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DEPARTMENT OF ENVIRONMENTAL PROTECTION Bureau of Water Supply and Wastewater Management

- DOCUMENT ID:** 362-2207-001
- TITLE:** Act 537 Program Guidance; Site Suitability and Alternatives Analysis Guidelines for New Land Development Proposing Onlot Sewage Disposal
- EFFECTIVE DATE:** Upon final publication in the *PA 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 authorize consideration of a wide range of available onlot sewage system technologies, including emerging technologies, into 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 DEP staff and the regulated community with a systematic approach to site suitability determinations and sewage facilities alternatives analysis 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 members of the regulated community involved in the preparation of Sewage Facilities Planning Modules, Sewage Enforcement Officers, municipal officials, Local Agencies, and any planning agencies involved in processing Sewage Facilities Planning Module proposals, and any DEP Act 537 Program staff involved in the 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 regulation. There is no intent on the part of DEP to give these rules 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.
- PAGE LENGTH:** 9 pages
- LOCATION:** Volume 33 Tab 41

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 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 those extremely challenging sites with steep slopes and shallow, poorly drained soils. Some sites are 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 the traditional 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*.

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” planning module or Application Mailer Planning Exemption Request.

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.
- Sewage Facilities Planning Module Component 1, 2, or Planning Exemption request 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. * 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.

Appendix A

- Section 73.14(a)(6) requires percolation tests to be performed within the proposed absorption area and that the average percolation rate 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
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- **SEO Confirmation:** The local agency SEO must sign 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 Planning Exemption Request may be used. See Appendix C.

*Standard trench (73.52); seepage bed (73.53); subsurface sand filter bed/trench (73.54); elevated sand mound (73.55); spray field (73.163).

Step 3: Determination of Marginal Conditions for Onlot Systems

- A proposed development site that is not suitable for a conventional sewage system because of depth to limiting zone or unacceptable percolation rate is considered to have marginal conditions for long-term onlot sewage disposal. This would include a site where the absorption area technology being considered requires a soil morphological evaluation instead of a percolation test.
- A proposed development site is 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.
 - 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 commercial, industrial, or institutional uses is proposed (Component 2 only).
- If marginal conditions exist on the proposed development site, additional measures must be taken to assure long-term sewage facilities needs are met.

Appendix A

- When marginal conditions are documented and replacement with sewerage facilities (i.e. centralized sewer) is not imminent, the property owner and municipality must, at a minimum, implement a sewage management program capable of ensuring the long-term provision of sewage facilities for the appropriate onlot technology.
- Additional assurances such as replacement area testing may be required by the municipality or DEP if deemed necessary for long-term onlot sewage system viability.
- 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 adequate documentation that appropriate marginal conditions assurances 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. See Appendix C.

Step 4: Alternatives Analysis

- Planning for new land development 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 experimental (with acceptable replacement provision) systems may be considered for evaluation in this step. The above site factors will determine which system types may be suitable for evaluation.

Note: it is essential for DEP to assure that, whenever alternate or experimental systems are proposed, sufficient justification for the selected system(s) and adequate assurance of long-term operation and maintenance are provided in the NLD revision. Use of experimental systems for NLD is limited 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) and 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:

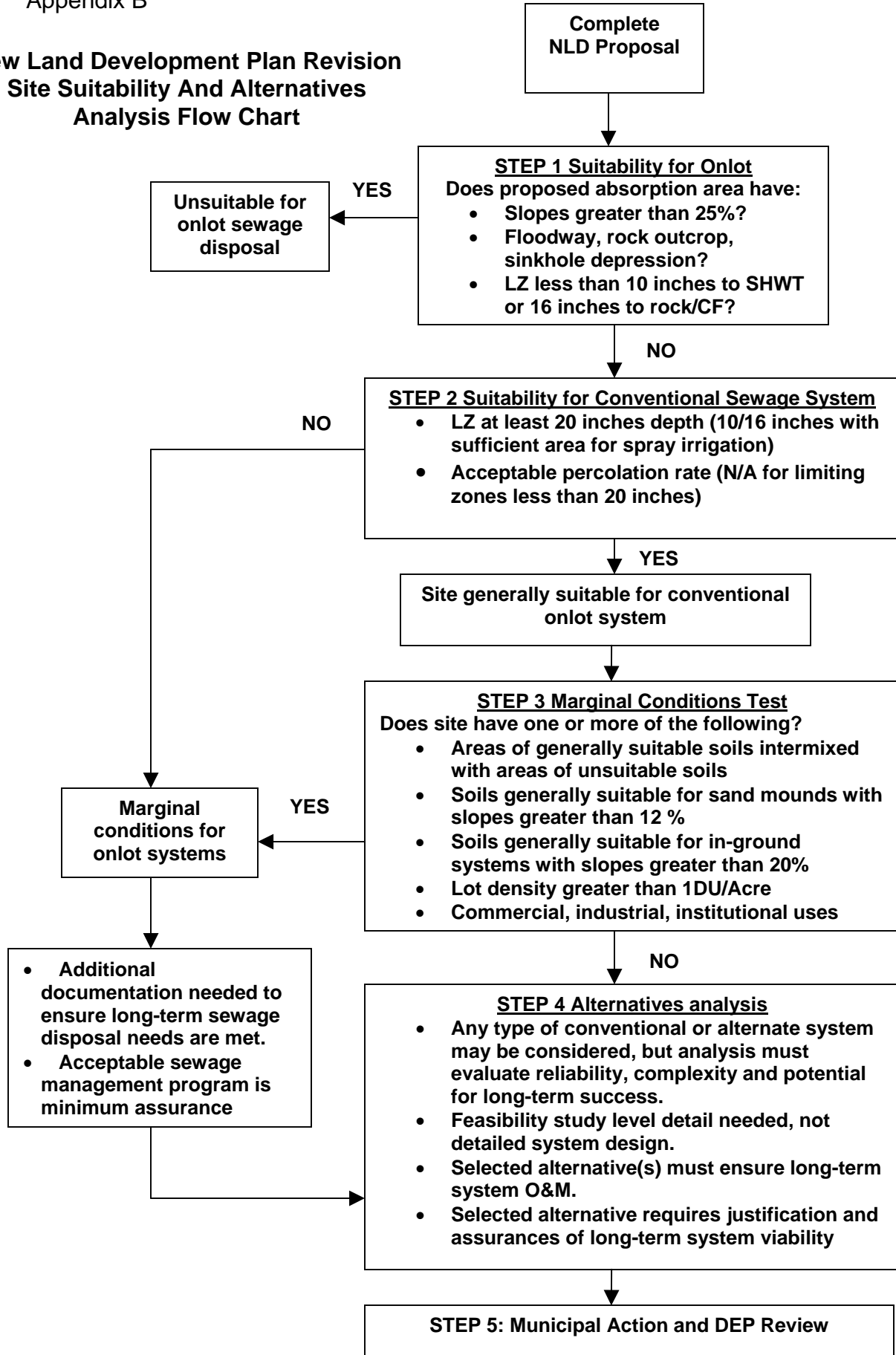
Appendix A

- 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 may be implemented and designation of the institutional arrangements necessary for implementation
- 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* (362-2208-NNN).
- The person responsible for operation and maintenance activities and legal/financial arrangements necessary for assumption of this responsibility
- Sewage Facilities Planning Module Component 2 may be used. 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
 - Documentation of newspaper publication (when applicable)
- A municipality may refuse to adopt an NLD plan revision if:
 - The revision is not technically or administratively able to be implemented
 - Present and future 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.

**New Land Development Plan Revision
Site Suitability And Alternatives
Analysis Flow Chart**



**New Land Development Form Use
& Process Flow Chart**

Key:
Sewage Facilities Planning Modules

- Component 1 (PMC-1)
- Component 2 (PMC-2)

