

# DUCK CREEK WASTEWATER PLANNING STUDY

## Onsite System Management Program (OSMP)

**What is an OSMP?** An onsite system management program is a program which implements a series of elements including public education, public participation, planning, performance, site evaluation, design, construction, operation, maintenance, residuals management, training, certification, licensing, inspections, monitoring, enforcement, recordkeeping, inventorying, and reporting, all which are designed to ensure that private, onsite wastewater treatment systems are functioning properly and are thereby not polluting the environment.

**Purpose of Management Program:** The underlying purpose of an onsite system management program is to help communities reach water quality and public health goals. Benefits of an adequate management program include protection of water quality and public health, protection of consumers' investment in homes and business ownership, increased onsite system service life and replacement cost savings, avoidance of transfers of water away from the source by conserving ground water, and a possible reduction in the need for a community to finance a wastewater system. **The primary reason for a management program in the Duck Creek area would be to ensure that onsite wastewater treatment systems are functioning properly and are not contaminating ground and surface water resources in the area.**

**Possible Management Models:** Five models are provided by the EPA as conceptual approaches for onsite wastewater treatment system management. Outlines of each of these models can be seen below in the EPA's *Table 1: Summary of Management Models*. The models are characterized by increasing management controls as sensitivity of the environment and/or treatment system complexity increases. The models are flexible so that programs can be customized by substituting elements of one program into another to accommodate local needs, practices, and conditions.

**Preferred Models:** The EPA's Model 2 (The Maintenance Contract Model) and Model 3 (The Operating Permit Model) are considered viable alternatives for onsite system management programs in the Duck Creek area. Model 2 is attractive because it minimizes the intrusion of a managing entity. Model 3 is attractive because it ensures that all treatment systems are checked regularly, limiting the risk to public health and the environment.

**A Hybrid Management Program:** A good management program for the Duck Creek Area may be a hybrid of the EPA's Model 2 and Model 3. **The goals of the management program would be accomplished by monitoring the siting, design and construction of onsite wastewater systems and by issuing operating permits contingent upon proof that an owner's system is functioning as it was originally designed and approved. The hybrid management model is meant to allow the individual owners as much autonomy as possible while still assuring that wastewater effluent is being properly treated before it is released to the environment.**

DESCRIPTION OF MANAGEMENT MODELS

**Table 1: Summary of Management Models**

	TYPICAL APPLICATIONS	PROGRAM DESCRIPTION	BENEFITS	LIMITATIONS	
<b>TABLE 1: SUMMARY OF MANAGEMENT MODELS</b>	<b>MODEL 1 - HOMEOWNER AWARENESS MODEL</b>	<ul style="list-style-type: none"> <li>• Areas of low environmental sensitivity where sites are suitable for conventional onsite systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Systems properly sited and constructed based on prescribed criteria.</li> <li>• Owners made aware of maintenance needs through reminders.</li> <li>• Inventory of all systems</li> </ul>	<ul style="list-style-type: none"> <li>• Code-compliant system.</li> <li>• Ease of implementation, based on existing, prescriptive system design and site criteria.</li> <li>• Provides an inventory of systems that is useful in system tracking and area-wide planning.</li> </ul>	<ul style="list-style-type: none"> <li>• No compliance/problem identification mechanism.</li> <li>• Sites must meet siting requirements.</li> <li>• Cost to maintain database and owner education program.</li> </ul>
	<b>MODEL 2 - MAINTENANCE CONTRACT MODEL</b>	<ul style="list-style-type: none"> <li>• Areas of low to moderate environmental sensitivity where sites are marginally suitable for conventional onsite systems due to small lots, shallow soils, or low-permeability soils.</li> <li>• Small clustered systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Systems properly sited and constructed, including mechanical components or small clusters of homes.</li> <li>• Requires service contracts to be maintained.</li> <li>• Inventory of all systems.</li> <li>• Service contract tracking system.</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces the risk of treatment system malfunctions.</li> <li>• Protects homeowner investment.</li> </ul>	<ul style="list-style-type: none"> <li>• Difficulty in tracking and enforcing compliance because it must rely on the owner or contractor to report a lapse in a valid contract for services.</li> <li>• No mechanism provided to assess effectiveness of maintenance program.</li> </ul>
	<b>MODEL 3 - OPERATING PERMIT MODEL</b>	<ul style="list-style-type: none"> <li>• Areas of moderate environmental sensitivity such as wellhead or source water protection zones, shellfish growing waters, or bathing/water contact recreation.</li> <li>• Systems treating high-strength wastes or large-capacity systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Establishes system performance and monitoring requirements.</li> <li>• Allows engineered designs but may provide prescriptive designs for specific receiving environments.</li> <li>• Regulatory oversight by issuing renewable operating permits that may be revoked for noncompliance.</li> <li>• Inventory of all systems.</li> <li>• Tracking system for operating permit and compliance monitoring.</li> <li>• Minimum for large-capacity systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Allows systems in more environmentally sensitive areas.</li> <li>• Operating permit requires regular compliance monitoring reports.</li> <li>• Identifies noncompliant systems and initiates corrective actions.</li> <li>• Decreases need for regulation of large systems.</li> <li>• Protects homeowner investment.</li> </ul>	<ul style="list-style-type: none"> <li>• Higher level of expertise and resources for regulatory authority to implement.</li> <li>• Requires permit tracking system.</li> <li>• Regulatory authority needs enforcement powers.</li> </ul>
	<b>MODEL 4 - RESPONSIBLE MANAGEMENT ENTITY (RME) OPERATION AND MAINTENANCE MODEL</b>	<ul style="list-style-type: none"> <li>• Areas of moderate to high environmental sensitivity where reliable and sustainable system operation and maintenance (O&amp;M) is required, e.g., sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, or outstanding value resource waters.</li> <li>• Clustered systems.</li> </ul>	<ul style="list-style-type: none"> <li>• Establishes system performance and monitoring requirements.</li> <li>• Professional O&amp;M services through RME (either public or private).</li> <li>• Provides regulatory oversight by issuing operating or NPDES permits directly to the RME. (System ownership remains with the property owner.)</li> <li>• Inventory of all systems.</li> <li>• Tracking system for operating permit and compliance monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• O&amp;M responsibility transferred from the system owner to a professional RME that is the holder of the operating permit.</li> <li>• Identifies problems needing attention before failures occur.</li> <li>• Allows use of onsite treatment in more environmentally sensitive areas or for treatment of high-strength wastes.</li> <li>• Can issue one permit for a group of systems.</li> <li>• Protects homeowner investment.</li> </ul>	<ul style="list-style-type: none"> <li>• Enabling legislation may be necessary to allow RME to hold operating permit for an individual system owner.</li> <li>• RME must have owner approval for repairs; may be conflict if performance problems are identified and not corrected.</li> <li>• Need for easement/right of entry.</li> <li>• Need for oversight of RME by regulatory authority.</li> </ul>
	<b>MODEL 5 - RESPONSIBLE MANAGEMENT ENTITY (RME) OWNERSHIP MODEL</b>	<ul style="list-style-type: none"> <li>• Areas of greatest environmental sensitivity where reliable management is required, includes sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, or outstanding value resource waters.</li> <li>• Preferred management program for clustered systems serving multiple properties under different ownership (e.g., subdivisions).</li> </ul>	<ul style="list-style-type: none"> <li>• Establishes system performance and monitoring requirements.</li> <li>• Professional management of all aspects of decentralized systems through public/private RMEs that own or manage individual systems.</li> <li>• Qualified, trained, owners and licensed professional owners/operators.</li> <li>• Provides regulatory oversight by issuing operating or NPDES permits.</li> <li>• Inventory of all systems.</li> <li>• Tracking system for operating permit and compliance monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• High level of oversight if system performance problems occur.</li> <li>• Simulates model of central sewerage, reducing the risk of noncompliance.</li> <li>• Allows use of onsite treatment in more environmentally sensitive areas.</li> <li>• Allows effective area-wide planning/watershed management.</li> <li>• Removes potential conflicts between the user and RME.</li> <li>• Greatest protection of environmental resources and owner investment.</li> </ul>	<ul style="list-style-type: none"> <li>• Enabling legislation and/or formation of special district may be required.</li> <li>• May require greater financial investment by RME for installation and/or purchase of existing systems or components.</li> <li>• Need for oversight of RME by regulatory authority.</li> <li>• Private RMEs may limit competition.</li> <li>• Homeowner associations may not have adequate authority.</li> </ul>

Note: If applicable, NPDES requirements under the CWA or UIC requirements under the SDWA supersede any less stringent or inconsistent provision.