

**DRAFT – FOR CONSIDERATION AT THE JUNE 5, 2008
MEETING OF THE HIGHLANDS COUNCIL**

Wastewater System Maintenance

Issue Overview

All development requires some form of wastewater treatment system. All forms of wastewater treatment systems require proper operation and maintenance (O&M). Unfortunately, most homeowners do not properly maintain their septic systems and many do not operate them properly, leading to failures that put human health and the environment at risk. Local Health Boards have the authority to require correction of failures, but maintenance is more cost-effective. NJDEP has proposed that all municipalities have some form of septic system maintenance program, but cannot mandate such programs where the municipality decides not to participate in Wastewater Management Plans. Only a few Highlands municipalities currently have such programs, and smaller municipalities will likely need assistance to implement septic system maintenance programs. Finally, in some cases, primarily in older communities, homes do not have modern septic systems but instead rely on cesspools or even less effective discharge methods. In all cases, increased septic system density and proximity to sensitive resources (e.g., wells, surface waters) increase the importance of proper O&M.

Community-based systems, such as communal septic systems and small wastewater treatment systems, are regulated by NJDEP under the NJPDES program to ensure proper O&M, but not all such system owners are financially and technically capable of ensuring that their systems routinely meet NJDEP requirements through decades of use. Moreover, NJDEP is prohibited from requiring that such facilities have co-permittees to ensure long-term compliance. While NJDEP can take enforcement action regarding its permit conditions, financial failure of the system owner is not easily remedied.

Wastewater systems operated by utility authorities and municipal government are generally well-financed through fee-based programs that have a sufficient user base. In addition, NJDEP permitting and enforcement can provide sufficient surety of proper O&M. Accordingly, the RMP does not address O&M for these systems, but the Council will coordinate with the NJDEP to determine where existing systems are potential water quality concerns and to address such issues through NJDEP regulation.

Program Summary

This program helps to ensure that on-site and small community wastewater treatment systems are properly maintained, using methods that complement NJDEP's regulatory programs and requirements. It is focused primarily on septic system maintenance and on small community-based systems (e.g., package plants).

Regarding septic systems, the primary purposes are: (1) to ensure that their O&M minimizes the potential threat to public health and the environment, (2) to extend the functioning life-cycle of septic systems, and (3) to reduce the potential need for creation or expansion of sewer systems into non-sewered areas. In many cases, the expansion or creation of sewerage to address septic system failures or excessive density is very costly and could increase demand for other development in inappropriate areas.

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**RMP Policies and
Objectives Addressed**

Regarding the community on-site systems, the primary purposes are: (1) to ensure that the systems retain their viability through proper O&M, and (2) to prevent the need for a transfer of system ownership due to fiscal collapse.

Objective 1L6b Septic systems and cesspools on small lots in close proximity to lakes shall be replaced with upgraded individual treatment systems, communal septic systems or community-based wastewater systems wherever feasible and cost-effective, with the selection of replacement technology to ensure minimal secondary impacts, including potential reductions in net water availability, maximum environmental benefit, and financial viability. Community-based systems should not provide for additional land development capacity except for exempt lots within that existing lake community that are not environmentally constrained, or for areas that are otherwise permitted to have wastewater service under the goals, policies and objectives in Part 2, Subpart d, Sustainable Development and Water Resources.

Objective 2K3c. Prohibit new, expanded or extended public wastewater collection and treatment systems and community on-site treatment facilities within the Protection Zone, the Conservation Zone and the Environmentally-Constrained Sub-zones of the Planning Area unless they are shown to be necessary for and are approved by the Highlands Council for one or more of the purposes listed below. For approvals regarding parts 1, 2 and 4, the project must maximize the protection of sensitive environmental resources such as Open Water buffer areas, Riparian Areas, the forested portion of the Forest Resource Area, agricultural lands of Agricultural Resource Areas, Steep Slopes, Prime Ground Water Recharge Areas and Critical Habitat Areas. For approvals regarding part 3, the project must avoid disturbance of Open Water buffer areas, Riparian Areas, Steep Slopes and Critical Habitat Areas, and must minimize disturbance of the forested portion of the Forest Resource Area, agricultural lands of Agricultural Resource Areas, and Prime Ground Water Recharge Areas. The choice of extension or creation of systems shall follow the requirements in Objective 2K3d (2 and 3). The applicable purposes are:

1. to address a documented existing or imminent threat to public health and safety from a pattern of failing septic systems (where the failing systems cannot reasonably be addressed through rehabilitation or replacement) or highly concentrated septic systems, where the threat is of sufficient scale to justify a public wastewater collection and treatment system or community on-site treatment facility and where no alternative is feasible that would sufficiently assure long-term protection of public health and safety. To address other issues of public health and safety, such needs shall have highest priority for allocation of existing system capacity;
2. to serve a designated Highlands Redevelopment Area;
3. to serve a cluster development that meets all requirements of Objective 2K3d; or
4. to avoid the taking of property without just compensation.

Objective 2K3d. Clustered development served by a public wastewater collection and treatment system or community on-site treatment facility within the Protection Zone, the Conservation Zone and the Environmentally-Constrained Sub-zones of the Planning Area shall be approved only if the

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following conditions are met:

1. The development impacts are otherwise consistent with the requirements of the RMP, including provisions for mandatory clustering in Agricultural Resource Areas;
2. Extension of an existing public wastewater collection and treatment system will occur only where the cluster development is within or immediately adjacent to an Existing Area Served with available capacity;
3. Creation of a community on-site treatment facility will occur only where such development is not within or immediately adjacent to an Existing Area Served with available capacity, where the proposed system is designed, permitted and constructed at a capacity limited to the needs of the clustered development, and where the system does not create the potential for future expansion into areas that are not the subject of cluster developments immediately adjacent to the initial cluster served;
4. The cluster development preserves at least 80 percent of the project area in perpetuity for environmental protection or agriculture purposes, and to the maximum extent feasible the developed portion of the project area (i.e. not including wetlands, open water buffers, recreational lands) is no more than 10 percent, with the remaining undeveloped lands protected by permanent easement.

Where the preserved land in the cluster project area is preserved for agricultural purposes, the cluster development ordinance and an Agriculture Retention/Farmland Preservation Plan requires continued agricultural viability of the agricultural land and the implementation of best management practices, including development and implementation of a USDA Natural Resource Conservation Service Farm Conservation Plan focused on protection of water resources.

Objective 2K3e. Allow the expansion or creation of wastewater collection systems within the Existing Community Zone of the Planning Area, other than the Environmentally-Constrained Sub-zone, to serve lands which are appropriate for designated TDR Receiving Zones, infill or redevelopment, to meet needs and protection requirements equivalent to Objective 2K3c within the Existing Community Zone, or to serve new areas for development that meet all other requirements of the RMP. The highest priority for allocation of excess or additional wastewater treatment capacity is to areas where there are clusters of failed septic systems that are located within or adjacent to Existing Areas Served. TDR Receiving Areas, where designated, affordable housing projects (where the affordable units exceed 10% of the total units), infill and redevelopment shall have higher priority for capacity than other developments requiring expansion of sewer service areas.

Objective 2K3f. All development within the Highlands Region, in areas which are not served by public wastewater collection and treatment system or community on-site treatment facility, shall be at a density that can be supported by septic systems under Goal 2L. Where cluster development in the Protection Zone, the Conservation Zone and the Environmentally-Constrained Sub-zones of the Planning Area shall be served by on-site wells, and the undeveloped land is preserved for agricultural purposes in perpetuity, the cluster design and the Agriculture Retention/Farmland Preservation Plan required by Objective 2K3d

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in combination shall include provisions for best management practices that protect the on-site wells from contamination resulting from agricultural practices and shall include provisions to minimize or reduce net pollutant loadings from the total project area including the preserved agricultural lands.

Policy 2L5. To establish minimum standards for the placement, design, monitoring and maintenance of septic systems necessary to protect, restore, and enhance ground water quality.

Objective 2M2a. Identify innovative technologies that may be appropriate for the design, installation, and maintenance of on-site wastewater treatment systems to minimize impairment to ground water or surface water quality due to elevated nitrate concentrations and other pollutant loads from septic systems providing the systems meet the minimum standards of N.J.A.C 7:9A.

Routine Maintenance of Residential Septic Systems

Municipalities shall, as a requirement of Plan Conformance, adopt municipal or Board of Health programs and ordinances (or participate in regional Board of Health programs) to improve the maintenance of existing and new residential septic systems.

The following maintenance standards apply:

1. Municipalities shall, at a minimum, implement the programs required under the Water Quality Management Planning rules, N.J.A.C. 7:15;
2. Proper O&M shall be encouraged for all septic systems through the annual provision of information to the landowner regarding proper O&M management;
3. Maintenance shall be ensured through a regulatory system requiring proof of proper maintenance, including but not limited to septic system pump-out, methods to prevent solids and grease migration into the distribution system, and no evidence of chemical disposal that disrupts the biological treatment of wastes, where septic systems:
 - a. exist at a density that exceeds an average nitrate concentration of 10 mg/L using drought ground water recharge, or
 - b. are within a Wellhead Protection Area, Prime Ground Water Recharge Area or Highlands Open Water Buffer area.

Life-cycle Maintenance of Residential Septic Systems

Municipalities shall, as a requirement of Plan Conformance, adopt the Standards for Individual Subsurface Sewage Disposal Systems (N.J.A.C. 7:9A). Municipalities shall also adopt municipal or Board of Health ordinances (or participate in regional Board of Health programs) addressing the long-term maintenance needs of new residential development that relies on septic systems, by requiring that each developed lot include a specified and sufficient location for a replacement disposal field. All septic system disposal fields eventually fail as solids and microbial growth clog the field, and therefore require a replacement field to ensure that the system will not fail without potential for rehabilitation at great cost.

Upgrading & Replacement of Residential Cesspools

Municipalities shall, as a requirement of Plan Conformance, adopt municipal programs or Board of Health ordinances (or participated in regional Board of Health programs) addressing the upgrade of residential wastewater systems that

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**and Other Inadequate
Wastewater Systems**

do not perform in a manner similar to or better than standard septic systems. Specifically, at least at time of system failure or property sale, whichever comes first, residential cesspools and other inadequate systems must be upgraded to meet NJDEP Standards for Individual Subsurface Sewage Disposal Systems (N.J.A.C. 7:9A) (or other applicable NJDEP requirements for charitable, non-profit campgrounds) to the maximum extent feasible given site conditions. No home improvements that increase daily domestic wastewater flows shall be permitted unless the wastewater system can be upgraded to satisfy the N.J.A.C. 7:9A standards. Priority shall be placed on such systems that are located in dense development that is dependent on on-site systems, or are within a Wellhead Protection Area or Highlands Open Water Buffer area.

**Upgrading of Septic
Systems to Address
Threats to Human
Health and Ground
Water Quality**

For ground water quality, unlike surface water quality, there is no specific State program for identifying areas of potential contamination and developing a management plan to restore ground water quality. The Highlands Council shall use its available information on residential development outside of sewer service areas to define locations where existing septic system density significantly exceeds the LUCM Zone or NJDEP nitrate targets, as potential contamination areas related to septic system density. The Highlands Council will rank the areas by size, severity and threat to human health and the environment, and work with municipalities to identify and confirm ground water quality concerns and evaluate cost-effective methods, where available, to restore ground water quality.

Methods may include one or more of the following, with due care to ensure that the replacement does not cause harmful secondary environmental effects such as ground water recharge losses:

1. Upgrade of existing septic systems to alternative on-site treatment systems, at times which maximize cost-effectiveness of the upgrade (e.g., when existing systems fail). Where the alternative systems require special O&M, they should only be implemented if the O&M is ensured;
2. Replacement of individual septic systems with a communal septic system or communal alternative treatment system, with ownership and management in place to ensure O&M;
3. Replacement of individual septic systems with a community-based wastewater treatment system sized to address only the project area, with ownership and management in place to ensure O&M;
4. Extension of public sewerage where it will not have significant secondary effects such as pressures to develop other areas in Conservation and Protection Zone, which are inappropriate for sewerage.

**Alternative
Management
Approaches for New
Septic Systems**

The traditional approach to septic systems is ownership, operation and maintenance of septic systems by the homeowner. Maintenance is usually not performed, and few homeowners are aware that septic systems have a lifespan and will require replacement, usually at a very high cost. As an optional approach, developers, municipalities, counties and the Highlands Council should consider the establishment of alternative management systems.

The following general concepts would ensure that septic systems are managed in a manner more equivalent to other utility services, with proper maintenance and methods to ensure that homeowners do not face major, unanticipated costs:

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**Requirements for New
Small-Community
Wastewater Systems**

1. Ownership of the septic system may remain with the homeowner or, similar to other utility services, be placed with a public or investor-owned utility;
2. Where the septic system remains the property of the homeowner, a mandatory condition of development approval would be a requirement that each homeowner have a maintenance contract for the entire life of the septic system and any replacement;
3. The maintenance contract would provide for routine maintenance, repairs and ultimate replacement, with costs spread over the contract life;
4. Where septic system ownership is with the utility, a fee-based system would address life-cycle costs for routine maintenance, repairs and ultimate replacement.

Proposals for development in an Existing Community Zone, a Council-approved cluster development site, or for which a Highlands Act waiver has been approved by NJDEP or the Highlands Council may require the use of a community-based wastewater treatment system.

These systems must be addressed through municipal Plan Conformance approval and must meet the following requirements:

1. The related development must meet all relevant RMP requirements regarding environmental constraints, applicable Land Use Capability Zone policies, and other goals, policies and objectives;
2. The community-based system must be sized such that it only provides capacity for the planned on-site improvements;
3. The community-based system must be owned and operated by an entity with sufficient financial capacity and operating expertise to ensure proper O&M over the life of the community. Owners may include utility authorities, municipal utilities, State agencies, and investor-owned utilities regulated by the NJ Board of Public Utilities;
4. The system and proposed service area must be approved by NJDEP as part of an Areawide Water Quality Management Plan or component Wastewater Management Plan, and permitted by NJDEP under the NJPDES program.

**Management of
Existing Small-
Community Wastewater
Systems**

Where community-based wastewater systems already exist, their continuing financial viability and proper O&M are of concern. All such facilities should already be part of an Areawide Water Quality Management Plan or component Wastewater Management Plan, and permitted by NJDEP under the NJPDES program. Where the owner/operator is a utility authority, municipal utility, State agency, or investor-owned utility regulated by the NJ Board of Public Utilities, no further action is needed.

Municipalities, counties and the Highlands Council should explore methods by which other facilities can continue to provide sufficient treatment throughout the lifespan of existing communities. Options include:

1. Requirements for annual reports from the system owner/operator discussing revenue, expenditures, reserve funds, O&M issues, etc., to help identify potential concerns that should be addressed;
2. Allowing or encouraging homeowners associations to transfer ownership of the system to a utility authority, municipal utility, State agency, or investor-owned utility regulated by the NJ Board of Public Utilities, with a fee-based

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- system for future O&M;
3. Establishing a special taxation district to provide funding for system O&M in lieu of homeowner association dues, etc.;
 4. Establishing a regional utility authority to either take ownership of or provide O&M services under contract for multiple community-based systems.