robust characterization and more collaboration with other water resource programs and local entities, as well as cross program integration;"²⁷ therefore, this approach has been integrated into the Department's Long-Term Monitoring Plan (see Appendix 2).

The rotating basin approach will generate:

- Evaluation of the effectiveness of control measures implemented to address water quality problems identified in the previously assessed water region;
- Identification of new and ongoing water quality problems, causes and sources in the current water
 region, improvements in water quality conditions that may have resulted from prior restoration
 activities, actions needed to fill data gaps, and additional control measures needed to address water
 quality problems and meet water quality goals in that region; and
- Collection of data to support assessment in the subsequent region, along with long-term, statewide
 monitoring and trend analysis to inform development or refinement of water quality goals and
 standards.

²⁷ National Water Monitoring Council. Water Quality Monitoring: A Guide for Informed Decision Making Rotating Basin Monitoring Designs. Fact Sheet Last Updated April 20, 2017. https://acwi.gov/monitoring/pubs/WIS 2017 fs/Rotating%20Basin%20Factsheet%20NWQMC.pdf.

Public input regarding the prioritization of the State's five Water Regions for comprehensive assessment through the rotating basin approach was provided through public review and comment on the draft 2014 Integrated Report when it was published in February 2016.²⁸

TMDL Prioritization Through Sublist 5 Initiated 2014

As with USEPA's Vision Document, USEPA's updated Integrated Report guidance, *Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions,*²⁹ provides states with more flexibility in structuring their Integrated Lists, allowing "...creation of a subcategory in Category 5 (i.e., 5-alternative) to report alternative restoration approaches for CWA 303(d) listed waters". Based on this guidance, the Department's revised New Jersey's Integrated List for the 2014 Integrated Report to include subparts of Sublist 5 to reflect a new TMDL prioritization process. Category 5 of the Integrated List identifies waters where "Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is required." New Jersey uses the term "Sublists" instead of "Categories" to avoid confusion between waters placed on Sublist 1 and waters assigned the antidegradation designation of "Category One" under the New Jersey Surface Water Quality Standards, N.J.A.C. 7:9B-1.5(d) and 1.15(c) – (i).

The draft 2014 Integrated List contains three new subparts of Sublist 5: Sublist 5A (Arsenic Naturally Occurring) identifies assessment units (AUs) where arsenic does not attain applicable surface water quality standards but concentrations are below those demonstrated to be from naturally occurring conditions; Sublist 5L (Legacy pollutants) identifies AUs where designated use impairment is caused by a "legacy" pollutant that is no longer actively discharged by a point source; and Sublist 5R (watershed restoration) identifies AUs for which water quality impairment is not effectively addressed by a TMDL, such as nonpoint source pollution that will be controlled under an approved watershed restoration plan or 319(h)-funded Watershed Based Plan (WBP). All three subparts to Sublist 5 reflect waters determined to be a very low priority for TMDL development because active point sources are not the primary cause of impairment. While the Department is working with USEPA and other states to develop effective responses to water quality impairment caused by naturally occurring arsenic or legacy pollutants, the Department is actively engaged in employing alternative restoration strategies for waters placed on Sublist 5R.

Sublist 5R was created to identify AUs that are impaired primarily by nonpoint sources of pollution that are not subject to regulation under the federal CWA, or regulated stormwater, which is most effectively addressed through source control. Watershed restoration plans, including 319(h) funded

²⁸ NJDEP. Request for Comments on The Draft 2014 303(d) List of Water Quality Limited Waters Pursuant to Section 303(d) of the Federal Clean Water Act at 33 U.S.C. 1313(d) and the New Jersey Water Quality Management Planning Rules at N.J.A.C. 7:15. February 1, 2016. http://www.state.nj.us/dep/wms/bears/docs/2014 draft 303dlist public notice for posting.pdf. ²⁹ USEPA. Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions. August 13, 2015. https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8-13-2015.pdf.

³⁰ USEPA. Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act. July 29, 2005. https://www.epa.gov/sites/production/files/2015-10/documents/2006irg-report.pdf.

WBPs, can be an effective alternative to a TMDL to characterize pollutant sources, the reductions needed to attain standards, and the means to achieve the reductions. Approved WBPs (see Figure 3) are the basis for the development of Sublist 5R list.

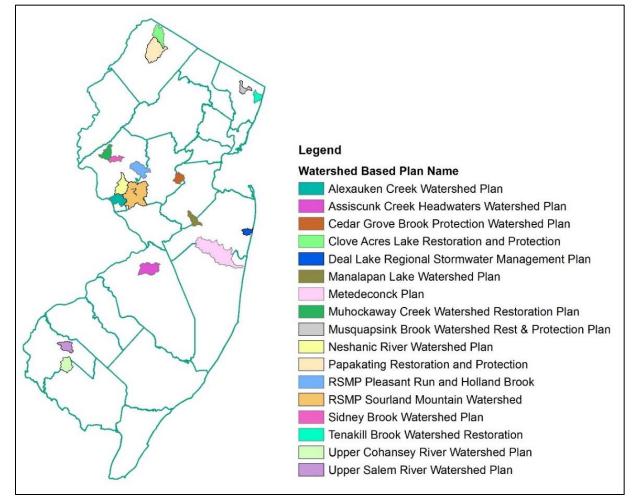


Figure 3. Approved 9-Element Watershed-based Plans

Seventeen AU/pollutant combinations were placed on Sublist 5R of the draft 2014 Integrated List based on the following considerations:

- Previous or new pollutants causing use impairment;
- Covered by USEPA-approved Watershed Based Plan³¹ containing the nine minimum elements;
- Not covered by a USEPA-approved TMDL; and
- No major industrial or municipal discharger (> 1 MGD) in AUs impaired by TP, DO, or pH.

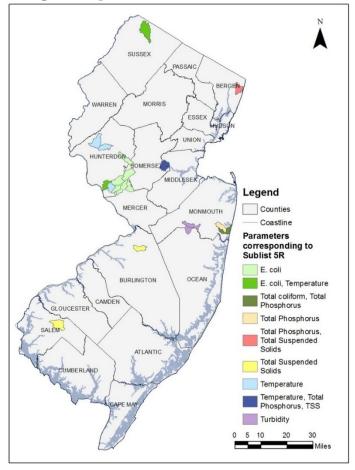
³¹ A list of and links to these approved WBPs is available on the Department's website at http://www.state.nj.us/dep/wms/bears/wbplans.htm.

Causes of water quality impairment to be addressed under these approved WBPs include nutrients (TP, DO, and pH), temperature, pathogens, and total suspended solids. The spatial extent of these pollutant causes identified on Sublist 5R is shown in see Figure 4.

While TMDLs are still required for impaired waters on Sublist 5R, such TMDLs are considered a very low priority since implementation of the approved WBPs would be a more effective means to restore water quality and the prioritized funding for implementation of WBPs makes it more likely that restoration strategies will be implemented before a TMDL is developed, resulting in the delisting of the impaired parameter and to restore water quality. This is consistent with the alternative restoration approach articulated in USEPA's Listing guidance, which allows alternative approaches to TMDL development where it is "expected to be more immediately beneficial or practicable in achieving WQS than pursuing a TMDL approach in the nearterm".

A more detailed explanation of the new structure of the 2014 Integrated List and the rationale for placing impaired waters on each subpart is provided in the final 2014 Methods Document³² and is being refined for the 2016 Integrated Reporting

Figure 4: Spatial extent of the 2014 Sublist 5R



cycle.³³ The process for statewide prioritization of impaired waters for TMDL development or other alternative measures in each subsequent listing cycle will be explained in each corresponding Methods Document under "Integrated List Guidance". Public input into this prioritization process will occur in each cycle when the Department publishes the draft Methods Document for public review and comment. The results of this prioritization process will be reflected in the placement of impaired waters on Sublist 5 and its subparts, as part of the Integrated List that is included in each biennial Integrated Report. An opportunity for public review and comment on the draft Integrated List will be provided when the draft Integrated Report is published each listing cycle.

³² NJDEP. 2014 Integrated Water Quality Monitoring and Assessment Methods. February 2015. Appendix B. http://www.state.nj.us/dep/wms/bears/docs/2014-final-methods-document and response to comments.pdf.

³³ See http://www.state.nj.us/dep/wms/bears/2016-integrated-report.htm.

2016 Integrated Report: Raritan Water Region

As explained earlier under the Rotating Basin Approach, the Raritan Water Region will be the focus area for comprehensive water quality assessment in the 2016 Integrated Report. A new stakeholder process was launched at the beginning of the 2016 integrated reporting cycle to provide more public engagement in accordance with the new USEPA Vision Document. Stakeholders including federal, state and local government agencies, watershed associations, academia, and

engaged citizens were invited to participate in this process to share information and provide input that will inform water quality assessment and prioritization decisions for the Raritan Water Region.

An informal Raritan Water Region Stakeholder meeting was held on June 30, 2016 to share data and information, identify water quality concerns and causes, inventory restoration actions already underway, and seek recommendations on goals, strategies, and priorities for water quality restoration. Stakeholder recommendations included capturing stormwater runoff from existing development, reducing impervious cover, and adding/increasing vegetated buffers along streambanks. Stakeholder priorities for restoration actions included control of agricultural nonpoint source pollution from farms, reduction in road salting/de-icing operations, and removal of dam removal. Meeting participants also identified successful restoration strategies already being implemented in the Raritan Water Region, including "River Friendly" education programs³⁴, Rutgers University Impervious Cover Reduction/Replacement projects, various rain gardens and/other green infrastructure projects, and wetlands reserve programs. Additional strategies were also recommended, including reductions in pesticide use and better protection of existing buffers. Stakeholders concurred with the Department that priority consideration should be given to implementation of the of TMDLs developed or under development for the non-tidal Raritan River Basin³⁵, Upper Saddle River, Hohokus River, and Duhernal Lake, which were identified as high priorities for TMDL development on the 2012 and 2014 303(d) Lists³⁶.

Subsequent stakeholder meetings were held on November 9, 2016 and February 23, 2017 in partnership with the Sustainable Raritan Collaborative³⁷ and the Rutgers University Sustainable Raritan River Initiative³⁸ to discuss preliminary results from the Department's comprehensive water quality assessment for the Raritan Water Region.³⁹ The Department presented data and results, including potential new 303(d) Listings for impaired waters in the Raritan Water Region and waters with declining water quality that are not yet impaired. The Department worked closely with these stakeholders to identify water quality impairments in the Raritan Water Region for which restoration best management practices would have a high likelihood for success based on consideration of available stakeholder data/information, local priorities, source verification, additional monitoring needed, cost and available funding, expected cooperation and other social, economic, environmental

³⁴ A partnership between the Stony Brook-Millstone Watershed Association, New Jersey Water Supply Authority and Raritan Headwaters Association formed to implement a suite of "River-Friendly" programs for businesses, golf courses, schools and residents in New Jersey. See http://www.njriverfriendly.org.

³⁵ NJDEP. Total Maximum Daily Load Report For the Non-Tidal Raritan River Basin Addressing Total Phosphorus, Dissolved Oxygen, pH and Total Suspended Solids Impairments. Established: June 2, 2015; approved May 9, 2016; and adopted May 24, 2016. http://www.ni.gov/dep/wms/bears/docs/raritan_tmdl_adopted.pdf.

³⁶ See http://www.state.nj.us/dep/wms/bears/assessment.htm.

³⁷ See http://raritan.rutgers.edu/about/background/.

³⁸ See http://raritan.rutgers.edu/

³⁹ Additional information about this collaboration and proceedings from the stakeholder meetings are available on the Rutgers University website at http://raritan.rutgers.edu/raritan-integrated-report/.

factors. These "candidate waterbodies" will be used to identify priority waterbodies for restoration in the 2016 Integrated Report and are also identified as priorities for funding under the SFY 2017 Water Quality Restoration Grants, including CWA 319(h) pass-through grants.

The Department recently expanded New Jersey's 319(h) NPS Grant Program into a Water Quality Restoration Grant Program to include other federal and State funds that may be available for NPSrelated water quality restoration activities. Under this expanded grant program, the Department awards water quality restoration grants to fund watershed restoration activities and initiatives around New Jersey. Generally, grants are focused on restoration of water quality impaired predominantly by NPS pollution for waters located in a priority waterbody or region where the grant will help implement an approved TMDL or WBPs. The Department published a request for proposals (RFP) on March 10, 2017⁴⁰ soliciting applications for eligible NPS pollution control projects to be considered for funding under its Water Quality Restoration Grant Program. 41 Funding priorities for the SFY 2017 NPS grants include implementation of approved WBPs and TMDLs within the Raritan and Lower Delaware Water Regions, to coincide with the focus areas for the 2016 and 2018 Integrated Report, and "candidate waterbodies" identified through the Raritan Water Region stakeholder process. Other funding priorities include those identified through the stakeholder-driven Barnegat Bay 10-Point Action Plan, creation of "living shorelines", coastal lake restoration, and green infrastructure projects to manage Combined Sewer Overflows (CSOs) for the 25 NJPDES-permitted CSOs that are concentrated in the northeast part of the State.

USEPA Water Quality Measure 27 (WQ-27) Since most parameters remaining on New Jersey's 303(d) List are nonpoint source in origin, the Department has embraced USEPA's new 303(d) Program Vision, which provides states with the flexibility to pursue alternate approaches to TMDL development where such approaches will be more effective in restoring water quality, and in a timelier fashion, than TMDLs. The Department plans to prepare additional WBPs to address water quality impairment caused by NPS

pollution and stormwater, as well as watershed protection plans to restore and protect high quality or declining water quality in waters that are not impaired, concurrent with development of high priority TMDLs identified through the comprehensive regional assessment using a rotating basin approach. As part of reporting progress in implementing the CWA 303d Program Vision, USEPA and States developed new performance measure WQ-27, which is defined as:

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.⁴²

New Jersey developed its first set of WQ-27 priority areas using the 2012 Listing Cycle as the baseline and 2022 as the target year for establishing TMDLs or alternative restoration approaches for impaired

⁴⁰ NJDEP. 2017 Water Quality Restoration Grants for Nonpoint Source Pollution Request for Proposals. March 20, 2017. http://www.state.nj.us/dep/wms/bears/docs/nps_grant_rfp_2017.pdf.

⁴¹ See http://www.state.nj.us/dep/wms/bears/npsrestgrants.html.

⁴² USEPA. FY2017 National Water Program Guidance: Addendum. April 2016. EPA 800-R-16-002. Subobjective 2.2.1 Improve Water Quality on a Watershed Basis. WQ-27. P. 6. https://www.epa.gov/sites/production/files/2016-04/documents/fy17-national-water-program-guidance-addendum.pdf.

waters, or protection approaches for unimpaired waters (see Appendix 2) and submitted it to USEPA on July 1, 2015 in fulfillment of its WQ-27 reporting commitment for 2014. USEPA requires this WQ-27 list to be updated on an annual basis. As the Department moves forward with the Rotating Basin Approach, the stakeholder process will provide the opportunity for public engagement in this prioritization process by providing a forum through which the public can share information about local water quality concerns, local restoration needs and priorities, restoration actions already completed or underway, and opportunities for funding and/or leveraging of resources for restoration actions. Such a stakeholder process will be conducted in each subsequent Water Region and the results of these regional prioritization processes will be reported to USEPA through New Jersey's annual WQ-27 submissions and in each corresponding Integrated Report.

Conclusion

The Department has invested significant resources in collecting and assessing water quality data and information, identifying sources and causes of water quality impairment, and developing and implementing strategies to restore water quality and meet statewide water quality goals and objectives. The Department has effectively engaged the public and other stakeholders at statewide, regional and local levels in these efforts. New Jersey has long embraced a comprehensive, integrated, stakeholder-based approach to water quality protection. Our partners have played a key role in the successful development and implementation of the Whippany Watershed Project, the Passaic and Raritan Basin TMDLs, and the Barnegat Bay 10-Point Action Plan, among others.

To date, the Department has completed TMDLs for over 600 assessment unit/pollutant combinations TMDLs, which address over 80% of impaired waterbodies in New Jersey that have at least one major point source discharger within the TMDL study area. A table showing all New Jersey TMDLs and their Department's approval status is available on the website http://www.state.nj.us/dep/wms/bears/tmdls.html. Because of the Department-led, stakeholderdriven, comprehensive watershed management process throughout the State, the Department has maintained a long-term commitment to public participation in the development of TMDLs. Direct input was received from stakeholders for the comprehensive Passaic and Raritan TMDLs, resulting in permit limits and NPS restoration strategies, which currently serve as funding priorities for funding through NPS restoration grants.

The new USEPA CWA 303(d) Program Vision provides much-needed flexibility and support to continue such efforts. The Rotating Basin Approach to Comprehensive Regional Assessment will allow the Department to prioritize water quality restoration on a regional basis and pursue restoration strategies that are most effective for addressing those priority concerns, including development, implementation and funding of NPS control measures where they provide a feasible alternative to TMDL development. Successful execution of NPS measures depends on maintaining existing partnerships and forging new ones with state, interstate, regional and local entities; private sector groups; citizens; and federal and other government agencies. These partners and their affiliated programs have goals that align or overlap with the goals of the Department, thus providing mutual benefits. Partnerships strengthen the program by attracting new ideas and input, increasing understanding of water quality problems and causes, and building commitment to implementing solutions. Partnerships are paramount to implementing the State's short- and long-term water quality goals and objectives. The Department will continue to work closely with our partners to implement

the broad range of available NPS reduction and prevention strategies along with other approaches necessary to address the full array of water quality issues in New Jersey. These include development of watershed restoration and protection 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.

This document will be refined and expanded to address the remaining goals of the USEPA CWA 303(d) Program Vision in accordance with the deadlines established in their guidance document and will be published in subsequent Integrated Reports.

Appendix 1: New Jersey's Initial WQ-27 Measure Candidates (based on 2012 Integrated Report)

Assessment Unit ID	Assessment Unit Name	Cause Name	Plan Type
NJ02030103140010-01	Hohokus Bk (above Godwin Ave)	PHOSPHORUS, TOTAL	TMDL
NJ02030103140030-01	Hohokus Bk(below Pennington Ave)	PHOSPHORUS, TOTAL	TMDL
NJ02030103140050-01	Saddle River (Rt 4 to HoHoKus)	PHOSPHORUS, TOTAL	TMDL
NJ02030103140060-01	Saddle River (Lodi gage to Rt 4)	PHOSPHORUS, TOTAL	TMDL
NJ02030103140070-01	Saddle River (below Lodi gage)	PHOSPHORUS, TOTAL	TMDL
NJ02030103140080-01	Saddle River (Hohokus to Ridgewood gage)	PHOSPHORUS, TOTAL	TMDL
NJ02030105010060-01	Raritan R SB(Califon br to Long Valley)	PH	TMDL
NJ02030105010080-01	Raritan R SB(Spruce Run-StoneMill gage)	PHOSPHORUS, TOTAL	TMDL
NJ02030105020050-01	Beaver Brook (Clinton)	PHOSPHORUS, TOTAL	TMDL
NJ02030105020070-01	Raritan R SB(River Rd to Spruce Run)	PHOSPHORUS, TOTAL	TMDL
NJ02030105020070-01	Raritan R SB(River Rd to Spruce Run)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105020080-01	Raritan R SB(Prescott Bk to River Rd)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105020100-01	Raritan R SB(Three Bridges-Prescott Bk)	PHOSPHORUS, TOTAL	TMDL
NJ02030105020100-01	Raritan R SB(Three Bridges-Prescott Bk)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105030060-01	Neshanic River (below FNR / SNR confl)	PHOSPHORUS, TOTAL	TMDL
NJ02030105030070-01	Neshanic River (below Black Brk)	PHOSPHORUS, TOTAL	TMDL
NJ02030105040010-01	Raritan R SB(Pleasant Run-Three Bridges)	PHOSPHORUS, TOTAL	TMDL
NJ02030105040030-01	Holland Brook	PHOSPHORUS, TOTAL	TMDL
NJ02030105040040-01	Raritan R SB(NB to Pleasant Run)	PH	TMDL
NJ02030105040040-01	Raritan R SB(NB to Pleasant Run)	PHOSPHORUS, TOTAL	TMDL
NJ02030105050020-01	Lamington R (Hillside Rd to Rt 10)	PHOSPHORUS, TOTAL	TMDL
NJ02030105050070-01	Lamington R(HallsBrRd-HerzogBrk)	PH	TMDL
NJ02030105050070-01	Lamington R(HallsBrRd-HerzogBrk)	PHOSPHORUS, TOTAL	TMDL
NJ02030105050090-01	Rockaway Ck (below McCrea Mills)	PHOSPHORUS, TOTAL	TMDL
NJ02030105050100-01	Rockaway Ck SB	PHOSPHORUS, TOTAL	TMDL
NJ02030105050100-01	Rockaway Ck SB	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105060040-01	Raritan R NB(Peapack Bk to McVickers Bk)	PHOSPHORUS, TOTAL	TMDL
NJ02030105060040-01	Raritan R NB(Peapack Bk to McVickers Bk)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105080020-01	Raritan R Lwr (Rt 206 to NB / SB)	PHOSPHORUS, TOTAL	TMDL
NJ02030105080030-01	Raritan R Lwr (Millstone to Rt 206)	PHOSPHORUS, TOTAL	TMDL
NJ02030105080030-01	Raritan R Lwr (Millstone to Rt 206)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105090050-01	Stony Bk(Province Line Rd to 74d46m dam)	PHOSPHORUS, TOTAL	TMDL
NJ02030105090060-01	Stony Bk (Rt 206 to Province Line Rd)	PHOSPHORUS, TOTAL	TMDL
NJ02030105090070-01	Stony Bk (Harrison St to Rt 206)	PHOSPHORUS, TOTAL	TMDL

Assessment Unit ID	Assessment Unit Name	Cause Name	Plan Type
NJ02030105090090-01	Stony Bk- Princeton drainage	PHOSPHORUS, TOTAL	TMDL
NJ02030105100010-01	Millstone River (above Rt 33)	PHOSPHORUS, TOTAL	TMDL
NJ02030105100010-01	Millstone River (above Rt 33)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105100020-01	Millstone R (Applegarth road to Rt 33)	PHOSPHORUS, TOTAL	TMDL
NJ02030105100020-01	Millstone R (Applegarth road to Rt 33)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105100030-01	Millstone R (RockyBk to Applegarth road)	PHOSPHORUS, TOTAL	TMDL
NJ02030105100050-01	Rocky Brook (below Monmouth Co line)	PHOSPHORUS, TOTAL	TMDL
NJ02030105100060-01	Millstone R (Cranbury Bk to Rocky Bk)	DISSOLVED OXYGEN	TMDL
NJ02030105100060-01	Millstone R (Cranbury Bk to Rocky Bk)	PHOSPHORUS, TOTAL	TMDL
NJ02030105100090-01	Cranbury Brook (below NJ Turnpike)	PHOSPHORUS, TOTAL	TMDL
NJ02030105100110-01	Devils Brook	PHOSPHORUS, TOTAL	TMDL
NJ02030105100130-01	Bear Brook (below Trenton Road)	PHOSPHORUS, TOTAL	TMDL
NJ02030105100140-01	Millstone R (Rt 1 to Cranbury Bk)	PHOSPHORUS, TOTAL	TMDL
NJ02030105110020-01	Millstone R (HeathcoteBk to Harrison St)	PHOSPHORUS, TOTAL	TMDL
NJ02030105110050-01	Beden Brook (below Province Line Rd)	PHOSPHORUS, TOTAL	TMDL
NJ02030105110100-01	Pike Run (below Cruser Brook)	PHOSPHORUS, TOTAL	TMDL
NJ02030105120130-01	Green Brook (below Bound Brook)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105120140-01	Raritan R Lwr(I-287 Piscatway-Millstone)	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105150010-01	Weamaconk Creek	PHOSPHORUS, TOTAL	TMDL
NJ02030105150010-01	Weamaconk Creek	TOTAL SUSPENDED SOLIDS (TSS)	TMDL
NJ02030105150030-01	McGellairds Brook (below Taylors Mills)	PHOSPHORUS, TOTAL	TMDL
NJ02030105150060-01	Matchaponix Brook (below Pine Brook)	PHOSPHORUS, TOTAL	TMDL
NJ02040301020010-01	Metedeconk R NB(above I-195)	NITRATES	Protection Plan
NJ02040301020010-01	Metedeconk R NB(above I-195)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan
NJ02040301020020-01	Metedeconk R NB(Rt 9 to I-195)	NITRATES	Protection Plan
NJ02040301020020-01	Metedeconk R NB(Rt 9 to I-195)	PHOSPHORUS, TOTAL	Protection Plan
NJ02040301020020-01	Metedeconk R NB(Rt 9 to I-195)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan
NJ02040301020020-01	Metedeconk R NB(Rt 9 to I-195)	TURBIDITY	Protection Plan
NJ02040301020050-01	Metedeconk R NB (confluence to Rt 9)	NITRATES	Protection Plan
NJ02040301020050-01	Metedeconk R NB (confluence to Rt 9)	PHOSPHORUS, TOTAL	Protection Plan
NJ02040301020050-01	Metedeconk R NB (confluence to Rt 9)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan
NJ02040301020050-01	Metedeconk R NB (confluence to Rt 9)	TURBIDITY	Protection Plan
NJ02040301030010-01	Metedeconk R SB (above I-195 exit 21 rd)	PHOSPHORUS, TOTAL	Protection Plan
NJ02040301030010-01	Metedeconk R SB (above I-195 exit 21 rd)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan
NJ02040301030020-01	Metedeconk R SB (74d19m15s to I-195 X21)	PHOSPHORUS, TOTAL	Protection Plan
NJ02040301030020-01	Metedeconk R SB (74d19m15s to I-195 X21)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan

Assessment Unit ID	Assessment Unit Name	Cause Name	Plan Type
NJ02040301030030-01	Metedeconk R SB(BennettsPd to 74d19m15s)	NITRATES	Protection Plan
NJ02040301030030-01	Metedeconk R SB(BennettsPd to 74d19m15s)	PHOSPHORUS, TOTAL	Protection Plan
NJ02040301030030-01	Metedeconk R SB(BennettsPd to 74d19m15s)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan
NJ02040301030040-01	Metedeconk R SB (Rt 9 to Bennetts Pond)	NITRATES	Protection Plan
NJ02040301030040-01	Metedeconk R SB (Rt 9 to Bennetts Pond)	PHOSPHORUS, TOTAL	Protection Plan
NJ02040301030040-01	Metedeconk R SB (Rt 9 to Bennetts Pond)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan
NJ02040301030040-01	Metedeconk R SB (Rt 9 to Bennetts Pond)	TURBIDITY	Protection Plan
NJ02040301030050-01	Metedeconk R SB (confluence to Rt 9)	NITRATES	Protection Plan
NJ02040301030050-01	Metedeconk R SB (confluence to Rt 9)	PHOSPHORUS, TOTAL	Protection Plan
NJ02040301030050-01	Metedeconk R SB (confluence to Rt 9)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan
NJ02040301030050-01	Metedeconk R SB (confluence to Rt 9)	TURBIDITY	Protection Plan
NJ02040301040020-01	Metedeconk R (Beaverdam Ck to confl)	NITRATES	Protection Plan
NJ02040301040020-01	Metedeconk R (Beaverdam Ck to confl)	TOTAL SUSPENDED SOLIDS (TSS)	Protection Plan

Appendix 2: Long Term Monitoring and Assessment Strategy

The Department oversees the operation of the primary water quality monitoring networks for the State of New Jersey. Monitoring strategies employed by the Department are comprised of multiple water quality assessment techniques including: habitat assessments, in-stream biological monitoring such as fish population surveys, collection of physical/chemical data on a variety of matrices (surface water, ground water, sediment), identifying pollution sources in the coastal and freshwater environment (discharges, stormwater, marinas), and sediment toxicity testing. Monitoring conducted by other entities, such as federal and county government agencies, regional commissions (e.g., Pinelands Commission) watershed associations (including voluntary citizen monitoring) and discharger associations, is also used to supplement these networks and expand the range and scope of information available for water quality assessment. New Jersey's water monitoring programs and federally-required long term monitoring strategy (LTMS) are described in New Jersey's Water Monitoring and Assessment Strategy (2005-2014), available on the Department's website at http://www.state.nj.us/dep/wms/longtermstrategyreport.pdf. The LTMS is currently being updated for the 2015-2022 timeframe. The update to the Department's LTMS will explain in more detail how the Department's monitoring and assessment programs are being transformed to support a more iterative process. The LTS for 2015-2022 will divide the Department's ambient monitoring network into three distinct tiers, each with a different focus:

Tier 1 - Statewide Status and Trends Monitoring: will focus on collecting statewide water quality data and information to comply with federal and state mandates. This tier will utilize fixed stations and probabilistically-selected monitoring locations to provide long-term data and information that support water quality assessment, water quality status (including identification of impaired waters, causes and sources), and trends evaluation.

Tier 2 - Targeted Monitoring: will focus on monitoring of targeted areas or specific issues to provide a more comprehensive evaluation of areas of interest, including monitoring in a specific or priority stream, watershed or region to fill data gaps, confirm suspected impairment, track down sources of pollutants causing impairment, and confirm water quality conditions attributed to natural conditions.

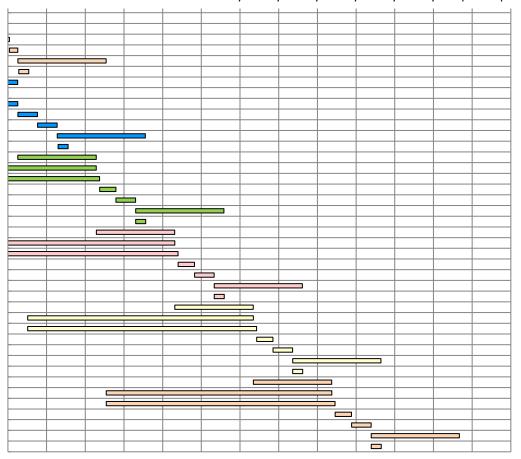
Tier 3 - Effectiveness Monitoring: will provide follow-up analysis to evaluate effectiveness of various management measures that have been implemented for areas of interest and confirm any corresponding improvement in water quality. Effectiveness of waterbody-specific management actions will be determined using indicators of improvement that are evaluated before and after management actions are implemented.

The rotating basin approach which will produce a comprehensive assessment of water quality in each of New Jersey five water regions on a cyclical basis. Priorities will be identified in collaboration with a stakeholder process for each water region coincident with the biennial Integrated Report cycle. Informal stakeholder input is sought for the specific water region at the time leading up to the preparation of the Integrated Report.

Rotating Basin Approach Monitoring and Assessment Cycles

Jul-15 Jun-16 Jun-17 Jun-18 Jun-19 Jun-20May-21May-22May-23May-24May-25May-26Apr-27 Apr-28

2014 Data Collection Period 2014 Data Submission 2014 Assessment/Draft 303d List and Integrated Report Identify Actions Needed in ACR Implement Actions Needed in ACR Adopt and Publish final 2014 303(d) List and Integrated Report Monitoring for Raritan Basin for 2016 cycle 2016 Data Collection Period 2016 Data Submission 2016 Assessment/Draft 303d List and Integrated Report Identify Actions Needed in Raritan Implement Actions Needed in Raritan Adopt and Publish final 2016 303(d) List and Integrated Report Monitoring for LDEL Basin for 2018 cycle 2018 Data Collection Period 2018 Data Submission 2018 Assessment/Draft 303d List and Integrated Report Identify Actions Needed in L DEL Region Implement Actions Needed in L DEL Region Adopt and Publish final 2018 303(d) List and Integrated Report Monitoring for U DEL Basin for 2020 cycle 2020 Data Collection Period 2020 Data Submission 2020 Assessment/Draft 303d List and Integrated Report Identify Actions Needed in U DEL Region Implement Actions Needed in U DEL Region Adopt and Publish final 2018 303(d) List and Integrated Report Monitoring for Northeast Basin for 2022 cycle 2022 Data Collection Period 2022 Data Submission 2020 Assessment/Draft 303d List and Integrated Report Identify Actions Needed in Northeast Region Implement Actions Needed in Northeast Region Adopt and Publish final 2018 303(d) List and Integrated Report Monitoring for ACR for 2024 cycle 2024 Data Collection Period 2024 Data Submission 2020 Assessment/Draft 303d List and Integrated Report Identify Actions Needed in ACR Implement Actions Needed in ACR Adopt and Publish final 2018 303(d) List and Integrated Report



Through effectiveness monitoring the Department will be able to ascertain the success of its restoration initiatives over the past 15 years such as the efficacy of the statewide fertilizer law which went into effect in 2011, as well as various 319(h) NPS funded restoration BMPs, and implemented TMDLs. Through the Department's progressive watershed management process benchmark monitoring was performed in the late 1990's in both the Toms River watershed in south Jersey (part of the Barnegat Bay watershed) and in the Whippany River watershed in north Jersey. The purpose of these previous monitoring initiatives was to determine regional specific land use loading coefficients. In the Spring of 2017, the Department will begin nonpoint source stormwater monitoring in the Toms River as a repeat of its 1994-98 investigation of land use loading coefficients. The same initiative will be reiterated in the Whippany River watershed. These multi-year surface water quality investigations will calculate the NPS loadings of nutrient, bacteria and suspended solids from various land use areas in these watersheds. It is anticipated that improvements in NPS loading from overland flow and the effectiveness of the fertilizer ordinance will be captured in these baseline investigations.

Watershed based plans employ an adaptive management approach in which available information and analytical tools are used to support the best planning decisions that can be made ensuring restoration and stewardship of impaired waters. The implementation specification found in watershed based plans is more detailed than in a TMDL document and is eligible for Section 319(h) funding. Further, there is a mechanism by which a watershed based plan could inform the need for enhanced regulatory requirements under the MS4 permitting. Therefore, there is no loss of implementation authority using the tool of a watershed based plan over a TMDL, in the intended circumstances.

This approach allows the Department to provide a transparent and rational identification of the intended response to listed impairments. Future site specific assessment will be streamlined through the continuation of an engaged stakeholder process and resultant updates to the WQ-27 measures list to identify forthcoming restoration and protection assessment unit candidates. The funding of projects to address the WQ-27 candidates and the implementation of the Department's Long Term Monitoring Strategy to address Tier 2 Targeted Monitoring assessment units and Tier 3 Effectiveness Monitoring assessment units will cap the New Jersey's Vision Approach to protect healthy waters and continue to restore impaired waters.