



Legal Basis and Regulatory Framework of Onsite Wastewater Management in the New Jersey Pinelands

Task 1 Final Report
New Jersey Pinelands Commission
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1. INTRODUCTION

The State-designated Pinelands Area covers approximately one million acres in southern New Jersey. The Pinelands Area was established at the federal level by Section 502 of the National Parks and Recreation Act of 1978 and at the state level by promulgation of the Pinelands Protection Act in 1979. Among the purposes for designating the Pinelands Area as a national reserve and state area of ecological sensitivity were the protection of groundwater and surface water quality through implementation of land use planning and development controls.

The Pinelands Area Comprehensive Management Plan (CMP) prescribes the location of designated growth areas where centralized wastewater sewer collection and treatment systems are allowed. These growth areas are identified in the CMP as Regional Growth Areas, Pinelands Towns, Pinelands Villages, and developed portions of Federal Military Installations. Outside of these designated growth areas, onsite and decentralized wastewater infrastructure must serve as a permanent solution to wastewater treatment and disposal needs. New centralized wastewater collection and treatment systems or the extension of centralized sewers are not allowed outside of regional growth areas except to resolve documented public health problems.

The scale of onsite wastewater treatment systems (OWTS) addressed in this report will be limited to systems with design flows of less than 2,000 gallons per day (gpd), since systems larger than this threshold are subject to management at the state level (described in Section 3.3.1). To ensure that the use of decentralized/onsite wastewater infrastructure is sustainable from an economic, public health, and environmental perspective, the Commission identified a need to evaluate options and develop practices for the long term management of OWTS in the Pinelands Area.

To evaluate the current status of OWTS management in the Pinelands Area, the New Jersey Pinelands Commission retained Stone Environmental, Inc to characterize the legal and regulatory framework of decentralized/OWTS management in the Pinelands Area. The following elements are summarized in this report:

- Review of state statutes, state regulations, county ordinances, regional ordinances, and municipal ordinances
- Interviews with administrative authorities pertaining to policies and practices
- Review of Pinelands area-wide water quality management plans
- Identification of wastewater and utility authorities in the Pinelands Area and elsewhere as appropriate
- Identification of governmental, quasi-governmental, and private entities that might administer long-term onsite/decentralized wastewater management programs
- Review of examples of such management programs instituted within and outside of New Jersey

- Summary of state and local guidance documents and model ordinances
- Description of existing wastewater infrastructure

The development of this report was accompanied by a series of technical advisory committee meetings and a survey of stakeholders in onsite wastewater system management in the Pinelands Area. This report will be followed by an extensive public outreach process and the development of a best management practices manual.

The audience of this report consists of stakeholders in management of OWTS in the Pinelands Area of New Jersey. These stakeholders include but are not limited to:

- Federal, State, county and local government officials
- Engineering and environmental health consultants
- Public and private utility authorities' officials
- Manufacturers and distributors of onsite wastewater technologies
- Service providers and practitioners (installers, maintenance providers, septic tank pumpers)
- Environmental organizations
- Professionals associated with land use and land development (planners, real estate agents, and officials of financial institutions)
- Pineland Area residents

Recommendations on how to use this report are provided in Section 1.3.

1.1. Overview

The Pinelands Area is located entirely in the State of New Jersey, extends over portions of seven counties (Figure 1), and includes all or part of 53 municipalities (Table 1, Figure 2). The regulatory authority of these counties and municipalities over onsite wastewater systems is established by Federal laws, including the Clean Water Act (33 U.S.C. 1251 et seq.), and State laws, including the Health and Vital Statistics Act (N.J.S.A. 26:1 et. seq.), the Realty Improvement Sewerage and Facilities Act (N.J.S.A. 58:11-23 et seq.), and the Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.).

Both Federal and State Pinelands statutes call for the preservation, protection, and enhancement of the unique Pinelands ecosystem and its land and water resources. The exceptional quality of Pinelands water resources are protected and maintained through the control of development and other land uses and through close cooperation and coordination between local, state, and federal agencies.

Most of the day-to-day regulation of OWTS with design flows of less than 2,000 gpd is carried out at the county or local level. However, Pinelands Commission staff review the siting, groundwater conditions, and nitrogen impacts resulting from new OWTS.

To safeguard Pinelands Area water resources, the water quality provisions of the Pinelands Area CMP focus on separation to groundwater, setbacks to surface waters/wetlands, and on controlling the amount of nitrogen that enters the environment. Maintaining adequate depth to groundwater is essential for the removal of sewage borne pathogens. Maintaining setback distances to surface waters and wetlands minimizes the risk of contamination of these water resources. Controlling the amount of nitrogen that enters the environment protects both public health and native Pinelands Area plants and animals.

Nitrogen is a significant point and nonpoint source pollutant due to its role in the eutrophication of surface water bodies. It is a useful indicator of overall Pinelands Area water quality and ecosystem health because it is naturally present in very low concentrations in the Pinelands environment. Both Federal and State statutes call for the preservation, protection, and enhancement of the unique Pinelands Area ecosystem and its land and water resources. The exceptional quality of Pinelands Area water resources are protected and maintained through the control of development and other land uses and through close cooperation and coordination between local, state and federal agencies.

The water quality standards of the CMP permit new development utilizing OWTS, provided that the system's design and the size of the parcel on which the system is located will ensure that the concentration of nitrogen in the ground water exiting the parcel or entering a surface water body will meet the Commission's water quality standard of two parts per million (ppm). In order to comply with the Pinelands Area water quality standard, unsewered residential development on lots smaller than 3.2 acres requires the use of advanced onsite denitrifying wastewater treatment technology.

1.2. Decentralized/Onsite Wastewater Management Definitions

As noted above, many properties in the Pinelands Area are dependent on decentralized OWTS due to land use requirements that have been in place since 1981. Since then, the Pinelands Commission has been evaluating options and implementing programs to enable compliance with water quality objectives in the Pinelands Area by utilizing conventional and state of the art wastewater technologies. The USEPA recognized the fact that OWTS can provide a permanent solution for wastewater management in the following statement: "Adequately managed decentralized (onsite) wastewater treatment systems are a cost-effective and long-term option for meeting public health and water quality goals" (USEPA, 1997).

The term "decentralized" generally refers to onsite and/or cluster wastewater systems that treat and disperse or discharge small volumes of wastewater, generally from dwellings or buildings that are located close to the system. Decentralized systems generally include small-scale systems, such as individual OWTS, shared systems, and cluster systems.

The term “centralized wastewater treatment system” typically consists of collection sewers and a centralized treatment facility with surface water discharge, used to collect and treat wastewater from entire municipalities or regions.

The term “onsite” refers to a system which collects, treats, and disperses wastewater on the same parcel where the wastewater is generated. It may also be used to refer to cluster systems that collect and treat wastewater from facilities under some form of common ownership and management and disperse that wastewater in the relative proximity of the source. This report will focus primarily on the management of individual onsite systems that collect and treat wastewater from a single dwelling or building. The terms *onsite* and *decentralized* are often used interchangeably. For the purpose of this report, and to be consistent with N.J.A.C. 7:9A, OWTS shall refer to systems with design flows of less than 2,000 gpd.

The term “wastewater” refers to domestic sanitary sewage from residential, commercial, retail, and institutional sources, described in the regulatory definition of sanitary sewage (N.J.A.C. 7:9A-2.1) as :

“any liquid waste containing animal or vegetable matter in suspension or solution, or the water carried wastes resulting from the discharge of water closets, laundry tubs, washing machines, sinks, dishwashers, or any other source of water carried wastes of human origin or containing putrescible material. This term specifically excludes industrial, hazardous or toxic wastes and materials.”

The term “onsite wastewater treatment system” (OWTS) will be used in this report to describe the combination of components which provide for the collection, settling, treatment, and dispersal of wastewater into the ground. This term is preferred over individual sanitary sewage disposal system (ISSDS), as it better emphasizes wastewater treatment versus wastewater disposal.

In this context, “management” refers to a program or collection of programs that ensure the long-term sustainability of wastewater infrastructure and protection of public health and water quality. The USEPA (2003, 2005) has developed two useful documents that provide voluntary guidelines and procedures for evaluating local needs for wastewater management and how to craft a program that is implementable and effective for the local community, municipality, county or state. Although the collection, treatment and dispersal of wastewater from onsite systems is decentralized, the management approach(es) can be centralized at the community, county, regional, or state level.

1.3. Organization of this Report

This report is divided into ten chapters, the first being the introduction. The second through fifth chapters describe the statutes and regulations pertaining to OWTS management in the Pinelands Area, from Federal, State, county, and local governments, respectively. The sixth chapter describes existing public and private management entities that potentially may be able to implement a

management program in the Pinelands Area. The seventh chapter describes existing OWTS management programs in the Pinelands Area. The eighth chapter illustrates examples of existing OWTS management programs located outside of the Pinelands Area, elsewhere in New Jersey and in other parts of the United States.

The ninth chapter provides the report's conclusions. The tenth chapter is a list of references used in the previous chapters.

1.4. Summary of Current Wastewater Infrastructure in the Pinelands Area

The current infrastructure for wastewater treatment and dispersal in the Pinelands Area is a mixture of centralized and decentralized systems, with permitting, reporting, and management requirements that vary widely between types of wastewater infrastructure.

Several centralized sewer systems with surface water discharge serve areas of dense development in the Pinelands Area. Planning for these facilities, including delineation of their current and future service areas and flows, is done through Wastewater Management Plans (WMPs). These planning documents are amendments to Water Quality Management Plans that provide 20-year planning primarily for centralized wastewater treatment facilities (see Section 3.2.2), and are maintained by individual wastewater management planning agencies. Centralized systems with surface water discharge are permitted through the New Jersey Pollutant Discharge Elimination System (NJPDDES) (Section 3.3.1).

The New Jersey Department of Environmental Protection (NJDEP) maintains geographic information about the current or planned method of wastewater disposal for each WMP area, i.e., whether the wastewater will be collected to a regional treatment facility or treated on site and disposed of through a surface water or a groundwater discharge (NJDEP, Bureau of Geographic Information Systems, 2006). While this dataset reflects the most current information available, the WMPs from which the data were drawn may not themselves be current. The attributes for the dataset distinguish between current and "planning" or future wastewater flows, but there is no way to distinguish which parts of the sewer service areas are currently served and which are planned for future service.

Wastewater treatment facilities with soil-based dispersal and design flows of more than 2,000 gallons per day are also permitted and managed through the NJPDDES. These OWTS may be issued either individual groundwater discharge permits or a general permit (also referred to as the T1 permit, see Section 3.3.1), depending on the system's size, complexity, and operating requirements. If these groundwater discharge systems are located within a WMP area, they may be included in that area's Wastewater Management Plan. If this is the case, the facility's service area will be shown in the geographic dataset described above. Many NJPDDES T-1 permitted systems are not included in WMPs; however, their locations are recorded in the geographic dataset of all NJPDDES-permitted groundwater discharges which is also maintained by NJDEP (NJDEP, Bureau of Geographic

Information Systems, 2007). There appear to be no more than 189 NJPDES T-1 permitted systems within the Pinelands Area (Table 7).

OWTS with design flows of less than 2,000 gpd for residential or commercial use are permitted by County health departments, using design standards maintained and promulgated by the NJDEP (see Section 3.1). OWTS using alternative technology or components that are outside the regulatory experience of the County health departments may be approved individually with an additional layer of review by NJDEP through the Treatment Works Approval process. The alternate design wastewater treatment system pilot program currently underway in the Pinelands Area (see Section 3.5.2.3) has a blanket Treatment Works Approval permit to expedite permitting of the alternate design systems by local health departments.

Design and permitting information for each OWTS is maintained at the offices of the administrative authority (in the Pinelands Area, this information is retained at the County health department offices, see Section 7.3). Most Pinelands Area counties have an electronic tracking system for conventional OWTS permitting, but these systems usually include only general information about each OWTS and design information and other details are available only on paper or, in some cases, on microfiche. While the county health departments have the most accurate information about where OWTS were installed, this information may not be current (for example, some areas where OWTS were originally installed have since been sewered and the OWTS have been abandoned).

There is no definitive estimate of the number of OWTS with design flows of less than 2,000 gpd in the Pinelands Area. However, a recent analysis of census data by the Pinelands Commission could provide the basis for a rough estimate of the number of small OWTS in the Pinelands based on Census blocks (Pinelands Commission, 2004). As of the 2000 census, approximately 277,000 people lived within the Pinelands Area and there were approximately 105,000 housing units (Pinelands Commission, 2004). The number of housing units served by OWTS can be roughly estimated by using the range of potentially sewered areas. Since the number of sewered parcels in the Pinelands Area is not known, the percentage of population that lives outside designated growth areas can be used to arrive at a range of OWTS installations within the Pinelands. As of 2000, approximately 55% of the Pinelands Area population lived outside of Regional Growth Areas, and 39% lived outside of designated growth areas (Regional Growth Areas, Pinelands Towns, and Pinelands Villages) (Pinelands Commission, 2004). Therefore, we estimate that there may be between 41,000 and 58,000 OWTS in the Pinelands Area.

Based on the information collected for this report, it appears that no government agency has a current inventory of OWTS in any municipality within the Pinelands Area.

1.5. Summary of Statutes and Regulations

The landscape of laws, statutes, regulations and ordinances governing individual subsurface sewage disposal systems in New Jersey is complex and wide-ranging, with components at the federal, state,

county, and local levels. Figure 3 and Tables 3, 4, and 5 summarize relevant information from other states, Pinelands Area county and municipal laws, statutes, and regulations by title and shows generally how they are related to each other. Each of the elements included in these tables are described in greater detail in the following chapters of this report. Resources for OWTS management in New Jersey, including model ordinances for management programs, are described in Section 8.1.5.

2. FEDERAL STATUTES

2.1. Clean Water Act

Growing public awareness and concern for controlling water pollution led to enactment of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500). This law, as amended in 1977, became known as the Clean Water Act (33 U.S.C. 1251 et seq). The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. It gave the United States Environmental Protection Agency (US EPA) the authority to implement pollution control programs, and continued requirements to set water quality standards for all contaminants in surface waters.

The Clean Water Act provided funding for wastewater infrastructure in the form of construction grants and loans, and funding for mitigation of nonpoint source pollution. Currently, the State Revolving Fund (SRF) is used to provide zero percent interest loans for eligible costs of qualifying wastewater projects (see Section 3.4.4).

Section 402 of the Clean Water Act created a system for permitting wastewater discharges known as the National Pollutant Discharge Elimination System (NPDES). Under NPDES, all facilities which discharge pollutants from any point source into waters of the United States are required to obtain a permit. Groundwater is not generally considered a water of the United States; therefore, discharges to groundwater are not subject to NPDES requirements. If, on the other hand, there is a discharge to groundwater that has a "hydrological connection" to nearby surface water, the discharger may be required to apply for an NPDES permit because the discharge is then considered a water of the United States. Some states choose to require NPDES permits for discharges to groundwater; New Jersey requires these permits for OWTS with design flows of over 2,000 gpd (see Section 3.3.1).

Although malfunctioning OWTS are considered to be one cause of nonpoint source pollution under the Clean Water Act, OWTS, along with other nonpoint pollution sources like agricultural operations, are exempt from Clean Water Act requirements. Thus, the Clean Water Act does not directly empower the States to regulate small-scale OWTS.

2.2. National Parks and Recreation Act of 1978

The Pinelands National Reserve (PNR) was created by Congress through the National Parks and Recreation Act of 1978 (PL 95-625, Section 502). The PNR is the first National Reserve in the nation, encompassing portions of seven counties and all or parts of 56 municipalities (Pinelands Commission, 1995). The Act recognized the unique values of the land and water resources within the Pinelands Area and the need to preserve and protect those resources (16 USC 4711). It provided for the creation of a planning entity and the development of a comprehensive management plan for

the Reserve (see Section 3.5), but did not otherwise directly or indirectly empower the State of New Jersey to regulate OWTS within the Reserve.

3. STATE STATUTES AND REGULATIONS

This section provides a summary description of the State of New Jersey statutes and regulations regarding Boards of Health, OWTS, wastewater financing, and Pinelands Area land use and management. These statutes and regulations are all in some way relevant to the current and future management of conventional and alternate design OWTS in the Pinelands Area.

3.1. Boards of Health and Septic System Permitting

These state statutes and regulations address the environmental and public health hazards related to the regulation of OWTS at multiple levels.

3.1.1. Health and Vital Statistics (N.J.S.A. 26:1 et. seq.)

Chapter 1A-7 within this statute gives the State the power to establish the State Sanitary Code, which regulates many public health functions including

- “(a) Prohibiting nuisances hazardous to human health;
- (c) Regulating the use of privies and cesspools; and
- (d) Regulating the disposition of excremental matter”.

This chapter provides for enforcement of the State Sanitary Code through penalties and civil actions in “any court of competent jurisdiction”. Both the New Jersey Department of Health and the New Jersey Department of Environmental Protection (NJDEP) claim authority for executing various public health functions, including the enforcement of OWTS regulations, through this statute.

3.1.1.1. Local Boards of Health (N.J.S.A. 26:3)

Chapter 3 establishes that each municipality in the state shall have a Board of Health that “may adopt rules, regulations or ordinances ... not inconsistent with law or the state sanitary code” (N.J.S.A. 26:3-2). Local Boards of Health may pass ordinances or make rules in regard to many aspects of public health within their jurisdiction, including :

- To regulate the location, construction, maintenance, and method and frequency of cleaning privies or other places used for reception or storage of excrement (N.J.S.A. 26:3-31(g)1);
- To prohibit construction or maintenance of any privy or other such place until a revocable license is issued by the board (N.J.S.A. 26:3-31(g)2 and 3)

The local board may, using ordinances or regulations, define nuisances (N.J.S.A. 26:3-45) and cause them to be removed or abated at the expense of the owner (N.J.S.A. 26:3-46). If the nuisance is on private property, the board notifies the owner to abate the nuisance in a specified period of time (N.J.S.A. 26:3-49). If the nuisance is not abated, the board or a health officer may abate the nuisance (N.J.S.A. 26:3-53) and the board may recover expenses through a civil action (N.J.S.A. 26:3-54). The local board may instead institute an action in the Superior Court for injunctive relief to prevent the nuisance from continuing (N.J.S.A. 26:3-56).

The statute also allows two or more adjacent municipalities to share health officers or registered environmental health specialists through a regional health commission (N.J.S.A. 26:3-22 and 84). The ordinances of each local Board of Health remain in effect and can be enforced by the regional health commission through the municipal courts (N.J.S.A. 26:3-93). The regional health commission may also enforce its own regional ordinances through a court having jurisdiction.

3.1.1.2. Local Health Services Act (N.J.S.A. 26:3A2)

Historically, the local Boards of Health pre-dated many of the formal municipal entities which exist today in New Jersey and were created in response to disease outbreaks and similar effects from increasingly urban populations. As time went by, public health services under these local boards of health were often fragmented and many smaller municipalities were unable to shoulder the financial burden of meeting the heightened state standards of public health care. Many communities shared the services of health officials and formed cooperative entities in order to provide services. The Local Health Services Act, originally enacted in 1975, was intended to address this problem, while recognizing the inherent historic autonomy of local health boards. It is the primary statute under which health departments provide services (including implementation of standards for OWTS) within the Pinelands Area. The Act was designed to enable the efficient provision of public health services through area-wide health departments where such arrangements were needed to enable municipalities to meet “standards of performance” (N.J.S.A. 26:3A2-2). Health departments can be established in one of two ways. The board of elected freeholders can form a county board of health, which then establishes a county-wide health department that provides public health activities that meet the “standards of performance” (N.J.S.A. 26:3A2-6). This form of health department is perceived to be more autonomous, due to the fact that it can act directly without political influence from the board of elected freeholders, although it answers to its Board of Health, the members of which are appointed by the board of elected freeholders. Alternatively, the board of elected freeholders can directly form a health department, which then is treated as a department of the county government. Regardless of which type of health department exists, both can enact health ordinances that are effective within the county board of health’s jurisdiction.

The interaction with local Boards of Health was mandated at the time the Act was passed because municipalities had to meet the “standards of performance” by using the services of one or more of:

- (1) an individual municipal local health agency;
- (2) a contracting health agency;
- (3) a regional health commission; or
- (4) a county health department (N.J.S.A. 26:3A2-10).

This meant that if a municipality could not fund a local health department that could meet the current public health standards, then it had to contract with a county health board or department, regional health commission, or a contracting health agency that could. The majority of the municipalities in the Pinelands Area either contract with a county Board of Health or health department for enforcement of all required public health ordinances or have abandoned their local

Boards of Health entirely and rely on the county for all implementation and enforcement. Only Vineland City still maintains a local Board of Health that has become a “certified local health agency” under the 1977 County Environmental Health Act.

3.1.1.3. County Environmental Health Act (N.J.S.A. 26:3A2-21)

The County Environmental Health Act (CEHA) was designed to supplement the Local Health Services Act and to provide increased powers for county Boards of Health and health departments, as well as provide state financing for certified programs. The legislative findings stated that the Legislature concluded that all environmental health programs (as distinguished from consumer health programs) were inherently regional in nature and could be best administered through the existing county health departments. The State policy was declared to be that environmental health services will be provided by those county health departments or municipalities which become state certified agencies pursuant to NJDEP regulations. Under this statute, the certified local health agency provides public information and education services; monitors state statutes and regulations relating to environmental health; investigates complaints; reports violations; and maintains court actions to enforce environmental health laws, rules, regulations and ordinances. All seven counties which make up the Pinelands Area are certified local health agencies. The Commissioner of the NJDEP may delegate administration of aspects of the State’s environmental health laws, rules, or regulations to certified local health agencies (N.J.S.A. 26:3A2-28). This is the source of the authority which allows health departments in the Pinelands Area to enforce the Standards for Individual Subsurface Sewage Disposal Systems (N.J.A.C. 7:9A), the administrative code or set of regulations which govern septic systems, in municipal court or superior court.

3.1.2. The Realty Improvement Sewerage and Facilities Act (N.J.S.A. 58:11-23 et seq.)

The Realty Improvement Sewerage and Facilities Act (1954) establishes that building permits cannot be issued by any municipal or other authority until the local board of health certifies that any proposed water and wastewater facilities comply with both this Act and the construction standards developed by the NJDEP (N.J.S.A. 58:11-25). Water and wastewater facilities for subdivisions including more than 50 realty improvements must be approved by the NJDEP instead of by the local board of health (N.J.S.A. 58:11-25.1). The Act also provides right of entry for board of health and NJDEP personnel to conduct inspections and tests, and provides enforcement power through the issuance of notices of violation and imposition of penalties. Summary proceedings for collection of the penalties may be carried out pursuant to the “Penalty Enforcement Law” in Superior Court.

3.1.3. Standards for Individual Subsurface Sewage Disposal Systems (N.J.A.C. 7:9A)

The Standards for Individual Subsurface Sewage Disposal Systems implement the Realty Improvement Sewerage and Facilities Act by prescribing “standards for the location, design, construction, installation, alteration, repair and operation of individual subsurface sewage disposal systems” with design flows of less than 2,000 gallons per day. Any OWTS with a design flow of less than 2,000 gpd is covered under these Standards, whether the system serves a residential,

commercial, or other land use. The permitting process for individual subsurface sewage disposal systems is generally as follows:

- The applicant hires a licensed professional engineer, who completes soil testing and system design and submits a complete application to the administrative authority (the County Health Department, see Section 4). The administrative authority should be notified of the soil evaluation and testing, and may witness the field evaluation.
- The administrative authority reviews the application, and if it complies with the Standards, a construction permit is issued. For individual subsurface sewage disposal systems within the Pinelands Area, the administrative authority cannot approve the application until the Pinelands Commission issues a Notice of Filing, Certificate of Compliance, Certificate of Filing, development approval, or a written statement that no Commission approval is required (N.J.A.C. 7:9A-3.8)
- The system is constructed, altered, or repaired in accordance with the construction permit. The administrative authority may make inspections to insure that the system is installed properly, or it may accept the certification of an engineer that the system was installed or modified in accordance with the design and permit requirements.
- Once the administrative authority is satisfied that the system was constructed, modified, or altered in accordance with the rules and its permit, a certificate of compliance is issued and the system can be operated.

The administrative authority is required to distribute information to each owner of an approved system about the proper operation and maintenance procedures for that system when a permit is issued and once every three years after the initial issuance (N.J.A.C. 7:9A-3.14). Administrative authorities may adopt the Standards by reference, or they may adopt local ordinances that are stricter than the Standards. Regardless of whether the administrative authority adopts the Standards at the County or local levels, the Standards are the minimum permitting criteria which the administrative authority must use in reviewing and granting permit applications.

It is important to note that the OWTS Standards are an administrative code and under New Jersey law administrative codes are only valid for a certain number of years, usually five. Approximately one year before a code expires, it is updated, revised, and changed through a public notice and hearing process. This is the primary reason that only one of the Pinelands Area Counties (Ocean County) has adopted the OWTS Standards as part of their actual ordinances. A county would have to re-adopt the Standards every time they were updated, and the majority of the counties find it more politically expedient to enforce the Standards in municipal court (even though this is not technically a proper venue) or to pursue public health nuisance violations under the Nuisances Affecting Health Act. Even Ocean County, which could enforce the Standards in Superior Court, does not do so. The Pinelands Area county health departments were unanimous in voicing the sentiment that the goal was to get the homeowner to repair the system, not to pursue penalties in Superior Court. It is also widely recognized that the legal process of going to Superior Court over a septic system case was cumbersome and politically unadvisable except in the instance of an extreme

violation by a commercial system, or a particularly egregious residential violation where a homeowner failed to cooperate in any manner.

3.1.4. Nuisances Affecting Health (N.J.S.A 26:3B)

This statute prohibits the use of any wastewater treatment system that allows waste to flow over the ground surface or impacts a potable water supply (N.J.S.A. 26:3B-2), establishes penalties for violations (N.J.S.A. 26:3B-10), and allows enforcement of the statute in every municipal court (N.J.S.A. 26:3B-11). This is the primary enforcement tool used by the health departments in the Pinelands Area. Except for Ocean County, which has adopted N.J.A.C. 7:9A, the other health departments enforce the Standards indirectly by bringing nuisance actions in local courts.

3.1.4.1. Public Health Nuisance Code (PHNC)

The Public Health Nuisance Code of New Jersey (1953) is a model code available from the New Jersey Department of Health and Senior Services. This model code is recommended in an appendix on programmatic guidelines for best practices regarding environmental health activities in the *Public Health Practice Standards Of Performance For Local Boards Of Health In New Jersey* (N.J.A.C. 8:52-1 *et seq.*). Most municipalities which have adopted a public health nuisance ordinance adopt the Public Health Nuisance Code of New Jersey by reference. The PHNC declares as a nuisance, among other things, as “[p]ollution or existence of a condition or conditions which cause or threaten pollution of any waters in this municipality in such manner as to cause or threaten injury to any of the inhabitants of this municipality, either in their health, comfort or property.”

3.2. Water Quality Planning

Water quality planning statutes and regulations address all forms of pollution sources including onsite systems. Although these statutes, rules, and management plans include onsite systems in their language, very few of the plans developed have addressed onsite systems from a planning perspective.

3.2.1. Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.)

The Water Quality Planning Act (1977) governs the development and implementation of areawide waste management planning processes in order to restore and maintain the integrity of the waters of the State, including groundwater. The planning areas, to the maximum extent practicable, conform to county boundaries, and the resulting plans are often referred to as “208 Water Quality Management Plans”, a reference to Section 208 of the federal Water Pollution Control Act Amendments of 1972. Every designated planning area must “conduct areawide waste treatment management planning and prepare a county water quality management plan”, including a regulatory program to provide control or treatment of both point and non-point sources of pollution. The watershed management areas which overlap with the Pinelands Area are shown on Figure 6.

3.2.2. Water Quality Management Planning Rules (N.J.A.C. 7:15)

The Water Quality Management Planning Rules are administered by the New Jersey DEP's Division of Watershed Management. Together with the Statewide Water Quality Management Plan, these rules implement the requirements of the Water Quality Planning Act (Section 3.2.1). Water Quality Management Plans are generally administered at the county level, usually by county planning departments (see Section 4.3). Wastewater Management Plans (WMPs) are amendments to Water Quality Management Plans that provide 20-year planning primarily for centralized wastewater treatment facilities. Each WMP addresses a specific planning area or sewer service area, and is maintained by an individual wastewater management planning agency. The planning agency in this case may be a municipality, municipal utility authority, or a regional utility authority.

3.2.3. Proposed Revisions to the Water Quality Management Planning Rules

The Water Quality Management Planning Rules are currently in the process of being readopted with amendments, including new requirements for the management of individual subsurface sewage disposal systems. If the proposed rules are adopted, WMP planning agencies will be required to perform build-out analyses, including a nitrate dilution analysis, for areas that are served by OWTS with design flows of less than 2,000 gallons per day (N.J.A.C. 7:15-5.25(e)1). If the results indicate that buildout at the current zoning density will result in nitrate concentrations greater than 2 mg/L on a HUC 11 watershed basis, the WMP must include an adjustment to the zoning to make it consistent with the allowable number of additional equivalent dwelling units at build-out.

Each municipality will, as part of the WMP, be required to demonstrate to the WMP planning agency that "areas to be served by individual subsurface sewage disposal systems are subject to a mandatory maintenance program, such as an ordinance, which ensures that all individual subsurface sewage disposal systems are functioning properly. This shall include requirements for periodic pump out and maintenance, as needed" (N.J.A.C. 7:15-5.25(e)3).

3.3. Onsite Wastewater Management

This section describes the state statutes and regulations and authorities specifically addressing onsite wastewater management. The majority of the authorizing legislation originates in the Realty Improvement Sewerage and Facilities Act and its related regulations, including the New Jersey Pollutant Discharge Elimination System.

3.3.1. New Jersey Pollutant Discharge Elimination System (N.J.A.C. 7:14A-1 et seq)

Subsurface sewage disposal systems with design flows of greater than 2,000 gallons per day are permitted by the New Jersey DEP either through the New Jersey Pollution Discharge Elimination System (NJPDES) program or the Treatment Works Program. These systems may be operating under an individual NJPDES permit, or under the Sanitary Subsurface Disposal General Permit (NJ0130281). Significant management requirements are in place to ensure that these systems operate properly:

- The systems must be inspected at least monthly;
- Records of inspections and maintenance activities must be kept at the facility;
- Training must be provided to personnel conducting the inspections at least every two years; and
- Septic tanks must be pumped at least once every five years.

3.4. Wastewater Financing

In addition to conventional commercial lending programs, there are a number of state and federally funded opportunities for financing repair and replacement of onsite wastewater infrastructure and management in New Jersey (Table 2). A number of the existing programs are available for funding repair or replacement of individual OWTS, and four of these programs (the New Jersey Environmental Infrastructure Financing Program, United States Department of Agriculture's (USDA) Rural Development program, the Small Cities Community Development Block Program, and the Clean Water Act Section 319(h) and 604(b) Nonpoint Source Water Quality Grants) could potentially be used to set up municipal Onsite Wastewater (Septic) Management Districts. However, the precedent for setting up decentralized wastewater management program funding in New Jersey is limited to the 319(h) and 604 (b) programs.

All of the identified programs are generally very competitive due to limited available funds. There are three programs (one at the New Jersey Housing and Mortgage Financing Authority, and two at the USDA) that are set up to lend money directly to homeowners.

3.4.1. Financial Assistance Programs for Environmental Infrastructure Facilities

The financial assistance program for environmental infrastructure facilities in New Jersey provides a combination of loans from both State and Federal sources. The Federal component of this loan program, authorized by the Clean Water Act, is administered through NJDEP. The regulations for the Clean Water Act component of this program are in N.J.A.C. 7:22 and the Water Pollution Control Act (N.J.S.A. 58:10A-1 to -60). The state component is administered by the New Jersey Environmental Infrastructure Trust (NJEIT). The statutory authority for this program is in the Wastewater Treatment Trust (N.J.S.A. 58:11B). These programs are administered jointly to enable a combination of zero percent interest loans and low interest loans for eligible costs. Towns, sewage authorities, or septic management districts may be eligible for low interest loans for repairs of decentralized and onsite wastewater infrastructure provided to they meet the criteria of the New Jersey Environmental Infrastructure Financing Program (Scangarella, 2007). For OWTS repairs, the loan recipient would then have to loan the money to the owner of the failed wastewater treatment system.

A town, sewage authority, or OWTS management district would need to apply for a loan under this program. The loans are awarded based on a priority ranking system. The priority point ranking system based on:

1. Type of project - Repair or replacement of failed OWTS is assigned 275 points out of a range from 250 to 600 for wastewater facilities infrastructure.
2. Existing Water Use - OWTS failures are considered public nuisances and are given 50 out of a range of 25 to 200 points.
3. Water Quality Parameters - Fecal coliform and nutrient impacts pertain to OWTS; dissolved oxygen impacts would be localized and only relevant if direct discharge into surface water was occurring. It is possible that the Pinelands Area 2 mg/l nitrogen standard could be applied here, but that could drive up the cost of repairs by adding nitrogen attenuation system components. Currently, repairs of existing OWTS are not required to meet the Pinelands Area 2 mg/L groundwater quality limit.
4. State Planning Approvals - OWTS repairs in the Pinelands Area are more likely in existing Towns, Villages and Hamlets, Regional Growth Areas, and Rural Development Areas, which are allocated 5-15 points on a scale of 5 to 50.
5. Population Served- One point per million people (or if two projects have the same points given the above criteria, then the one with greater population receives higher priority).

Currently, both the federal and state funding components can only be used to fund infrastructure, not for planning or to start up OWTS management programs. In some other states, such as Massachusetts and Rhode Island, Clean Water SRF funding can be used towards planning for OWTS management as well as for repairs or upgrades (see Section 8.2.1).

3.4.1.1. Water Pollution Control Act

New Jersey's Water Pollution Control Act (N.J.S.A. 58:10A-1 to -60) specifically addresses Clean Water Act funding for OWTS alterations:

On-Site Rehabilitation of Septic Systems - Under the Financing Program, a local government unit may apply for funding to upgrade or replace failing on-site systems. The nature and extent of failures would be documented during planning and a Septic Management District (SMD) would have to be established in order to assure on-going operation and maintenance. Typically, this involves implementing a system to assure regular, usually once every three years, pump out and/or inspection of the on-site systems. While some SMDs have formed in New Jersey (so there is institutional precedent on which to advance this option), none have tackled the costly job of system rehabilitation as yet.

The Smart Growth Financing Package currently provides loans for 75% of a project loan at 0% interest and 25% at the current market rate, resulting in the lowest loan rate available from NJEIT. For example, if the current market rate is 5%, then the municipality would repay the project loan at an interest rate of 1.25%. By providing the Smart Growth Financing Package to such projects, the Program corrects existing wastewater problems in a way that is appropriate to a rural environment

and the correction does not result in inappropriate growth-inducement that could potentially occur with construction of a centralized collection and conveyance system. The on-going operation of the SMD results in pollution control benefits and reduced water supply impacts; and the funding enhancement may entice additional municipalities to establish their own SMD and address long-standing failing septic system problems.

3.4.1.2. Financial Assistance Programs for Environmental Infrastructure Facilities (N.J.A.C. 7:22)

This rule specifically addresses financial assistance for OWTS. For example, N.J.A.C. 7:22-3 pertains to the disposition of appropriations of federal funds for environmental infrastructure. Septic systems are mentioned in the definition of Alternative Technology in section 7:22-3.4.

The priority of repair and replacement of onsite systems that constitute a health hazard are addressed in N.J.A.C.7:22-4, which pertains to the policies and procedures of the NJEIT regarding money appropriated under the Bond Acts or other monies available to the NJEIT. In this subchapter (N.J.A.C. 7:22-4.7), a criterion for project loan priority is stated as:

(d) For wastewater treatment facilities, the Trust shall give a project funding priority over other projects on the Project Priority List, in instances where existing on-site wastewater treatment system failures are determined to constitute a public health hazard.

NJEIT funding is limited to financing the cost of infrastructure, such as OWTS system alterations or repairs, and cannot be used toward the costs of operation of a management district (Scangarella, 2007).

3.4.2. USDA Rural Development

USDA Rural Development has three financing programs that pertain to onsite/decentralized wastewater management in the Pinelands Area: the Community Facilities Program; Single Family Housing Loans (Section 502 Loans); Very Low Income Repair Loans and Grants (Section 504 Loans and Grants). The programs clearly can apply to OWTS infrastructure, but their application to OWTS management programs in New Jersey has not been documented.

All of these programs are targeted for housing in communities with populations of less than or equal to 10,000 persons, or less than 20,000 provided that the area is not in a Metropolitan Statistical Area. The 502 and 504 programs provide different levels of assistance based on median household income of the individual applying for the grant or loan. Interest rates are set by USDA based on local indicators.

The Community Facilities Program has Water and Waste Disposal Direct and Guaranteed Loans and Grants. Whether a project is eligible, and whether it receives a loan or a grant, depends on

median household income for the service area or municipality where a project is located. Although no precedent for using Rural Development Community Facilities funds for infrastructure associated with OWTS management programs in New Jersey, it is an eligible activity in other states.

3.4.3. State of New Jersey Community Development Block Grant

The State of New Jersey administers a United States Department of Housing and Urban Development (HUD) funded grant program for eligible communities, called the Small Cities Community Development Block Grants (CDBG). The federal regulations pertaining to this program are contained in 24 CFR 570. The total amount of money available for 2007 funding cycle was \$8,000,000 (Benton, 2007). Typically, a municipality (township, borough, city or county) would apply for a grant. Some Pinelands Area municipalities, such as the City of Vineland and Burlington County have their own CDBG grant programs, which administer a local allocation of federal funds that are subject to HUD criteria. The grant money can be used for housing rehabilitation to be distributed by local municipalities directly to homeowners with low to moderate income.

3.4.3.1. Refinance Housing Rehabilitation Loans

The federal and local CDBG programs can be used to finance individual septic system repairs within the program's limitations of income, and existing housing stock. The local municipality would be responsible for the administering the disposition of the grant money to homeowners meeting the HUD moderate to low income requirements. Municipalities who set up local revolving housing rehabilitation loan programs have a higher priority rating for grant selection, due to the greater leverage of funds when the loans can be issued again after repayments are made to the municipality. Municipalities are encouraged to apply on multiple jurisdictional basis to maximize the amount of grant money that can be received and to obtain an economy of scale for administrative costs of the program (Benton, 2007).

Emergency grants can be dispersed under the CDBG programs to individuals for housing rehabilitation; however, the limit for emergency funding is \$5,000 per household, while a municipality with a CDBG grant can set its own limits for funding to individual households. Revolving Housing Rehabilitation CDBG programs have been widely used for septic system alterations and replacements in New Jersey, particularly in Warren and Sussex Counties (Benton, 2007).

3.4.3.2. Community Development Projects

The CDBG grants can be applied to eligible community infrastructure projects, such as municipal wastewater and sewer system infrastructure. No precedent for using these funds for components of an OWTS management district was identified, but this possibility should be explored by communities looking for start up financing for establishing municipal septic management programs or septic management districts.

3.4.4. Nonpoint Source Water Quality Grants

The Clean Water Act Section 319(h) nonpoint source water quality grant program has been used to enable municipalities and state agencies to develop and implement onsite wastewater management programs (Krukowski, 2007). The project under which this report has been repaired is funded by 319(h) funds. Each year the New Jersey Department of Environmental Protection Division of Watershed Management Bureau of Watershed Planning issues a Request for Proposals (RFP) for projects within Targeted Watersheds and for specific types of projects.

The NJDEP has pass-through grants from Clean Water Act Section 604(b) for Water Quality Planning programs. In New Jersey's fiscal year 2006, this money was focused on onsite wastewater management programs (NJDEP Watershed Management Division, 2006). In the 2006 state fiscal year, the following communities received funding under the 604(b) pass-through grant program: Bass River Township; Jefferson Township; and West Milford Township. The Jefferson and West Milford projects were for the development of OWTS management programs in those townships and the Bass River Township project was for the township's Wastewater Management Plan (NJDEP Watershed Management Division, 2006). The NJDEP Watershed Management Division has discretion to direct where 604(b) pass through grants are allocated, but there are no current plans to focus funding on OWTS management (McPartland, 2007).

3.4.5. New Jersey Housing and Mortgage Financing Authority

The New Jersey Housing and Mortgage Financing Authority's (NJHMFA) Refinancing Rehabilitation program is intended to assist current homeowners with rehabilitation of their primary dwelling through mortgage refinancing (Table 2). OWTS repair and replacement are eligible activities for this program. The interest rates are set by NJHMFA and the loans are initiated and processed through local lending institutions.

3.4.6. New Jersey Pinelands Infrastructure Act

Funding has been designated for Pinelands Area wastewater infrastructure (Scangarella, 2007). This funding, as described below, is focused on centralized wastewater infrastructure (NJDEP, Office of Planning and Sustainable Communities, 2007):

New Jersey Pinelands Infrastructure Trust Financing Program: Established by the Pinelands Infrastructure Trust Bond Act of 1985, the Program provides funding for infrastructure projects needed to accommodate existing and future needs in the 23 designated Pinelands Regional Growth Areas. Funding is available for the construction of new collection systems, interceptors, and the expansion/upgrade of wastewater treatment facilities. Projects certified under this program generally receive a grant for 40 percent of the allowable project costs and a loan for 20 percent of the allowable project costs from the Department. Loans for the remaining project costs may also be received from the Trust.

3.5. Pinelands Area

The Pinelands authorizing statute (Pinelands Protection Act, N.J.S.A. 13:18-A) is all encompassing in addressing orderly development in the 53 municipal jurisdictions in the Pinelands Area. The Pinelands Commission implements the Act through its Comprehensive Management Plan, which established standards for development. The sections below summarize the various elements of law and regulation as they relate to onsite wastewater management in the Pinelands Area.

3.5.1. Pinelands Protection Act (N.J.S.A. 13:18A-1)

The Pinelands Protection Act (N.J.S.A. 13:18A-1) implements the Federal Act establishing the Pinelands National Reserve (Section 2.2). The Act creates the Pinelands Commission and empowers it to prepare and oversee the implementation of a comprehensive management plan for the Pinelands Area.

3.5.2. Pinelands Comprehensive Management Plan (N.J.A.C. 7:50)

The Pinelands Comprehensive Management Plan (CMP) implements the powers granted to the Pinelands Commission by the 1979 New Jersey Pinelands Protection Act (Section 3.5.1) and the Federal National Parks and Recreation Act of 1978 (Section 2.2). Its regulations and standards are designed to promote orderly development in the Pinelands Area to preserve and protect its unique nature and resources. Portions of the CMP that are relevant to individual septic systems are described in more detail below.

3.5.2.1. N.J.A.C. 7:50-5 (Minimum Standards for Land Uses and Intensities)

Subchapter 5 of the CMP contains minimum standards for development and land use within the Pinelands Area, including standards for preparing and adopting county and municipal master plans and land use ordinances. Local government agencies can adopt more restrictive regulations if they choose, providing that those regulations are compatible with the goals of the CMP.

Significantly, Subchapter 5 defines eight different classes of Pinelands Management Areas, including Pinelands Area Villages and Pinelands Towns and Regional Growth Areas (RGA) (See Figure 5):

- “Pinelands Villages and Towns are existing spatially discrete settlements in the Pinelands. These traditional communities are appropriate for infill residential, commercial and industrial development that is compatible with their existing character” (N.J.A.C. 7:50-5.13(f)).
- “Regional Growth Areas are areas of existing growth or lands immediately adjacent thereto which are capable of accommodating regional growth influences while protecting the essential character and environment of the Pinelands Area, provided that the environmental objectives of Subchapter 6 are implemented through municipal master plans and land use ordinances” (N.J.A.C. 7:50-5.13(g)).

In these three types of management areas (Village, Town and RGA), denser appropriate development is encouraged on relatively small lots (less than 3.2 acres in size). Development on lots less than 1 acre is not allowed unless the lot is served by a centralized wastewater treatment plant. If the overall parcel's residential density does not exceed 1 dwelling unit per acre, an individual septic system as well as a community septic system serving two or more residential dwelling units can be used, subject to compliance with Pinelands Area water quality standards and DEP treatment works approvals.

3.5.2.2. Management Programs and Minimum Standards—Water Quality

Part VIII of the CMP (N.J.A.C. 7:50-6.81 through 6.87) requires the Commission to “protect and preserve surface and ground waters of the Pinelands and to ensure that...development will not degrade the Pinelands environment”. This portion of the CMP requires that certified municipal master plans and land use ordinances include a water quality management program (N.J.A.C. 7:50-6.82), establishes an anti-degradation standard (N.J.A.C. 7:50-6.83), and sets minimum standards for permitted point and non-point source discharges (N.J.A.C. 7:50-6.84), including both conventional and nitrogen-attenuating OWTS.

Long-term management of on-site wastewater treatment facilities in the Pinelands Area is required by the Comprehensive Management plan (N.J.A.C. 7:50-6.85), as follows:

- (a) The owner of every on-site septic wastewater treatment facility in the Pinelands shall, as soon as suitable septage disposal facility capacity is available, in accordance with the provisions of Chapter 326 of the Solid Waste Management Act, N.J.S.A. 13:1E-1 et seq. and Section 201 of the Clean Water Act:
 1. Have the facility inspected by a technician at least once every three years;
 2. Have the facility cleaned at least once every three years; and
 3. Once every three years submit to the board of health serving the municipality in which the facility is located a sworn statement that the facility has been inspected, cleaned and is functional, setting forth the name of the person who performed the inspection and cleaning and the date of such inspection.

Commission staff advises that this provision of the CMP pertains to all OWTS in the Pinelands Area. However, this provision is not currently being enforced by the Pinelands Area municipalities (Wengrowski, 2007).

All OWTS must be designed and located so that groundwater leaving the parcel will not exceed the water quality standard of 2 mg/L nitrate-nitrogen, as calculated using the Pinelands dilution model (N.J.A.C. 7:50-6.84(a)(4)(ii) and N.J.A.C. 7:50-6 Appendix A). Essentially, lots that are 3.2 acres or larger can be developed using conventional OWTS, provided that the design meets the requirements of the New Jersey DEP (see Section 3.1.3 on N.J.A.C. 7:9A). Conventional OWTS should be inspected and pumped out at least once every three years, and documentation of the inspection and pump-out should be submitted to the local municipal board of health (N.J.A.C. 7:50-6.85). Alternate

design septic systems installed pursuant to the Pinelands Pilot program must be inspected annually during the initial five years of use. Commission staff report that maintenance in perpetuity will likely be required in future CMP amendments.

Systems that are intended to reduce the level of nitrate-nitrogen in wastewater are also permitted, provided that the same water quality standard of 2 mg/L is met, a maintenance contract is maintained for the system, and a notice is recorded with the deed to the property (N.J.A.C. 7:50-6.84(a)5). RUCK septic systems, pressure dosed systems, and other experimental systems are all listed under this section of the CMP. Like conventional OWTS, these systems are subject to the inspection, pump-out, and reporting requirements described in N.J.A.C. 7:50-6.85. Using a RUCK system could potentially allow lots of between 1.5 and 3.2 acres to be developed, but RUCK systems have not been installed in the Pinelands since the mid-1990s. Prior to August 5, 2002, pressure-dosed systems were allowed on lots between 1 and 3.2 acres in size, but these systems did not reduce nitrate-nitrogen in wastewater sufficient to comply with the water quality standard and are no longer allowed (N.J.A.C. 7:50-10.21 and Wengrowski, 2007, pers. comm.).

Commercial properties, such as restaurants or convenience stores, may have higher nitrogen concentrations in their wastewater that need to be considered in dilution calculations. These situations can be addressed either through density or by the use of alternative treatment systems. If alternate treatment systems are used to reduce the levels of nitrate-nitrogen in wastewater from commercial applications, monitoring and management should be implemented to ensure that the alternate OWTS are operating properly and are sufficiently protective of groundwater quality.

3.5.2.3. Alternate Design Waste Water Treatment Systems Pilot Program

The Pinelands Commission formed a committee in 2000 to investigate alternate septic system technologies that would better meet the water quality requirements described above on lots smaller than 3.2 acres that are authorized by N.J.A.C. 7:50-5. Based on extensive research and the results of the Pinelands Septic Dilution Model, the committee identified five technologies that could meet the water quality requirements: the Amphidrome, Cromaglass, Bioclere, and FAST treatment systems for use on lots of 1 to 3.2 acres; and the Ashco RFS^{III} for use on lots of 1.5 to 3.2 acres. The committee recommended a pilot program for the approval, installation, and monitoring of these technologies (N.J.A.C. 7:50-10). The alternate design treatment technologies were originally only allowed in municipalities which adopted a model ordinance that implements the pilot program. Recently authorized amendments to the CMP (September, 2007) now allow their use in all Pinelands Area municipalities.

The pilot program provides a means to test whether the technologies can be operated and maintained to meet the CMP's water quality standards in a way that homeowners can follow. The program was implemented on August 5, 2002. Each pilot system installed under this program must be sold with a five-year warranty and a five-year operation and maintenance contract, and quarterly effluent sampling and analysis is required during each system's first three years of operation. In

September, 2007, the Commission adopted an amendment to the CMP authorizing pilot program installations through August 5, 2010.

3.5.2.4. Recent Amendments to the Pilot Program for Alternate Design Wastewater Treatment Systems

The relatively limited use of the pilot program technologies to date has not provided sufficient data from which to draw definitive conclusions about the ability of these technologies to reliably meet Pinelands Water Quality Standards. A series of amendments to the CMP have recently (September, 2007) been passed to revise and extend the pilot program:

- The Ashco RFS^{III} technology was not installed during the evaluation period and was removed from the pilot program.
- A handful of municipalities have not adopted the model ordinance to implement the pilot program. Property owners in these municipalities have thus been unable to proceed with development on lots smaller than 3.2 acres, even though such development otherwise fully complies with applicable land use ordinances. In September, 2007 the Commission approved an amendment authorizing the use of alternate design systems in all Pinelands Area municipalities for the duration of the pilot program, regardless of whether all the program's standards are reflected in municipal ordinances.
- In September 2007, the Commission approved an amendment to continue the pilot program through August 5, 2010, to provide for more installations of pilot systems. The monitoring provisions of the pilot program were extended through August 5, 2009.

4. COUNTY REGULATIONS, ORDINANCES, AND PERMITTING

This chapter describes the Pinelands Area's county-level authority over and implementation of regulation, planning, and management of OWTS. All Pinelands Area counties administer the OWTS Standards (N.J.A.C. 7:9A) through their county health departments or boards of health, though each county has somewhat unique authority and the scope of management activities for OWTS after a permit is issued varies somewhat between counties. Section 4.4 describes the source for each Pinelands county health department's regulatory and enforcement authority. Chapter 7 describes current county-level OWTS management efforts with respect to each of the 13 management program elements identified in the US EPA's 2003 voluntary guidelines for decentralized wastewater management.

4.1. Conventional OWTS Permitting

Permits for the location, design, construction, operation, repair, or alteration of conventional OWTS that discharge less than 2,000 gallons of wastewater per day are governed by N.J.A.C. 7:9A (see Section 3.1.3). These rules are implemented through and coordinated with county health departments. Local (county or municipal) permits are needed for all residences and small scale commercial operations with design flows that are less than 2000 gallons per day. A summary of the permitting process for conventional OWTS is shown on Figure 4.

4.2. Alternate OWTS Permitting

Permitting for alternate design treatment systems on lots less than 3.2 acres in the Pinelands follows the same general process as that for conventional OWTS, but has an added level of review by the Pinelands Commission to ensure that the alternate system being proposed is designed properly and that adequate arrangements are in place for ongoing monitoring, maintenance, and operation (Figure 4). Additionally, under the pilot program, the manufacturers of alternate technologies or their designated agents are actively involved in the design, installation, and management of the systems. See Sections 3.5.2.3 and 7 for more information about the Alternate Design Treatment Systems Pilot Program.

Alternate design systems on residential lots greater than 3.2 acres in size can be approved by NJDEP and are regulated through NJDEP review and issuance of Alternative Design Treatment Works Approvals, so long as the treatment system is not preceded by a septic tank (NJDEP, 2007). If a septic tank precedes the advanced treatment system, an application can be approved by the local Health Department without NJDEP approval.

4.3. Water Quality Management Plans and Wastewater Management Plans

The current Water Quality Management Planning (WQMP) Rules do not directly address the management of individual OWTS; however, several of the WQMPs reviewed do mention OWTS as a non-point source of pollution, and some provide information on managing these systems.

Atlantic County's WQMP includes a detailed discussion of OWTS within the county, including information about system operation, major pollutants, causes of failure, and limiting soils within the County. Several 'septic system problem areas' were identified in the WQMP, and a range of recommendations were provided for public education, alternative systems, improved soil and site characterization, and the implementation of septic system management districts by local governments. The appendices to Atlantic County's WQMP include a local analysis indicating that at the time (1979), regional sewerage authorities and municipal utility authorities possessed the greatest powers for implementing OWTS management districts (Appendix A). A draft ordinance creating such a management district was included in the WQMP.

The Cape May County WQMP contains a chapter on Septic Management Programs. Cape May County has administered a "Septics Management Program" as part of their WQMP since 1980. The program establishes development guidelines (particularly a minimum lot size of 35,000 square feet, based on the Cape May County nitrate dilution model) in areas of Cape May County where OWTS are the expected means of wastewater treatment. Within the Pinelands Area of Cape May County, portions of Upper Township, Dennis Township, and Woodbine Borough are designated to be served by wastewater facilities of varying planning flows, all of which discharge to groundwater. A section of the Septic Management Programs on development in the Pinelands Area states that the Pinelands CMP allows the use of individual OWTS, provided that the water quality standard for nitrate-nitrogen is met. No mention is made in the WQMP of managing the OWTS after a permit has been issued.

The Rural District Element of the Cumberland County Wastewater Management Plan, which is an amendment to the Lower Delaware WQMP, designates Pinelands Villages in Maurice River Township as future areas to be served by OWTS with planning flows of less than 20,000 gpd. The remaining Pinelands Area of Maurice River Township is designated to be served in the future by OWTS with planning flows of less than 2,000 gpd. Although these areas are designated to be served by OWTS, no specific plans were discussed for managing OWTS with flows of less than 2,000 gpd.

The Tri-County WQMP (Burlington, Camden, and Gloucester) discusses nitrogen as a cause of limitations to septic system use in Pinelands and discusses localities where relatively dense clusters of OWTS may impact groundwater or surface waters. No mention is made of OWTS management in the WQMP.

Of the Wastewater Management Plans (WMPs) reviewed for this report, most did not contain any mention of individual OWTS; those few that did mention individual systems did so primarily because sewer service was not expected to be available in the future. Only the WMPs for Cape May County (described above), Cumberland County's Rural District (described above), Franklin Township, North Hanover Township, Shamong Township, and Tabernacle Township contain any information about OWTS. Table 3 provides a summary of wastewater management planning agencies in the Pinelands and additional information about their WMPs.

The existing and potential sewer service areas as described in existing WQMPs and amendments have been compiled by NJDEP and located using a Geographic Information System (Figure 7).

4.4. County-by-County Summary of Permitting and Enforcement Authority

The following section provides a summary of each county's permitting and enforcement authority.

4.4.1. Atlantic County

Atlantic County is the only county in the Pinelands which operates under a county executive form of government, and it has a county health department which was established directly by the Board of Elected Freeholders. The County Health Department represents 22 of the 23 local municipalities, all of which gave up their local boards of health. The only exception is Atlantic City, located outside of the Pinelands Area, which maintains a local board of health and is a certified local health agency. The Board of Elected Freeholders has the authority to approve ordinances concerning septic systems under the County Environmental Health Act (CEHA), and the Atlantic County Health Department acts as an administrative authority under CEHA. However, the county health department has not proposed septic system ordinances to date; N.J.A.C. 7:9A has reportedly been deemed to be adequate and the adoption process is reportedly considered to be too time-consuming relative to other priorities. The county has not adopted N.J.A.C. 7:9A as a county ordinance, although it enforces the Standards in a de facto manner via public health nuisance actions in municipal court. Two other counties (Ocean and Cumberland) enforce the Standards similarly.

While Atlantic County has the authority to enact its own ordinances concerning OWTS, it has chosen not to do so for the reasons set out above. For example, Egg Harbor Township has refused to enact the Pinelands alternative septic system ordinance. While technically Atlantic County could enact the Pinelands ordinance county-wide, over the objections of towns, it has reportedly chosen not to do so. Before September 2007, the CMP required the adoption of an implementing ordinance by a municipality as a condition of approving alternative design systems. Under that restriction, Atlantic County could not authorize the Pinelands alternative design septic system pilot program in a municipality that had not adopted an ordinance to implement the pilot program. The County reportedly sees no need to attempt to over-ride a town and adopt an implementing ordinance County-wide. Technically, once a town has disbanded its local board of health there is some question as to whether or not it can then enact ordinances that deal with environmental health or are more stringent than the state standards. However, municipalities often have ordinances for land use, water quality, and natural resource protection that are not enacted under local or county Boards of Health.

4.4.2. Burlington, Camden, Cape May, and Gloucester Counties

These counties have county health departments that were created directly by the Board of Elected Freeholders pursuant to N.J.S.A. 3A2-6(b), without a county Board of Health. In these counties, the Boards of Elected Freeholders are directly in charge of departmental operations for the counties instead of relying on a county executive. These health departments are part of the county

government, answer directly to the elected freeholders and cannot pass ordinances on their own. They act as the administrative authority under CEHA and they administer local ordinances for each municipality in their jurisdiction. This means that the local Boards of Health still exist (except in Cape May County, discussed below) and that ordinances are enacted at the local level. Each municipality signs a local health services agreement with the Board of Elected Freeholders for enforcement of the local ordinances. If a municipality has adopted an ordinance to implement N.J.A.C. 7:9A, then a notice of violation can be filed directly and properly in municipal court by an agent of the county health department. If not, then the county can either enforce N.J.A.C. 7:9A in municipal court in spite of lack of venue or pursue a public health nuisance charge under the Public Health Nuisance Code of New Jersey (N.J.S.A. 26:3B), which has been adopted in all the Pinelands municipalities and reiterates some of the standards of N.J.A.C. 7:9A.

Cape May County has some municipalities without local Boards of Health (Dennis Township in the Pinelands Area, for example), and therefore no local public health ordinances, but the county still enforces N.J.A.C. 7:9A county-wide. Cape May County has not adopted N.J.A.C. 7:9A formally, so it conducts enforcement under a public health nuisance claim if necessary. These enforcement cases are generally not challenged by the homeowners on jurisdictional grounds within the Pinelands Area. Additionally, OWTS can be and are regulated by the Pinelands Commission and by local municipalities through land use and water quality ordinances, rather than through public health ordinances. The implementing ordinance for the alternate design OWTS pilot program, for instance, (Section 3.5.2.3) was drafted by the Pinelands Commission and then recommended by local planning departments to municipal governing bodies for adoption into land use or zoning ordinances.

Gloucester County only has two municipalities, Franklin and Monitor, in the Pinelands Area. The County has reportedly suggested that these two Pinelands Area towns adopt N.J.A.C. 7:9A as their local ordinance so that it would then be enforceable in municipal court, but the towns have not acted on that suggestion.

4.4.3. *Cumberland and Ocean Counties*

Both of these county health departments were formed by a county board of health pursuant to N.J.S.A. 3A3-6(a). This means that they do have the power to enact their own ordinances and the health department reports to an autonomous Board of Health. The local Boards of Health have all disbanded and delegated their powers to the County Board of Health. Only one exception remains: in Vineland (Cumberland County), a local Board of Health still exists.

Cumberland County has not passed any ordinances relating to septic systems, although it has the power to do so. It has not adopted N.J.A.C. 7:9A but enforces the Standards through public health nuisance complaints (N.J.S.A. 26:3B).

Ocean County is the only Pinelands County that has adopted N.J.A.C. 7:9A, and it can bring direct enforcement actions in municipal court. The County Board of Health has not adopted the Pinelands model ordinance for the alternate design systems pilot program; however, the majority of Ocean County's Pinelands Area municipalities have adopted the ordinance. The Ocean County Health Department reportedly felt that adopting the ordinance was a local decision tied to land use priorities and not public health, and was therefore best left to the individual municipalities.

5. MUNICIPAL REGULATIONS, ORDINANCES, AND BYLAWS

This chapter summarizes information regarding municipal regulations, ordinances and bylaws related to OWTS management (Table 5). All of the municipalities were contacted and pertinent codes were requested from every municipality, although not all responded to the request.

With the exception of the City of Vineland, permitting of repairs, replacement and installation of new OWTS is implemented at the county level in the Pinelands Area. With the exception of Atlantic County as described in Section 4, townships, boroughs, and cities either have a local Board of Health that delegates authority to the county Health Department or Board of Health, or the municipalities have delegated authority to the county and disbanded their local Board of Health.

5.1. Atlantic County

The following municipalities in Atlantic County have land in the Pinelands Area:

- Buena Borough
- Buena Vista Township
- Egg Harbor City
- Egg Harbor Township
- Estell Manor Township
- Folsom Borough
- Galloway Township
- Hamilton Township
- Hammonton Town
- Mullica Township
- Port Republic City
- Weymouth Township

The Atlantic County Department of Human Services' Environmental Health Unit administers the OWTS regulations in each of these communities. Though Folsom Borough and Mullica Township still have ordinances within their municipal codes that pertain to local boards of health, neither municipality actually has a local board of health.

Pinelands alternative design OWTS ordinances are in effect in all eligible municipalities within Atlantic County with the exceptions of Egg Harbor Township and Port Republic City. The City of Corbin does not have land zoned in the Pinelands Area that would allow the use of alternate design OWTS.

5.2. Burlington County

The following municipalities in Burlington County have land in the Pinelands Area:

- Bass River Township

- Evesham Township
- Medford Township
- Medford Lakes Borough
- New Hanover Township
- North Hanover Township
- Pemberton Township
- Shamong Township
- Southampton Township
- Springfield Township
- Tabernacle Township
- Washington Township
- Woodland Township
- Wrightstown Township

The Burlington County Health Department's Environmental and Consumer Health Unit administers the OWTS regulations in each of these municipalities. Pinelands alternative design OWTS ordinances are in effect in all eligible communities within Burlington County with the exception of Southampton Township, which has recently introduced an ordinance. The following municipalities do not have land zoned in the Pinelands Area that would allow the use of alternate design OWTS: Medford Lakes, New Hanover, North Hanover, and Springfield.

5.3. Camden County

The following municipalities in Camden County have land in the Pinelands Area:

- Berlin Borough
- Berlin Township
- Chesilhurst Township
- Waterford Township
- Winslow Township

The Camden County Department of Health and Human Services' Division of Environmental Health administers the OWTS regulations in each of these municipalities. Berlin Borough does not have land zoned in the Pinelands Area that would allow the use of alternate OWTS. Winslow Township maintains a local Department of Health and Vital Statistics, but all environmental and health complaints are directed to the Camden County Department of Health.

Pinelands alternative design OWTS ordinances are in effect in all three eligible municipalities.

5.4. Cape May County

The following municipalities in Cape May County have land in the Pinelands Area:

- Dennis Township

- Upper Township
- Woodbine Borough

The Cape May County Department of Health’s Division of Environmental Health Services administers the OWTS regulations in each of these municipalities. Pinelands alternative design OWTS ordinances are in effect in all three municipalities listed.

5.5. Cumberland County

The following municipalities in Cumberland County have land in the Pinelands Area:

- Maurice River Township
- City of Vineland

The Cumberland County Public Health Department’s Environmental unit administers the OWTS regulations in each of these municipalities. The Pinelands alternative design OWTS ordinance is in effect in Maurice River Township.

The City of Vineland is the only local municipality that reported having its own Environmental Health program, and therefore does not rely on the services of Cumberland County for regulation of OWTS. The City of Vineland, however, does not have land zoned in the Pinelands Area that would allow the use of Pinelands alternate design OWTS.

5.6. Gloucester County

The following municipalities in Gloucester County have land in the Pinelands Area:

- Franklin Township
- Monroe Township

The Gloucester County Department of Health and Senior Services’ Division of Environmental Services administers the OWTS regulations in each of these municipalities. The Pinelands alternative design OWTS ordinance is in effect in both municipalities. Although Monroe Township maintains a local Board of Health, environmental complaints are handled by the County Health Department.

5.7. Ocean County

The following municipalities in Ocean County have land in the Pinelands Area:

- Barnegat Township
- Beachwood Borough
- Berkeley Township
- Eagleswood Township
- Jackson Township
- Lacey Township
- Lakehurst Borough

- Little Egg Harbor Township
- Manchester Township
- Ocean Township
- Plumsted Township
- South Toms River Borough
- Stafford Township

The Ocean County Health Department's Environmental Health Division administers the OWTS regulations in each of these municipalities. Although several Ocean County municipalities have ordinances in their local code books pertaining to the establishment of local boards of health, none of the municipalities appears to maintain a local board of health.

Pinelands alternative design OWTS ordinances are in effect in all eligible municipalities with the exceptions of Berkeley, Little Egg Harbor and Plumsted Townships. Beachwood, Eagleswood, and Lakehurst do not have land zoned in the Pinelands Area that would allow the use of Pinelands alternate design OWTS.

6. IDENTIFICATION OF POTENTIAL MANAGEMENT ENTITIES (IN PINELANDS AREA AND ELSEWHERE IN NJ)

Throughout the State of New Jersey, OWTS management is strongly encouraged by staff at NJDEP (Bowers, 2007; Krukowski, 2007). The NJDEP has published guidelines for the inspection of existing OWTS (typically conducted at the time of title transfer) and has provided technical assistance, upon request, to communities that are considering OWTS management programs. In addition, the NJDEP has posted Septic System Management Tips at http://www.state.nj.us/dep/dwq/owm_regulate.htm.

A number of different entities have the potential to perform successful management of conventional and alternate OWTS in the Pinelands Area, including existing utilities, utility authorities, and governmental or quasi-governmental organizations (Section 6.1), and private utilities or other privately owned companies specializing in certain areas of OWTS management (Section 6.2). Additionally, if the current proposal for OWTS management contained in the amendments to the Water Quality Management Planning Rules is implemented, each municipality will be required to institute a management program for OWTS (Table 6).

6.1. Governmental or Quasi-Governmental Entities

All Pinelands Area counties, except Burlington County, have a county utilities authority which is responsible for collection and treatment of wastewater at one or more regional wastewater treatment plants (Table 6). Some of these authorities also provide other services, such as drinking water or solid waste disposal. The Municipal and County Utilities Authority Law (N.J.S.A. 40:14B-1 et seq.) defines the “district” or service areas of these utility authorities as “the area within the territorial boundaries of the county, or of the municipality or municipalities, which created or joined in or caused the creation or organization of a municipal authority”. The law establishes the powers of a utilities authority to include property access for inspection, repair, and other activities involving failing OWTS (N.J.S.A. 40:14B-20(9)); establishment of an inspection program for all OWTS within the utilities authority’s district (N.J.S.A. 40:14B-20(10)); and to keep records of OWTS inspections and repairs (N.J.S.A. 40:14B-20(10)). At least one of these utilities authorities, Atlantic County Utilities Authority, has expressed interest in the possibility of being involved in managing OWTS in the future.

A number of municipal utilities authorities, which were also established under the Municipal and County Utilities Authority Law, are located throughout the Pinelands Area and are listed in Tables 5 and 6.

The idea of using electrical utilities as wastewater management entities, as is done in some other rural areas of the US, does not appear to be feasible in New Jersey. During the early Technical Advisory Committee meetings for this project, attendees reported that no precedent exists for an electrical utility in New Jersey taking on sewer or other wastewater management services. Attendees

believed it unlikely that any electrical utility in the state would be interested in taking on such a service offering.

The New Jersey Local Information Network and Communications System (NJ LINCS) may serve as one model for an agency or entity that could also work for management of conventional or alternate design OWTS.

Through its administration of the alternate design systems pilot program, the Pinelands Commission already performs some of the recordkeeping, performance, planning, and public education functions that are generally included in management programs for OWTS.

County or regional water quality management planning agencies are only indirectly involved in OWTS management at present (see Section 3.2). Wastewater management plans, included as amendments to the 208 water quality management plans prepared by these agencies, currently do not include much information about or planning for OWTS management. If the revisions to the Water Quality Management Planning Rules (N.J.A.C. 7:15) that are currently under consideration are adopted, both wastewater management planning agencies and water quality management planning agencies may become more involved in OWTS management.

County health departments or boards of health currently administer the permitting of OWTS under N.J.A.C. 7:9A, and provide enforcement when violations are reported. They also keep records about systems that have been constructed, altered, or repaired; and are required to provide educational materials about OWTS maintenance.

Individual municipalities may act as management entities for OWTS within their jurisdictions, as is done by several communities within New Jersey outside the Pinelands Area (see Section 8.1.4). Either a local board of health/health department or a municipal utility authority could establish a management program for OWTS at the local level.

6.2. Private Utilities / Entities

There were no privately owned utility entities currently managing OWTS in the Pinelands Area. However, there is at least one private utility within the Pinelands Area. The Pinelands Wastewater Company, which is a subsidiary of Middlesex Water Company, operates a municipal wastewater treatment facility in the Pinelands Area. Pinelands Wastewater Company provides wastewater collection, treatment and disposal services to customers in Southampton Township. This utility is regulated by the Board of Public Utilities and all rate requests involve the Board and the New Jersey Department of the Public Advocate, Division of Rate Counsel.

Wastewater management companies serving Pinelands area schools and other NJPDES-permitted businesses, such as campgrounds, apartment buildings or condominiums, and mobile home parks, are already fulfilling many OWTS management functions. These companies provide permitting

assistance, construction supervision, operation and maintenance services, and record-keeping for the OTWS they service. A few examples of such companies are listed for illustrative purposes in Table 6, but this is not a complete listing and should not be considered an endorsement. There is significant overlap between these organizations and the other potential types of private-company OWTS management entities discussed below.

Wastewater treatment plant operators are required to be licensed by the New Jersey DEP. These operators provide operation, maintenance, monitoring, compliance, and record-keeping services for centralized collection systems and treatment plants with both surface water and groundwater discharge. Operators of OWTS with design flows of more than 2,000 gallons per day (facilities permitted under the T1 general permit) may not always be certified operators, but they still must be trained to conduct inspections and operate the systems properly. Table 7 shows a list of T1-permitted OWTS locations in Pinelands Towns, along with the facility contacts for each system. While these systems may not all be located within the Pinelands Area, the table is provided to inform municipal officials of potential contacts for local wastewater management expertise.

Consulting engineering firms employ licensed professional engineers (P.E.s) and wastewater operators and typically offer many of these management services to their clients, including design, permitting, and construction assistance; O&M activities; and inspection, monitoring, and reporting functions.

Management agents for alternate design systems allowed through the pilot program perform several management functions for pilot systems, including routine maintenance, monitoring, and record keeping. These agents are listed in Table 6, and their responsibilities are described further in Section 7.4.

Septic tank pumpers are licensed as solid waste transporters by the NJDEP's Division of Solid and Hazardous Waste. In addition to septic tank pumping and septage hauling, these service providers often offer OWTS inspections, and some offer construction and alteration services as well. In Ocean County, a manifest system is already in place in effect for every septic hauler, with copies of the manifests submitted to the health department.

Another potential OWTS management entity might be independent system inspection companies who conduct time-of-sale OWTS inspections but are not affiliated with septage haulers or construction contractors. In order for a licensed home inspector to perform OWTS inspections, the home inspector must also be a licensed P.E. in New Jersey. A few examples of such companies with service areas in the Pinelands are shown in Table 6.

7. EXISTING ONSITE/DECENTRALIZED WASTEWATER MANAGEMENT PROGRAMS IN THE PINELANDS

For systems with design flows less than 2,000 gpd, the current level of onsite/decentralized wastewater management programs in the Pinelands Area is limited to permitting and response to complaints for traditional systems. Alternate design systems used for nitrogen removal are managed through maintenance contracts with system manufacturers pursuant to the Pinelands alternative design treatment systems pilot program.

7.1. Jurisdictional Authority

As discussed in previous sections of this report and established by precedent in other areas of New Jersey, municipalities have the authority to manage to OWTS under the Realty Improvement Sewerage and Facilities Act.

7.2. Current Programs

Environmental health officials who work with OWTS programs in the divisions of environmental health at each of the seven Pinelands Area County Health Departments were interviewed concerning administrative policies and practices applicable to onsite/decentralized wastewater systems. The interviews covered each of the 13 elements of onsite wastewater management programs as defined by USEPA (2003). Table 4 contains a summary of the findings of those interviews.

7.3. OWTS Management in the Pinelands

The siting, design, and installation of OWTS is currently managed effectively throughout the Pinelands Area and includes the involvement of licensed Professional Engineers and licensed Registered Environmental Health Specialists. The management of OWTS with design flows less than 2,000 gpd in the Pinelands Area, although required by the CMP of N.J.A.C. 7:50-6.85(a), is not presently occurring, with the exception of the Pinelands Commission's alternative system pilot program for nitrogen reducing advanced treatment systems. The following is a summary of management in the Pinelands organized according to the 13 elements of management programs established by the USEPA (2003):

Inspections and Monitoring

In the Pinelands Area and elsewhere in New Jersey, both new OWTS and repairs/alterations to OWTS are inspected and certified by the County health departments pursuant to N.J.A.C. 7:9A. Inspections of OWTS often occur at the time of a real estate transaction. Mortgage institutions sometimes require a septic system certification, and an inspection pursuant to that certification can trigger the detection of a marginally operating or malfunctioning system. The NJDEP published voluntary guidelines for time of sale inspections (NJDEP, 2003), which were developed in coordination with the New Jersey Septic Management Association (NJSMA), boards of health, and others. Although NJSMA adopted the voluntary guidelines as their own, no training or certification is required for inspectors who perform time-of-sale inspections of OWTS.

The performance of Pinelands alternative design nitrogen reducing OWTS are monitored through a combination of effluent sampling, periodic maintenance visits, and telemetric alarm dialers. Effluent quality monitoring of those systems is required during the first three years of operation. Maintenance visits are required at least annually for a five year period. The Commission reports that future CMP amendments are likely to require maintenance in perpetuity.

Septic Tank Pump-outs/Residuals Management

The Pinelands CMP requires pump-outs every three years, but as mentioned in Section 3.5.2.2 and immediately above, this requirement is not enforced. No Pinelands Area municipalities have septic tank pump-out requirements.

A number of New Jersey municipalities outside the Pinelands Area require periodic septic tank pumping. Septage residuals are disposed of at Publicly Owned Treatment Works (POTW). Adequate capacity currently exists for septic residuals treatment and disposal.

Training and Certification

The New Jersey Department of Health administers a licensing program for residential environmental health specialists (REHS). Minimum education and experience requirements must be met before an individual can sit for the REHS licensing exam. Continuing education requirements must be met to maintain the REHS credential in active status. REHS typically inspect new and repaired or altered OWTS. There are no other established programs for training and certifying environmental health professionals in New Jersey, although N.J.A.C. 7:9A allows NJDEP to establish voluntary registration of "... professional engineers, health officers, registered environmental health specialists, soil scientists, contractors, septic tank pumpers, and other individuals involved in implementation of these standards." Rutgers University's Office of Continuing Professional Education conducts an annual two-day training program in New Brunswick, and presentations are given at various organization meetings, such as New Jersey Environmental Health Association, New Jersey Association of Environmental Agencies.

The New Jersey Board of Professional Engineers and Land Surveyors administers a licensing program for licensed professional engineers. Minimum education and experience requirements must be met before an individual can sit for the P.E. exam. Continuing education is not a requirement for P.E.s. Only a New Jersey licensed P.E. can design OWTS in New Jersey.

Site Evaluation

Site evaluations are completed by New Jersey licensed professional engineers who typically employ engineers, registered environmental health specialists, soil scientists, and engineering technicians to conduct field work. Licensed professional engineers must certify, by signature and seal, all soil tests performed for an OWTS design. The site evaluation requirements are in N.J.A.C. 7:9A.

Design

Requirements for design of OWTS in the Pinelands are based on N.J.A.C. 7:9A with some municipalities having stricter requirements (see Table 5). For example, Medford Township's OWTS ordinance requires that capped risers be included on distribution boxes, and Winslow Township's OWTS ordinance incorporates the Pinelands CMP's OWTS management requirements, including inspections of all OWTS with pump-outs every three years.

Construction

The installation of OWTS is performed by contractors and inspected by county or local registered environmental health specialists, or by a licensed professional engineer on behalf of the administrative authority or applicant.

Financial Funding and Assistance

State and Federal programs exist that can provide grants and loans are available on a competitive basis for eligible municipalities to implement decentralized onsite wastewater management. However, the cost to document the need for these grants or loans often discourages municipalities from pursuing these funds. Multiple sources of funding for individual homeowners to repair or replace OWTS are available for very-low, low and moderate income households (see Section 3.4 for detailed information about these funding sources).

Repairs and Alterations

All repairs are permitted through the county health departments. "Repair" means "to fix, refurbish or replace one or more components of an OWTS in a manner that will restore, preserve and not change the original location, design, construction and installation, size, capacity, type, or number of components of the system" (N.J.A.C. 7:9A). Repairs are commonly characterized as in-kind or like-kind replacement. The Burlington County Health Department reportedly disallows system "repairs", especially for real estate transactions. Instead, the system must be "altered" in a manner that brings it into compliance or as close to compliance with current design standards as possible. "Alter" or "alteration" means any change in the physical configuration of an existing OWTS or any of its components including replacement, modification, addition or removal of system components such that there will be a change in the location, design, construction, installation, size, capacity, type or number of one or more components (N.J.A.C. 7:9A).

Public Education and Outreach

N.J.A.C. 7:9A-3.14 requires administrative authorities to send periodic notices to owners of septic systems on proper operation and maintenance procedures. Some counties report compliance with this requirement (Table 4). Each county health department has a website and brochures available for the public. The Pinelands Commission is conducting an extensive public education and outreach program in conjunction with the project that is developing this report.

Recordkeeping, Inventory and Reporting

Most Pinelands Area counties have an electronic tracking system for conventional OWTS permitting (Table 4). Many of these systems have been acquired in the last five to seven years, and older information is not always available electronically. Most permits are tracked using databases, but design information and other materials for OWTS permitting is often available only on paper. Some older records (for example, in Atlantic County) are available on microfiche. Additionally, while the counties have information about where OWTS were installed, this information may not be up-to-date (for example, some areas which were originally permitted for OWTS have since been sewerred). Based on the information collected for this report, it appears that no government agency has a current inventory of OWTS in any municipality within the Pinelands Area.

Performance

All OWTS must be operated in a manner that prevents the contamination of well or surface water bodies, ponding or breakout onto the surface of the ground, seepage of sewage or effluent into buildings or to back up into the building served.

OWTS performance is addressed via nitrate dilution requirements and the alternative wastewater treatment pilot study. Systems whose performance complies with specific levels of nitrogen reduction are used to allow a density of greater than one single family house per 3.2 acres to a minimum of one house per 1 acre, where permitted by local zoning.

The Pinelands alternative design OWTS are currently being evaluated by the Pinelands Commission to determine if they can be maintained and operated in a manner that meets the water quality (nitrogen) standard of the CMP.

Construction

OWTS installation is carried out by local contractors and generally inspected by Registered Environmental Health Specialists acting as agents for the county health departments, with the exception of the City of Vineland where inspections are conducted by municipal health department staff. Alternatively, licensed professional engineers may certify construction compliance as agents for the administrative authority or applicant.

Operation and Maintenance

As noted previously, operation and maintenance of traditional systems is required in the Pinelands Area by the Comprehensive Management Plan, but the regulation has historically not been enforced. Maintenance of alternative Pinelands pilot program OWTS is required to be provided by the manufacturer or their agent under five-year prepaid service contracts.

Planning

There does not appear to be significant local or county-wide planning for OWTS management, except for the management provisions of the Pinelands alternative design treatment systems pilot

program, incorporated into municipal ordinances of the thirty-four towns which have implemented the pilot program. The Pinelands Commission and NJDEP are involved in planning and establishing guidelines and processes for implementing OWTS management programs.

7.4. Management of Alternate Design Pilot Program Systems in the Pinelands Area

Currently, three entities act as management agents for alternate design pilot program systems in the Pinelands Area:

- Mid State Electrical Contracting, Inc. (management agent for Cromaglass systems)
- Advanced Nitrate Solutions (management agent for Bioclere™ systems)
- Site Specific Design, Inc. (management agent for FAST® systems)

These companies perform maintenance, inspections, and effluent quality sampling; respond to alarms; and keep records of all activities and testing results for reporting to the Pinelands Commission. Each company contracts with the system owner as part of the initial pilot system permitting, design, and installation process for a period of five years after the system's construction. As noted in Section 3.5.2.2, Commission staff report that maintenance in perpetuity will likely be required in future CMP amendments.

8. EXAMPLES OF MANAGEMENT PROGRAMS OUTSIDE OF PINELANDS AREA

8.1. Examples Within New Jersey

8.1.1. Private Entities

In addition to the parent company of the Pinelands Wastewater Company, Middlesex Water Company, there are at least two other private utilities that manage wastewater systems outside the Pinelands Area of New Jersey: Aqua New Jersey and New Jersey American Water Company.

Aqua New Jersey operates wastewater treatment facilities in a number of Townships throughout New Jersey and one water system near the Pinelands Area in Berkeley Township of Ocean County.

Applied Water Management Group specializes in managing and operating decentralized water and wastewater projects, and currently operates primarily in northern New Jersey, close to New York City. Applied Water Management Group of the New Jersey American Water Company (A subsidiary of American Water) is currently owned by RWE Group (New Jersey American, 2007)). Their primary wastewater service area is the management of cluster and centralized wastewater systems, which they refer to as Community Onsite Wastewater Systems (COWS). This utility is licensed to operate specific systems under the State of New Jersey Board of Public Utilities (BPU). Their rates are regulated by the BPU. Due to their origin with smaller scale projects, this privately owned utility in New Jersey may be capable of managing conventional and alternate OWTS.

Many classes of private companies that perform certain aspects of OWTS management within the Pinelands Area, which were discussed in Section 6.2, have analogs that operate outside of the Pinelands Area.

A certain economy of scale is required to make a responsible management entity cost effective in the field of decentralized wastewater management. Yeager et al (2005) estimated that economy of scale was approximately 500 to 1000 customers.

8.1.2. Governmental or Quasi-Governmental Entities

Other than the potential management entities discussed in Section 6.1, no governmental or quasi-governmental agencies were identified in New Jersey providing OWTS management program oversight or management services to less than 2,000 gpd OWTS.

8.1.3. County Programs

Each county has an environmental health department (described in Section 4) that provides some level of OWTS management by permitting OWTS under either county or municipal ordinances and providing enforcement as requested, or as delegated, by local municipalities. OWTS management activities initiated by counties outside the Pinelands Area include Sussex County

Department of Environmental and Public Health Services' development of an OWTS information management database (Yardley, 2007). Screen shots from the database are included in Appendix B.

8.1.4. Township Programs

According to Obropta and Berry (2005), eight municipalities in New Jersey have onsite wastewater management programs that are roughly equivalent to USEPA level 3 programs requiring operating permits for individual OWTS (USEPA, 2003). Sorted by county, the eight municipalities are:

- Morris County
 - Chatham Township
 - Montville Township
 - Mount Olive Township
- Somerset County
 - Montgomery Township
- Sussex County
 - Byram Township
 - Frankford Township
 - Borough of Hopatcong
 - Sparta Township (Lake Mohawk watershed only)

According to Obropta and Berry (2005) these programs were all developed with extensive local input. Half of the programs are mandatory for all septic system owners in the municipality (or watershed). The remaining management programs require operating permits when a construction permit for a new system, or an upgrade/repair of existing system, is required. The permits generally run for a period of three years. System inspection and/or pumping the septic tank are typically required for operating permit renewal.

The enabling ordinances for two of these programs are included as appendices to this report. Montgomery Township's ordinance, which applies to all new construction and alterations, but "grandfathers" existing systems, is Appendix C. Byram Township's ordinance (Appendix D) is an example of a program that applies both to existing systems and new construction or alterations.

8.1.5. OWTS Management Resources

The Association of New Jersey Environmental Commissions (ANJEC) is a statewide non-profit organization that informs and assists environmental commissioners and interested citizens in preserving and protecting New Jersey's environment. Working with NJDEP, ANJEC created a short document titled *Septic System Management for Clean Water* that provides information about how septic systems work and why they should be managed (ANJEC, 2003). They also created a model ordinance, included in the document, which municipalities can use to implement local management programs (the report and model ordinance are included as Appendix E).

In addition to maintaining N.J.A.C. 7:9A, the New Jersey Department of Environmental Protection's (NJDEP) Onsite Wastewater Management Program staff are committed to improving and promoting local management of septic systems. The NJDEP's website provides educational information for homeowners and for local regulators, such as Boards of Health (NJDEP, 2007a and 2007b). The bureau also provides technical guidance for OWTS inspections, and is willing to meet with and provide guidance for municipalities interested in managing OWTS.

The Rutgers Cooperative Extension Water Resources Program has also made a commitment to raising awareness of the proper care and management of OWTS. They have published a series of fact sheets on OWTS that give municipalities, planners, and engineers information to address potential problems associated with OWTS (included as Appendix F). They also offer several resources in support of management systems organized by local municipalities, including PowerPoint presentations, examples of OWTS management in New Jersey and in other states, and extensive resource pages with links to other sources of information (Rutgers Cooperative Extension, 2007).

8.2. Examples Outside New Jersey

The following programs were selected because they appeared to have conditions, programs and needs similar to the State of New Jersey, the Pinelands Commission, and the seven counties and 53 municipalities in the Pinelands.

8.2.1. State Programs

State programs in Massachusetts, Florida, and Rhode Island were evaluated and compared to existing programs in New Jersey, as administered by NJDEP and the Pinelands Commission (Table 8).

8.2.1.1. Massachusetts

The Commonwealth of Massachusetts' statewide onsite regulation is generally referred to as "Title 5" (Table 8). OWTS management in Massachusetts was significantly increased in 1995, when Title 5 was overhauled to address the current state-of-the-art OWTS practices and technologies. Permitting is carried out at the local Board of Health level. Significant elements of Title 5 include mandatory time of transfer inspections, innovative/alternative OWTS certification and monitoring programs, and low interest loans for OWTS repair from the State Revolving Fund (SRF) program through municipal governments, who prepare Community Septic System Management Plans. Massachusetts also has training and certification programs for soil evaluators and OWTS inspectors. An OWTS technology testing facility is located in Barnstable County Massachusetts. This facility tests the performance of conventional and advanced treatment OWTS and potential impacts on groundwater quality. The Massachusetts DEP contracts with the New England Interstate Water Pollution Control Commission to conduct a training and certification program for licensing soil evaluators and OWTS inspectors. The Massachusetts Estuaries Project is documenting the need for nitrogen reduction in watersheds of nutrient sensitive coastal embayments.

Massachusetts municipalities have multiple means of establishing onsite wastewater management districts, including local board of health ordinances, town meeting votes, inter-municipal agreements and special legislation (MADEP, 2003).

8.2.1.2. Florida

The State of Florida established a comprehensive OWTS management program in response to rapid growth and environmental sensitivity of their groundwater, surface water and coastal resources. They have had a progressive alternative technology management program since the mid-1990s. The Florida OWTS program is implemented at the county level, and includes septic tank contractor registration, voluntary OWTS inspection procedures, alternative treatment systems and performance-based treatment systems, and inspection of systems by management entities and county health departments.

The state-wide rules also include minimum level of treatment from OWTS for Florida Keys area (10 mg/L 5-day Biochemical Oxygen Demand, 10 mg/L Total Suspended Solids; 10 mg/L Nitrogen; and 1 mg/L Phosphorus). Maintenance agreements for aerobic treatment systems are required with management entities. Operating permits are required for systems with commercial, industrial, or manufacturing waste. Management entities and performance-based systems are required to obtain biennial operating permits.

County departments of health track the operating permits and maintenance agreements. Each county is required to report to the State Department of Health the number of new systems and repair systems permitted annually.

8.2.1.3. Rhode Island

The State of Rhode Island has a dense population in close proximity to fragile coastal resources such as nutrient sensitive salt ponds. Their OWTS management program has grown significantly since the opening of the University of Rhode Island's New England Onsite Wastewater Training Center in the mid-1990s. The University of Rhode Island has implemented a National Onsite Demonstration Project documenting the feasibility and performance of alternative OWTS to overcome small lot sizes in the replacement of existing OWTS. The University also used Sea Grant funds and other sources of funding to assist municipalities in the implementation of onsite wastewater management programs. The training center provides workshops for homeowners, real estate agents, public officials, soil evaluators, designers, and installers. The training center also maintains a registry of both Onsite Wastewater System Inspectors and Innovative and Alternative Wastewater System Service Providers, who have taken appropriate short courses provided by the training center and passed examinations on the short course material.

The State of Rhode Island requires certification of soil evaluators, designers, and installers. Alternative technologies have been permitted on a state-wide basis since 2002, and the state

Department of Environmental Management (DEM) maintains a list of approved innovative or alternative OWTS technologies. The Rhode Island legislature passed a law requiring the inspection of all cesspools state-wide with replacement of failed cesspools and cesspools within 200 feet of tidal shoreline features, public wells, and water bodies with a drinking water supply intake.

A currently proposed revision to the state rule includes codifying the term “onsite wastewater treatment system” (instead of the current term “individual sewage disposal system”), and delineation of a specific region in the state where, due to sensitive coastal salt ponds, nitrogen removal systems will be required for repairs, replacements, and new system installations.

Onsite wastewater management programs at the local level are encouraged in Rhode Island. The Rhode Island Department of Environmental Management provided grants, ranging from \$10,000 to \$35,000, for the development of Onsite Wastewater Management Plans by municipalities. Towns and Cities can apply for state revolving Loan funds to issue to individual homeowners under a Community Septic System Loan Programs (CSSLP). Management programs range from inventorying OWTS and promoting voluntary maintenance to comprehensive management programs that require inspection of all OWTS, with mandatory system maintenance and/or septic tank pumpouts.

8.2.1.4. Commonalities and Differences among State Programs

Commonalities include the fact that the Massachusetts, Florida, and Rhode Island state programs all have nutrient sensitive surface waters and/or groundwater. Each of these states has onsite wastewater training programs and professional licensing of individuals performing soil evaluation, OWTS design, and OWTS installation.

Differences include how the delegation of programs to county and local levels has been executed in each of the states. Florida has a strong county system of government, while Massachusetts and Rhode Island both have a municipal home rule system of government. The licensing of maintenance providers differed among the states. Florida and Massachusetts both require that maintenance entities be licensed by the State; Rhode Island provides training for and maintains a list of OWTS maintenance providers, but does not license them. The programs in Massachusetts and Rhode Island have been successful because they provide resources that enable local municipalities to inventory their OWTS, provide low income loans for upgrades of failed systems, and incorporate OWTS management programs that are developed and implemented at the municipal level.

8.2.2. County and Regional Programs

Significant elements of a range of OWTS management programs from across the country whose situations and solutions may be applicable to the Pinelands are briefly described below.

8.2.2.1. Cape Cod, Massachusetts

Cape Cod is a peninsula that extends between Cape Cod Bay and the Atlantic Ocean approximately 50 miles south of Boston Massachusetts. Massachusetts does not have a county government system. However, most of the municipalities on the Cape utilize the Barnstable County Department of Health as a regional health district for OWTS permitting. The Massachusetts Department of Environmental Protection requires monthly to quarterly monitoring of advanced treatment OWTS, with copies of monitoring results submitted to local boards of health. The county health department requires digital submittal of monitoring results and uses a database to manage the information and to confirm performance of these systems (Heufelder, 2007).

In response to the significant costs related to water quality studies and wastewater treatment, fifteen municipalities on the Cape joined together with the county to form the Cape Cod Water Protection Collaborative in 2005. This is a regional entity that can apply for and receive grants from state and federal sources. Although it is not clear how this collaborative is addressing OWTS issues, the member municipalities share in utilizing paid staff to better leverage grants and cooperate in addressing regional water quality needs.

8.2.2.2. Santa Cruz County, California

Due to water quality impairments from failing OWTS in the San Lorenzo Valley in Santa Cruz County, the State of California Regional Water Quality Control Board imposed a prohibition on the installation of new OWTS. In response to this prohibition, the County of Santa Cruz Environmental Health Department established a wastewater management district that comprises the San Lorenzo Creek watershed. In that district, the county assesses a fee on each lot served by an OWTS. Fees are collected concurrent with property taxes, and are used to pay county staff to inventory OWTS and to conduct annual inspections of every system in the watershed. Although the fees are collected concurrent with property taxes, they go directly back to the OWTS management programs and not to the general fund (Santa Cruz County, 2007). Outside the San Lorenzo Creek watershed, the county imposes a lower per lot fee for lots served by an OWTS to fund “permanent facilities for the collection and treatment of septic tank sludge” and “administration of the septic tank sludge disposal program, public education on septic system maintenance, and maintenance of a computerized record keeping system of septic tank pumping, inspections, and repairs” (Santa Cruz County, 2007).

8.2.3. Municipal Programs

The following municipalities were selected due to the need for management of nutrients in proximity to environmentally sensitive areas.

8.2.3.1. Tisbury, Massachusetts

The Town of Tisbury is located on the island of Martha’s Vineyard. Tisbury established an OWTS management program in 1989 that required inspection of OWTS at time of property transfer, 6 years ahead of Massachusetts’ statewide time of transfer requirements. In conjunction with a project

to create a large cluster wastewater system serving approximately 120 users in the village of Vineyard Haven, Tisbury set up a town-wide program in 2001 that required inspections and pumpouts of the approximately 2,400 remaining OWTS on a seven-year cycle. Key objectives of the management program are to protect water quality and to limit the need for unnecessary expansion of the community large cluster wastewater system. It took several years for a Town Meeting vote to fund and implement the OWTS management program, but the program is now being implemented (Martha's Vineyard Water Alliance, 2006).

The inspection and pumpout program is funded solely out of the Town's general fund, and permit fees go back into the general fund as well. The Town's health department has an annual budget of \$240,000, and the OWTS management program accounts for about 20% of the department's annual budget (Pacchio, 2008). Inspections take the health inspector approximately half an hour, assuming that tanks are located and opened before the inspector arrives. About 30 systems are inspected every month, including those driven by property transfers. The Town tracks systems and inspections using a web-based proprietary database provided by Carmody Systems, for which it pays approximately \$200 per month (Pacchio, 2008).

A total of \$100,000 in SRF loans was made available for individual system repairs and upgrades, though almost all of that funding has been depleted. Additional funding for repairs is not expected to be available until houses are sold and the loan balances are repaid, coming into the system to be loaned again (Valley, 2008).

8.2.3.2. City of Malibu, California

The City of Malibu is located along approximately 25 miles of coastline with a nitrogen sensitive estuary, Malibu Lagoon, in the middle of one of the more densely settled areas of the city. Malibu developed an integrated decentralized wastewater management plan that spelled out management elements that would be implemented over time. This plan contributed to the city's compliance with requirements of a Total Maximum Daily Load for Malibu Lagoon. The first phase of the plan included extensive public outreach, followed by training of OWTS professionals and practitioners in inspection practices and procedures that led to inspectors' certification. Upon establishment of a pool of certified inspectors, the City implemented an operating permit program for all new, repaired, or replaced systems. The operating permit program uses a risk-based approach to determine the level of management required for each OWTS. Complex systems with high risk of failure or systems located in sensitive environments require more frequent inspections and higher levels of management than traditional septic tank and drain field systems. The City has implemented a web-based database for OWTS systems to facilitate the management of approximately 5,000 OWTS. The City's next step will be the implementation of a point of sale (time of property transfer) inspection program to enable repair of systems or replacement of systems to address malfunctions or failures identified during inspections, and to bring more existing systems under the operating permit program. A public outreach campaign is currently underway for the point of sale inspection program.

8.2.3.3. Town of Charlestown, Rhode Island

The Town of Charlestown, located along Block Island Sound, was one of the first municipalities in Rhode Island to establish a town-wide onsite wastewater management district. The town utilized a public outreach and education program to encourage voluntary septic tank pumpouts. This program was so successful that the residents who complied with the program supported the transition to a mandatory program a few years later. The Town currently has a web-based OWTS data management program and is participating in a decentralized wastewater facilities plan to determine how to best protect two coastal salt ponds that have areas currently closed to shellfishing due to bacteria contamination, and areas that are sensitive to nitrogen loading.

9. CONCLUSIONS

State and Federal laws, statutes, and rules provide municipal and county entities with the authorization to implement decentralized/onsite wastewater management programs in the Pinelands and throughout New Jersey. Federal and state loan and grant programs such as the New Jersey Environmental Infrastructure Trust, Community Development Block Grants, and USDA Rural Development programs, can enhance opportunities for replacement of OWTS infrastructure. Two sources of grants for developing OWTS management programs are the Clean Water Act funds that are passed through NJDEP (Section 319 and 604(b) grants).

There are a number of state statutes and rules that regulate OWTS in New Jersey. These existing statutes and rules authorize municipal and county governments to regulate all aspects of OWTS design, construction, operation, and maintenance. The multiple sources of enabling legislation have allowed the development of a range of municipal and county-level programs for permitting and enforcing OWTS design, installation, and operation. The management of OWTS could be enhanced through the development of new legislation to require inventories of OWTS, maintenance of alternative OWTS, and licensing of OWTS practitioners and professionals. Overall, it would be helpful if all legislation that pertains to OWTS is consolidated into one statute, including clear language to enable the establishment of onsite wastewater management districts and definitions of the limits of authority for those districts. There are no municipal-wide or county-wide inventories of OWTS in the Pinelands.

Through the CMP, Pinelands Area water resources are protected by a water quality performance standard for nitrate in groundwater that restricts new development which relies on OWTS. The CMP requires compliance with this standard through straight dilution or a combination of advanced treatment (denitrification) and dilution. These advanced treatment systems require a higher level of management to ensure their long-term performance and cost-effectiveness. The Pinelands Commission has implemented an alternative system pilot program for nitrogen-reducing residential systems. Long-term management of OWTS should include residential, commercial, and institutional users of both traditional and alternative wastewater treatment technologies.

At least eight municipalities in New Jersey have implemented OWTS management programs utilizing an operating permit model under existing statutes. A number of states along the East Coast have effectively established programs that enable management at the local level.

While funding for decentralized wastewater management planning and infrastructure is sometimes available, this funding is both limited and very competitive. The Environmental Infrastructure financing program, which appears to be less competitive, requires the applicant to provide clear documentation of a public health problem. This requirement may discourage municipalities from applying for these funds. Funding for individual onsite system repair or replacement is available for very-low, low, and moderate income homeowners through USDA Rural Development programs,

Community Development Block Grant programs, and New Jersey Housing and Mortgage Financing Agency. These programs can be enhanced if municipalities establish Septic Management Districts, which renders them eligible for funding of repairs through the NJEIT Smart Growth Financing program.

The management of OWTS can be enhanced by dedicating SRF funding for OWTS planning to local municipalities and/or to counties. This planning can be followed by financing for the repair or replacement of failed OWTS. The current requirement of identifying all failed systems within a municipality or a septic management district before receiving any funding for repairs does not provide an incentive towards local OWTS management.

A number of potential OWTS entities already exist in the Pinelands Area and include public and private utilities; state, municipal, and county departments and agencies; private firms including but not limited to 'full-service' OWTS management companies, consulting engineers, and wastewater operations providers.

Effective public education and outreach is an essential element of formulating effective and community-supported OWTS management programs that are tailored to the needs and circumstances of the area served by the management program.

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Table 1
Pinelands Area Municipalities

| County | Municipality |
|---------------------|-----------------------------|
| Atlantic | Buena Borough |
| | Buena Vista Township |
| | Corbin City |
| | Egg Harbor City |
| | Egg Harbor Township |
| | Estell Manor City |
| | Folsom Borough |
| | Galloway Township |
| | Hamilton Township |
| | Hammonton Town |
| | Mullica Township |
| | Port Republic City |
| | Weymouth Township |
| Burlington | Bass River Township |
| | Evesham Township |
| | Medford Lakes Borough |
| | Medford Township |
| | New Hanover Township |
| | North Hanover Township |
| | Pemberton Township |
| | Shamong Township |
| | Southampton Township |
| | Springfield Township |
| | Tabernacle Township |
| | Washington Township |
| Woodland Township | |
| Wrightstown Borough | |
| Camden | Berlin Borough |
| | Berlin Township |
| | Chesilhurst Borough |
| | Waterford Township |
| | Winslow Township |
| Cape May | Dennis Township |
| | Upper Township |
| | Woodbine Borough |
| Cumberland | Maurice River Township |
| | Vineland City |
| Gloucester | Franklin Township |
| | Monroe Township |
| Ocean | Barnegat Township |
| | Beachwood Borough |
| | Berkeley Township |
| | Eagleswood Township |
| | Jackson Township |
| | Lacey Township |
| | Lakehurst Borough |
| | Little Egg Harbor Township |
| | Manchester Township |
| | Ocean Township |
| | Plumsted Township |
| | South Toms River Borough |
| | Stafford Township |
| | Toms River (Dover) Township |

*Table 2
Potential Onsite Wastewater Infrastructure Financing Programs*

| Financing Programs | Grant or Loan | Eligibility | Individual OWTS repair and replacement Costs | Municipal Onsite Wastewater (Septic) Management Programs | Annual amount funded in most recent year available | Contact information | |
|---|---------------|------------------------|--|--|--|--|--|
| New Jersey Environmental Infrastructure Financing Program | Loan | Low income | Yes ¹ | No | \$270 M | Stanley V. Cach, Jr., P.E., P.P. Assistant Director Municipal Finance and Construction Element Division of Water Quality New Jersey Department of Environmental Protection PO Box 425 Trenton, NJ 08625-0425 (609) 292-8961 www.nj.gov/dep/dwq | Dennis Hart Executive Director NJ Environmental Infrastructure Trust 3131 Princeton Pike, Bldg 6 Suite 201, PO Box 440 Lawrenceville, NJ 08648 (609) 219-8600 www.njeit.org |
| USDA Rural Development Programs | Loans | Low Income | Yes ¹ | No | NA | Local offices serving Pinelands area in Cape May, Columbus, Vineland, and Woodstown For applicable local office contact: USDA Rural Development 5 th Floor North, Suite 500 800 Midlantic Drive Mt. Laurel, NJ 08054 Phone: 856-787-7700 Fax: 856-787-7783 http://www.rurdev.usda.gov/nj/ | |
| Small Cities Community Development Block Program | Grant | Low to Moderate Income | Yes ¹ | No | \$8 M | R. Bruce Benton, Acting Administrator Department of Community Affairs Division of Community Resources NJ Small Cities CDBG Program Phone: 609-633-6277 E-mail: bbenton@dca.state.nj.us | |

Table 2
Potential Onsite Wastewater Infrastructure Financing Programs

| Financing Programs | Grant or Loan | Eligibility | Individual OWTS repair and replacement Costs | Municipal Onsite Wastewater (Septic) Management Programs | Annual amount funded in most recent year available | Contact information |
|---|---------------|------------------------|--|--|--|---|
| Clean Water Act, Section 319(h) and 604(b) Nonpoint Source Water Quality Grants | Grant | No Income Limitation | No | Yes | NA | David McPartland Dept. of Environmental Protection Division of Watershed Management Bureau of Watershed Planning PO Box 418 Trenton, NJ 08625-0418 Phone: (609) 292-0837 ; Fax: (609) 633-1458 david.mcpartland@dep.state.nj.us http://www.state.nj.us/dep/watershedmgt/319grant.htm |
| New Jersey Housing and Mortgage Financing Agency | Loan | Low to Moderate Income | Yes ² | Not applicable | NA | Available through local lending institutions, for list of lenders contact: New Jersey Housing and Mortgage Finance Agency 637 South Clinton Avenue P.O. Box 18550 Trenton, NJ 08650 phone: 609-278-7400 web: http://www.nj.gov/dca/hmfa/consu/owners/refin/ |

Notes:

1. Through municipal government, sewer authority, or septic management district
 2. Directly to homeowners
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STONE ENVIRONMENTAL, INC

Table 3
Wastewater Management Plans in the Pinelands

| Water Quality Management Planning Agency | Wastewater Management Planning Agency | Wastewater Management Plan Name | OWTS Included |
|--|--|--|---------------|
| Atlantic County | Atlantic County Freeholders | Buena Vista Twp | n/a |
| Atlantic County | Atlantic County Freeholders | Buena Borough | n/a |
| Atlantic County | Atlantic County Freeholders | Egg Harbor City WMP | No |
| Atlantic County | Atlantic County Freeholders | Egg Harbor Twp WMP | No |
| Atlantic County | Atlantic County Freeholders | Estell Manor City | n/a |
| Atlantic County | Atlantic County Freeholders | Folsom Borough | n/a |
| Atlantic County | Atlantic County Freeholders | Galloway Twp WMP | No |
| Atlantic County | Atlantic County Freeholders | Hamilton Twp | n/a |
| Atlantic County | Atlantic County Freeholders | Hammonton Town | n/a |
| Atlantic County | Atlantic County Freeholders | Mullica Twp | n/a |
| Atlantic County | Atlantic County Freeholders | Port Republic City | n/a |
| Atlantic County | Atlantic County Freeholders | Weymouth Twp WMP | No |
| Cape May County | Cape May County | Cape May County | Yes |
| Lower Delaware | Cumberland County | Cumberland County Wastewater Management Plan, Rural District Element | Yes |
| Ocean County | Ocean County Board of Chosen Freeholders | Barneget Twp | No |
| Ocean County | Ocean County Board of Chosen Freeholders | Eagleswood Twp | n/a |
| Ocean County | Ocean County Board of Chosen Freeholders | Jackson Twp | No |
| Ocean County | Ocean County Board of Chosen Freeholders | Lacey Twp | n/a |
| Ocean County | Ocean County Board of Chosen Freeholders | Little Egg Harbor Twp | n/a |
| Ocean County | Ocean County Board of Chosen Freeholders | Manchester Twp | No |
| Ocean County | Ocean County Board of Chosen Freeholders | Ocean Co UA Central Planning Area WMP ¹ | No |
| Ocean County | Ocean County Board of Chosen Freeholders | Plumsted Twp | n/a |
| Ocean County | Ocean County Board of Chosen Freeholders | Stafford Twp | No |
| Tri-County | Camden County MUA | Camden County MUA ² | No |
| Tri-County | Evesham MUA | Evesham | No |
| Tri-County | Franklin Township | Franklin Twp | Yes |
| Tri-County | Gloucester County UA | Gloucester County | No |
| Tri-County | Medford | Medford | No |
| Tri-County | Medford Lakes MUA | Medford Lakes | No |
| Tri-County | Monroe Twp. | Monroe | No |
| Tri-County | Fort Dix / McGuire AFB | New Hanover Twp | n/a |
| Tri-County | North Hanover Twp | North Hanover Twp | Yes |
| Tri-County | Pemberton Township MUA | Pemberton Twp | No |
| Tri-County | Shamong MUA | Shamong | Yes |
| Tri-County | Southampton Twp | Southampton Twp | No |
| Tri-County | Springfield Twp | Springfield Twp | n/a |
| Tri-County | Tabernacle MUA | Tabernacle | Yes |
| Tri-County | Wrightstown MUA | Wrightstown | No |



STONE ENVIRONMENTAL, INC

Sources: NJDEP GIS coverage of sewer service areas and WMPs, 2007; review of WMPs on file at Pinelands Commission offices, 2007.

Notes: (1) Includes Berkeley Twp, Beachwood borough, Dover Twp, Lakehurst Borough, Ocean Township, and South Toms River Borough

(2) Includes Berlin Township, Berlin Borough, part of Waterford Twp, part of Winslow Twp, and Chesilhurst Borough

n/a = The wastewater management plan was not available for review.

Yes = Onsite wastewater treatment systems are mentioned in the WMP.

No = Onsite wastewater treatment systems are not mentioned in the WMP.

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Date: 8/15/07 anm

Table 4
Summary of Current OWTS Management Program Elements by County

| Program Element | Atlantic County Environmental Health Department | Burlington County Environmental and Consumer Health | Camden County Health Department | Cape May County Environmental Health | Cumberland County Department of Health | Gloucester County Department of Health and Senior Services | Ocean County Health Department |
|---|---|--|---|---|--|--|---|
| Compliance Inspections / Monitoring of existing svstems Construction (additional local standards for new, altered, or repaired systems) | No Corbin Township has an ordinance regarding the distance of a mound system to a neighbor | No No information | No Gloucester, Pine Hill, and Lindewalt Townships have local MUA (municipal utilities authority) - need a letter to say whether sewer is available | No County sends all permits to townships to be included in bldg permit | No County sends all permits to township to be included in local permits | No Franklin and Monroe townships have additional standards/ordinances regarding mound systems | No Manchester requires system be located in front; property owner needs a waiver if system is on side or back. In Berkeley, waiver needed if well is less than 100 ft from septic. County will reject designs that don't comply with local ordinances. |
| Construction (inspections) | Inspection by registered environmental health specialist (REHS) | Inspection by REHS | Inspection by REHS | Inspection by REHS | Inspection by REHS | Inspection by REHS | Inspection by REHS only for repairs |
| Corrective Actions | Health department inspectors respond to complaints; notice of violation (NOV) issued if violation found | Health department inspectors respond to complaints; NOV issued if violation found | Health department inspectors respond to complaints; NOV issued if violation found; homeowners have 48 hours to take corrective action. | Health department inspectors respond to complaints; NOV issued if violation found | Health department inspectors respond to complaints of surfacing effluent; NOV issued if violation found | Health department inspectors respond to complaints; NOV issued if violation found; repairs/alternations also result from house sale inspections. | Health department inspectors respond to complaints; NOV issued if violation found; repairs/alternations also result from house sale inspections. |
| Enforcement | Atlantic County is a regional health department; the ACHD passed their own ordinances, and can do enforcement administratively. | Health department contracts with each municipality, so enforcement is based on local ordinances and is pursued through municipal courts, usually under the Public Health Nuisance Code (1953). | If complaint not resolved, taken to municipal court under locally adopted nuisance code, fines issued | Violator will be taken to municipal court if they don't comply with NOV. | Notice of violation is sent; follow-up enforcement is done through locally adopted nuisance code with an administrative penalty of \$500 "ticket" or court actions | Enforcement action taken in municipal court through locally adopted nuisance code if systems are not repaired. | Ocean County has a well water testing and permitting ordinance (94-1) that adopts N.J.A.C. 7:9A and the water supply code. Violations of N.J.A.C. 7:9A can thus be pursued through complaints signed in municipal court. |
| Design | Licensed private engineers complete designs; County reviews and issues permits. | Licensed private engineers complete designs; County reviews and issues permits. | Licensed private engineers complete designs; County reviews and issues permits. Some replacement systems can't meet standards | Licensed private engineers complete designs; County reviews and issues permits. | Licensed private engineers complete designs; County reviews and issues permits. | Licensed private engineers complete designs; County reviews and issues permits. | Licensed private engineers complete designs; County reviews and issues permits. |

Table 4
Summary of Current OWTS Management Program Elements by County

| Program Element | Atlantic County Environmental Health Department | Burlington County Environmental and Consumer Health | Camden County Health Department | Cape May County Environmental Health | Cumberland County Department of Health | Gloucester County Department of Health and Senior Services | Ocean County Health Department |
|--|--|---|---|--|---|---|---|
| Financial Assistance and Funding | The Atlantic County improvement authority has a variety of grants available to homeowners, including housing rehabilitation funding for low-income owners that can be used for OWTS repair. | Department of Community Development and Rental Assistance has deferred grants or low-interest loans for low-income homeowners to make essential repairs. | Community Development department has money for essential repairs if people qualify. Berlin Township has its own program for financing. | No | Bayshore grants in shore communities, for essential repairs, based on financial need. | Economic & Community Development has limited funding available for essential repairs, including OWTS, to qualified low / moderate income owners. | No |
| Operation and Maintenance ¹ Performance | No | No | No | No | No | No | No |
| Planning for OWTS Management | Pinelands alternate design pilot systems | Pinelands alternate design pilot systems | Pinelands alternate design pilot systems | Pinelands alternate design pilot systems | Pinelands alternate design pilot systems, if any | Pinelands alternate design pilot systems | Pinelands alternate design pilot systems |
| Public Education and Participation | No | No | No | No | No | No | No |
| Record Keeping, Inventory and Reporting | Information mailed when system is approved | Periodic notices sent to septic system owners per NJAC 7:9a | No | Brochures on permitting process available to public | Website | Information booklet provided at installation | Pamphlets are sent out at installation |
| Residuals Management | Conventional ISDS permits and inspections tracked in a database | Electronic ISDS permit tracking using a database | Electronic permit tracking, but mostly a paper system | Electronic tracking of recent (2006 and later) septic and well permits and repairs | Database of projects since 2005 - permit, block & lot, inspections, installation date, and final certification | Electronic permit tracking | Electronic permit tracking; moving to a web-based system with tablet data collection and inspection reports A manifest system is in effect for every septic hauler. A copy of each manifest is sent to the health department but no additional tracking or reporting is done by the HD. |
| Site Evaluation | No | No | No | No | No | No | No |
| Training and Certification/ Licensing | No information | No information | County staff witnesses every soil test pit | County staff witnesses every soil test pit | No information | County is notified and attempts to witness soil test pits; depends on staff availability. | No |
| | No | No | No | No | No | No | No |

Sources: Interviews with County environmental health staff; county ordinances; Technical Advisory Committee meetings.

Notes: (1) Pinelands CMP (N.J.A.C. 7:50-6.85(a)) requires triennial inspection and pumping of every OWTS, with reporting to the Board of Health serving the municipality in which the system is located; however, this provision is not enforced.

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Date: 10/25/07 anm/bfd

*Table 5
Summary of Municipal Ordinances that Pertain to Onsite Wastewater Treatment Systems*

| County | Administrative Authority | Municipality | Ordinances Reviewed for this Report | Alternate Design Systems Ordinance Certified | Board of Health | Development | Individual System | Sewer | Subdivision | Utility Authority | Zoning |
|----------|---|----------------------|-------------------------------------|--|--|--|---------------------------------------|--|---|---|--|
| Atlantic | Atlantic County Environmental Health Department | Buena Borough | No ¹ | Yes | | | | | | | |
| Atlantic | Atlantic County Environmental Health Department | Buena Vista Township | No ² | Yes | | | | | | | |
| Atlantic | Atlantic County Environmental Health Department | Corbin City | No ² | n/a | | | | | | | |
| Atlantic | Atlantic County Environmental Health Department | Egg Harbor City | No ¹ | Yes | | | | | | | |
| Atlantic | Atlantic County Environmental Health Department | Egg Harbor Township | Yes | No | | Requires showing locations of system, well, and test locations on plans | | Connection required if sewer service available | Nothing relating to ISDS | | Chap. 255, Article 6 Water Quality incorp. 2 mg/L standard, but not pilot program. |
| Atlantic | Atlantic County Environmental Health Department | Estell Manor City | Yes | Yes | Adopted the PH Nuisance Code (NJSA 26:3-69.1) but nothing on BoH. | | | | Requires showing locations of system, well, and test locations on plans | | Chap. 10, p. 1056 incorporates the pilot program |
| Atlantic | Atlantic County Environmental Health Department | Folsom Borough | Yes | Yes | Board of Health est. under NJSA 26:3-1 et seq. | | | | Description of system, flows, etc. required | | Chap. 200-47 incorporates the pilot program |
| Atlantic | Atlantic County Environmental Health Department | Galloway Township | Yes | Yes | Nuisance code still in force; no actual BoH. | Chap. 233-83(F) incorporates the pilot program. | ISDS ordinance repealed in June 2005. | Connection required if sewer service available | | | |
| Atlantic | Atlantic County Environmental Health Department | Hamilton Township | Yes | Yes | Repealed in 1982. Atlantic County Board of Health has jurisdiction. | Chap. 203: show locations of tests and components on subdivision plans; 203-186 incorporates the pilot program | | | | Utility Authority for water supply only. | |
| Atlantic | Atlantic County Environmental Health Department | Hammonton Town | Yes | Yes | | Chap. 175-60 requires locations of tests and components on subdivision plans; Chapter 175-137 incorporates the pilot program | | Connection required if sewer service available | | | |
| Atlantic | Atlantic County Environmental Health Department | Mullica Township | Yes | Yes | Board of Health est. under NJSA 26:3-1(B); nuisance code adopted (Chap. 248) | Chap. 144-110 incorporates the pilot program | | | | | |
| Atlantic | Atlantic County Environmental Health Department | Port Republic City | Yes | No | | Chap. 54 incorporates water quality standards for ISDS, but not pilot program. | | | | | |
| Atlantic | Atlantic County Environmental Health Department | Weymouth Township | Yes | Yes | | Chap. 155: show locations of tests and components on subdivision plans; Chap. 155-57 incorporates the pilot program | | | | Chap. 51 establishes, but no information on what services authority provides. | |

*Table 5
Summary of Municipal Ordinances that Pertain to Onsite Wastewater Treatment Systems*

| County | Administrative Authority | Municipality | Ordinances Reviewed for this Report | Alternate Design Systems Ordinance Certified | Board of Health | Development | Individual System | Sewer | Subdivision | Utility Authority | Zoning |
|------------|---|------------------------|-------------------------------------|--|--|---|---|--|--|--|--|
| Burlington | Burlington County Environmental and Consumer Health | Bass River Township | Yes | Yes | | | Chap. 8-36 prohibits cesspools, seepage pits, and systems within 5 feet of water table or within 100 ft. of surface water | | Chap.16 requires locations of components and tests to be shown on plot plans | | Chap. 17.20.190 incorporates the pilot program |
| Burlington | Burlington County Environmental and Consumer Health | Evesham Township | Yes | Yes | Chapter 3-51 establishes that Township Mgr is Director of Health and may recommend that Township Council pass ordinances, enter into agreements with Burlington County Freeholders. Nuisance code adopted (Chap. 106). | Chap. 15 requires locations of tests and components on plans | Chapter 121 adopts NJSA 58:11-23 and NJAC 7:9A; license required for septage haulers; permit required from Director of Health before tank can be cleaned. | Connection required if sewer service available | Chap. 135-26: BoH approval required before subdivision app approved | Chap. 27 establishes the sewerage authority. | Chap. 160-50 incorporates the pilot program. |
| Burlington | Burlington County Environmental and Consumer Health | Medford Lakes Borough | Yes | n/a | Chapter 26 establishes that Borough Manager can be Director and contract with County Health Officer to provide services under NJSA 26 | Chapter 145-54 incorporates the water quality standard; not the pilot program | | Connection required if sewer service available | | Chapter 51 establishes sewer utility under NJSA 40A:26A-1 et seq. | |
| Burlington | Burlington County Environmental and Consumer Health | Medford Township | Yes | Yes | Chap. 5-87 establishes that Township Manager can be Director and contract with County Health Officer to provide services under NJSA 26 | Chapter 521 Performance Standards-Water Quality incorporates the pilot program. | Chapter 118 adopts NJAC 7:9A; capped risers required on d-box and septic tank. License required for septage haulers; permit required from Director of Health before tank can be cleaned. | Chap. 121 requires connection if service available | | Chap. 5-95 establishes water and wastewater (sewer) municipal utility department | |
| Burlington | Burlington County Environmental and Consumer Health | New Hanover Township | No ² | n/a | | | | | | | |
| Burlington | Burlington County Environmental and Consumer Health | North Hanover Township | No ¹ | n/a | | | | | | | |
| Burlington | Burlington County Environmental and Consumer Health | Pemberton Township | Yes | Yes | No specific code establishing Board of Health. Chap. 205 adopts nuisance code | | Adopts Individual Sewage Dsposal System Code of 1963; has not been amended. License required for pumpers before tanks can be pumped. | Chap. 150 requires connection if service available | Chap. 159-30: If no sewer is available, owner shall provided for on-lot sewage disposal according to State Rules and zoning ordinance. | Chapter 3-33 establishes a municipal utilities authority | Chap. 190-50.3 Alternate Design Pilot Program incorporates the pilot program |
| Burlington | Burlington County Environmental and Consumer Health | Shamong Township | Yes | Yes | No specific code establishing Board of Health. Chap. 183 adopts nuisance code. | Chap. 110-21: Locations of all soil borings, percolation tests, and system components shall be shown on plan; Chap. 110-32 Water Quality incorporates the pilot program | Chap. 190 adopts NJAC 7:9A by reference. Board of Health secretary will issue maintenance manual at time of issuing certificate of compliance; maintain records of such licenses and notify permittee if license needs to be renewed. | | | | |

*Table 5
Summary of Municipal Ordinances that Pertain to Onsite Wastewater Treatment Systems*

| County | Administrative Authority | Municipality | Ordinances Reviewed for this Report | Alternate Design Systems Ordinance Certified | Board of Health | Development | Individual System | Sewer | Subdivision | Utility Authority | Zoning |
|------------|---|----------------------|-------------------------------------|--|--|---|---|--|----------------------------|-------------------|---|
| Burlington | Burlington County Environmental and Consumer Health | Southampton Township | Yes | No | Chap. 2-11: Twp contracts with Burlington County Health Dept. to provide services required under NJSA 26:3A-1 et seq. | Chap. 16 Pinelands Development: Locations of all soil borings, percolation tests, and system components shall be shown on plan; Chap. 12-4.21 incorp. The Pinelands nitrate model and requires that the area considered for development be able to provide adequate dilution. | Chap. 18-3 adopts NJAC 7:9A by reference; construction code official will issue maintenance manual at time of issuing certificate of compliance; maintain records of such licenses and notify permittee if license needs to be renewed. | | | | |
| Burlington | Burlington County Environmental and Consumer Health | Springfield Township | Yes | n/a | Chap. 5-86 establishes the Board to include Township Council and Clerk; Board can adopt ordinances and have jurisdiction conferred by NJSA 26. Chap. 131 adopts the nuisance code. | Chap. 164: Locations of sewage disposal systems must be shown on site plans. | | | Nothing pertaining to OWTS | | Nothing pertaining to OWTS |
| Burlington | Burlington County Environmental and Consumer Health | Tabernacle Township | No ¹ | Yes | | | | | | | |
| Burlington | Burlington County Environmental and Consumer Health | Washington Township | No ¹ | Yes | | | | | | | |
| Burlington | Burlington County Environmental and Consumer Health | Woodland Township | Yes | Yes | | | | | | | Section 1706 Water Quality incorporates pilot program. |
| Burlington | Burlington County Environmental and Consumer Health | Wrightstown Borough | No ¹ | n/a | | | | | | | |
| Camden | Camden County Health Department | Berlin Borough | Yes | n/a | Board of Health est. under NJSA 26:3-1 et seq. (appointed by Mayor, confirmed by Borough Council); Chap. 355 adopts nuisance code. | | | Chap. 358 requires connection if sewer service available | | | Chap. 335-28 requires that locations of tests and components be shown on site plans |
| Camden | Camden County Health Department | Berlin Township | No ¹ | Yes | | | | | | | |
| Camden | Camden County Health Department | Chesilhurst Borough | No ¹ | Yes | | | | | | | |
| Camden | Camden County Health Department | Waterford Township | Yes | Yes | | Chap. 176 incorporates the pilot program. | | | | | |

*Table 5
Summary of Municipal Ordinances that Pertain to Onsite Wastewater Treatment Systems*

| County | Administrative Authority | Municipality | Ordinances Reviewed for this Report | Alternate Design Systems Ordinance Certified | Board of Health | Development | Individual System | Sewer | Subdivision | Utility Authority | Zoning |
|------------|--|------------------------|-------------------------------------|--|--|--|---|---|--|---|---|
| Camden | Camden County Health Department | Winslow Township | Yes | Yes | Chap. 34 establishes Board of Health (appointed by Twp. Committee) under NJSA 26:3-1 et seq); Chap. 183 adopts the nuisance code. | | Chap. 218 adopts 1963 ISDS construction standards (has not been amended); also adopts the pilot program; pumpers must be licensed and license is required before tank can be pumped; incorporates mgmt requirements from Pinelands CMP for inspection, pumping every 3 years. | Chap. 221 requires connection if sewer service available | Chap. 246 requires approval of syste, or submission of test locations and results, at preliminary plat stage | Chap. 221 establishes a Municipal Utilities Department for water and sewer. | Chap. 296-84 Water Quality incorporates the 2 mg/L water quality standard, but see Chap. 218 for pilot program. |
| Cape May | Cape May County Environmental Health | Dennis Township | Yes | Yes | | | | | | | Chap 185-40 requires that locations of tests and components be shown on site plans; Chap. 185-50, Water Quality incorporates the pilot program. |
| Cape May | Cape May County Environmental Health | Upper Township | Yes | Yes | Chap. 2-8 includes interlocal service agreements for services from Cape May County. Nothing on local board of health. Chap. BH-3 adopts the nuisance code. | | Chap. BH-4 prohibits off-site septic systems. | | Chap. 19-7.13 requires installation of septic system if no sewer available | | Chap. 20-11.5 requires that locations of tests and components be shown on site plans; Chap. 20-5.14(g) incorporates the pilot program. |
| Cape May | Cape May County Environmental Health | Woodbine Borough | No ¹ | Yes | | | | | | | |
| Cumberland | Cumberland County Department of Health | Maurice River Township | No ¹ | Yes | | | | | | | |
| Cumberland | Cumberland County Department of Health | Vineland City | Yes | n/a | Chap. 57 establishes Dept. of Health that supercedes Board of Health. Board of Health abolished. | Chap. 300-220 incorporates the 2 mg/L water quality standard but not pilot program. | Chap. 392 requires license for pumpers of 'cesspools'; monthly reports of cesspools cleaned must be submitted to Dept. of Health. | Chap. 392 requires connection if sewer service available. | | Chap. 71 establishes the Landis Sewerage Authority. | |
| Gloucester | Gloucester County Department of Health and Senior Services | Franklin Township | Yes | Yes | Chap. 302 adopts the nuisance code and the ISDS standards. Nothing in code on actual Board of Health. | Chap. 253-62 requires that locations of tests and components be shown on site plans; Chap. 253-77(B) incorporates the pilot program. | | | | Chap. 89 establishes the Franklin Township Municipal Utilities Authority | |
| Gloucester | Gloucester County Department of Health and Senior Services | Monroe Township | Yes | Yes | Chap. 45 establishes the Monroe Board of Health under NJSA 26:3; allows the Board to hire personnel and pass ordinances; Chap. 295 adopts the nuisance code. | Chap. 175-57 requires that locations of tests and components be shown on site plans; 175-149(I) incorporates the pilot program. | | Chap. 303 requires connection if sewer service available. | | Chap. 59 establishes the Monroe Municipal Utilities Authority (a sewerage authority). | |

*Table 5
Summary of Municipal Ordinances that Pertain to Onsite Wastewater Treatment Systems*

| County | Administrative Authority | Municipality | Ordinances Reviewed for this Report | Alternate Design Systems Ordinance Certified | Board of Health | Development | Individual System | Sewer | Subdivision | Utility Authority | Zoning |
|--------|--------------------------------|---|-------------------------------------|--|---|---|--|---|-------------|--|--------|
| Ocean | Ocean County Health Department | Barnegat Township | Yes | Yes | Chap. 11 establishes local Board of Health under NJSA 26:3-9; Chap. 59 adopts the nuisance code. | Chap. 55-276 requires that locations of tests and components be shown on site plans; Chap. 55-291 incorporates the pilot program. | Chap. 79A adopts the 1963 ISDS code (has not been amended); permit and CoC must be issued by Board of Health; satisfactory inspection must be obtained prior to resale or refinancing. | Chap. 74 requires connection if sewer service available. | | Chap. 74 establishes the Barnegat Township Water and Sewer Utility. | |
| Ocean | Ocean County Health Department | Beachwood Borough | Yes | n/a | Chap. 2-18 establishes local Board of Health under NJSA 26; Chap. BH-5 adopts the nuisance code. | Chap. 17-27.6 requires that locations of tests and components be shown on site plans; Chap. 17-27.24 incorporates the 2 mg/L water quality standard but not pilot program. | Chap. BH-3 adopts the 1963 ISDS code (has not been amended); permit must be issued by Board of Health; permit required for pumpers;. | Chap. BH-4 requires connection if sewer service available. | | Chap. 2-14 establishes the Beachwood Sewerage Authority | |
| Ocean | Ocean County Health Department | Berkeley Township | Yes | No | | Chap. 11 requires plot plan showing septic system; system must comply with NJAC 7:9a; Ocean County HD permit required if applicable | | | | | |
| Ocean | Ocean County Health Department | Toms River Township (fmr. Dover Township) | Yes | n/a | Chap. 46-10 establishes Board of Health under N.J.S.A. 26:3-5. Chap. 542-22 adopts the nuisance code. | Chap. 348-8.24 requires sewerage authority approval; septic systems allowed if no sewer available and N.J.S.A. 58:11-23 requirements met. Sets minimum lot size at 30,000 ft ² for lots served by OWTS; larger size may be required by BoH. Chap. 348-3.16 requires all certificate of filing from Pinelands Commission for any development in Pinelands Area. | Chap. 408 requires local BoH inspection and certification of water/sewerage facilities; all facilities will comply with N.J.S.A. 58:11-23 et seq; allows reduced horizontal setbacks to property lines, etc. for very small lots. Chap. 417 prohibits OWTS where sewer available, and allows for septage disposal at sanitary landfill only. | Chap. 572 requires connection if sewer service available. | | Chap. 71-1(F) establishes the Dover Municipal Utilities Authority under N.J.S.A. 40:14B-4; no information about type of authority. | |
| Ocean | Ocean County Health Department | Eagleswood Township | No ¹ | n/a | | | | | | | |
| Ocean | Ocean County Health Department | Jackson Township | Yes | Yes | Chap. 15 establishes Board of Health under NJSA 26:3-3; Chap. 126 adopts the nuisance code. | Chap. 109-71 (G) incorporates the pilot program; Chap. 109-180 allows septic systems where central sewerage not provided; must be installed in accordance with Ocean County BOH. | Chap. 138 adopts the 1963 ISDS code (has not been amended); permit and certificate of compliance must be issued by Board of Health; permit required for pumpers. Chap. 133 allows Board of Health to issue sanitary certification for premises to be mortgaged under FHA or VA loans; fees set for inspection. | Chap. 136 requires connection unless residential septic system is operating properly and release form filed. Connection required when system fails or for new construction in service area. | | Chap. 31 establishes the Jackson Township Municipal Utilities Authority | |

Table 5
Summary of Municipal Ordinances that Pertain to Onsite Wastewater Treatment Systems

| County | Administrative Authority | Municipality | Ordinances Reviewed for this Report | Alternate Design Systems Ordinance Certified | Board of Health | Development | Individual System | Sewer | Subdivision | Utility Authority | Zoning |
|--------|--------------------------------|----------------------------|-------------------------------------|--|--|--|---|--|---|---|---|
| Ocean | Ocean County Health Department | Lacey Township | Yes | Yes | Chap. 55 establishes Board of Health under NJSA 26:3-3; Chap. 381 adopts the nuisance code. | | Chap. 400 contains specific requirements for septic tanks and seepage pits in areas where groundwater is less than 6 feet below ground surface. Chap. 412 states permit and certificate of compliance must be issued by Board of Health; amends standards for setbacks. | Chap. 404 requires connection if sewer service available, except for existing structures more than 200 feet from road centerline with properly functioning ISDS. | Chap. 297-49 requires proof of approval from Board of Health and other county/state agencies of acceptable sewer or ISDS. | Chap. 73 establishes the Lacey Municipal Utilities Authority (water and sewer) program. | Chap. 335-29(B) incorporates the pilot program. |
| Ocean | Ocean County Health Department | Lakehurst Borough | Yes | n/a | | | | Chap. 16 requires connection to water and sewer where service available. | | | |
| Ocean | Ocean County Health Department | Little Egg Harbor Township | Yes | No | Chap. 55 establishes Board of Health under NJSA 26:3-3; Chap. 358 adopts the nuisance code. | Chap. 212 incorporates the 2 mg/L water quality standard but not pilot program | | Chapter 282 requires connection where sewer service available, except in Pinelands where connection is subject to requirements in Chap. 212 (Land Development) | | Chap. 71 establishes the Little Egg Harbor Township Municipal Utilities Authority (water and sewer) | |
| Ocean | Ocean County Health Department | Manchester Township | No ² | Yes | | | | | | | |
| Ocean | Ocean County Health Department | Ocean Township | Yes | Yes | Chap. 2.64 establishes the Board of Health under NJSA 26:3-3; Chap. 8.40.050 adopts the nuisance code. | | Chap. 8.40.170 contains minimum setbacks between wells and cesspools; prohibits failures; Chap. 8.40.240 requires certificate of occupancy | Chap. 8.40.270 requires connection if sewer service available. | Chap. 17.20 requires approval by township engineer and board of health for ISDS | Chap. 2.72 establishes the The Ocean Township Municipal Utilities Authority program. | Chap. 18.60.020 incorporates the pilot program. |
| Ocean | Ocean County Health Department | Plumsted Township | No ² | No | | | | | | | |
| Ocean | Ocean County Health Department | South Toms River Borough | Yes | n/a | | | | Ordinance #251 requires connection if sewer service available. | | | |
| Ocean | Ocean County Health Department | Stafford Township | Yes | Yes | Nothing specific on establishing a local board of health. Chap. 228 adopts the nuisance code. | | | Chap. 47 (water and sewer) and 223 (sewer) require connection when service is available. Chap. 223 contains exemptions for Pinelands area. | | Chap. 47 establishes the Stafford Township Water and Sewer Utility Department. | 211-9(G) incorporates the pilot program. |

Sources: Local ordinances and codes as referenced in table; correspondence with municipal clerks

Notes:

n/a = Not applicable; there are no zoning districts in this municipality where the alternate design pilot program ordinance would apply

1 = Ordinances requested via letter; no response from municipality.

2 = Ordinances requested via letter; local clerk responded that all permitting at County level and no ordinances available

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STONE ENVIRONMENTAL, INC

Table 6
Examples of Potential Management Entities for OWTS

| Type of Utility or Organization | Organization Name | Services Provided | Current Service Area |
|---|--|------------------------------------|--|
| County Utilities Authority | Atlantic County Utilities Authority | Wastewater, solid waste | Atlantic County |
| County Utilities Authority | Camden County Municipal Utilities Authority | Wastewater | Camden County |
| County Utilities Authority | Cape May County Municipal Utilities Authority | Wastewater, solid waste | Cape May County |
| County Utilities Authority | Cumberland County Utilities Authority | Wastewater | Cumberland County |
| County Utilities Authority | Gloucester County Utilities Authority | Wastewater | Gloucester County |
| County Utilities Authority | Ocean County Utilities Authority | Wastewater | Ocean County |
| Municipal Utilities Authority | Hamilton Township Municipal Utilities Authority | Water supply | Hamilton Township (Atlantic Co.) |
| Municipal Utilities Authority | Weymouth Township Municipal Utilities Authority | not specified in ordinance | Weymouth Township (Atlantic Co.) |
| Municipal Utilities Authority | Evesham Township Municipal Utilities Authority | Wastewater | Evesham Township (Burlington Co.) |
| Municipal Utilities Authority | Medford Township Municipal Utilities Authority | Wastewater, water supply | Medford Township (Burlington Co.) |
| Municipal Utilities Authority | Pemberton Township Municipal Utilities Authority | not specified in ordinance | Pemberton Township (Burlington Co.) |
| Municipal Utilities Authority | Franklin Township Municipal Utilities Authority | not specified in ordinance | Franklin Township (Gloucester Co.) |
| Municipal Utilities Authority | Monroe Township Municipal Utilities Authority | Wastewater | Monroe Township (Gloucester Co.) |
| Municipal Utilities Authority | Toms River Township Municipal Utilities Authority | not specified in ordinance | Toms River Township (Ocean Co.) |
| Municipal Utilities Authority | Jackson Township Municipal Utilities Authority | not specified in ordinance | Jackson Township (Ocean Co.) |
| Municipal Utilities Authority | Lacey Township Municipal Utilities Authority | Wastewater, water supply | Lacey Township (Ocean Co.) |
| Municipal Utilities Authority | Ocean Township Municipal Utilities Authority | not specified in ordinance | Ocean Township (Ocean Co.) |
| Private Utility | New Jersey American Water Company, Water Management Group | Applied Water, wastewater | Northern New Jersey |
| Public Utility | Aqua New Jersey, Inc. | Water, wastewater | Burlington, Ocean, Camden, Gloucester Counties |
| Water Quality Management Planning (WQMP) Agency | Atlantic County Division of Planning | Wastewater planning (through WMPs) | Atlantic County |
| WQMP Agency | Cape May County Planning Department | Wastewater planning (through WMPs) | Cape May County |
| WQMP Agency | Cumberland County Department of Planning and Development | Wastewater planning (through WMPs) | Cumberland County |
| WQMP Agency | Ocean County Department of Planning | Wastewater planning (through WMPs) | Ocean County |
| WQMP Agency | Delaware Valley Regional Planning Commission | Wastewater planning (through WMPs) | Gloucester, Camden, and Burlington Counties |

| | | | |
|---|--|---|---|
| Government or Quasi-Governmental Agency | Wastewater Management Planning Agencies | Planning and operation of (primarily) centralized wastewater treatment facilities; may be required to include OWTS under proposed revisions to N.J.A.C. 7:15 | County utility authorities listed above; local authorities listed in Tables 3 and 5 |
| Government or Quasi-Governmental Agency | Pinelands Commission | Planning; alternate design pilot program administration | Pinelands Area |
| Government or Quasi-Governmental Agency | County Health Departments or Boards of Health | OWTS permitting, enforcement, and education | Each Pinelands County has a HD or BoH |
| Government or Quasi-Governmental Agency | Municipal Health Departments or Boards of Health | Currently, have little or no involvement in OWTS management | Local Boards of Health/Health Departments listed in Table 5 |
| Government or Quasi-Governmental Agency | Local Municipal Utility Authorities (also see WMP Agencies above) | Currently, those that handle wastewater management focus on centralized services. May be required to consider OWTS management under proposed revisions to N.J.A.C. 7:15 | Local Boards of Health/Health Departments and Municipal Utility Authorities listed in Table 5 |
| Private Utility | Pinelands Wastewater Company (subsidiary of Middlesex Water Company) | Wastewater collection, treatment, and disposal services | Southampton Township |
| Private Individuals | Licensed Water/Wastewater Operators | O&M, compliance, monitoring, and record-keeping for WWTPs | Throughout the Pinelands |
| Private Company | English Services Group | "Full service" OWTS management: design/engineering, permitting assistance, inspections, construction services, septic tank pumping, repairs, O&M. | Cumberland, Gloucester, Camden, and Atlantic Counties |
| Private Company | Baker Industries | System inspection/evaluations, regulatory compliance assistance, O&M | Burlington, Ocean, and Atlantic Counties |
| Private Company | Central Jersey Septic, Inc. | System inspection/evaluations, installation, O&M | Ocean County |
| Private Company | Engineering Firms with on-staff P.E.s and Wastewater Operators | System design, permitting, and construction assistance; O&M activities, monitoring/reporting | Throughout the Pinelands; listings by municipality available at http://www.state.nj.us/cgi-bin/consumeraffairs/search/searchentry.pl |

| | | | |
|-----------------|--|---|--|
| Private Company | Septage Haulers | Residuals management; record-keeping and reporting; often also time-of-transfer inspections and construction services | Throughout the Pinelands |
| Private Company | F. R. Mahoney Associates | Inspections, maintenance, monitoring, and record-keeping for Amphidrome alternate design pilot program OWTS | Atlantic, Burlington, Camden, Cumberland, Gloucester, and Ocean Counties (wherever Amphidrome systems installed) |
| Private Company | Advanced Nitrate Solutions | Inspections, maintenance, monitoring, and record-keeping for Bioclere alternate design pilot program OWTS | Atlantic, Burlington, Camden, Cape May, and Ocean Counties (wherever Bioclere systems installed) |
| Private Company | Mid State Electrical Contracting, Inc. | Inspections, maintenance, monitoring, and record-keeping for Chromaglass alternate design pilot program OWTS | Atlantic, Burlington, Camden, and Ocean Counties (wherever Chromaglass systems installed) |
| Private Company | Site Specific Design, Inc. | Inspections, maintenance, monitoring, and record-keeping for BioMicrobics FAST alternate design pilot program OWTS | No FAST system installations to date. |
| Private Company | Absolute Home Inspection, LLC | Inspections, record-keeping | Burlington and Camden Counties |
| Private Company | Klock Engineering, LLC | Inspections, record-keeping | Atlantic, Camden, Cape May, Cumberland, and Gloucester Counties |



Table 7
NJPDES T1-Permitted OWTS Facilities and Operator Contacts in Pinelands Municipalities

| Municipality | Permittee Name | Facility Name | Facility Address | Facility City | Facility Zip Code | Facility Contact | Facility Phone | NJPDES Permit Number |
|--------------------------|---|---|---|--------------------|-------------------|--------------------|---------------------|----------------------|
| Atlantic County | | | | | | | | |
| Buena Vista Twp | BUENA FAMILY MANOR MOBILE HOME PARK | BUENA FAMILY MANOR | MOBILE HOME PARK, ROUTE 54 & LEGHORN RD | Buena Vista Twp | 08043 | ROBERT K CORSON | (609) 767-3730 | NJG0084948 |
| Buena Vista Twp | BUENA VISTA CAMPING PARK | BUENA VISTA CAMPING | RT 54 & RT 40 | Buena Vista Twp | 08310 | JOHN CASELLI | (609) 697-2004 | NJG0084956 |
| Buena Vista Twp | ALPINE VILLAGE MHC | ALPINE VILLAGE MHC | 421 MAIN AVE | Buena Vista Twp | 08360 | MICHAEL A BYLONE | (856) 696-8189 | NJG0107824 |
| Egg Harbor Twp | NUTOR & TORNUI CORP | OCEAN HEIGHTS TRAILER PARK | ENGLISH CREEK & OCEAN HEIGHTS AVES | Egg Harbor Twp | 08232 | PLANT OFFICER | | NJG0053155 |
| Egg Harbor Twp | STONEFIELD MOBILE HOME PARK | STONEFIELD MOBILE HOME PARK | OCEAN HEIGHTS AVE | Egg Harbor Twp | 08215 | MIKE BRINEY | (609) 338-3650 | NJG0055042 |
| Egg Harbor Twp | OAK FOREST MOBILE HOME PARK LLC | OAKFOREST MOBILE HOME PARK LLC | 102 MAST DR | Egg Harbor Twp | 08234-9664 | PAUL CASACCIO | (609) 653-4110 | NJG0084336 |
| Egg Harbor Twp | EGG HARBOR RIVER RESORT | EGG HARBOR RIVER RESORT | 181 THOMPSON LN | Egg Harbor Twp | 08330 | PAUL ST JAMES | (609) 927-6841 | NJG0084379 |
| Egg Harbor Twp | SEA LAND INVESTORS INC | BAY BREEZE VILLAGE MOBIL HOME PARK | RT 559 | Egg Harbor Twp | 08330 | ROY A VOLL | (609) 456-4932 | NJG0084417 |
| Egg Harbor Twp | AUGUST SALES CO INC | NORMS DALE MOBILE HOME PARK | OCEAN HEIGHTS AVE & GOLF RD (RD2) | Egg Harbor Twp | 08330 | GERALD GIORDANO | (908) 280-8857 | NJG0084476 |
| Egg Harbor Twp | KAPP THOMAS | TOWER 1999 MOBILE HOME PARK | 1999 BLACK HORSE PIKE | Egg Harbor Twp | 08232 | PAUL C FUHS JR | (609) 697-1575 | NJG0084484 |
| Egg Harbor Twp | ERIKA PASTAL D/B/A TOWER HOMES | TOWER HOMES | 2005 BLACK HORSE PIKE | Egg Harbor Twp | 08232 | ERIKA PASTAL | (609) 463-1169 | NJG0084549 |
| Egg Harbor Twp | STEEPLECHASE VILLAGE INC | STEEPLECHASE VILLAGE | TILTON & DELILAH RDS, BOX 472 | Egg Harbor Twp | 08232 | CORRINE LATOOF | (609) 298-1310 | NJG0084719 |
| Egg Harbor Twp | SAGE INVESTMENT CORP | TILTON TERRACE MHP | 2528 TILTON RD | Egg Harbor Twp | 08234 | FLORENCE WALKER | (609) 641-5629 | NJG0084751 |
| Egg Harbor Twp | DELILAH TERRACE | DELILAH TERRACE | 6515 DELILAH RD | Egg Harbor Twp | 08234 | PAUL ST JAMES | (609) 927-6841 | NJG0084760 |
| Egg Harbor Twp | ENGLISH CREEK MANOR LTD | ENGLISH CREEK MANOR LTD | 5043 ENGLISH CREEK AVE | Egg Harbor Twp | 08234-9612 | VERDON R SKIPPER | (609) 641-8611 | NJG0085057 |
| Egg Harbor Twp | YOUNG JOSEPH & ANTOINETTE | SOMERSET COVE MARINA | 1810 MAYS LANDING, SOMERS POINT RD | Egg Harbor Twp | 08234 | JOSEPH YOUNG | (609) 927-9393 | NJG0100609 |
| Egg Harbor Twp | SLEEPY HOLLOW FAM CAMPGROUND | SLEEPY HOLLOW FAM CAMPGROUND | 132 BEVIS MILL RD | Egg Harbor Twp | 08234 | RANDY PRICKETT | (609) 927-1969 | NJG0135097 |
| Egg Harbor Twp | ADVENTURE VILLAGE GROUP LLC | ADVENTURE VILLAGE | 3002-3004 IVINS AVE | Egg Harbor Twp | 08234 | STEVE O'SULLIVAN | (516) 877-1677 | NJG0142361 |
| Egg Harbor Twp | SHORE MEMORIAL HOSPITAL | MARLIN APARTMENTS | 1107 SOMERS POINT RD | Egg Harbor Twp | 08330 | JOHN MILLER | (609) 653-3594 | NJG0146897 |
| Estell Manor City | MAYS LANDING RV RESORT LLC | YOGI BEARS JELLYSTONE PARK | 1079 12TH AVE | Estell Manor | 08330 | PATRICK BRISLIN | (518) 654-6334 | NJG0085090 |
| Estell Manor City | PLEASANT VALLEY CAMPGROUND | PLEASANT VALLEY CAMPGROUND | RT 50 & S RIVER RD RD 20 | Estell Manor | 08330 | CHARLES A GRIFFIN | (609) 625-1238 | NJG0085103 |
| Estell Manor City | NELSON RUSSELL & DONNA | HOLIDAY HAVEN CAMPGROUND LLC | 230 RT 50 | Estell Manor | 08319 | RUSSELL NELSON | (609) 476-2963 | NJG0085731 |
| Estell Manor City | LAZY RIVER CONDO CAMPGROUND | LAZY RIVER CONDO CAMPGROUND | 103 CUMBERLAND AVE | Estell Manor | 08319 | ANDREW NELSON | (609) 476-2540 | NJG0085936 |
| Estell Manor City | ESTELL MANOR CITY BD OF ED | ESTELL MANOR ELEMENTARY SCHOOL | CAPE MAY AVE | Estell Manor | 08319 | ROSEANN M CIALELLA | (609) 476-2267 | NJG0105431 |
| Estell Manor City | MANOR WOODS C/O THE FOUR BS | MANOR WOODS | RT 50 | Estell Manor | 08319 | JOSEPH DIFETERICI | (609) 794-4646 | NJG0107387 |
| Estell Manor City | ATLANTIC CNTY | ESTELLE MANOR - ATLANTIC CNTY PARK | RT 50 | Estell Manor | 08401 | GEORGE FLICKER | (609) 625-7700x5401 | NJG0139459 |
| Folsom Boro | SOUTH JERSEY GAS CO | SOUTH JERSEY GAS COMPANY | 1 SOUTH JERSEY PLAZA | Folsom | 08037 | GARY ALLEN | (609) 561-9000 | NJG0105651 |
| Folsom Boro | LIBERTY SQUARE ASSOCIATES | LIBERTY SQUARE ASSOCIATES | 301 E BLACKHORSE PIKE | Folsom | 08094 | HARVEY JACOB | (856) 795-3600 | NJG0134937 |
| Galloway Twp | A CLASSIC CORP T/A A1 MOTEL | A-1 MOTEL | 616 W WHITE HORSE PK | Cologne | 08213 | ASHOK SUTARIA | (609) 965-5141 | NJG0139891 |
| Galloway Twp | RENAULT REALTY CO | RENAULT WINERY | 72 N BREMEN AVE | Galloway Twp | 08215 | CHARLES LEE HARP | (609) 965-2111 | NJG0082848 |
| Galloway Twp | HAUSCHILD BOB & CONI | POMONA CAMPGROUND | OAK DR | Galloway Twp | 08240 | ROBERT HAUSCHILD | (609) 965-2123 | NJG0084735 |
| Galloway Twp | HOLLY ACRES BEST HOLIDAY TRAV L PARK | HOLLY ACRES BEST HOLIDAY TRAV-L-PARK | 218 S FRANKFURT AVE | Galloway Twp | 08215 | SARAH FERENCE | (609) 965-2287 | NJG0085707 |
| Galloway Twp | BAYVIEW II INC | THE FAREWAY RESTAURANT | 265 RT 9 | Galloway Twp | 08201 | JIM PLAMANTOURAS | (609) 652-4100 | NJG0128627 |
| Galloway Twp | PILGRIM ACADEMY | PILGRIM ACADEMY | 301 MOSS MILL RD | Galloway Twp | 08215 | ROBERT PETERSON | (609) 965-2866 | NJG0134732 |
| Galloway Twp | BENSON ERNEST & JOAN | EVERGREEN WOODS T/A CASINO CAMPGROUNDS | 106 E MOSSMILL RD | Galloway Twp | 08240 | ERNIE BOERNER | (609) 597-7131 | NJG0134961 |
| Hamilton Twp | SHAPIRO MORRIS | INLAND ESTATES | 4288 BLACK HORSE PIKE | Hamilton Twp | 08232 | MORRIS SHAPIRO | (609) 645-1717 | NJG0084531 |
| Hamilton Twp | COLONIAL MEADOWS FAMILY CAMPGROUND | COLONIAL MEADOWS FAMILY CMPGRD | 557 SOMERS POINT RD | Hamilton Twp | 08330 | WILLIAM C HARE | (609) 626-4358 | NJG0085120 |
| Hamilton Twp | WINDING RIVER CAMPGROUND | WINDING RIVER CAMPGROUND | R D #2 PO BOX 246 | Hamilton Twp | 08330 | JAMES A HORSEY | (609) 625-3191 | NJG0085367 |
| Hamilton Twp | MORGAN LAWRENCE J JR | INDIAN BRANCH PARK CAMPGROUND | 2021 SKIP MORGAN DR & RT 322 | Hamilton Twp | 08037 | LAWRENCE MORGAN | (609) 561-4719 | NJG0102717 |
| Hamilton Twp | VUOCOLO RIVER BEACH CAMP LLC | VUOCOLO RIVER BEACH CAMP LLC | 4678 MAYS LNDG SOMERS PT RD | Mays Landing | 08330 | JAMES VUOCOLO | (609) 625-8611 | NJG0086878 |
| Hamilton Twp | ATLANTIC CNTY | GREENTREE GOLF COURSE | 1030 SOMERS POINT/MAYS LANDING RD | Mays Landing | 08330 | ED MCGETTIGAN | (609) 625-3153 | NJG0139220 |
| Hammonton Town | PARADISE LAKES CAMPGROUND | PARADISE LAKES CAMPGROUND | RT 206 | Hammonton | 08037 | WALTER D LOHRMAN | (609) 561-7095 | NJG0080667 |
| Hammonton Town | DIMEO MIKE FRANK BILL | INDIAN BRAND FARM MIGRANT CAMP | UNION & MIDDLE RD | Hammonton | 08037 | WILLIAM DIMEO | (609) 561-4689 | NJG0100978 |
| Mullica Twp | SWEETWATER CASINO | SWEETWATER CASINO | SEVENTH AVE | Mullica Twp | 08037 | DANIEL EDDLESTON | (609) 965-3285 | NJG0080314 |
| Mullica Twp | AIOP MULLICA WOODS | MULLICA WOODS ADULT COMMUNITY | HEIDELBERG AVE | Mullica Twp | 08215 | MICHAEL S MARCHESE | (609) 965-0111 | NJG0112640 |
| Port Republic City | FBR ASSOC | BLUEBERRY HILL CAMPGROUND | 283 CLARKS LANDING RD, PO BOX 219 | Port Republic | 08241 | MORGAN MANAGEMENT | (866) 376-4432 | NJG0088366 |
| Port Republic City | NATIONAL AMERICAN CORP | CHESTNUT LAKE CAMPGROUND | 631 OLD NEW YORK RD | Port Republic | 08241 | VICKIE MCCOURT | (972) 652-1005 | NJG0135348 |
| Port Republic City | CLEM LOIS & ROGER GIBERSON | RED WING LAKES CAMPGROUND | 317 SOOYS LNDG RD | Port Republic City | 08241 | ROGER GIBERSON | (609) 748-1948 | NJG0138738 |
| Weymouth Twp | COUNTRY OAKS LLC | COUNTRY OAKS / COUNTRY MOUSE CAMPGROUND | 13 S JERSEY AVE | Weymouth Twp | 08317 | LYNN KYLER | (609) 476-2143 | NJG0085251 |
| Weymouth Twp | WEYMOUTH TWP BD OF ED | WEYMOUTH TWP ELEMENTARY SCHOOL | ELEVENTH & ESTELLE AVES | Weymouth Twp | 08317 | MARSHALL BEHR | (609) 476-2412 | NJG0104353 |
| Burlington County | | | | | | | | |
| Bass River Twp | NJDEP STATE PARK SERVICE | BASS RIVER STATE FOREST | STAGE RD, PO BOX 118 | Bass River | 08224 | DENNIS C FOX | (609) 296-1114 | NJG0085201 |
| Bass River Twp | GRETNA GREENS CORP | PILGRIM LAKE CAMPGROUNDS | STAGE & ALLEN RDS | Bass River | 08224 | R SCOTT HAZARD | (609) 296-4725 | NJG0085260 |
| Bass River Twp | TIMBERLINE LAKE INC | TIMBERLINE LAKE CAMPING RESORT | RT 679 | Bass River | 08224 | WILLIAM MCGOURLEY | (609) 296-5990 | NJG0086886 |
| Bass River Twp | CHIPS FOLLY OUTDOOR ASSOC INC | CHIPS FOLLY OUTDOOR ASSOC INC | 100 CHIPS FOLLY RD | Bass River | 08224 | PAUL LUDWIG | (609) 296-5178 | NJG0145394 |
| Bass River Twp | WALKER TRANSIT INC T/A AC N FAMILY CAMPGROUND | ATLANTIC CITY NORTH FAMILY CAMPGROUND | 450 ISHMAEL RD | Bass River | 08224 | COLLEEN SELLERS | (609) 296-3086 | NJG0154628 |
| Bass River Twp | VIKING YACHT & MARINA | VIKING YACHT & MARINA | 5738 RTE 9 | New Gretna | 08224 | STANLEY J. BLAIR | (609) 296-6000 | NJG0134872 |
| Bass River Twp | BUTTONWOOD INC | BUTTONWOOD MOBILE HOME PARK INC | 143 LEEKWOOD RD | New Gretna | 08224 | PATRICK MONAGHAN | (609) 296-3571 | NJG0157015 |
| Medford Twp | SHAMONG TWP BD OF ED | INDIAN MILLS SCHOOL | MEDFORD - INDIAN MILLS RD | Medford | 08088 | PLANT OFFICER | (609) 268-0440 | NJG0072168 |
| Medford Twp | JEWISH FEDERATION OF SOUTHERN NJ | JEWISH COMM CTR CAMP - MEDFORD | 400 TUCKERTON RD | Medford | 08003-2763 | OLWIN HAYES | (609) 654-5192 | NJG0088331 |

Table 7
NJPDES T1-Permitted OWTS Facilities and Operator Contacts in Pinelands Municipalities

| Municipality | Permittee Name | Facility Name | Facility Address | Facility City | Facility Zip | | Facility Contact | Facility Phone | NJPDES Permit Number |
|------------------------|---|---|---|-------------------|--------------|--|------------------------|---------------------|----------------------|
| | | | | | Code | | | | |
| Medford Twp | LOWELL & DAWN CAVE | FLYING W AIRPORT | 60 FOSTERTOWN RD | Medford | 08055 | | LEN LAGOCKI | (609) 267-7673 | NJG0131431 |
| North Hanover Twp | GND MANAGEMENT | MAPLEWOOD APARTMENTS | CROSHAW RD & JONES MILL RD | North Hanover Twp | 08562 | | PLANT OFFICER | | NJG0066249 |
| North Hanover Twp | DEEP WELL MOBILE HOME PARK | DEEP WELL MOBILE HOME PARK | CORNER OF RT 528 & RT 537 | North Hanover Twp | 08562 | | SKIP DEBROSSY | (609) 316-0508 | NJG0084425 |
| North Hanover Twp | MSL MANAGEMENT & DEVELOPMENT CORP | CEDAR GROVE APARTMENTS | 145 COOKSTOWN-NEW EGYPT RD | North Hanover Twp | 08511 | | LOU KOAUPER | (732) 278-9476 | NJG0085022 |
| North Hanover Twp | WILLARD SOUTH | SOUTH'S MOBILE HOME COURT | RT 528 SPUR | North Hanover Twp | 08511 | | WILLARD SOUTH | (609) 758-8186 | NJG0085081 |
| North Hanover Twp | TOWNSEND HARRY | TOWNSEND MOBILE HOME PARK | 34 JACOBSTOWN-COOKSTOWN RD | North Hanover Twp | 08562 | | HARRY TOWNSEND | (609) 758-2080 | NJG0086851 |
| North Hanover Twp | GND MANAGEMENT | MAPLEWOOD APARTMENTS | JACOBSTOWN NEW EGYPT MEANY RDS (CR 526) | North Hanover Twp | 08562 | | GEORGIANNA EARLS | (609) 723-4666 | NJG0087360 |
| North Hanover Twp | LAMBERT PROPERTIES LLC | LAMBERT PROPERTIES | JONES MILL RD | North Hanover Twp | 08016 | | CECILIA LEAMON | (609) 723-0990 | NJG0105384 |
| Pemberton Twp | NJDEP STATE PARK SERVICE | WHITESBOG VILLAGE -BRENDAN BYRNE STATE FOREST | PO BOX 215, PEMBERTON TWP | New Lisbon | 08064 | | CHRISTIAN BETHMANN | (609) 726-1191 | NJG0133132 |
| Pemberton Twp | COUNTRY HOUSE RESTAURANT | COUNTRY HOUSE RESTAURANT | 122 S PEMBERTON RD | Pemberton Twp | 08068 | | RON ASPELL | (609) 894-2620 | NJG0128554 |
| Shamong Twp | LAW & PUBLIC SAFETY JUVENILE JUSTICE COMM | WHARTON TRACT UNIT | NJ DEPT OF CORRECTIONS, RR8 | Shamong Twp | 08086-8567 | | RICHARD DASS | (609) 292-9071 | NJG0082686 |
| Shamong Twp | THIRD GARDEN PARK LP | OAKVIEW LEISURE VILLAGE | OAK DRIVE | Shamong Twp | 08088 | | DR WILLIAM P GELINAS | (201) 233-6261 | NJG0082872 |
| Shamong Twp | FAWN LAKE VILLAGE INC | FAWN LAKE VILLAGE INC | 1000 RT 206 | Shamong Twp | 08002 | | JACK LYNCH | (609) 465-7979 | NJG0084786 |
| Shamong Twp | NJDEP STATE PARK SERVICE | BATSTO HISTORIC SITE (WHARTON) | RD #9, SHAMONG & BURLINGTON TWP | Shamong Twp | 08065 | | LYNN FLEMING | (609) 561-0024 | NJG0133191 |
| Southampton Twp | LONTOKAL INC - T/A RED LION DINER | RED LION DINER | RT 70 & 206 | Southampton Twp | 08088 | | DIMITRIOS LONTORFOS | (609) 859-2301 | NJG0078891 |
| Southampton Twp | NEW VINCENTOWN DINER INC THE | NEW VINCENTOWN DINER INC THE | 2357 RT 206 & 38 | Southampton Twp | 08088 | | NICK MELISSARATOS | (609) 267-3033 | NJG0112623 |
| Southampton Twp | APANAY CAFE | APANAY CAFE | 788 MAGNOLIA RD | Southampton Twp | 08088 | | ALI SAYIN | (609) 894-9494 | NJG0138223 |
| Southampton Twp | RICHARDS MOBILE HOME COURT | RICHARDS MOBILE HOME COURT | 150 RT 530 | Southampton Twp | 08068 | | BARRY WHAM P.E. | (609) 426-4390 | NJG0155756 |
| Springfield Twp | COLUMBUS MARKET ASSOCIATION | COLUMBUS FARMERS MARKET | RT 206 S | Springfield | 08022 | | ROY LUDWICK | | NJG0075493 |
| Springfield Twp | MEHMET PAMUK | ESQUIRE DINER | RT 206 & RT 537 | Springfield | 08060 | | MEHMET PAMUK | (609) 267-6544 | NJG0102415 |
| Tabernacle Twp | LENAPE RGNL HIGH SCHOOL DISTRICT | SEQUOIA HIGH SCHOOL | 180 CARRANZA RD | Tabernacle | 08088 | | JAMES CROWLEY | (609) 268-2000x5525 | NJG0070998 |
| Tabernacle Twp | ALLENWOOD MOBILE ESTATES INC | ALLENWOOD MOBILE ESTATES INC | 17 CHERRY LN | Tabernacle | 08088 | | ARTHUR C ALLEN | (609) 268-8687 | NJG0084859 |
| Washington Twp | MP CAMPGROUND INC | BELHAVEN LAKE RES CAMPGROUND | 1213 RT 542 | Washington | 08215 | | FRANK PERGER | (609) 965-2827 | NJG0085146 |
| Washington Twp | WADING PINES CAMPGROUND | WADING PINES CAMPING RESORT | 85 GODFREY BRIDGE RD | Washington | 08019 | | JOAN PURPURI | (908) 349-2808 | NJG0085715 |
| Washington Twp | FAMILY CAMPING GROUP INC | TURTLE RUN CAMPGROUND | 3 CEDAR LN | Washington | 08215 | | JOE DIECKMAN/RICH BECK | (609) 965-5343 | NJG0139467 |
| Westampton Twp | BURLINGTON CNTY COUNTRY CLUB | BURLINGTON COUNTY COUNTRY CLUB | 170 BURRS RD | Westampton Twp | 08060 | | E A OLAFF | (609) 267-1886 | NJG0100617 |
| Woodland Twp | NJ JUVENILE JUSTICE COMM | PINELANDS RESIDENTIAL GROUP CENTER | 3016 RT 563 | Chatsworth | 08019 | | DAVID ESCHERT | (609) 530-5200 | NJG0132608 |
| Woodland Twp | NJDEP STATE PARK SERVICE | BRENDAN BYRNE STATE FOREST | PO BOX 215, WOODLAND TWP | Woodland Twp | 08064 | | CHRISTIAN BETHMANN | (609) 726-1191 | NJG0133141 |
| Wrightstown Boro | GARDEN STATE DINER & RESTAURANT | GARDEN STATE DINER & RESTAURANT | 208 GEORGETOWN RD | Wrightstown | 08562 | | STEVE OR ZACK ROTSIDES | (609) 723-5625 | NJG0137421 |
| Camden County | | | | | | | | | |
| Berlin Boro | BLOOM ORGANIZATION | COMMERCE LANE BUSINESS PARK | RT 73 N & COMMERCE LN | Berlin | 08009 | | STEVEN BLOOM | (609) 778-0300 | NJG0102091 |
| Berlin Boro | JOHNS MANVILLE CORP | JOHNS MANVILLE CORP | 437 N GROVE ST | Berlin Boro | 08009 | | NICK BRUECKNER | (856) 768-7082 | NJG0141321 |
| Berlin Twp | BECKY RON | OFFICE/WAREHOUSE | 420 COMMERCE LN | Berlin Twp | 08009 | | RON BECKY | (609) 768-0150 | NJG0101249 |
| Winslow Twp | WINSLOW COURT HOMES INC | WINSLOW COURT HOMES INC | 412 WILLIAMSTOWN RD | Sicklerville | 08081 | | MICHAEL A DIAMOND | (856) 767-8016 | NJG0137073 |
| Winslow Twp | STRAWBERRY VILLAGE INC | STRAWBERRY VILLAGE INC | 331 TANSBORO RD | Tansboro | 08009 | | PAUL SICKLER | (856) 629-5248 | NJG0084671 |
| Winslow Twp | WINSLOW TWP BD OF ED | WINSLOW SCHOOL #1 | BLUE ANCHOR ELEMENTARY, 413 INSKIP RD | Winslow | 08037 | | FRED WRIGHT | (609) 561-4106 | NJG0100099 |
| Winslow Twp | SEDHANI MATA LLC | KNIGHTS INN | 530 SOUTH RT 73 | Winslow | 08095 | | JOHN BICKEL | (856) 769-2423 | NJG0135739 |
| Winslow Twp | BVCA BLAST INC | WINSLOW HOUSE RESTAURANT | WILLIAMSTOWN-NEW FREEDOM RD | Winslow Twp | 08081 | | ENGINEER | (609) 629-9400 | NJG0100790 |
| Winslow Twp | TAHA JOHN | AUTUMN RUN APARTMENTS | SURREY AVE | Winslow Twp | 08009 | | JOHN TAHA | (908) 787-7873 | NJG0127228 |
| Winslow Twp | ELMTOWNE VILLAGE CONDOMINIUM ASSOC | ELMTOWNE VILLAGE CONDO ASSOC | 19 ELMTOWNE BLVD (UNIT 110 TO UNIT 242) | Winslow Twp | 08037 | | WILLIAM RUTH | (609) 704-2884 | NJG0157511 |
| Cape May County | | | | | | | | | |
| Dennis Twp | DRIFTWOOD CAMPING RESORT INC | DRIFTWOOD CAMPLING RESORT INC | 1955 RT 9 | Clermont | 08210 | | DEAN MITZEL | (609) 624-1899 | NJG0137103 |
| Dennis Twp | HOLLY LAKE CAMPGROUND | HOLLY LAKE CAMPGROUND | HOLLY RD | Dennis Twp | 08214 | | PETER SMITH | (609) 861-0662 | NJG0063673 |
| Dennis Twp | NJDEP STATE PARK SERVICE | BELLEPLAIN STATE FOREST | COUNTY RT 550, PO Box 450 | Dennis Twp | 08270 | | THOMAS KECK | (609) 861-0745 | NJG0084638 |
| Dennis Twp | TAMERLANE CAMPGROUND INC | TAMERLANE CAMPGROUND INC | 2241 RT 9, PO BOX 510 | Dennis Twp | 08230 | | RONALD STACKHOUSE SR | (609) 624-0767 | NJG0085154 |
| Dennis Twp | TURNER ENTERPRISES INC | OCEAN VIEW RESORT CAMPGROUND | 2555 RT 9 | Dennis Twp | 08230 | | JOHN T TURNER III | (609) 624-1675 | NJG0085189 |
| Dennis Twp | PERAGINE PETER & NANCY | SEA GROVE CAMPGROUND | 2665 RT 9 | Dennis Twp | 08230 | | PETER PERAGINE | (609) 624-3529 | NJG0085197 |
| Dennis Twp | JERSEY SHORE HAVEN INC | JERSEY SHORE HAVEN INC | 728 DENNISVILLE RD, PO BOX 96 | Dennis Twp | 08246 | | CHARLES B MARPLE | (609) 861-7038 | NJG0085243 |
| Dennis Twp | PINE HAVEN LLC | PINE HAVEN CAMPGROUND | RT 9 | Dennis Twp | 08230 | | GLEN HEPPARD | (609) 762-0928 | NJG0085359 |
| Dennis Twp | RESORT CAMPGROUND CORP | RESORT CAMPGROUND | 48 CORSON TAVERN RD | Dennis Twp | 08230 | | REUBEN | (609) 624-3666 | NJG0085740 |
| Dennis Twp | AVALON CAMPGROUND INC | AVALON CAMPGROUND INC | 1917 RT. 9 N | Dennis Twp | 08210 | | LEONARD CATANOSO | (609) 624-0075 | NJG0132772 |
| Dennis Twp | SEASHORE LINE CAMPING RESORT CONDOMINIUM | SEASHORE LINE CAMPING RESORT CONDOMINIUM | 720 KINGS HWY | Dennis Twp | 08246 | | BRUCE GREEN | (609) 624-0110 | NJG0135488 |
| Dennis Twp | OCEAN VIEW CONDOMINIUM ASSN | OCEAN VIEW CONDO ASSOCIATION | RT 9 & SEA ISLE BLVD | Dennis Twp | 08230 | | DAVID W. HUNTER | (609) 624-3637 | NJG0157694 |
| Dennis Twp | SJ MICHAEL INC | LITTLE OAKS CAMPGROUND | 318 KINGS HWY | South Seaville | 08230 | | JUDY LAPORTA | (609) 624-1682 | NJG0135267 |
| Upper Twp | UPPER TWP BD OF ED | UPPER TOWNSHIP MIDDLE SCHOOL | 525 PERRY RD | Petersburg | 08270 | | Ray Cavanaugh | (609) 390-1242 | NJG0135623 |
| Upper Twp | SEAVILLE SHORES | SEAVILLE SHORES TRAILER RESORT | 98 CORSON TAVERN RD | Seaville | 08230 | | JAMES SCHRODER | (609) 861-5571 | NJG0085308 |
| Upper Twp | OCEAN SANDS RESORT ASSOCIATION | OCEAN SANDS RESORTS ASSOC | 56 RT 50 | Seaville | 08230 | | JOHN WALLACE | (609) 624-1623 | NJG0135470 |
| Upper Twp | FT NUGENT ENTERPRISES | NJBELL TELEPHONE SERVICE SYS | RT 9 | Upper Twp | 08250 | | PLANT OFFICER | (609) 641-2503 | NJG0071676 |
| Upper Twp | TYANS CORP T/A TUCKAHOE INN | TUCKAHOE INN | 1 HARBOR RD | Upper Twp | 08223 | | WILLIAM W. CATHCART | (609) 390-3322 | NJG0073725 |
| Upper Twp | BAYBERRY COVE CONDO ASSN | BAYBERRY COVE CAMPGROUND | 435 US RT 9 | Upper Twp | 08223 | | ALBERT U STUBEE | (609) 455-3518 | NJG0075558 |
| Upper Twp | SHORE ACRES | SHORE ACRES ADULT MOBILE HOME COMMUNITY | 1621 S SHORE RD | Upper Twp | 08230 | | PLANT MANAGER | (609) 390-3627 | NJG0084743 |

Table 7
NJPDES T1-Permitted OWTS Facilities and Operator Contacts in Pinelands Municipalities

| Municipality | Permittee Name | Facility Name | Facility Address | Facility City | Facility Zip | | Facility Contact | Facility Phone | NJPDES Permit Number |
|--------------------------|--|--|---|-------------------|--------------|--|-----------------------|----------------|----------------------|
| | | | | | Code | | | | |
| Upper Twp | OAK RIDGE RESORT CONDOMINIUM | OAK RIDGE RESORT CONDOMINIUM | 516 SOUTH SHORE RD | Upper Twp | 08223 | | GEORGE J CLEMENT JR | (609) 390-0916 | NJG0084891 |
| Upper Twp | PLANTATION CAMPGROUND | PLANTATION CAMPGROUND | CORSON TARVERN RD | Upper Twp | 08230 | | ELIZABETH E CORSON | (609) 624-3528 | NJG0084964 |
| Upper Twp | FRONTIER CAMPGROUND | FRONTIER CAMPGROUND | RT 50 GREENFIELD | Upper Twp | 08230 | | GEORGE REAGAN | (609) 390-3649 | NJG0084972 |
| Upper Twp | SHADY OAKS CAMPGROUND INC | SHADY OAKS CAMPGROUND | 64 STATE HIGHWAY 50 | Upper Twp | 08230 | | RACHAEL A CLARKE | (609) 390-0431 | NJG0085171 |
| Upper Twp | WHIPPOORWILL CAMPGROUND | WHIPPOORWILL CAMPGROUND | 810 S SHORE RD | Upper Twp | 08223 | | THOMAS R SWENK | (609) 390-3458 | NJG0085294 |
| Upper Twp | US COAST GUARD GROUP AIR STATION | US COAST GUARD HOUSING FAC | WASTEWATER DISPOSAL FACILITY, 1823 S SHORE RD | Upper Twp | 08230 | | J M DEANGELIS | (609) 677-2173 | NJG0088561 |
| Upper Twp | OCEAN BEACH TRAILER RESORT | OCEAN BEACH TRAILER RESORT | COMMONWEALTH AVE | Upper Twp | 08248 | | STEVEN FILIPPONE | (609) 390-0332 | NJG0089681 |
| Upper Twp | PINE HILL TRAILER PARK INC | PINE HILL TRAILER PARK INC | 430 US ROUTE 9 S | Upper Twp | 08223 | | ELIZABETH BROADLEY | (609) 390-2039 | NJG0100242 |
| Upper Twp | PINE HILL TRAILER PARK INC | PINE HILL TRAILER PARK II | 430 SHORE RD | Upper Twp | 08223 | | FRANK FOGLIO | (609) 390-2039 | NJG0100251 |
| Upper Twp | MCINTYRE ENTERPRISES INC | YESTERDAY'S | 316 ROOSEVELT BLVD | Upper Twp | 08223 | | MARIE MCINTYRE | (609) 390-1757 | NJG0100765 |
| Upper Twp | MCINTYRE MARIE | OBADIAH'S | ROOSEVELT BLVD | Upper Twp | 08223 | | MARIE MCINTYRE | (609) 390-1757 | NJG0100773 |
| Upper Twp | WAYSIDE VILLAGE | WAYSIDE VILLAGE | TUCKAHOE RD | Upper Twp | 08233 | | ANTHONY FAVORITO | (856) 390-5960 | NJG0108227 |
| Upper Twp | MARMORA SAI MOTEL INC | ECONO LODGE | 119 RT 9 S | Upper Twp | 08233 | | NEELAM MERCHANT | (609) 390-3366 | NJG0108537 |
| Upper Twp | KARAYIANNIS DINO | DINO'S DINER | 31 RT 50 | Upper Twp | 08230 | | STEVEN FILIPPONE | (609) 390-0332 | NJG0109550 |
| Upper Twp | DEAUVILLE INN INC | DEAUVILLE INN | 201 WILLARD RD | Upper Twp | 08248 | | LYNDA BROWN | (609) 263-2080 | NJG0109924 |
| Upper Twp | MCCREESH NOEL & DABUNDO TONY | RIVERVIEW CAMPGROUND | RT 49 | Upper Twp | 08250 | | NOEL MCCREESH | (609) 624-1087 | NJG0129003 |
| Upper Twp | SPINELLI KATHLEEN | SHORE BIRDS CAMPGROUND | 1314 STAGECOACH RD | Upper Twp | 08230 | | KATHLEEN SPINELLI | (609) 390-1276 | NJG0134309 |
| Upper Twp | ECHO FARM CAMPGROUND INC | ECHO FARM CAMPGROUND INC | 3066 RT 9 | Upper Twp | 08230 | | JAMES SIMKIN | (609) 624-3589 | NJG0135071 |
| Woodbine Boro | SADUK ANTHONY SR | CAROL LYNN RESORTS INC | FREMONT AVE | Woodbine | 08270 | | ANTHONY SADUK SR | (609) 861-2172 | NJG0066958 |
| Woodbine Boro | OCEAN WORLD CAMPERS RESORT | OCEAN WORLD CAMPGROUND | 1324 FRIEDRIECHSTADT AVE & OCEAN BLVD | Woodbine | 08270 | | HARRY HANNA | (609) 861-0388 | NJG0084808 |
| Cumberland County | | | | | | | | | |
| Maurice River Twp | VILLAGES II THE | THE VILLAGES II | 3929 S DELSEA DR | Dorchester | 08316 | | JIM SULLIVAN | (609) 694-3232 | NJG0089249 |
| Maurice River Twp | CAPTAIN KLEIN BOAT RENTAL & CAMPGROUND | CAPTAIN KLEIN BOAT RENTAL & CAMPGROUND | 233 EAST PT RD | Heislerville | 08324 | | NELSON KLEIN | (856) 785-0198 | NJG0135801 |
| Maurice River Twp | MAURICE RIVER TWP BD OF ED | PORT ELIZABETH SCHOOL | SOUTH DELSEA DR | Maurice River Twp | 08348 | | KENT SCHELLINGER | (609) 825-0083 | NJG0128503 |
| Vineland City | RURAL DEVELOPMENT CORP | RURAL DEVELOPMENT CORP | 6140 MAYS LANDING RD | Vineland | 08360 | | RICK BELUS | (609) 327-3145 | NJG0082147 |
| Vineland City | CHAPMAN MANUFACTURED HOUSING | CHAPMAN MANUFACTURED HOUSING | 768 E GARDEN ROAD #1 | Vineland | 08360 | | PHILO CHAPMAN JR | (609) 696-4034 | NJG0084395 |
| Vineland City | MARTAG INC | DELSEA WOODS-VINELAND MHP | 800 COLLEGE DR | Vineland | 08360 | | MARVIN GOLDSTEIN | (609) 825-4655 | NJG0084433 |
| Vineland City | DEMAIO JOSEPH | REDWOOD COURT INC | 1811 N DELSEA DR | Vineland | 08360 | | JOSEPH DEMAIO | (609) 692-9551 | NJG0084441 |
| Vineland City | GROVE ACRES MOBILE HOME PARK | GROVE ACRES MOBILE HOME PARK | 576 W FOREST GROVE RD | Vineland | 08360 | | ALBERT D MARTINELLI | (609) 768-9330 | NJG0084450 |
| Vineland City | THIRD GARDEN PARK LP | LAMPLIGHTER COMMUNITY | 3592 DELSEA DR | Vineland | 08360 | | JOEL FREEDMAN | (203) 348-2200 | NJG0084590 |
| Vineland City | WEST JERSEY GROVE ASSOC | MALAGA CAMP | COLUMBIA AVE & NORTH DELSEA DR | Vineland | 08360 | | CARLTON JOHNSON JR | (856) 691-0561 | NJG0153796 |
| Gloucester County | | | | | | | | | |
| Franklin Twp | MALAGA MOBILE HOME PARK | MALAGA MOBILE HOME PARK | DELSEA DR & MARSHALL MILL RD | Franklin Twp | 08328 | | MALAGA | (609) 694-1361 | NJG0084611 |
| Franklin Twp | ISIHOS LOUIS | PEGASUS RESTAURANT | RTS 40 & 47 | Franklin Twp | 08328 | | LOUIS ISIHOS | (609) 694-0500 | NJG0085456 |
| Franklin Twp | ROSAMAR PROPERTIES V LLC | MALAGA VILLA_APTS | 570 SPRINGFIELD AVE | Franklin Twp | 07902 | | MARSHALL WEINERMAN | (908) 273-2444 | NJG0104230 |
| Franklin Twp | MARYVILLE INC | MARYVILLE INC | 1903 GRANT AVE | Franklin Twp | 08094 | | MELVIN STOKES | (856) 629-0244 | NJG0145980 |
| Franklin Twp | FAIOLA ANTHONY M SR | IONA MOBILE HOME PARK | 18 HALE AVE | Franklinville | 08322 | | Anthony M Faiola Sr | (856) 665-9283 | NJG0135275 |
| Franklin Twp | SHARON REED DEVELOPMENT CORP | THE ROCK AT VILLAGE DOCK | 1664 DELSEA DR | Franklinville | 08322 | | TYLER HARLEY | (215) 477-6700 | NJG0140121 |
| Franklin Twp | WHITE & BLUE LLC | FRANKLIN SENIOR RESIDENCE | 119 RAILROAD AVE | Franklinville | 08322 | | TONY GROCHOWSKI | (856) 694-4614 | NJG0146056 |
| Monroe Twp | HOSPITALITY CREEK | HOSPITALITY CREEK CAMPGROUND | 117 COLES MILL RD | Monroe Twp | 08094 | | THOMAS K CRANE | (856) 629-5140 | NJG0086932 |
| Ocean County | | | | | | | | | |
| Barnegat Twp | RISSMAN INVESTMENT CO | PINEWOOD ESTATES MOBILE HOME PARK | RT 72 LOT 2, BLOCK 86 | Barnegat | 08005 | | PLANT OFFICER | | NJG0064823 |
| Barnegat Twp | BOY SCOUTS OF AMERICA | CITTA BOY SCOUT CAMP | 229 BROOKVILLE RD | Barnegat | 08005 | | BILL FREELAND | (908) 349-1037 | NJG0101621 |
| Berkeley Twp | NJDEP STATE PARK SERVICE | ISLAND BEACH STATE PARK | PO BOX 37, BERKELEY TWP | Berkeley Twp | 08752 | | WILLIAM VIBBERT | (732) 793-0506 | NJG0133175 |
| Berkeley Twp | NJDEP STATE PARK SERVICE | DOUBLE TROUBLE STATE PARK | PO BOX 175, BERKELEY & LACEY TWPS | Berkeley Twp | 08721 | | GEORGE BURKE | (732) 793-0506 | NJG0133183 |
| Dover Twp | ALBOCONDO CAMPGROUND | ALBOCONDO CAMPGROUND | 1480 WHITESVILLE RD | Toms River | 08755 | | DOUGLAS H CLAYTON | (908) 349-4079 | NJG0085324 |
| Eagleswood Twp | SEA PIRATE LIGHT CAMPSITE | SEA PIRATE CAMPGROUND | RT 9 | Eagleswood Twp | 08092 | | PATRICK BENN | (609) 296-7400 | NJG0085448 |
| Jackson Twp | LAND O PINES MOBILE HOME PARK | LAND O'PINES MOBILE HOME PARK | 135 W COMMODORE BLVD | Jackson Twp | 08527 | | FREDERICK F HEBELER | (908) 928-1440 | NJG0083186 |
| Jackson Twp | PSL LLC | LUXURY MOBILE HOME PARK | RT 571 | Jackson Twp | 08527 | | ALAN KENNETT | (732) 269-4396 | NJG0084697 |
| Jackson Twp | TOMARON INC - INDIAN ROCK CAMPGROUND | INDIAN ROCK CAMPGROUND | RTE 528 RD 6 BOX 292B | Jackson Twp | 08527 | | THOMAS J VIVIANO | (908) 928-0034 | NJG0084794 |
| Jackson Twp | BUTTERFLY CAMPGROUND | BUTTERFLY CAMPGROUND | BUTTERFLY RD RD2 BOX 51A | Jackson Twp | 08527 | | RICHARD JOHNSON | (908) 928-2107 | NJG0085138 |
| Jackson Twp | GUGLIEMELLI LEO | TIP TAM CAMPING RESORT LLC | 301 BREWERS BRIDGE RD | Jackson Twp | 08527 | | LEO GUGLIEMELLI | (908) 363-4036 | NJG0085278 |
| Jackson Twp | SHADY LAKE PARK INC | SHADY LAKE PARK INC | 631 N COUNTY LINE RD, AKA RTE 526 | Jackson Twp | 08527 | | WILBUR DENSON | (908) 928-1688 | NJG0086860 |
| Jackson Twp | MAPLE LAKE INC | MAPLE LAKES CAMPGROUNDS INC | RT 528 | Jackson Twp | 08527 | | THEODORE P. HORDICHUK | (908) 367-0177 | NJG0088951 |
| Jackson Twp | TOBYS HIDEAWAY CAMPGROUND LLC | TOBYS HIDEAWAY CAMPGROUND | 380 CLEARSTREAM RD | Jackson Twp | 08527 | | TERRI PITEO | (732) 363-3662 | NJG0089010 |
| Jackson Twp | LTR PLEASANT GARDEN CO | PLEASANT GARDEN APARTMENTS | RT 528 & HOPE RD | Jackson Twp | 08527 | | CHESTER LIU | (908) 536-0115 | NJG0100404 |
| Jackson Twp | OCEAN CNTY VOCATIONAL TECH SCHOOL | OCEAN CO VO TECH SCHOOL | 850 TOMS RIVER RD | Jackson Twp | 08527 | | EDWARD J CRAWFORD | (908) 244-5685 | NJG0108545 |
| Jackson Twp | SHADY OAK TRAILER PARK | SHADY OAK TRAILER PARK | 355 RT 571 | Jackson Twp | 08527 | | EARL TERHUNE | (908) 787-3664 | NJG0112658 |
| Jackson Twp | NJDEP STATE PARK SERVICE | STATE NURSERY | 370 E VETERANS HIGHWAY | Jackson Twp | 08527 | | | | NJG0133205 |
| Jackson Twp | DOVES MILL APARTMENTS | DOVES MILLS APARTMENTS | 401 405 BENNETTS MILLS RD | Jackson Twp | 08527 | | DAVID O'ROKKE | (732) 245-7653 | NJG0136719 |
| Jackson Twp | JACKSON COLONIAL ARMS | JACKSON COLONIAL ARMS APARTMENTS | 80 W VETERANS HWY | Jackson Twp | 08527 | | KIM MONJOY | (732) 928-3702 | NJG0136913 |

Table 7
NJPDES T1-Permitted OWTS Facilities and Operator Contacts in Pinelands Municipalities

| Municipality | Permittee Name | Facility Name | Facility Address | Facility City | Facility Zip Code | Facility Contact | Facility Phone | NJPDES Permit Number |
|-----------------------|--|---|----------------------------------|-------------------|-------------------|---------------------|----------------|----------------------|
| Jackson Twp | RED CEDAR VILLAGE INC | RED CEDAR VILLAGE | RT 537 | Jackson Twp | 08527 | ANTHONY VINCIGUERRA | (732) 928-0236 | NJG0139777 |
| Jackson Twp | MEADOWBROOK COOPERATIVE INC | MEADOWBROOK VILLAGE | RT 528 E VETETERANS HWY | Jackson Twp | 08527 | LEONA M PASCARELLA | (732) 928-3049 | NJG0140368 |
| Lacey Twp | SCRUBBIE PINES CAMPGROUND | SCRUBBIE PINES CAMPGROUND | 30 RT 72 | Lacey | 08005 | ROBERT M ELLEY | (609) 698-7252 | NJG0132560 |
| Lakehurst Boro | CEDAR GLEN WEST INC | CEDAR GLEN WEST INC | RT 571 & 547 | Lakehurst | 08733 | EARL F SUTTON JR | (732) 657-5525 | NJG0136387 |
| Little Egg Harbor Twp | BAKER JACK F | BAKER'S ACRES CAMPGROUND INC | WILLETS AVENUE & RAIL RD | Little Egg Harbor | 08087 | JACK F BAKER | (609) 296-2664 | NJG0085286 |
| Manchester Twp | GARDEN HOMES MGMT CORP | RIDGEWAY MANUFACTURED HOUSING COMMUNITY | 3614 RIDGEWAY RD | Manchester Twp | 08733 | JOHN HURLEY | (732) 657-6750 | NJG0085014 |
| Manchester Twp | CEDAR GLEN HOMES INC | CEDAR GLEN HOMES INC | 1848 RIDGEWAY RD, RD 2 GLN HOUSE | Manchester Twp | 08733 | ROBERT KNOWLES | (732) 349-3108 | NJG0136492 |
| Manchester Twp | BECKERVILLE URBAN RENEWAL ASSOC LP | MANCHESTER VILLAGE | HORICON AVE | Manchester Twp | 08733 | DONALD R FLETT | (732) 604-7390 | NJG0141933 |
| Ocean Twp | OCEAN CNTY BD OF ED OF VOCATIONAL SCHOOL | OCEAN CNTY VOC TECH - WARETOWN | 432 WELLS MILLS RD, RT 532 | Ocean Twp | 08758-8822 | EDWARD CRAWFORD | (732) 473-3112 | NJG0134813 |
| Plumsted Twp | LAMBERT PROPERTIES LLC | OAK GROVE MOBILE HOME PARK | 254 LAKEWOOD RD | New Egypt | 08533 | CRIS LAMBERT | (732) 751-9520 | NJG0157309 |
| Plumsted Twp | JUNG HYUN CHO | NEW EGYPT TRAILER PARK | 67 JACOBSTOWN RD | Plumsted Twp | 08533 | JUNG HYUN CHO | (609) 758-8883 | NJG0084212 |
| Plumsted Twp | COLLIERS MILLS MOBILE HOME PARK INC | COLLIERS MILLS MOBILE HOME PARK INC | 137 RICHARDSON RD | Plumsted Twp | 08691 | GEORGE J LORBECK | (609) 259-3248 | NJG0084387 |
| Plumsted Twp | NEW EGYPT SPEEDWAY | NEW EGYPT SPEEDWAY | RT 539 | Plumsted Twp | 08533 | RICHARD GROSSO | (908) 281-0171 | NJG0154105 |

Source: NJPDES database, downloaded November 9, 2007.

Note: This table includes all wastewater facilities holding a T-1 NJPDES permit (for OWTS with design flows of greater than 2,000 gallons per day) in Pinelands Municipalities.

The facilities themselves, however, may not be within the Pinelands Area. This table is intended to inform municipal officials of potential contacts for local wastewater management expertise.

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Date/init: anm, 12/17/07

STONE ENVIRONMENTAL, INC.

Table 8
Summary of Selected Current OWTS Management Program Elements for New Jersey and Selected Other States

| Program Element | State of New Jersey Pinelands Commission (NJPC) | State of New Jersey Department of Environmental Protection (NJDEP) | State of Massachusetts Department of Environmental Protection (MADEP) | State of Florida Department of Health (FLDOH) | State of Rhode Island Department of Environmental Management |
|---|---|--|--|--|---|
| Compliance Inspections / Monitoring for Existing Systems | Inspection/ pumping required for all systems every three years | State Guidance Manual for inspection of existing OWTS | Time of transfer inspections required since 1995. Annual inspections required for innovate/alternative systems | State voluntary inspection procedures | State Guidance Manual; implemented by local municipalities |
| Construction (additional local standards for new, altered, or repaired systems) | Greater setbacks to wetlands, greater depth to groundwater | Yes, certified by PE or REHS | Implemented by each municipality, with some regional health districts | Information not available | None |
| Corrective Actions | Nitrogen (N) reducing systems only through pilot program | Municipal or County level | Municipal level | County level | State level for installation; town level for management |
| Enforcement | N reducing systems only through provisions of pilot program | Municipal or County level | Municipal level | Administrative citation for violation for onsite sewage program/sanitary nuisance | State level for installation; town level for management |
| Design | Pilot N reducing systems only; depth to seasonal high water table; distance to wetland/ water courses | State minimum standards (N.J.A.C. 7:9A); designs by N.J.P.E. only | State minimum code (Title 5) & allowable innovative/ alternative technologies | State minimum code (Chapter 64E-6) | State Minimum Code (Individual Sewage Disposal System (ISDS) regulations) |
| Financial Assistance and Funding | Assistance to local entities in applying for state or other funding | Community Development | Local revolving loan programs using CWA SRF funds | Regional community service organizations have loan programs | DEM grants for local or regional Onsite Wastewater Management Plans; State SRF & RI MHFA funds used for Community Septic System Loan Programs (CSSLP) |
| Operation and Maintenance | O&M required for pilot nitrogen reducing systems; periodic inspection and pumping of all OWTS required by CMP | Local programs in at least 8 municipalities | Required for I/A technology; municipality-based for traditional systems | Advanced Treatment Systems (ATUs) require regular service and reporting by ATU Management Entities | Town-based programs can require O&M permits; at least 2 towns have done so. |
| Performance | Specific levels of nitrogen reduction required based on lot size | Allow for Treatment Works Approval for advanced treatment systems to overcome soil or site constraints | OWTS Testing Center; Nitrogen limits for systems in source protection areas and some coastal estuaries | Nitrogen Limits for Florida Keys and N-sensitive spring recharge areas | Nitrogen reducing systems approved for Critical Resource Areas |
| Planning for OWTS Management | Ongoing | Proposed revisions of Water Quality Management Planning Requirements | Septic Management Plans are required to receive SRF funds | FLDOH has had an OWTS Technical Review and Advisory Panel since 1996 | 9 Approved local OWMPs; 11 draft OWMPs out of a total of 39 municipalities |

Table 8

Summary of Selected Current OWTS Management Program Elements for New Jersey and Selected Other States

| Program Element | State of New Jersey Pinelands Commission (NJPC) | State of New Jersey Department of Environmental Protection (NJDEP) | State of Massachusetts Department of Environmental Protection (MADEP) | State of Florida Department of Health (FLDOH) | State of Rhode Island Department of Environmental Management |
|---|--|--|---|---|---|
| Public Education and Participation | Ongoing | Web site, brochures, short courses, triennial notices of proper O&M required by N.J.A.C. 7:9A to be sent by administrative authority | Website, brochures, and municipal level outreach | Website, brochures, and county level outreach | Website, brochures, outreach programs for homeowners |
| Record Keeping, Inventory and Reporting | Water quality data & annual reports on performance of pilot program alternative design systems | Up to authorized agencies (local/County Health Dept), who must report summary of permitting of new, replacement, and repairs to NJDEP annually | Inventory and recordkeeping are required to receive SRFFunds | County-level reporting to the State annually | State wide system for new permits - municipalities encouraged to adopt Rhode Island Wastewater Information System (RIWIS) database, developed with state grant money. |
| Residuals Management | Rely on DEP rule | Municipalities can set requirements for pumpouts; septic tank pumps must be registered with DEP | Municipalities can set requirements for pumpouts, some of which require permits or notification of pumping and septage disposal for each system | Documentation of mandatory pumpouts is not available. Septage haulers required to complete septic tank pumping reports are required to be submitted to | Municipalities can set requirements for pumpouts - some local municipalities have mandatory inspections and pumpouts |
| Site Evaluation | Depth to seasonal high water table >5' feet; required separation to wetlands and water courses | Per N.J.A.C. 7:9A. Findings certified by PE, witnessed by administrative authority unless waived | Soils and site evaluation by professional site evaluators; based on soil morphology & site conditions | Soils and site evaluation by environmental health professional; based on soil morphology and site conditions | Soils and site evaluation by licensed evaluators; based on soil morphology and site conditions |
| Training and Certification/Licensing | Specific models of N reducing systems are designated in regulation for pilot program | PE required to design system; and pumpers need to be registered; PE or REHS required to inspect new OWTS construction | Training and Certification Programs for Inspectors and Site Evaluators at State level; local municipalities register installers and septic tank pumpers | Florida Onsite Wastewater Association Training Center; State certifies environmental health professionals, inspectors and septic system contractors, septage haulers, and advanced treatment unit management entities | New England Onsite Wastewater Training Center is located in South Kingstown, Rhode Island. Training and licensing required for soil evaluators, licensed designers, inspectors, installers, and septage |

Sources: Interviews with County environmental health staff; county ordinances; Technical Advisory Committee meetings.

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Date: 10/24/07 anm/bfd



STONE ENVIRONMENTAL, INC

Figure 1. Pinelands Area Location and Counties in the Pinelands Area

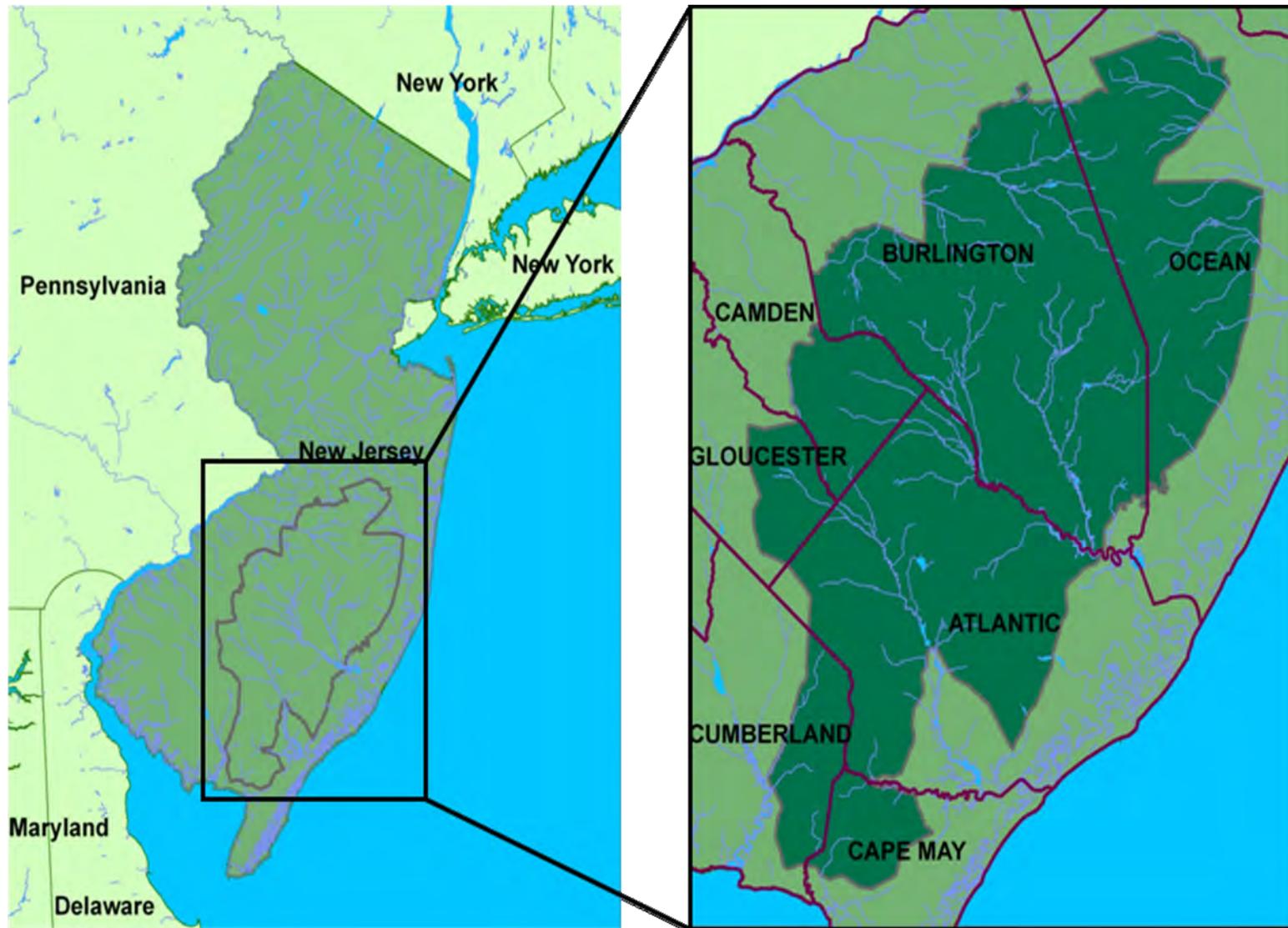
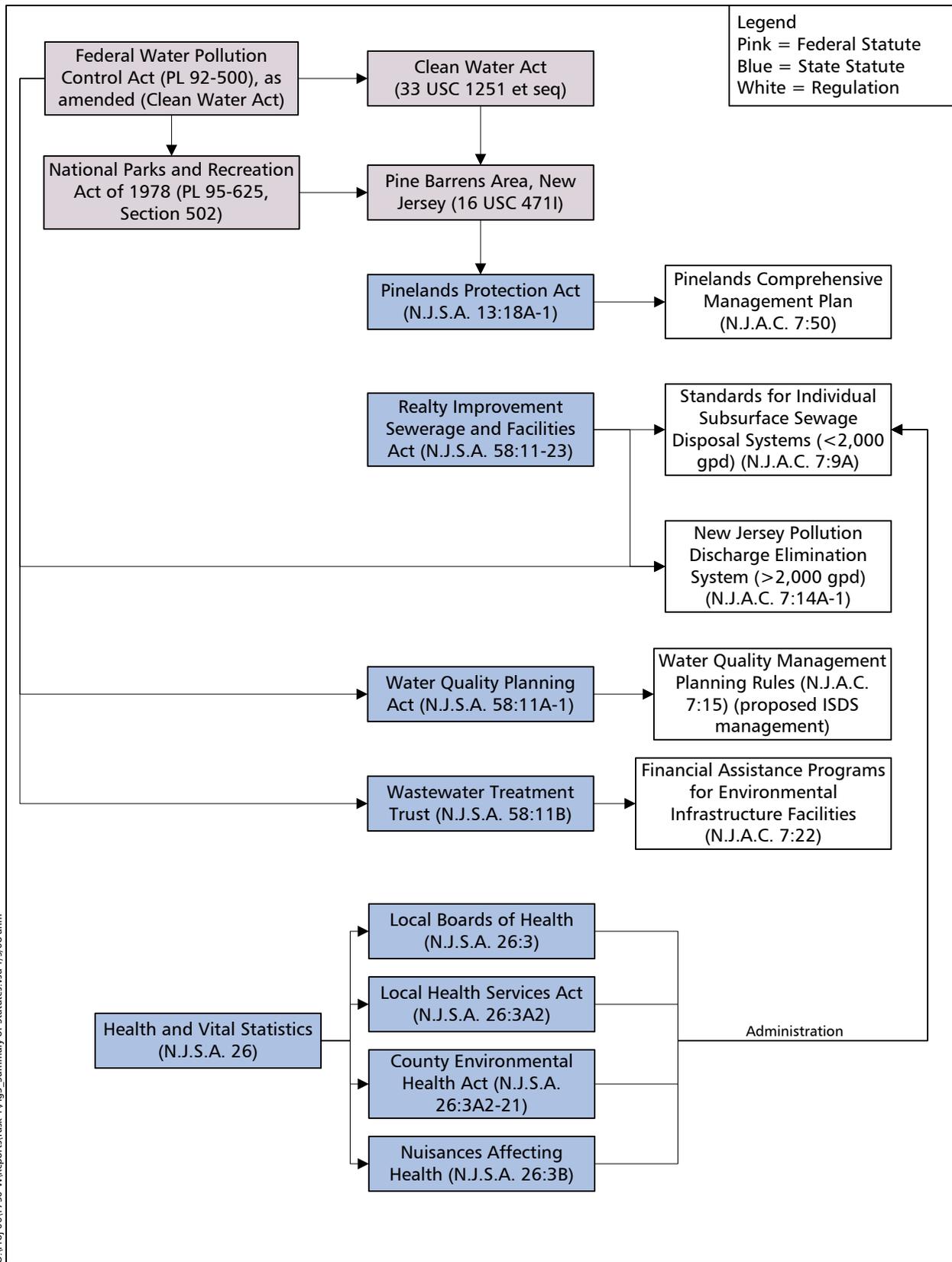


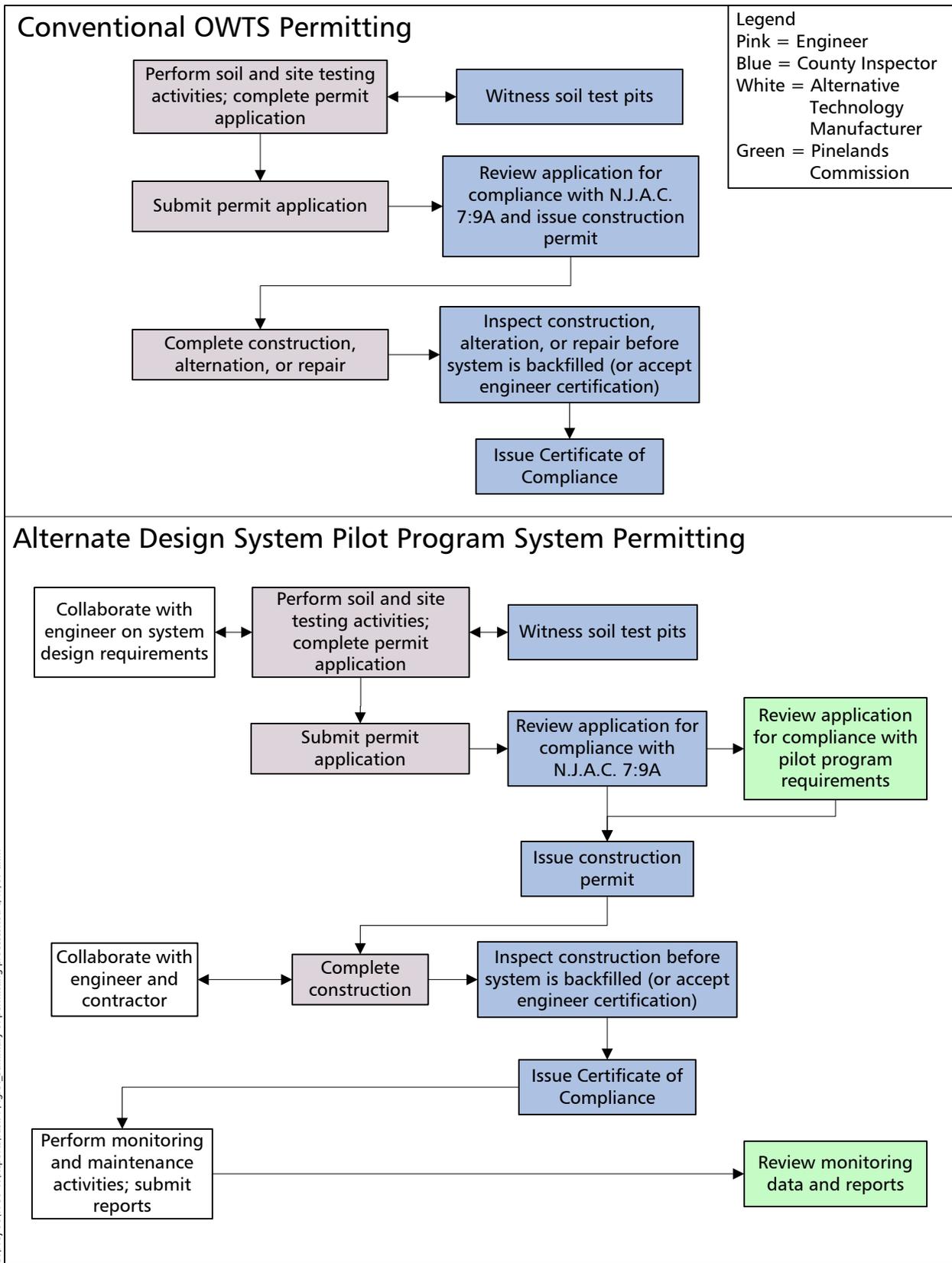
Figure 2. Pinelands Area Municipalities





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Figure 3: Summary of Laws, Statutes, and Regulations Relating to OWTS Pinelands Area, New Jersey



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Figure 4: Summary of Permitting Process for Conventional OWTS and Alternate Design Pilot Program Systems Pinelands Area, New Jersey

Figure 5. Pinelands Area Land Use Designations

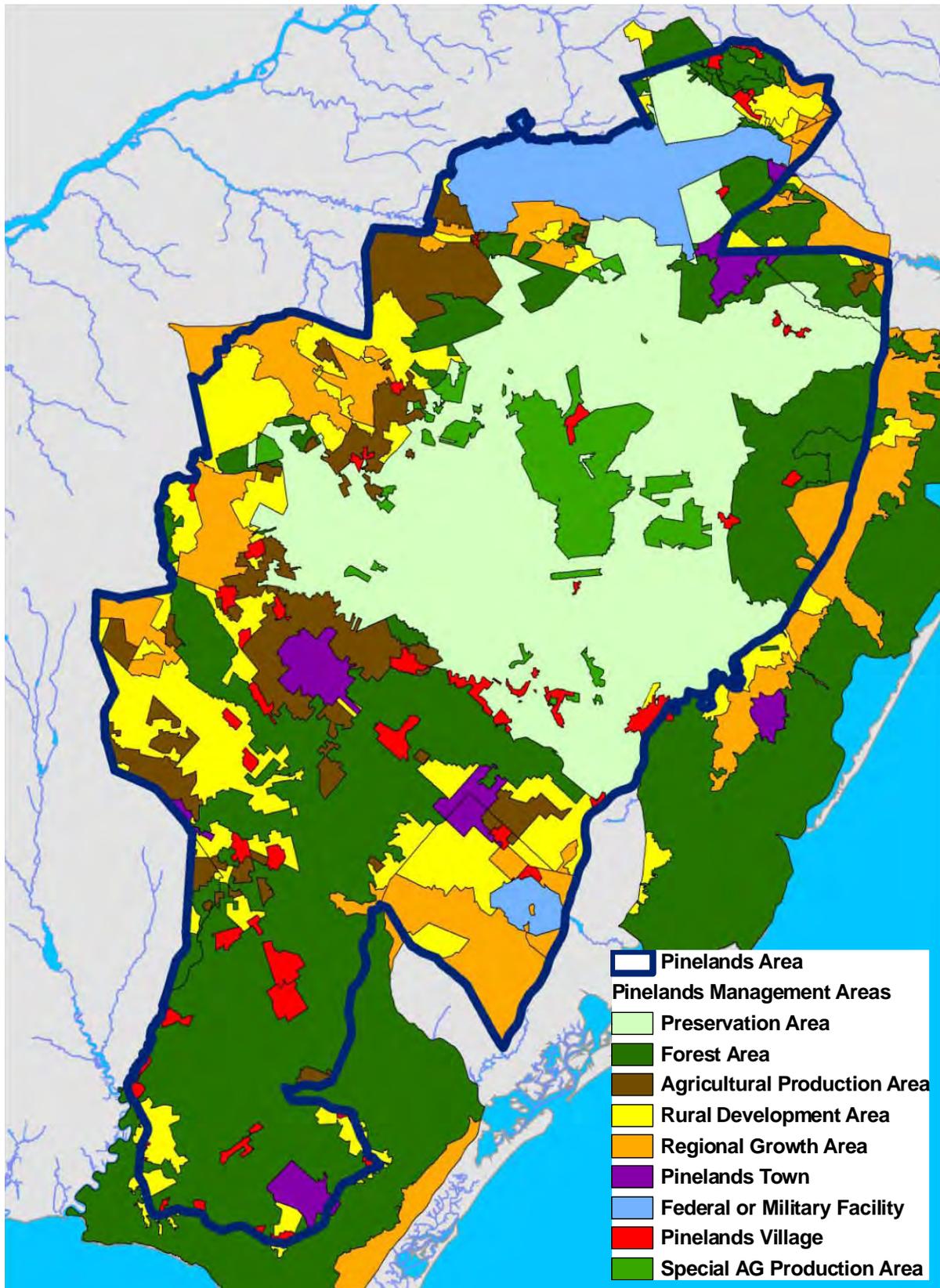


Figure 6. Watershed Management Areas

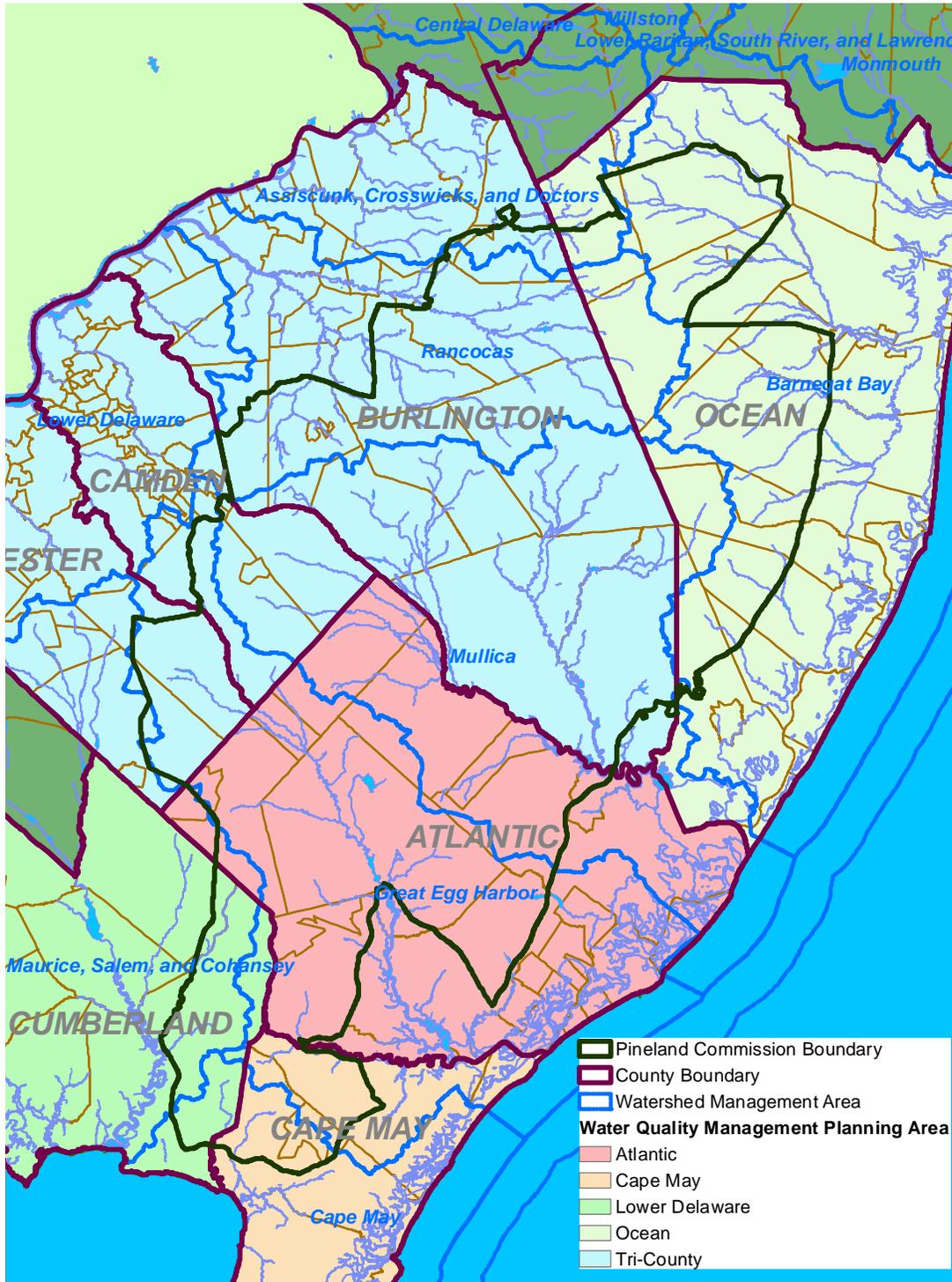
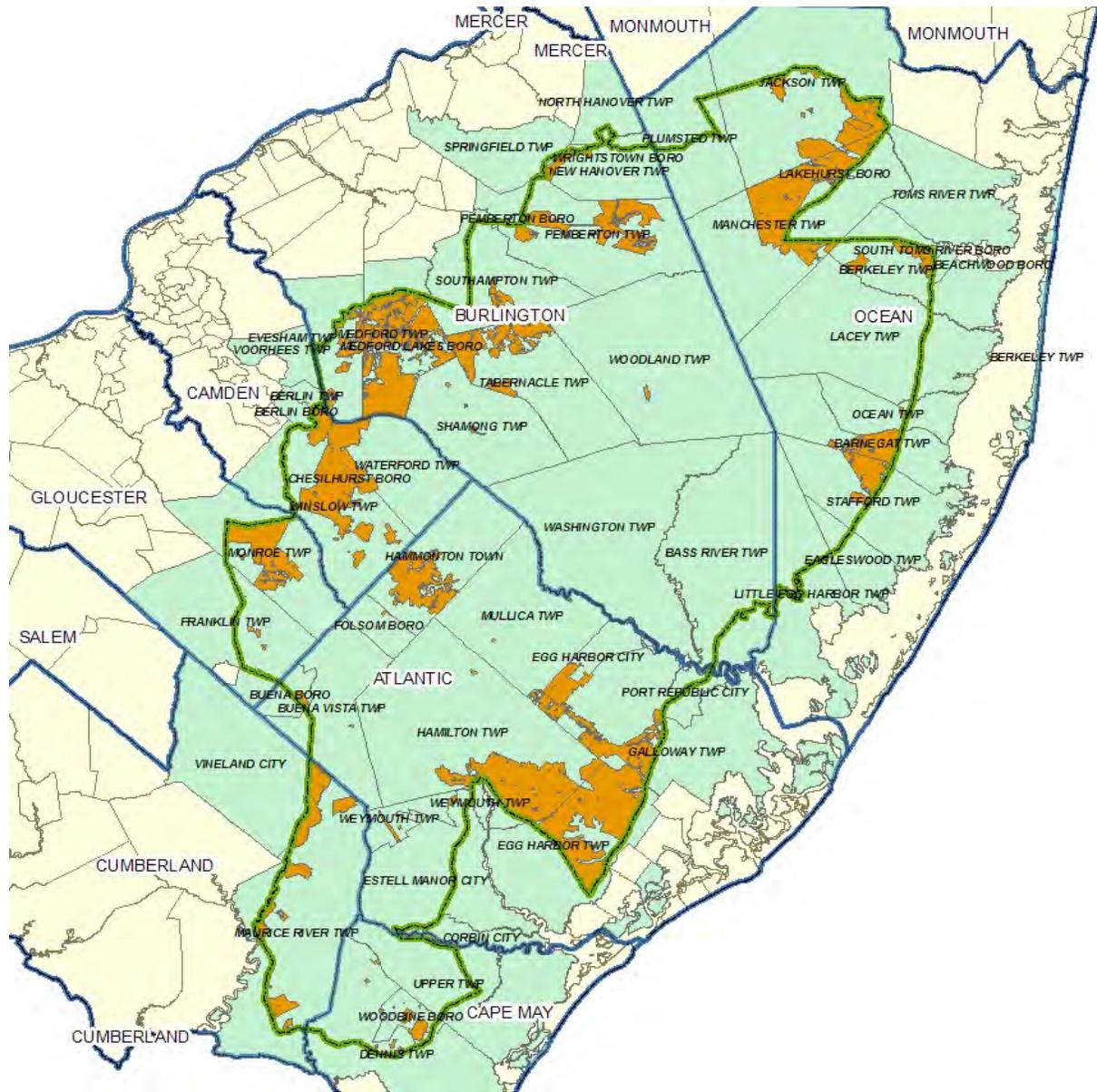


Figure 7. Pinelands Area, Potential Sewer Service Areas, and Areas within Pinelands That Rely Upon OWTS



Appendix B

Septic System Management Legislation

New Jersey Department of Environmental Protection, Office of
Regulatory Affairs

May, 1979 unpublished report

An Ordinance Creating a Subsurface

Waste Disposal System Management District

In the (Township of Hopewell)

Stony Brook - Millstone Watersheds Association

February 26, 1979

Septic System Management Legislation

Authority

Any authority for the establishment of septic system management programs must be implied from the statutes, by interpretation, because the laws do not specifically authorize this management program. However, some of the broadest authority in New Jersey for water pollution control is vested in sewerage authorities and municipal utility authorities. In making such a determination, one must look first at the purpose of the legislation. Sewerage authorities are authorized under N.J.S.A. 40:14A-1 et seq.

It is hereby declared to be in the public interest and to be the policy of the State to foster and promote by all reasonable means the relief of waters in or bordering the State for pollution and thus to reduce and ultimately abate the menace to the public health resulting from such pollution. It is the purpose and object of this act to further and implement such policy by

- (1) Authorizing counties, or municipalities either separately or in combination with other municipalities, by means and through the agency of a sewerage authority, to acquire, construct, maintain, operate or improve works for the collecting, treatment, purification or disposal of sewage or other wastes.
- (2) Authorizing service charges to occupants or owners of property for direct or indirect connection with and the use or services of such works, and providing for the establishment, collection and enforcement of such charges;
- (3) Creating as a body corporate and politic sewerage authorities to have full responsibility and powers with respect to such works and the establishment, collection, enforcement, use and disposition of all such service charges;
- (4) Providing for the financing of such works, for the issuance of bonds therefor, and for the payment and security of such bonds; and
- (5) In general, granting to counties and municipalities and to such sewerage authorities discretionary powers to provide for sewerage services designed to relieve pollution of such waters at the expense of the users of such services or of counties or municipalities or other persons contracting for or with respect to the same.

The above citations can be interpreted as permitting the establishment of septic system management districts by a sewerage authority and the management of the district by the authority. This position is further justified by examining the specified powers of an authority. (N.J.S.A. 40:14A-7)

- ...
- (4) In the name of the sewerage authority but for the local unit or units, to acquire, hold, use and dispose of other personal property for the purposes of the sewerage authority;
 - (5) In the name of the sewerage authority but for the local unit or units, to acquire by purchase, gift, condemnation or otherwise, real property and easements therein, necessary or useful and convenient for the purpose of the sewerage authority, ...;
 - ...
 - (8) To enter on any lands, waters or premises for the purpose of making surveys, borings, soundings and examinations for the purposes of the sewerage authority;
 - (9) To make and enforce bylaws or rules and regulations for the management and regulation of its business and affairs and for the use, maintenance, and operation of the sewerage system and any other of its properties, and to amend the same;
 - ...
 - (11) To enter into any and all contracts, execute any and all instruments, and do and perform any and all acts or things necessary, convenient, or desirable for the purposes of the sewerage authority or to carry out any power expressly given in this act subject to P.L. 1971, c. 198 "Local Public Contracts Law" (C.40A:11-1 et seq.).

An examination of the section pertaining to rates and service charges further illustrates the potential for sewerage authorities to become involved in septic system management. (N.J.S.A. 40:14A-8)

- (a) Every sewerage authority is hereby authorized to charge and collect rents, rates, fees, or other charges (in this act sometimes referred to as "service charges") for direct or indirect connection with, or the use of services of, the sewerage system. Such service charges may be charged to and collected from any person contracting for such connection or use or services or from the owner or occupant, or both of them, of any real property which directly or indirectly is or has been connected with the system or from or on which originates or has originated sewage or other wastes which directly or indirectly have entered or may enter the sewerage system, and the owner

of any such real property shall be liable for and shall pay such service charges to the sewerage authority at the time when and place where such service charges are due and payable.

- (b) Rents, rates, fees, and charges, which may be payable periodically, being in the nature of use or service charges, shall as nearly as the sewerage authority shall deem practicable and equitable be uniform throughout the district for the same type, class and amount of use or service of the sewerage system.

Finally, sewerage authorities have the power to approve or disapprove the construction of any facilities for the collection, treatment, or disposal of sewage arising within a district. The authority must approve any plans and specifications for disposal facilities.

These provisions implicitly permit the establishment of septic system management districts and would provide the mechanism for the financing of such activities. As long as the septage would be disposed of by the sewerage authority, it could charge the owners of septic systems for the expenses incurred in maintaining the system and disposing of its wastes.

Another statute which may be utilized in establishing septic system management districts is the "Municipal Utilities Authority Law" (N.J.S.A. 40:14B-1 et seq.). This statute is similar to the sewerage authorities law discussed above, however, this law permits municipalities and counties to establish utilities to provide for both sewage treatment and water purification and supply facilities. The language pertaining to sewage treatment service by a municipal utility authority is essentially identical with the powers of a sewerage authority as outlined above, and both statutes should be considered equally in assessing the potential for a septic system management alternative under either law.

Another one of the most important issues to be faced in considering septic system management alternatives, is which agencies can exercise control over the location and densities of septic systems.

The agencies discussed above do not exercise such controls. In New Jersey, agencies responsible for the location and siting of facilities exist at the municipal level in the form of planning boards and zoning boards of adjustment. The Municipal Land Use Law (N.J.S.A. 40:55D-1 et seq.) sets forth the role and responsibilities of these agencies in the municipal land use planning process. The purposes of this Act illustrate this role:

- (a) To encourage municipal action to guide the appropriate use or development of all lands in this State, in a manner which will promote the public health, safety, morals, and general welfare;
- ...
- (j) To promote the conservation of open space and valuable natural resources and to prevent urban sprawl and degradation of the environment through improper use of land;

- ...
- (m) To encourage coordination of the various public and private procedures and activities shaping land development with a view of lessening the cost of such development and to the more efficient use of land. (N.J.S.A. 40:55D-2)

A municipal planning board is to prepare a master plan which includes the following elements:

- (2) A land use plan element (a) taking into account the other master plan elements and natural conditions, including, but not necessarily limited to, topography, soil conditions, water supply, drainage, flood plain areas, marshes and woodlands; (b) showing the existing and proposed located, extent and intensity of development of land to be used in the future for varying types of residential, commercial, industrial, agricultural, recreational, educational, and other public and private purposes or combination of purposes, and (c) including a statement of the standards of population density and development intensity recommended for the municipality.
- (3) A housing plan, element, including but not limited to, residential standards and proposals for the construction and improvement of housing;

...

- (5) A utility service plan element analyzing the need for and showing the future general location of water supply and distribution facilities, drainage and flood control facilities, sewerage and waste treatment, solid waste disposal and provision for other related utilities;

...

- (8) A conservation plan element providing for the preservation, conservation, and utilization of natural resources, including, to the extent appropriate, open space, water, forests, soil, marshes, wetlands, harbors, rivers, and other waters, fisheries, wildlife and other natural resources; and
- (9) Appendices or separate reports containing the technical foundation for the master plan and its constituent elements. (N.J.S.A. 40:55D-28)

It would, therefore, be appropriate for planning boards to incorporate location and density requirements for septic systems in its land use planning process. Adequate and detailed information to substantiate such a planning program will be necessary.

Governing bodies are required under the Municipal Land Use Law to adopt zoning ordinances consistent with the master plan. This action may permit adequate control and regulation over septic system densities and reinforce planning board objectives under the master plan.

In addition to their powers under zoning ordinances, planning boards may have the power to approve subdivision plats prior to their filing and conduct a site plan review prior to the issuance of a permit for development. (N.J.S.A. 40:55D-37). An ordinance requiring approval by the planning board of either subdivision or site plans, or both, shall include:

...
b. Provisions ensuring:

(1) Consistency of the layout or arrangement of the subdivision or land development with the requirements of the zoning ordinance;

...
(3) Adequate water supply, drainage, shade trees, sewerage facilities and other utilities necessary for essential services to residents and occupants;

...
c. Provisions governing the standards for grading, improvement, and construction of... drainage and sewerage facilities and other improvements as shall be found necessary and provisions ensuring that such facilities shall be completed either prior to or subsequent to final approval of the subdivision or site plans;

... (N.J.S.A. 40:55D-38)

Under its subdivision and site plan review authority, planning boards may direct the siting of septic systems and ensure their construction in conformance with a site plan. This authority may be shared with a Board of Health.

The authority for boards of health is found at N.J.S.A. 26:3-1 et seq. which authorizes the establishment of local and regional boards of health. Many of the powers of these boards directly relate to the activities under consideration as part of a septic system management program. These powers are found at N.J.S.A. 26:3-31:

The local board of health shall have power to pass, alter or amend ordinances and make rules and regulations in regard to the public health within its jurisdiction, for the following purposes:

- g. (1) To regulate the location, construction, maintenance, method of emptying or cleaning, and the frequency of cleaning of any privy or other place used for the reception or storage of human excrement, and to prohibit the construction or maintenance of any privy or other such place until a license therefor shall have been issued by the board, which license shall continue in force for one year from the date of issue.
- (2) To fix the fee, not exceeding \$5.00 for such license, and to use the fees so collected in supervising and maintaining said privies or other places and in removing and disposing of the excrement therefrom.
- (3) To revoke such license at any time if the owner or tenant of the property on which any privy or other such place is located, maintains the same in violation of law, or of the State sanitary code, or any ordinance or rule of the board."

Local boards of health are further authorized to take actions to abate nuisances. (N.J.S.A. 26:3-45 through 63). The Realty Improvement Sewerage and Facilities Act provides that septic systems constructed which are not in conformance with regulations promulgated pursuant to the act, constitute a nuisance, (N.J.S.A. 58:11-23 et seq. and N.J.A.C. 7:9-2 et seq.) This provides an additional mechanism by which boards of health may control the construction and maintenance of a septic system.

The Realty Improvement Sewerage and Facilities Act (commonly known as Chapter 199) cited above, establishes the design and construction standards which are enforced by the local board of health having jurisdiction in the area.

County boards of health are becoming increasingly active in regulating septic systems. Many counties now undertake septic system reviews under Chapter 199 for the municipalities in their jurisdiction. These agencies are authorized under N.J.S.A. 26:3A2-1 et seq. and have the authority to undertake certain activities pertaining to septic system controls. In addition, the recently enacted County Environmental Health Act (N.J.S.A. 26:3A-22) authorizes county boards of health and health departments to administer environmental health programs delegated to them by the Department of Environmental Protection, pertaining to, among other things, water pollution. The potential scope or extent of this legislation remains to be seen, however, it should be recognized as a viable approach to county control over water pollution issues related to a septic system management program.

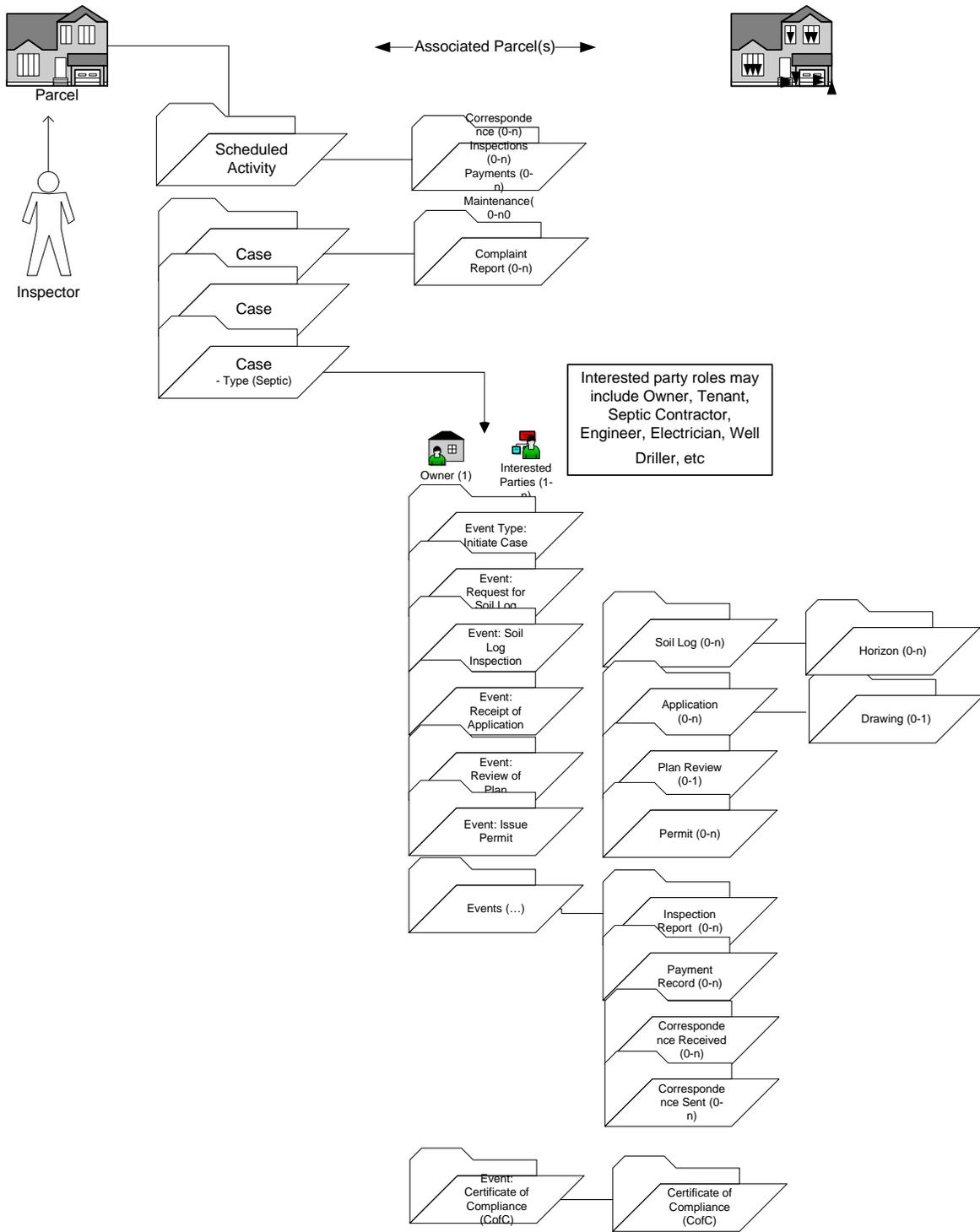
Conclusions

Existing laws provide limitations on the ability of any agency to establish septic system management controls either because such authority does not exist or must be implied from the existing laws. Certain geographic areas are without any available "agencies" to undertake such functions even if they could be implied from existing law.

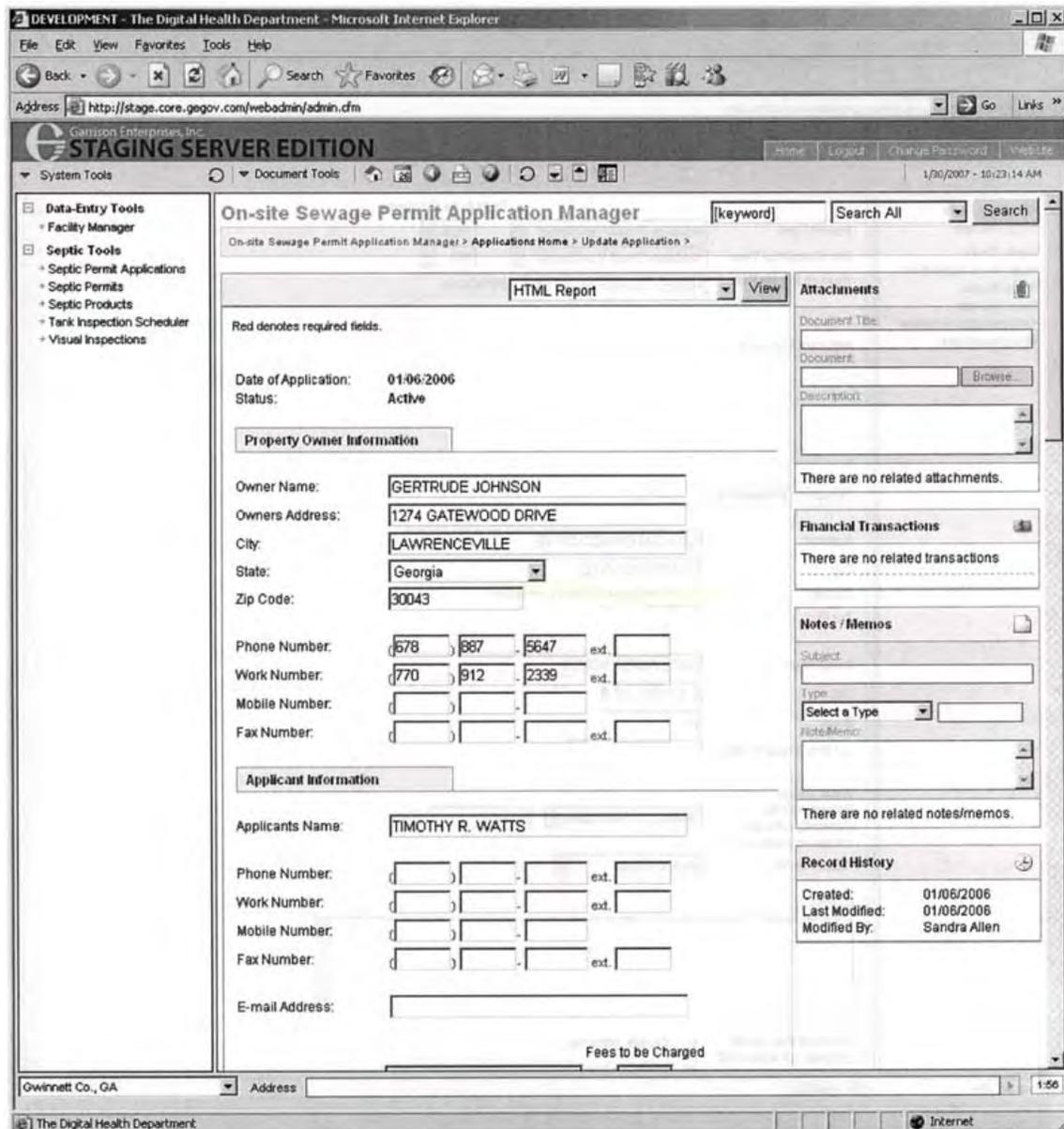
There are presently no programs in New Jersey providing for septic system management. The only activities are those undertaken pursuant to the "Realty Improvement Sewerage and Facilities Act" in the review and approval of design and construction for individual systems. Sewerage authorities and municipal utilities authorities are accepting septage in certain cases, however, not as part of a comprehensive control program. Any programs which may be initiated will be undertaken under the existing legislation pending adoption of a legislative bill providing for explicit authority in the establishment of septic system management agencies and districts.

APPENDIX B SCREEN SHOTS FROM THE SUSSEX COUNTY OWTS MANAGEMENT DATABASE

Sample objects associated with Water and Wastewater Cases



A diagram of the data types and activities that the Sussex County Department of Environmental and Public Health Services' digital health department database application will document. Image courtesy of the Department, Herbert J. Yardley, M.A., REHS, Administrator/Health Officer.



A screen shot of a prototype screen for the Sussex County Department of Environmental and Public Health Services' digital health department database. Image courtesy of the Department, Herbert J. Yardley, M.A., REHS, Administrator/Health Officer.

http://70.168.205.112/montgomery_nj/lpext.dll?f=templates&fn=site_main-j.htm&2.0

Board of Health Code of the Township of Montgomery

COUNTY OF SOMERSET

STATE OF NEW JERSEY

1984; Amended through March 1, 2003.

CHAPTER BH:XIII ON-SITE WASTE WATER DISPOSAL MANAGEMENT DISTRICT*

BH:13-1 SHORT TITLE.

This chapter shall be known and cited as the "On-Site Waste Water Disposal Management District Ordinance of the Board of Health of the Township of Montgomery." (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-2 FINDINGS OF BOARD.

It is found and declared that:

- a. On-site subsurface waste water disposal systems are in widespread use within the Township.
- b. Such systems constitute a potential source of pollution of ground and surface waters, contamination of potable water supplies, foul odors, nuisance problems and other hazards to public health.

It is determined to be in the interest of public health, safety and welfare to establish a Management District to regulate the maintenance of such systems to protect the public against system failures and resultant pollution.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-3 DEFINITIONS.

Definitions, words and terms as used in this chapter shall have the meanings as set forth in N.J.A.C. 7:9A-2.1, adopted by reference in Chapter BH:VI of the Montgomery Township Board of Health Code. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-4 SCOPE.

The owner and/or occupant of any realty improvement serviced by an on-site subsurface waste water disposal system located in the Management District shall be a member of the Management District and subject to all of the requirements of this chapter. The Management District shall be comprised of all on-site subsurface waste water disposal systems that had been licensed by the Board of Health prior to the effective date of this chapter, and all on-site subsurface waste water disposal systems which shall be installed, altered or repaired subsequent to the effective date of

this chapter. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-5 LICENSE TO OPERATE.

a. The Board of Health or its designee shall issue a license to operate and a copy of the Board of Health's operation and maintenance manual to the owner/occupant at the time that a certificate of compliance is issued. The licenses shall be issued on forms provided by the Board of Health. Licenses shall be transferable upon change of ownership or occupancy of the premises with respect to which the license has been issued. Each application for a license or renewal thereof shall be accompanied by a fee of fifteen (\$15.00) dollars plus an administrative fee of forty-five (\$45.00) dollars shall also accompany the license or renewal fee.

b. The license to operate shall expire three (3) years after issuance. The applicant shall be notified by the Board of Health or its designee before the license expires and shall be directed to apply for a renewal of the license. The Board of Health or its designee shall not renew the license unless the licensee has submitted the following to the Board of Health or its designee:

1. Evidence that the septic tank has been pumped as prescribed in this chapter; or a septic tank inspection report on a MTHD approved form, prepared by a registered septic installer, NJDEP registered waste hauler licensed professional engineer, or other person acceptable to the Board of Health or its designee, indicating that the system has been maintained, is not in need of pumping, and is functioning in conformance with the requirements of this chapter; and

2. Payment of any fees that are required herein or in Chapter BH:XV of this Code.

c. The Board of Health or its designee may suspend or revoke the license to operate in the following circumstances:

1. It has been determined that the system is malfunctioning based upon criteria outlined in N.J.A.C. 7:9A-3.4(a) and the licensee fails to take steps to correct said malfunction as directed by the Board of Health or its designee;

2. The owner or occupant of the premises served by the system violates any provision of this chapter with respect to operation and maintenance of the system; or

The owner or occupant of the premises served by the system denies right of entry to the Board of Health or its designee, or the New Jersey Department of Environmental Protection (NJDEP), as required in N.J.A.C. 7:9A-3.19, or in any way interferes with the administration or enforcement of this chapter.

(Ord. #92-2, S 1; Ord. #99-02, S 1; Ord. #2002-04, S 1)

BH:13-6 APPEAL TO BOARD OF HEALTH.

Any person aggrieved by any decision of the Board of Health or its designee made pursuant to this chapter shall have the right to appeal that decision to the Board of Health in accordance with the procedures set forth in Section BH:1-3. These decisions do not include determinations made by the Board of Health or its designee based on N.J.A.C.7:9A. (Ord. #99-01, S 1; Ord. #99-02, S 5)

BH:13-7 SYSTEM USE.

- a. The subsurface waste water disposal system shall be used only for the disposal of wastes of the type and origin provided for in the approved engineering design. No permanent or temporary connection shall be made to any source of wastes, waste water or clean water other than those plumbing fixtures which are normally present within the type of facility indicated in the approved engineering design.
- b. Drainage from basement floors, footings or roofs shall not enter the waste water disposal system and shall be diverted away from the area of the disposal field. Backwash from water softeners shall be discharged away from the area of the disposal field by means not conflicting with other Township ordinances.
- c. As set forth in N.J.S.A. 58:10A-17, no person shall use or introduce or cause any other person to use or introduce into any waste water disposal system any sewage system cleaner containing any restricted chemical material.
- d. Disposal of materials containing toxic substances into a subsurface waste water disposal system is prohibited. Materials containing toxic substances include, but are not limited to, waste oil (other than cooking oil), oil based or acrylic paints, varnishes, photographic solutions, pesticides, insecticides, paint thinners, organic solvents or degreasers and drain openers.
- e. Inert or non-biodegradable substances shall not be disposed of in the subsurface waste water disposal system. Such substances include, but are not limited to, disposable diapers containing plastic, cat box litter, coffee grounds, cigarette filters, sanitary napkins, facial tissues and wet-strength paper towels.
- f. Large quantities of cooking greases or fats shall not be discharged into systems not equipped with a grease trap designed and constructed as prescribed in N.J.A.C. 7:9A-8.1.

Major plumbing leaks shall be repaired promptly to prevent hydraulic overloading of the system.
(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-8 SYSTEM INSPECTION REQUIREMENTS.

- a. In accordance with section BH:13-15, but subject to section BH:13-10, inspection of the system shall be required once every three (3) years following its installation, alteration or repair. Inspection or walk-over of the system shall begin or resume three (3) years after installation. Based on the results of these inspections, the frequency may be reduced if prior satisfactory inspections are noted.
- b. During each inspection, information shall include but is not limited to the following:
 1. A complete walkover of the septic field.
 2. Measurement of effluent in inspection ports, and a reading of the groundwater monitoring port when such ports were included in the original septic design.
- c. In the following cases, the Board of Health or its designee may require inspection of the

system once every year regardless of whether the septic tank has been pumped out:

1. The system is malfunctioning or has malfunctioned in the past;
 2. The size or capacity of one (1) or more components of the system does not meet the current requirements of the standards set forth in N.J.A.C. 7:9A-1.1 et seq.;
 3. When actual measured water usage is greater than the design capacity of one or more system components;
 4. In residential facilities, when the estimated water usage based upon the actual number of residents is greater than the design capacity of one or more system components. For the purpose of making this determination, the design flow shall be estimated by multiplying the number of persons living in the residence by a factor of one hundred (100) gallons per day; or
 5. Facilities in which a grease trap is required.
- d. When applicable, the results of system inspections shall be reported on standard forms provided by the Board of Health, or on equivalent forms which are acceptable to the Board of Health or its designee.

Any problems or malfunctions noticed during the inspection shall be corrected in a manner and within a time frame acceptable to the Board of Health or its designee.

(Ord. # 92-2, S 1; Ord. #99-02, S 1)

BH:13-9 SEPTIC TANK MAINTENANCE.

- a. The contents of the septic tank shall be pumped out within three (3) years after the tank has been installed. The tank may be pumped at more frequent intervals. A septic tank inspection report may be submitted in lieu of pumping if the scum/sludge levels are not within the parameters listed in paragraphs 1. and 2. below:
1. The bottom of the scum layer is within three (3) inches of the bottom of the outlet baffle.
 2. The top of the sludge layer is within eight (8) inches of the bottom of the outlet baffle when noted during an inspection.
- b. Pumping of septic tanks shall be performed by a solid waste hauler registered with the NJDEP in accordance with the requirements of N.J.A.C. 7:26-3.1.
- c. Equipment used in the pumping of septic tanks shall meet the following requirements:
1. Mobile tanks shall be securely mounted on trucks or trailers, shall be water-tight and provided with a leak-proof cover and shall be vented to permit the escape of gases but not the liquid or solid contents of the tank.
 2. Pumps and hoses shall be maintained and operated in a condition that will prevent the leakage of sewage.
 3. Equipment shall be available to permit accurate measurement of the sludge and scum levels

in relation to the bottom of the outlet baffle.

d. Pumping of septic tanks shall be conducted in such a manner that the entire contents of the septic tank including both liquids and solids are removed.

e. Pumping shall be carried out in a manner that will prevent spillage of sewage onto the ground. If any spillage occurs, the solid portion shall be immediately removed and disposed of in a sanitary manner and the area of the spill shall be disinfected using a suitable chlorine-bearing compound.

Septage shall be disposed of at a sewage treatment plant designated in accordance with District and/or State Solid Waste Management Plans pursuant to the Statewide Sludge Management Plan adopted pursuant to N.J.S.A. 13:1E-1 et seq. and N.J.S.A. 58:11A-1 et seq.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-10 ADDITIONAL INSPECTION AND MAINTENANCE REQUIREMENTS FOR GREASE TRAPS.

a. Grease traps shall be inspected and cleaned out at a frequency adequate to prevent the volume of grease from exceeding the grease retention capacity. Grease shall be removed whenever seventy-five (75%) percent of the grease retention capacity has been reached. Grease traps serving restaurants may require pumping as frequently as once a week to once every two to three (2-3) months.

b. Pumping of grease traps shall be performed by a solid waste hauler registered with the NJDEP in accordance with the requirements of N.J.A.C. 7:26-3.1.

c. Equipment used in the pumping of grease traps shall meet the following requirements:

1. Mobile tanks shall be securely mounted on trucks or trailers, shall be water-tight and provided with a leak-proof cover and shall be vented to permit the escape of gases but not the liquid or solid contents of the tank.

2. Pumps and hoses shall be maintained and operated in a condition that will prevent the leakage of sewage.

3. Equipment shall be available to permit accurate measurement of the volume of grease in relation to the grease retention capacity of the grease trap.

d. Pumping of grease traps shall be conducted in such a manner that the entire contents of the grease trap including both liquids and solids are removed.

e. Pumping shall be carried out in a manner that will prevent spillage of sewage onto the ground. If any spillage occurs, the solid portion shall be immediately removed and disposed of in a sanitary manner and the area of the spill shall be disinfected using a suitable chlorine-bearing compound.

Grease and other waste materials removed from grease traps shall be disposed of in accordance with the requirements of the Statewide Sludge Management Plan adopted pursuant to N.J.S.A. 13:1E-1 et seq. and N.J.S.A. 58:11A-1 et seq., as well as any other applicable State or local rules,

regulations, ordinances or directives.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-11 MAINTENANCE OF DOSING TANKS.

a. Dosing tanks and associated pumps, siphons, switches, alarms, electrical connections and wiring shall be maintained in proper working order.

Any solids which accumulate in the dosing tank shall be removed and disposed of in a sanitary manner.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-12 DISPOSAL FIELD MAINTENANCE.

a. (Ref. N.J.A.C. 7:9A-Table 4.3) The area of the disposal field shall be kept free of encroachments from decks, pools, sprinkler systems, driveways, patios, accessory buildings, additions to the main building and trees or shrubbery whose roots may cause clogging of any part of the system.

b. Grading shall be maintained in a condition that will promote run-off of rainwater and prevent ponding.

c. Drainage from roofs, footing drains, ditches or swales shall be diverted away from the disposal field.

d. Vegetation shall be maintained to prevent soil erosion.

Vehicle traffic shall be kept away from the area of the disposal field.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-13 CLASSIFICATION OF ON-SITE SUBSURFACE WASTE WATER DISPOSAL SYSTEMS.

Every licensed on-site subsurface waste water disposal system shall be assigned one (1) principal classification. The principal class shall be determined according to the residential or non-residential nature of the system's use and configuration. The assigned principal classification designations shall be from one of the following classes:

CLASS R.I. denotes a system which is an individual on-site subsurface waste water disposal system serving one (1) single family home on one (1) individual lot.

CLASS N.R.I. denotes a system which is an individual on-site subsurface waste water disposal system serving one (1) non-residential realty improvement on one (1) individual lot.

CLASS R.C. denotes an on-site subsurface waste water disposal system which in whole or component part serves more than one (1) residential property and/or more than one (1) residential realty improvement.

CLASS N.R.C. denotes an on-site subsurface waste water disposal system which in whole or component part serves more than one (1) non-residential property and/or more than one (1)

non-residential realty improvement.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-14 SUBCLASSIFICATIONS OF ON-SITE SUBSURFACE WASTE WATER DISPOSAL SYSTEMS.

Dependent upon a system's design components, its use and configuration, none, all, or combinations of the following subclassifications shall be assigned to licensed systems:

SUBCLASS A denotes that a system has two (2) or more disposal fields designed to be alternated from the receipt of effluent flow from time to time. Alternation intervals shall be determined by the Board of Health or its designee.

SUBCLASS E denotes that the system, by virtue of a Board of Health condition of approval and/or by virtue of the requirements of other state or local codes, shall be operated and/or inspected under the direct supervision of a licensed New Jersey Professional Engineer and/or a licensed New Jersey Sewer Plant Operator.

SUBCLASS F denotes that a system receives wastes in total, or in part, from food preparation or food handling operations.

SUBCLASS G denotes that a system has an outside grease collection trap/tank as one of its components.

SUBCLASS M denotes that there are groundwater monitoring wells located on the property.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-15 SYSTEM INSPECTION, MAINTENANCE AND MONITORING TIMEFRAMES ACCORDING TO SYSTEM CLASS.

For the purposes of system inspections, maintenance, and monitoring, the following management parameters shall prevail, notwithstanding BH:13-8 et seq., BH:13-9 et seq., and BH:13-10 et seq., to the contrary:

CLASS RI AND NRI licensed systems shall be maintained and inspected a minimum of once every three (3) years or at a time interval deemed appropriate by the Board of Health or its designee, or any other qualified or licensed person, partnership, corporation, or public agency delegated to function within specific limits as an agent of the Board of Health to carry out provisions of this chapter. If these systems are covered under a New Jersey Pollution Discharge Elimination System (NJPDES) permit, than those requirements may be considered instead/or in addition to the ones listed above.

CLASS RC AND NRC licensed systems shall be inspected a minimum of once every year or at a frequency as determined by the Board of Health or its designee, or any other qualified or licensed person, partnership, corporation, or public agency delegated to function within specific limits as an agent of the Board of Health or its designee to carry out provisions of this chapter. If these systems are covered under a New Jersey Pollution Discharge Elimination System (NJPDES) permit, then those requirements may be considered instead/or in addition to the ones listed above.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-16 ADDITIONAL SYSTEM INSPECTION, MAINTENANCE AND MONITORING TIMEFRAMES ACCORDING TO SYSTEM SUBCLASS.

In addition to the requirements of section BH:13-15, any licensed system which has been assigned a subclassification or a combination of subclassifications, shall be subject to the following management parameters:

- a. The owner of every licensed system assigned a subclass A designation shall have disposal fields alternated semi-annually, or as determined by the Administrative Authority, unless otherwise specified by State requirements under a NJPDES permit. The alternation event shall be reported to the Board of Health on appropriate forms provided by the Board of Health.
- b. The owner of every licensed system assigned a subclass E designation shall be inspected semi-annually by a licensed New Jersey Professional Engineer who shall report the results of the semi-annual inspection to the Board of Health on appropriate forms provided by the Board of Health, unless otherwise specified by State requirements under a NJPDES permit.
- c. The owner of every licensed system assigned a sub-class F designation shall have septic tanks pumped and cleaned a minimum of once annually, and the pumping occurrence shall be reported to the Board of Health, unless otherwise specified by State requirements under a NJPDES permit.
- d. The owner of every licensed system assigned a subclass G designation shall have the outside grease tank(s)/trap(s) emptied by a licensed pumper as frequently as needed, but in no case any less frequently than once every three (3) months (quarterly). Proof of all grease tank(s)/trap(s) pumping occurrences shall be furnished to the Board of Health within five (5) days following the pumping event on forms provided by the Board of Health.
- e. The owner of every licensed system assigned a subclass M designation shall have groundwater monitored by samples derived from each monitoring well located on the property a minimum of once a year. The monitoring well's sample water shall be analyzed for nitrates and volatile organic chemicals in accordance with accepted practices and performance standards established by the NJDEP. The method and techniques of obtaining the samples shall be to the satisfaction of a certifying licensed New Jersey Professional Engineer. The samples shall be analyzed by a New Jersey NJDEP certified water laboratory.

All systems covered by a NJPDES permit must submit copies of all NJPDES reports to the Health Department on a semi-annual basis.

(Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-17 OTHER MAINTENANCE.

The Board of Health or its designee shall require the owner or occupant to conduct other necessary maintenance activity during regularly scheduled pump out of the on-site waste water disposal system such as cleaning and unclogging of lines, cleaning of the distribution box and mechanical equipment. The owner or occupant shall, in each case, be responsible to pay for the cost of such other maintenance. In the event that the owner or occupant shall refuse to conduct such additional maintenance, the Board of Health or its designee may revoke the license in

question. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-18 NUISANCES TO BE CORRECTED.

Any on-site waste water disposal system or component thereof which is found to be malfunctioning (as defined in N.J.A.C. 7:9A-2.1) shall constitute a nuisance and shall be repaired, modified or replaced pursuant to an order of the Board of Health or its designee to correct the condition caused by the malfunction. Alterations shall be performed in accordance with "Standards for the Construction of Individual Subsurface Sewage Disposal Systems" as adopted and implemented by the Board of Health of the Township by virtue of this Code and any amendments thereto. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-19 DECLARATION AND ABATEMENT OF NUISANCES.

The Board of Health hereby retains its authority to abate any nuisance in the Management District in accordance with the provisions of N.J.S.A. 26:3-45 et seq. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-20 RIGHT OF ENTRY.

In furtherance of the rights granted to the Board of Health in N.J.S.A. 26:3-45 et seq., the Health Officer or his designee, upon presentation of identification, shall have the right to enter upon property of members of the Management District for the purpose of observation, inspection, monitoring and/or sampling of the on-site waste water disposal system. This authority is exercised by virtue of N.J.S.A. 26:3-31 as a necessary and reasonable method of furthering the duties of the Board of Health as enumerated therein. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-21 SYSTEM TESTING.

No person shall test an individual subsurface sewage disposal system in a manner that will adversely affect the functioning of the system. Hydraulic loading shall not be applied in excess of the design flow capacity. All solids shall have been removed from the septic tank and/or grease trap prior to testing unless the hydraulic loading is applied at a point that will bypass the septic tank and/or grease trap. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-22 ABANDONED SYSTEMS.

a. When it is necessary to abandon a system or components of a system, all septic tanks, dosing tanks, seepage pits, dry wells and cesspools which are to be abandoned shall be emptied of wastes and removed or filled completely with sand, gravel, stones or soil material in a manner which is acceptable to the Board of Health or its designee.

b. Except when done as part of, or in conjunction with a repair, a permit must be obtained prior to abandoning a septic system or component of a septic system. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-23 RULES AND REGULATIONS.

The Board of Health may adopt and promulgate procedural rules and regulations in furtherance

of the goals of this chapter. (Ord. #92-2, S 1; Ord. #99-02, S 1)

BH:13-24 PENALTY AND ENFORCEMENT.

Any person violating any of the provisions of this chapter or any order promulgated under this chapter shall, upon conviction thereof, pay a penalty of not less than one hundred (\$100.00) dollars nor more than five hundred (\$500.00) dollars for each violation. Each day a particular violation continues shall constitute a separate offense.

A late charge of fifteen (\$15.00) dollars per month will be assessed to persons who do not comply with any part of the licensing requirements, unless the system owner/operator has applied for, and received, a waiver of such requirement from the Board of Health Administrative Authority or his designated representative. (Ord. #92-2, S 1; Ord. #99-02, S 1; Ord. #2002-04; S 1)

***Editor's Note:** Prior ordinances codified herein include portions of Ordinance Nos. 64-82, 99-89 and 100-89.

<http://byramtwp.org/upclose/govmnt/Township%20Codebook/Township%20Code%20Book%20Links.htm>

Code of the Township of Byram, New Jersey
Part III, Board of Health Legislation
Chapter 272: SEWAGE DISPOSAL SYSTEMS

[HISTORY: Adopted by the Board of Health of the Township of Byram as indicated in article histories. Amendments noted where applicable.]

GENERAL REFERENCES

Violations and penalties — See Ch. 245, § 245-14.

Excavations — See Ch. 125.

Soil removal — See Ch. 208.

ARTICLE I General Provisions [Adopted 8-17-1971 by Ch. BH-IX of the Revised General Ordinances]

§ 272-1. Adoption of standards.

A code regulating the location, construction, use, maintenance and method of emptying or cleaning individual sewage disposal systems and the issuance of permits to locate, construct, empty or clean the systems and fixing penalties for the violation thereof is hereby adopted pursuant to N.J.S.A. 26:3-69.1 et seq. A copy of the code is annexed to this article and made a part hereof without inclusion of the text.

§ 272-2. Title. [Amended 8-21-1979]

The code established and adopted by this article is described and commonly known as "Standards for the Construction of Individual Subsurface Sewage Disposal Systems," promulgated by the New Jersey State Department of Environmental Protection, and such amendments thereto and revisions thereof as may be hereafter promulgated.

§ 272-3. Copies on file.

Three copies of the Standards for the Construction of Individual Subsurface Sewage Disposal Systems have been placed on file in the offices of the Secretary of the Board of Health and the Township Clerk for the use and examination of the public.

§ 272-4. Permits.

- A. Permit required. No person shall locate, construct or alter any individual sewage disposal system until a permit for the location, construction or alteration of the sewage disposal system shall have been issued by the Board of Health. Any permit to locate, construct or alter any individual sewage disposal system issued by the Board of Health shall expire one year after the date of issuance. All existing permits for the location, construction or alteration of any individual sewage disposal system heretofore issued by the Board of Health shall expire one year from the date of the adoption of this section. [Amended 11-16-1982]
- B. Approval of plans and specifications. Application for the approval of plans and specifications

for an individual sewage disposal system shall be prepared by a registered professional engineer licensed to practice in the State of New Jersey and shall bear his seal. [Amended 10-3-1988 by Ord. No. 6-1988; 3-5-1990 by Ord. No. 4-1990]

- C. Temporary facilities. No person shall locate, erect or use any temporary privy, portable facility or sanitary toilet facility until a permit for the location of the temporary privy has been issued by the Byram Township Board of Health. Every temporary privy, portable facility or toilet facility shall be properly enclosed, screened, ventilated, kept in repair and maintained at all times in a clean and sanitary condition. No such facility shall be located or maintained within 10 feet of any property line or within 25 feet of any door or window of any building used for human occupancy, and no such facility shall be constructed under or within any building or structure used for human occupancy. The contents of such facility shall be completely covered with inert material or otherwise effectively treated or removed at the end of each shift or working day.

§ 272-5. Operation of new systems.

- A. Certificate required. New individual disposal systems shall not be placed in operation, nor shall new dwellings or buildings or additions thereto be sold or occupied which must rely on such a system for sewage disposal, until the Board of Health has issued a certificate indicating that the disposal system has been located and constructed in compliance with the terms of the permit issued and the requirements of the aforesaid code. Issuance of such certificate shall not be required for alterations to an existing individual sewage disposal system.
- B. Issuance of certificate. The Board of Health may issue such certificate if an engineer licensed to practice professional engineering in New Jersey submits a written statement, signed by him, to the Board of Health stating that the disposal system has been located and constructed in accordance with the terms of the permit issued and the requirements of the code.

§ 272-6. (Reserved) Editor's Note: Former § 278-6, Emptying or cleaning septic tanks, was repealed 2-11-1997 by Ord. No. BH1-1996.

§ 272-7. Hearing on denial of license or permit.

If a license or permit or certification required by this article is denied by the Board of Health, a hearing shall be held thereon before the Board within 15 days after request is made by the applicant, and the Board of Health shall affirm, alter or rescind its previous determination and take action accordingly within 15 days after the hearing.

§ 272-8. Stop-work orders.

The Board of Health may order all further work in and about any individual sewage disposal system which is being erected or installed in violation of the code to be stopped forthwith, except such work as shall be necessary to remedy the violation and, thereafter, the work continued without any violation of any of the provisions of the code. After issuance of such order and the service of a copy upon the person connected with or working in and about the erection or installation of the disposal system or any part thereof, no further work shall be done except as aforesaid.

§ 272-9. Fees and charges. [Amended 6-20-1978; 4-26-1983; 10-3-1988 by Ord. No. 6-1988; 11-7-1988 by Ord. No. 7-1988; 3-5-1990 by Ord. No. 4-1990]

The following fees and charges shall be established:

- A. For the filing of an application and plans for a permit to locate and construct an individual sewage disposal system: \$150. This fee shall only include the cost of initial site inspection.
- B. For the filing of an application and plans for a permit to alter an existing individual sewage disposal system: \$75. This fee shall only include the cost of site inspection. "Alteration" means any change in the physical configuration of an existing individual subsurface sewage disposal system or any of its component parts, including replacement, modification, addition or removal of system components such that there will be a change in the location, design, construction, installation, size, capacity, type or number of one or more components. The term "alter" shall be construed accordingly. [Amended 8-13-1991 by Ord. No. BH1-1991]
- C. An applicant shall apply for the review of a proposed septic design by an authorized agent of the Board of Health to either construct a new system or alter an existing system prior to or simultaneously with the application for said permit. A fee of \$25 shall be charged for the initial review of each proposed design. This fee shall not be credited to the cost of any fee to install a new system or alter an existing system.
- D. A fee of \$25 shall be charged for each plan review after the initial review, referenced in Subsection C above, which is caused by the applicant's failure to submit an application and plans which conform to the requirements of state law and these ordinances. For each reinspection of an individual sewage disposal system or part thereof caused by the failure of the permittee to locate, construct or alter the same in accordance with the terms of the permit issued or the terms of the aforesaid code, a reinspection fee of \$25 shall be charged.
- E. A fee of \$25 plus \$5 for each hole shall be charged for the observation, inspection and recording of any soil log or percolation test by the authorized agent of the Board of Health.
- F. Where an application is before the Board for waiver of any health standard and the Board feels that a review and report by one or more of the Township's professional staff is necessary, an escrow of \$250 shall be paid. The appropriate staff individuals will charge against this escrow for time spent outside the Board meetings preparing a report on the subject application. Should the charges exceed the \$250 initially deposited, additional funds shall be paid by the applicant upon request. Should there be a surplus of funds in the escrow account following resolution of the application, the excess shall be returned to the applicant.
- G. For the filing of an application and plans for a permit to repair an existing individual sewage disposal system: \$25. This fee shall only include the cost of site inspection. "Repair" means to fix, refurbish or replace one or more components of an individual subsurface sewage disposal system in a manner that will restore, preserve and not change the original location, design, construction and installation, size, capacity, type or number of the components of the system. [Added 8-13-1991 by Ord. No. BH1-1991]

§ 272-10. Minimum standards. [Amended 7-18-1978; 2-19-1980; 10-3-1988 by Ord. No. 6-1988; 2-11-1997 by Ord. No. BH1-1996]

Notwithstanding the requirements of the code established and adopted pursuant to § 272-1 of this article, the following minimum requirements shall apply within the Township of Byram with respect to the location, design, construction, alteration, use and supervision of individual subsurface sewage disposal systems:

- A. Septic tanks serving single-family dwelling units with four or fewer bedrooms shall have a minimum capacity of 1,500 gallons. Septic tanks serving single-family dwelling units with five or more bedrooms shall have an additional capacity of at least 250 gallons per bedroom.
- B. All septic systems must have either a single tank with two compartments or two tanks providing the required capacity. The septic tank must be provided with a manhole frame and cover for septic tank access on each compartment and installed at the finished grade of the property. The manhole and frame must be equivalent to Campbell Foundry Pattern No. 1302A and constructed with a bituminous seal where the casting meets the top of the septic tank. The finished grading must divert surface water away from the manhole cover, which shall be left exposed.
- C. There shall be a minimum distance of 100 feet between all water wells and the disposal field.

§ 272-11. (Reserved) Editor's Note: Former § 272-11, Aerobic wastewater treatment units, added 10-17-1972, as amended 8-13-1991, was repealed 2-11-1997 by Ord. No. BH1-1996.

ARTICLE II Septic Management Program [Adopted 4-26-2005 by Ord. No. BH1-2005 Editor's Note: This ordinance also superseded former Art. II, Septic Management Pilot Study Program, adopted 5-12-1998 by Ord. No. BH1-1998.]

§ 272-12. Purpose.

In addition to the purposes set forth in N.J.A.C. 7:9A-1.1, it is the purpose of this article to:

- A. Regulate individual subsurface sewage disposal systems in the program areas to protect public health and welfare and the environment, and to provide for a means of educating owners/operators, as defined herein, in the characteristics of such systems and the proper procedures for altering, operating and maintaining them.
- B. Maintain records and help prevent the future malfunction of septic systems in the program areas.

§ 272-13. Scope.

This article prescribes maintenance of new and existing individual subsurface sewage disposal systems in the program areas.

§ 272-14. Definitions.

All definitions in Subchapter 2 of the Department of Environmental Protection (DEP) Standards for the Construction of Individual Subsurface Sewage Disposal Systems, N.J.A.C. 7:9A- 1.1 et seq., and any amendments thereto ("DEP Regulations") are hereby incorporated into this article, with the following additions:

CRANBERRY LAKE PROGRAM AREA — That section of the Township defined in the

document entitled "Program Development and Implementation Report, Byram Township Septic System Management Pilot Project, Cranberry Lake, NJ," dated August 1989, revised January 1990, prepared by the Sussex County Planning Department. That document defines the septic management district as "developed land immediately surrounding Cranberry Lake, bordered on three sides by the Allamuchy State Park and by Route 206 on the fourth." Township Tax Maps show that this definition overlooks a small area at the beginning of South Shore Road, where the management district boundary is defined neither by the park boundary nor Route 206. In this area, the small stream flowing from Johnson Lake to Dragon Brook and paralleling this section of South Shore Road will provide the boundary. The district boundary is shown on an official map on file with the Township Clerk.

EDUCATION PROGRAM — An educational program prepared and administered by the Township regarding the fundamentals of individual subsurface sewage disposal systems and the proper procedures for the operation and maintenance of such systems.

LAKE LACKAWANNA PROGRAM AREA — That section of the Township consisting of developed land immediately surrounding Lake Lackawanna, bounded on the southeast by the large wooded parcel owned by Lake Lackawanna Investment Company; on the northeast by the Lackawanna Cut-off right-of-way; on the northwest, west and southwest by the undeveloped ridges above the lake; and on the south by the state-preserved parcel managed by New Jersey Natural Lands Trust. The district boundary is shown on an official map on file with the Township Clerk.

OWNER — The person or entity that owns or leases the realty upon which an individual subsurface sewage disposal system is located and who is liable for the obligations imposed by this article.

PLOT PLAN — A sketch drawn by the owner or operator, or agent on behalf of the owner, showing the type (if known) and location (both the tank and the leaching area) of the individual subsurface sewage disposal system servicing the property, as well as the location and type of any on-site water supply. All plots shall be drawn to scale and list the dimensions used. Alternatively, "plot plan" means a copy of an existing survey that delineates the individual subsurface sewage disposal system.

TOWNSHIP — The Township of Byram and its authorized agents, including, but not limited to the Byram Township Board of Health, the Byram Township or Sussex County Health Department and health officer.

VERIFICATION OF EXEMPTION — Verification by a septic pumper or licensed engineer that the individual subsurface sewage disposal system servicing a property does not need to be pumped. Written verification must be submitted on the pumper's or engineer's letterhead and include a brief explanation of why pumping should not be required. The verification must further state that it is based on a physical inspection, and it must be dated and signed by the pumper or engineer.

§ 272-15. Septic management requirements.

- A. Septic management materials. The Township shall forward a copy of the NJDEP or Sussex County septic management manual or other educational program materials to each owner of property within the program areas.
- B. Initial registration. The Township will also supply the owner with a registration form when the educational materials are forwarded. Within six months the owner must submit the completed form to the Township, together with:
 - (1) A plot plan;
 - (2) Proof that the system has been pumped out or request for exemption; and
 - (3) The program fee.
- C. Exemptions.
 - (1) The Township may exempt a system from the pumping requirement based on verification of exemption and/or other information submitted by the owner.
 - (2) Requests for exemption must be approved by the Board of Health.
 - (3) The Township retains the right to have a registered environmental health specialist inspect the system with the charges to be paid by the owner.
- D. Minimum pumping requirements.
 - (1) Each individual subsurface sewage disposal system in the program areas must be pumped at least every three years.
 - (2) The Township may require pumping on a two- or one-year schedule where there is evidence that a system is substandard or functioning poorly.
 - (3) Where an exemption is granted, the system must be pumped at least once every six years unless the property owner proves that the dwelling has not been occupied during that period or that other extenuating circumstances exist.
- E. Subsequent compliance.
 - (1) The Township will issue a notice that the septic system must be pumped to each property owner at least 60 days prior to the due date, which shall be the anniversary of the most recent pumping or grant of an exemption.
 - (2) On or before the due date, the owner shall submit proof that the system has been pumped out, a statement of any modifications to the system, and the fifteen-dollar program fee.

§ 272-16. Violations and penalties.

- A. In addition to complying with the requirements of this article, an owner convicted of a violation shall be punished by a fine of \$100 for each violation.
- B. Upon conviction, an owner shall pay an additional penalty of \$25 per week for each week that the violation continues after notice of the violation was issued by the Township.
- C. Nothing in this section shall be construed as limiting the remedies of the Township for

violation of this article. The Township may proceed under any other remedy available at law or in equity for any violation of this article or any term or condition of any failure to comply with any notice or order issued by the Township under this article.

§ 272-17. (Reserved)

§ 272-18. (Reserved)

ARTICLE III Lake Mohawk Septic Management District [Adopted 2-9-1999 by Ord. No. BH1-1999]

§ 272-19. Title.

This article shall be known as the "Individual Subsurface Sewage Disposal Systems Maintenance Ordinance of Byram Township, Lake Mohawk Septic Management District."

§ 272-20. Purpose and intent.

The purpose and intent of this article is to establish a management program for the pumping of the individual subsurface sewage disposal systems in Byram Township, Lake Mohawk Septic Management District, the metes and bounds of which are recorded in the office of the Clerk of Sussex County in Book 372, Pages 24 and c. This article requires existing, new and proposed individual subsurface sewage disposal systems to be pumped out at least once every three years in order to minimize future malfunctions of such systems.

§ 272-21. Definitions.

All definitions in Subchapter 2 of the DEP standards for the construction of individual subsurface sewage disposal system, N.J.A.C. 7:9A-1.1, et seq. and all amendments are hereby incorporated into this article with the following additions:

NOTICE OF REQUIREMENTS FOR PERMIT RENEWAL — A notice issued by the Township to an owner/operator that the permit to operate the individual subsurface sewage disposal system will expire on a given date and that proof is required to be furnished to the Township that either pumpout has occurred within the effective period of the permit or that the homeowner has voluntarily had the individual subsurface sewage disposal system inspected by a licensed professional who certified that pumping is not required before the permit may be renewed.

OPERATOR PERMIT — A permit issued pursuant to this article and the DEP regulations for the operation of an individual subsurface sewage disposal system.

OWNER/OPERATOR — The person, corporation or partnership who owns or leases the realty on which the individual subsurface sewage disposal system is located and this entity is a property owner within the Lake Mohawk Country Club. The owner of the dwelling is liable for the obligations imposed by this article.

PLOT PLAN — A sketch drawn by the homeowner or agent on the homeowner's behalf,

showing the type (if known) and location of the individual subsurface sewage disposal system servicing the property, as well as the location and type of any on-site water supply servicing the property. All plots should be drawn to scale listing the dimensions used. Alternatively, "plot plan" means a copy of an existing survey which delineates the system.

SYSTEM — An individual subsurface sewage disposal system, as defined by law, including all of the component parts of the system.

TOWNSHIP — Byram Township and its authorized agents, including but not limited to, the Township Board of Health and Health Officer.

§ 272-22. Requirements for permit to operate an individual subsurface sewage disposal system: application procedure; permit term; automatic transfer of permit.

- A. Requirement for permit. On and after November 1, 1998, no owner or occupant of a property in the Lake Mohawk Septic Management District upon which an individual subsurface sewage disposal system is located shall use or operate the system unless a currently valid permit to operate the system has been issued by the Township in accordance with the provision of this article.
- B. Application. Every application for a permit to operate a system and every renewal of such a permit shall be made on a form provided by the Township. The date for the initial application for permit will be provided to each affected property owner.
 - (1) Every application for an initial permit shall be accompanied by documentation establishing that the entire contents of the septic tank for the system (both liquids and solids) have been pumped and removed by a solid waste hauler registered with the New Jersey State DEP. A permit will be issued which will expire three years from the date of the documented pumpout or from the approval date of a new septic system installation.
 - (2) Every application for an initial permit shall be accompanied by a plot plan.
- C. Initial permit. The initial permit, issued by the Township in accordance with this article, shall include a copy of this article and a copy of the DEP's Operation and Maintenance Manual for each owner/operator within the Lake Mohawk Septic Management District.
 - (1) The initial operator's permit shall expire three years after issuance or three years from the date of the documented pumpout, whichever comes first. The Township shall notify the owner/operator that the permit is about to expire and direct the owner/operator to apply for renewal.
- D. Renewal. The Township shall not renew the permit unless the owner/operator has submitted to the Township proof that the system has been pumped out or proof that a waiver has been granted by the Township.
- E. Waiver. A waiver shall be granted upon submission of certification by a licensed professional certifying that pumping is not required. Such certification will be renewed annually until pumping is required and performed, at which time the three-year permitting period recommences.
- F. Automatic transfer of permit. In the event of a change in the ownership of a property to

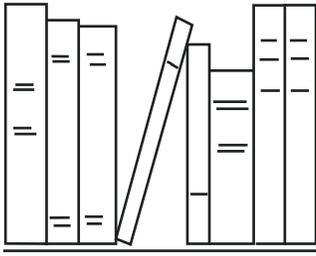
which a permit to operate a system has been issued, the permit shall be considered transferred to the new owner.

§ 272-23. Violations and penalties.

- A. Any persons who shall willfully violate any provision of this article or any person who shall use or operate a system within the Lake Mohawk Septic Management District without a currently valid operator's permit to operate such system or any person who shall violate any part of this article shall be subject to a fine not exceeding \$100 for each violation and an additional penalty of \$25 a day for each particular violation that continues after notice of the violation issued by the Township.
- B. Nothing in this article shall be construed as limiting the remedies of the Township for violations of this article. The Township may proceed under any other remedy available at law or equity for any violation of this article or any term or condition of any permit issued by the Township or for any failure to comply with any notice or order issued by the Township pursuant to this article.

**APPENDIX E ANJEC/NJDEP OWTS MANAGEMENT PROGRAM REPORT AND MODEL
ORDINANCE**

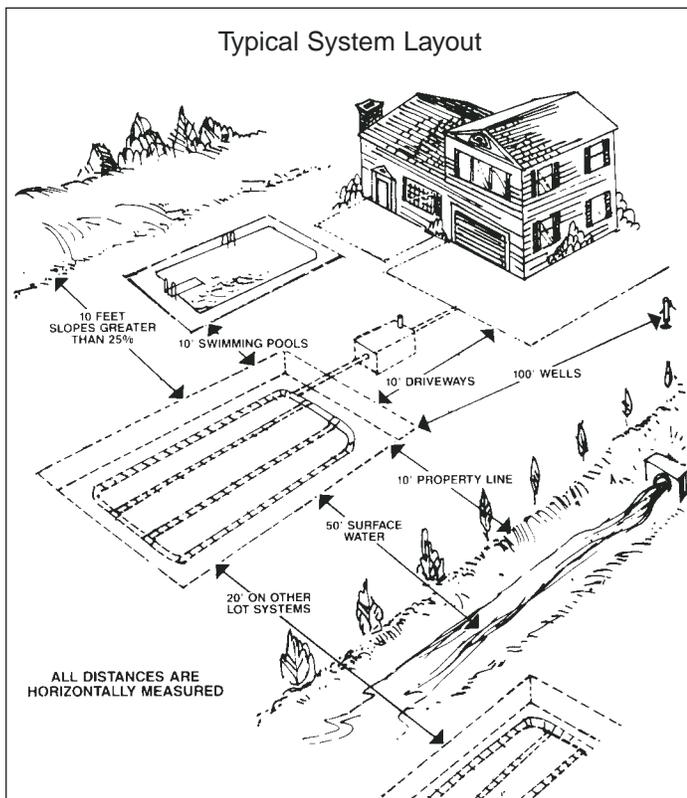
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**ASSOCIATION OF NEW JERSEY
ENVIRONMENTAL COMMISSIONS**

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Septic System Management for Clean Water



COURTESY OF RUSSELL REID

Septic systems treat and dispose of household wastewater on individual lots, mostly in more rural areas with large lots where sewers are not practical. According to the federal Environmental Protection Agency, nearly one out of every four homes in the U.S. relies on septic systems. When properly designed, installed, operated and maintained, septic systems can be the most cost-effective method of wastewater treatment.

How Septic Systems Work

Most individual septic systems consist of a septic tank and a septic drain field. The purpose of the septic tank is to separate the solids from the liquids and to promote partial breakdown of contaminants by microorganisms naturally present in the wastewater. The wastewater solids, known as sludge, collect on the bottom of the tank.

The liquid, or effluent, moves from the septic tank either by gravity, or by pumping to a subsurface drain field where a perforated pipe disperses it. The drain field's size and depth is determined by the size of the septic tank, the soils, geology and groundwater levels. The effluent exits the pipe and trickles through soil under the field. The soil treats the wastewater through physical, chemical and biological processes. It also filters out many of the bacteria, viruses and nutrients before the effluent reaches groundwater.

Cesspools were commonly used many years ago and are still in use in some areas today. They are

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simply underground pits with open-jointed linings that receive septage. The effluent leaches into the surrounding soil while the solids are retained in the pit. Cesspools do not connect to a septic field but simply allow the liquid to escape through the open joints. The New Jersey Department of Environmental Protection (DEP) regulations outlaw new cesspools and require replacement of old cesspools when they are found to be in use.

Proper Location, Design and Operation

Septic systems can fail due to improper siting (involving soil conditions, slopes or water table levels) or improper construction.

Location

DEP regulations (N.J.A.C.7:9A) spell out the minimum requirements for the design and location of septic systems. The regulations specify that a septic system shall not be located where it would be adversely affected by natural features including: bedrock outcrops, sink holes, steep slopes, bare eroded ground, sand dunes, mine spoils or landfills, low-lying coast areas with tidal inundation, low-lying inland areas with ponding or freshwater wetlands, flat low-lying areas adjoining streams, and high groundwater areas.

Septic systems must be located in soils that have acceptable permeability to provide adequate absorption characteristics for septic fields. The regulations require a minimum number of percolation tests that must be completed for different size disposal fields. The tests determine the design permeability needed for proper infiltration to ensure the effluent can move through the soil in enough time for adequate treatment to take place. For example, in areas of low permeability, sandy material may need to be added to increase permeability. By the same token, in areas of very high permeability, clay material would be needed to decrease permeability.

Systems must be adequately distanced from occupied buildings, property lines, adjacent septic systems, water courses, water supply lines, reservoirs, and wells.

Design

The design of the septic system is determined by its location – soils, groundwater elevation, topography, geology – and by the number of bedrooms of the residence it is to serve. The number of bedrooms determines the number of expected occupants and, therefore, the estimated volume of daily sewage flow. For residential systems, the DEP assigns a flow of 200 gallons per day to the first bedroom and 150 gallons per day for each additional bedroom. The more bedrooms in a house, the higher the wastewater volume and the larger the septic field will have to be. The site characteristics determine the size of the disposal field. The slower the soil's permeability, the more area will be required to absorb the wastewater in the septic field.

Operation

The regulations prohibit septic systems from receiving drainage from basement floors, footings and backwash from water softeners within the septic field. The regulations also specifically prohibit discharges, including: industrial wastes, material from photo-processing, dry-cleaning, printing, furniture stripping, auto painting. Grease traps must be installed where septic systems serve food establishments.

Additives should not be used unless they are bacterial and enhance bacterial action in septic tanks.

Properly Functioning Septics Support the Water Cycle

The recurrent droughts in New Jersey highlight the need for land use practices that mimic the natural water cycle. Experience and research show the importance of infiltrating water as close to its source as possible. Septic systems are important in maintaining the water cycle and should be considered a resource. They help replenish groundwater and maintain base stream flows by keeping used wastewater on site rather than sending it to a sewage treatment plant that discharges far from the water source.

Why Septic Management

Malfunctioning Septic Systems

In New Jersey, about 1.2 million people rely on individual septic systems for their wastewater management needs. Properly designed, sited and constructed individual septic systems provide necessary on-site wastewater treatment, provide important groundwater recharge and contribute to base flow in streams. Improperly sited and maintained septic systems can discharge bacteria, viruses and nutrients to groundwater and surface water. In addition, improper use of septic systems can contaminate ground and surface water with toxic chemicals. Over half New Jersey's population relies on groundwater for its water supply, making improper use and failure of septic systems of very serious concern. Septic malfunction can also cause surface water pollution, which can lead to fish advisories, beach closings and contaminated water supplies.

Public sewage collection systems are not the answer according to the 1996 NJ Water Supply Master Plan.

“When septic systems begin to fail in a municipality, public sewage collection systems are often installed and denser development often follows in nearby areas. The end result may be increased nonpoint source pollution and reductions in base flow in local streams.”

In other words, pollution from stormwater generated by newly induced development may become a problem if sanitary sewers replace septic systems.

The 1996 New Jersey Water Supply Master Plan raises the need for aquifer protection from malfunctioning septic systems. The Plan estimates that approximately 100 million gallons of septic effluent are discharged into the state's aquifers every day.

“When these systems are well managed, they allow the recycling of treated wastewater into the source supply as long as the density of the systems is not excessive and wells or streams are not in close proximity. However, if homeowners do not operate these systems properly (such as by introducing toxic chemicals or failing to periodically inspect and maintain the systems), they may malfunction and cause ground water contamination.”

In New Jersey the power to protect water quality from nonpoint source (NPS) pollution rests largely in the hands of local government. Local officials need to select, adopt and implement ordinances to ensure the maintenance of on-site systems to prevent nonpoint source pollution. Septic management is especially important as the

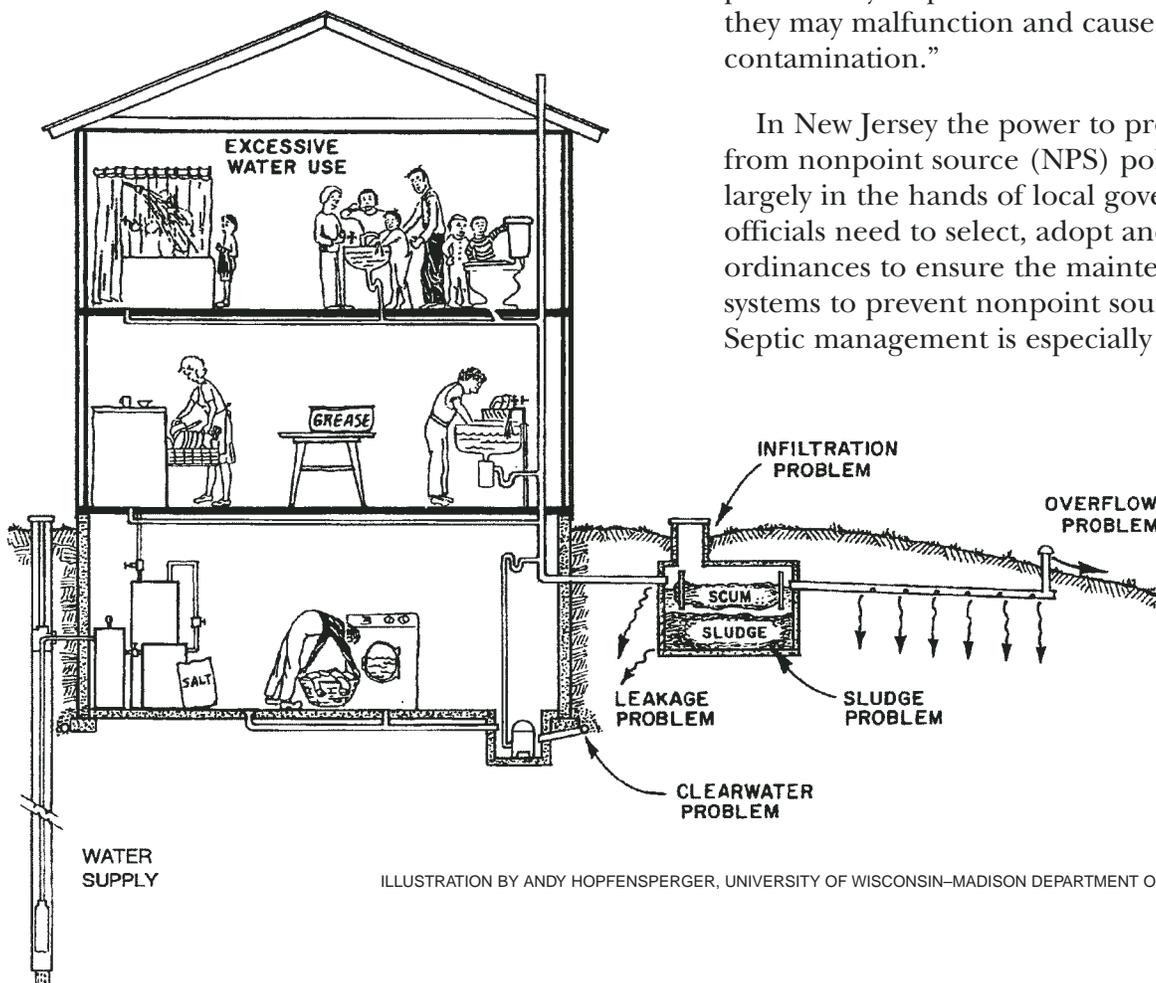


ILLUSTRATION BY ANDY HOPFENSBERGER, UNIVERSITY OF WISCONSIN-MADISON DEPARTMENT OF AGRICULTURAL ENGINEERING

state's population increases in areas dependent on septics.

Alternative Solutions for Older Systems

Often, steps can be taken to improve the function of malfunctioning older systems where site constraints limit solutions and public sewers are not feasible or desirable. In accordance with the state regulations, an aerobic treatment unit can be placed after a septic tank. The aerobic unit reduces the biological oxygen demand and total suspended solids in the fluid that exits the septic tank, and converts the ammonia to nitrate. It reduces clogging potential, and lowers fecal levels somewhat. An aerobic unit is a good solution when systems are located in areas of high water table, in proximity to streams, or where properties have no space for a full-sized septic field.

The Pinelands Commission in 2002 launched a five-year study of the use of alternative septic systems as opposed to conventional systems in the Pinelands. The Commission will monitor and evaluate specified alternate systems for effectiveness.

Many of New Jersey's septic systems predate implementation of more scientifically based regulations. In some areas, cesspools are still being used. Older systems need to be properly managed, upgraded or replaced. Newer systems are much improved, but still must be properly managed and maintained to remain effective.

Septic Management – Good Environmental Sense

A septic management program that requires proper maintenance of septic systems makes good environmental sense, as it helps to insure proper operation of both older and newer systems. Because older systems were not subject to strict requirements, they may be in inappropriate places and have minimum design. They pose serious pollution threats to surface and ground water. Newer systems also need to be properly maintained to insure effective wastewater treatment into the future.

Basic septic management consists primarily of regular pumping of septic tanks. This simple management requirement can vastly improve septic system functioning and protect the environment since the septic tank is a key component of the septic system. The septic system's function is drastically limited if the septic tank is not properly maintained. If the sludge level in the bottom of the tank builds up to the outlet pipe that carries the liquid to the septic field, the sludge will be carried to the field and will block release of the liquid. The liquid may then overflow the tank, or may leak out to the surface of the septic field. The tank is susceptible to damage caused by solvents, which kill the active bacteria essential to the breakdown of sludge. Garbage disposals can overload the tank. Grease and oils can clog vital tank components.

Establishing Proper Density

Even properly functioning septic systems can pollute water, primarily through release of excess nitrates. High nitrate concentrations in groundwater can flow to surface waters or wells. At concentrations in excess of 45 mg/l (milligrams of nitrate per liter of water), nitrate can be fatally toxic to infants. To establish appropriate septic densities, the DEP New Jersey Geologic Survey (NJGS) has developed a Nitrate Dilution Model (www.state.nj.us/dep/njgs/geodata/dgs02-6.htm). This model estimates the average area required per septic system to generate enough groundwater recharge to dilute the nitrate in that system's effluent to acceptable levels. Using average annual recharge calculated from soils and geology, the model estimates the required acres per system based on book values of nitrates in septic systems.

The NJGS emphasizes that the model is a starting point and a community can modify it to reflect its goals and concern for critical environmental resources. A basic step in the model is choosing what nitrate standard to use in the calculation of lot size. The NJGS model uses the DEP statewide groundwater anti-degradation standard of 5.2 mg/l. This standard is strictly health-based and does not take critical resource protection into account.

The Recharge-Based Nitrate Dilution Model Technical Guidance advises that in selecting the recharge-based water quality target or standard, you should consider water resource policies, standards and requirements. The nitrate target can be revised to reflect local considerations. Well records or surface water quality data may provide information for a stricter nitrate standard than the DEP's. For example, since discharge from septic fields contributes to base stream flows, if a stream is capable of supporting trout, a nitrate standard of 2.5 may be warranted. Reservoir watersheds and aquatic habitat areas for threatened and endangered species are examples where a stricter standard is deemed appropriate. Because of model assumptions, NJGS recommends a target value that incorporates safety factors. In other words, the target standard might be stricter to take into account nitrate pollution from sources other than septic systems, like fertilizer from lawns or agriculture. Another factor to be considered is poor dilution that occurs during periods of drought. The target may vary depending on land use and location.

Models are tools that can estimate the results of a given action over time; they do not tell us what the results will actually be. The assumptions and parameters in the model are only estimates and we need to understand the uncertainties inherent in the model. The model formula itself is also an estimate – simplifying what may be a very complex process in order to estimate potential impacts.

Model Septic Management Ordinance

Under a contract with the DEP, ANJEC conducted a survey of the state's municipalities to document municipal use of septic management ordinances in New Jersey. Working with an attorney, ANJEC developed the model ordinance found on page 7. The ordinance requires residents to pump septic tanks at regular intervals. Municipalities interested in enacting septic management ordinances need to evaluate their administrative capacity and the availability of licensed septic pumping companies or individuals.

Municipalities with septic management ordinances report that the most important aspect of implementing the ordinance is extensive

education and outreach to residents. Septic ordinances are difficult to enforce unless residents understand the benefit to them and the environment.

Septic Management Makes Good \$ Sense

Municipalities that require septic management are helping their residents dependent on septic systems. Properly functioning septic systems are an essential part of residential infrastructure and add to the value of a property. Like any other part of a residence, keeping the septic system in good repair is important, especially if or when sale of the property is considered. It is common practice for lending institutions to require proof that a property owner's septic system is in good order before they will consider issuing a mortgage to a buyer. Unfortunately, homeowners may be unaware of problems with their septic until the problem reaches a crisis – septic overflow, back-up or other malfunction.

Ordinances that Complement Septic Management Ordinances

To better serve our members, ANJEC has developed a database of environmental and land use ordinances from municipalities throughout New Jersey. These ordinances are examples of approaches that have worked in other municipalities. The user should modify them to reflect local environmental conditions, current regulations, and state-of-the art knowledge in the environmental field.

Aquifer Recharge Area Protection ordinances control uses on lands that provide recharge for water supply.

Clustering is a design technique that allows development to be clustered on a part of a site while requiring preservation of the site's open space; the density should not exceed that allowed under the conventional zone designation.

Floodplain Protection ordinances prohibit certain uses or development in the 100-year floodplain.

Impervious Cover ordinances limit the amount of land that can be covered by buildings, roads and other impervious uses to allow infiltration of precipitation.

Limestone Protection offers special protections to groundwater in limestone areas.

Lot Size Averaging allows lots to be of variable size so that critical environmental areas can be avoided.

Septic System Design ordinances have stricter standards than the state minimum standards. For example, local ordinances can require greater distances between septic systems and water courses or can require reserve septic fields to insure replacement if septic fields fail.

Shade Tree Protection ordinances require shade tree protection and replacement to maintain the evapotranspiration function so important to the water cycle and to prevent erosion.

Steep Slope ordinances protect slopes over 15%, with prohibition of use above 25% to minimize erosion and sedimentation.

Stormwater Management ordinances require structural and non-structural methods to control stormwater runoff.

Stream Corridor ordinances protect land along stream corridors to provide natural filtration of pollutants, prevent erosion and subsequent sedimentation, and provide important wildlife habitat. Stream corridors are an easier and more economic way to protect water than dealing with stream corridor degradation impacts.

Useable Lot Area ordinances require during subdivision that a certain area of a proposed new lot be free of environmentally critical areas – steep slopes, wetlands, floodplains and easements.

Well Head Protection ordinances establish allowed and prohibited uses in the land area influencing wells.

Some On-line Resources

- Ordinances and other information for municipalities www.anjec.org/html/waterresources.htm
- Information on nonpoint source pollution www.epa.gov/owow/info/NewsNotes/
- Issue reports on wastewater needs research funded by the U.S. EPA www.nesc.wvu.edu/nsfc/
- NJ Stormwater Web Page www.njstormwater.org
- NJ Nitrate Dilution Model www.state.nj.us/dep/njgs/geodata/dgs02-6.htm
- Homeowners Manual www.state.nj.us/dep/dwq/septicmn.htm
- Realty Improvement Sewerage & Facilities Act N.J.S.A. 58:11-23 to -48 (Septic System Regulations) www.state.nj.us/dep/dwq/pdf/njac79a.pdf

MODEL SEPTIC MANAGEMENT ORDINANCE

In consultation with NJDEP and an attorney, ANJEC developed this model ordinance.

This model ordinance regulates only the operation and maintenance of on-site sewage disposal systems, not the siting and construction of such systems.

AN **ORDINANCE** TO AMEND THE CODE OF THE BOARD OF HEALTH OF THE (INSERT NAME OF JURISDICTION) TO ESTABLISH REQUIREMENTS FOR THE OPERATION AND MAINTENANCE OF ON-SITE SEWAGE DISPOSAL SYSTEMS.

BE IT ORDAINED by the Board of Health of the (INSERT NAME OF JURISDICTION) in the County of (Insert Name of County) and State of New Jersey as follows:

SECTION ONE

A. FINDINGS

It is found and declared that:

1. Individual and non-individual on-site subsurface sewage disposal systems are in use within the (insert name of jurisdiction).
2. Existing subsurface sewage disposal systems have malfunctioned even when the systems have been designed, constructed, and sited in accordance with applicable standards, largely due to lack of proper system management or improper operation and maintenance. These malfunctions have been shown to adversely affect public health and welfare and the environment. Such systems constitute a potential source of pollution of ground and surface waters, contamination of potable water supplies, foul odors, nuisance problems and other hazards to public health.
3. It is determined 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.
4. The licensing provisions contained in this Ordinance are necessary to protect the public health safety and welfare and it is therefore necessary to exceed the provisions contained in N.J.A.C. 7:9A-1 et seq. This is hereby declared to be a "special ordinance" in accordance with N.J.A.C. 7:9A-3.1(b) and shall be forwarded to the New Jersey Department of Environmental Protection within 10 days of adoption.

OR

A. PURPOSE

In addition to the purposes set forth in N.J.A.C. 7:9A-1.1, it is the purpose of this ordinance:

1. To establish a management program for individual and non-individual subsurface sewage disposal systems in the (insert name of jurisdiction) in order to ensure the proper operation and maintenance of such systems. This 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.
2. To regulate individual and non-individual subsurface sewage disposal systems in the program area in such a way as to protect public health and welfare and the environment, and to provide for a means of educating owners/operators, as defined herein, in the characteristics of such systems and the proper procedures for altering, operating and maintaining them.
3. To develop a management program to maintain records and manage systems in the program area.
4. To promote and assure the proper management and maintenance of individual and non-individual sewage disposal systems through time.

SECTION TWO. TITLE

This Ordinance shall be known as the Subsurface Sewage Disposal System Management Ordinance of the (insert name of jurisdiction.)

SECTION THREE. DEFINITIONS

All definitions given in Subchapter 2 (N.J.A.C. 7:9A-2.1 et. seq.) of the New Jersey Department of Environmental Protection (NJDEP) Standards for the Construction of Individual Subsurface Sewage Disposal Systems, N.J.A.C. 7:9A-1.1 et seq., and any amendments thereto ("NJDEP Regulations") are hereby incorporated into this article, with the following additions:

ACTIVE USE – For initial licenses, this term shall mean: "The use or direction of waste water to a system after the adoption date of this ordinance." For renewal licenses, this term shall mean: "The use or direction of waste water to a system at any time during the period of the license."

BOARD OF HEALTH – The Board of Health of the (insert name of jurisdiction)

EDUCATION PROGRAM – An educational program prepared and administered by the Board of Health regarding the fundamentals of individual and non-individual subsurface sewage disposal systems and the proper procedures for the operation and maintenance of such systems. The educational program shall be deemed to be in accordance with N.J.A.C. 7:9A-3.14.

ENFORCING OFFICIAL – The (Insert name of officer) of the (insert jurisdiction) or his designee.

INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM – An individual subsurface sewage disposal system, as defined at N.J.A.C. 7:9A-2.1, serving a single family detached residential housing unit.

LICENSED SEPTIC SLUDGE REMOVAL OPERATOR – Any person, firm or corporation which has been duly examined by the enforcing official and found qualified to pump out an individual or non-individual subsurface sewage disposal system, and who has been issued a license.

MANAGEMENT DISTRICT – (This definition is necessary if the ordinance is to be applied only to a portion of a jurisdiction. The definition must be developed locally and specifically describe the geographic area to be subject to the ordinance.)

NON-INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM – An on-site subsurface sewage disposal system serving a property other than a single family home. Such systems include but are not limited to those systems defined in N.J.A.C. 7:9A-1.8(c)2. Typical examples include but are not limited to: commercial buildings, restaurants, food establishments, commercial/residential mixed uses, and systems servicing multiple units.

OPERATOR'S LICENSE – A license issued to an applicant pursuant to this ordinance for the operation of an individual or non-individual subsurface sewage disposal system.

OWNER OR OPERATOR – The person who owns or leases the realty upon which an individual or non-individual subsurface sewage disposal system is located and/or the person who uses or operates said system. The owner of the realty and the operator of the system, if different, are jointly and severally liable for the obligations imposed by this ordinance.

PLOT PLAN – A sketch drawn by the owner/operator, or agent on their behalf, showing the type (if known) and location of the individual or non-individual subsurface sewage disposal system servicing the property, as well as the location and type of any on-site water supply. All plots shall be drawn to scale and list the dimensions used.

RETAIL FOOD ESTABLISHMENT – Any fixed or mobile restaurant; coffee shop; cafeteria; short order cafe; luncheonette; grill; tearoom; sandwich shop; soda fountain; tavern; bar; cocktail lounge; night club; roadside stand; industrial feeding establishment; private, public, or nonprofit organization, institution, or group preparing, storing or serving food; catering kitchen; commissary; box lunch establishment; retail bakery; meat market; delicatessen; grocery store; public food market, or any similar place in which food or drink is prepared for retail sale or service on the premises or elsewhere, and any other retail eating or drinking establishment or operation where food is served, handled or provided for the public with or without charge.

SYSTEM – An individual or non-individual subsurface sewage disposal system, including all of the component parts thereof.

SECTION FOUR. SCOPE, APPLICABILITY AND EXEMPTIONS

- A. SCOPE.** The owner and/or occupant of any realty improvement serviced by an individual or non-individual on-site subsurface sewage disposal system located in the (Option One – Management District) (Option Two – insert name of jurisdiction) shall be subject to all of the requirements of this chapter.
- B. APPLICABILITY.** No person within the (insert name of jurisdiction) area shall operate an individual or non-individual subsurface sewage disposal system unless such construction, installation, alteration, maintenance or operation is in accordance with all applicable sanitary regulations and this ordinance.
- C. EXEMPTIONS.** Any system not in active use shall be exempted from this Ordinance. The Board of Health may require an owner or operator of a system seeking exemption under this section to submit proof in the form acceptable to the Board so as to qualify for this exemption.

SECTION FIVE. LICENSE TO OPERATE

- A. REQUIREMENT FOR LICENSE:** On and after (insert effective date) no owner or occupant of a property in the (insert name of jurisdiction) upon which an individual or non-individual subsurface sewage disposal system is located shall use or operate the system unless a currently valid license to operate the system has been issued by the Board of Health in accordance with the schedule herein to the owner of the property on which the system is located.
 - 1. The Board of Health or its designee may issue a license to operate and educational information relative to the proper operation and maintenance practices (pursuant to N.J.A.C. 7:9A-3.14) to the owner and occupant of a property upon one or more of the following events:
 - a. Issuance of a certificate of compliance for a new system.
 - b. Issuance of a certificate of compliance for the alteration of a system
 - c. Upon the sale or transfer of a premises.
 - d. For all existing individual and non-individual sewerage disposal systems in accordance with the following schedule
 - Option 1 – Immediate effective date for all systems
 - Option 2 – Deferred effective date for all systems
 - Option 3 – Phased in date for existing systems
 - 2. All licenses issued pursuant to this section shall be on a form provided by the Board of Health. Once issued, a license shall be transferable upon change of ownership or occupancy of the premises for which the license has been issued. A fee as provided in section eleven of this ordinance thereof shall accompany each application for a license or renewal. The initial application for a license shall include a plot plan showing the location of the septic system (both the tank and the disposal area) and of any private water source on the property. The plot plan shall also include the general location, if known, of any wells, and septic systems on adjoining properties.
- B. EXPIRATION/RENEWAL:** The license to operate shall expire three (3) years after issuance. The Board of Health shall notify the licensee or its designee at least (INSERT REASONABLE TIME) before the license expires and shall be directed to apply for a renewal of the license. The renewal notice shall include educational materials relative to the proper operation and maintenance practice for such systems in accordance with N.J.A.C. 7:9A-3.14.

1. Requirements for Renewal: The Board of Health or its designee shall not renew the license unless the licensee has submitted the following to the Board of Health or its designee:

JURISDICTIONS SHOULD CHOOSE EITHER OPTION 1 OR OPTION 2

OPTION 1

- a. Evidence that the septic tank (or in the case of an alternate system, the comparable component of such system) has been pumped by a licensed septic sludge removal operator as required by Section Seven of this Ordinance; or
- b. Submission of a Septic System Inspection* Report on a form approved by the Board of Health indicating that the system has been maintained, is not in need of pumping, and is functioning in conformance with the requirements of this chapter. Said form shall be prepared, completed and certified by:
 - i) A staff member of the Board of Health;
 - ii) A licensed septic installer;
 - iii) A NJDEP registered inspector;
 - iv) A NJDEP registered waste hauler;
 - v) A licensed professional engineer;
 - vi) A licensed health officer or sanitarian;
 - vii) Insert local option, if any); or
 - viii) Other person acceptable to the Board of Health.

Any such inspection under this section, shall include but not be limited to the following:

- i) A complete walkover of the septic field;
- ii) Measurement of the effluent in inspection ports, (if any) and a reading of the groundwater monitoring port when such ports were included in the original septic design; and
- iii) An inspection of baffles and internal integrity of the tank.

OPTION 2

Submission of a Septic System Inspection* Report only as required in OPTION 1 on this page (Section Five B1b).

** Any such inspection shall be conducted in accordance with any NJDEP approved protocol, guidance or regulations.*

If the inspection indicates that a pumpout of the tank or other maintenance, alteration, or repair of the system is necessary, the Board of Health shall issue a notice of pumping, alteration or repair. Following pumpout or other maintenance, alteration or repair of the system, the owner /operator shall submit to the Board of Health a completed alteration/pumpout report prepared and signed by the person performing the required work.

No person shall test an individual or non-individual subsurface sewage disposal system in a manner that will adversely affect the functioning of the system. Hydraulic loading shall not be applied in excess of the design flow capacity. All solids shall have been removed from the septic tank and/or grease trap prior to testing unless the hydraulic loading is applied at a point that will bypass the septic tank and/or grease trap.

2. Renewal Term: Any license renewed under section B.1.a (Actual pumping) shall be renewed for a period of three years. Any license renewed under Option 2 (Inspection) shall be renewed for period of (insert term) years.

3. As a condition precedent to a license renewal, the owner/operator shall pay the fee required by section eleven herein.

C. SUSPENSION OF LICENSE: The Board of Health or its designee may suspend or revoke the license to operate in the following circumstances:

1. It has been determined that the system is malfunctioning based upon criteria provided for in N.J.A.C. 7:9A-3.4(a) and the licensee fails to take steps to correct said malfunction as directed by the Board of Health or its designee;
2. The owner or occupant of the premises served by the system violates any provision of this chapter with respect to operation and maintenance of the system; or
3. The owner or occupant of the premises served by the system denies the right of entry to the Board of Health or its designee, or to the New Jersey Department of Environmental Protection (NJDEP), as required in N.J.A.C. 7:9A-3.19, or in any way interferes with the administration or enforcement of this ordinance.

D. MODIFIED TERM OF LICENSE: The Board of Health may on its own motion, upon notice and opportunity to the property owner or operator for a hearing, or upon application of a property owner or system operator, alter the time period of a license to operate. The Board of Health may consider the following factors in determining that a more frequent licensing renewal or pumping/inspection schedule may be necessary:

1. Limited size of the septic tank or disposal field;
2. The fact that the existing system may be a cesspool;
3. The age of the system;
4. Past history of malfunction or other non-compliance;
5. Location of the existing system in a flood hazard, wetland area, wetland transition zone or other environmentally sensitive area as defined in (insert reference);
6. Proximity of the system to a well or water body.

E. SPECIAL LICENSING PROVISIONS FOR RETAIL FOOD HANDLING ESTABLISHMENTS:

The license to operate for a retail food handling establishment shall expire one year after issuance or one year from the date of the documented pumpout, whichever comes first. The owner of said establishment shall have the right to apply to the Board of Health for a longer license renewal period, but in no case shall the license renewal period exceed three years.

In considering any such application the Board of Health may consider the establishment's demonstrated compliance history with management of the system.

SECTION SIX. STANDARDS ON THE USE OF SUBSURFACE SEWAGE DISPOSAL SYSTEMS

A. GENERAL

1. The subsurface sewage disposal system shall be used only for the disposal of wastes of the type and origin provided for in the approved engineering design. No permanent or temporary connection shall be made to any source of wastes, waste water or clean water other than those plumbing fixtures which are normally present within the type of facility indicated in the approved engineering design.
2. Drainage from basement floors, footings or roofs shall not enter the sewage disposal system and shall be diverted away from the area of the disposal field.
3. As set forth in N.J.S.A. 58:10A-17, no person shall use or introduce or cause any other person to use or introduce into any sewage water disposal system any sewage system cleaner containing any restricted chemical material.
4. Disposal of materials containing toxic substances into a subsurface sewage disposal system is prohibited. Materials containing toxic substances include, but are not limited to, waste oil (other than cooking oil), oil based or acrylic paints, varnishes, photographic solutions, pesticides, insecticides, paint thinners, organic solvents or degreasers and drain openers.
5. Inert or non-biodegradable substances should not be disposed of in the subsurface sewage disposal system. Such substances include, but are not limited to, disposable diapers containing plastic, cat box litter, coffee grounds, cigarette filters, sanitary napkins, facial tissues and wet-strength paper towels.
6. Large quantities of cooking greases or fats shall not be discharged into systems not equipped with a grease trap designed and constructed as prescribed in N.J.A.C. 7:9A-8.1.
7. Major plumbing leaks shall be repaired promptly to prevent hydraulic overloading of the system.
8. Vehicle traffic and vehicular parking shall be kept away from the aspects of the system, unless the system has been specifically designed to support vehicular traffic.

B. DISPOSAL FIELD MAINTENANCE

1. The area of the disposal field shall be kept free of encroachments from decks, pools, sprinkler systems, driveways, patios, accessory buildings, additions to the main building and trees or shrubbery whose roots may cause clogging of any part of the system
2. Grading shall be maintained in a condition that will promote run-off of rainwater and prevent ponding.
3. All drainage from roofs, footing drains, ditches or swales shall be diverted away from the disposal field.
4. Vegetation shall be maintained to prevent soil erosion.
5. Vehicle traffic and vehicular parking shall be kept away from the area of the disposal field, unless the disposal field has been specifically designed to support vehicular traffic.

C. ABANDONED SYSTEMS

1. When it is necessary to abandon a system or components of a system, all septic tanks, dosing tanks, seepage pits, dry wells and cesspools which are to be abandoned shall be emptied of wastes and removed or filled completely with sand, gravel, stones or soil material in a manner which is acceptable to the Board of Health or its designee.
2. Except when done as part of or in conjunction with an alteration, a permit must be obtained from the Board of Health prior to abandoning a septic system or component of a septic system.

D. ADDITIONAL INSPECTION AND MAINTENANCE REQUIREMENTS FOR SYSTEMS WITH GREASE TRAPS

1. Grease traps shall be inspected and cleaned out at a frequency adequate to prevent the volume of grease from exceeding the grease retention capacity. Grease shall be removed whenever seventy-five percent (75%) of the grease retention capacity has been reached.
2. Pumping of grease traps shall be performed by a solid waste hauler registered with the NJDEP in accordance with the requirements of N.J.A.C. 7:26-3.1
3. Equipment used in the pumping of grease traps shall meet the following requirements:
 - a. Mobile tanks shall be securely mounted on trucks or trailers, shall be watertight and provided with a leak-proof cover and shall be vented to permit the escape of gases but not the liquid or solid contents of the tank.
 - b. Pumps and hoses shall be maintained and operated in a condition that will prevent the leakage of sewage.
 - c. Equipment shall be available to permit accurate measurement of the volume of grease in relation to the grease retention capacity of the grease trap.
 - d. Pumping of grease traps shall be conducted in such a manner that the entire contents of the grease trap including both liquids and solids are removed.
 - e. Pumping shall be carried out in a manner that will prevent spillage of sewage onto the ground. If any spillage occurs, the solid portion shall be immediately removed and disposed of in a sanitary manner and the area of the spill shall be disinfected using a suitable chlorine-bearing compound.
 - f. Grease and other waste materials removed from grease traps shall be disposed of in accordance with the requirements of the Statewide Sludge Management Plan adopted pursuant to N.J.S.A. 13:1E-1 et seq. and N.J.S.A. 7:11A-1 et seq., as well as any other applicable State or local rules, regulations, ordinances or directives.

E. MAINTENANCE OF DOSING TANKS

1. Dosing tanks and associated pumps, siphons, switches, alarms, electrical connections and wiring shall be maintained in proper working order.
2. Any solids that accumulate in the dosing tank shall be removed and disposed of in a sanitary manner.

SECTION SEVEN. REMOVAL OF SEPTIC TANK SLUDGE

- A. Any person, partnership, firm or corporation who empties, relieves or pumps out all or a portion of an individual or non-individual sewage disposal system within the (insert jurisdiction) shall first apply to the Board of Health to become a licensed septic sludge removal operator. The applicant shall have the following qualifications: (Insert qualifications.) Any such license shall be for a term of (insert time period) and shall be subject to the payment of a fee as provided in section eleven of this ordinance.
- B. Prior to emptying, relieving or pumping out all or a portion of any individual or non-individual subsurface sewage disposal system within the (insert name of jurisdiction), the licensed septic sludge removal operator shall obtain a septic sludge removal permit from the Board of Health.
- C. The septic sludge removal operator shall complete all information on the septic sludge removal permit and deliver one (1) copy to the property owner and one copy to the Board of Health within 72 hours of the time that the individual or non-individual sewage disposal system is pumped. Failure to deliver said report within the required time frame shall be considered to be a violation of this ordinance.
- D. In addition to the license required under section A above, the pumping of septic tanks shall be performed by a solid waste hauler registered with the NJDEP in accordance with the requirements of N.J.A.C. 7:26-3.c.
- E. The Board of Health may suspend or refuse to renew the license of any septic sludge removal operator who fails to comply with this ordinance.
- F. Equipment used in the pumping of septic tanks shall meet the following requirements:
 1. Mobile tanks shall be securely mounted on trucks or trailers, shall be watertight and provided with a leak-proof cover and shall be vented to permit the escape of gases but not the liquid or solid contents of the tank.
 2. Pumps and hoses shall be maintained and operated in a condition that will prevent the leakage of sewage.
 3. Equipment shall be available to permit the accurate measurement of the sludge and scum levels in relation to the bottom of the outlet baffle.
- G. Pumping of septic tanks shall be conducted in such a manner that the entire contents of the septic tank including both liquids and solids are removed.
- H. Pumping shall be carried out in a manner that will prevent spillage of sewage onto the ground. If any spillage occurs, the solid portion shall be immediately removed and disposed of in a sanitary manner and the area of the spill shall be disinfected using a suitable chlorine-bearing compound.
- I. Septage shall be disposed of at a sewage treatment plant designated in accordance with District and/or State Solid Waste Management Plans pursuant to the Statewide Sludge Management Plan adopted pursuant to N.J.S.A. 13:1E-1 et seq. and N.J.S.A 58:1A-1 et seq.

SECTION EIGHT. APPEAL TO BOARD OF HEALTH

Any person aggrieved by any decision of a designee of the Board of Health made pursuant to this chapter shall have the right to appeal that decision to the Board of Health. Any aggrieved person seeking a hearing under this section shall make application to the Board in writing within 30 days of the decision to be appealed. The Board of Health shall schedule the matter for a hearing within 45 days thereafter. The hearing shall be conducted at a meeting held pursuant to the Open Public Meetings Act.

SECTION NINE. ENFORCEMENT

A. NUISANCES TO BE CORRECTED

1. Any on-site sewage disposal system or component thereof that is found to be malfunctioning (as defined in N.J.A.C. 7:9A-2.1 and 3.4) shall constitute a nuisance and shall be repaired, modified or replaced pursuant to an order of the Board of Health or its designee to correct the condition caused by the malfunction. Alterations shall be performed in accordance with "Standards for the Construction of Individual Subsurface Sewage Disposal Systems" as adopted and implemented by the Board of Health by virtue of this Code and any amendments thereto.
2. Any individual or non-individual subsurface sewage disposal system which has not been maintained in accordance with N.J.A.C. 7:9A:12.3, Septic Tank Maintenance, is hereby declared a nuisance.
3. Any individual or non-individual subsurface sewage disposal system which is constructed, installed, altered, operated or maintained in violation of this section, the DEP Regulations, any rule or regulation promulgated pursuant to this ordinance or any permit, certificate or license issued pursuant to this ordinance is hereby declared to be a nuisance.
4. In addition the powers provided for in N.J.A.C. 7:9A-1.1 et seq., the Board of Health retains its authority to abate any nuisance in accordance with the provisions of N.J.S.A. 26:3-45 et seq.

B. MALFUNCTIONING SUBSURFACE SEWAGE DISPOSAL SYSTEM: INSPECTIONS OF SYSTEM; REVOCATION OF LICENSE

1. The Board of Health shall have the right to inspect any system which shows evidence of any malfunction. Such evidence may include, but not be limited to, foul odors, leakage to ground surface, or soggy ground over system. Water and/or soil samples may be taken to confirm the existence of a malfunctioning system.

2. The Board of Health may require that any malfunctioning system be corrected by servicing or by replacement or alteration of the system.
3. Until any necessary replacement or alteration of a system has been accomplished, the Board of Health may require pumping and the removal of the entire contents of the septic tank for the system (both liquids and solids) at intervals specified by the Board.
4. No provision to this Ordinance shall be interpreted as precluding the Board of Health from revoking a license issued by the Board for the operation of a system in the event that the Board shall determine that such action is necessary and appropriate for the enforcement of this Ordinance. Any such revocation shall be upon Notice to the owner/operator, with an opportunity to comment or appeal.

SECTION TEN. RIGHT OF ENTRY

In furtherance of the rights granted to the Board of Health in N.J.S.A. 26:3-45 et seq. and N.J.A.C. 7:9-3.19, the (insert name of enforcing official) or his designee, upon presentation of identification, shall have the right to enter upon property where an individual or non-individual subsurface sewage disposal system is located for the purpose of observation, inspection, monitoring and/or sampling of the on-site sewage disposal system. This authority is exercised by virtue of N.J.S.A. 26:3-31 as a necessary and reasonable method of furthering the duties of the Board of Health as enumerated therein.

SECTION ELEVEN. FEES

- A. Initial License
- B. Renewal License
- C. Board of Health Inspection at time of license renewal
- D. Septic Sludge Removal Operator
- E. Septic Sludge Removal Permit

SECTION TWELVE. VIOLATIONS AND PENALTIES

- A. A person who violates any provision of this article, or any term or condition of any certificate or license issued hereunder, shall be liable for one or more of the following penalties [N.J.S.A. 40:69A-29(b)].
 1. A fine of not less than one hundred dollars (\$100.00) nor more than \$1,000.
 2. A period of community service not to exceed 90 days.
- B. Each separate day and each violation of any provision or this article, any term or condition of any certificate or license or any notice or order issued by the Board of Health shall constitute a separate and distinct violation under this ordinance.
- C. Nothing in this section shall be construed as limiting the remedies of the Board of Health for violation of this article. The Board of Health may proceed under any other remedy available at law or in equity for any violation of this article or any term or condition of any certificate or license issued by the Board or Health or for any failure to comply with any notice or order issued by the Board of Health or its enforcement official under this ordinance.

SECTION THIRTEEN. REPEAL OF INCONSISTENT ORDINANCES.

All ordinances, codes or parts of same inconsistent with any of the provisions of this ordinance are hereby repealed to the extent of such inconsistency

SECTION FOURTEEN. EFFECTIVE DATE

This ordinance shall take effect thirty (30) days after adoption and publication of a Notice of Adoption in accordance with New Jersey law.

SECTION FIFTEEN. SEVERABILITY

In the event that any provision of this Ordinance or its application to any person is held invalid for any reason, such invalidity shall not affect any other provision of this Ordinance and to this end, the provisions of this Ordinance are severable.

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2002

**APPENDIX F RUTGERS UNIVERSITY COOPERATIVE EXTENSION FACT SHEETS ON OWTS
MANAGEMENT**



Onsite Wastewater Treatment Systems: Five Levels of Protection

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The Importance of OWTS Management

Onsite Wastewater Treatment Systems (OWTS) have been identified by the U.S. Environmental Protection Agency (USEPA) as a long-term solution to wastewater treatment. Twenty-five percent of U.S. homes and 33% of new construction utilize OWTS (USEPA, 2002). These systems may be the best option in many areas because of relatively low construction and maintenance costs and effective treatment of domestic wastewater. Because impaired and failing systems are costly to repair and replace and can endanger public health and water quality, proper maintenance of OWTS is essential. Furthermore, management of OWTS can help ensure proper maintenance and early detection of malfunctioning systems before problems become larger and more expensive to repair. Thus, the USEPA has developed a voluntary OWTS management program consisting of five models based upon varying levels of management.

The Incentives of OWTS Management

- Protection of public health and local water resources;
- Increase in property values;
- Avoidance of expensive repairs;
- Groundwater aquifer replenishment;
- No costly infrastructure to install unlike public sewerage;
- Long-term savings through proper maintenance (longer system life means less replacement costs).

Management Considerations

The management model that a community chooses to use should be based upon the potential for system failure, environmental sensitivity, and potential public health risks in the area (see Figure 1). The density of development, soil type, water table depth, limiting horizons (clay lens or bedrock), important ecological areas, and receiving water use are among the many factors affecting environmental sensitivity. Advanced technology and rigorous management may be suitable for areas at a high risk for system failure, whereas, homeowner awareness and education programs combined with regular pumping and inspections may be the best option for non-sensitive areas.



Figure 1. Risk Levels Determine Management Program (USEPA, 2003).

The Five Management Levels

LEVEL 1 – Homeowner Awareness:

The homeowner awareness model is appropriate for areas where conventional systems function properly, and there are no critical environmental issues of concern. The



purpose of this model is to educate the homeowner on the proper operation and maintenance of their systems. In doing so, a regulatory agency (typically, the township engineer or local health department) issues permits for system construction and keeps a comprehensive database of OWTS. The agency is advised by the USEPA to send reminders to homeowners when a pump-out or inspection is due. The reminder, combined with community “refresher” classes in maintenance and care, will ensure an educated and aware homeowner.

This model has the advantage of compiling comprehensive information about onsite systems within a region, which may be useful in monitoring and future planning. The possible disadvantage of the model is that maintenance and system operation fall in the hands of the homeowner, who is responsible for proper care of their system.

LEVEL 2 – Maintenance Contracts:

The maintenance contract level is an additional step above Level 1, the Homeowner Awareness Model. In this program, homeowners must have OWTS maintenance contracts with licensed septic technicians. This model is appropriate for areas that require additional treatment and more advanced technologies, which may require more maintenance and understanding. Typically, pretreatment (removing excess solids) is used in conjunction with conventional systems. These advanced technologies require maintenance levels agreed upon by the owner and operator.

Advantages of this model include the ability to implement technology, to treat wastewater to a higher level, and to ensure that regular inspections will occur by a licensed service provider. The limitation of this system is that the regulatory agency depends on the homeowner or the service provider to alert them if there has been a breach of contract. In this model, there is no mechanism that ensures that the contracts are being upheld.

LEVEL 3 – Operating Permits:

The operating permit model guarantees regular inspections by a licensed service provider through mandatory compliance of municipal regulations. Limited-term operating permits are issued to the owner upon satisfying the terms of the permit agreement. When the permit expires, the homeowner must demonstrate that the system is still in accordance with permit specifications. This model ensures long-term commitment from the homeowner and

fewer impaired systems. The degree of management afforded by operating permits promotes greater property values and fewer repair costs in the long run. This model is appropriate for areas where high levels of treatment are crucial, in particular, areas that are concerned with excessive nutrient inputs into local water bodies. This model is also appropriate for places where systems may have been installed in marginally appropriate areas such as areas with a high water table or areas having soils with low permeability.

Level 3 gives regulatory agencies a mechanism for regulating consistent and proper operation of OWTS. Because implementation of this program level is fully dependent on the support of the community, proper steps must be taken to raise awareness among residents. Currently, some municipalities have approved ordinances that only require new systems to enter the program. Unfortunately, allowing existing systems to operate unregulated may reduce the effectiveness of the program, particularly if the unregulated systems are much older and possibly failing (see Figure 2).

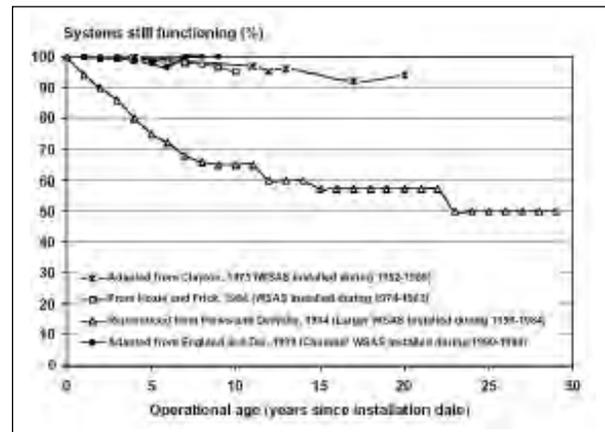


Figure 2. System Functionality with Respect to Age (USEPA, 2003).

LEVEL 4 – Responsible Management Entity (RME) Operation and Maintenance:

This model grants operating permits to RME organizations. The RME is then responsible for timely and concise operation and maintenance of OWTS. While operation and maintenance is a responsibility of the RME, the homeowner owns the OWTS and is responsible for any repair or replacement costs. This is appropriate for areas of moderately high environmental sensitivity or with large concentrations of OWTS. Particularly, this management level is applicable for developments that utilize clustered OWTS technology.

In this program, the RME, not the homeowner, is responsible for the permit and the maintenance of the system. Thus, responsibility lies in the hands of knowledgeable professionals. However, potential for conflict between the RME and the homeowner exists when there is a disagreement over repair or system replacement. Accordingly, the RME must also have a legal easement to the OWTS to access the system.

LEVEL 5 – RME Ownership:

In this model, the RME owns the OWTS and is responsible for all aspects of operation, maintenance, repair, and replacement of failing systems. This is the decentralized analog to public sewerage. Level 5 has the greatest amount of management and allows for technologically advanced systems that treat wastewater to a very high level. This management level is ideal for very sensitive areas and clustered systems that require a high level of monitoring and maintenance. It also provides a form of insurance to the homeowner for repairing or replacing malfunctioning systems. In New Jersey, these costs can be excessive, and the homeowner typically delays repairing or replacing a failing system, resulting in unpleasant smells, human health concerns, and environmental impacts until the system is repaired. A potential impediment is the unwillingness of homeowners to pay an annual fee to a RME. Some homeowners will relate this fee as an additional tax for a service that they have been financially responsible for on their own. Homeowners may object to the establishment of an RME if the annual RME fee is significantly greater than the cost homeowners incurred with their system before the creation of the RME.

Existing New Jersey Management Programs

In New Jersey, all municipalities are required by regulation to implement management programs similar to a Level 1 program. For example, the Standards for Individual Subsurface Sewage Disposal Systems (N.J.A.C. 7:9A) requires all system construction and repairs to be designed by a Professional Engineer (P.E.) and to be approved by the appropriate health department. In addition, N.J.A.C. 7:9A-3.14 requires health departments to notify homeowners on a triennial basis of proper operation and maintenance practices. Furthermore, when people buy homes with septic systems, it is standard practice for them to hire the services of a qualified septic inspector.

Of 566 New Jersey municipalities, eight have implemented more comprehensive OWTS management programs based on the USEPA’s voluntary guidelines (see Table 1). The management programs have been spurred, in many instances, by a need to protect shared resources such as recreational and potable waterbodies. To fully establish a Level 5 management strategy, years of planning may be necessary. Figure 3 depicts an approximate timeline for program establishment.

These eight New Jersey municipalities have instituted management programs to the EPA’s Level 3. OWTS owners are required to apply for and maintain a license for operation, which is typically a three year agreement. At the end of this time, the owner is required to apply for a new license and prove that the terms of the license have been fulfilled. This usually means that the tank has been

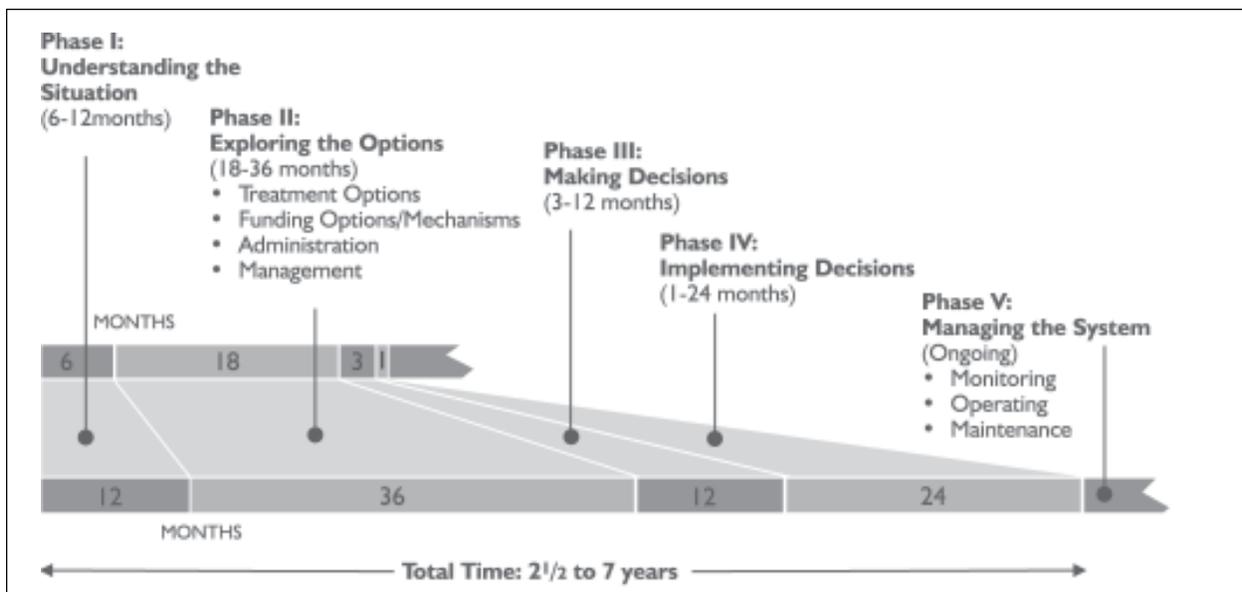


Figure 3. Typical Timetable for a Wastewater Treatment Project (Olson et al., 2002).

inspected and pumped in the last three years and that any necessary repairs have been made. These measures can reduce the number of failing systems, aid the municipality in tracking the frequency and location of system failures, and ensure that non-working systems will be repaired.

Table 1. New Jersey Municipalities with OWTS Management Programs.

| County | Municipality | Level | “Grand-fathering” |
|----------|----------------------|-------|-------------------|
| Morris | Chatham Township | 3 | No |
| Morris | Montville Township | 3 | Yes |
| Morris | Mount Olive Township | 3 | Yes |
| Somerset | Montgomery Township | 3 | Yes |
| Sussex | Byram Township | 3 | No |
| Sussex | Frankford Township | 3 | Yes |
| Sussex | Borough of Hopatcong | 3 | No |
| Sussex | *Sparta Township | 3 | No |

*Lake Mohawk Watershed only.

Fifty percent of the municipalities requiring operating permits for septic systems included a “grandfather clause” allowing homeowners with existing systems the option of not entering the program. This means that a failing system may continue to fail until such time as there is new construction. This can limit the effectiveness of the program, and should be considered during program design.

All OWTS that have flow greater than 2,000 gallons per day are required to obtain permits to operate from the NJDEP. These NJDEP permits require frequent maintenance inspections and monitoring to ensure ongoing compliance with ground water and surface water quality

standards. This level of management corresponds to USEPA Level 3, 4, or 5.

Funding Sources

- Clean Water State Revolving Fund (USEPA). www.epa.gov/owm/cwfinance/cwsrf.
- Environmental Finance Program (USEPA). www.epa.gov/efinpage/.
- Nonpoint Source Pollution Program (USEPA). www.epa.gov/owow/nps/319hfunds.html.
- U.S. Department of Agriculture, Rural Development. www.rurdev.usda.gov.
- U.S. Department of Housing and Urban Development, Office of Community Planning and Development. www.hud.gov/cpd/cdbg.html.
- The National Decentralized Water Resources Capacity Development Project. www.ndwrcdp.org/funding.cfm.

For More Information

- Rutgers Cooperative Research & Extension. www.rcrc.rutgers.edu.
- *A Guide to Public Management of Private Septic Systems*. www.cardi.cornell.edu/clgp/septics_index.cfm.
- *U.S. Environmental Protection Agency, Septic Systems, Guidelines, and General Guidance*. <http://cfpub.epa.gov/owm/septic/guidelines.cfm#7479>.

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- U.S. Environmental Protection Agency (USEPA). 2002. *Onsite Wastewater Treatment Systems Manual*. EPA/625/R-00/008. Office of Research and Development. Cincinnati, OH.
- U.S. Environmental Protection Agency (USEPA). 2003. *Draft: Handbook for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems*. EPA 832-D-03-001. Office of Research and Development. Cincinnati, OH.

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