

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Water Standards and Facility Regulation

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TITLE: Act 537 Program Guidance; Site Suitability and Alternatives Analysis Guidelines for New Land Development Proposing Onlot Sewage Disposal

EFFECTIVE DATE: Upon notice of publication as final in the *Pennsylvania Bulletin*

AUTHORITY: Pennsylvania Sewage Facilities Act, Section (5) and Section (10) 35 P.S. §§705.3(5) and 750.10
Title 25, Pennsylvania Code, Chapter 71
Title 25, Pennsylvania Code, Chapter 72
Title 25, Pennsylvania Code, Chapter 73

POLICY: It is the policy of the Department of Environmental Protection (DEP) to consider a wide range of available onlot sewage system technologies, including emerging technologies, in the Act 537 new land development planning process. This authorization is contingent upon the applicability of given technology to site conditions and assurance and availability of adequate operation and maintenance support mechanisms.

PURPOSE: The purpose of this guidance is to provide a systematic approach to site suitability determinations and sewage facilities alternatives analysis when encountering marginal conditions for the long-term use of onlot sewage systems or when incorporating recently demonstrated onlot sewage disposal technologies into the Act 537 new land development planning process described in Title 25 Pennsylvania Code Chapter 71.

APPLICABILITY: This guidance applies to the preparation and review of Sewage Facilities Planning Modules, assessing site suitability for, or the use of, individual or community onlot sewage systems.

DISCLAIMER: The policies and procedures outlined in this guidance are intended to supplement existing requirements. Nothing in the policies or procedures shall affect regulatory requirements.

The policies and procedures herein are not an adjudication or a regulation. There is no intent on the part of DEP to give the rules in these policies that weight or deference. This document establishes the framework within which DEP will exercise its administrative discretion in the future. DEP reserves the discretion to deviate from this policy statement if circumstances warrant.

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I. GENERAL

- A. Planning for the long-term use of individual onlot sewage systems and community onlot sewage systems requires extensive site evaluation and an equally extensive analysis of available technical alternatives for use at the site. Onlot sewage systems are dependent upon a very sensitive system of physical, chemical and biological processes in the soil and groundwater to renovate sewage and return it safely to the environment. Thus, site evaluation and alternatives analysis is critical to successfully addressing the long-term sewage disposal needs of a given site.
- B. Title 25, Pennsylvania Code, Chapter 71 requires that “general site suitability” evaluations be made in preparation for the “alternatives evaluation” portion of the Sewage Facilities Planning process to establish the use of onlot sewage systems as a feasible alternative for sewage treatment and disposal. Chapter 73 provides the technical requirements to use when evaluating site suitability and when evaluating alternatives. The alternatives evaluation also requires municipalities to assure the long term sanitary treatment and disposal of sewage and to evaluate and implement options to assure the proper operation and maintenance of onlot sewage systems.
- C. In practice, municipalities commonly forgo “general site suitability” testing in favor of more detailed lot-by-lot site testing during the planning portion of project development to ensure that each new lot is created with an available method of sewage disposal.
- D. Actual site suitability for the use of onlot sewage systems is highly variable in the Commonwealth and ranges from relatively flat sites exhibiting deep, well-drained soils that are ideal for the use of onlot sewage systems to sites with steep slopes and shallow, poorly drained soils which may be altogether unsuitable for onlot sewage systems. Since onlot sewage system technologies also have physical, design and operational limitations, not all sites are suitable for all technologies. In recognition of these limitations, “marginal conditions for the long term use of onlot sewage systems” have been recognized by DEP in the Act 537 new land development planning process since 1984.
- E. Since the last update to Chapter 71 and Chapter 73 in 1997, a number of onlot sewage system technologies were (and continue to be) developed and approved by DEP for use on sites not meeting regulatory general site suitability standards. These technologies routinely employ equipment and processes that are often more complex than those technologies presently described in Chapter 73. Additionally, more complex technologies tend to be more maintenance intensive.
- F. The procedures outlined in this guidance document consider the variables found in the field and onlot sewage system technologies. They are intended to clarify the regulatory planning requirements for site suitability testing and alternatives analysis.

II. PROCEDURE

- A. The site suitability testing procedures found in *Appendix A* and depicted in the flowchart in *Appendix B* clarify those procedures found in Chapter 71 and Chapter 73. These procedures provide a systematic approach to making site suitability determinations and

comprehensive alternatives analysis for new land development projects that propose the use of onlot sewage system technologies.

- B. Individuals involved in site suitability testing and alternatives evaluation for projects proposing the use of onlot sewage systems should follow the process found in Appendix A and depicted in Appendix B. Form use and process flow are depicted in Appendix C.

III. IMPLEMENTATION

Implementing the sewage management program provisions of this guidance will represent a significant logistical challenge to municipalities, Local Agencies and DEP. Therefore, implementation of the sewage management program provisions of this guidance will be “phased in” based upon a risk assessment-like process that recognizes a more pressing need for sewage management in areas with greater population as characterized in housing density.

Implementation will be subject to the following criteria:

- A. Municipalities that are completely served by a community sewerage system are exempt from the sewage management program provisions of this guidance.
- B. Municipalities may continue to process new land development planning modules for areas that include marginal conditions for the long-term use of onlot sewage disposal provided that:
 - A sewage management program is being developed simultaneously.
 - Those appropriate projects that are approved in this timeframe are included in the resulting sewage management program and
 - Municipalities with a housing unit density of greater than 20 and less than 60 housing units per square mile should commence implementation of the sewage management program within three years of the date of this guidance or
 - Municipalities with a housing unit density of greater than 61 housing units per square mile should commence implementation of the sewage management program within one year of the date of this guidance.
 - Municipalities with a housing unit density of 20 or fewer housing units per square mile may continue to process new land development planning modules for areas that include marginal conditions for the long term use of onlot sewage disposal by substituting other options recognized in planning module forms for the sewage management program.
- C. Phased implementation will not:
 - Restrict a municipality from selecting a sewage management program to address existing or future sewage disposal needs.
 - Exempt a municipality from including a sewage management program in an Act 537 Official Plan or Official Plan Update Revision.
 - Exempt a municipality from the provisions relating to a “Private request to require a sewage management program” under Section 71.75.

- D. Housing density (i.e. housing units per square mile) will be used to determine whether a sewage management program will be the minimum requirement as identified in Appendix A, Step 3 or other “additional measures” will suffice.
- E. The most recent US Census Bureau information (currently the 2000 Census) will be used to determine housing density. Census data for Pennsylvania is available online at www.census.gov.

Guidelines For Adequately Addressing Long-Term Sewage Disposal Needs For Projects Proposing The Use Of Onlot Sewage Systems

These guidelines provide narrative for the New Land Development Plan Revisions Flow Chart depicted in Appendix B. The technical review process in new land development (NLD) planning begins with a complete NLD revision proposal. This proposal will be submitted using either a Component 1 “Exception to the Requirement to Revise the Official Plan,” Component 2 “Individual and Community Onlot Disposal of Sewage” or “Sewage Facilities Planning Module Application Mailer” form.

Step 1: Suitability for Onlot Sewage Disposal

- Initial site location qualification under Sections 73.12 and 73.14.
 - A proposed onlot system absorption area or IRSIS spray field may not be placed on a site with any of the following characteristics:
 - The slope of the proposed absorption area or spray field is greater than 25 percent.
 - The proposed absorption area is located in a floodway
 - One or more rock outcrops exist within the proposed absorption area
 - Evidence of sinkholes exists within the proposed absorption area or spray field in areas underlain by limestone
 - Limiting zone within 10 inches of the mineral soil surface (seasonal high water table) or within 16 inches of the mineral soil surface (bed rock or coarse fragments with insufficient fines)
 - If one or more of the above characteristics is present, the site is unsuitable for onlot sewage disposal.
 - If none of the above characteristics is present, proceed to step two.
- Sewage Facilities Planning Module Component 1, 2, or the Planning Exemption Request section of the Mailer Application form may be used. See Appendix C.

Step 2: Suitability for Conventional Onlot Sewage System

- General site suitability test under Section 71.62(b)(2). This regulation specifies the soils characteristics requirements for the proposed development site to be suitable for the use of a conventional sewage system absorption area (standard trench (73.52); seepage bed (73.53); subsurface sand filter bed/trench (73.54); elevated sand mound (73.55); spray field (73.163)). To demonstrate that this requirement is met, the following must be provided:
 - Soil profiles as described in Chapter 73
 - Section 73.14(a) applies to absorption areas and requires at least 20 inches of suitable soil to the limiting zone
 - Section 73.14(b) applies to spray fields and requires at least 10 inches of suitable soil to indications of a seasonal high water table (SHWT) and 16 inches to rock or coarse fragments with insufficient fines soil to fill the voids (CF)
 - Percolation test results within acceptable limits as described in Chapter 73.
 - Section 73.14(a)(6) requires percolation tests to be performed within the proposed absorption area and that the average percolation rate of the six

(or more) tests specified in Section 73.15(1) be within the range indicated in Section 73.16.

- Table A of Section 73.16 contains acceptable average percolation rates for conventional sewage systems.
- Table B of Section 73.16 contains sizing criteria for spray fields
- Percolation testing is not permitted for sites with limiting zones less than 20 inches except as prescribed in Section 73.77
- **SEO Confirmation:** The local agency SEO signs the appropriate section of the sewage facilities planning module component indicating the onlot site suitability.
- Satisfying the general site suitability for a conventional system allows the preparer to proceed directly to the alternatives analysis unless marginal conditions exist.
- Sewage Facilities Planning Module Component 1, 2, or the Planning Exemption Request section of the Mailer Application form may be used. See Appendix C.

Step 3: Determination of Marginal Conditions for the Long-Term Use of Onlot Sewage Systems

- A proposed development site that is not suitable for a conventional sewage system because of depth to limiting zone, unacceptable percolation rate or no percolation test is considered to have marginal conditions for long-term use of onlot sewage disposal. A site where the absorption area technology being considered requires a soil morphological evaluation instead of a percolation test is included in this latter group.
- A proposed development site is also considered to have marginal conditions for the long-term use of onlot sewage systems when one or more of the following conditions are present. Marginal conditions criteria are presented in both Component 1 and Component 2 forms.
 - The site evaluation documents areas of soils generally suitable for onlot sewage systems intermixed with areas of soils unsuitable for onlot systems.
 - The site evaluation documents soils generally suitable for elevated sand mounds with some potential lots with slopes greater than 12%.
 - The site evaluation documents soils generally suitable for in-ground systems with some potential lots with slopes greater than 20%.
 - Density of the proposed development site is greater than one residential dwelling unit per acre.
 - A community onlot system or system serving a commercial, industrial, or institutional use is proposed (Component 2 only).
- Where marginal conditions exist on the proposed development site, additional measures must be taken to assure that long-term sewage disposal needs are addressed. This requirement applies to revisions for new land development and to exceptions to the requirement to revise the Official plan.
- Additional measures:
 - Where replacement with sewerage facilities (i.e. centralized sewer) is not imminent (i.e. scheduled within five years), the municipality and property owner must, at a minimum, implement a sewage management program capable of ensuring the long-term provision of sewage facilities for the appropriate onlot technology.
 - Where replacement with sewerage facilities (i.e. centralized sewer) is imminent (i.e. scheduled within five years) or where the proposed development is located within a future sewage service area that is projected for service within five years, onlot sewage systems may be considered interim rather than long-term facilities.

Appendix A

- Where deemed necessary for long-term onlot sewage system viability by a municipality or DEP, additional assurances such as replacement area testing may also be required.
- Where marginal conditions are caused exclusively by high density, the municipality may eliminate the marginal conditions through reduction in the density of the onlot systems.
- DEP may not approve the planning module unless it contains adequate documentation that appropriate additional measures for marginal conditions have been selected and are able to be implemented.
- **SEO Confirmation:** The local agency SEO indicates or confirms the presence of marginal conditions on the planning module component.
- Sewage Facilities Planning Module Component 1, or 2 may be used where marginal conditions exist. See Appendix C.

Step 4: Alternatives Analysis

- Planning for new land development (NLD) requires a comprehensive alternatives analysis to determine the most suitable onlot treatment for the development and to assure the long-term sanitary collection, treatment, and disposal of sewage.
- At this point, with the completion of Steps 1 through 3, the proposed lots have passed the suitability tests for the installation of an onlot sewage system and a determination has been made concerning marginal site conditions. The soils, slope and other site information collected during these steps provides the site factors needed to determine the type or types of onlot sewage system technologies for consideration.
- Conventional, alternate or selected experimental (with acceptable replacement area provision) onlot sewage systems may be considered for evaluation in this step. The above site factors will determine which system types may be suitable for evaluation.

Note: Use of experimental systems for NLD is specifically limited to those systems in the field-testing phase of the *Experimental Onlot Technology Verification Program (TVP)* (381-2208-001). Replacement areas and monitoring are required (section 73.71). DEP has the authority to limit the number of experimental permits.

- Section 71.52 contains the required elements for evaluating and selecting the most suitable onlot treatment alternative. The NLD revision shall include:
 - An analysis of technically feasible sewage facilities alternatives identified by the municipality and additional alternatives identified by DEP
 - Selection of an alternative that adequately addresses both the present and future sewage needs of the proposal
 - Selection of an alternative that assures continued operation and maintenance of the selected sewage facilities through a sewage management program and administrative capability
 - Assurance that the proposal will be implemented and designation of the institutional arrangements necessary for implementation

Appendix A

- The type of sewage facilities proposed, including collection, treatment and disposal methods
- A description of operation and maintenance activities required by Subchapter E of Chapter 71 (relating to sewage management programs) and clarified in the DEP technical guidance titled *Act 537 Program Guidance; Sewage Management Activities* (362-2206-002), when it becomes available.
- The person responsible for operation and maintenance activities and the legal/financial arrangements necessary for assumption of this responsibility
- Sewage Facilities Planning Module Component 2 may be used for alternatives evaluation. Sewage Facilities Planning Module Component 1 may be used where marginal conditions exist, if the additional measures necessary to support chosen technologies are identified, selected and documented. See Appendix C.

Step 5: Municipal Action and DEP Review

- A NLD revision may be considered incomplete unless it includes:
 - The minimum content required in 71.52 and the information described in this document
 - Comments from appropriate official planning agencies
 - Documentation that the proposal complies with applicable consistency requirements
 - SEO statement of general site suitability for onlot sewage disposal.
 - Documentation of newspaper publication (when applicable)
 - Additional information as required in the planning module component form.
- An exception to the requirement to revise the Official Plan may be considered incomplete unless it includes:
 - The information described in Step 3 of this document.
 - Additional information as required in the planning module component form.
- An exemption from planning requirements may be requested when all other requirements are satisfied and suitability for conventional onlot sewage systems is documented. An exemption from planning requirements may be requested where marginal conditions exist when all other requirements are satisfied and an existing municipal sewage management program, adequate to assure the long-term sewage disposal needs for onlot sewage systems appropriate to the site conditions is documented.
- A municipality may refuse to adopt a NLD plan revision if:
 - The revision cannot technically or administratively be implemented.
 - Present and future sewage disposal needs are not adequately addressed.
 - The revision is not consistent with the official plan or municipal comprehensive planning.
 - The revision does not meet applicable consistency requirements.
- DEP may not approve a NLD plan revision unless:
 - It contains all required information and supporting documentation.
 - It is complete in accordance with 71.53.
- NLD revisions require alternatives evaluation and selection of an alternative that is technically and administratively feasible and assures the long-term sanitary collection, treatment, and disposal of sewage.



