



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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Division of Water Monitoring and Standards  
Bureau of Environmental Analysis, Restoration and Standards  
PO Box 420 (Mail Code 401-04I)  
401 East State Street  
Trenton, New Jersey 08625-0420  
609-633-1441

<http://www.state.nj.us/dep/wms/bears/index.html>

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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).<sup>1</sup> This is a “living document” it has been updated from previous iterations to focus on the alternatives and assessment goals articulated in the USEPA Vision Document commensurate with the 2018 and 2020 Integrated Reporting Cycles. The Vision Document has been 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 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.

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<sup>1</sup> 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](https://www.epa.gov/sites/production/files/2015-07/documents/vision_303d_program_dec_2013.pdf).

Communication and partnership with the public in all facets of these programs is critical to ensuring 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 1<sup>st</sup> 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 established 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 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.
2. "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 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](https://www.epa.gov/sites/production/files/2015-10/documents/fy_2016_nwpg_measure_definitions_water_quality_-_copy.pdf)).

USEPA encouraged states to adopt the 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 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-1 et 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 Council<sup>2</sup> 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)<sup>3</sup>, 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 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).<sup>4, 5</sup>

**Statewide Water  
Quality  
Management  
Program Plan  
1985-2015**

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”<sup>6</sup> 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

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

<sup>3</sup> NJEP. New Jersey Statewide Water Quality Management Program Plan. December 2015.

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

<sup>5</sup> New Jersey’s first 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 WQM Program Plan and the 1987 CPP.

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

strategy, objectives, priorities, policies and procedures<sup>7</sup>. The water quality priorities articulated in these 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)<sup>8</sup> 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 Watershed<sup>9</sup> 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 TMDL<sup>10</sup> (TMDLs adopted prior to 1999 were prepared by USEPA or consisted only of wasteload allocations), followed by a short-term implementation strategy<sup>11</sup>, a nonpoint source pollution control guidance manual<sup>12</sup>, and a comprehensive Watershed Management Plan for the Whippany River Watershed. The Watershed Management Plan continues to be implemented by the stakeholder-led Whippany River Watershed *Action Committee*<sup>13</sup> with a focused effort on stormwater management.

**Whippany River  
Watershed TMDL  
Established 1999**

**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 framework<sup>14</sup>, 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

<sup>7</sup> The Statewide 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 Plan, the CPP and the WQMP rules by reference.<sup>7</sup>

<sup>8</sup> 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>.

<sup>9</sup> Whippany River Watershed Action Committee website. <http://www.wrvac.org/About-Us.html>

<sup>10</sup> 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](http://www.nj.gov/dep/wms/bears/docs/whippany_tmdl.pdf).

<sup>11</sup> NJDEP. *Whippany River Watershed Action Now Strategy*. January 2000.

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

<sup>13</sup> <http://www.wrvac.org/>

<sup>14</sup> NJDEP. *Draft Statewide Watershed Management Framework Document for the State of New Jersey*. January 1997.



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 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 of 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<sup>15</sup> 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

<sup>15</sup> <http://www.state.nj.us/dep/wms/bears/nps.htm>.

*Handbook for Developing Watershed Plans to Restore and Protect Our Waters*<sup>16</sup> to be eligible for Section 319(h) grant funds. In 2013, USEPA issued updated guidelines describing key components to be included in an effective state NPS management program (see <http://water.epa.gov/polwaste/nps/cwact.cfm>). *New Jersey's NPS Program Plan* was updated in 2015 to comply with the new USEPA guidance. In November 2020 US EPA Region 2 approved New Jersey's 2020-2025 *Nonpoint Source Management Program Plan*<sup>17</sup> commending the Department for its commitment to provide significant state funding to implement its Nonpoint Source Program.

In 2017, the Department expanded the 319(h) Nonpoint Source Grant Program to make additional funds available through its annual Request for Proposals (see <https://www.state.nj.us/dep/wms/bears/npsrestgrants.html>) for prioritized watershed restoration activities that address nonpoint source pollution. Renamed *Water Quality Restoration Grants for Nonpoint Source Pollution* the RfP identified up to 10.4M dollars comprised of section 319(h) Clean Water Act pass through funds as well as Natural Resource Damages (NRD) recoveries and Corporate Business Tax (CBT) funding available to award grants to eligible recipients to carry out targeted water quality restoration initiatives including environmental education throughout the state. The RfP identified statewide priorities such as implementing green infrastructure in urban areas and implementation of WBPs in the Raritan and Lower Delaware Water Regions to support the rotating basin approach (as described on Page 10).

In the 2018 RfP (see <https://www.state.nj.us/dep/wms/bears/2018grants.htm>) the Department made approximately \$10M in grants available for watershed restoration, enhancement, and protection strategies that address NPS pollution from both point source and nonpoint source discharges within the Barnegat Bay watershed. The funded projects were intended to implement the *Barnegat Bay Restoration, Protection, and Enhancement Strategy*<sup>18</sup>.

The Department issued two separate RfPs in 2019. RfP#1 *Grants to Prevent, Mitigate and/or Control of Freshwater Harmful Algal Blooms (HABs)* and made \$13.5 million in funding available for local projects to improve water quality and help prevent, mitigate and manage HABs in New Jersey's lakes and ponds, building upon the state's HAB response strategy (see <https://www.state.nj.us/dep/wms/bfbm/CyanoHABHome.html>). The RfP#1 identified \$3.5 million in grants for planning and projects to help local management in the response and mitigation of HABs through proven and innovative projects. In addition, the Department issued an Intended Use Plan that earmarked \$10 million in Clean Water State Revolving Fund money as principal-forgiveness (grant-like) funding for projects that address HABs by improving water quality.

Rfp#2 *Water Quality Restoration Grants for Nonpoint Source Pollution* made an additional \$3.5 in grants available for watershed restoration, enhancement, and protection strategies that address NPS pollution. Priorities for funding included, mitigating HABs through lake and watershed planning and implementation projects, implementation of water quality improvement measures associated with

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<sup>16</sup> 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>.

<sup>17</sup> NJDEP. *New Jersey Nonpoint Source Management Program Plan 2020-2025*. November 2020. <https://www.state.nj.us/dep/wms/bears/docs/NJFinalNPSProgramPlan2020-2025.pdf>

<sup>18</sup> NJDEP. *Barnegat Bay Restoration, Protection, and Enhancement Strategy: Moving Science into Action*. October 2017. <https://www.nj.gov/dep/barnegatbay/>

approved watershed plans and total maximum daily loads (TMDL's), development of wastewater management plans and /or their components, implementation of green infrastructure to reduce stormwater input into combined sewer systems, and implementation of measures to provide resiliency against future storm events and sea level rise due to climate change. The projects selected for funding may be viewed on the Department's web page at <https://www.state.nj.us/dep/wms/bears/2019grants.htm>.

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 the failure of some states to establish TMDLs for impaired waters as required under CWA Section 303(d). While the Department was not a party to such litigation, USEPA Region 2 was and, in compliance with Region 2's Consent Order under the Widener Lawsuit, the Department executed a memorandum of agreement (MOA) with USEPA creating a nine-year schedule to establish TMDLs for all water quality-limited segments identified on New Jersey's 1998 303(d) List. 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, including metals in the New York/New Jersey Harbor Estuary, volatile organics in the Delaware Estuary, and the Whippany River Watershed TMDL, all of which were to be completed by December 1999.

**TMDL MOA  
1998-2008**

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 over 200 TMDLs established between 2000 – 2004 that addressed mostly fecal coliform in streams and total phosphorous in lakes throughout the State, followed by an additional 160 TMDLs between 2005 – 2007 that focused primarily 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.

**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 TMDL<sup>19</sup>, 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)<sup>19</sup>. 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

<sup>19</sup> See the Department's website at <http://www.state.nj.us/dep/wms/bears/generalinfo.htm>.

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  
Watershed  
1990's - present**

Identified by the Department as a watershed priority area in the early 1990s, the Barnegat Bay was designated to the National Estuary program in 1995 in recognition of the importance of the Bay as an estuary of national concern. In 2010, the Department developed a Comprehensive Action Plan to address the ecological health of the larger 660-square-mile Barnegat Bay watershed. A series of public meetings were held to engage stakeholders in the collaborative development of the December 2010 Barnegat Bay Ten-Point Action Plan<sup>20</sup>.

Through the Ten-Point Plan (Phase One), the Department launched both long-term efforts, such as closing the Oyster Creek Nuclear Generating Station, funding comprehensive research and water quality model development, and the development of post-construction soil restoration standards, and short-term actions such as municipal compliance assistance, reducing nutrient pollution from fertilizer through increased education and enforcement, and acquiring land in the Barnegat Bay watershed. Much of Phase One focused on research and the collection of sufficient hydrodynamic (flow and current), water chemistry, biological, and sediment flux data needed for model development, and to systematically assess the current condition of the bay and its watershed.

The Barnegat Bay Watershed remains a priority for the Department and through the *Barnegat Bay Restoration, Enhancement, and Protection Strategy* (BB REP Strategy)<sup>21</sup>, the Department is moving science into action in the watershed. The October 2017 BB REP is based upon the data, modeling results, and research generated by the Barnegat Bay Ten-Point Plan (Phase One) announced in 2010. The Department is building upon the accomplishments of Phase One by identifying restoration, enhancement, and protection actions as part of Phase Two (BB REP Strategy) with the continued goal of improving the ecological health of Barnegat Bay and its watershed. The BB REP Strategy provides four major components; restoration, enhancement, protection and assessment; that include short-term, mid-term, and long-term objectives and actions. This strategic plan identifies objectives and actions aimed at restoring areas of concern, enhancing areas wherever possible, and protecting healthy areas of the Barnegat Bay and its watershed. During Phase Two, partners and stakeholders will continue to be instrumental in accomplishing the objectives and actions alongside the Department; this BB REP Strategy will undergo constant re-evaluation to gauge the effectiveness of the four major components and modifications will be made as needed. The BB REP identified the need to develop site-specific nutrient criteria and TMDL reduction targets to ensure total nitrogen concentrations are at appropriate levels to protect sensitive species.

A key finding of the BB REP Strategy was that although the northern third of the bay is ecologically impaired, and other areas are showing signs of stress, many parts of the bay and its resources are healthy. These findings informed the BB REP Strategy to implement appropriate measures which will

<sup>20</sup> See the Department's website at <http://www.nj.gov/dep/barnegatbay> December 9, 2010

<sup>21</sup> See the Department's website at <http://www.nj.gov/dep/barnegatbay>

help restore those impaired areas, enhance “on the edge” areas, and protect healthy areas. As described previously, Barnegat Bay was the focus of 2018 RfP to support implementation of projects that will improve the water quality and ecological health of the bay. To help maintain water quality of nonimpaired waters in Barnegat Bay the Department prepared the *Metedeconk River Watershed Protection Plan* which was accepted by EPA in March 2021.

### **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 Document<sup>22</sup> and carried forth in the 2016 Methods Document<sup>23</sup>. The results of the comprehensive assessment of the Atlantic Coastal Region were presented in the 2014 Integrated Report<sup>24</sup> along with an overall assessment of statewide water quality conditions, as required under CWA Section 305(b). A comprehensive assessment of the Raritan Water Region is presented in the 2016 Integrated Report<sup>25</sup>.

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.

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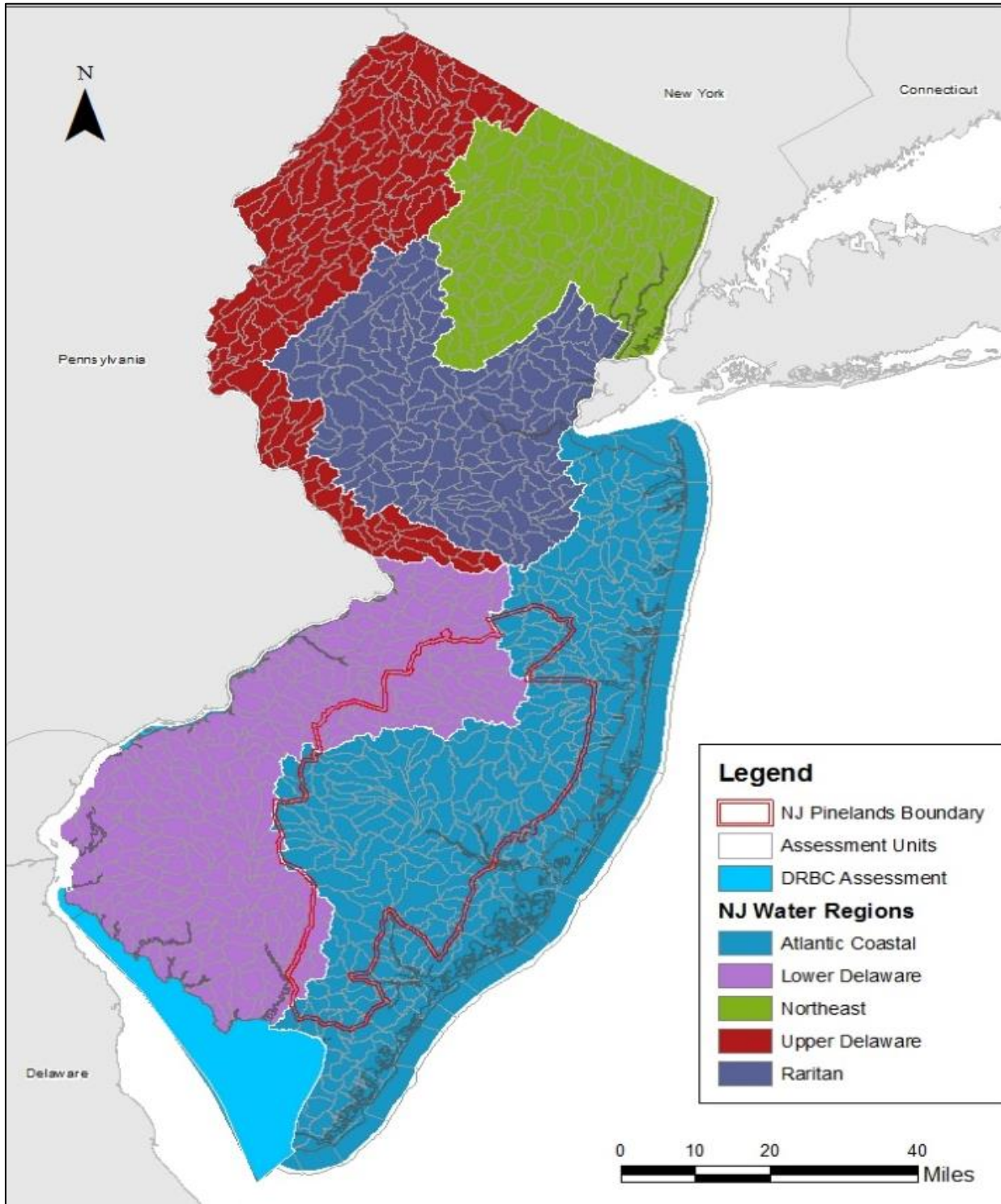
<sup>22</sup> NJDEP. 2014 *Integrated Water Quality Monitoring and Assessment Methods*. February 2015. [http://www.nj.gov/dep/wms/bears/docs/2014\\_final\\_methods\\_document\\_and\\_response\\_to\\_comments.pdf](http://www.nj.gov/dep/wms/bears/docs/2014_final_methods_document_and_response_to_comments.pdf).

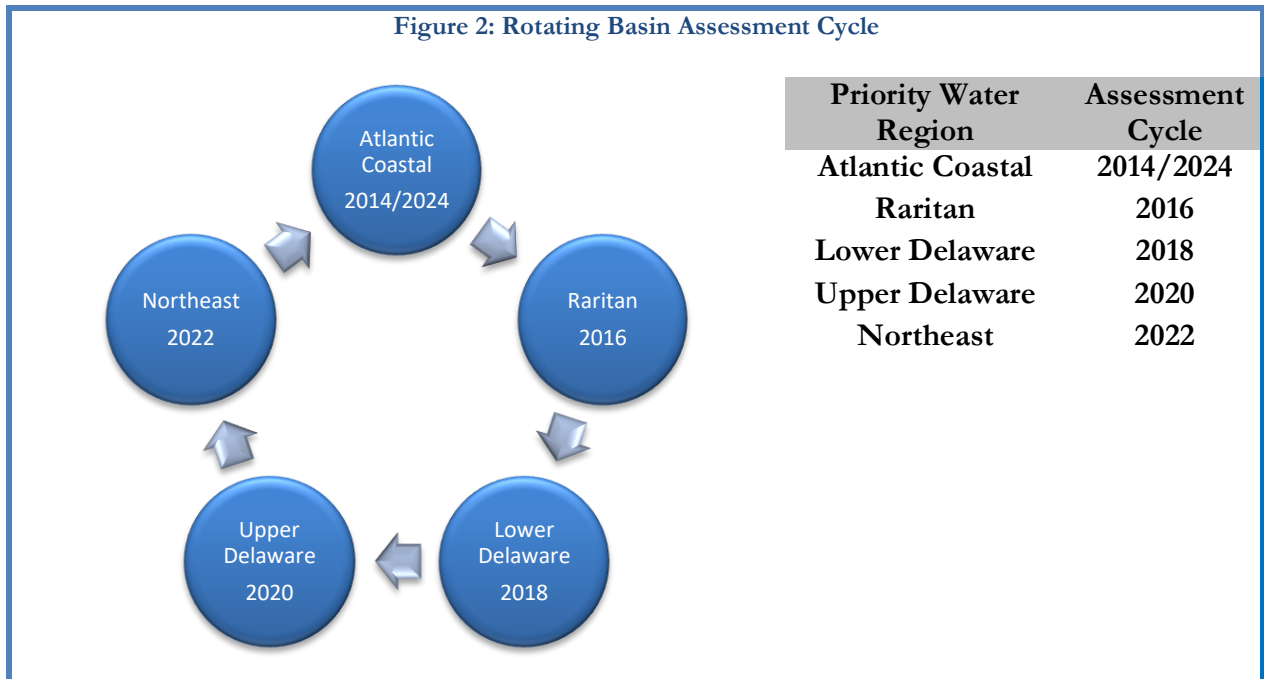
<sup>23</sup> NJDEP. 2016 *Integrated Water Quality Monitoring and Assessment Methods*. June 2017. [https://www.state.nj.us/dep/wms/bears/docs/2016\\_final\\_methods\\_document.pdf](https://www.state.nj.us/dep/wms/bears/docs/2016_final_methods_document.pdf)

<sup>24</sup> NJDEP. 2014 *New Jersey Integrated Water Quality Assessment Report*. May 2017. [https://www.state.nj.us/dep/wms/bears/docs/2014\\_final\\_integrated\\_report.pdf](https://www.state.nj.us/dep/wms/bears/docs/2014_final_integrated_report.pdf)

<sup>25</sup> NJDEP. 2016 *New Jersey Integrated Water Quality Assessment Report*. Final December 2019. <https://www.state.nj.us/dep/wms/bears/assessment.htm>

Figure 1: New Jersey Water Regions





The rotating basin approach produces a comprehensive assessment of the entire state every ten years and supports the development of measures to restore, maintain, and enhance water quality tailored to the unique circumstances of each region. 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;”<sup>26</sup> therefore, this approach has been integrated into the Department’s forthcoming Long Term Monitoring and Assessment Strategy (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.

<sup>26</sup> 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](https://acwi.gov/monitoring/pubs/WIS_2017_fs/Rotating%20Basin%20Factsheet%20NWQMC.pdf).

Initial 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.<sup>27</sup>

### **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*,<sup>28</sup> 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."<sup>29</sup> 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).

Beginning with the 2014 Integrated Report, the impaired waters list was parsed into three subparts under 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 WBPs, can be an effective alternative to a TMDL to characterize pollutant sources, the reductions

<sup>27</sup> See [http://www.state.nj.us/dep/wms/bears/docs/2014\\_draft\\_303dlist\\_public\\_notice\\_for\\_posting.pdf](http://www.state.nj.us/dep/wms/bears/docs/2014_draft_303dlist_public_notice_for_posting.pdf).

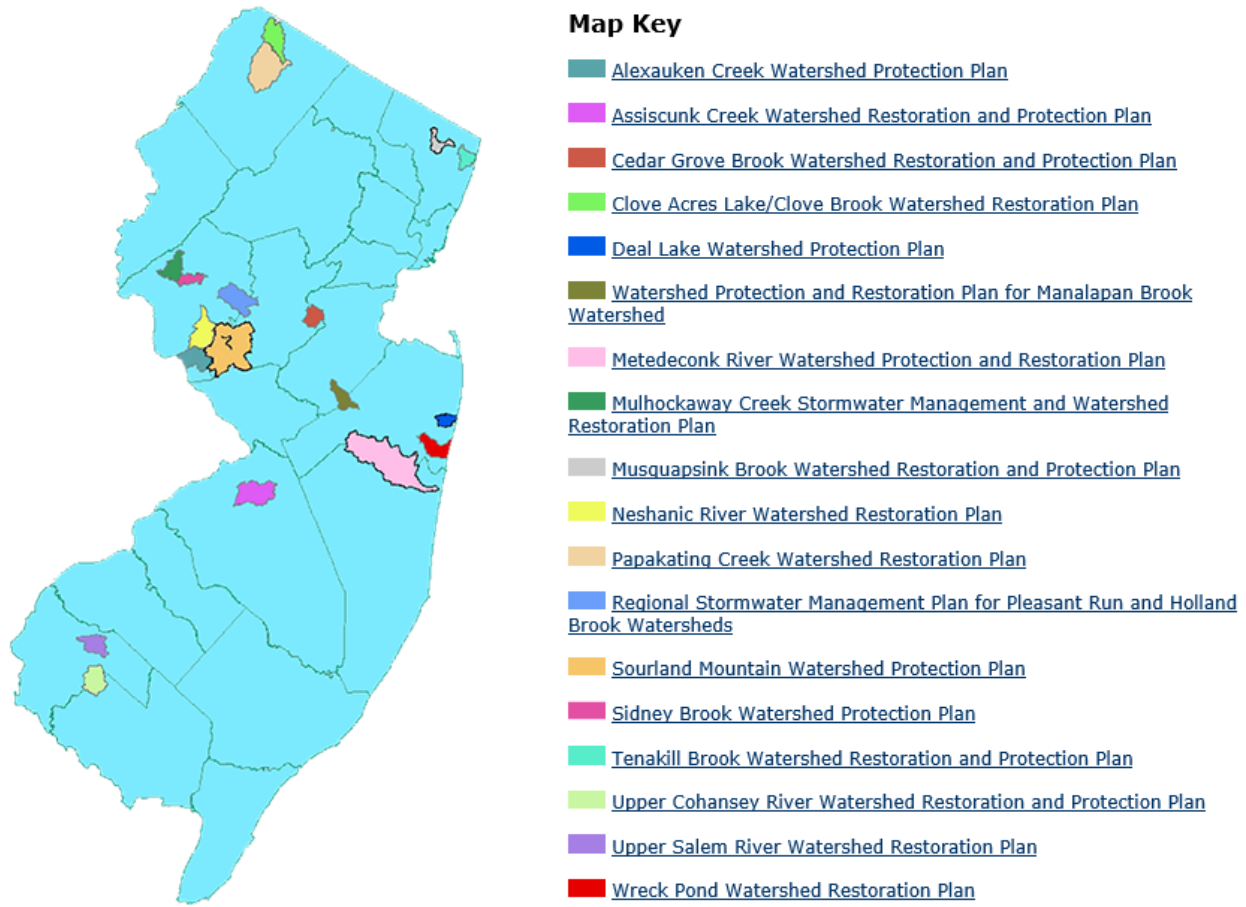
<sup>28</sup> USEPA. *Information Concerning 2016 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions*. August 13, 2015. [https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8\\_13\\_2015.pdf](https://www.epa.gov/sites/production/files/2015-10/documents/2016-ir-memo-and-cover-memo-8_13_2015.pdf).

<sup>29</sup> 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.



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



Twenty-three AU/pollutant combinations were placed on Sublist 5R of the 2016 Integrated List based on the following considerations:

- Previous or new pollutants causing use impairment;
- Covered by USEPA-approved Watershed Based Plan<sup>30</sup> 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.

Causes of water quality impairment to be addressed under these approved WBPs include nutrients (TP, DO, and pH), temperature, pathogens, and total suspended solids.

<sup>30</sup> 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>.

While TMDLs are still required for impaired waters on Sublist 5R, such TMDLs are considered a 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 near-term”.

A more detailed explanation of the structure of the 2018/2020 Integrated List and the rationale for placing impaired waters on each subpart is provided in the final 2014 Methods Document<sup>31</sup> and reiterated in the 2016 Methods Document<sup>32</sup> which remains the basis for the 2018/2020 Integrated Report. 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.

**2016 Integrated  
Report:  
Raritan Water  
Region**

As explained earlier under the Rotating Basin Approach, the Raritan Water Region is the focus area for comprehensive water quality assessment in the 2016 Integrated Report. A 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 programs<sup>33</sup>, Rutgers University Impervious Cover Reduction/Replacement projects, various rain gardens and/other green infrastructure projects, and

<sup>31</sup> See [http://www.state.nj.us/dep/wms/bears/docs/2014\\_final\\_methods\\_document\\_and\\_response\\_to\\_comments.pdf](http://www.state.nj.us/dep/wms/bears/docs/2014_final_methods_document_and_response_to_comments.pdf).

<sup>32</sup> See [https://www.state.nj.us/dep/wms/bears/docs/2016\\_final\\_methods\\_document.pdf](https://www.state.nj.us/dep/wms/bears/docs/2016_final_methods_document.pdf)

<sup>33</sup> 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>.

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 Basin<sup>34</sup>.

Subsequent stakeholder meetings were held on November 9, 2016 and February 23, 2017 in partnership with the Sustainable Raritan Collaborative<sup>35</sup> and the Rutgers University Sustainable Raritan River Initiative<sup>36</sup> to discuss preliminary results from the Department’s comprehensive water quality assessment for the Raritan Water Region.<sup>37</sup> 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 factors. These “candidate waterbodies” were used to identify priority waterbodies for restoration through grant funding under the SFY 2017 Water Quality Restoration Grants. 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, 2017<sup>38</sup> soliciting applications for eligible NPS pollution control projects to be considered for funding under its Water Quality Restoration Grant Program.<sup>39</sup> 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. The complete list of funded projects and their descriptions may be viewed at: <https://www.state.nj.us/dep/wms/bears/2017grants.htm>.

**2018/2020  
Integrated Report:  
Lower and Upper  
Delaware Water  
Regions**

EPA supports a combined state Integrated Report submission listing to allow states to catch-up on their past CWA 303(d) lists and maintain the biennial reporting cycle with an April 1 deadline moving forward. Thus, the Department has prepared a combined report that includes a comprehensive assessment of the Lower and Upper Delaware Water Regions.

<sup>34</sup> 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.nj.gov/dep/wms/bears/docs/raritan\\_tmdl\\_adopted.pdf](http://www.nj.gov/dep/wms/bears/docs/raritan_tmdl_adopted.pdf).

<sup>35</sup> See <http://raritan.rutgers.edu/about/background/>.

<sup>36</sup> See <http://raritan.rutgers.edu/>

<sup>37</sup> 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/>.

<sup>38</sup> See [http://www.state.nj.us/dep/wms/bears/docs/nps\\_grant\\_rfp\\_2017.pdf](http://www.state.nj.us/dep/wms/bears/docs/nps_grant_rfp_2017.pdf).

<sup>39</sup> See <http://www.state.nj.us/dep/wms/bears/npsrestgrants.html>.

The Department will work with the Delaware Estuary Program and its stakeholders to inform the [Partnership for the Delaware Estuary \(PDE\)](#) on updating the Comprehensive Coastal Management Plan (CCMP) for the Delaware Estuary. The PDE administers the Delaware Estuary Program, one of 28 National Estuary Programs established under Section 320 of the federal Clean Water Act. The goal of the program is to establish, restore, and protect a healthy and productive ecosystem able to fully support the beneficial uses articulated in each CCMP. The Department and PDE co-hosted a stakeholder meeting on July 27, 2016 at the Burlington County Library in Westampton, New Jersey to kickoff the process for CCMP revision process. Subsequently, the PDE conducted a survey of experts and held workshops in the three member states (Delaware, New Jersey and Pennsylvania) to gather information and determine priorities for developing actions for the revised CCMP. A series of public workshops were held throughout the Delaware Estuary in 2017 “to reach out to local partners and communities to get new ideas for a draft set of strategies for clean water, strong communities, and healthy habitats in and around the Delaware River and Bay”. The PDE issued the *A Comprehensive Conservation & Management Plan* in 2019 see <https://delawareestuary.org/our-plan-2/> with an emphasis on clean waters and strong communities.

The Department partnered with the Sussex County Municipal Utilities Authority (SCMUA) in 2000 to bring together major stakeholders, including federal, state, county, and municipal officials, farmers, lake communities, academics, and interested residents to study water quality issues and develop strategies, plans and initiatives to ensure the restoration, maintenance and enhancement of the waterways within the Wallkill River Watershed. Through this process, a strong sense of watershed stewardship was generated, including organization of the [Wallkill River Watershed Management Group \(WRWMG\)](#), which serves as the "Watershed Liaison" for all of Sussex County. The WRWMG established a watershed management program aimed at reducing nonpoint source pollutant loadings, improving water quality, and promoting long-term watershed health through riparian ecosystem enhancement, stormwater management, and agricultural outreach and assistance. The WRWMG also educates local residents about water quality issues and fosters a greater sense of watershed stewardship to ensure the long-term sustainability of local watersheds for future generations. The Department continues to work with the WRWMG and regional stakeholders to fund implementation projects to mitigate NPS to address and inform the comprehensive water quality assessment of the Upper Delaware Water Region for the 2018/2020 Integrated Report.

Several projects funded under the 2019 Water Quality Restoration Grants were targeted for the Upper and Lower Delaware Water Regions descriptions may be viewed at <https://www.state.nj.us/dep/wms/bears/docs/FundedProjectSummaries-SFY2019RFP2.pdf>.



**PROTECTION  
GOAL**

### **Raritan River Protection Plan**

As the first state in the nation to develop and receive EPA acknowledgement for a watershed protection plan, the *Non-tidal Raritan River Watershed Protection Plan (WPP)* brings together the many ongoing and latest water quality restoration actions being implemented in the Raritan to protect unimpaired waters while restoring impaired waters in this watershed. The WPP is based on the data and modeling results generated for the *Total Maximum*

*Daily Load Report for the Non-Tidal Raritan River Basin.* Assessment units covered by this protection plan include those that attain the SWQS for total phosphorus and/or total suspended solids on the 2014 Integrated List and are within the area covered by the non-tidal Raritan River TMDL study. A total of 90 separate AU/parameter combinations in 66 separate AUs are identified for protection through the WPP with 36 AUs protected for TSS; six for TP and 24 for both TSS and TP. Both reports may be viewed under the Raritan tab at <https://www.state.nj.us/dep/wms/bears/assessment.htm>.

The WPP reflects a watershed approach that is based on the implementation of the Raritan TMDL which will provide a benefit to unimpaired HUCs within the watershed. Furthermore, a full complement of regulations, funding, and stewardship partnerships implemented through regulatory and nonregulatory approaches are key to protect and restore water quality. In order to ensure future water quality protection and restoration, the continuation of nonpoint source restoration projects, water quality monitoring, and stakeholder involvement are essential for the success of the plan. Restoration efforts to date have helped improve water quality in the region resulting in delisting five AU/parameter combinations that were previously on the 303(d) list of impaired waterbodies. The WPP aims to expand upon these positive results and achieve the Department's goal of restoration, maintenance and preservation of water quality in the Raritan River watershed.

### **Metedeconk Protection Plan**

The Department prepared *The Metedeconk River Watershed Protection Plan* (see <https://www.state.nj.us/dep/wms/bears/docs/MetedeconkWBPlan.pdf>), the purpose of which is to preserve the non-impaired sub-basins (HUC14s) in the Metedeconk River, which empties into the northern portion of Barnegat Bay. It is an extension of the work completed by Brick Township MUA under a 319(h) grant from the Department to develop a 9 element *Metedeconk River Watershed Protection and Restoration Plan* (2013). This protection plan is built upon data, modeling results and research generated in the 2013 plan providing a watershed-scale approach to bring together the many ongoing and new actions being implemented to simultaneously protect non-impaired waters while restoring impaired waters. The *Metedeconk River Watershed Protection Plan* targets 11 unimpaired HUC 14s for protection for total phosphorus, total suspended solids, turbidity, nitrate, and/or coliforms. The protection plan is based on the implementation of the *Metedeconk River Watershed Protection and Restoration Plan*, the 2017 *Barnegat Bay Restoration, Enhancement and Protection Strategy* and several EPA approved TMDLs for the Metedeconk River. The Protection Plan is an additional tool in the implementation of Barnegat Bay Phase 2 “moving science into action” as part of the overall protection strategy. The Plan may be viewed under the Atlantic Coastal tab at [https://www.state.nj.us/dep/wms/bears/assessment.htm#](https://www.state.nj.us/dep/wms/bears/assessment.htm#/).

### **Category One Designations**

As a further measure to protect water quality throughout New Jersey, on April 6, 2020, the Department 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>.




**INTEGRATION  
GOAL**

### **Climate Change**

New Jersey is working to address and mitigate the impacts of climate change. So far, its efforts have been successful, with New Jersey's 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. The integration of climate change with water policy is evolving on many fronts, although no single approach has emerged. A reliance on information sharing and collaboration among organizations would provide the most cost-effective and efficient approach at this time. The testimony at the public hearing emphasized that adaptive management will provide the Department with greater flexibility to evaluate agency policies, priorities, and resources. This will in turn enable the Department to more efficiently address and minimize increasing climate-related risks to water resources, including those that will directly affect water supply and wastewater systems. 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, 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.

### **Wastewater Management Planning**

The Water Quality Management Planning (WQMP) rules, N.J.A.C. 7:15, implement the Water Quality Planning Act (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 are one component of the State's water quality continuing planning process (CPP) discussed earlier in this appendix. The WQMP rules better integrate wastewater planning with existing permitting programs. They also provide the framework to identify the anticipated municipal and industrial waste treatment needs and any gaps in providing capacity in the future. Water quality management planning is one part of the CPP, which 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. N.J.S.A. 58:11A-7. The Department recently adopted several municipal and county wastewater management plans (WMPs) and components of WMPs and is currently reviewing several others. These adoptions will help preserve and protect both water quality and water supply in New Jersey.



**Alternatives**

Since most parameters remaining on New Jersey's 303(d) List are nonpoint source in origin, the Department has embraced USEPA's 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 WBP's 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:

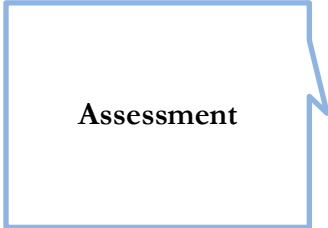
Extent of priority areas identified by each State that are addressed by EPA-approved TMDLs or alternative restoration approaches for impaired waters that will achieve water quality standards. These areas may also include protection approaches for unimpaired waters to maintain water quality standards.<sup>40</sup>

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 waters, or protection approaches for unimpaired waters and submitted it to USEPA on July 1, 2015 (see Appendix 1) in fulfillment of its WQ-27 reporting commitment for 2014. Subsequently, the Department has completed statewide Mercury TMDLs, Raritan TMDLs, and the Metedeconk River Protection Plan. Forthcoming TMDLs will be for Duhernal Lake, Saddle and Hohokus Rivers and several 9 element watershed restoration plans in the Barnegat Bay Watershed: Southern Barnegat Bay – Little Egg Harbor Tributaries, Cedar Creek Watershed, Oyster Creek Watershed Watershed, Toms River Watershed and Twilight Lake.

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.

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<sup>40</sup> See USEPA FY 2017 National Water Program Guidance Addendum at [https://www.epa.gov/sites/production/files/2016-11/documents/fy\\_2017\\_nwpg\\_water\\_quality\\_measure\\_definitions.pdf](https://www.epa.gov/sites/production/files/2016-11/documents/fy_2017_nwpg_water_quality_measure_definitions.pdf).



**Assessment**

### **Stormwater Studies to Evaluate the Effects of the 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 Department began working with the lawn care industry to voluntarily reduce the content of phosphorus in fertilizer by 50 percent as part of its "Healthy Lawns Healthy Water" campaign, see <http://www.nj.gov/dep/healthylawnshealthywater/>.

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 Department, 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.

In the 1990s, the Department 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 Department, will also be a candidate for replication. Repeating these sentinel studies will allow the Department to assess 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.

## **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 approval status is available on the Department's website at <http://www.state.nj.us/dep/wms/bears/tmdls.html>. Because of the Department-led, stakeholder-driven, 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 USEPA CWA 303(d) Program Vision provides much-needed flexibility and support to continue such efforts. The Rotating Basin Approach to Comprehensive Regional Assessment allows 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.

The USEPA in conjunction with the states and tribes is currently updating the Vision Strategy; thus this Appendix will be updated to reflect that guidance for subsequent Integrated Reports

## Appendix 1: New Jersey's WQ-27 Measure Commitments (based on 2012 & 2014 Integrated Report – Revised August 2018)

Assessment Unit ID	Assessment Unit Name	Cause Name*	Plan Type
NJ02030105010060	Raritan R SB(Califon br to Long Valley)	pH	TMDL in place
NJ02030105010080	Raritan R SB(Spruce Run-StoneMill gage)	TP	TMDL in place
NJ02030105020050	Beaver Brook (Clinton)	TP	TMDL in place
NJ02030105020070	Raritan R SB(River Rd to Spruce Run)	TP	TMDL in place
NJ02030105020070	Raritan R SB(River Rd to Spruce Run)	TSS	TMDL in place
NJ02030105020080	Raritan R SB(Prescott Bk to River Rd)	TSS	TMDL in place
NJ02030105020100	Raritan R SB(Three Bridges-Prescott Bk)	TP	TMDL in place
NJ02030105020100	Raritan R SB(Three Bridges-Prescott Bk)	TSS	TMDL in place
NJ02030105030060	Neshanic River (below FNR / SNR confl)	TP	TMDL in place
NJ02030105030070	Neshanic River (below Black Brk)	TP	TMDL in place
NJ02030105040010	Raritan R SB(Pleasant Run-Three Bridges)	TP	TMDL in place
NJ02030105040030	Holland Brook	TP	TMDL in place
NJ02030105040040	Raritan R SB(NB to Pleasant Run)	pH	TMDL in place
NJ02030105040040	Raritan R SB(NB to Pleasant Run)	TP	TMDL in place
NJ02030105050020	Lamington R (Hillside Rd to Rt 10)	TP	TMDL in place
NJ02030105050070	Lamington R(HallsBrRd-HerzogBrk)	pH	TMDL in place
NJ02030105050070	Lamington R(HallsBrRd-HerzogBrk)	TP	TMDL in place
NJ02030105050090	Rockaway Ck (below McCrea Mills)	TP	TMDL in place
NJ02030105050100	Rockaway Ck SB	TP	TMDL in place
NJ02030105050100	Rockaway Ck SB	TSS	TMDL in place
NJ02030105060040	Raritan R NB(Peapack Bk to McVickers Bk)	TP	TMDL in place
NJ02030105060040	Raritan R NB(Peapack Bk to McVickers Bk)	TSS	TMDL in place
NJ02030105080020	Raritan R Lwr (Rt 206 to NB / SB)	TP	TMDL in place
NJ02030105080030	Raritan R Lwr (Millstone to Rt 206)	TP	TMDL in place
NJ02030105080030	Raritan R Lwr (Millstone to Rt 206)	TSS	TMDL in place
NJ02030105090050	Stony Bk(Province Line Rd to 74d46m dam)	TP	TMDL in place
NJ02030105090060	Stony Bk (Rt 206 to Province Line Rd)	TP	TMDL in place
NJ02030105090070	Stony Bk (Harrison St to Rt 206)	TP	TMDL in place
NJ02030105090090	Stony Bk- Princeton drainage	TP	TMDL in place
NJ02030105100010	Millstone River (above Rt 33)	TP	TMDL in place
NJ02030105100010	Millstone River (above Rt 33)	TSS	TMDL in place
NJ02030105100020	Millstone R (Applegarth road to Rt 33)	TP	TMDL in place
NJ02030105100020	Millstone R (Applegarth road to Rt 33)	TSS	TMDL in place
NJ02030105100030	Millstone R (RockyBk to Applegarth road)	TP	TMDL in place
NJ02030105100050	Rocky Brook (below Monmouth Co line)	TP	TMDL in place

Assessment Unit ID	Assessment Unit Name	Cause Name*	Plan Type
NJ02030105100060	Millstone R (Cranbury Bk to Rocky Bk)	DO	Alternative plan in place
NJ02030105100060	Millstone R (Cranbury Bk to Rocky Bk)	TP	TMDL in place
NJ02030105100090	Cranbury Brook (below NJ Turnpike)	TP	TMDL in place
NJ02030105100110	Devils Brook	TP	TMDL in place
NJ02030105100130	Bear Brook (below Trenton Road)	TP	TMDL in place
NJ02030105100140	Millstone R (Rt 1 to Cranbury Bk)	TP	TMDL in place
NJ02030105110020	Millstone R (HeathcoteBk to Harrison St)	TP	TMDL in place
NJ02030105110050	Beden Brook (below Province Line Rd)	TP	TMDL in place
NJ02030105110100	Pike Run (below Crusier Brook)	TP	TMDL in place
NJ02030105120130	Green Brook (below Bound Brook)	TSS	TMDL in place
NJ02030105120140	Raritan R Lwr(I-287 Piscatway-Millstone)	TSS	TMDL in place
NJ02030103140010	Hohokus Bk (above Godwin Ave)	TP	TMDL
NJ02030103140030	Hohokus Bk(below Pennington Ave)	TP	TMDL
NJ02030103140050	Saddle River (Rt 4 to HoHoKus)	TP	TMDL
NJ02030103140060	Saddle River (Lodi gage to Rt 4)	TP	TMDL
NJ02030103140070	Saddle River (below Lodi gage)	TP	TMDL
NJ02030103140080	Saddle River (Hohokus to Ridgewood gage)	TP	TMDL
NJ02030105150010	Weamaconk Creek	TP	TMDL
NJ02030105150010	Weamaconk Creek	TSS	TMDL
NJ02030105150030	McGellairds Brook (below Taylors Mills)	TP	TMDL
NJ02030105150060	Matchaponix Brook (below Pine Brook)	TP	TMDL
NJ02040301020010	Metedeconk R NB(above I-195)	Nitrate	protection
NJ02040301020010	Metedeconk R NB(above I-195)	TSS	protection
NJ02040301020020	Metedeconk R NB(Rt 9 to I-195)	Nitrate	protection
NJ02040301020020	Metedeconk R NB(Rt 9 to I-195)	TP	protection
NJ02040301020020	Metedeconk R NB(Rt 9 to I-195)	TSS	protection
NJ02040301020020	Metedeconk R NB(Rt 9 to I-195)	Turbidity	protection
NJ02040301020050	Metedeconk R NB (confluence to Rt 9)	Nitrate	protection
NJ02040301020050	Metedeconk R NB (confluence to Rt 9)	TP	protection
NJ02040301020050	Metedeconk R NB (confluence to Rt 9)	TSS	protection
NJ02040301020050	Metedeconk R NB (confluence to Rt 9)	Turbidity	protection
NJ02040301030010	Metedeconk R SB (above I-195 exit 21 rd)	TP	protection
NJ02040301030020	Metedeconk R SB (74d19m15s to I-195 X21)	TP	protection
NJ02040301030030	Metedeconk R SB(BennettsPd to 74d19m15s)	Nitrate	protection
NJ02040301030030	Metedeconk R SB(BennettsPd to 74d19m15s)	TP	protection
NJ02040301030030	Metedeconk R SB(BennettsPd to 74d19m15s)	TSS	protection
NJ02040301030040	Metedeconk R SB (Rt 9 to Bennetts Pond)	Nitrate	protection

Assessment Unit ID	Assessment Unit Name	Cause Name*	Plan Type
NJ02040301030040	Metedeconk R SB (Rt 9 to Bennetts Pond)	TP	protection
NJ02040301030040	Metedeconk R SB (Rt 9 to Bennetts Pond)	TSS	protection
NJ02040301030040	Metedeconk R SB (Rt 9 to Bennetts Pond)	Turbidity	protection
NJ02040301030050	Metedeconk R SB (confluence to Rt 9)	Nitrate	protection
NJ02040301030050	Metedeconk R SB (confluence to Rt 9)	TP	protection
NJ02040301030050	Metedeconk R SB (confluence to Rt 9)	TSS	protection
NJ02040301030050	Metedeconk R SB (confluence to Rt 9)	Turbidity	protection
NJ02040301040020	Metedeconk R (Beaverdam Ck to confl)	Nitrate	protection
NJ02040301020030	Haystack Brook	TP	protection
NJ02040301020030	Haystack Brook	Nitrate	protection
NJ02040301020030	Haystack Brook	TSS	protection
NJ02040301020030	Haystack Brook	Turbidity	protection
NJ02040301020040	Muddy Ford Brook	Nitrate	protection
NJ02040301020040	Muddy Ford Brook	Turbidity	protection
NJ02040301030010	Metedeconk R SB (above I-195 exit 21 rd)	Turbidity	protection
NJ02040301030030	Metedeconk R SB (BennettsPd to 74d19m15s)	Turbidity	protection
NJ02040301040020	Metedeconk R (Beaverdam Ck to confl)	Turbidity	protection
NJ02030105010020	Drakes Brook (below Eyland Ave)	TP	protection
NJ02030105010020	Drakes Brook (below Eyland Ave)	TSS	protection
NJ02030105010050	Raritan R SB (LongValley br to 74d44m15s)	TP	protection
NJ02030105010050	Raritan R SB (LongValley br to 74d44m15s)	TSS	protection
NJ02030105010060	Raritan R SB (Califon br to Long Valley)	TP	protection
NJ02030105010060	Raritan R SB (Califon br to Long Valley)	TSS	protection
NJ02030105010070	Raritan R SB (StoneMill gage to Califon)	TP	protection
NJ02030105010070	Raritan R SB (StoneMill gage to Califon)	TSS	protection
NJ02030105010080	Raritan R SB (Spruce Run-StoneMill gage)	TSS	protection
NJ02030105020050	Beaver Brook (Clinton)	TSS	protection
NJ02030105020060	Cakepoulin Creek	TP	protection
NJ02030105020060	Cakepoulin Creek	TSS	protection
NJ02030105020080	Raritan R SB (Prescott Bk to River Rd)	TP	protection
NJ02030105020090	Prescott Brook / Round Valley Reservior	TSS	protection
NJ02030105030030	Headquarters trib (Third Neshanic River)	TP	protection
NJ02030105030030	Headquarters trib (Third Neshanic River)	TSS	protection
NJ02030105030040	Third Neshanic River	TP	protection
NJ02030105030040	Third Neshanic River	TSS	protection
NJ02030105030060	Neshanic River (below FNR / SNR confl)	TSS	protection
NJ02030105030070	Neshanic River (below Black Brk)	TSS	protection

Assessment Unit ID	Assessment Unit Name	Cause Name*	Plan Type
NJ02030105040010	Raritan R SB (Pleasant Run-Three Bridges)	TSS	protection
NJ02030105040020	Pleasant Run	TP	protection
NJ02030105040020	Pleasant Run	TSS	protection
NJ02030105040030	Holland Brook	TSS	protection
NJ02030105040040	Raritan R SB (NB to Pleasant Run)	TSS	protection
NJ02030105050010	Lamington R (above Rt 10)	TP	protection
NJ02030105050020	Lamington R (Hillside Rd to Rt 10)	TSS	protection
NJ02030105050030	Lamington R (Furnace Rd to Hillside Rd)	TP	protection
NJ02030105050040	Lamington R (Pottersville gage-FurnaceRd)	TSS	protection
NJ02030105050040	Lamington R (Pottersville gage-FurnaceRd)	TP	protection
NJ02030105050050	Pottersville trib (Lamington River)	TP	protection
NJ02030105050070	Lamington R (HallsBrRd-HerzogBrk)	TSS	protection
NJ02030105050080	Rockaway Ck (above McCrea Mills)	TSS	protection
NJ02030105050080	Rockaway Ck (above McCrea Mills)	TP	protection
NJ02030105050090	Rockaway Ck (below McCrea Mills)	TSS	protection
NJ02030105050130	Lamington R (Hertzog Brk to Pottersville gage)	TP	protection
NJ02030105050130	Lamington R (Hertzog Brk to Pottersville gage)	TSS	protection
NJ02030105060010	Raritan R NB (above/incl India Bk)	TP	protection
NJ02030105060010	Raritan R NB (above/incl India Bk)	TSS	protection
NJ02030105060020	Burnett Brook (above Old Mill Rd)	TP	protection
NJ02030105060020	Burnett Brook (above Old Mill Rd)	TSS	protection
NJ02030105060030	Raritan R NB (incl McVickers to India Bk)	TP	protection
NJ02030105060030	Raritan R NB (incl McVickers to India Bk)	TSS	protection
NJ02030105060050	Peapack Brook (above/incl Gladstone Bk)	TP	protection
NJ02030105060050	Peapack Brook (above/incl Gladstone Bk)	TSS	protection
NJ02030105060060	Peapack Brook (below Gladstone Brook)	TP	protection
NJ02030105060060	Peapack Brook (below Gladstone Brook)	TSS	protection
NJ02030105060070	Raritan R NB (incl Mine Bk to Peapack Bk)	TP	protection
NJ02030105060070	Raritan R NB (incl Mine Bk to Peapack Bk)	TSS	protection
NJ02030105060090	Raritan R NB (Lamington R to Mine Bk)	TP	protection
NJ02030105060090	Raritan R NB (Lamington R to Mine Bk)	TSS	protection
NJ02030105070010	Raritan R NB (Rt 28 to Lamington R)	TP	protection
NJ02030105070030	Raritan R NB (below Rt 28)	TP	protection
NJ02030105070030	Raritan R NB (below Rt 28)	TSS	protection
NJ02030105080010	Peters Brook	TSS	protection
NJ02030105090020	Stony Bk (74d 48m 10s to 74d 49m 15s)	TP	protection

Assessment Unit ID	Assessment Unit Name	Cause Name*	Plan Type
NJ02030105090020	Stony Bk (74d 48m 10s to 74d 49m 15s)	TSS	protection
NJ02030105090050	Stony Bk (Province Line Rd to 74d46m dam)	TSS	protection
NJ02030105090060	Stony Bk (Rt 206 to Province Line Rd)	TSS	protection
NJ02030105090070	Stony Bk (Harrison St to Rt 206)	TSS	protection
NJ02030105100040	Rocky Brook (above Monmouth Co line)	TP	protection
NJ02030105100040	Rocky Brook (above Monmouth Co line)	TSS	protection
NJ02030105100050	Rocky Brook (below Monmouth Co line)	TSS	protection
NJ02030105100070	Cranbury Brook (above NJ Turnpike)	TP	protection
NJ02030105100070	Cranbury Brook (above NJ Turnpike)	TSS	protection
NJ02030105100110	Devils Brook	TSS	protection
NJ02030105100130	Bear Brook (below Trenton Road)	TSS	protection
NJ02030105100140	Millstone R (Rt 1 to Cranbury Bk)	TSS	protection
NJ02030105110010	Heathcote Brook	TSS	protection
NJ02030105110040	Beden Brook (above Province Line Rd)	TP	protection
NJ02030105110050	Beden Brook (below Province Line Rd)	TSS	protection
NJ02030105110060	Rock Brook (above Camp Meeting Ave)	TP	protection
NJ02030105110060	Rock Brook (above Camp Meeting Ave)	TSS	protection
NJ02030105110070	Rock Brook (below Camp Meeting Ave)	TP	protection
NJ02030105110070	Rock Brook (below Camp Meeting Ave)	TSS	protection
NJ02030105110100	Pike Run (below Crusier Brook)	TSS	protection
NJ02030105110110	Millstone R (BlackwellsMills to BedenBk)	TSS	protection
NJ02030105110120	Sixmile Run (above Middlebush Rd)	TSS	protection
NJ02030105110130	Sixmile Run (below Middlebush Rd)	TSS	protection
NJ02030105110140	Millstone R (AmwellRd to BlackwellsMills)	TSS	protection
NJ02030105120020	Green Bk (N Plainfield gage to Blue Bk)	TSS	protection
NJ02030105120050	Middle Brook EB	TSS	protection
NJ02030105120060	Middle Brook WB	TSS	protection
NJ02030105120080	South Fork of Bound Brook	TSS	protection
NJ02030105120090	Spring Lake Fork of Bound Brook	TSS	protection
NJ02030105120100	Bound Brook (below fork at 74d 25m 15s)	TSS	protection
NJ02030105120180	Middle Brook	TSS	protection
NJ02040301060010	Toms River (above Francis Mills)	TP	Salt
NJ02040301060020	Toms River (74-22-30 rd to FrancisMills)	TP	protection
NJ02040301060030	Toms River (Bowman Rd to 74-22-30 road)	TP	protection
NJ02040301060040	Maple Root Branch (Toms River)	TP	protection
NJ02040301060050	Dove Mill Branch (Toms River)	TP	protection
NJ02040301060070	Toms River (Rt 70 to Hope Chapel Road)	TP	protection

Assessment Unit ID	Assessment Unit Name	Cause Name*	Plan Type
NJ02040301060080	Toms River (Oak Ridge Parkway to Rt 70)	TP	protection
NJ02040301070010	Shannae Brook	TP	protection
NJ02040301070030	Ridgeway Br (Hope Chapel Rd to HarrisBr)	TP	protection
NJ02040301070040	Ridgeway Br (below Hope Chapel Rd)	TP	protection
NJ02040301070050	Blacks Branch (above 74d22m05s)	TP	protection
NJ02040301070080	Manapaqua Brook	TP	protection
NJ02040301070090	Union Branch (below Blacks Br 74d22m05s)	TP	protection
NJ02040301080020	Michaels Branch (Wrangel Brook)	TP	protection
NJ02040301080050	Wrangel Brook (below Michaels Branch)	TP	protection
NJ02040301080060	Toms River Lwr (Rt 166 to Oak Ridge Pkwy)	TP	protection
NJ02040301080070	Jakes Branch (Lower Toms River)	TP	protection
NJ02040301060010	Toms River (above Francis Mills)	Nitrate	protection
NJ02040301060020	Toms River (74-22-30 rd to FrancisMills)	Nitrate	protection
NJ02040301060030	Toms River (Bowman Rd to 74-22-30 road)	Nitrate	protection
NJ02040301060040	Maple Root Branch (Toms River)	Nitrate	protection
NJ02040301060070	Toms River (Rt 70 to Hope Chapel Road)	Nitrate	protection
NJ02040301060080	Toms River (Oak Ridge Parkway to Rt 70)	Nitrate	protection
NJ02040301070010	Shannae Brook	Nitrate	protection
NJ02040301070040	Ridgeway Br (below Hope Chapel Rd)	Nitrate	protection
NJ02040301070050	Blacks Branch (above 74d22m05s)	Nitrate	protection
NJ02040301080020	Michaels Branch (Wrangel Brook)	Nitrate	protection
NJ02040301080060	Toms River Lwr (Rt 166 to Oak Ridge Pkwy)	Nitrate	protection
NJ02040301080070	Jakes Branch (Lower Toms River)	Nitrate	protection
NJ02040301060010	Toms River (above Francis Mills)	TSS	protection
NJ02040301060020	Toms River (74-22-30 rd to FrancisMills)	TSS	protection
NJ02040301060030	Toms River (Bowman Rd to 74-22-30 road)	TSS	protection
NJ02040301060050	Dove Mill Branch (Toms River)	TSS	protection
NJ02040301060070	Toms River (Rt 70 to Hope Chapel Road)	TSS	protection
NJ02040301060080	Toms River (Oak Ridge Parkway to Rt 70)	TSS	protection
NJ02040301070010	Shannae Brook	TSS	protection
NJ02040301070030	Ridgeway Br (Hope Chapel Rd to HarrisBr)	TSS	protection
NJ02040301070040	Ridgeway Br (below Hope Chapel Rd)	TSS	protection
NJ02040301070080	Manapaqua Brook	TSS	protection
NJ02040301080050	Wrangel Brook (below Michaels Branch)	TSS	protection
NJ02040301080060	Toms River Lwr (Rt 166 to Oak Ridge Pkwy)	TSS	protection
NJ02040301080070	Jakes Branch (Lower Toms River)	TSS	protection
NJ02040105230050	Assunpink Ck (Shipetaukin to Trenton Rd)	HG in Fish Tissue	TMDL

Assessment Unit ID	Assessment Unit Name	Cause Name*	Plan Type
NJ02040105090050	Furnace Brook	HG in Fish Tissue	TMDL
NJ02040206160040	Mill Creek (lower)	HG in Fish Tissue	TMDL
NJ02040105150030	Musconetcong R (Wills Bk to LkHopatcong)	HG in Fish Tissue	TMDL
NJ02040105050050	Paulins Kill (below Blairstown gage)	HG in Fish Tissue	TMDL
NJ02040105050010	Paulins Kill (Blairstown to Stillwater)	HG in Fish Tissue	TMDL
NJ02030105100050	Rocky Brook (below Monmouth Co line)	HG in Fish Tissue	TMDL
NJ02040104240010	Van Campens Brook	HG in Fish Tissue	TMDL
BarnegatBay04	Toms R Estuary	DO	TMDL
BarnegatBay05	Barnegat Bay Central West	DO	TMDL
BarnegatBay09	Lower Little Egg Harbor Bay	DO	TMDL
BarnegatBay03	Metedeconk and Lower Tribs - Bay	Turbidity	TMDL
BarnegatBay08	Manahawkan Bay and Upper Little Egg Harbor	Turbidity	TMDL
BarnegatBay09	Lower Little Egg Harbor Bay	Turbidity	TMDL

Footnote: \* - The abbreviated cause names are TP = Total Phosphorus, TSS = Total Suspended Solids, and HG = Mercury.

The green highlighted commitments have been fulfilled through the adoption of the Raritan River TMDL (dated May 24, 2016) and the USEPA approved Raritan River Watershed Protection Plan (approval dated September 12, 2018).



## 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.

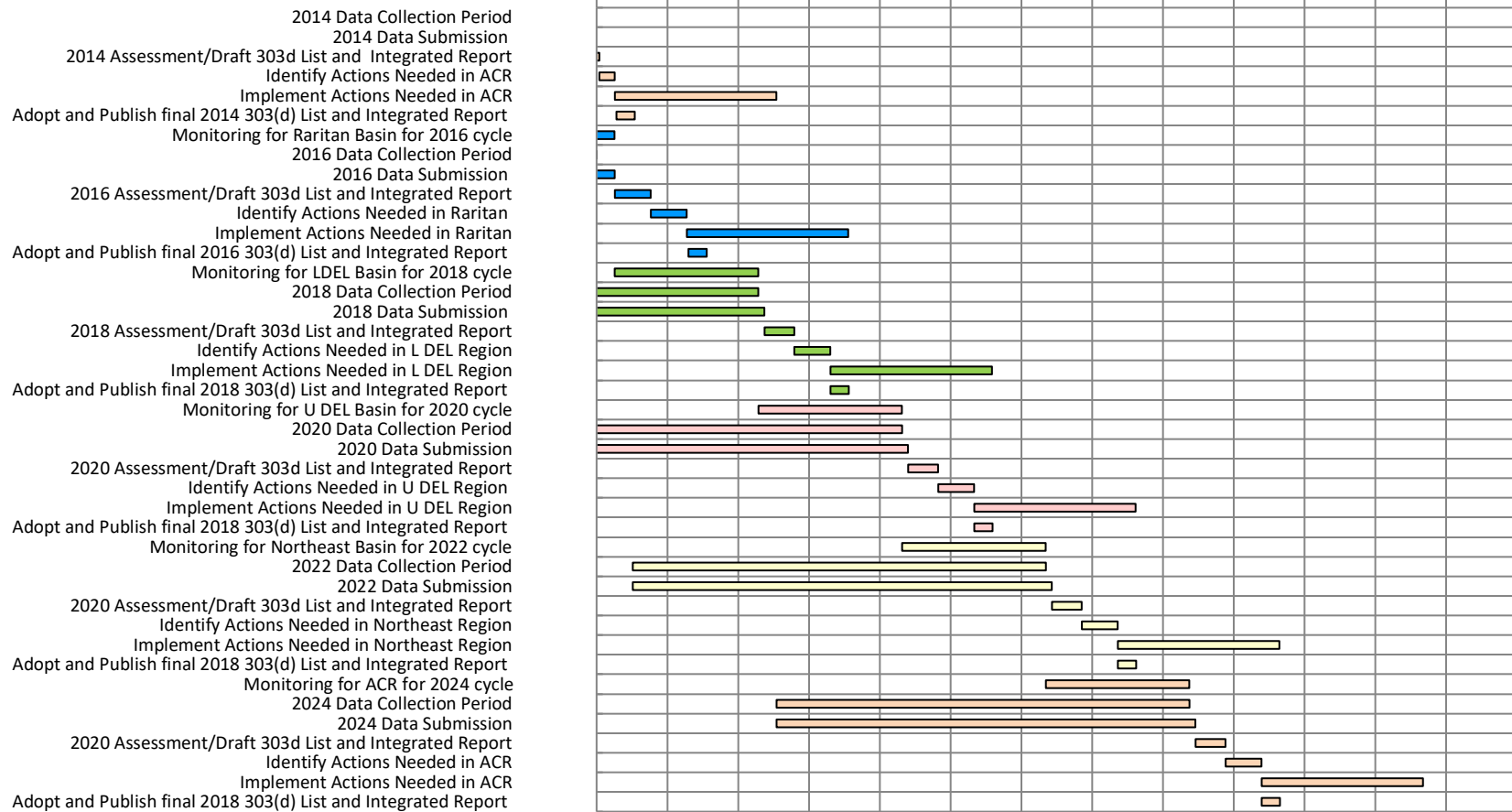
Tier 2 - Targeted Monitoring: will focus on monitoring of targeted areas or specific issues to provide a more comprehensive evaluation of areas of interest, including monitoring in a specific or priority stream, watershed or region to fill data gaps, confirm suspected impairment, track down sources of 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-20 May-21 May-22 May-23 May-24 May-25 May-26 Apr-27 Apr-28



Through effectiveness monitoring the Department will be able to ascertain the success of its restoration initiatives over the past 20 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 Fall of 2019, 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 at a later date. 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.