New Jersey Department of Environmental Protection
Water Resources Management

New Jersey's Continuing Planning Process

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This CPP is a "living document" that consists of both narrative summaries as well as links to on-line information about Department programs, strategies and measures. The CPP will be refined through an iterative process to include new and updated information, including development and implementation of new strategies and measures to achieve water quality goals.

Executive Summary

This document is prepared pursuant to the federal Clean Water Act (CWA) and the New Jersey Water Pollution Control Act (WQPA), both of which require the Department of Environmental Protection (Department) to articulate a continuing planning process (CPP) for water quality. The CPP is intended to integrate and unify water quality management planning processes, assess water quality, establish water quality goals and standards, and develop a statewide implementation strategy to achieve the water quality standards and maintain, improve, and protect water quality throughout the State.

The Water Quality Management Planning rules at N.J.A.C 7:15 represent one component of the CPP. These rules focus on procedures for adopting new or amended areawide water quality management (WQM) plans, including Wastewater Management Plans (WMPs); Lists of water quality limited (impaired) waters; and total maximum daily loads ("TMDL") for impaired waters. The CPP describes how these processes, along with other Department programs, integrate and unify water quality management planning processes, establish and assess attainment of water quality goals and standards, and implement control measures necessary to maintain, improve, and protect water quality throughout the State.

The Department has restructured New Jersey's CPP to serve as an easily accessible planning tool, to be used not only as a listing of current Department programs and rules pertaining to water quality, but as a resource for planning entities and members of the public on current policies and technical guidance on water quality issues. This iteration of the CPP is a "living document" that consists of both narrative summaries as well as links to on-line information about Department programs, strategies and measures to establish New Jersey's water quality goals and standards, monitor and assess compliance with those goals and standards, and implement and enforce controls necessary to achieve them. The CPP will be refined through an iterative process to include new and updated information, including development and implementation of new strategies and measures to achieve water quality goals.

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Introduction

The federal Clean Water Act (CWA), , 33 USC § 1251 et seq., requires each state to have a continuing planning process (CPP) for water quality planning, management, and implementation that serves to maintain, improve, and protect water quality. Pursuant to CWA Section 303(e)(1): "Each State shall have a continuing planning process ... which is consistent with this Act." Federal Water Quality Planning and Management Regulations at 40 CFR 130 include provisions regarding a continuing planning process (CPP) as part of the policies and program requirements for water quality planning, management and implementation necessary to achieve the national goals of maintaining, improving and protecting water quality (see 40 CFR 130). States are required to not only establish and maintain a continuing planning process (CPP) in accordance with the CWA and also manage its water quality programs to implement the required programs and processes required under the CWA as part of the CPP. The CPP is also 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. Federal regulations at 40 CFR 130.5(b) allow each state to determine the format of its CPP, but require each state CPP to include the following nine minimum components:

(1) The process for developing effluent limitations and schedules of compliance at least as stringent as those required by sections 301(b) (1) and (2), 306 and 307, and at least stringent as any requirements contained in applicable water quality standards in effect under authority of section 303 of the Act.
(2) The process for incorporating elements of any applicable areawide waste treatment plans under section 208, and applicable basin plans under section 209 of the Act.
(3) The process for developing total maximum daily loads (TMDLs) and individual water quality based effluent limitations for pollutants in accordance with section 303(d) of the Act and §130.7(a) of this regulation.
(4) The process for updating and maintaining Water Quality Management (WQM) plans, including schedules for revision.
(5) The process for assuring adequate authority for intergovernmental cooperation in the implementation of the State WQM program.
(6) The process for establishing and assuring adequate implementation of new or revised water quality standards, including schedules of compliance, under section 303(c) of the Act.
(7) The process for assuring adequate controls over the disposition of all residual waste from any water treatment processing.
(8) The process for developing an inventory and ranking, in order of priority of needs for construction of waste treatment works required to meet the applicable requirements of sections 301 and 302 of the Act.
(9) The process for determining the priority of permit issuance.

The New Jersey Water Quality Planning Act (WQPA) at N.J.S.A. 58:11A-1 et seq., was enacted in 1977 to restore, maintain, and preserve the quality of the waters of the State, including both surface and ground

water, for the protection and preservation of the public health and welfare, food supplies, public water supplies, propagation of fish and wildlife, agricultural and industrial uses, aesthetic satisfaction, recreation, and other beneficial uses. N.J.S.A. 58:11A-7(a) complements and expands upon the federal CPP requirements. These requirements are shown below along with the corresponding section of the CPP.

The commissioner shall conduct a continuing planning process which shall:

a. Integrate and unify the statewide and areawide water quality management planning processes;
   - See Water Quality Management Planning section.

b. Conduct a statewide assessment of water quality and establish water quality goals and water quality standards for the waters of the State;
   - See Establish Water Quality Standards and Goals section
   - See Assess Water Quality and Identify Priority Problem section.

c. Develop a statewide implementation strategy to achieve the water quality standards, which shall include, but not be limited to:

   (1) The determination of effluent limitations and schedules of compliance at least as stringent as those required by the Federal Act;
      - See Effluent Limits section.
      - See Schedules of Compliance section.

   (2) The determination of the total maximum daily load for pollutants necessary to meet the water quality standards;
      - See TMDLs section.

   (3) The incorporation of all elements of any areawide waste management plan prepared pursuant to this act;
      - See Water Quality Management Planning section.

   (4) An inventory and ranking of needs, in order of priority, for the construction of municipal waste treatment works needed to meet the water quality goals and standards;
      - See New Jersey Environmental Infrastructure Financing Program section.

   (5) Methods for controlling all residual wastes from any water treatment processing.
      - See Disposition of Residual Waste section.

New Jersey's CPP was originally prepared by the Department of Environmental Protection (Department) and submitted to the U.S. Environmental Protection Agency (USEPA) in 1976 pursuant to 40 CFR 130.5.

In 1985, the Department adopted the Statewide Water Quality Management Plan (SWQMP), which contains the written provisions of the continuing planning process in New Jersey. Pursuant to the Department's Water Quality Management and Implementation Process rules adopted in 1984, the purpose of the SWQMP was to integrate the water quality planning programs established under the Clean Water Act (including wastewater facilities planning under section 201, basin planning under sections 209 and 303(e), and areawide planning under section 208, and the components of the CPP) into one plan. The 1985 SWQMP was amended in 1987 to include a supplemental component entitled: "The New Jersey Continuing Planning Process for Water Quality Management - Descriptions of Selected Management Processes". Subsequent changes to the SWQMP/CPP were promulgated as amendments to the Water Quality Management Planning rules at N.J.A.C. 7:15 (between 1988 and 2008).

This CPP is intended to satisfy the requirements of both federal and state statutes (see crosswalk in Appendix I) and is intended to replace all prior versions of the CPP, including the former Statewide Water Quality Management Plan. The CPP has been restructured to serve as an easily accessible planning tool that not only lists current Department programs and rules pertaining to water quality, but explains how they are implemented as part of an iterative water resources management process that meets the federal and state water goals by:

- Establishing water quality standards and goals for all waters of the State;
- Assessing water quality and identifying priority water quality problems;
- Identify and control specific sources and causes of water quality impairment, including regulation of point sources and institution of best management practices for nonpoint sources of pollution;
- Evaluating effectiveness of control measures and resulting improvements in water quality; and
- Conduct additional monitoring, assessment and planning as needed to identify further refinements or controls needed to achieve water quality goals

The CPP contains regulatory and non-regulatory strategies for the management of water quality and wastewater, including rules promulgated by the Department to address water quality and wastewater management, such as the Surface Water Quality Standards rules at N.J.A.C. 7:9B, the Ground Water Quality Standards rules at N.J.A.C. 7:9C, the Stormwater Management rules at N.J.A.C. 7:8, and the New Jersey Pollutant Discharge Elimination System rules at N.J.A.C. 7:14A. The CPP also identifies Department programs and measures established to address water quality issues, and provides hyperlinks to more detailed information about these programs and related publications available on the Department's website, such as the Integrated Water Quality Assessment Report and 303(d) List of Water Quality Limited Waters, the Nonpoint Source Management Program Plan, and the Stormwater Best Management Practices Manual.

The CPP Appendix outlines technical measures, requirements and guidance, funding, tools, and other information developed by the Department or USEPA that address point and nonpoint sources of water pollution, protection of water resources, protection of environmentally sensitive areas, and other water quality related issues, such as buffers around Category One waters, model ordinances designed to address water quality issues related to the disturbance of steep slopes and riparian zones, septic

management, and adopted Total Maximum Daily Loads. Additional strategies and tools will be added as they are identified, allowing the CPP to function as a "living", user-friendly document that is readily available on the Department's website at http://www.nj.gov/dep/wrm/.

Establish Water Quality Standards and Goals

The CWA and WQPA require the Department, through the CPP, to conduct a statewide assessment of water quality and establish water quality goals and standards for all waters of the State (33 U.S.C. § 1313(e) and N.J.S.A. 58:11A-7b, respectively). Ongoing collection and evaluation of water quality data supports the Department's efforts to develop and refine water quality standards to protect high quality waters, identify and restore impaired waters, issue and enforce discharge permits, manage and reduce nonpoint sources of pollution, set priorities for water quality and water resource management, and evaluate the effectiveness of those processes in achieving the goals of the federal and state statutes. While the primary focus of the CWA is surface water ("waters of the United States"), New Jersey also comprehensively protects ground water as "waters of the State." New Jersey's process for establishing and assuring adequate implementation of new or revised water quality standards is administered under the Surface Water Quality Standards (SWQS) and Ground Water Quality Standards (GWQS) pursuant to N.J.A.C. 7:9B and N.J.A.C. 7:9C, respectively.

Surface Water Quality Standards, N.J.A.C. 7:9B

The New Jersey Surface Water Quality Standards (SWQS) establish the designated uses to be achieved and specify the water quality necessary to protect the State's waters. Designated uses of New Jersey waters include aquatic life, recreation, water supplies, fish consumption, and shellfish harvest for consumption. The SWQS also establish a stream classification and an antidegradation designation for all surface waters of the State. The stream classifications reflect the designated uses assigned to individual surface waterbodies. Water quality criteria are numerical estimates of constituent concentrations, including toxic pollutants, protective of existing and designated uses. Narrative criteria describe instream conditions to be attained, maintained or avoided. Waters of the State include, but are not limited to, rivers, lakes, streams, wetlands, estuaries and near-shore coastal waters. In addition, each surface waterbody is assigned an antidegradation that designation specifies the discretion, if any, that would allow a lowering of water quality that may be authorized for a new or expanded activity. There are three antidegradation designations in the SWQS: Outstanding Natural Resource Waters (no new or expanded discharge), Category One Waters (no measureable change in water quality), and Category Two Waters.

The SWQS are utilized by the New Jersey Pollutant Discharge Elimination System (NJPDES) discharge to surface water permitting program to establish permit effluent limitations that will ensure the discharge will not cause, have the reasonable potential to cause, or contribute to an excursion of any State water quality standards. The SWQS contain policies on design flows, mixing zones, antidegradation, and nutrients, which specify how the surface water quality criteria and policies are to be applied in establishing effluent limitations for NJPDES permits. The SWQS also serve as water quality restoration

targets to be achieved by total maximum daily loads (TMDLs) and are utilized by the Department's Site Remediation Program to ensure that ground water remediation activities that discharge to surface waters comply with the SWQS. The Department's Freshwater Wetlands Program, the Coastal Permitting Program, and the Flood Hazard Area Control Program also utilize the stream classifications and antidegradation designations adopted in the SWQS to regulate activities under their respective programs. Additional information about the SWQS, including the SWQS rules, is available on the Department's website at http://www.state.nj.us/dep/wms/bears/swqs.htm.

Ground Water Quality Standards, N.J.A.C. 7:9C,

The New Jersey Ground Water Quality Standards (GWQS) establish the designated uses to be achieved and specify the water quality criteria necessary to protect the State's ground waters. Designated uses of New Jersey's ground waters include support, preservation and maintenance of special ecological resources; provision of potable ground waters with conventional water supply treatment; agricultural and industrial water, and other reasonable non-potable uses. The GWQS also establish the ground water classifications and antidegradation policies for all ground waters of the State. Ground water is classified according to the hydrogeologic characteristics of the ground water resource and the designated use(s) that are to be maintained, restored and enhanced within the classification area. Ground water quality criteria are derived levels or concentrations of constituents that are protective of the designated uses of ground water. The antidegradation policy is established to protect existing ground water quality that is better than criteria from significant degradation and is implemented based on the classification, designated use, and any special regional protections afforded under other rules or statutes, such as those applicable to the Pinelands or Highlands regions of the State. The antidegradation policy also requires that certain discharges from new or expanded domestic treatment works to Class II or Class III ground waters maintain existing ground water quality by demonstrating that a nitrate concentration of 2 mg/L, which is representative of the average existing ground water quality Statewide, will be achieved on a HUC 11 basis (see Appendix F).

The GWQS serve as the basis for setting effluent limitations for discharges to ground water under the NJPDES Discharge to Ground Water Permit Program and for establishing remediation standards for ground water cleanups under the Site Remediation Program. Other relevant programs using the GWQS include, but are not limited to, those implemented pursuant to the Spill Compensation and Control Act, Solid Waste Management Act, Industrial Site Recovery Act, Underground Storage of Hazardous Substances Act, Realty Improvement Sewerage and Facilities Act, and Pesticide Control Act of 1971. Additional information about the GWQS, including the GWQS rules, is available on the Department's website at http://www.state.nj.us/dep/wms/bears/gwqs.htm.

Assess Water Quality and Identify Priority Problems

Water Quality Monitoring

Water quality monitoring activities generate the data needed to evaluate water quality, establish and refine water quality standards and goals, determine waterbody compliance with water quality standards, evaluate the effectiveness of water quality controls and restoration measures, and track changes in water quality over time. 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 time frame. Additional information about the Department's water monitoring activities and networks is available on the Department's website at: http://www.nj.gov/dep/wms/.

Water Quality Assessment

Every two years, the Department solicits water quality data from other monitoring entities and compiles all readily available data collected over the prior five years that is electronically available from various public data repositories. The data is evaluated to ensure that it meets established data quality requirements and then assessed using scientific methods developed specifically for the applicable type of parameter, designated use, and waterbody classification to determine waterbody compliance with New Jersey's surface water quality standards and support of designated uses. These methods are published for public review and comment prior to data assessment. Data are assessed at the monitoring station, waterbody, and subwatershed scale. The results of this assessment process are presented in the biennial New Jersey Integrated Water Quality Assessment Report (Integrated Report), in accordance with the reporting requirements of Sections 303(d) and 305(b) of the CWA.

Section 305(b) of the CWA requires the submission of a biennial report ("305(b) Report") to USEPA that assesses the state's overall water quality and support of designate uses of all principal waters, as well as strategies to maintain and improve water quality. The 305(b) Reports are used by Congress and USEPA to establish program priorities and funding for federal and state water resource management programs. Section 303(d) requires submission of a biennial List of Water Quality Limited Waters ("303(d) List"), which identifies waters that are not supporting designated uses because they do not meet surface water

quality standards despite the implementation of technology-based effluent limits. States must prioritize waters on the 303(d) List for Total Maximum Daily Load (TMDL) analyses, or alternative approaches, and identify those high priority waters on the 303(d) List for which they anticipate establishing TMDLs in the next two years. The Integrated Reports satisfies these requirements.

The Integrated Report identifies waters that are fully supporting applicable designated uses ("high quality waters"), waters that are not supporting designated uses ("lower quality waters"), and waters for which insufficient information is available to adequately assess water quality. The report summarizes these results in the "Integrated List of Waters (Integrated List)" component, which satisfies CWA Section 305(b) reporting requirements. The Integrated Report also identifies the cause(s) and sources of water quality issues so that appropriate strategies may be developed and implemented to protect and maintain high quality waters, restore lower quality waters, and fill data gaps. In 2014, the Department adapted the statewide water quality assessment process to a comprehensive regional assessment using a rotating basin approach, based on the success of the Barnegat Bay Action Plan. Under this approach, the Department will conduct 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) each assessment cycle, beginning with the Atlantic Coastal Region. This "rotating basin approach" will produce a comprehensive assessment of the entire state every ten years and will support development of measures to restore, maintain, and enhance water quality uses that maximize effectiveness and efficiency in achieving positive environmental outcomes that are tailored to the needs of each region. Additional information about the assessment process and the Integrated Report, including 303(d) Lists, is available on the Department's website at: http://www.state.nj.us/dep/wms/bears/assessment.htm.

Water Quality Management Planning

The Department administers New Jersey's Water Quality Management (WQM) Planning program pursuant to the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.), the New Jersey Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.), and the Water Quality Management Planning rules (N.J.A.C. 7:15). The WQM Planning program implements the areawide planning requirements of the New Jersey Water Quality Planning Act at N.J.S.A. 58:11-4 and 5, effectively addressing multiple CWA planning components (Section 201 wastewater facilities planning (33 U.S.C. § 1281), Section 208 areawide waste treatment planning (33 U.S.C. § 1288), and Section 209 and Section 303(e) basin planning (33 U.S.C. § 1289 and 1313(e)) through the rules at N.J.A.C. 7:15. Additional information about the WQM Planning program is available on the Department's website at http://www.nj.gov/dep/wqmp/.

Areawide Water Quality Management Plans

Section 201 Facilities Plans were required prior to distribution of federal grants for wastewater facilities. The Facilities Plans identified sewer service areas and areas where sewer service is inappropriate due to environmental sensitivity. Section 303(e) Basin Plans specified the amount of

pollutants allowed to be discharged from point sources while maintaining water quality standards. Section 208 required the Governor to designate agencies to prepare areawide waste treatment management plans. All applicable areawide waste treatment plans, facilities plans, and basin plans were incorporated into New Jersey's twelve areawide Water Quality Management (WQM) Plans pursuant to 40 CFR 130.6. Areawide WQM plans include wastewater management plans (WMPs), which identify the wastewater generation potential within a county or municipality and designate areas appropriate for sewer service, and total maximum daily loads (TMDLs). Additional information about the history of the WQM Planning Program and the twelve areawide WQM Plans is available on the Department's website at: http://www.nj.gov/dep/wqmp/wqmps.html.

Under both the federal and state water quality statutory and regulatory frameworks, the areawide WQM Plans are key water quality planning documents. Among other things, areawide WQM Plans identify treatment works necessary to meet the anticipated municipal and industrial waste treatment needs of the area covered by the plan. N.J.S.A. 58:11A-10 requires that all projects and activities affecting water quality in any planning area must be developed and conducted in a manner consistent with the areawide WQM Plan adopted for that planning area. The Commissioner is also prohibited from granting funds for construction of publicly owned treatment works to any agency not identified in an areawide WQM Plan.

Wastewater Management Plans

Wastewater Management Plans (WMPs) are required and outlined in the WQM Planning Rules, N.J.A.C. 7:15, and are an integral component of areawide WQM Plans. WMPs address wastewater management planning within each county or municipality. In general, WMPs identify the wastewater generation potential within a county or municipality and designate which areas are appropriate for sewer service. Sewer service areas are areas where wastewater is conveyed by a collection system and interceptors to a centralized facility for treatment and ultimate discharge into the surface or ground water. Such infrastructure is regulated and requires a New Jersey Pollutant Discharge Elimination System (NJPDES) permit. WMPs consider the impact of different types of development on water quality and natural resources, and reflect planning and development goals in a particular area. When a WMP is approved by the Department in accordance with the process specified in the WQMP rules, it is incorporated into the areawide WQM plan as an amendment. WMPs must be updated periodically to ensure that the most recent municipal zoning, State, and regional planning activities, and regulatory standards are considered in future decisions concerning wastewater management options. Additional information about WMPs is available on the Department's website at http://www.nj.gov/dep/wqmp/wmps.html.

WMPs and WMP updates must include required wastewater and water quality management components, including wastewater treatment capacity analysis, nitrate dilution analysis, and nonpoint source pollution requirements, to ensure that wastewater needs are met and water quality is protected. If the wastewater capacity or nitrate dilution analyses identify a gap or deficiency in meeting wastewater needs or water quality goals, the WMP must also identify strategies to address the gap(s) and work with the Department to determine and implement the appropriate strategy (see Appendix E

and Appendix F, respectively). WMPs must also identify strategies that will be implemented to meet nonpoint source pollution requirements. The Department has set forth its overall strategy for control of regulated stormwater and nonpoint sources in its Nonpoint Source Management Program Plan (NPS Program Plan) and will work closely with counties and municipalities to select and implement a broad range of available nonpoint source pollution reduction and prevention strategies (see Appendix A). The Appendix identifies tools that may be used for conducting these analyses and developing strategies to address any identified gaps. Other WQMP/WMP tools are provided in Appendix H.

Identify and Control Sources and Causes of Water Quality Impairment

Total Maximum Daily Loads

Total Maximum Daily Loads (TMDLs) represent the assimilative or carrying capacity of the receiving waterbody taking into consideration point and nonpoint sources of pollution, natural background water quality, and surface water withdrawals. A TMDL identifies the sources (point and nonpoint) contributing a pollutant of concern and sets load reductions needed to meet surface water quality standards. A TMDL may be viewed as a pollutant budget for an impaired waterbody since it derives the maximum amount of a pollutant that a waterbody can receive and still meet surface water quality standards. CWA Section 303(d) requires TMDLs to be developed for the pollutant(s) of concern in waterbodies that do not meet, or are expected to exceed, surface water quality standards after the implementation of technology-based effluent limitations. Waters of the State are regularly assessed to determine if surface water quality standards are met and designated uses are supported. Waters that do not meet the applicable standard(s) or support the applicable designated use(s) are placed on the 303(d) List of Water Quality Limited Waters (303(d) List). TMDLs, or an alternative process, are required for waters identified on the 303(d) List, along with a priority ranking ("high", "medium", or "low") for TMDL development. Waters that are ranked as high priority for TMDL development are generally those scheduled to be developed before the subsequent 303(d) List is published. A Two-Year TMDL Schedule is included in the appendix of the Integrated Report. Additional information about New Jersey's TMDL Program is available on the Department's website at http://www.nj.gov/dep/wms/bears/tmdls.html.

New Jersey Pollutant Discharge Elimination System: Effluent Limitations and Schedules of Compliance

Effluent limitations and schedules of compliance are administered and enforced through discharge permits issued by the Department under the authority of CWA Section 402, the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq., and the implementing rules at N.J.A.C. 7:14A. The New Jersey Pollutant Discharge Elimination System (NJPDES) Permit Program protects New Jersey's surface and ground water quality by assuring the proper treatment and discharge of wastewater (and its residuals) and stormwater from various types of facilities and activities. To accomplish this, permits are issued limiting the mass and/or concentration of pollutants that may be discharged into waters of the State (including ground water, streams, rivers, and the ocean). The types of regulated facilities range

from very small sanitary wastewater systems at campgrounds, schools, and shopping centers, to large industrial dischargers and regional wastewater treatment plants. Before a new or expanded wastewater treatment plant can be constructed, the proposed discharge must be authorized under a NJPDES permit. The permit will contain effluent limitations necessary to protect and ensure compliance with the surface or ground water quality standards. The Department determines the relative priority and schedule for permit issuance based on permit expiration/renewal deadlines, submittal and type of applications for new permits, and permits needed to address priority water quality issues, such as combined sewer overflows (CSOs). For existing discharges, schedules of compliance needed to meet newly imposed or more stringent effluent may be included in the NJPDES permit. NJPDES Permits and other programs and measures for controlling stormwater, including industrial and municipal stormwater permits and combined sewer overflow permits, are provided in Appendix B. Additional information about the NJPDES Program is available on the Department's website at http://www.state.nj.us/dep/dwq/njpdes.htm.

Discharge to Surface Water Permits

The Department regulates the discharge of pollutants from various municipal and industrial facilities into surface waters of the State under the NJPDES Discharge to Surface Water Permit Program. The NJPDES permit program is operated under the additional authority of the CWA delegated to New Jersey by USEPA to implement the National Pollutant Discharge Elimination System (NPDES). The federal NPDES system regulates discharges to surface water but not ground water. The NJPDES DSW permits establish effluent limitations that limit the mass and/or concentration necessary to protect and ensure compliance with the surface water quality standards, including water quality criteria and water quality policies at N.J.A.C. 7:9B. The effluent limitations can be technology based or water quality based. The permit requires the permittee to monitor the discharge and report the results to the Department on a Discharge Monitoring Report (DMR). Additional water quality monitoring may also be required. A facility that exceeds its effluent limitations or otherwise does not comply with the permit is subject to enforcement action by the Department. Additional information about NJPDES DSW permits is available on the Department's website at http://www.nj.gov/dep/dwq/sw.htm.

Significant Indirect Users

Some industrial dischargers do not discharge their wastewater directly into a surface waterbody like a stream or river, but rather discharge into a sanitary sewer system or publicly-owned treatment works (POTW). The wastewater is conveyed to a local agency's treatment plant where it is treated and discharged, commonly into a river or stream. These dischargers are known as "indirect users." Although not all indirect users require individual NJPDES permits, all must comply with at least minimum regulatory requirements under N.J.A.C. 7:14A-21.2, as well as the rules and regulations or sewer use ordinance of the local agency. Depending on the quality or quantity of the pollutants discharged into the sewer system by an indirect user, it may be further classified as a significant indirect user (SIU) requiring a NJPDES permit. The criteria include discharging from specific operations, discharging high strength or high volume wastewaters, and failure to comply with regulatory requirements under N.J.A.C. 7:14A-21.2. The Department is responsible for issuing permits for SIUs unless the Department has reviewed

and approved the local agency's capability to administer the SIU program. Additional information about SIUs is available on the Department's website at http://www.state.nj.us/dep/dwq/sius.htm.

Discharge to Groundwater Permits

The Department regulates the discharge of sanitary and industrial wastewater to ground water under the NJPDES Discharge to Ground Water (DGW) Permit Program. The pollution control requirements contained in NJPDES DGW permits are those conditions necessary to attain applicable ground water quality standards, which include designated uses, ground water classifications, criteria, and policies established at N.J.A.C. 7:9C. The types of regulated discharge activities include: surface impoundments, infiltration/percolation lagoons, overland flow systems, spray irrigation systems, and various types of subsurface disposal systems that are classified as underground injection systems. The types of facilities regulated include: mines, pits and quarries; schools and hospitals; potable water treatment plants; large corporate office buildings; industrial manufacturing facilities; campgrounds and mobile home parks; food processors; and sewage treatment plants and other discharges of wastewater that can impact ground water, including the management of dredged materials at upland locations. Additional information about the NJPDES DGW Permit Program is available on the Department's website at www.state.nj.us/dep/dwq/dgw_home.htm.

The Department also regulates low volume residential and commercial onsite wastewater treatment systems that discharge to ground water, commonly called septic systems pursuant to the Standards for Individual Subsurface Sewage Disposal Systems, N.J.A.C. 7:9A. These rules establish requirements for the proper design, construction, operation and maintenance of onsite wastewater treatment systems to protect public health and the environment. These rules are implemented through local health departments. The Department has also developed guidance for municipalities and septic owners on proper management and maintenance of septic systems to prevent system failures, which may result in untreated wastewater being discharged into the environment. Additional information about the Onsite Wastewater Management Program is available on the Department's Web site at http://www.state.nj.us/dep/dwq/owmp_main.htm. Additional guidance on planning for onsite wastewater treatment systems through the WQM Planning process is provided in Appendix E.

Disposition of Residual Waste

Residuals are generated by both domestic treatment plants (sewage sludge) and industrial treatment plants (industrial residuals). Residuals are managed in a variety of ways, including the development of Marketable Residuals Products used to fertilize or condition the soil. Examples include pellets, compost, and alkaline materials. Residuals are also incinerated in New Jersey and managed in a variety of ways at out-of-state facilities. Beneficial use of residuals as a fertilizer or soil conditioner in New Jersey is regulated under a NJPDES permit. Incineration of residuals is regulated under New Jersey's Air Pollution Control Program. Residuals managed in other states are regulated by the receiving state. Additional information about residuals management is available on the Department's website at http://www.state.nj.us/dep/dwq/sludge.htm.

The New Jersey Environmental Infrastructure Financing Program

The New Jersey Environmental Infrastructure Financing Program (NJEIFP) satisfies the CPP requirement to inventory and rank needs, in order of priority, for the construction of municipal waste treatment works needed to meet water quality goals and standards. The NJEIFP is a revolving loan program administered by the Department and the New Jersey Environmental Infrastructure Trust (EIT), an independent state financing authority, pursuant to the New Jersey Wastewater Treatment Trust Act, N.J.S.A. 58:11B-1 to 27, the Financial Assistance Programs for Wastewater Treatment Facilities rules and Wastewater Treatment Trust Procedures & Requirements (N.J.A.C. 7:22), and the Sewage Infrastructure Improvement Act Grants rules at N.J.A.C. 7:22A. The 1987 amendments to the federal Clean Water Act required states to establish a Clean Water State Revolving Fund (CWSRF) to provide financial assistance for the construction of projects that protect, maintain, and improve water quality. New Jersey's CWSRF program is included in the NJEIFP.

The NJEIFP provides loans to local government units for the construction of wastewater treatment facilities, sludge management systems for wastewater and water treatment systems, combined sewer overflow abatement, stormwater, and other nonpoint source management projects. The financing program also provides loans to both publicly and privately owned drinking water systems for the construction or upgrade of drinking water facilities, transmission and distribution systems, storage facilities, and source development. Funds are made available under the CWA, the federal Safe Drinking Water Act, and various state bond acts. The Department offers zero percent interest rate loans to local government units for up to one-half the allowable project costs, and the EIT offers market rate loans for the remaining allowable costs.

Every year, the Department develops a Proposed Priority System, Intended Use Plan, and Project Priority List as required under Federal and State law, which describes how the State plans to utilize federal funds provided to the State under the CWA to address water quality issues and water supply deficiencies. The Priority System (PS) describes the ranking methodology for the municipal water pollution control projects that are eligible for financial assistance through the NJEIFP. The Intended Use Plan (IUP) provides information on funds available through the clean water component of the EIFP, including all federal funds allotted to the State under the CWA and available to the CWSRF. The Priority List identifies projects targeted for financial assistance from the CWSRF and identifies the estimated total eligible building costs under the appropriate project category. Projects must be identified on the Project Priority List to be eligible for funding. Additionally, project sponsors must meet established planning, design and application deadlines as identified in the Priority System, Intended Use Plan and Project Priority List for the applicable funding cycle.

Through the Proposed Priority System, Intended Use Plan, and Project Priority List, the Department continues to prioritize low-cost financing for urban centers/complexes, combined sewer system abatement, on-site rehabilitation of existing septic systems, rehabilitation of designated brownfield areas, and development of designated transit villages and designated transfer of development rights (TDR) receiving areas. These programs directly benefit water quality by supporting the redevelopment

and rehabilitation of urban areas, and limiting the potential expansion of infrastructure into areas of the State planned for conservation/preservation. Additional information about the New Jersey Environmental Infrastructure Trust: Financing Program is available on the Department's website at http://www.nj.gov/dep/dwq/mface_njeifp.htm (also see Appendix D).

Intergovernmental Coordination

The Department actively engages municipal, county and regional governmental entities in order to promote and achieve statewide water quality goals.

Water Quality Management Planning

The process for assuring adequate authority for intergovernmental cooperation in the implementation of the Statewide WQM Planning Program is identified in each of the areawide WQM plans and in the regulations of the respective water quality management programs. Generally, intergovernmental cooperation is assured by the WQMP rules at N.J.A.C. 7:15, which require that all affected governmental entities receive written notification and requests for endorsement of all proposed amendments and revisions to the WQM plans. Where designated planning agencies have established plan amendment procedures, approval of the designated planning agency is also required before NJDEP will approve a proposed plan amendment or revision.

Water Quality Monitoring

Many different organizations and entities conduct water quality monitoring that may supplement the Department's own efforts in generating water quality data for all waters of the State. Monitoring partners work with the Department to gather information about New Jersey's waters and share their data with the Department for water quality assessment purposes. The Department provides technical support and capacity building for many of our monitoring partners. Monitoring partners generally include:

- Federal agencies, alone or in cooperation with Department (e.g., USEPA, National Oceanic and Atmospheric Association (NOAA), U.S. Geological Survey (USGS));
- Interstate commissions (e.g., Delaware River Basin Commission (DRBC));
- Regional, county, and municipal government agencies (e.g., county health departments, municipal utilities authorities);
- Private entities (e.g., dischargers, water purveyors, academic institutions);
- Volunteer monitoring organizations (e.g., watershed associations and civic/community groups).

The Department is also a key member of The New Jersey Water Monitoring Coordinating Council, established in 2003 to promote and facilitate the coordination, collaboration, and communication of scientifically sound, ambient water quality and quantity information to support effective environmental management. The Council consists of representatives from various Divisions within the Department; USGS; USEPA Region 2; the DRBC, Pinelands, and Meadowlands Commissions; the Interstate Environmental Commission; county health departments, academia; and the volunteer monitoring

community. Meeting quarterly, the Council provides the opportunity to exchange information and data among its participants.

Regional Initiatives

A number of regional initiatives have also been formulated to address issues important within those regions. Planning, regulatory, and non-regulatory measures aim to identify and respond to water quality issues in each:

Barnegat Bay Action Plan

On December 9, 2010, Governor Chris Christie announced a comprehensive action plan to address the ecological health of the 660-square-mile Barnegat Bay watershed. The Department has been aggressively implementing that plan including progress in scientific research, water quality monitoring and analysis, and implementation of stewardship projects, to storm water management efforts and purchasing of important lands for open space protection. Additional information about the Barnegat Bay Action Plan and its implementation is available on the Department's website at http://www.state.nj.us/dep/barnegatbay/index.htm. The Department is also an active partner in the Barnegat Bay National Estuary Program. The Department anticipates establishing similar regional initiatives and partnerships to identify and address water quality problems through the Rotating Basin Approach to Comprehensive Water Quality Assessment,

National Estuary Programs:

CWA Section 320 directs USEPA to develop plans for attaining or maintaining water quality in an estuary. This includes protection of public water supplies; protection and propagation of a balanced, indigenous population of shellfish, fish, and wildlife; allows recreational activities in and on water; and requires control of point and nonpoint sources of pollution. USEPA's National Estuary Program (NEP) was created in 1987 to improve the quality of estuaries of national importance. Each National Estuary Program is a partnership of federal, state, and local government agencies, non-profit groups, academics, and individual citizens that is charged with creating and implementing a Comprehensive Conservation and Management Plan (CCMP) that addresses all aspects of environmental protection for the estuary, including issues such as water quality, habitat, living resources, and land use. The CCMP is based on a scientific characterization of the estuary, and is developed and approved by a broad-based coalition of stakeholders. The CCMP establishes priorities for action, research, and funding, and serves as a blueprint to guide future decisions and activities related to the estuary. The Department is an active member of three National Estuary Programs: the Barnegat Bay Estuary Program, the Delaware Estuary Program, and the NY/NJ Harbor Estuary Program.

The Barnegat Bay Partnership (BBP), operates the Barnegat Bay National Estuary Program and is a partnership of federal, state, and local interests overseeing the development and implementation of a management plan for the entire Barnegat Bay watershed. Additional information about the Barnegat Bay Partnership (BBP), including actions, projects, programs, and publications, is available on the BBP website at www.bbep.org. The Delaware Estuary Program activities are coordinated by the Partnership

for the Delaware Estuary (PDE). The PDE is charged with addressing the full complement of actions called for in the CCMP. Additional information about the Partnership for the Delaware Estuary (PDE), including actions, projects, programs, and publications, is available on PDE's website at www.DelawareEstuary.org. The primary focus of the New York/New Jersey Harbor Estuary Program (HEP) is on the core area of the Harbor. Additional information about the New York/New Jersey Harbor Estuary Program (HEP), including actions, projects, programs, and publications, is available on the HEP website at http://www.harborestuary.org.

Highlands Region Water Resource Protection Program:

The purpose of the Highlands Water Protection and Planning Act (Highlands Act), N.J.S.A. 13:20-1 et seq., is to preserve an essential source of clean and plentiful drinking water for one-half of the State's population, and to protect the State's great diversity of natural resources. The Highlands Act establishes a Highlands Preservation Area (Preservation Area) and a Highlands Planning Area (Planning Area), each approximately 400,000 acres. Additional information about the Highlands Act and its implementation is available on the Department's website at http://www.nj.gov/dep/highlands/.

Pinelands Protection Program:

The Pinelands National Reserve (PNR) was created by Congress under the National Parks and Recreation Act of 1978. The PNR is the first National Reserve in the nation. The PNR encompasses approximately 1.1 million acres covering portions of seven counties and all or parts of 56 municipalities. The Pinelands Preserve occupies 22% of New Jersey's land area. It is the largest body of open space on the Mid-Atlantic seaboard between Richmond and Boston and is underlain by aquifers containing 17 trillion gallons of some of the purest water in the land. The Pinelands Comprehensive Management Plan sets forth the regulations and standards designed to promote orderly development of the Pinelands so as to preserve and protect the region's significant and unique ecology and natural resources. The Plan is administered by the New Jersey Pinelands Commission. Additional information is available on the Pinelands Commission website at http://www.state.nj.us/pinelands/index.shtml.

New Jersey Meadowlands:

Also known as the Hackensack Meadowlands, the New Jersey Meadowlands is the largest system of wetlands in New York/New Jersey Harbor Estuary. It contains the largest (8,400 acres) remaining brackish wetland complex in the New York - New Jersey Harbor Estuary. The New Jersey Meadowlands stretch along the terminus of the Hackensack and Passaic Rivers as they flow into Newark Bay, encompassing a range of aquatic ecosystems including fresh water, brackish, and saltwater environments. The Meadowlands Regional Commission (MRC) is the zoning and planning agency for a 30.4 square-mile area of the Meadowlands complex, covering parts of 14 municipalities in Bergen and Hudson Counties. Additional information about the MRC is available on the Commission's website at http://www.njmeadowlands.gov/home.

Local/Watershed Coordination

CSO planning

CSO permits encourage permittee and community collaboration on the planning and development of projects that will provide urban redevelopment opportunities, improve water quality, beautify neighborhoods, and improve the overall quality of life in our urban communities. The permittees are required to develop long term control plans to address the remaining combined sewer overflow (CSO) discharge points, or outfalls, in the state. These permits also reinforce the importance of properly operated and maintained water infrastructure systems in protecting public health and the environment and supporting economic redevelopment.

AmeriCorps New Jersey Watershed Ambassadors Program

The Department began hosting the AmeriCorps New Jersey Watershed Ambassadors Program in September of 2000 under an AmeriCorps State contract with the Corporation for National and Community Service. The AmeriCorps New Jersey Watershed Ambassadors Program is an environmental community service program administered by the Department to raise public awareness about water and watershed issues and to promote watershed stewardship through direct community involvement. AmeriCorps members are assigned to different watersheds throughout the State to serve as "Watershed Ambassadors" to their watershed communities. Each year, the Watershed Ambassadors complete a set of objectives that serve to raise awareness of the importance of individual actions in controlling NPS pollution, build stewardship capacity at the local level to assess water quality and directly accomplish source control projects. The objectives may be revised from year to year, but remain focused on NPS pollution control. Additional information about this program is available on the Department's website at http://www.nj.gov/dep/wms/bears/americorps.htm.

Community/Watershed Cleanups

The Department conducts and collaborates with partners in conducting large scale cleanup projects to control debris reaching waterbodies. An example of partnership effort is with the New Jersey Clean Communities Council, which annually removes tons of debris from waterways, beaches, greenways and roads. The Department also partners with other state and local agencies in administering the Adopt-A-Beach and Clean Shores Programs to address coastal debris.

The Clean Shores Program uses inmates from state correctional facilities to remove wood and garbage from tidal shorelines. Cleaning up these wastes helps prevent the deleterious effects of marine debris upon recreational ocean bathing beaches and the coastal environment. The program is funded entirely from the sale of "Shore to Please" shore protection license plates. The sponsoring municipalities and state/federal parks provide support to the program and lay out the initial costs of the cleanup. The Clean Shores program in turn reimburses the sponsors for the cost of waste disposal and contracted services incurred during cleanup activities. The program is also responsible for building dune fencing and planting dune grass in several oceanfront communities and one state park. In an average year, cleanups are carried out with the cooperation of more than 45 municipalities, seven county agencies, two state

parks, one federal park, and the Department of Corrections. Additional information about the Clean Shores Program is available on the Department's website at http://www.nj.gov/dep/bmw/cleanshores/csindex.html.

The Adopt-A-Beach program fosters volunteer stewardship of the State's coastal beaches to reduce the threat of marine debris to marine fish and wildlife. The Department partners with the New Jersey Clean Communities Council and Clean Ocean Action to conduct the twice-a-year program. Participants are encouraged to adopt one of New Jersey's ocean beaches and become responsible for cleaning up debris and floatables that wash up on the shore. Since 1993, Adopt-A-Beach volunteers have been cleaning up litter and debris from about 60 beaches statewide. The cleanup results are forwarded to our national partner the Ocean Conservancy for analysis and inclusion in national and international marine debris databases. The results are used to gauge the type of education and outreach activities needed to change public attitudes and behavior about litter and the importance of keeping our waterways clean. Additional information about the Adopt-A-Beach Program is available on the Department's website at www.state.nj.us/dep//seeds/aabeach.htm.

Conducting an Iterative Process

As explained in the Introduction, both federal and state statutes require the Department to conduct a "continuing" planning process designed to achieve water quality goals and protect public health and the environment. By definition, such a process must be iterative and adaptive in order to respond effectively to changes in conditions, technology and knowledge. To that end, the standards, monitoring and assessment programs and processes explained in the preceding sections are also employed to "evaluate the effectiveness of control measures and resulting improvements in water quality, conduct additional monitoring, assessment and planning as needed to identify further refinements or controls needed to achieve water quality goals". The update to the Department's Long Term Monitoring Strategy (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 to comprehensive regional water quality assessment will utilize this new tiered monitoring process to concurrently undertake:

1) Evaluation of the effectiveness of control measures implemented to address water quality problems identified in the previously assessed water region;
2) 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
3) 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.

Under this approach, the Department will be 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) each assessment cycle, beginning with the Atlantic Coastal Region. This "rotating basin approach" will produce a comprehensive assessment of the entire state every ten years and will support development of measures to restore, maintain, and enhance water quality tailored to the unique circumstances of each region. The programs described in the CPP will implement control measures to address the water quality problems identified in each assessment cycle and will be evaluated for effectiveness and refined as needed during the subsequent assessment cycle. The culmination of these efforts will be a continuous, iterative planning and management process that will ultimately achieve the water quality goals established in the federal and state statutes.

CPP Appendix Table of Contents

The CPP appendix outlines technical measures, requirements and guidance, funding, tools, and other information developed by the Department or USEPA to protect water resources, environmentally sensitive areas, and address other water quality related issues. These appendices are organized to provide assistance with meeting specific requirements of the WQMP rules along with strategies to address identified capacity needs and other gaps during the WMP process. The acceptability of specific infrastructure solutions will be determined during the permitting process when there is an actual need to build new or expanded infrastructure based on the water quality conditions and the science and technology available at that time. As with the main CPP, the Appendix is a living document. As needs are identified through the rule making process and beyond, additional strategies and tools will be added to improve the process and provide a user-friendly forum for sharing information.

Appendix A: Nonpoint Source Pollution Requirements, Strategies and Tools

Nonpoint Source Pollution Control Program

Nonpoint source (NPS) pollution is caused by natural and synthetic pollutants carried into surface and ground water by stormwater moving over and through the land. The significance of NPS loadings can vary widely depending upon the watershed and the pollutant. NPS pollution is diffuse in origin, can emanate from anywhere in the watershed and is significantly associated with human activity. It is also not generally subject to regulatory controls. NPS pollution may include chemicals and pathogens carried into streams by stormwater runoff, such as oil and grease from roadways and parking lots; fertilizers from lawns, golf courses, and agricultural fields; and bacteria from improperly maintained septic systems, pet waste, and large congregations of waterfowl. NPS pollution may also include other adverse impacts on water resources caused by anthropogenic activity. For example, clearing of streamside vegetation can cause increased water temperature that impairs aquatic life uses, such as trout production and maintenance. Increased development may result in increased water withdrawals or loss of recharge, which can cause reduced base flow during dry weather and impair aquatic life and public water supply uses. Increased impervious cover increases stormwater runoff and can exacerbate erosion of streambed and banks. This can significantly alter stream hydrology, increase turbidity and flashiness of streams, and increase flooding. Urbanization increases impervious surfaces of the land due to the building of roads, pavement, and rooftops which cause rain and snowmelt to remain on the surface. The runoff then moves over the land and picks up natural and human-made pollutants (nonpoint source pollution) and deposits them into lakes, rivers, wetlands, ground and coastal waters. These include:

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

Because NPS pollution is diffuse, control is most effective at the source, in contrast to the collect/treat/discharge approach used with point sources. Source control includes strategies that prevent the introduction of pollutants to the environment as well as taking advantage of natural systems to filter and process pollutants in each watershed. The Department has developed a Nonpoint Source Management Program Plan (NPS Program Plan), which outlines the key actions that the Department and our partners will take to address water quality issues caused by NPS pollution.

The NPS Program Plan is a key component of New Jersey's CPP since it sets forth the strategies and actions that the Department, along with its partners, will implement to restore water quality in waters impaired by NPS pollution. The NPS Program Plan explains how the Department, in cooperation with local government and other partners, implements a mix of regulatory, non-regulatory, funding strategies to address NPS pollution. Strategies include development of watershed restoration plans, prioritization of available funding to implement nonpoint source reduction and prevention measures, stewardship building, and environmental education intended to enhance local initiatives to reduce and prevent nonpoint source pollution, such as adoption of local ordinances related to riparian zone and steep slope protection. Specific measures and tools for different types of NPS pollution are identified below. New Jersey will continue to review, refine, and add program components and tools, as appropriate. The NPS Program Plan is available on the Department's website at http://www.nj.gov/dep/wrm/wqmprule.html. USEPA requires states to have an updated NPS Program Plan in place to qualify for CWA Section 319(h) NPS pollution control grants. Examples of NPS Strategies are provided below. Model ordinances and links to other NPS tools are provided in the table of Additional NPS Control Measures and Tools.

Nonpoint Source Pollution Control Strategies

Funding to Implement Nonpoint Source Reduction And Prevention Measures: New Jersey Statewide 319(h) Nonpoint Source Pollution Control Grant Program

The New Jersey Statewide 319(h) Nonpoint Source (NPS) Pollution Control Grant Program is an integral component and funding source for statewide NPS management programs, which aim to control NPS pollution to achieve and maintain designated uses of waters of the State. This program is supported by pass-through grants from USEPA whose purpose is to maintain and improve water quality by:

- Strategically focusing on water quality goals to achieve water quality standards in the state's priority waters/watersheds;
- Clearly articulating program goals and developing annual work plans that reflect actions to advance those goals;
- Reflecting a balance between planning, staffing, statewide action, and watershed project implementation that best utilizes resources to deliver measurable water quality results;
- Leveraging and integrating with other programs to align planning, priority-setting and resources to make the best use of available resources to control NPS pollution; and
- Tracking and reporting results to demonstrate program progress and success.

Federal 319(h) grant funds can also be used to secure additional funding and in-kind contributions from other sources (in the form of labor, materials, and professional guidance) and expand the scope of restoration efforts in targeted priority watersheds. For example, through partnership with the New Jersey Department of Agriculture (NJDA), the United States Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS), and other agricultural organizations, the Department has been able to administer 319(h) grants in conjunction with other funds and programs administered through the State Soil Conservation Committee and New Jersey's 15 Soil Conservation Districts to restore water quality in some of New Jersey's more rural watersheds, where agricultural land uses are the major nonpoint source of pathogens and nutrients. Implementing best management and

conservation practices on agricultural lands is an important component of New Jersey's nonpoint source pollution control strategy because it will improve water quality, conserve water and energy, prevent soil erosion, and reduce the use of nutrients and pesticides. The accomplishments of the 319(h) grant program, including pollutant load reductions, are tracked through USEPA's Grant Reporting Tracking System (GRTS), which is available on USEPA's website at http://iaspub.epa.gov/apex/grts/f?p=110:199. Additional information about the Department's 319(h) NPS Grant Program is available on the Department's website at http://www.state.nj.us/dep/wms/bears/319_grant_program.htm (also see Appendix D).

Watershed Based Plans (including Watershed Restoration Plans)

Watershed based plans (WBPs) identify causes and sources of pollution, estimate pollutant loading and the expected load reductions, develop management measures that will achieve load reductions, identify resources and authority needed to implement management measures, and monitor and track implementation and water quality improvement. USEPA has established requirements for WBPs developed under the Section 319(h) NPS Grant Program that require nine key elements critical for achieving improvements in water quality, including:

- Identify causes and sources of pollution
- Estimate pollutant loading into the watershed and the expected load reductions
- Describe management measures that will achieve load reductions and targeted critical areas
- Estimate amounts of technical and financial assistance and the relevant authorities needed to implement the plan
- Develop an information/education component
- Develop a project schedule
- Describe the interim, measurable milestones
- Identify indicators to measure progress
- Develop a monitoring component

A watershed restoration plan (also referred to as Watershed Based Plan or WBP) can be an effective alternative to a TMDL for waters impaired primarily by nonpoint and regulated stormwater sources of pollution. WBPs are required by USEPA to characterize pollutant sources, identify reductions needed to attain standards, and the means to achieve the reductions, similar to the measures that would be included to implement LAs contained in a TMDL implementation plan. Systematic implementation of WBPs is an effective means to restore water quality in watersheds with minimal impact from typical CWA-regulated sources. The Department may issue Section 319(h) NPS control grant funds for the development of Watershed Based Plans (WBPs) for threatened or impaired waters. WBPs are effective alternatives to TMDLs wherever NPS pollution is a significant source of water quality impairment. Additional information about WBPs is available on the Department's website at http://www.state.nj.us/dep/wms/bears/wbplans.htm.

Coastal Nonpoint Source Pollution Control Program

The Department is responsible for developing and administering a Coastal Nonpoint Pollution Control Programs (CNPCP) in accordance with Section 6217 of the federal Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), 16 U.S.C. 1455b. A CNPCP describes how a state will implement NPS BMPs to reduce pollution associated with several sources such as forestry practices, urban development, marinas and boating activities, hydromodification, and others. The Department is responsible for the CNPCP in New Jersey. New Jersey's CNPCP applies statewide since, under federal definitions, most of New Jersey is considered to be "coastal". Some of the management measures contained in the CNPCP are implemented by other state agencies, such as the New Jersey Department of Agriculture; however, most are implemented by the Department in coordination with other Department programs required under the federal CWA, including those included in the CPP, for example, Section 208 Water Quality Management Planning, Section 303(d) Total Maximum Daily Loads, Section 319(h) Nonpoint Source Pollution Control Grants. The CNPCP is also coordinated with the Section 320 National Estuary Program (see Intergovernmental Coordination). Additional information about New Jersey's Coastal Nonpoint Source Pollution Control Program is available on the Department's website at: http://www.nj.gov/dep/cmp/czm_cnpp.html.

Stormwater Management

The New Jersey Stormwater Management rules, N.J.A.C. 7:8, establish stormwater management design and performance standards for groundwater recharge, water quality protection, and water quantity control that are mandatory for new major development in New Jersey. The Department publishes a Stormwater Best Management Practices Manual (BMP Manual) to provide guidance to review agencies and the regulated community on complying with these standards. The rules also establish general requirements for stormwater management plans and stormwater control ordinances, as well as content requirements and procedures for the adoption and implementation of regional stormwater management plans and municipal stormwater management plans

The Stormwater Management rules promote low impact development techniques by requiring consideration of nonstructural stormwater management strategies. These include maintaining natural vegetation, reducing land disturbance, minimizing or breaking up impervious surfaces, and maintaining existing drainage characteristics and patterns. The rules require that these techniques be considered early in the project design. Once nonstructural stormwater management strategies have been integrated into the site design to the maximum extent practicable, any remaining water quality, groundwater recharge, or water quantity control requirements must be addressed using structural best management practices.

The rules establish minimum design and performance standards to control erosion, encourage and control infiltration and groundwater recharge, and control stormwater runoff quantity and quality impacts of major development. The rules require that 100 percent of the average annual groundwater recharge be maintained for new development projects to help mitigate future droughts and flooding. The rules also require that stormwater management measures be designed to reduce total suspended

solids (TSS) in stormwater runoff by 80 percent and other pollutants by the maximum extent feasible, to protect water quality in the receiving waters. Furthermore, the rules require reductions in peak flowrates of stormwater leaving the site to mitigate flooding impacts resulting from new development projects.

- Stormwater Management Rules, N.J.A.C. 7:8
  - http://www.nj.gov/dep/rules/rules/njac7_8.pdf
- New Jersey Stormwater BMP Manual
  - http://njstormwater.org/bmp_manual2.htm
- Stormwater Maintenance Guide
  - http://njstormwater.org/maintenance_guidance.htm
- Model Stormwater Control Ordinances for Municipalities (March 2004)
  - http://www.state.nj.us/dep/wqmp/docs/sw_ordinance.pdf
- Stormwater in New Jersey
  - www.njstormwater.org
- Clean Water – It's Up to You in New Jersey
  - www.cleanwaternj.org

Green infrastructure

Traditional stormwater infrastructure design focuses on collecting and conveying rainwater off-site, often through pipes, so it is ultimately discharged into a downstream waterway. Green infrastructure mimics natural processes utilizing soils and vegetation to manage rainwater where it falls by allowing it to infiltrate into the soils, where it can be used by plants or recharge aquifers and stream base flow. In addition, green infrastructure can reduce runoff volumes by capturing the rainfall in manufactured structures, such as rain barrels or cisterns, where it is stored until it can be reused for non-potable uses such as irrigation. The Department supports the use of green infrastructure as a preferred method of stormwater management. Additional information, along with examples and guidance on green infrastructure, are provided below.

- What is Green Infrastructure
  - http://www.nj.gov/dep/gi/
- Green Infrastructure Design
  - http://www.nj.gov/dep/gi/More_Info.html#gid
- Green Stormwater Practices
  - Cisterns
    - http://www.nj.gov/dep/gi/pdf/gi_cisterns.pdf
  - Grass Swales
    - http://www.nj.gov/dep/gi/pdf/gi_grass_swales.pdf

    Green Roofs
    - http://www.nj.gov/dep/gi/pdf/gi_green_roofs.pdf
  - Pervious Pavement

- http://www.nj.gov/dep/gi/pdf/gi_pervious_pavement.pdf
- Street Tree Trench
  - http://www.nj.gov/dep/gi/pdf/gi_street_tree_trench.pdf
- Rain Barrels
  - http://www.nj.gov/dep/gi/pdf/gi_rain_barrels.pdf
- Subsurface Gravel Wetlands
  - http://www.nj.gov/dep/gi/pdf/gi_subsurface_gravel_wetlands.pdf
- Rain Gardens/ Bioretention Basins
  - http://www.nj.gov/dep/gi/pdf/gi_rain_gardens.pdf
- Riparian Buffers
  - http://www.nj.gov/dep/gi/pdf/gi_riparian_buffers.pdf

Riparian Zones

New Jersey's water quality protection programs also include protection of riparian zones (including the 300-foot riparian zone associated with Category One streams and their tributaries) and other near stream areas through the riparian zone protections provided by the Flood Hazard Area Control Act Rules, N.J.A.C. 7:13. These protections provide an effective strategy to guard against further degradation of the State's waters since they provide an excellent means to control pollutants carried by stormwater runoff to streams. Compliance with these measures is enforced through the Department's permitting programs. Additional information on this rule and associated programs are available on the Department's website at: http://www.nj.gov/dep/landuse/. Model ordinances for riparian zones are provided in the table of Additional NPS Control Measures and Tools.

Additional NPS Control Measures and Tools

Type of NPS Pollution	Guidance/Tools	Website (if applicable)
Excess fertilizers from agricultural and residential areas	New Jersey Fertilizer Law, N.J.S.A. 58:10A-61 et seq.	➢ http://www.nj.gov/dep/healthylawnshealthywater/ ➢ http://snyderfarm.rutgers.edu/fertilizerlawfaq.html ➢ http://www.njleg.state.nj.us/2010/Bills/PL10/112_.PDF
Oil, grease, and toxic chemicals from vehicles, urban and developed land	Industrial and Municipal Stormwater Permits	➢ http://www.nj.gov/dep/dwq/ispp_home.html ➢ http://www.nj.gov/dep/dwq/msrp_home.htm ➢ http://www.nj.gov/dep/stormwater/
Sediment from improperly managed construction sites and other disturbed land uses	• Steep slopes model ordinance • Minimum Acceptable Riparian Zone Model Ordinance (2010) • Riparian Zone Model Ordinance (2008) • 5G3 Construction Activities Permit	➢ http://www.nj.gov/dep/wqmp/docs/steep_slope_model_ordinance20080624.pdf ➢ http://www.state.nj.us/dep/wqmp/docs/min_riparian_zone_model_ordinance20100223.pdf ➢ http://www.state.nj.us/dep/wqmp/docs/riparian_model_ordinance.pdf ➢ http://www.nj.gov/dep/dwq/5g3.htm
Excess salt from winter road management	• Road De-Icing • Storage of De-Icing Materials	➢ http://vtransoperations.vermont.gov/sites/aot_operations/files/documents/AOT-OPS_SnowAndIceControlPlan.pdf ➢ http://www.nj.gov/dep/dwq/pdf/deicing_policy.pdf
Bacteria and nutrients from livestock, pet wastes, and septic systems	• Pet Waste Ordinances • Concentrated Animal Feeding Operations (CAFOs) • Septic System O&M • Septic System Inspection Guidance • Brochures and Tip Cards • Other Educational Materials	➢ http://www.state.nj.us/dep/dwq/pdf/Tier_B/pet%20waste%20ordinance.pdf ➢ http://www.nj.gov/dep/dwq/cafo.htm ➢ http://www.state.nj.us/dep/dwq/pdf/cafofs.pdf ➢ http://www.state.nj.us/dep/dwq/pdf/septicmn.pdf ➢ http://www.state.nj.us/dep/dwq/pdf/inspection_guidance.pdf ➢ http://www.njstormwater.org/tier_A/edu_fliers.htm ➢ http://www.state.nj.us/dep/dwq/msrp_ed_brochure.htm ➢ http://www.nj.gov/dep/watershedrestoration/waterbook_tble.html
Hydromodification, such as bank and channel erosion	Riparian restoration	➢ http://www.state.nj.us/dep/cmp/czm_cnpp.html ➢ http://www.nj.gov/dep/landuse/mitigate.html ➢ http://www.state.nj.us/dep/wms/bears/index.html

Appendix B: Regulatory Stormwater Controls

Stormwater Permits

The Stormwater Permitting Program implements the stormwater permitting requirements established by CWA Section 402(p). Consistent with the corresponding federal regulations, New Jersey's Stormwater Permitting Program is divided into two sections: Industrial Stormwater Permitting ("Phase I") and Municipal Stormwater Regulation ("Phase II"). Both programs are implemented through the issuance of individual permits and general NJPDES permits. The Industrial Stormwater Permitting Program regulates stormwater discharges to surface and ground water by issuing NJPDES permits to industries involved in manufacturing, processing, or storage of raw materials at industrial facilities, as well as point source discharges from certain construction activities. The Municipal Stormwater Regulation Program issues general permits authorizing stormwater discharges from municipalities, as well as public complexes, and highway agencies that discharge stormwater from municipal separate storm sewers (MS4s). Public complexes include certain large public colleges, prisons, hospital complexes and military bases. Highway Agencies include county, state, interstate, or federal government agencies that operate highways and other thoroughfares. All stormwater permits emphasize pollution prevention techniques and source control rather than "end-of-pipe" treatment. Stormwater permits generally rely on best management practices (BMPs) that eliminate or minimize contact between source materials and stormwater, thus preventing pollution and reducing costs associated with inventory and material losses. Strategies, tools and other information are outlined below.

Industrial Stormwater Permitting Strategies

- Individual Permits
  - http://www.nj.gov/dep/dwq/ind_storm.htm
- General Permits
  - http://www.nj.gov/dep/dwq/ispp_gp.html
    - Construction Activities
      - http://www.nj.gov/dep/dwq/5g3.htm
- Pollution Prevention Plans (PPPs)

Municipal Stormwater Permitting

- Tier A Permit
  - http://www.nj.gov/dep/dwq/tier_a.htm
- Tier B Permit
  - http://www.nj.gov/dep/dwq/tier_b.htm
- Highway Agency Permit
  - http://www.nj.gov/dep/dwq/highway.htm
- Public Complex Permit
  - http://www.nj.gov/dep/dwq/pc.htm
- Stormwater Pollution Prevention Plan Guidance
  - http://www.nj.gov/dep/dwq/pdf/Tier_A/Chapter%202.pdf

- Model Ordinances for Municipalities
  - Stormwater Control
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/NJ_SWBMP_D.pdf
  - Pet Waste
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/pet%20waste%20ordinance.pdf
  - Litter Control
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/litter%20ordinance.pdf
  - Improper Disposal of Waste
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/improper%20disposal%20of%20waste%20ordinance.pdf
  - Wildlife Feeding
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/wildlife%20feeding%20ordinance.pdf
  - Containerized Yard Waste
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/containerized%20yard%20waste%20ordinance.pdf
  - Yard Waste Collection Program
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/yard%20waste%20collection%20program%20ordinance.pdf
  - Illicit Connections
    - http://www.nj.gov/dep/dwq/pdf/Tier_A/illicit%20connection%20ordinance.pdf
  - Refuse Containers/Dumpsters
    - http://www.nj.gov/dep/dwq/pdf/final_refuse_containers_dumpsters_ordinance.pdf
  - Private Storm Drain Inlet Retrofitting
    - http://www.nj.gov/dep/dwq/pdf/final_private_retrofitting_ordinance.pdf

- Educational Brochures and Information
  - http://www.nj.gov/dep/dwq/msrp_ed_brochure.htm
  - http://www.nj.gov/dep/dwq/msrp_suplment_ed.htm

Soil Erosion and Sediment Control

Stormwater runoff from construction sites can also be a significant cause of water quality impairment if not properly managed. Soil erosion controls to prevent sedimentation during land disturbance, as well as minimization of stormwater contamination from other construction related activities, is required under the Statewide Stormwater Permitting Program for Constructions Activities in New Jersey and the Construction Activity Stormwater (5G3) General Permit (NJ0088323). The Department publishes a Stormwater Best Management Practices (BMP) Guide to help the regulated community comply with the requirements. The program is administered by the Department in coordination with the New Jersey Department of Agriculture (NJDA) and the State Soil Conservation Committee through its 15 Soil Conservation Districts (SCDs) located throughout the State, who are responsible for administering the New Jersey Soil Erosion and Sediment Control Act, N.J.S.A. 4:24-39 et seq., commonly known as "Chapter 251". The Department is authorized to enforce compliance with Chapter 251 provisions that are incorporated into the Construction Activity Stormwater (5G3) General Permit. Additional

information about the Stormwater Permitting Program is available on the Department's website at http://www.nj.gov/dep/dwq/bnpc_home.htm.

Chapter 251 requires the minimization of soil erosion from construction sites, reduction of nonpoint source pollution from sediment, and enhancement of water quality and stormwater quality. The Department is authorized to enforce compliance with Chapter 251 provisions that are incorporated into the Construction Activity Stormwater (5G3) General Permit. The SCDs review development and site plans to ensure that they are in compliance with standards established by the State Soil Conservation Committee. SCDs enforce the requirements associated with the 5G3 General Permit that allows the discharge of stormwater from a developed site. These requirements ensure that stormwater runoff will not contribute to long-term water quality degradation in the receiving waters. SCD staff routinely inspect active constructions sites to make sure the soil erosion and sediment control measures are carried out in the correct construction sequence on the site. SCD inspectors also perform final site inspections once construction is finished, to ensure that the site has been properly and permanently stabilized. Additional information about Chapter 251 and New Jersey SCDs is available on the NJDA website at http://www.nj.gov/agriculture/divisions/anr/nrc/conservdistricts.html.

Combined Sewer Overflow Program

Sanitary sewer systems transport household, commercial and industrial wastewater to a sewage treatment plant for treatment, while storm sewers collect and transport rainwater and melted snow to outfalls that then discharge to a waterway. Most of New Jersey communities are served by both types of systems functioning separately from each other; however, in some older urban communities, the sanitary and storm sewers are combined. In combined sewer areas, all wastewater flows during dry weather are conveyed to a sewage treatment plant where it receives appropriate treatment before it is discharged to the waterway. However, when it rains or there is snowmelt in combined sewer areas, the additional high volume of rain water or melted snow can overwhelm the capacity of the pipes in the combined sewer system or sewage treatment plant. Combined sewer systems were designed to overflow during these periods and discharge excess wastewater directly from the combined sewer systems, through a combined sewer overflow (CSO) to nearby streams or rivers, instead of being transported to the sewage treatment plant. CSOs provide a hydraulic release for these combined sewer systems when they are over capacity. Without CSOs this mix of sewage and stormwater could back up into homes, businesses, and other public places. Instead, CSOs result is an overflow of untreated combined sewage and stormwater into the receiving waterbody. These discharges often contain high levels of total suspended solids, pathogens, nutrients, oxygen-demanding organic compounds, oil, grease, and other pollutants that impair water quality and the recreational use of urban waterways.

The goal of the Department's Combined Sewer Overflow (CSO) program is to meet the requirements of the CWA and the National CSO Policy by reducing or eliminating CSO events. Strategies include sewer system separation, expanding treatment facilities, incorporating holding basins, ensuring proper system operation, maintenance and management of existing infrastructure, and providing opportunities for **green infrastructure**. A major emphasis of the permit process is the development of regional strategies

to reduce the amount of storm water that flows into combined sewer systems, through the development and implementation of a Long Term Control Plan. Additional information about New Jersey's CSO program is available on the Department's website at: http://www.nj.gov/dep/dwq/cso.htm.

Appendix C: Other Water Quality Protection Tools

- Surface Water Quality Standards Program
  - http://www.state.nj.us/dep/wms/bears/swqs.htm
  - http://www.nj.gov/dep/rules/rules/njac7_9b.pdf
- Stream Classifications (GIS:)
  - http://www.state.nj.us/dep/wms/bears/gis_coverages.htm
- Antidegradation Designations
  - http://www.state.nj.us/dep/wms/bears/antidegradation.htm
- Category One Waters
  - http://www.state.nj.us/dep/wms/bears/c1waters.htm
  - http://www.nj.gov/dep/gis/listall.html

    (Select GIS Coverage entitled "Surface Water Quality Standards"; then select "Category One Waters")
- GWQS Classification Maps:
  - http://www.nj.gov/dep/wms/bears/docs/gwqs_classifications.pdf
- TMDL Program
  - http://www.state.nj.us/dep/wms/bears/tmdls.html
  - **Table of New Jersey TMDLs and Approval Status**
  - TMDL Coverage (GIS)
    - http://www.nj.gov/dep/gis/listall.html
- Water Quality Assessment
  - http://www.state.nj.us/dep/wms/bears/assessment.htm
- Ground Water Quality Standards Program
  - http://www.state.nj.us/dep/wms/bears/gwqs.htm

Appendix D: Funding Resources

Numerous funding opportunities are available from the Department and USEPA for water quality management activities. Key water quality grant and loan programs are summarized below. Additional information about the Department's various Grant and Loan Programs is also available on the Department's website at http://www.nj.gov/dep/grantandloanprograms/.

CWA Section 319(h) Nonpoint Source Pollution Control Grants (319(h) Grants)

319(h) Grants are federal funds awarded to the Department and passed-through to eligible recipients to implement NPS pollution control projects that maintain and improve water quality. Each year, the Department publishes a Request for Proposals (RfP) that provides guidance and establishes criteria for projects based on federal requirements and state priorities; identifies specific administrative, procedural, and programmatic requirements for applicants; and provides timetables and deadlines for the grant application and related decision-making processes.

- 319(h) Grant Program Information
  - http://www.state.nj.us/dep/wms/bears/319_grant_program.htm.
- 319(h) Grant Application Information
  - http://www.nj.gov/dep/grantandloanprograms/eps_nspc.htm
- SFY 2015 RfP
  - http://www.state.nj.us/dep/wms/bears/docs/319h_sfy2015_rfp.pdf

CWA Section 604(b) Water Quality Management Planning Grants (604b Grants)

604(b) Grants are federal funds awarded to the Department and passed through to eligible recipients to to regional public comprehensive planning organizations (RPCPOs) and Interstate Organizations created for the purpose of carrying out water quality planning activities. In New Jersey, these government agencies include: designated water quality management planning agencies, counties, municipalities, and other regional or interstate water quality planning agencies.

- 604(b) Grant Program Information
  - http://www.nj.gov/dep/wqmp/funding.html
- 604(b) Grant Application Information
  - http://www.nj.gov/dep/grantandloanprograms/nhr_wqmp.htm
- SFY 2014 RfP
  - http://www.state.nj.us/dep/wms/bear/604b_sfy14_rfp.pdf

Environmental Infrastructure Financing (EIF) for Wastewater Treatment, Stormwater Management and Combined Sewer Overflows

This program uses funds from the Department's Clean Water State Revolving Fund and the New Jersey Environmental Infrastructure Trust to provide low-interest loans for the construction of a variety of water quality protection measures, including wastewater treatment facilities and stormwater and nonpoint source management facilities. The Financing Program also provides loans for activities such as open space land purchase and conservation, remedial action activities (including brownfields) and well sealing.

- Environmental Infrastructure Financing Program Information
  - http://www.nj.gov/dep/dwq/mface_njeifp.htm
- Municipal Finance and Construction Element
  - http://www.nj.gov/dep/dwq/mface.htm

Clean Communities Program Fund

The Department provides financial assistance for the implementation of litter abatement programs in eligible municipalities and counties within the State.

- New Jersey Clean Communities Grants
  - http://www.nj.gov/dep/grantandloanprograms/lga_ccpg.htm

Appendix E: Wastewater Treatment Capacity Analysis Strategies and Tools

Wastewater Capacity Analysis

WMP agencies are required to conduct a capacity analysis and determine future wastewater needs based on population and existing and planned future development as part of a WMP. Tools provided by the Department include an inventory of wastewater treatment facilities, their existing and permitted flows, and the wastewater management needs associated with each facility, which is updated annually. Additional tools are also provided to assist WMP agencies in estimating wastewater flows and future needs, GIS coverages for various planning elements including sewer service area mapping, land use/land cover, and areas restricted from development. Modeling tools for projecting density of development and growth trajectories are also provided. If the capacity analysis identifies capacity needs, the WMP agency is also required to identify strategies to address those needs. Strategies for addressing a potential capacity deficiency include water conservation, infiltration and inflow reduction, new or expanded treatment infrastructure, and reduced sewer service area.

Tools For Estimating Wastewater Flow:

- Population projections/growth trajectory
- Municipal master plan
- Zoning maps
- Lands with restricted development potential, e.g., federal lands, open space, ESAs
  - GIS coverages: http://www.state.nj.us/dep/gis
  - Sewer Service Area Map: Digital mapping coverage developed and maintained by the Department maintains on its website http://www.state.nj.us/dep/gis

Tools For Identifying Available Wastewater Treatment Capacity For NJPDES DSW Permitted Facilities:

- Wastewater Facility Inventory: **I**nventory of wastewater treatment facilities, their existing and permitted flows, and the wastewater management needs associated with each facility developed by the Department and updated annually.
  - http://www.nj.gov/dep/wrm/
- Wastewater flow projections: See N.J.A.C. 7:14A-23.3, 7:14A-23.2(c), and 7:9A,
  - Capacity thresholds- under development – awaiting stakeholder coordination and WQMP rule finalization.

Tools For Identifying Potential Capacity Deficiency And Strategies To Address Capacity Needs And Infrastructure Solutions, DSW:

- Capacity Analysis (N.J.A.C. 7:15-4.5(b): *under development*- awaiting stakeholder coordination and WQMP rule finalization.

- Capacity Assurance Program (See N.J.A.C. 7:14A-22.16)
  - The Capacity Assurance Program (CAP) rules establish a mechanism for ensuring that treatment works, which includes both the treatment plant and the associated conveyance system(s), will avoid hydraulic overloads that could result in violation(s) of NJPDES permit discharge limits or unpermitted discharges. Under the existing rules, when the committed flow (i.e. the average flow over three consecutive months plus the sum of all flows anticipated from approved but non-operational connections) to a treatment plant reaches 80 percent of the permitted flow, the participating municipalities and/or sewerage authorities are required to submit a CAP to the Department. At a minimum, the CAP shall include implementation of water conservation measures; maximization of treatment capacity at a minimum cost; reduction of infiltration/inflow (I/I) where appropriate; construction of improvements; disconnection of sources of inflow into the sanitary sewer lines and their connection into storm sewer lines where available and to the extent feasible; submission of a WQM007 form on a quarterly basis; and preparation for the imposition of a self-imposed sewer connection ban.
  - Recently proposed amendments to the CAP rules (see 47 N.J.R. 2582(a), October 19, 2015) modify the flow trigger to when the average flow over 12 consecutive months reaches or exceeds the permitted flow of a treatment plant. In addition, the proposed amendments expand upon the existing requirements in the rule by requiring the submission of a capacity analysis report (CAR) that must assess the treatment works (treatment plant and conveyance system); evaluate alternatives that would maximize conveyance and treatment of existing flows, reduce existing flows, and/or increase the capacity of the treatment works; identify the alternative(s) that will be implemented; establish an implementation schedule; and identify the financing mechanism(s) for the selected alternative(s). For a copy of the proposed rule, see http://www.nj.gov/dep/rules/proposals/20151019b.pdf.
  - CAP website: http://www.nj.gov/dep/dwq/sbcap.htm

Strategies for Addressing Wastewater Capacity Deficits:

The acceptability of the selected strategy, including specific infrastructure solutions, will be determined through the technical review conducted during the permitting process. Examples of strategies that may be considered for addressing wastewater capacity analysis deficits are provided below along with references and links to additional information available from the Department or USEPA.

Water Conservation

- NJDEP Division of Water Supply and Geoscience: Water Conservation in New Jersey
  - http://www.nj.gov/dep/watersupply/conserve.htm

- Conservation Plans
- Conservation Ordinances
  The local authority through its local ordinances mandates the use of water saving/low flow devices, appliances, fixtures, etc.
- Buffers Zones Around Water Supply Reservoirs (PL88, c. 163)

Infiltration and inflow (I/I) reduction

Infiltration occurs when groundwater enters sanitary sewers through cracked pipes and/or defective pipe joints. There are numerous ways that pipes may leak, including, but not limited to, poor installation practices, heavy pressure caused by vehicle traffic, and degradation of the pipe material over time. Inflow occurs from water entering sanitary sewers from inappropriate sources. These sources include, but are not limited to, roof leaders, sump pumps, and cellar drains. Inflow tends to be at a maximum during wet weather events.

I/I that is conveyed through the system uses available capacity in both the conveyance system and at the treatment plant that could otherwise be used to convey and treat wastewater, including sanitary sewage or a combination of sanitary sewage and stormwater (combined sewage). The owner and/or operator of a conveyance system (whether sanitary or combined) should regularly assess its system when circumstances exist that are likely to result in excessive flow that may cause NJPDES permit violations or contribute to the discharge of untreated sewage at a combined sewer overflow or through sanitary sewer overflows. The assessment should look for sources and the extent of I/I. If it is determined that excessive flow is entering the conveyance system, measures should be taken to replace or slip line cracked pipes and/or install water tight manhole covers.

Measures should be taken for the disconnection of roof leaders, sump pumps, and other sources of inflow into sanitary sewer lines and their redirection into storm sewer lines where available and to the extent feasible.

Maximization of Existing Conveyance and Treatment Infrastructure

Owners and/or operators should look at the current operation and maintenance practices to find measures that maximize conveyance and treatment.

If ways to reduce I/I have been exhausted, the owner and/or operator of the conveyance and treatment systems may need to look at the necessity of increasing the capacity of the treatment works by making capital improvements to the existing conveyance and/or treatment system.

New or Expanded Treatment Infrastructure above permitted flows

If new or expanded infrastructure may be needed within five years, the WMP agency must coordinate with the Department and the wastewater treatment facility to evaluate the technical feasibility of new or expanded infrastructure, and facilitate the development of wastewater management strategies well in advance of permitting, financing, design, and construction where the treatment works is proposed to

discharge to surface water. Consideration of potential strategies must follow a specified hierarchy designed to avoid increases in pollutant loads. Expansions that maintain the current pollutant load through improved treatment must be given primary consideration, followed by new or expanded facilities that achieve no measurable change in water quality in the receiving water. The option of new or expanded facilities that result in a lowering in water quality will only be considered when no other viable option is available.

- Antidegradation Policies:
  - See N.J.A.C. 7:9B-1.5(d) - http://www.nj.gov/dep/rules/rules/njac7_9b.pdf
  - http://www.state.nj.us/dep/wms/bears/antidegradation.htm
  - http://www.state.nj.us/dep/wms/bears/swqs.htm

- Effluent Limitations (Water Quality Based Effluent Limitations, Technology-based):
  - See N.J.A.C. 7:9B-1.5(e), 1.6, 1.8, and 1.9 - http://www.nj.gov/dep/rules/rules/njac7_9b.pdf
  - See N.J.A.C. 7:14A-13 - http://www.nj.gov/dep/dwq/7_14a/sub13rule.pdf

- WLAs from Adopted TMDLs
  - http://www.state.nj.us/dep/wms/bears/tmdls.html
  - See N.J.A.C. 7:14A - http://www.state.nj.us/dep/dwq/714a.htm

- Water Quality Studies:
  - See N.J.A.C. 7:9B - http://www.nj.gov/dep/rules/rules/njac7_9b.pdf
  - See N.J.A.C. 7:14A-2.12 – http://www.state.nj.us/dep/dwq/7_14a/sub02rule.pdf
  - See N.J.A.C. 7:14A-13 - http://www.nj.gov/dep/dwq/7_14a/sub13rule.pdf

    - **Reduction in Sewer Service Area/Changes in Zoning** : *under development*-– awaiting stakeholder coordination and WQMP rule finalization.

Appendix F: Nitrate Dilution Analysis Strategies and Tools -

Nitrate Dilution Analysis

Nitrate dilution analysis is required to determine the appropriate density of development that can be accommodated in areas proposed to be served by individual subsurface sewage disposal systems (ISSDS) less than or equal to 2,000 gallons per day (gpd) based on the attainment of two milligrams per liter (mg/L) nitrate in the ground water on a HUC 11 basis. This is based on the Department's ground water antidegradation policy at N.J.A.C. 7:9C-1.8(b). Nitrate dilution analysis for ISSDS also requires a demonstration that areas to be served by ISSDSs are subject to a mandatory maintenance program, such as an ordinance to ensure that all ISSDSs are inspected regularly.

Applicants for a new or expanded domestic treatment works (DTW) with a discharge to ground water must demonstrate compliance with the Ground Water Quality Standards through the permitting process. For non-sewer service areas in the Pinelands Area, as well as in the Highlands preservation area and in Highlands conforming municipalities, the nitrate dilution analysis must be conducted in accordance with the standards and procedures established in the Pinelands Comprehensive Management Plan, the Highlands Water Protection and Planning Act Rules, and the Highlands Regional Master Plan.

If the nitrate dilution analysis shows that the nitrate target cannot be achieved, the Department will work with the local government to identify and evaluate appropriate strategies, including zoning adjustments, land preservation, or requiring ISSDS or DTW to achieve a higher level of treatment.

Nitrate Dilution Analysis for ISSDS

- Nitrate-dilution model
  - "A Recharge-Based Nitrate-Dilution Model for New Jersey V6.2" developed by the New Jersey Geological Survey
    - http://www.nj.gov/dep/wrm/
  - "A Recharge-Based HUC 11-Scale Nitrate-Carrying-Capacity Planning Exercise for New Jersey, MS Excel Workbook, version 3.0," (2009)
    - http://www.nj.gov/dep/wrm/
- Other Guidance and Information

Nitrate as a Surrogate for Assessing Impact of Development Using Individual Subsurface Sewage Disposal Systems on Ground Water Quality
May 21, 2007

- A Recharge-Based Nitrate-Dilution Model for Small Commercial Establishments in New Jersey, v2.2 (MS Excel)
- Map of New Jersey Septic Densities Based on Regional HUC 11 Analysis - this map depicts statewide variations in HUC 11 septic densities
- Septic Density per HUC 11 (MS Excel) - average acres per individual subsurface sewage disposal

system, HUC 11s by County and HUC 11s by Municipality

- Technical Guidance for Inspections of Onsite Wastewater Treatment and Disposal Systems
  - http://www.state.nj.us/dep/dwq/owm_inspect.htm
  - http://www.state.nj.us/dep/dwq/pdf/inspection_guidance.pdf

- Other Information on Septic Systems
  - Homeowner Information
    - http://www.state.nj.us/dep/dwq/owm_home.htm
  - "A Homeowner's Guide to Septic Systems"
    - http://www.state.nj.us/dep/dwq/pdf/septicmn.pdf
  - EPA Guidance on Septic (Onsite/Decentralized) Systems
    - http://water.epa.gov/infrastructure/septic/
  - New Jersey Standards for Individual Subsurface Sewage Disposal Systems, N.J.A.C. 7:9A
    - http://www.state.nj.us/dep/dwq/pdf/njac79a.pdf

Septic System Operation and Maintenance

- So You Need a Septic Management Plan? (Pdf Format) - an introductory overview of amended WQMP rule requirements for development of Septic Management Plans as components of updated wastewater management plans
- Septic Systems 101: A Primer to Understanding Your ISSDS (Pdf Format) - an introduction to septic system operation principles and maintenance recommendations
- A Homeowners Guide to Septic Systems (Pdf Format) - NJDEP Division of Water Quality

Nitrate Dilution Analysis for New or Expanded NJPDES DGWs

- Antidegradation Policy at N.J.A.C. 7:9C-1.8(b)
  - http://www.nj.gov/dep/rules/rules/njac7_9c.pdf
- Dilution Analysis under NJPDES DGW Permit: See N.J.A.C. 7:14A-7.6 and the GWQS at NJAC 7:9C
  - http://www.state.nj.us/dep/dwq/7_14a/sub07rule.pdf
  - http://www.state.nj.us/dep/dwq/714a.htm
  - http://www.nj.gov/dep/dwq/dgw_home.htm
- Pinelands Comprehensive Management Plan
  - http://www.nj.gov/pinelands/cmp/
- Highlands Water Protection and Planning Act Rules
  - http://www.nj.gov/dep/rules/rules/njac7_38.pdf
  - http://www.nj.gov/dep/landuse/highlands.html
- Highlands Regional Master Plan
  - http://www.highlands.state.nj.us/njhighlands/

- http://www.highlands.state.nj.us/njhighlands/master/

Strategies for Meeting Nitrate Dilution Analysis Target: under development- – awaiting stakeholder coordination and WQMP rule finalization.

Appendix G: Environmentally Sensitive Areas

Threatened and Endangered Species

Landscape Maps http://www.nj.gov/dep/gis/

Endangered and threatened wildlife species habitats, for the purposes of establishing sewer service areas, are determined on the basis of the Department's Landscape Project mapping. The Landscape Maps define suitable habitat based on modeling that intersects confirmed endangered and threatened wildlife species occurrences with the habitat requirements and known behavior/life history requirements of the particular species.

Other Environmentally Sensitive Areas

Wetlands http://www.nj.gov/dep/gis/

C-1 Waters http://www.nj.gov/dep/gis/

Additional Resources: under development– awaiting stakeholder coordination and WQMP rule finalization.

Appendix H: Other WQMP/WMP Tools

- Surface Water Quality Standards Program
  - http://www.state.nj.us/dep/wms/bears/swqs.htm
  - http://www.nj.gov/dep/rules/rules/njac7_9b.pdf
- Stream Classifications (GIS:)
  - http://www.state.nj.us/dep/wms/bears/gis_coverages.htm
- Antidegradation Designations
  - http://www.state.nj.us/dep/wms/bears/antidegradation.htm
- Category One Waters
  - http://www.state.nj.us/dep/wms/bears/c1waters.htm
  - http://www.nj.gov/dep/gis/listall.html (Select GIS Coverage entitled "Surface Water Quality Standards"; select for Category One Waters; apply 300-foot buffer)
- GWQS Classification Maps:
  - http://www.nj.gov/dep/wms/bears/docs/gwqs_classifications.pdf
- TMDL Program
  - **Table of New Jersey TMDLs and Approval Status** http://www.state.nj.us/dep/wms/bears/tmdls.html
  - TMDL Coverage (GIS) http://www.nj.gov/dep/gis/
- Water Quality Assessment
  - http://www.state.nj.us/dep/wms/bears/assessment.htm
- Ground Water Quality Standards Program
  - http://www.state.nj.us/dep/wms/bears/gwqs.htm

Appendix I: CPP Crosswalk to Required Elements under CWA and WQPA

Under development-to be posted in the near future