

National Onsite Wastewater Recycling Association
Model Code Framework for the Decentralized Wastewater
Infrastructure
– 1st Edition¹
August 2006

Executive Summary

Introduction

The National Onsite Wastewater Recycling Association (NOWRA) Model Code Framework is intended to serve as a guide and to facilitate the following activities within states and localities.

- Promote the rationalization of regulations across political boundaries with performance and science based code provisions.
- Establish an efficient method with which to evaluate and deploy new onsite wastewater treatment processes.
- Create a methodology to integrate decentralized wastewater treatment standard setting mechanisms within the U.S.E.P.A Total Maximum Daily Load (TMDL) program.
- Advance the professionalism of industry participants through education, training and certification.

The documents within the Framework were developed over a five year period beginning in 2001 by a team of experienced team of industry professionals. Participants included volunteers from the regulatory, service and manufacturer segments in all geographic regions of North America. The resulting Framework documents evolved through ten drafts that were reviewed and discussed at model code committee meetings, held in all regions of the country. Committee resources were provided by self-funded volunteers, grants from the US Environmental Protection Agency, and contributions from business, industry and state onsite associations.

The Framework comprises several related documents that can be used either independently or in concert. At the same time, several documents remain under development

1. The Guidance Document -- includes the core principles and structures of the Model Code Framework and recognizes regulation as a form of risk management. It is written to inform businesses, citizens, policy officials and other related industry groups about the use and regulation of decentralized treatment systems. The Guidance Document was approved by the NOWRA Board of Directors, June 9, 2006

¹ The NOWRA Model Code Framework for the Decentralized Industry was adopted by the NOWRA Board of Directors, June 9, 2006. The adoption of these documents represents a milestone in a five year effort to complete this work. Additional information can be found at www.modelcode.org.
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2. The Model Code Framework -- presents a written structure with policy options for each major subject of a code. The Framework is not a model code that can be adopted directly. Instead it contains policy options to be considered when adopting a state or local code. Code language is provided to implement the selected policy choices. Code committee guidance and supporting rationale is offered on each of the policy options. This guidance is intended as a tool to evaluate proposed or existing regulation. It was approved by the NOWRA Board of Directors, June 9 2006
3. Appendices provide additional resources for use in writing codes/
 - o Appendix A: Classification Matrices. This document provides a matrix for use to classify treatment components on the basis of effluent quality and variability for constituents of design and regulatory interest. It is useful for designers assembling treatment trains and regulators setting effluent requirements for pretreatment and final treatment components. The classification matrices are to be used in conjunction with Appendices C and D.

Currently, the State of Florida Department of Health, in cooperation with NOWRA, is beta testing the classification matrices (Appendix A) and the procedure for evaluating confined treatment components (Appendix D) NOWRA Board approval is waiting for results of the beta test.

- o Appendix B: Is reserved for states to list the results of component classification decisions in the matrices.
- o Appendix C: Soil evaluation component is still in development.
- o Appendix D: Procedures for Administering the Confined Treatment Components Database and Matrix. This information gives the method in which to evaluate confined treatment component data by the quality of the protocol used to collect the data and to use acceptable data to list components in the classification matrices. This document is being beta testing by Florida DOH..
- o Appendix E: Tank Standards -- establishes the requirements for watertight and structurally sound tanks. Methods for testing tanks are not specified. Instead, the document relies on using material specific evaluation protocols that have been adopted by other standard setting organizations. Treatment requirement standards are not specified because the performance of the device is highly dependent on the influent characteristics and because performance and assessment tools are still under development by other groups. The document has been approved by the NOWRA Board of Directors.
- o Appendix F: Do Not Flush List Guidance-- identifies substances that may cause problems with the operation of pretreatment devices and the

traditional septic system if flushed into the household wastewater plumbing system. The document has been approved by the NOWRA Board of Directors.

Framework Objectives

The Model Code Framework is intended to overcome significant structural and attitudinal barriers to industry modernization. The information within the documents enables the regulatory community and policy officials to change the style of regulation from prescriptive to performance. The performance of specific regulatory functions and services is also changed to the organizational level that can most efficiently and effectively perform the function; local, regional or state government and national organizations that evaluate and certify people skills and treatment components. More specific changes in code construction and style occur in the following components.

- Prescriptive codes to performance based codes. The shift implies both a change in the construction of codes and in the processes by which they are administered.
 - The term “prescriptive code” means an administrative regulation that specifies the means of achieving an objective and excludes other means of achieving the same objective. Approval of new methods requires a code change which has occurred as infrequently as every 10 to 25 years in the states. The use of a prescriptive treatment design is presumed to produce an acceptable quality of effluent despite large variation in site risk conditions and system performance in the field.
 - The contrasting term “performance code” means an administrative regulation that specifies the end or result of a process or activity. It allows the general use of solutions that demonstrate achievement of the objective requirement or standard without a code revision. The deployment of treatment and dispersal methods creates a link between demonstrated performance and site risk. Performance of treatment components and skilled personal is assessed by the creation of measurable standards and an evaluation tool to assess compliance with the standard. This process can be applied to treatment components and skilled personnel and is intended to allow their deployment across multiple political jurisdictions.
- Treatment/dispersal designs and industry professionals to national level evaluation programs. Promote national evaluation systems that evaluate to multiple levels of performance to allow state and local jurisdictions to link performance with the appropriate level of risk management. Under current regulatory practices a treatment technology or method is subject to unique specifications and evaluation procedures in each state/province and often in each county. The result of this unique evaluation process, coupled with the inflexibility of prescriptive codes means that proven methods and technologies employed in one jurisdiction are either banned in a neighboring jurisdiction or are not offered by the manufacturer because of the time and money cost of the approval process.

- The establishment of performance requirements to the jurisdiction best suited to match site or area risk conditions with performance requirements – local, regional or state level government. The common practice in most state codes is to establish statewide standards that are not sensitive to site or area risk. This results in a standard that is too strict at some sites, resulting in unnecessary costs to homeowners, and too lenient in others, resulting in excessive health and environmental risk. Instead, the Framework suggests that performance requirements be set by the level of government that best understands local risk conditions, the local tolerance for risk relative to cost of managing that risk and the enforcing authority's capacity to administer the code provisions. This political/technical cost/benefit evaluation provides value to citizens affected by the regulation.
- Promote reasonable rules by causing a close link between the establishment and enforcement of a code requirement. The assumption is that code provisions are written to be enforced and that enforcing a provision evaluates the body politic's determination of reasonableness of the rule. Enforced unreasonable rules are quickly modified as a result of the political feedback mechanism. Unreasonable rules tend to be selectively enforced to ensure political survival of the rule and the discretionary power of the enforcing agency, violating the concept of equitable application of laws. Selective enforcement also creates the opportunity for corruption and invidious discrimination.
- Shift regulatory attention to operational management of treatment systems.
- Promote the education and certification of industry participants.

The Model Code Framework does not provide clear solutions for several issues facing the decentralized industry; either because the solutions need to be determined by organizations with a broader scope than the industry or the definition of the problem remains undefined.

- Risk assessment –the code does not provide a methodology to assess the actual risk of utilizing decentralized wastewater treatment at a site or in an area.
- Risk management, not risk elimination – no wastewater treatment system reduces risk to zero at an acceptable cost. Therefore the regulatory portion of the industry is charged to manage risk by balancing benefit and cost of the regulation. Since benefits are linked to risk reduction and sensitivity to costs vary greatly, this balance is largely a local political decision.
- Risk management relative to other sources - each health or environmental issue likely has multiple sources. Risk management can only occur within the context of a broad regulatory program covering all sources. The USEPA TMDL program can provide a reasonable methodology to manage the multiples sources of environmental pollution. The NOWRA model code is designed to facilitate implementation of the TMDL program.
- Abuse of regulatory discretion – to establish requirements for reasons other than requiring the treatment levels needed to protect the human and natural environments.

- Use the code to manage land use in lieu of appropriate zoning. The objective of decentralized regulation should be to provide a safe wastewater management methodology for every site deemed buildable by other regulations. It is not uncommon that regulatory agencies set unreasonable standards, deny access to treatment technology or increase the land or money cost of using a treatment system to discourage or otherwise manage development outside the service area of central treatment works.
- Discriminate between treatment and dispersal technologies/methods on the basis of personal or institutional bias instead of performance relative to reasonable performance standards and evaluation programs.

Conclusion

The first edition of the NOWRA Model Code Framework is designed to accelerate the process of industry maturation. Regulation largely shapes the industry and can promote or inhibit the development of more effective and efficient technologies and methods.

The model code needs to evolve along with the service and manufacturing segments of the industry as new research better defines the risks of decentralized system utilization and improves on the technology.

To accomplish this work, the NOWRA Board has directed the Model Code Committee to meet annually to review and update the code and guidance. This meeting will occur during NOWRA's annual conference with the purpose to review and propose appropriate revisions to the Framework Documents and new materials. Additional meetings will occur through teleconference to address ongoing activities.

To facilitate the use of this work NOWRA has developed and will conduct an Education and Outreach Program for regulators and policy officials. The purpose is to assist the states/provinces and local government regulators and policy officials in the use of the code documents. This program, funded with a grant from the US EPA, includes a series of four workshops to be held in different geographic regions of the US, and where code changes are being planned. They are scheduled to begin January 2007. Information about these activities and their results will be posted on the Model Code website – www.modelcode.org. Additional updates on the work of the Model Code Committee will also be posted on this website.