New Jersey Department of Environmental Protection
Water Resources Management

New Jersey's Continuing Planning Process

November 6, 2015

(Appendix Update February 23, 2018)

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 Quality Planning 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
- Reclaimed Water for Beneficial Use (RWBU)
  - http://www.nj.gov/dep/dwq/reuseff.htm
- Water Conservation
  - http://www.nj.gov/dep/watersupply/conserve.htm
- Water Conservation Ordinance (Outdoor Irrigation)
  - A Model Water Conservation Ordinance was created and made a "Priority Item" for municipalities seeking Sustainable Jersey certification.
- Wellhead Protection Areas
  - http://www.state.nj.us/dep/njgs/enviroed/freedwn/whpaguide.pdf

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: Sewer Service Area (Wastewater Treatment) Capacity Analysis: Strategies and Tools

Capacity Analysis: Sewer Service Areas

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. For sewer service areas, this requires the projected future demand for each sewage treatment plant to be compared to the existing permitted capacity of the sewage treatment plant. 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, zoning and land use policies and reduced sewer service area.

In conducting a capacity analysis for wastewater treatment within the sewer service area, WMP agencies will use either population projections (urbanized municipalities) or add together existing flow with projected flow based on build-out to compare whether the existing capacity will meet the demands for wastewater treatment in the future. Urbanized municipalities are defined at N.J.A.C. 7:15- 4.5 (b) 1ii (1) and a list can be found http://www.nj.gov/dep/wqmp/guidance.html.

Tools provided by the Department to assist in the buildout capacity analysis include an inventory of wastewater treatment facilities, their existing and permitted flows, and when available, 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. All are available on the Department's website at: http://www.nj.gov/dep/wqmp/guidance.html.

Steps for Conducting Build-out for Capacity Analysis: Sewer Service Area

The WQMP rules at N.J.A.C. 7:15-4.5 identify the requirements for conducting the buildout capacity analysis. Additional information for implementing these requirements is provided below.

REQUIREMENT: Existing and Future Wastewater Management Needs
N.J.A.C. 7:15-4.5
(b) ***The existing and future wastewater management needs of each sewer service area of a DTW, or industrial wastewater facility that receives wastewater from outside the industrial facility boundary, shall be identified and evaluated in a wastewater treatment capacity analysis prepared in conformance with the following:***

1. For assigned sewer service area, the applicant shall identify the existing and projected future flows that will be generated.
2. For unassigned sewer service area, the applicant shall identify the future flows from the entire area in accordance with N.J.A.C. 7:14-4.5(b)1ii

Existing Flow

Existing flow is defined at N.J.A.C. 7:15-4.5 (b) 1(i).

1. For assigned sewer service area, the applicant shall identify the existing and projected future flows that will be generated.

i. For the purposes of this paragraph, the existing flow is the highest consecutive 12 months rolling average over the most recent five-year period preceding development of the WMP, as reported in the Discharge Monitoring Reports required pursuant to N.J.A.C. 7:14A-6.8 for the facility, or other method approved by the Department if the Department determines that the alternate method better predicts flow taking into account factors unique to the area, such as significant variability of flows due to seasonal population shifts, the effects of weather, or variable volumes of combined sewage conveyed to the wastewater treatment facility.

*****The Department has posted facility information as it relates to the WQMP rules on the Water Resources Management Website (*http://www.nj.gov/dep/wqmp/guidance.html*).*

Proposed Future Flow-Assigned and Unassigned SSA

N.J.A.C. 7:15- 4.5 (b) 1ii

Urbanized municipalities

(1) *For urbanized municipalities, estimate future wastewater flows by multiplying the population increase projected within a 20-year planning horizon from the date of the WMP preparation, developed using the municipal master plan or other governmental or academic source, by a value of 75 gallons per capita per day and adding any known new non-residential flows including flows from sources such as expanded or redeveloped industries, landfill leachate, or septage;*

Take the projected population for the SSA and multiply this by 75gpd to get the future wastewater flow estimation.

Non Urbanized municipalities

(2) For municipalities not subject to (b)1ii(1) above, estimate build-out future wastewater flows from existing development that is not currently connected and future development based on flow projections from N.J.A.C. 7:14A-23.3, 7:14A-23.2(c), or 7:9A, as applicable. Federal lands and areas with limited development potential, such as preserved open space or areas subject to statutory restrictions, may be excluded from the calculation of future flows provided the WMP agency identifies the area to be excluded and the reason for exclusion, and the basis for exclusion is approved by the Department.

Use zoning to determine the number of units, houses, and square footage of future development (build-out) and multiply by the corresponding gallons per day of sewerage (as defined at N.J.A.C. 7:14A-23.3, 7:14A-23.2(c), or 7:9A, as applicable) in order to determine how much wastewater flow will come from new development. This flow should be added to the existing flow (existing flow is defined at N.J.A.C. 7:15-4.5 (b) 1(i) to get the projected future flow for the SSA within a municipality.

[Zoning buildout for areas not currently served X gpd] + [exisiting flow] = future wastewater flows

See http://www.state.nj.us/dep/dwq/7_14a/sub23rule.pdf and http://www.state.nj.us/dep/dwq/pdf/njac79a.pdf for more information on flow projections.

Zoning Build-out Tools (These should be used as guidance to see how to determine build-out potential, not wastewater flow projections. Ultimately, build-out for areas not currently served by sewer but within the SSA will need to be multiplied by the corresponding flow assigned to the type of development, as defined at N.J.A.C. 7:14A-23.3, 7:14A-23.2(c), or 7:9A, as applicable.)

Sustainable Jersey: Build-out Analysis

Association of New Jersey Environmental Commissions, *Planning: Build-Out and Capacity Analysis*

REQUIREMENT: Capacity Analysis

N.J.A.C. 7:15-4.5(b)

3. For each assigned and unassigned sewer service area, the applicant shall determine if there is a potential capacity deficiency in accordance with the following*:*

Potential Capacity Deficiency-Assigned SSA

N.J.A.C. 7:15-4.5(b)3

*i. For each assigned sewer service area, compare the sum of the existing flow and the result of the calculation at (b)1ii **[future flow calculation**] above with the current permitted flow at the wastewater treatment facility. Any deficit between the need and the permitted flow constitutes a potential capacity deficiency;*

The future wastewater flows identified in previous steps should be compared with the existing capacity assigned to the respective wastewater treatment facility. Keep in mind that not all capacity will be available to all municipalities, especially with regional treatment plants that serve multiple municipalities. The build-out for all municipalities will need to be added together to determine the treatment plant's ability to handle future wastewater flow projections.

[Wastewater Treatment Capacity] – [Future Projected Flow] = (+/-) gallons

If (-) gallons, then potential capacity deficiency exits.

Potential Capacity Deficiency-Unassigned SSA

N.J.A.C. 7:15-4.5(b)3

ii. For any unassigned sewer service area, the entire wastewater demand calculated at N.J.A.C. 7:15-4.5(b)2 (above) constitutes a potential capacity deficiency.

The projected flow identified using buildout for the unassigned SSA, should be considered a potential capacity deficiency.

Strategies for Addressing Wastewater Capacity Deficits:

WMP agencies are required to identify and evaluate strategies to address the potential capacity deficiencies identified in the wastewater capacity analysis. There are several options to consider when dealing with a sewage capacity deficit that has been identified through the build-out capacity analysis. Selected strategies, 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.

REQUIREMENT: Strategies
N.J.A.C. 7:15- 4.5 (b)4

The applicant shall identify and evaluate strategies for addressing the potential capacity deficiencies identified in (b)3 above, including management approaches and infrastructure improvements. As part of this evaluation, the applicant shall consider the growth trajectory for the sewer service area using population projections, number of treatment works approvals and other indicators of rate of development. Strategies identified shall take into account the size of the identified potential capacity deficiency and the time frame within which the estimated need is anticipated to exceed the current permitted flow.

The following are options that the WMP agency may choose to evaluate as a strategy to address potential capacity deficiency. Every option may not work for all municipalities. Additionally, these do not preclude a municipality or county from developing other strategies to the requirements set forth in N.J.A.C. 7:15-4.5 (b)4. For each strategy chosen to address deficits in capacity, municipalities/planning agencies will be required to provide justification and demonstrate how each strategy will decrease demand on the STP. It should be cautioned that in most cases, municipalities will want to consider a variety of options to address capacity issues as it is unlikely, any one strategy alone will address the gap. When evaluating the strategies counties and municipalities should consider population parameters and projections, Master Plan and other planning goals and objectives, and any preservation goals. If presented along with the strategies, the Department will also take these into consideration.

Water Conservation Strategies

As New Jersey's population continues to grow and water reserves are further constrained, more must be done to safeguard an adequate water supply. Conservation can save water utilities and the State considerable capital expenses over the long term by delaying or even eliminating the need to develop new or expanded potable water supplies infrastructure. Water savings also reduce the volume of water that needs to be pumped and treated, thereby cutting energy costs and the production of unnecessary greenhouse gases. Before undertaking additional capital infrastructure projects to increase the treatment capacity of the State's wastewater utilities in the future, it is an appropriate first attempt to reduce the amount of wastewater needing treatment by conserving water through more effective water use. By reducing the amount of wastewater entering the system, utilities may be able to avoid costly expansions or upgrades. Municipalities may develop conservation plans (covering homes, business, water

consumptive uses), conservation ordinances, or mandating or promoting the use of water saving/low flow devices and appliances.

NJDEP Water Conservation Website:
http://www.nj.gov/dep/watersupply/conserve.htm

New Jersey Water Savers:
http://njwatersavers.rutgers.edu/

NJ Highlands Council Water Conservation Resources:
http://www.highlands.state.nj.us/njhighlands/planconformance/guidelines/resource.html

Infiltration and inflow (I/I) Reduction

Infiltration and inflow can cause increases in the flow reaching a sewer treatment plant that if reduced could free up flow for sanitary sewage. "Infiltration" means water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow. "Inflow" means water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters or drainage. Inflow does not include, and is distinguished from, infiltration.

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 sewer). The owner and/or operator of a conveyance system (whether sanitary or combined) should regularly access 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 though 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 the slip line cracked pipes, or install water tight manhole covers. Measures should be taken for the disconnection of roof leaders, sump pumps, and other sources of inflow into the sanitary sewer lines and their redirection into storm sewer lines where available and to the extent feasible.

Treatment facilities should provide details on what they are doing to reduce I/I and measure before and after projects are implemented to see the level of reduction they are able to achieve, possibly freeing up additional flow for new development.

Maximization of Existing Conveyance and Treatment Infrastructure

Owners and/or operators should look at 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 capacity of the treatment works by making capital improvements to the existing conveyance and/or treatment system. Actions such as rehabilitation and replacement plans can help to maximize the efficiency of the treatment system as well as reduce the costs associated with emergency repairs.

Separate Sewer Systems:

https://www3.epa.gov/npdes/pubs/sso_optimizing_ch3.pdf

Combined Sewer Systems:

https://www3.epa.gov/npdes/pubs/maxstrg2.pdf

Sewer Treatment Expansion/Increased Flow Capacity

If new or expanded infrastructure may be needed within five years, N.J.A.C. 7:15-4.5(b)8 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 considerations, 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 lowering in water quality will only be considered when no other viable option is available.

New and expanded discharges will not be permitted in FW1 surface waters or Class I-A ground waters. New and expanded discharges that would degrade current water quality will not be permitted in FW2-Category 1 surface waters or Highlands Preservation Area ground and surface waters. New and expanded discharges to FW2-Category 2 surface waters and Class II-A ground waters may be permitted subject to an analysis of their potential to degrade water quality, the justification for doing so, opportunities for avoiding such degradation, and an overriding requirement that any degradation may not be allowed to violate or increase the violation of standards.

Additional requirements for new or expanded treatment works or increased pollutant loads will be applied through the NJDEP regulatory process, including but not limited to compliance with antidegradation requirements of the Surface Water Quality Standards, NJAC 7:9B, and the Ground Water Quality Standards, NJAC 7:9C. Most stringent of these are the nondegradation requirements. Nondegradation water areas shall be maintained in their natural state (set aside for posterity) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharges to an FW1 stream, with the exception of upgrades to or continued operation of existing facilities serving existing development. 2) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the upgrade

or continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9C. Nondegradation requirements also apply in most situations for waters of the Highlands Preservation Area.

Antidegradation Analysis: 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
- http://www.state.nj.us/dep/dwq/sw.htm

No increase in pollutant load through Improved Treatment

- Effluent Limitations: See N.J.A.C. 7:9B and N.J.A.C. 7:14A-13
- http://www.nj.gov/dep/rules/rules/njac7_9b.pdf
- http://www.state.nj.us/dep/dwq/7_14a/sub13rule.pdf
- http://www.state.nj.us/dep/dwq/714a.htm

- Wasteload Allocations from Adopted TMDLs
- http://www.state.nj.us/dep/wms/bears/tmdls.html
- http://www.state.nj.us/dep/dwq/714a.htm

New/Expanded Wastewater Facilities with Increased Load but No Lowering of Water Quality

- Water Quality Based Effluent Limitations (WQBELs): See N.J.A.C. 7:9B and N.J.A.C. 7:14A-13
- http://www.nj.gov/dep/rules/rules/njac7_9b.pdf
- http://www.state.nj.us/dep/dwq/7_14a/sub13rule.pdf
- http://www.state.nj.us/dep/dwq/714a.htm
- Wasteload Allocations from Adopted TMDLs
- http://www.state.nj.us/dep/wms/bears/tmdls.html
- http://www.state.nj.us/dep/dwq/714a.htm

New/Expanded Wastewater Facilities with Measurable Change in Water Quality (only available for DSW to Category 2 Waters)

- Demonstration/justification of Need to Lower Water Quality: See N.J.A.C 7:9B-1.9
- http://www.nj.gov/dep/rules/rules/njac7_9b.pdf

Reduction of Sewer Service Area

Reducing the size of the sewer service area would reduce the amount of future development that would be served by the STP and potentially reducing the predicted future flow enough to stay under the capacity of the STP. These changes should be considered in coordination with the Master Plan and Land Use goals and policies as these areas will be subject to the Nitrate dilution standard and applicable septic

regulations. Areas zoned to high intensity development would not be appropriate to be removed from the SSA unless they were being considered for new lower intensity zoning and uses.

Zoning Changes/ Land-use Policies

Another option to reduce future demand on the sewer system would be to change the land-use/zoning policies and regulations and/or reduce the size of the sewer service area or reduce the potential flow to the STP. By re-zoning, a municipality can reduce the total number of units or square footage allowable that would contribute wastewater to the system. This is often a long process and can be met with some opposition. In order to potentially reduce opposition, municipalities should ensure zoning objectives are supported by Master Plan goals and objectives. Doing so will meet Municipal Land Use Law (M.L.U.L.). requirements as well as ensure a public process occurred and that any changes to the zoning will also meet the Master Plan goals or objectives also reflects the public's input.

Consider zoning changes to reflect current goals and objectives within a community to encourage redevelopment or compact land use patterns. In some areas, the sewer service area might cover areas that may not need to be connected to the sewer system, such as areas that have been identified as possible open space. Municipalities should review their land use goals and maps in connection with the sewer service areas to determine if there are areas where sewer service is not appropriate or an efficient use of resources.

Open Space Acquisition

Another alternative to reducing the amount wastewater discharge of future development could be to acquire additional open space within the SSA that could potentially exceed its permitted capacity based on zoning. By purchasing additional open space within the SSA, the flow that could have been come from the development of that site can be subtracted from the total build-out flow and therefore possibly reducing the flow below the capacity permitted for the STP.

Voluntary Sewer Bans

Municipalities or utilities may consider a voluntary sewer ban to prevent the sanitary flow from development within the planning area from exceeding the capacity of the STP. However, before considering this option, the Department strongly encourages the planning authority to consider other options associated with the Capacity Assurance Program and develop a Capacity Assurance Plan.

Municipalities, Counties or Utilities are welcome to consider options and actions that will reduce flow to the treatment plant and developing a capacity assurance plan prior reaching the trigger amount that would require participation in the Program. The Capacity Assurance Program assesses how a treatment plant owner will prevent a plant from exceeding its permitted design flow capacity. This program is required when a treatment plant's actual and permitted flows exceed 95% of the permitted design capacity.

If a treatment plant fails to meet its NJPDES discharge permit limits, it can adversely impact the waterway it discharges into, threatening drinking water supplies and the habitat of aquatic plants and

animals. To prevent further harm, a sewer ban is implemented in the areas served by the affected treatment plant. This measure protects the receiving water from additional damage until the problem can be corrected. To avert the need for a sewer ban, the Capacity Assurance Program serves as a planning tool which is implemented when committed flows (anticipated flow from permitted projects not yet constructed) reach 95% of a treatment plant's permitted design capacity. This helps treatment plant owners decide how a plant's remaining flow capacity will be used and whether an equipment upgrade is necessary to assure future capacity.

If other actions would not help to keep flow under the capacity of the treatment plant, a voluntary sewer ban could be considered. While the municipality or other planning authority may establish the ban voluntarily prior to the Capacity Assurance Program identifying the need for a sewer ban, the Department has guidelines that could be considered to establish the voluntary ban. The Sewer Ban Program requires the imposition of sewer connection bans for treatment plants failing to meet their NJPDES effluent discharge limitations, or conveyance systems that do not have adequate conveyance capacity. A moratorium may also be imposed on treatment plants when the sum of existing wastewater flows and the flows allocated to approved projects (that are not yet operational), has reached 100 percent of the plant's permitted capacity.

The purpose of the sewer ban program is to limit further pollution by restricting additional sewage flow to the non-conforming treatment works. The DEP requires the following for sewer bans (summarized below from N.J.A.C. 7:14A-22.17):

1. Adopt a resolution imposing the sewer connection ban;

2. Cease the further approval of sewer connections to the subject treatment works as the effective date of the ban;

3. Notify the affected municipalities that they shall cease the issuance of building permits and condition all other approvals which require or modify a sewer connections, and which has not already obtained a valid treatment works approval issued by the Department.

4. Give notice of the sewer connection ban to the Department, to residents of the area that contributes to the subject treatment works, landowners therein, local planning boards, and other persons or legal entities affected by the ban, within 10 days of adoption of the ban imposition resolution, and at intervals of no more than six months in a manner reasonably expected to be received by such persons.

Capacity Assurance Program:

http://www.nj.gov/dep/dwq/sbcap.htm

Sewer Ban Guidance:

http://www.nj.gov/dep/dwq/sewer_ban.htm

Borough of Mendham Limitations on Sewer Connections:

http://ecode360.com/6681312

Appendix F: Nitrate Dilution Analysis: Strategies and Tools

Wastewater Capacity Analysis: Non-Sewered Areas

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. Areas that are not designated as sewer service area may be designated for discharge to ground water of 2,000 gallons per day or less. Municipalities and counties conduct a nitrate dilution analysis for such areas to determine the density that would be consistent with maintaining the nitrate target of 2 mg/L through the development of their WMPs as outlined at N.J.A.C. 7:15-4.5 (c). Nitrate dilution 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 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 to ensure that all ISSDSs are inspected regularly.

For non-sewer 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 WMP agency and local governments to identify and evaluate appropriate strategies, including zoning adjustments, land preservation, or requiring ISSDSs or Domestic Treatment Work (DTW) to achieve a higher level of treatment.

Nitrate Dilution Analysis

The assessment of water quality impacts from development on septic systems relies on nitrate concentration. In this analysis, nitrate acts as the conservative surrogate for any number of constituents that could be discharged from a septic system (e.g. cleaners, solvents, pharmaceuticals, etc.). The Water Quality Management Planning Rules advocate a watershed approach to assessing the adequacy of available dilution to meet future development on septic systems. Using this approach, available dilution, (essentially groundwater recharge), is calculated within a HUC 11 or 14 watershed and translated into a finite amount of wastewater that can be discharged, which in turn can be translated into a finite number of housing units that can be supported while maintaining a target concentration of nitrate in groundwater. Zoning is then applied to the available land in that same watershed, outside of any sewer service area, to calculate the number of units that could be developed on septic systems. The results of these two analyses are then compared. *See N.J.A.C. 7:15-4.5 (c) for exact requirements.*

Steps for Conducting Build-out for Capacity Analysis: Areas outside of Sewer Service Area

The WQMP rules at N.J.A.C. 7:15-4.5 identify the requirements for conducting the buildout capacity analysis. Additional information is provided below.

It is recognized that some WMP planning authorities may have completed build-out. Unless there have been major changes to the SSA or zoning, then there is no need to repeat this process if it has already been reviewed, not expired and approved by the DEP.

REQUIREMENT: Nitrate Dilution Analysis

N.J.A.C. 7:15-4.5

(c) ***For areas not covered by (b) above (a sewer service area), the future wastewater treatment needs shall be evaluated through a nitrate dilution analysis in conformance with the following:***

1. Except as provided in (c)2 and 3 below, for areas proposed to be served by individual subsurface sewage disposal systems discharging 2,000 gallons per day or less to ground water, the applicant shall determine the development density that can be accommodated in developed and underdeveloped areas that will result in attainment of two mg/L nitrate in the ground water on a HUC 11 basis, as follows:

Nitrate Analysis

N.J.A.C. 7:15- 4.5 (c) 1

i. Determine the number of acres per equivalent dwelling unit using either:

(1) "A Recharge-Based Nitrate-Dilution Model for New Jersey V6.2" developed by the New Jersey Geological Survey, incorporated herein by reference, as amended and supplemented, available at http://www.nj.gov/dep/wrm/; or

(2) A simplified model using HUC 11 recharge values called "A Recharge-Based HUC 11-Scale Nitrate-Carrying-Capacity Planning Exercise for New Jersey, MS Excel Workbook, version 3.0," (2009) incorporated by reference, as amended and supplemented, available at http://www.nj.gov/dep/wrm/;

Start by identifying the HUCs within the municipality and use one of the Nitrate Dilution models identified directly above to determine the corresponding acres needed per dwelling unit to maintain 2 mg/L nitrate in the ground water within each HUC.

ii. Determine the number of undeveloped and underdeveloped acres in each municipality or portion thereof in each HUC-11 and divide the number of acres by the number of acres per unit calculated in (c)1i above to determine the number of additional equivalent dwelling units.

Using the number of acres needed per dwelling unit, divide available acres for development using ISSDSs for discharge to ground water 2,000 gpd or less by the acres per dwelling unit. This number will provide how many equivalent dwelling units can be developed and still maintain 2 mg/L nitrate in ground water for that HUC. This number will be compared to allowable dwelling units based on zoning.

[# of undeveloped/underdeveloped acres] / [# of acres per unit] **= # of additional dwelling units** that can be supported and maintain 2mg/L nitrate across the HUC.

Nitrate Dilution Model Related 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 New Jersey, v6.2 (MS Excel)
- A Recharge-Based HUC 11-Scale Nitrate-Carrying-Capacity Planning Tool for New Jersey, v3.0 (MS Excel Workbook)
- 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

REQUIREMENT: Build-out Analysis

Build- Out Analysis

N.J.A.C. 7:15- 4.5 (c) 1

iii. Apply existing zoning to all undeveloped and underdeveloped areas to determine the number of equivalent dwelling units for comparison to (c)1ii above. For nonresidential areas, convert the proposed development type to equivalent dwelling units by dividing the flow projected to be generated in accordance with N.J.A.C. 7:9A-7.4 by 500 gallons per day;

By applying zoning to the undeveloped and underdeveloped areas outside of the SSA within each of the HUCs, the resulting number of dwelling units can be used to compare to the nitrate analysis done using the nitrate dilution models.

Zoning Build-out Tools (These should be used as guidance to see how to determine build-out potential, not wastewater flow projections. Ultimately, commercial and other non-residential areas will need to be converted to equivalent dwelling units according to the rules above.)

Sustainable Jersey: Build-out Analysis

Association of New Jersey Environmental Commissions, *Planning: Build-Out and Capacity Analysis*

REQUIREMENT: Capacity Analysis
N.J.A.C. 7:15- 4.5 (c) 1

iv. Identify areas where the number of additional equivalent dwelling units calculated in (c)1iii above exceeds the allowable number of additional equivalent dwelling units in (c) 1ii above;

Insufficient Nitrate Capacity

N.J.A.C. 7:15- 4.5 (c) 1

v. If the future nitrate dilution capacity is insufficient to meet the projected loading from future development, the local government unity shall work with the Department to evaluate options to address this capacity gap. The CPP, which is posted on the Department's website at http://www.nj.gov/dep/wrm/, identifies potential strategies to address this capacity deficiency;

[# of additional dwelling units that can be supported by the HUC] – [Equivalent dwelling units from build-out] = (+/-) dwelling units

If (-), then strategies for addressing the deficiency should be identified.

The future development potential for areas outside of the SSA should be compared with the nitrate carrying capacity for each HUC using the methods described above. Where future development potential is greater than the nitrate carrying capacity for that HUC, then strategies should be explored to reduce the total number of equivalent dwelling units to a level that can be sustain 2mg/L nitrate in ground water throughout the HUC.

Strategies for Addressing Nitrate-Dilution Carrying-Capacity Deficits:

If the results of the nitrate dilution analysis indicate that a HUC-11 cannot meet the compliance standard of 2mg/l, then rezoning to reduce the equivalent number of dwelling units might appear to be the most obvious means to reduce the threats to groundwater as a result of too many septic systems. However, this in not always practical or politically feasible. Counties and municipalities may consider a variety of options to achieve the 2mg/l standard across the HUC.

The following are options that the WMP agency may choose to evaluate as a strategy to address potential capacity deficiency. Every option may not work for all municipalities. Additionally, these do not preclude a municipality or county from developing other strategies to meet the requirements set forth in N.J.A.C. 7:15- 4.5 (c) 1 unless otherwise explicability prohibited by law. Municipalities pursuing the options below as a strategy to meet nitrate dilution standards, or any other options, will be required to provide justification and demonstrate how these changes will result in the attainment of the nitrate dilution standards. It should be cautioned that in most cases, municipalities will want to consider a variety of options to address capacity issues as it is unlikely using one strategy alone will address the

gap. When evaluating the strategies counties and municipalities should consider population parameters and projections, Master Plan and other planning goals and objectives, and any preservation goals. If presented along with the strategies, the Department will also take these into consideration.

Identify Areas Appropriate for Sewer Service

Some areas currently served by ISSDSs, might be in a location that could be served by a wastewater treatment facility. Areas currently next to an area served by sewer service where capacity and projected development potential could warrant the expansion of the sewer service area so long as the area meets the requirements found at N.J.A.C. 7:15-4.4as appropriate for sewer service area. if feasible, the area to be delineated as SSA should be included in any build-out scenarios to ensure that there would be adequate capacity to handle the additional flow.

Some may consider developing plans for smaller treatment package plants to address wastewater needs for an area designated for growth but currently not within the Sewer Service Area. In order to proceed with this option, these would be approved through the amendment process at N.J.A.C. 7:15- 3.5 in addition to any NJPDES or TWA permits needed for this option.

Advanced Levels of Treatment

Municipalities (or Counties as appropriate) could adopt policies and ordinances requiring ISSDSs to achieve higher levels of treatment than required for standard ISSDSs at N.J.A.C. 7:9A. Residential onsite wastewater treatment technology is advancing beyond conventional treatment. The DEP provides a framework for using advanced onsite wastewater treatment systems, so health departments can properly approve the use of these new types of technologies in certain applications. Information about the environmental benefits of advanced technology is contained in each guidance document for these technologies. Since advanced wastewater treatment and disposal options are highly case-specific, the department encourages dialogue with technology vendors and manufactures and their local, authorized representatives directly to understand the specific applications of these technologies.

NJDEP rules were modified in 2012 to allow for the use and design of “advanced wastewater pretreatment components”, N.J.A.C. 7:9A-8.3. These standards set forth guidelines for these types of systems and provides for the acceptance of NSF/ANSI Standard 245 systems. These systems meet the nitrate reduction standard that the Pinelands Commission uses as an initial gauge for technologies and have been incorporated into their nitrate reduction pilot program. Any local, county or state program that would want to incorporate these devices into systems for their programs (by ordinance, rule, etc.) can do as these rules allow local health departments to approve these systems. O&M Standards for these systems are at N.J.A.C. 7:9A-12.3, requiring these systems to have regular inspections by rule.

Resources:

For more information, please visit the Department’s website for Advanced Treatment Systems at: http://www.nj.gov/dep/dwq/owm_ia.htm.

Open Space Acquisition

Another alternative to meeting the nitrate dilution standard could be to acquire additional open space within the HUC that is exceeding the nitrate standard to reduce the total number of equivalent dwelling units. By purchasing additional open space within the HUC, the number of dwelling units that could have been built can be subtracted from the total build-out number and therefore possibly reducing the equivalent number of dwelling units below the nitrate dilution standard for the HUC.

Zoning Changes

The ability to change zoning to meet nitrate dilution standards is permitted based on the municipality's responsibility to consider sewage disposal in municipal master planning and site plan and subdivision ordinances per Articles 3 and 6 of the Municipal Land Use Law (N.J.S.A. 40:55D-28 and 28). This, however, can take significant time and effort, including development of a draft zoning ordinance, public hearings, multiple meetings of municipal boards and commissions, and in many cases, amendment of the municipal Master Plan, which can be daunting as well. The Department projects that changing zoning to be consistent with the WQMP rules is likely to take 6-18 months or longer depending on local support and municipal master plan goals. This does not include the possibility of lengthy legal challenges. In order to potentially reduce opposition, municipalities should ensure zoning objectives are supported by Master Plan goals and objectives. Doing so will meet Municipal Land Use Law (M.L.U.L.) requirements as well as ensure a public process occurred and that any changes to the zoning to meet the Master Plan goals or objectives will also reflect the public's input.

Municipalities may consider developing Transfer of Development Rights (TDR) ordinances to allow some land owners to sell their development rights and encourage more compact or center-based development. Clustering ordinances may also provide an alternative to "down zoning" an area.

Municipalities may find that changing zoning, while difficult, is still a solution worth pursuing in order to meet nitrate dilution requirements. Some may determine that sections of the areas served by septic be rezoned, while others will not. Municipalities will want to consider a variety of options to address capacity issues as it is possible, identifying areas for zoning changes alone will not address the gap.

Farmland Preservation

As counties and municipalities develop and implement their farmland preservation programs, the number of equivalent dwellings could be reduced as more farmland is permanently preserved. If being used as strategy for addressing nitrate dilution deficiencies, permanent farmland preservation will allow for the reduction of the number of dwelling units for that site based on the zoning for that parcel(s). When considering this as a strategy, municipalities and counties should also consider other strategies to reduce the number of equivalent dwelling units as it is not practicable to fully evaluate if the farming practice is more or less nitrate producing than the number of equivalent homes. Therefore, considering many alternatives to reducing the nitrate loading for all possible development and farming would provide more protection to the groundwater in the area.

Septic Maintenance Program

A Septic Maintenance Program that aims to ensure that all septic systems are functioning properly is a requirement of the WMP. In developing these rules, the Department intended to avoid being overly prescriptive in its approach as to how WMP agencies would comply with the provision requiring a septic maintenance program. The Department is allowing for local decisions and needs to guide the level of active county management (as well as to the local government) desired within specific planning areas. Septic management is an important aspect of wastewater management planning, as ISSDs protect human health and water quality when they are properly maintained. A septic maintenance program's requirements should allow for a progressive increase in actions to reflect the increased level of risk imposed by ISSDSs in order to achieve water quality and public health goals.

The Department recognizes that although implementation of septic maintenance programs will primarily be carried out by local authorities (other than the county), this does not preclude the counties from developing a program that they believe will achieve effective septic management throughout the county. The Department intends for the counties and local authorities (municipalities, health agencies, etc.) to develop a septic maintenance program and set implementation authority based on their authority, resources available, and local needs to promote the maintenance of ISSDSs so that they continue to function properly and protect human health and water quality.

Septic maintenance programs may include a variety of planning and implementation tools. The minimum requirements for a septic maintenance program includes the following components: an inventory of ISSDSs in the planning area; a description of current practices in the planning area (at any level of government) that are focused on ensuring the proper functioning of ISSDSs; and lastly, any areas for improving the current practices and the goal of proper ISSDSs maintenance. These components are described in a bit more detail below.

The septic maintenance program should identify the actions conducted to develop an inventory of ISSDSs as well as any future actions to expand the inventory, as applicable. Compliance with this action would be the compilation of the current ISSDSs in the planning area based on permit records or any other currently maintained data. The plan could identify that the inventory would be a "work in progress" and how the plan would be supplemented by the future identification of ISSDSs installed prior to permitting requirements or newly permitted systems.

The septic maintenance programs should provide a thorough description of what is currently being accomplished within the planning area, such as septic management education, requirements or permitting programs that have been established to install, inspect, alter, replace, or repair ISSDSs as well as compliance, as applicable, with the septic management rules at N.J.A.C. 7:9A.

Lastly, the septic maintenance program should provide a description of actions for improving the increased proper maintenance of ISSDSs and an evaluation of alternatives to meet that goal.

A septic maintenance program can include many other components, such as mandatory inspections, pump outs, or targeted enforcement. These aspects of septic management can be included in the plan, but they are not required in order to meet the Department's minimum technical requirements nor to be

in compliance with the septic management provision at N.J.A.C. 7:15-4.5(c)1vi. Below is an overview of information and examples of strategies that may be included in a septic management program.

This is for illustrative purposes only. Each municipality or county should develop their own septic management program that meets their needs and resources available.

Each program should include the following listed in bold. Information that follows describes how you could meet this requirement.

I. **Inventory** (All items listed below are part of the inventory requirement)

a. Current Inventory and how this was developed.
b. Expanding the inventory (i.e. new permits)
c. "Work in Progress"- how will inventory be built and include those ISSDSs that are not on the current inventory because built prior to the current inventory development or permitting process.

II. **Currently Being Accomplished** (All items listed below are required, however, they may look very different between planning agencies/ counties.)

a. Educational materials and policies (All required to do this at some level already)
b. Any other actions regarding permitting or other compliance requirements (i.e. inspections, ordinances for pump outs, etc.) (This will differ among municipalities and counties)

This is what the existing septic management within the planning area currently accomplishes. Municipalities will have varying levels of septic management. There is not a set level of management required to meet this part of the septic management program.

III. **Promoting Increased Proper Maintenance** (All items listed below are required, however, they may look very different between planning agencies/ counties.)

a. Gaps in current practices (i.e. areas with repetitive septic failures, homeowner complaints, or poor water quality due to failing septics)
b. Strategies to address these gaps (i.e. targeted education or inspections, ordinances, etc.)

Municipalities or counties can identify what strategies will work to accomplish their septic management needs and goals. Septic management is important as ISSDSs protect human heal and water quality when they are properly maintained. A septic maintenance program shall allow for a progressive increase in actions to reflect the increased level of risk imposed by ISSDSs in order to achieve water quality and public health goals.

Resources:

As the Department intends for the counties and local authorities (municipalities, health agencies, etc.) to develop a septic management program and set implementation authority based on their authority, resources available, and local needs to promote the maintenance of ISSDSs so that they continue to function properly and are protective of human health and water quality, programs will vary amongst the planning agencies. They following is illustrative of the varying levels of septic management depending on the needs and resources of the municipalities.

EPA Septic Management Models:

The EPA has developed septic maintenance management models that range from focusing efforts on primarily homeowner education and inventorying septics to models with varying intensity of permitting and compliance measures. (See https://www.epa.gov/sites/production/files/2015-06/documents/septic_guidelines.pdf for more information of types of management models.). These models are examples for developing and implementing a maintenance program for ISSDSs, and each should be evaluated based on the municipality or county needs as well as if it meets the minimum requirements based on the WQMP rule. Some models may exceed the minimum requirements, but their use is not discouraged if it is needed to maintain proper functioning ISSDSs that are protective of groundwater quality. The Department will work with each county and planning area as necessary to guide the development of a septic maintenance program that is suitable to meet the needs and authoritative capacity within the planning area.

Inventory:

Septic management starts with the development of an inventory as part of understanding the universe of ISSDSs in a given area. A database inventory can include locations, site evaluations, record drawings, permits, performed maintenance and i`1nspection reports of all systems. System inventories provide the nuts and bolts for onsite management. Basic system information—GIS location, type, design capacity, owner, installation, and servicing dates—is essential to an effective program. The best recordkeeping programs feature integrated electronic databases with field unit data entry (i.e. using a handheld PDA), save-to-file CAD drawings, and user-specified reporting formats. (https://www.epa.gov/sites/production/files/2015-06/documents/onsite_handbook.pdf)

Using various different forms of information to identify the location and type of system may allow for systems to be mapped or data manipulated in such a way as to provide valuable planning information. Consider including the name and address of the property owner/person responsible for the ISSDS; street address, municipality and Block/Lot of property with septic; date of last notification to property owner; date of last inspection; name of inspector; date of last pump- out; name of hauler; date next notification is to be sent. Inventorying a description of system size/what is served, type and the location of system on the property is also recommended.

It is important to Identify how the ISSDS inventory will be initially developed. Identify the mechanism(s) that will be utilized to obtain this information such as the local authority designated under N.J.A.C. 7:9A (aka Chapter 199) records, tax records, sewer bills, registration form, local permit. Identify the timeframe for development of the inventory. If development of the inventory is to be phased, an initial

phase inventory must be submitted with a timeline as to when the remainder of the inventory will be populated. Identify how the ISSDS inventory will be updated over time as ISSDSs are constructed or come off line. Identify the mechanism(s) that will be utilized to obtain this information such as construction permits, property sale records, sewer connection approvals, etc.

The TWIST database was created for local, county, and state health departments or other agencies that need an adaptable tool for tracking and managing onsite and clustered wastewater treatment systems. TWIST is designed to track information related to the facility served, permits, site evaluations, system types, services provided, and complaints (see Section V on page 22 for a complete list of data elements). It can also provide guidance to private vendors who might be developing databases with similar purposes. TWIST is a template which can be modified to meet specific needs.

Twist User Guide

Updated Your Inventory
Identify how the ISSDS inventory will be updated over time as ISSDSs are constructed or come off line. Identify the mechanism(s) that will be utilized to obtain this information such as construction permits, property sale records, sewer connection approvals, etc.

As inventories are submitted and approved by the DEP, we will provide additional examples for others to follow.

Septic Management Ordinances:

ANJEC Model Ordinance: http://www.anjec.org/html/ord-modelseptic.htm

Mount Olive, NJ:
The ordinance governing ISSDSs in Mt. Olive require annual renewal of Septic Installer's licenses, licenses to operate ISSDS every three years, issuing Health Certificates when homes on septic are rented, and permits for work on septic systems. This ordinance can be viewed at: http://ecode360.com/29897642 (Chapter 445: Sewage Disposal and Water Systems, Individual; Article II: Individual and Semipublic Water Supply Systems).

Jefferson Township, NJ
In establishing their ordinance, Jefferson Township determined it to be in the interest of public health, safety and welfare to establish provisions to regulate the management of such systems to protect the public against system failures and resultant pollution. The ordinance was designed to establish a management program for individual and non-individual subsurface sewage disposal systems in the Township of Jefferson in order to ensure the proper operation and maintenance of such systems. The ordinance requires existing, new and proposed individual and non-individual subsurface sewage disposal systems to be pumped out at least once every three years in order to minimize future malfunctions of

such systems. http://ecode360.com/10284515 (Chapter 436: Subsurface Sewage Disposal System Management)

Montgomery Township, NJ

Montgomery Township developed an ordinance that regulates the location, design, construction, installation, alteration, operation and maintenance of individual subsurface sewage disposal systems. http://clerkshq.com/default.ashx?clientsite=Montgomery-nj (CHAPTER BH:VI INDIVIDUAL SEWAGE DISPOSAL SYSTEMS: Septic Repair/Alteration Application)

Homeowner Education:

Onsite Septic Systems: Educating the Homeowner:
http://www.nesc.wvu.edu/pdf/WW/septic/education_SFQw02.pdf

Home Owner's Guide to Septic Systems:
http://www.state.nj.us/dep/dwq/pdf/septicmn.pdf

Technical Guidance for Inspections of Onsite Wastewater Treatment and Disposal Systems:
http://www.nj.gov/dep/dwq/pdf/inspection_guidance.pdf

EPA Resources:
https://www.epa.gov/septic

Septic System Management for Clean Water:
http://www.anjec.org/pdfs/RP_Septic.pdf

Appendix G: Environmentally Sensitive Areas – *Updated September 9, 2016*

Steep Slopes Ordinance

Disturbance of steep slopes results in accelerated erosion processes from storm water runoff and the subsequent sedimentation of waterbodies with the associated degradation of water quality and loss of aquatic life support. Related effects include soil loss, changes in natural topography and drainage patterns, increased flooding potential, further fragmentation of forest and habitat areas, and compromised aesthetic values. It has become widely recognized that disturbance of steep slopes should be restricted or prevented based on the impact disturbance of steep slopes can have on water quality and quantity, and the environmental integrity of landscapes.

Protection of steep slopes is required in the Highlands preservation area through the applicable rules at N.J.A.C. 7:38-3.8, and under the Coastal Zone Management rules at N.J.A.C. 7:7- 9:32. It is also an objective in the Highlands planning area as set forth in the Highlands Regional Master Plan (RMP). In other areas of the State, some municipalities have opted to incorporate steep slope protection in land development ordinances. In remaining areas, the Department encourages and will work with municipalities to incorporate appropriate protections as part of its nonpoint source pollution control strategies.

A steep slope model ordinance is available at:
http://www.nj.gov/dep/wqmp/docs/steep_slope_model_ordinance20080624.pdf

ANJEC Model Ordinance:

Steep Slope Protection - protects slopes over 15%, with prohibition of use above 25% to minimize erosion and sedimentation.

Riparian Buffer Ordinance

Riparian lands adjacent to streams, lakes, or other surface water bodies that are adequately vegetated provide an important benefits and protection to environmental and water resources. It is necessary to protect and maintain the beneficial character of riparian areas by implementing specifications for the establishment, protection, and maintenance of vegetation along the surface water bodies, consistent with the interest of landowners in making reasonable economic use of parcels of land that include such designated areas. The purpose of this Ordinance is to designate riparian zones, and to provide for land use regulation therein in order to protect the streams, lakes, and other surface water bodies; to protect the water quality of watercourses, reservoirs, lakes, and other significant water resources; to protect the riparian and aquatic ecosystems; to provide for the environmentally sound use of the land resources, and to complement existing state, regional, county, and municipal stream corridor protection and management regulations and initiatives.

Environmental and water resource protection benefits provided by riparian ordinances:

- Restore and maintain the chemical, physical, and biological integrity of the water resources;
- Prevent excessive nutrients, sediment, and organic matter, as well as biocides and other pollutants, from reaching surface waters by optimizing opportunities for filtration, deposition, absorption, adsorption, plant uptake, biodegradation, and denitrification, which occur when stormwater runoff is conveyed through vegetated buffers as stable, distributed flow prior to reaching receiving waters;
- Provide for shading of the aquatic environment so as to moderate temperatures, retain more dissolved oxygen, and support a healthy assemblage of aquatic flora and fauna;
- Provide for the availability of natural organic matter (leaves and twigs) and large woody debris (trees and limbs) that provide food and habitat for aquatic organisms (insects, amphibians, crustaceans, and small fish), which are essential to maintain the food chain;
- Increase stream bank stability and maintain natural fluvial geomorphology of the stream system, thereby reducing stream bank erosion and sedimentation and protecting habitat for aquatic organisms;
- Maintain base flows in streams and moisture in wetlands;
- Control downstream flooding; and
- Conserve the natural features important to land and water resources, e.g., headwater areas, ground water recharge zones, floodways, floodplains, springs, streams, wetlands, woodlands, and prime wildlife habitats.

Model ordinances are available at: http://www.nj.gov/dep/wqmp/docs/riparian_model_ordinance.pdf.

Stream Corridor Protection - protects land along streams as an easier and more economical way to protect water quality than cleaning up impacts from degradation.

Habitat Suitability Determination

The following is meant to summarize and serve as a brief overview of a Habitat Suitability Determination. Please refer to the rules at N.J.A.C. 7:15 (in particular 7:15-4.4(j)2 and 4.6) and any other referenced rules for more information.

A habitat suitability determination in accordance with N.J.A.C. 7:15-4.6 seeks to demonstrate that the habitat rank on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife is not accurate; that the area is not suitable habitat for endangered or threatened wildlife species and the area accordingly should not be classified as environmentally sensitive on the basis of such habitat.

Habitat Suitability Determination

Where an area is excluded from being eligible for sewer service area in accordance with N.J.A.C. 7:15-4.4 on the basis that it is within a habitat Rank 3, 4, or 5 on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife, or within a Natural Heritage Priority Site, an applicant may seek a Habitat Suitability Determination from the Department to rebut the presumption that the habitat patch rank is accurate or that the habitat is suitable for the natural resource elements contained in a Natural Heritage Priority Site. The following is a summary of the requirements and all applicants should refer to the rules for exact requirements or other Departmental guidance as available for more information. If an applicant is also seeking additional permits from the Department that also require an HSD, these can be submitted and reviewed concurrently.

The applicant may submit an HSD to the Department in accordance with N.J.A.C. 7:15- 1.6 and shall include information listed below (requirements are summarized, please see N.J.A.C. 7:15- 4.6 (c) for exact requirements):

1. Letter from Department's Natural Heritage Program within past six months stating if an endangered or threatened wildlife species or natural resource elements listed in the Natural Heritage Database exist on or near the site;
2. Description of the local/regional habitat requirements for each species identified by the Natural Heritage Program;
3. Description of the parcel, including, but not limited to:
    i. Vegetation, elevation, slope, and aspect and a description of any important topographic features such as cliffs, bluff and sinkholes;
    ii. Geology, USGS bedrock geologic maps, description of bedrock and surficial deposits, and geologic features;
    iii. Soil types
    iv. Hydrologic features such as rivers, streams, lakes, ponds, springs, seeps, vernal pools and waterfalls;
    v. Location and description of all evidence of natural and man-made disturbance;
    vi. Location and description of all upland, wetland, and aquatic ecological vegetative communities;
    vii. Location and composition of ecological communities;
    viii. Results of endangered or threatened wildlife or plant species survey, or biodiversity inventory;
    ix. Names, addresses, and professional qualifications of all persons who performed habitat evaluations and/or species surveys;
    x. Copy of any or all other relevant survey(s) or report(s) conducted;
    xi. Any other information relevant to assessing the suitability of habitat on the site for any endangered or threatened wildlife species or natural resource element occurrence.

Habitat Impact Assessment

The following is meant to summarize and serve as a brief overview of a Habitat Impact Assessment. Please refer to the rules at N.J.A.C. 7:15 (in particular 7:15-4.4(k) and 4.7) and any other referenced rules for more information.

Where an area is excluded from being eligible for sewer service area in accordance with N.J.A.C. 7:15-4.4 on the basis that it is within a habitat Rank 3, 4, or 5 on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife, or within a Natural Heritage Priority Site, an applicant may seek a Habitat Impact Assessment from the Department for a proposed project or activity to determine if the area may be included within the sewer service area. A Habitat Impact Assessment shall consider the likely effects of the proposed development on the local populations of the particular wildlife species or on the natural resource elements. The impacts shall be assessed using accepted ecological principles and scientific literature on each species or natural resource element and both direct and indirect impacts of the proposed development shall be considered. This assessment shall be based on habitat requirements and life history of each species, or natural resource element occurrence, and the manner in which the proposed development may alter habitat, including, but not limited to, vegetation, soils, substrate, bathymetry, salinity, hydrology, wildlife movement corridors, human disturbance, and effects on competitor, parasite, or predator species.

A Habitat Impact Assessment (HIA), submitted in accordance with N.J.A.C. 7:15-4.7, shall provide evidence that the proposed project or activity avoids endangered and threatened wildlife species habitat or natural resource elements, or will result in insignificant or discountable effects on the maintenance of local breeding, resting or feeding of the endangered or threatened wildlife species. If neither of these two standards can be met, the HIA may be used to demonstrate that the potential impacts to endangered or threatened wildlife species habitats are minimized to the maximum extent practicable and mitigated through the use of project redesign or modification, implementation of timing restrictions, best practices, or other proposed conservation measures in a manner that provides for no net loss of habitat value to the endangered wildlife species.

The HIA process provides a mechanism for the review of a proposed project or activity for inclusion in the sewer service area because it avoids the habitat, will cause only insignificant or discountable effects to the wildlife habitat or natural resource elements, or, with respect to endangered and threatened wildlife species habitat, the project or activity includes conservation measures that will minimize to the maximum extent practicable all adverse modification of suitable habitat, and will mitigate for any adverse modification of habitat so that there is no net loss of habitat value for the local population of endangered or threatened wildlife species documented on-site, or their suitable habitat. N.J.A.C. 7:15-4.4(k) recognizes that there are situations in which development in environmentally sensitive areas connected to sewer treatment will have little or no impact on the endangered or threatened wildlife species habitat.

Mitigation is only permitted when it is demonstrated that the impacts to endangered and threatened wildlife species habitat cannot be avoided, and the proposed project or activity includes implementation of conservation measures that will minimize to the maximum extent practicable all adverse modification of suitable habitat. If impact cannot be avoided and any impact is minimized to the maximum extent

practicable, mitigation provided is required to result in no net loss of habitat value to endangered or threatened species, including the local population of that species. Allowing mitigation is not a new process and is consistent with the Department's permitting programs for threatened and endangered wildlife species in the Freshwater Wetlands Protection Act Rules, N.J.A.C. 7:7A and the Flood Hazard Control Act Rules N.J.A.C. 7:13.

Mitigation for agriculturally dependent endangered or threatened wildlife species is permitted and may include the creation, enhancement, restoration, management, maintenance, and/or acquisition of habitat by a responsible third party, such as a governmental body or nonprofit organization with a conservation purpose, as near as feasible to the project or activity that is adversely modifying habitat for agriculturally dependent species and generally within the local municipality or county where the project or activity is located. Documentation shall be provided by the applicant indicating the nature of the activities, the entity responsible to carry them out and the time frame associated with initiation and maintenance of the activities. Mitigation activities may be for a specified term of years. Mitigation measures shall be memorialized in an enforceable document approved by the Department, such as a conservation restriction to be filed in accordance with the New Jersey Recording Act, N.J.S.A. 46:15-1.1 et seq.

In each case, the Department evaluates the components of the habitat that support feeding, breeding, nesting and resting and their spatial relationship to each other. When one of these components is not present, the value of the habitat is generally not considered of equal value. Additionally, when conducting an analysis of a particular habitat, the Department often weighs the quality of the habitat present, with the likelihood that the species in question would use the habitat as part of an overall habitat or impact assessment. The evaluation of each of the components that make up the habitat offered for mitigation, will ensure the viability of the remaining habitat to support endangered and threatened wildlife species. It is recognized that mitigation takes many forms, and as result, a varying amount of time. Some mitigation includes an action that may take several months or more to complete. The Department will request a schedule for the mitigation activity, expecting the activity that can occur quickly be performed either before the development activity or begin shortly thereafter the approval of the site-specific amendment, and ultimately, in according with the approved schedule that is approved by the Department. These rules do not allow mitigation or conservation measures to compensate for impacts to natural resource elements; in such cases, the area will be denied inclusion in the sewer service area.

Habitat Impact Assessment Application:

An application for a Habitat Impact Assessment shall be submitted to the Department in accordance with N.J.A.C. 7:15-1.6 and shall include the information required in N.J.A.C. 7:15-4.6(c) and all the information required below, unless the Department advises the applicant in writing that any particular item(s) is not required for the area that is the subject of the application:

1. An introduction describing the goals of the Habitat Impact Assessment;

2. A USGS quad map(s) meeting the standards identified at N.J.A.C. 7:15-1.7 showing the location of the site, with the State plane coordinates of the site. The accuracy of these coordinates shall be within 50 feet of the actual center point of the site. For linear sites, 2,000 feet in length and longer, additional coordinates shall be provided at each 1,000- foot interval;

3. The lot, block, municipality, and county in which the site is located;

4. For Habitat Impact Assessments for wildlife species, a digital map identifying the site, and the areas mapped as endangered or threatened wildlife species habitat on the Landscape Maps onsite and surrounding the site, along with a list of the endangered or threatened species that resulted in the mapping of endangered or threatened species habitat;

5. For Habitat Impact Assessments for natural resource elements, a map identifying the location of the natural resource element habitat and Natural Heritage Priority Site boundaries on the site or surrounding the site along with a list of the potential plant species and other natural resource elements from the Department's Natural Heritage Database;

6. A description of the habitat requirements for each of these wildlife species and natural resource elements identified at (d)4 and 5 above, specific to New Jersey/regional populations including appropriate literature citations;

7. The names, addresses, and professional qualifications of all persons who performed habitat evaluations, species surveys, and/or impact assessments; and

8. A narrative, including supporting documentation, such as maps and photographs, which contains the following:

i. A description for each wildlife species and natural resource element, of how the proposed development will alter habitat, including vegetation, soils, hydrology, human disturbance, and effects on competitor, parasite, or predator species. The impact assessment shall describe the likely effects of the proposed development on the local populations of the particular wildlife species or natural resource element on or surrounding the site and why the development would not directly or through secondary impacts adversely affect each endangered or threatened wildlife species habitat or natural resource element; and

ii. Literature citations used to reach the conclusions in (d)8i above.

Resources:

The following provide examples of types of applications and/or permits for Habitat Conservation Plans/Programs. They are representative of the types of information that could be provided in a Habitat Impact Assessment and/or mitigation plan. Please follow the Department's rules at N.J.A.C. 7:15 and any other rules that apply to threatened and endangered wildlife in New Jersey.

U.S. Fish and Wildlife: Habitat Conservation Plans:

https://www.fws.gov/midwest/endangered/permits/hcp/hcphandbook.html

Massachusetts: Conservation and Management Permit Process

http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-conservation-and-management-permit-process.html

As the DEP works with HIA applications, it will provide additional guidance and examples as appropriate. Join the OWRWC listserv to receive timely updates on Water Quality Management Planning at: http://www.nj.gov/dep/wqmp/subscribe.html

Appendix H: Other WQMP/WMP Tools

Wastewater Management Plan Template

A template for a Wastewater Management Plan has been developed by the Department and can be found: http://www.nj.gov/dep/wqmp/guidance.html.

Adopted Wastewater Management Plans

Adopted Wastewater Management Plans can be found here:

http://www.nj.gov/dep/wqmp/wmpadopted.html.

Designated Planning Agencies with Amendment Procedures

- Atlantic (pdf)
- Cape May (pdf)
- Mercer (pdf)
- Middlesex (pdf)
- Monmouth (pdf)
- Sussex (pdf)

http://www.nj.gov/dep/wqmp/guidance.html

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

A crosswalk has been developed to describe how the WQMP rules, the CPP and its Appendices meet the requirements of the Federal Clean Water Act (CWA) and the State Water Quality Planning Act. The crosswalk outlines the provisions of the CWA/CPP requirements and the correlating State program that demonstrates compliance with that provision. Through these various regulatory programs, the Department maintains many strategies to restore, maintain, and enhance water quality, water quantity, and ecosystem health. The Crosswalk can be found at: http://www.nj.gov/dep/wqmp/docs/cwa-wqpa-crosswalk.pdf