Appendix F

On-site Wastewater Treatment Systems

Background
There are approximately 1.4 million on-site wastewater treatment systems currently in use in Michigan. This type of sewage management is frequently used in rural and suburban residential areas that lack access to public collection systems. These systems can adequately provide water quality and environmental protection when properly designed, sited, constructed, maintained, and operated. It is generally accepted that these types of systems will continue to serve as the appropriate sewage treatment method in many areas both now and in the future. The proper functioning of these systems is necessary to protect public health and water quality and the issue of how to effectively address the repair of failing or malfunctioning systems is of primary importance. Nationally, failure rates range from 0.4 percent to 70 percent, but are typically 10 percent to 20 percent. Failure rates in two Southern Michigan counties were found to range from 15 percent to 23 percent over a three year period. However, the statewide failure rate is thought to be 10 percent or less.

Typically, system owners, who are often untrained and uninformed, are responsible for operating and maintaining their individual systems. Performance results under this approach can vary significantly, with operation and maintenance functions driven mostly by complaints or system failures. Many conventional system failures have been linked to operation and maintenance failures. Common causes of failure include sludge-filled tanks, and hydraulic overloading caused by increased occupancy or greater water use. Landscape modifications and alteration of the infiltration field surface can also cause problems.

Funding for Public Involvement and Education
Public involvement and education are critical to successful on-site wastewater management. Engaging the public in wastewater treatment issues helps build support for funding, regulatory initiatives and other elements of a comprehensive program. Educational activities directed at increasing general awareness and knowledge of on-site management efforts can improve the probability that simple, routine operation and maintenance tasks (e.g., inspecting for pooled effluent, pumping the tank) are carried out by system owners.

Information regarding regular inspections, pumping, ground water threats from chemicals, hydraulic overloading from roof runoff or other clear water sources, pollutant loads from garbage disposal units, drain field protection, and warning signs of failing systems can be easily communicated. Flyers, brochures, posters, new media articles and other materials have proven effective in raising awareness and increasing public knowledge of onsite wastewater management issues.

The Nonpoint Source (NPS) Program will continue to support homeowner education and awareness of technical and financial options related to on-site wastewater treatment systems.

Funding for the Repair or Replacement of Failing or Malfunctioning Systems
The NPS Program will consider proposals to repair failing on-site wastewater systems that meet all the following criteria:

- The system is within a critical area identified in a watershed plan that has been approved by the DEQ as meeting Clean Michigan Initiative (CMI) and 319 criteria. The plan must also identify water bodies where water quality standards are not being met due to failing on-site wastewater treatment systems.

- The on-site wastewater treatment system has been documented as causing impairment of water quality. **Please Note: The federal Clean Water Act defines point sources as discrete conveyances such as pipes or man-made ditches. Point sources are not eligible for NPS Program funding. Therefore, proposals to address direct discharges from on-site wastewater treatment system through cheater pipes or man-made ditches are not eligible for funding.*
- The on-site wastewater treatment system is not within an area determined by DEQ staff as having a community-wide problem with failing on-site wastewater treatment systems that would best be resolved through a more comprehensive solution such as centralized or cluster waste water treatment systems.
- The county or local unit of government, where the on-site wastewater treatment system is being repaired or replaced, has a point-of-sale ordinance.
- Prior to funding, all failing septic systems identified through the watershed planning and management process have been formally referred to the local health department for parallel follow-up.
- The homeowner commits to sign a 20 year maintenance agreement to ensure the septic system will be operated and maintained appropriately.

Priority will be given to areas where correction of failing on-site wastewater treatment systems will result in measurable water quality improvement.