MODEL CODE FRAMEWORK FOR PERFORMANCE MANAGEMENT OF ONSITE/CLUSTER WASTEWATER SYSTEMS

VERSION 1.1

PREPARED FOR

IRON RANGE RESOURCES AND REHABILITATION BOARD
AND
NORTHERN MINNESOTA CONSORTIUM OF COUNTIES

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ABSTRACT

The purpose of the "Model Code Framework for Performance Management of Onsite/Cluster Wastewater Systems" is to provide a true performance-based code for management of onsite and cluster wastewater systems. Its primary objective is to provide a guide for the implementation of county regulatory programs that ensure sustained performance of onsite/cluster systems in compliance with local public health and water quality goals. This is achieved through performance management of not only the treatment performance of systems themselves, but also by defining the roles, responsibilities, and performance expectations of system owners, practitioners who provide onsite system services, and the regulatory authority and regulators who administers the code. An important secondary objective is to provide a flexible framework that allows the implementation of safe and effective wastewater treatment solutions on lots that are not considered suitable for traditional onsite systems. Success of implementing such a code should show improved environmental quality, more effective land use planning, preservation of property values and the local tax base, protection of the individual investments in treatment systems, increased public confidence and satisfaction with onsite and cluster systems as valued components of rural infrastructure, and the integration of these systems with conventional sewerage to provide less costly, but equally effective wastewater solutions for communities.

The development of this framework is only a first step in implementation of a performance program. Successful implementation of this code will require a well thought out implementation plan, stakeholder education program, comprehensive land use plan, draft of a legally acceptable county ordinance, and administrative and technical tools to simplify administration of the rule and to minimize administrative costs to the counties.

ACKNOWLEDGEMENTS

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CHAPTER 100

Onsite and Cluster Wastewater Treatment Systems

PREAMBLE

Introduction

Regulation is used by society to manage societal risks from various human activities through laws, rules, and guidelines. To be effective, the regulatory program must be responsive and adaptable to changes in conditions or perceptions of risk. In its purest sense, the program should establish a framework that assures that the desired outcomes of an activity are routinely achieved regardless of the prevailing circumstances. In other words, the regulatory program should be outcome-based that includes clear assignments of responsibilities and accountabilities of the parties involved. Further, it must be structured such that it can be administered fairly and consistently over the range of circumstances that the program might apply.

Codes regulating onsite wastewater treatment systems traditionally have not followed this outcome-based model. Nearly all onsite wastewater treatment codes are prescriptive. That is they prescribe detailed means and methods for siting, designing, and constructing systems on sites meeting specific criteria. Typically, the designs are robust; "passive" in operation and stable in performance, so little owner attention is needed. If applied in conformance to the rules, the designs are "deemed to satisfy" the desired outcomes without confirming measurements. In other words, prescriptive codes are "means-based" seeking design compliance with "pre-engineered" systems approved for use only on properties with specific site conditions that are considered suitable for the prescriptive designs. Changing the prescriptive rules to address concerns for adverse environmental impacts from the systems or to relax restrictions to their application in a particular area is a cumbersome process and not readily undertaken by local authorities. As a result, practices and technologies are updated slowly and are not always responsive to the needs of the area. If building sites do not meet the accepted site criteria, regulators are put in the position of either prohibiting development of the lot or granting variances to the prescribed applications to allow development to proceed. The variances are often granted with no clear assurances that the desired outcomes can be achieved.

An outcome-based regulatory program can be achieved through a performance code. This is a relatively new approach to onsite wastewater system regulation, which seeks sustained performance compliance with stipulated performance outcomes based on potential public health and environmental risks of the particular receiving environment. The "ends", or treatment performance, determine compliance rather than the "means", or design compliance, as is the case with prescriptive codes. The performance-based approach

- ✓ Provides assurances that system performance is sustained over the life of the system so that public health, water resources, and property values, and quality of living are not threatened,
- ✓ Allows effective solutions for sensitive environments,
- ✓ Provides more flexibility in dealing with difficult wastewater characteristics (*e.g.* large volumes, high strengths, etc.),
- ✓ Allows easier and swifter application of new technologies or practices,
- ✓ Allows science-based means to correct failures that will maintain performance requirements,
- ✓ Provides flexibility to change performance requirements as perceptions of risk change, and
- ✓ Allows economic growth to achieve sustainable development, which will not sacrifice public health or environmental quality.

While a performance approach is rational and verifiable, it lacks the objectivity of prescription. Under prescription either the property is "suitable" for a prescribed design or it is not. Thus, whether a treatment system is in compliance with a prescriptive code is easy to determine because compliance is based at the time of construction on physical features that can be measured against the specific required criteria, *i.e.* conformance of the installed system to the code prescripts. After the final construction inspection, regulatory oversight typically ends because the system is "deemed to satisfy" the implicit performance requirements. Only when a complaint is filed or a failure recorded does the regulatory authority intervene. Conversely, the performance approach is much more subjective

and, thus more difficult to enforce. Compliance is determined not by the technology alone, but also by the results of ongoing operation and maintenance each system receives. Rather than demonstrating compliance only at the time of installation, a system is judged on its performance measured at intervals throughout its service life. In addition to education and design review, system surveillance becomes a principal role of the regulator. Thus, many regulatory authorities prefer the prescriptive approach because rule compliance is well defined so enforcement can be easier but, without performance monitoring, malfunctions often are not detected creating the misperception that the program is successfully protecting public health and water resources.

Framework Purpose

In January 2000, ten northern Minnesota counties undertook an effort to develop a performance code framework that could be used to develop customized performance codes addressing the difficulties with permitting effective onsite wastewater treatment in the region. The current Chapter 7080 of the Minnesota Rules regulating onsite treatment systems is primarily prescriptive (MPCA, 2000). In northeast Minnesota, a large percentage of the existing lot conditions are not suitable for most of the prescriptive designs currently permitted by the state code. As with any prescriptive code, land use decisions are based on what the code considers "suitable" site conditions for construction of approved designs rather than what is desirable from a resource perspective. As a result, economic hardships have been created, poor land use decisions made, and economical development inhibited.

The project team decided at the outset that rather than trying to "fix" the existing code, a fresh start was necessary with a "clean sheet of paper", which would be unencumbered by existing biases and political decisions of the past that could limit innovation. This effort was not undertaken to create a new code that would replace the current code, but rather to create our concept of an "ideal" model that could provide a guide to enhance the existing program. Stakeholder meetings were held with staff and/or county commissioners in each of the participating counties. Also, meetings were held with several regional special interest groups. The purpose of the meetings was to identify strengths and weaknesses of the current regulatory programs and to solicit recommendations for alternative approaches. From these meetings, objectives of the model code and principles that would guide its development and implementation were drafted (Otis, McCarthy, and Crosby, 2000). These are stated in Subchapter 1 of the Model Framework.

This performance code framework presents the results of this effort. The framework is intended to provide a structure for an effective regulatory program that will achieve sustainable and affordable development without endangering public health or water quality. It is intended to provide flexibility to solve wastewater problems, ready access to technologies and practices that can be used in sensitive receiving environments, and options to allow rational land use planning. It is meant to assist counties in implementing a comprehensive onsite wastewater system regulatory program that can be customized to meet the specific needs of their customers and circumstances.

Five program models are described. They are models similar to those promoted by U.S. EPA (2000), which progress from a traditional, but enhanced, prescription model to performance models that rely on property owner operation or public or private utility ownership and management. A county would select one of the management models based on the sensitivity of the environments typically encountered in the county, the county's wastewater treatment needs, and the capacities of regulatory, technical, and management resources available in the county. Using this model as the basis of its program, the county could borrow elements from higher level models to customize the model to its specific needs and desired outcomes. Thus, the framework allows a county to remain with the existing prescriptive program and "grow" into a performance program as the program elements necessary to support the more advanced program are put into place.

Role of Onsite Wastewater Treatment in Rural Infrastructure

Onsite Wastewater System Regulation

Traditionally, wastewater treatment outside of municipal sewer service areas is provided by individually owned systems constructed on each owner's property. Such onsite wastewater systems, or "septic systems" as they are commonly called, have been used since the early 1900's. However, it was not until rural electrification brought a clean power source to the farms in the 1940's that their use became widespread. Families were able to install pressurized water systems in their homes for the first time and modern indoor plumbing became commonplace. This created a need for safe wastewater disposal. Cesspools were commonly used, but when they were unable to

accept all the wastewater discharged into them, shallow trenches were added to increase the infiltration area. These were the forerunners of the today's septic systems.

During the suburban housing boom that followed World War II home construction in urban fringes outpaced the extension of sewers; consequently "septic systems" were installed in large numbers. Programs to regulate the installation and use of onsite wastewater systems were not adequate for the increased demand. Regulatory programs were weak and inadequate for small lot subdivisions where failures created health hazards and nuisances not only for the owners but their neighbors as well. System siting and design guidelines were vague or non-existent. Little was known about the relationship between design and performance. Operation and maintenance were left to uninformed homeowners. With limited alternatives, systems were often installed where conditions were not suitable or where designs were inappropriate for the application. As a result, hydraulic failures in the form of plumbing backups or wastewater ponding above ground surface were common.

In the 1950's, states began to promulgate prescriptive codes with the intent to provide standard designs and construction practices for septic systems. The codes, which were enforced by local health departments, were developed around the "percolation test", U.S. Public Health Service research performed in the late 1940's, and local practices and experiences (Otis, 1991). The prescribed systems were designed to prevent direct contact with wastewater by requiring that wastewater is discharged below the ground surface and distant from drinking water wells. However, the designs were not well founded on scientific principles, but rather on empirical relationships, arbitrary requirements, and folklore. They were based largely on several false assumptions including (Gunn, 1991; Otis and Anderson, 1994):

- ✓ The design and sizing of infiltration fields or "drainfields" could be based on a clean water "percolation test", which ignores the complex interrelationships between soil characteristics and conditions, characteristics of the wastewater to be applied, biochemical mechanisms, and climate;
- ✓ A prescribed design could be used for all sites meeting a specific suite of minimum requirements;
- ✓ Siting, design, and construction could be adequately performed by untrained persons;
- ✓ Routine operation and maintenance of the systems would be performed in a timely manner by an uninformed and often unwilling owner;
- ✓ Compliance with public health objectives would meet environmental protection requirements, and;
- ✓ Onsite wastewater systems would be only a temporary stage toward progressive extension of central sewerage and, therefore, provisions to proactively manage the systems or deal with failures would not be necessary.

Largely because of these flawed assumptions, the success of early codes in regulating system use and preventing system failure was limited. In the 1960's, land that met the prescriptive site requirements was estimated to be only 30 to 40 percent of the land area available for development (Wenk, 1971). With pressure to develop "unsuitable" areas, and no practical alternatives, the code limits were often stretched to the point that onsite wastewater system designs were not appropriate and, as a result, failures were assured. Subsequent efforts to improve the regulation of onsite systems have involved revising existing prescriptive codes by modifying existing designs, changing treatment technologies, or imposing standards through political pressure. However, in these revisions many of the flawed assumptions implicit in the codes were perpetuated. Thus, most codes provide little assurance that public health or environmental goals always will be met. As a result, "septic systems" are not highly regarded by owners, planners, engineers, and regulators. They are considered a poor substitute to central sewerage.

Capabilities of Onsite Wastewater Systems

Fortunately the paradigm that "septic systems" are only interim facilities and are inadequate substitutes for central sewerage is changing. Twenty five percent of all existing households and approximately 35 percent of all new homes in the United States are beyond the reach of sewer systems and rely on onsite systems for wastewater treatment (USEPA, 1998). In some states, over 40% of homes are served by onsite systems. Rather than declining, onsite wastewater system use is increasing because sewer construction costs are excessively high where building densities are low and the federal USEPA construction grants program, which provided cities financial assistance to reduce the local share of construction costs to affordable levels, no longer exists. The idea that much of the U.S. ultimately will be sewered is no longer considered realistic. Often, onsite wastewater systems are the only affordable alternative outside of urban areas. Many regulators now recognize that regulatory practices for managing onsite wastewater systems are not adequate for today's life styles and development pressures. Prescriptive codes

that seek design compliance rather than performance compliance are not always meeting public health or environmental protection goals effectively.

Onsite systems are viable and acceptable alternatives to central sewerage in protecting public health and the environment. With the exception of nitrate, a suitably sited, designed, constructed, and maintained traditional "septic system", meets most public health and water quality goals (Ayres Associates, 1995). Where higher levels of treatment than can be achieved by traditional designs are desired, a variety of treatment technologies are available which have the capabilities to effectively protect most public health and water quality goals consistently and reliably with proper management (USEPA, 2002).

In addition to providing similar treatment capabilities to central sewerage, onsite systems offer several advantages (English, et al., 1999; Otis, 1998):

- ✓ Onsite systems are often less costly than conventional sewerage.
- ✓ They are usually better suited than central sewerage in areas of low density housing.
- ✓ They use the natural environment's assimilative capacity more efficiently than central sewerage, which reduces treatment costs and avoids large mass discharges of pollutants that are typical at municipal treatment plant outfalls.
- ✓ They can improve watershed management because onsite systems recharge groundwater throughout the basin rather than transporting the water in sewers to the bottom of the drainage basin where it is discharged from the basin after treatment.
- ✓ Also, they produce fewer residuals that must be treated and disposed than municipal wastewater treatment works.
- ✓ When malfunctions do occur, they are small, have limited impacts, and are relatively easy and inexpensive to correct when compared to central sewerage.

However, these advantages have been overlooked because of the public perception that onsite systems are neither reliable nor are they able to protect public health and environmental quality. Thus, the appeal of sewers is strong because not only are they perceived to be more reliable, but they are removed from the homeowners property, and they do not impose responsibilities on the property owners for their operation and maintenance.

Barriers to Onsite Wastewater Systems as Permanent Infrastructure

If onsite treatment systems are to be successfully accepted as a permanent part of the rural infrastructure they must assure the public that their performance can be sustained to meet public health and water quality goals. It is also important that the level of service they provide is similar to central sewerage (Otis, 1998). Historically, this has not been the case. Onsite systems are not perceived by the public to do an adequate job of protecting public health or water quality. System owners often do not feel free to assume the same life styles as those served by central sewerage. Unlike their urban counterparts, they are advised to carefully manage their daily water use and to abstain from installing modern conveniences and luxuries such as garbage disposals and whirlpools. Further, owners must encumber areas of their lots which have "suitable" soils to provide a reserve area for system replacements when failures occur. The areas that must be placed in reserve often are the areas that are desired for patios, swimming pools, landscaping, or other practical or aesthetic uses. In addition to these restrictions, the owners are responsible for system maintenance for which they have little understanding and usually find distasteful. If not properly maintained, owners are faced with significant costs that are usually unbudgeted in replacing their systems. Thus, onsite systems are perceived by most to be inadequate and undesirable substitutes to central sewerage.

Prescriptive regulations have made it difficult to change public perceptions that onsite systems are acceptable and needed complements to central sewerage. The prescriptive siting and design requirements are assumed to protect public health, but how systems actually perform and are maintained after construction is seldom monitored. Thus, preventive maintenance is lax and failures that occur may go unnoticed and uncorrected for some time. Further, owners are discouraged from using some modern plumbing fixtures creating a the perception that their life styles are restricted and they are responsible for maintaining their systems, which for most is distasteful.

Historically, this approach to onsite systems regulation, with its focus on compliant construction has protected public health reasonably well. But increasingly, development is occurring on land that is less suited for traditional onsite systems and the density of development is often greater. In addition to public health, there is growing public concern over the potential impacts the traditional onsite systems may have on groundwater quality, inland lakes, and other public waters. Environmental protection is becoming a priority as high as public health. The traditional regulatory approach does not respond well to these concerns.

Significant barriers to acceptance of onsite wastewater treatment systems as suitable substitutes to central sewerage exist and will need to be overcome if we are to protect public health and the environment effectively. In their *Response to Congress on Use of Decentralized Wastewater Treatment Systems* (1997) the U. S. Environmental Protection Agency (EPA) identified and described five major barriers to onsite wastewater system acceptance by the public:

- Lack of knowledge and poor public perceptions of onsite systems as viable alternatives to central sewerage.
- Statutory and regulatory prescriptions which limit effective technologies and applications.
- Lack of management programs to ensure satisfactory performance over the life of the onsite system.
- Lack of familiarity and comfort with onsite systems by the engineering community.
- Lack of financial assistance programs similar to those for central sewerage.

One of the more significant barriers is the traditional approach to onsite system regulation. Typically, onsite regulatory programs do not require enhanced treatment that the advanced technologies can provide and where environmental sensitivities make it necessary. Because regulatory authorities lack experience with newer technologies, they are apprehensive about incorporating advanced technologies because code revisions are cumbersome and costly. Staffs of regulatory authorities are unfamiliar with the technologies and the treatment processes used, and are wary of unconfirmed manufacturers' claims. The technologies are usually more complex and therefore require greater attention to operation and maintenance, which most existing programs ignore. Also, municipalities often are opposed to onsite treatment systems that can eliminate the need for sewers because without the need to extend sewers the opportunities for annexation may be lost and the growth of the city hampered. Further, land use advocates actively defend these prescriptive programs because they have come to depend on them as *de facto* zoning ordinances. Understandably, they fear that improved onsite programs that might allow a wider application of onsite systems could eliminate one of the more effective controls to indiscriminate land use since enforceable land plans usually have not been adopted.

Yet, if we are to be able to rely on onsite treatment systems as effective and permanent components of our rural infrastructure to provide affordable sanitation and sustainable development for individual homes, small, unsewered communities, and urban fringe developments, changes in the way we regulate the systems are needed. Those changes must protect public health and our water resources while allowing a similar standard of living provided urban residents. Without such changes, our choices are either increased risks to public health, impaired environmental quality, severe limitations on unsewered development, or excessively expensive sewerage. But the changes made must be carefully conceived to ensure sustainable public health and environmental protection as well as sound land use.

Performance Management

Prescription Versus Performance-Based Regulatory Programs

Throughout the country, prescriptive-based programs are relied upon for regulation of onsite wastewater treatment systems. Prescriptive programs require that building sites meet specific site characteristics, which are considered suitable for the prescribed or pre-engineered designs. Typically, the variety of sites for which the pre-engineered designs are suited are limited. The objective of prescription programs is to seek siting, design, and construction compliance with the prescribed rules. If in compliance, the systems are deemed to satisfy the Regulatory Authority's performance requirements as long as plumbing backups or seepage of wastewater onto the ground surface does not occur. Existing systems found to be not in compliance with the prescriptions are cited as failing even though the system may be meeting all public health and water resource goals. As a consequence, property owners must repair or replace the "failing" systems, often at significant costs without receiving measurable benefits for the expenditures. For example, if 36 inches of unsaturated soil is required below the infiltration system but only 35 inches exists, an operating system can be declared failing without regard to its actual performance. The code requires that an upgrade be made but no benefits may result to public health, water resources, or the owner other than achieving code compliance.

Performance-based programs for onsite system regulation provide an alternative approach, which can enhance public health and environmental protection and avoid such pitfalls. Performance-based programs seek *sustained*

compliance of systems to stipulated and measurable performance requirements that are periodically verified by the regulatory authority. The performance requirements are established based on public health and environmental risks that may be posed by discharges from the onsite wastewater systems on the particular receiving environment. The treatment systems themselves are not specified as in prescriptive programs but rather the performance they must achieve. For example, a site with very rapidly permeable sand and a shallow water table would not be acceptable for a conventional prescriptive system because of the risk of groundwater contamination by pathogenic organisms and/or nitrate nitrogen. However, under a performance program, the regulating authority may accept an onsite treatment system as long as the owner operates the system reliably and consistently to remove pathogens in compliance with enforceable limits stipulated by the authority. Thus, performance programs regulate the "ends" produced by the system rather than the "means" used to treat the wastewater as is done in prescriptive programs. In other words, the system must be suitable for the site rather than the site suitable for a pre-engineered system. This avoids the problem with unnecessary repairs that can occur with prescription programs.

A significant consequence of implementation of a performance code however, is that acceptable wastewater treatment can be provided for any parcel of land removing *de facto* zoning restrictions provided by most prescriptive codes. Thus, whether a lot is developed would be a property owner decision based on a number of criteria including the stipulated performance requirements of the treatment system and the cost to install, operate, and monitor the system. While *de facto* zoning has allowed local units of government to avoid controversial land use issues, the result is that these decisions are being made inadvertently by regulators. These occur through arbitrary or ill-conceived variances to the rules granted by regulators who may be confronted with unrelenting pressure from property owners or politicians to "bend" the rules. Thus, not only have we allowed development primarily on some of our best agricultural lands because that is where the "suitable" soils exist, but development is occurring on land that planners thought was prohibited from development because of variances. In the latter case, because the soils and site conditions are marginal, the pre-engineered systems may not perform well and consequently may fail, creating nuisances, public health hazards, or environmental damage in addition to costly repairs for system owners. A performance code can avoid these problems but local planning and zoning authorities must be aware that the performance code is development neutral causing *de facto* zoning controls created by onsite wastewater system rules to be no longer valid. Thus, it is imperative that planning and zoning authorities participate in the code change process so that appropriate safeguards can be implemented to ensure sound land use planning.

Comprehensive Management

Sustaining successful performance of onsite systems requires coordinated teamwork between the regulatory authority; system owner; onsite system practitioners that provide siting, design, construction, operation, and maintenance services; practitioner licensing board; and the legal system. Each member of this team must perform those activities for which he or she has the authority and responsibility to perform (Otis, 2000). As a team, each member must perform his or her role competently according to the expectations of the team. No member should assume another's authority without also assuming the responsibility that accompanies that authority, nor should the member assume such authority without the expressed delegation by the member who has the authority. For example, the permitting authority should not assume the owner's authority for system design by dictating the design to the property owner without accepting the responsibility for the system's performance. If the property owner were to comply with the dictates of the permitting authority but the system failed due to no fault of the owner, enforcement actions by the regulatory authority would be problematic and likely ineffective. Only if the members respect the roles and responsibilities of the others can performance management succeed.

Under performance management, the role of the regulatory authority is to establish rules and administer those rules fairly and consistently for the good of the public. The regulatory authority has the authority to set the performance expectations of the treatment system, the system owner, and the system practitioners and verify compliance. Along with this authority rests the responsibility to clearly set specific and measurable performance requirements for each system, to verify that the system owner operates the system in accordance with the performance requirements over the service life of the system, and to verify that all practitioners that perform services for the owner are competent to fulfill their responsibilities.

The role of the system owner is to construct, operate, and maintain the wastewater treatment system. It is the owner's responsibility to comply with the program rules and the performance requirements stipulated by the regulatory authority. Also, if the owner engages a practitioner to assist in performing his or her responsibilities, the owner has the obligation to report any unlawful or fraudulent acts performed by the practitioner to the regulatory authority or licensing board.

The practitioners have the authority granted them by the licensing board to provide services to the system owners. To maintain this authority, they have the responsibility to comply with the licensing requirements, usually including training, examination, and continuing education, and providing their services in strict compliance with relevant laws and codes of conduct.

The role of the licensing board is to develop and administer a training and licensing program to ensure competence of all practitioners who offer onsite wastewater system services and regulatory authority staff. The board has the responsibility to set the training and examination requirements (in conjunction with the regulatory authority), confirm that all practicing practitioners and regulators maintain their licenses in compliance with the board rules, and to adjudicate any complaints or reports of misconduct of a licensed individual.

Finally, the legal system through the civil courts has the authority to settle disputes between parties brought to it by an aggrieved party. The court's responsibilities are to the prevailing laws of the governing jurisdiction.

Figure 1 illustrates the separation of roles and responsibilities of the "management team" members. The three depictions differ primarily in the role of the property owner. Typically, the property owner is responsible for installing a code compliant system and maintaining the system as depicted in Figure 1a. The owner is the holder of the construction permit and the operating permit (if issued) and is the responsible party, though the owner may hire practitioners to perform these duties. Under other management schemes, a responsible management entity (RME) relieves the property owner of his or her authority and responsibility over the treatment system. The RME may assume the authority and responsibility for system performance from the owner (Figure 1b). In this model, the operating permit is held by the management entity. The property owner still holds the construction permit and must see that the system's physical integrity is maintained. The third management scheme is a district or utility approach where the RME assumes both ownership and operation authority from the property owner (Figure 1c). Under this scheme, the property owner is only a user and has no responsibilities for the treatment system other than to pay a user fee to the RME. The district or utility is responsible for planning, siting, design, construction, operation, and maintenance of all systems in its jurisdiction.

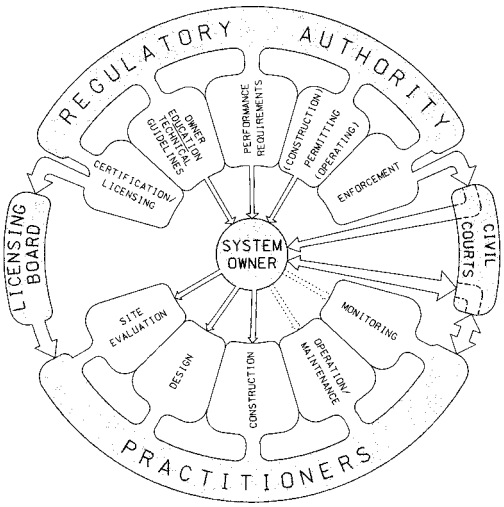
Performance Management Program Models

NOWRA Model Framework for Unsewered Wastewater Infrastructure

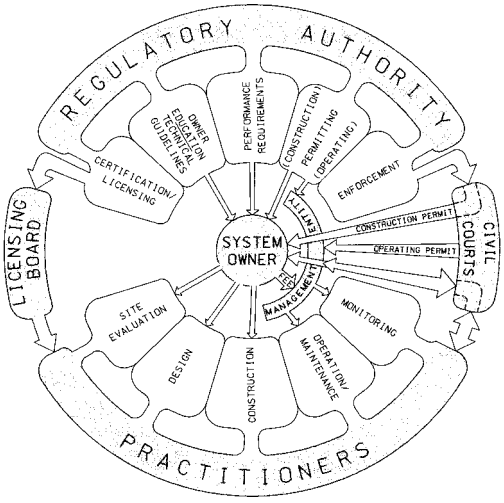
Several regulatory program models exist. However, to be effective the model selected must include a minimum suite of elements. In 1999, the National Onsite Wastewater Recycling Association (NOWRA) appointed a Strategic Directions Committee to identify the critical elements of an onsite treatment system management program that are necessary to overcome the barriers and achieve sustainable unsewered development. The result of the committee effort was the drafting of a "Model Framework for Unsewered Wastewater Infrastructure" (NOWRA, 1999; Walsh, et al., 2001). The framework focuses on performance management; performance of the treatment system, system owner, system service providers, and regulatory authorities. Seven framework elements were defined:

- **Performance requirements** that protect human health and the environment, ensure safety and prevent nuisances;
- **System maintenance** to maintain performance within the established performance requirements;
- **Compliance monitoring and enforcement** to ensure system performance is achieved and maintained;
- **Technical guidelines** for site evaluation, design, construction, operation, and maintenance and suitable prescriptive designs for specific site conditions and use;
- **Education/training** for all practitioners, regulators, planners, and owners;
- **Certification/licensing** for all practitioners and regulators to maintain standards of competence and conduct; and
- **Management program reviews** to identify knowledge gaps, shortcomings in implementation, and necessary corrective actions.

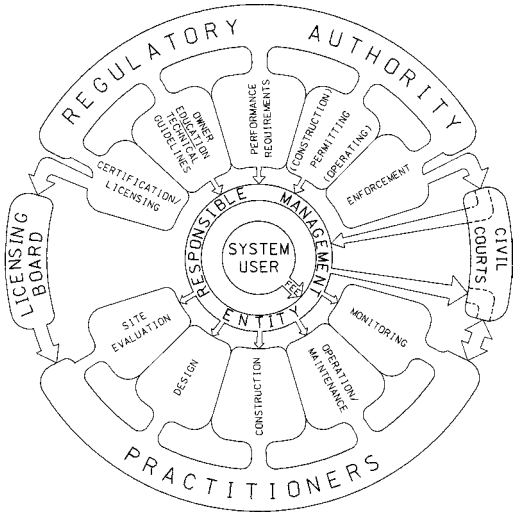
NOWRA believes the goal of sustainable development can be achieved only if all of these elements are implemented. Elimination or diminution of any will prevent this goal from being reached.



a). Property owner as owner/operator



b). Responsible Management Entity as operator



c). Responsible Management Entity as owner/operator

Figure 1: Management Schemes (Otis, et al., 2001)

USEPA Voluntary Management Guidelines

The United States Environmental Protection Agency is developing voluntary management guidelines for onsite and cluster wastewater systems which follow the performance management concept (USEPA, 2000). The purpose of the guidelines, which USEPA expects to publish in 2002, is to raise the performance level of onsite systems through improved management programs. Five management models representing progressive levels of management control are offered (Table 1). Each model includes program elements that are considered necessary to the models' success. Without implementing all the elements described for each model, success of the adopted program model will be severely limited. The elements include:

Public Education & Participation	Construction	Inspections/Monitoring
Planning	Operation & Maintenance	Corrective Actions & Enforcement
Performance Requirements	Residuals Management	Record Keeping, Inventory & Reporting
Site Evaluation	Training & Certification/Licensing	Financial Assistance & Funding
Design		

Model 1 represents typical prescriptive programs that are used today except that better system inventories and public education are encouraged. Model 2 allows more complex treatment systems to be used if maintenance contracts are maintained between the system owner and manufacturer, supplier, or certified operator. Models 3 and above represent radical changes from current regulatory practices in most counties. Model 3 introduces the concept of performance requirements allowed through the use of operating permits issued to the system owner. The operating permit has a limited term after which it can be renewed upon demonstration that the system is operating in compliance with the permit. If the stipulations of the permit are not met, the permit can be revoked and operation of the system must cease. Models 4 and 5 introduce a responsible management entity to be responsible either for system operation or for system installation, operation, and maintenance. Both Management Program Models 4 and 5 may be superimposed over Management Program Models 1, 2, or 3. This series of management program models is intended to provide a stepped progression from a traditional prescription program to sustainable performance management by progressively improving management oversight. Thus, a state or local unit of government can progress through the models as wastewater treatment needs change, the regulatory program matures, and public awareness builds to support more rigorous management.

Organization of the Code Framework

This model code framework has been developed to provide the necessary elements for a local regulatory program to implement and administer a program for any of the USEPA Management Programs described in Table 1.0 and Tables 1.1 through 1.5. As written, the framework best represents Management Program 3. Programs 1 and 2 are prescriptive programs. If a performance program is not desired, some of the elements in the framework needed to support a performance code can ignored or deleted. Note that the prescriptive programs limit the use of new practices and technologies until they have been proven to perform at least as well as the traditional septic tank system under the specific conditions they will be used (see Ayres Associates, 1995). Thus, procedures and criteria for accepting new practices and technologies must be incorporated into the code. This is not necessary, nor possible in Management Programs 3 through 5 because they are performance codes. As such, treatment systems and performance requirements can not both be prescribed by the regulatory authority for a particular application because the prescribed system may not be capable of meeting the performance requirements under the particular wastewater and site characteristics. Under a performance code new practices and technologies can be permitted without prior proof that they will perform as required since operating permits are issued to allow oversight of system performance compliance. Thus, these models allow the introduction of new solutions that can be evaluated under actual use and incorporated into prescriptive designs as experience is gained. For Management Programs 4 and 5 in which responsible management entities (RME) are used, state permits likely would be necessary. If so, federal National Pollutant Discharge Elimination System (NPDES) or state permit procedures would need to be referenced. Financial oversight of the responsible management entities by a public services commission or similar institution also would need to be incorporated.

The framework consists of a series of subchapters. Each presents program elements that are considered necessary to support the chosen management model. A description and an objective or purpose statement accompany each element to make clear why the element is needed and how the code language should be developed. The subchapters include:

I. Purpose, Objectives, Principles, and Scope

Purpose is to describe the purpose of the framework, the objectives of the model code, the principles on which the model is based, and the scope of the code's application.

II. Program Administration and Compliance Management

Purpose is to clearly establish requirements and procedures for program administration, facility permitting, and permit enforcement.

III. Performance Requirements

Purpose is to create procedures for identifying and evaluating the various potential receiving environments or parcels in a jurisdiction to determine appropriate onsite/cluster treatment system performance requirements that would be necessary to protect public health and the environment.

TABLE 1.0 SUMMARY OF USEPA GUIDELINES FOR MANAGEMENT OF DECENTRALIZED WASTEWATER SYSTEMS (USEPA, 2000)

TYPICAL APPLICATIONS	PROGRAM DESCRIPTION	BENEFITS	LIMITATIONS
MANAGEMENT PROGRAM 1: INVENTORY AND MAINTENANCE REMINDERS			
Appropriate for areas of low environmental sensitivity where sites are suitable for conventional onsite systems, which are effective in protecting public health and water quality.	Ensures systems are sited and constructed properly in accordance with state/tribal/local codes and regulations that prescribe siting and design criteria that are deemed to satisfy performance requirements. Seeks to ensure that systems are regularly maintained and repaired as necessary by striving to make owners aware of maintenance needs through reminders sent to the owners by the regulatory authority. Establishes a database inventory of all systems (locations, designs, permits, and inspection reports) within the jurisdiction.	Ensures code compliant system is sited, designed and installed. Relatively easy and inexpensive to implement and maintain because it is based on prescriptive designs that rely on restrictive site criteria and design requirements promulgated in existing codes. Provides an inventory of systems that is useful in system tracking and area-wide planning.	No mechanism provided to confirm operating compliance of systems. No mechanism provided to identify problems before failures occur. Limits building sites to those meeting the prescriptive siting requirements. Requires regulatory authority investment to implement a database of permitted systems and an owner education program.
MANAGEMENT PROGRAM 2: MAINTENANCE CONTRACTS			
Appropriate for areas of low to moderate environmental sensitivity where sites are marginally suitable for conventional onsite systems either due to small lots, shallow soils, or low permeability soils.	Ensures systems are sited and constructed properly in accordance with state/tribal/local codes and regulations that prescribe siting and design criteria that are deemed to satisfy performance requirements. Allows the use of more complex treatment options that may include mechanical components. Requires service contracts be maintained over the life of the system between the system owner and the equipment manufacturer, supplier, or independent service provider. Establishes a database inventory of all systems (locations, designs, permits, and inspection reports) within the jurisdiction. Establishes a service contract tracking system.	Reduces the risk of treatment system malfunctions through the requirement for sustained routine maintenance of mechanical components by skilled personnel.	State/tribal/local regulatory authority may have 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. No mechanism is provided to assess the effectiveness of the maintenance program.
MANAGEMENT PROGRAM 3: OPERATING PERMITS			
Appropriate for areas of greater environmental sensitivity such as wellhead or source water protection zones, shellfish growing waters, bathing or water-contact recreation or other areas where prescriptive designs alone are inadequate for meeting public health and water quality requirements.	Establishes system performance requirements for receiving environments including maintenance monitoring, possibly water quality monitoring, and compliance monitoring reporting. Allows engineered designs but also provides prescriptive designs for specific receiving environments. Allows regulatory oversight of system performance throughout its service life by issuing operating permits that must be renewed periodically but may be revoked for non-compliance. Establishes a database inventory of all systems (locations, designs, permits, and inspection reports) within the jurisdiction. Establishes a system inventory database and operating permit and compliance monitoring report tracking systems.	Allows use of onsite treatment systems in more environmentally sensitive areas or for wastes that may pose more of an environmental risk. Reduces the risk of a system operating out of compliance through a renewable/revocable operating permit issued to the owner which requires regular compliance monitoring reports. Routinely identifies non-compliant systems and initiates corrective actions.	Needs a higher level of technical/engineering expertise on part of regulatory authority to implement. Requires an effective permit tracking system. Education and enforcement activities of the regulatory authority will increase. Requires that the regulatory authority have the powers to issue citations and assess fines and penalties.

TABLE 1.0 SUMMARY OF USEPA GUIDELINES FOR MANAGEMENT OF DECENTRALIZED WASTEWATER SYSTEMS (CON'T)

TYPICAL APPLICATIONS	PROGRAM DESCRIPTION	BENEFITS	LIMITATIONS
MANAGEMENT PROGRAM 4: RME OPERATION AND MAINTENANCE			
Areas of moderate to high environmental sensitivity where sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, outstanding value resource waters, or other critical resources exist where environmental and/or treatment complexity concerns require reliable and sustainable system operation and maintenance for resource protection or restoration.	Establishes system performance requirements for receiving environments including maintenance monitoring, possibly water quality monitoring, and compliance monitoring reporting. Provides professional operation and maintenance services through RME (either public or private). Provides regulatory oversight by issuing operating or NPDES permits directly to the RME (system ownership remains with the property owner). May require the RME to monitor parts of the watershed. Establishes a database inventory of all systems (locations, designs, permits, and inspection reports) within the jurisdiction. Establishes a system inventory database and operating permit and compliance monitoring report tracking systems.	Responsibility for operation and maintenance is transferred from the system owner to a professional RME that is the holder of the operating permit. Routine monitoring and inspections identify problems needing preventive maintenance before failures occur. Allows use of onsite treatment systems in more environmentally sensitive areas or for wastes that may pose more of an environmental risk. Number of permits requiring tracking by the regulatory authority are reduced by issuing one permit for a group of systems in a watershed.	Enabling legislation may be necessary to allow a RME to hold the operating permit for an individual system owner. The RME must have owner approval to repair or replace system components, which may create conflicts between system owner and RME if performance problems are identified and not corrected. Property owner may not agree to grant an easement for system access by the RME. Oversight by the regulatory authority is needed to ensure that the RME has the technical and financial capability to provide reliable and sustainable operation services to meet the permit requirements.
MANAGEMENT PROGRAM 5: RME OWNERSHIP			
Areas of greatest environmental sensitivity as described in program Management Program 4. Preferred management program for cluster systems serving multiple properties under different ownership.	Establishes system performance requirements for receiving environments including maintenance monitoring, possibly water quality monitoring, and compliance monitoring reporting. Provides professional management of the planning, siting, design, installation, operation, maintenance, regulatory compliance, watershed monitoring, customer service, financing, and administration of decentralized systems through the public or private RMEs that own and manage individual systems. Provides regulatory oversight by issuing operating or NPDES permits that may require watershed monitoring directly to the RME. Establishes a database inventory of all systems (locations, designs, permits, and inspection reports) within the jurisdiction. Establishes a system inventory database and operating permit and compliance monitoring report tracking systems.	Achieves a high level of oversight for existing systems that may have performance problems. Simulates the municipal model of central sewerage by transferring all responsibilities from the system user to a RME, reducing the risk of non-compliance to the lowest level. Allows use of onsite treatment systems in more environmentally sensitive areas or for wastes that may pose more of an environmental risk. Allows effective area-wide wastewater planning and watershed management through the integration of decentralized systems with conventional sewerage under a single RME. Avoids the potential for conflicts between the user and RME that exists in Management Program 4.	Acquiring private property easements or land for treatment sites necessary for the RME to perform its functions may require formation of a public special purpose district. . Greater financial investment may be necessary by the RME for installation and/or purchase of existing systems or components. Oversight by the regulatory authority is needed to ensure that the RME has the technical and financial capability to provide reliable and sustainable services to meet the permit requirements.

IV. Site Evaluation and Design Requirements

Purpose is to provide minimum criteria and acceptable procedures for property evaluations and system designs.

V. Training, Licensing, and Certification of Businesses and Practitioners

Purpose is to establish a training, licensing (and/or certification), and disciplinary program for all practitioners and regulatory staff with the intent to cause uniform and consistent application of practices, standards, and enforcement of the rules.

How to Use the Framework

Implementing a Performance Code

The principal tenet of a performance code is system management to sustain acceptable treatment system performance. It is achieved through the coordinated activities of the regulatory authority, licensing board, system owners, service providers, and, under some management program models, responsible management entities. The roles and responsibilities of the different parties and how they interact depend on the management program adopted. Program model selection is dependent on the potential public health and environmental risks from the wastewater discharges, which in turn is dependent on the wastewater constituents, the environmental sensitivity to those constituents, the treatment technology selected to meet the performance requirements, and the density of development. As the public health and environmental risks increase either due to particular wastewater constituents, environmental sensitivity, land use, and/or treatment technology complexity, the management controls must increase to ensure that the risks are held to an acceptable level. The specific management model may be one or a combination of models that meet the specific local public health and environmental needs and can be supported by the available local public and private capacities to perform the requisite activities associated with the selected program model. *Counties must recognize that the available financial, regulatory staffing, and service provider capacities may limit the choice of management programs at first until those capacities can be developed over time.*

Implementation of a performance management program involves several steps:

1. Selection of a management program model
2. Promulgating any necessary state statute, rule, or local ordinance changes
3. Adoption of management tools
4. Training and education

Each of these steps is discussed below.

Selection of a Management Program Model

Selection of a management program model is based on the potential for unacceptable impacts of onsite wastewater system discharges on public health or the environment and the available regulatory and service provider capacities to administer and provide the services required by the selected model. As the risk of adverse impacts from onsite treatment system discharges increase, regulatory controls likewise must increase. The severity of the risks will depend on development density (risk of human exposure), environmental sensitivity (low assimilative capacity), wastewater characteristics (constituents of concern to health or environment), and the complexity of the treatment technology (risk of treatment failure). However, selection of a program model where the code can not be adequately administered or the capacity of requisite qualified service providers is too low, will result in program failure. In such instances, implementation of a more simple management program that can be progressively built upon should be pursued. *Note that during the process of selecting a management program and in the development of the program procedures and requirements, it is extremely important that the local land use planning and zoning authorities and public are actively sought to participate.*

The management programs promoted by USEPA (2000) can be used as guidance in designing a local program. Tables 1.1 through 1.5 describe the necessary elements of each program. For any program chosen, it is critical that the regulatory elements described be developed and implemented prior to adopting the program model.

The tables of elements can be used to compare the county's existing program with the selected management program model to identify any regulatory "gaps" so that revisions and/or additions needed to implement the chosen model can be made prior to its adoption.

The reader should note that these management program models are only intended to be general guides in developing a performance management program. Elements from higher level management programs may be incorporated into lower level programs as deemed necessary. For example, Management Programs 1 and 2 do not include operating permits. However, issuing operating permits in these management program models would enhance the programs substantially. Operating permits could be easily incorporated into these two programs but they would require the Regulatory Authority to develop and administer an effective permit tracking system and establish a certification program for operators. However, adopting elements from lower level programs into higher level programs should be avoided. Also, more than one management program model may be used within a local jurisdiction as appropriate for the circumstances encountered (housing density, site and soil characteristics, and treatment technology complexity). While Management Program 1 may adequately address conventional systems within low-risk segments of a service area, there may be other areas of higher risk, which require higher levels of management. For these areas, a higher level management program model, more appropriate for areas with higher sensitivities, may be incorporated into the overall management program to customize system management to the needs of the community or service area. It is important that the management program be structured to adequately manage an appropriate set of decentralized systems for the full range of environmental conditions. For example, Management Program 3 might be selected for the more sensitive areas such as those along a shores of lakes that have been shown to have poor water quality, while a lower level management program model may still be appropriate for conventional systems in areas where the receiving environment is not as sensitive.

Management Program 1 is similar to the regulatory program used by most local authorities today. It restricts the onsite system options to the traditional prescriptive designs and their corresponding sites allowed by the state or county. Traditional systems are passive and robust treatment systems that can provide acceptable treatment under suitable site conditions despite a lack of attention by the owner. Failures that may occur and continue to be undetected should pose only a minimum risk to public health and the environment where the sensitivity of the environment is low. This model may be appropriate if the majority of the unsewered area of the county is well suited for traditional prescriptive designs and has a low environmental sensitivity (site and soil conditions suitable for the use of traditional systems without serious threats to public health and environment). The objectives of this management program are to ensure that all systems are sited, designed and constructed by qualified service providers in compliance with the prevailing rules, to record and inventory all systems installed in the local jurisdiction, to inform and encourage timely maintenance through education of the property owners about the care and maintenance needs of their systems, and to institute a of point-of-sale and change-in-use inspection program so that any failures are identified and corrected at some point in time (see Table 1.1).

Management Program 2 is appropriate in areas where more complex treatment systems are needed to mitigate site constraints (slowly permeable soils, shallow water tables, shallow depths to restrictive horizons, and small lots). Because of their treatment process complexity, (*e.g.* activated sludge processes) and/or mechanical complexity (*e.g.* pumps, blowers, valves, programmable controllers), timely maintenance of these systems by qualified operators is critical to sustaining acceptable performance in these areas of greater environmental sensitivity. Therefore, these systems should be allowed only where system owners maintain contracts with trained operators to perform maintenance at the appropriate intervals. The objectives of this program build on Management Program 1 by adding a owner/operator maintenance contract tracking system (see Table 1.2). Note that because tracking owner/operator contracts is problematic, consideration should be given to adding an operating permit requirement (see Management Program 3) for complex systems to provide an institutionalized mechanism for regular confirmation of valid contracts.

Management Program 3 is a program that allows all types of treatment technologies as long as they can demonstrate sustained treatment to performance requirements stipulated in a renewable and revocable operating permit. Treatment systems that are designed to meet specific effluent limits are less dependent on site characteristics and conditions. Therefore, they can be used safely in more sensitive environments but only if their performance can be continuously ensured. This program should be seriously considered for commercial systems, areas of high density residential development, and identified areas of concern (areas of impaired surface or ground water, source water protection areas, sensitive coastal areas such as recreational beaches, shellfish waters, etc.). The objective of this management program, in addition to those of the previous levels, is to ensure that the onsite systems continuously meet their performance requirements. Limited term operating permits are issued to the property

owner, which are renewable for another term after the owner demonstrates that the system is in compliance with the terms and conditions of the permit. The permit provides the management program a mechanism for continuous oversight of system performance and negotiating corrective actions, levying penalties, or revoking the permit if compliance is not maintained. If an owner refuses to comply where a failing system is an imminent threat to public health or the environment the local authority should have the authority to enter the property and correct the failure and assess the costs back to the property owner. This program requires that the local authority develop procedures for determining suitable and reasonable performance requirements for potential receiving environments, developing plan review and permitting procedures that can accept non-traditional designs, and administer an operating permit tracking system together with a compliance monitoring reporting requirement for owners (see Table 1.3). Although the owner may perform the necessary maintenance and compliance monitoring reporting, many owners likely would contract with local service providers. The need for qualified operators may raise a third party services capacity issue that could delay the program's implementation. A critical concern could be septage treatment capacity for all the systems that will receive routine maintenance where they had not before.

Management Program 4 is a management program that provides additional public health and environmental protection through "management districts" or "utility districts" where a responsible management entity performs the necessary operation, maintenance, and monitoring activities for all treatment systems in its jurisdiction. The district or utility takes responsibility for the operation and maintenance of systems owned by subscribers for a service fee. This model is recommended where onsite systems are to be used in areas of moderate to high environmental sensitivity (sole source aquifers, wellhead or source water protection zones, critical aquatic habitats, outstanding natural resource waters, or where other critical resources exist). The objectives of this program are nearly identical to Management Program 3 except that it strives to achieve greater control over compliance by issuing the operating permit to a public or private RME instead of the property owner. Under this permit, the RME may be required to conduct water quality assessments of the watershed(s) or sub-watershed(s) in its jurisdiction to determine the appropriate requirements for new and existing treatment systems in various areas of the district. A significant advantage of this program is that the local authority deals with a single entity so accountability, and presumably compliance, is much higher. Also, the local authority can coordinate with the RME in determining what treatment goals are necessary to mitigate public health and environmental concerns in a watershed or sub-watershed. If a single private RME is designated as the sole operator in a defined jurisdiction, financial oversight (financial stability and fair and equitable fees) by a public services commission would be required as with any utility operation (see Table 1.4). A distinct disadvantage is that ownership of the systems remain with the property owners which may cause conflicts between the district or utility and the subscribers when system repairs or upgrades are needed to meet the permit requirements.

Management Progam 5 is a management program that is analogous to a municipal wastewater district or utility where a RME both owns and operates the treatment facilities. This program is essential in areas where systems must be sited, designed, installed, and operated, monitored, and maintained to meet very specific treatment requirements (high density developments, very sensitive environments). The objectives of this program are very similar to Management Program 4 except that it provides substantially greater control of system performance because of system ownership (see Table 1.5). This allows the RME to perform area-wide planning regarding system performance requirements, upgrades of existing systems with higher performance treatment technologies, and implement potential efficiency options such as clustering. It also avoids the potential disputes that may arise under Model Program 4 between the system owner and the RME. Further, if the RME is a public entity, it is eligible for public financial assistance with costs of individual system construction. As with Management Program 4, if a single private RME is designated as the sole manager in a defined jurisdiction, financial oversight (financial stability and fair and equitable fees) by a public services commission would be required as with any utility operation.

Note that for both Management Programs 4 and 5, the RME may be a local municipality or sewerage district that is responsible for the municipal sewerage facilities as well.

Promulgating Statute and Rule Changes

Implementation of a program above Management Program 1 will require rule changes for most local programs and statutory changes may be necessary for models higher that Management Program 2. Tables 1.1 through 1.5, which provide a brief description of what program elements must be included in each model, are intended to be used as a guide to evaluate existing programs against the management model selected for implementation. By comparing the current program elements to the recommended elements of the desired program, gaps in regulatory authority can be identified. These gaps may require new rules and/or statutory authority if the model is to be successfully implemented. It is important that all of the elements recommended for a model be developed and accepted or

TABLE 1.1: MANAGEMENT PROGRAM 1

INVENTORY AND MAINTENANCE REMINDERS

Objective: To ensure conventional decentralized systems are sited and constructed properly in accordance with appropriate state/tribal/local regulations and codes, are periodically inspected and, if necessary, repaired by the owner. The regulatory authority maintains a record of the location of all systems and periodically provides owners with notices regarding preventive operation and maintenance recommendations.

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
PUBLIC EDUCATION AND PARTICIPATION	**Regulatory Authority**[2]	Educate Owners on purpose, use, and care of treatment system. Send reminders to Owners when scheduled maintenance is due. Hold public meetings to inform the public of proposed program and/or rule changes. Provide public review and comment periods of any proposed program and/or rule changes.
	Public	Be informed of existing and any proposed program and/or rule changes Review and comment on proposed program and/or rule changes.
PLANNING	**Regulatory Authority**	Coordinate program rules and regulations with state/tribal/ local planning and zoning and other water related programs. Evaluate potential risks of wastewater discharges on receiving environments during the rule making process. Evaluate impacts of rules on residuals management. Inform local planning authority of rule changes and recommend their evaluation of potential impacts on land use.
PERFORMANCE REQUIREMENTS	**Regulatory Authority**	Establish system failure criteria to protect public health, *e.g.* wastewater backups in building, wastewater on ground surface, insufficient separation from groundwater, wells, etc.
	Owner	Prevent system failure through preventive maintenance.
SITE EVALUATION	**Regulatory Authority**	Codify prescriptive requirements for site evaluation procedures. Codify criteria for treatment site characteristics suitable for permitted designs that will prevent unacceptable impacts on ground water and surface water resources.
	Owner	Hire a certified/licensed Practitioner to perform site evaluation.
DESIGN	**Regulatory Authority**	Codify prescriptive, pre-engineered designs that are suitable for treatment sites meeting the prescriptive site criteria.
	Owner	Hire a certified/licensed Practitioner to prepare system design.
CONSTRUCTION	**Regulatory Authority**	Administer a permitting program for system construction, including Regulatory Authority review of proposed system siting and design plans and a final construction inspection for compliance assurance and inventory data collection.
	Owner	Hire a certified/licensed Practitioner to construct system.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity

TABLE 1.1 (CONTINUED): MANAGEMENT PROGRAM 1
INVENTORY AND MAINTENANCE REMINDERS

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
OPERATION & MAINTENANCE	**Regulatory Authority**	Provide Owner with timely reminders to perform scheduled preventive maintenance.
	Owner	Hire a certified/licensed Practitioner to perform necessary maintenance.
RESIDUALS MANAGEMENT	**Regulatory Authority[2]**	Administer a tracking system for residuals hauling, treatment, and disposal in accordance with 40 CFR Part 503 *Use and Disposal of Sewage Sludge*, 40 CFR Part 257, and applicable state/tribal/local requirements.
	Practitioner	Comply with applicable federal, state, tribal, and local requirements in the pumping, hauling, treatment, and disposal of treatment system residuals.
TRAINING AND CERTIFICATION/ LICENSING	**Licensing Board/ Regulatory Authority**	Develop and administer training, testing, and certification/licensing program for site evaluators, designers/contractors, pumpers/haulers, and inspectors. Maintain a certified/licensed Practitioner listing.
	Practitioner	Obtain appropriate certification/license to practice.
INSPECTIONS/ MONITORING	**Regulatory Authority**	Conduct final construction inspections to assure compliance with approved plans and permit requirements. Provide Owner with timely reminders to perform scheduled preventive maintenance. Administer/perform inspection programs at point-of-sale, change-in-use of properties and/or "targeted areas" as needed.
CORRECTIVE ACTIONS AND ENFORCEMENT	**Regulatory Authority**	Negotiate compliance schedules for correcting documented non-compliance items. Administer enforcement program including fines and/or penalties for failure to comply with compliance schedule.
	Owner	Comply with terms and conditions of the negotiated compliance schedule.
RECORD KEEPING, INVENTORY, & REPORTING	**Regulatory Authority**	Administer a database inventory (locations, site evaluations, record drawings, permits, and inspection reports) of all systems within the Regulatory Authority's jurisdiction. Maintain a certified/licensed Practitioner listing.
FINANCIAL ASSISTANCE & FUNDING	**Regulatory Authority**	Provide the legal and financial support to sustain the management program. Provide listing of financial assistance programs available to Owners and the qualifying criteria for each program.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity

TABLE 1.2: MANAGEMENT PROGRAM 2
MAINTENANCE CONTRACTS

Objective: To provide management control of system maintenance by requiring that maintenance contracts between the owner and maintenance provider be maintained over the service life of the system. Maintenance contracts allow use of more complex mechanical treatment options.

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
PUBLIC EDUCATION AND PARTICIPATION	**Regulatory Authority**[2]	Educate Owners on purpose, use, and care of treatment system. Hold public meetings to inform the public of proposed program and/or rule changes. Provide public review and comment periods of any proposed program and/or rule changes.
	Public	Be informed of existing and any proposed program and/or rule changes Review and comment on proposed program and/or rule changes.
PLANNING	**Regulatory Authority**	Coordinate program rules and regulations with state/tribal/ local planning and zoning and other water related programs. Evaluate potential risks of wastewater discharges on receiving environments during the rule making process. Evaluate impacts of rules on residuals management. Inform local planning authority of rule changes and recommend their evaluation of potential impacts on land use.
PERFORMANCE REQUIREMENTS	**Regulatory Authority**	Establish system failure criteria to protect public health, *e.g.* wastewater backups in building, wastewater on ground surface, insufficient separation from groundwater, wells, etc. *Establish minimum maintenance requirements for systems.
	Owner	Prevent system failure through preventive maintenance. *Maintain valid contract with certified/licensed operator.
SITE EVALUATION	**Regulatory Authority**	Codify prescriptive requirements for site evaluation procedures. Codify criteria for treatment site characteristics suitable for permitted designs that will prevent unacceptable impacts on ground water and surface water resources. *Establish alternative site acceptance criteria for systems with enhanced pretreatment.
	Owner	Hire a certified/licensed Practitioner to perform site evaluation.
DESIGN	**Regulatory Authority**	Codify prescriptive, pre-engineered designs that are suitable for treatment sites meeting the prescriptive site criteria.
	Owner	Hire a certified/licensed Practitioner to prepare system design.
CONSTRUCTION	**Regulatory Authority**	Administer a permitting program for system construction, including Regulatory Authority review of proposed system siting and design plans and a final construction inspection for compliance assurance and inventory data collection.
	Owner	Hire a certified/licensed Practitioner to construct system.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity
* Added activities to program elements from preceding management model

TABLE 1.2 (CONTINUED): MANAGEMENT PROGRAM 2
MAINTENANCE CONTRACTS

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
OPERATION & MAINTENANCE	**Regulatory Authority**	Provide Owner with educational materials regarding system use and care. *Require Owner to attest periodically that he/she holds a valid contract with a certified/licensed operator to perform scheduled and any necessary maintenance according to the established minimum maintenance requirements. *Require Owner to submit maintenance report signed/sealed by certified/licensed operator immediately following scheduled maintenance.
	Owner	*Maintain contractual agreement with a certified/licensed operator to perform scheduled maintenance as required. *Inform Regulatory Authority of any change in maintenance contract status.
RESIDUALS MANAGEMENT	**Regulatory Authority[2]**	Administer a tracking system for residuals hauling, treatment, and disposal in accordance with 40 CFR Part 503 *Use and Disposal of Sewage Sludge*, 40 CFR Part 257, and applicable state/tribal/local requirements.
	Practitioner	Comply with applicable federal, state, tribal, and local requirements in the pumping, hauling, treatment, and disposal of treatment system residuals.
TRAINING AND CERTIFICATION/ LICENSING	**Licensing Board/ Regulatory Authority**	Develop and administer training, testing, and certification/licensing program for site evaluators, designers/contractors, haulers/pumpers, inspectors, and *operators. Maintain a certified/licensed Practitioner listing.
	Practitioner	Obtain appropriate certification/license to practice.
INSPECTIONS/ MONITORING	**Regulatory Authority**	Conduct final construction inspections to assure compliance with approved plans and permit requirements. Administer/perform inspection programs at point-of-sale, change-in-use of properties and/or "targeted areas" as needed. *Administer program for confirming Owners hold valid maintenance contracts with certified/licensed operators and for monitoring timely submittals of certified maintenance reports. *Send reminders to Owners when scheduled maintenance is due.
	Owner	*Attest to the Regulatory Authority that a valid contract with a certified/licensed operator to perform scheduled and any necessary system maintenance is executed. *Submit a maintenance report signed/sealed by a certified/licensed operator immediately following scheduled maintenance.
CORRECTIVE ACTIONS AND ENFORCEMENT	**Regulatory Authority**	Negotiate compliance schedules for correcting documented non-compliance items. Administer enforcement program including fines and/or penalties for failure to comply with compliance schedule.
	Owner	Comply with terms and conditions of the negotiated compliance schedule.
RECORD KEEPING, INVENTORY, & REPORTING	**Regulatory Authority**	Administer a database inventory (locations, site evaluations, record drawings, permits, and inspection reports) of all systems within the Regulatory Authority's jurisdiction. Maintain a certified/licensed Practitioner listing. *Administer an Owner/operator maintenance contract compliance tracking system. *Record maintenance contract requirement on property deed.
FINANCIAL ASSISTANCE & FUNDING	**Regulatory Authority**	Provide the legal and financial support to sustain the management program. Provide listing of financial assistance programs available to Owners and the qualifying criteria for each program.

[1] Detailed activity components of each element are presented in the Guidance Manual
[2] The party having primary responsibility for the activity
* Added activities to program elements from preceding management program model

TABLE 1.3: MANAGEMENT PROGRAM 3
OPERATING PERMITS

Objective: To issue renewable and revocable operating permits to system owners that stipulate specific and measurable performance requirements for their systems and periodic submittals of compliance monitoring report. The performance requirements are based on risks to public health and water resources posed by wastewater dispersal in the receiving environment. Operating permits allow the use of decentralized systems on sites with a greater range of site characteristics.

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
PUBLIC EDUCATION AND PARTICIPATION	**Regulatory Authority**[2]	Educate Owners on purpose, use, and care of treatment system. *Notify Owners of impending scheduled submittals of compliance monitoring reports. Hold public meetings to inform the public of proposed program and/or rule changes. Provide public review and comment periods of any proposed program and/or rule changes.
	Public	Be informed of existing and any proposed program and/or rule changes Review and comment on proposed program and/or rule changes.
PLANNING	**Regulatory Authority**	Coordinate program rules and regulations with state/tribal/ local planning and zoning and other water related programs. Evaluate potential risks of wastewater discharges on receiving environments during the rule making process. Evaluate impacts of rules on residuals management. Inform local planning authority of rule changes and recommend their evaluation of potential impacts on land use.
PERFORMANCE REQUIREMENTS	**Regulatory Authority**	*Establish performance requirements necessary to protect public health and water resources for each defined receiving environment in the Regulatory Authority's jurisdiction.
	Owner	*Operate system to comply with performance requirements stipulated in the operating permit.
SITE EVALUATION	**Regulatory Authority**	Codify prescriptive requirements for site evaluation procedures. *Establish the defining characteristics of each receiving environment in the Regulatory Authority's jurisdiction
	Owner	Hire a certified/licensed Practitioner to perform site evaluation.
DESIGN	**Regulatory Authority**	*Administer plan review program for engineered designs to meet stipulated performance requirements. *Require routine operation and emergency contingency plans necessary to prevent catastrophic failures to be submitted with the design documents. Codify prescriptive, pre-engineered designs for treatment sites meeting prescriptive site criteria.
	Owner	Hire a certified/licensed Practitioner to prepare system design.
CONSTRUCTION	**Regulatory Authority**	Administer a permitting program for system construction including Regulatory Authority review and acceptance of proposed system siting and design plans. *Require designer's certification that completed system construction is in substantial compliance with approved plans. *Require record drawings be provided of constructed system.
	Owner	Hire a certified/licensed Practitioner to construct system.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity
* Added activities to program elements from preceding management model

TABLE 1.3 (CONTINUED): MANAGEMENT PROGRAM 3
OPERATING PERMITS

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
OPERATION & MAINTENANCE	**Regulatory Authority**	Provide Owner with educational materials regarding system care. *Administer a program of renewable/revocable operating permits issued to system Owners, stipulating system performance and compliance monitoring requirements renewable upon documented compliance with operating permit stipulations. *Track and review compliance monitoring reports for timely submittal by the Owner and to ensure the system is operating within its performance requirements stipulated in the operating permit.
	Owner	*Operate and maintain the system in accordance with the stipulated operating permit requirements. *Submit compliance monitoring reports to the Regulatory Authority according to the schedule stipulated in the operating permit.
RESIDUALS MANAGEMENT	**Regulatory Authority** [2]	Administer a tracking system for residuals hauling, treatment, and disposal in accordance with 40 CFR Part 503 *Use and Disposal of Sewage Sludge*, 40 CFR Part 257, and applicable state/tribal/local requirements.
	Practitioner	Comply with applicable federal, state, tribal, and local requirements in the pumping, hauling, treatment, and disposal of treatment system residuals.
TRAINING AND CERTIFICATION/ LICENSING	**Licensing Board/ Regulatory Authority**	Develop and administer training, testing, and licensing program for site evaluators, contractors, haulers/pumpers, inspectors, and operators. Maintain a certified/licensed Practitioner listing.
	Practitioner	Obtain appropriate license to practice.
INSPECTIONS/ MONITORING	**Regulatory Authority**	Administer/perform inspection programs for high risk systems, or at point-of-sale, and/or change-in-use of properties. *Administer program for monitoring timely submittals of acceptable compliance maintenance reports. *Notify Owners of impending scheduled submittals of compliance monitoring reports. *Perform system inspections randomly and/or at time of operating permit renewal.
	Owner	*Submit compliance monitoring reports to Regulatory Authority as stipulated in operating permit. *Submit compliance inspection report signed/sealed by a certified/licensed inspector prior to applying for renewal of operating permit.
CORRECTIVE ACTIONS AND ENFORCEMENT	**Regulatory Authority**	Negotiate compliance schedules for correcting documented non-compliance items. Administer enforcement program including fines and/or penalties for failure to comply with compliance schedule. *Require system inspections by certified inspector at time of operating permit renewal.
	Owner	Comply with terms and conditions of the negotiated compliance schedule.
RECORD KEEPING, INVENTORY, & REPORTING	**Regulatory Authority**	Administer a database inventory (locations, site evaluations, record drawings, permits, and inspection reports)of all systems within the jurisdiction Maintain a certified/licensed Practitioner listing. *Administer a tracking system for operating permits. *Administer a compliance reporting database.
FINANCIAL ASSISTANCE & FUNDING	**Regulatory Authority**	Provide the legal and financial support to sustain the management program. Provide listing of financial assistance programs available to Owners and the qualifying criteria for each program.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity
* Added activities to program elements from preceding management model

TABLE 1.4: MANAGEMENT PROGRAM 4
RESPONSIBLE MANAGEMENT ENTITY (RME) OPERATION AND MAINTENANCE

Objective: To ensure that decentralized systems consistently meet the stipulated performance requirements by issuing the operating permit to a responsible management entity that accepts the responsibility for performance of systems within its service area.

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
PUBLIC EDUCATION AND PARTICIPATION	**Regulatory Authority[2] (and/or RME)**	Educate Owners on purpose, use, and care of treatment system. Hold public meetings to inform the public of proposed program and/or rule changes. Provide public review and comment periods of any proposed program and/or rule changes.
	Public	Be informed of existing and any proposed program and/or rule changes Review and comment on proposed program and/or rule changes.
PLANNING	**Regulatory Authority**	Coordinate program rules and regulations with state/tribal/ local planning and zoning and other water related programs. Evaluate potential risks of wastewater discharges on receiving environments during the rule making process. Evaluate impacts of rules on residuals management. Inform local planning authority of rule changes and recommend their evaluation of potential impacts on land use.
PERFORMANCE REQUIREMENTS	**Regulatory Authority**	Establish performance requirements necessary to protect public health and water resources for each defined receiving environment in the Regulatory Authority's jurisdiction.
	RME	*Operate systems to comply with performance requirements stipulated in the operating permit.
	Owner	*Maintain system components in proper working order.
SITE EVALUATION	**Regulatory Authority**	Codify prescriptive requirements for site evaluation procedures.
	Owner	Hire a licensed site evaluator to perform site evaluation.
DESIGN	**Regulatory Authority**	Administer plan review program for engineered designs to meet stipulated performance requirements. Require routine operation and emergency contingency plans necessary to prevent catastrophic failures to be submitted with the design documents. Codify prescriptive, pre-engineered designs for treatment sites meeting prescriptive site criteria.
	Owner	Hire a certified/licensed Practitioner to prepare system design.
CONSTRUCTION	**Regulatory Authority**	Administer a permitting program for system construction, which includes Regulatory Authority acceptance of proposed system siting and design plans. Require designer's certification that system construction complies satisfactorily with approved plans.
	Owner	Hire a certified/licensed contractor to construct system.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity
* Added activities to program elements from preceding management model

TABLE 1.4 (CONTINUED): MANAGEMENT PROGRAM 4
RESPONSIBLE MANAGEMENT ENTITY (RME) OPERATION AND MAINTENANCE

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
OPERATION & MAINTENANCE	**Regulatory Authority**	Administer a program of renewable/revocable operating permits issued to the RME, stipulating system performance and compliance monitoring requirements renewable upon documented compliance with operating permit stipulations. Track and review compliance monitoring reports for timely submittal by the RME and to ensure the system is operating within its performance requirements stipulated in the operating permit.
	RME	Operate and maintain the system in accordance with the stipulated operating permit requirements. Submit compliance monitoring reports to the Regulatory Authority according to the schedule stipulated in the operating permit.
RESIDUALS MANAGEMENT	**Regulatory Authority**	Administer a tracking system for residuals hauling, treatment, and disposal in accordance with 40 CFR Part 503 *Use and Disposal of Sewage Sludge*, 40 CFR Part 257, and applicable state/tribal/local requirements.
	RME or Practitioner	Comply with applicable federal, state, tribal, and local requirements in the pumping, hauling, treatment, and disposal of treatment system residuals.
TRAINING AND CERTIFICATION/ LICENSING	**Licensing Board/ Regulatory Authority**	Develop and administer training, testing, and licensing program for site evaluators, contractors, haulers/pumpers, inspectors, and operators.
	RME or Practitioner	Obtain appropriate license to practice.
INSPECTIONS/ MONITORING	**Regulatory Authority**	Administer/perform inspection programs for high risk systems, or at point-of-sale, and/or change-in-use of properties. Administer program for monitoring timely submittals of acceptable compliance maintenance reports. Perform system inspections randomly and/or at time of operating permit renewal.
	RME	Submit compliance monitoring reports to Regulatory Authority as stipulated in operating permit. Submit compliance inspection report signed/sealed by a certified/licensed inspector prior to applying for renewal of operating permit.
CORRECTIVE ACTIONS AND ENFORCEMENT	**Regulatory Authority**	*Negotiate compliance schedules with RME , Owner, or both for correcting documented non-compliance items. Administer enforcement program including fines and/or penalties for failure to comply with compliance schedule. Require system inspections by certified inspector at time of operating permit renewal.
	RME	Comply with terms and conditions of the negotiated compliance schedule.
	Owner	Comply with terms and conditions of the negotiated compliance schedule.
RECORD KEEPING, INVENTORY, & REPORTING	**Regulatory Authority**	Administer a database inventory (locations, site evaluations, record drawings, permits, and inspection reports)of all systems within the jurisdiction Maintain a certified/licensed Practitioner listing. Administer a tracking system for operating permits. Administer a compliance reporting database. *Administer financial, management, and technical audits of RME.
FINANCIAL ASSISTANCE & FUNDING	**Regulatory Authority**	Provide the legal and financial support to sustain the management program. Provide listing of financial assistance programs available to Owners and the qualifying criteria for each program.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity
* Added activities to program elements from preceding management model

TABLE 1.5: MANAGEMENT PROGRAM 5
RESPONSIBLE MANAGEMENT ENTITY (RME) OWNERSHIP

Objective: To provide professional management of the planning, siting, design, construction, operation, and maintenance of decentralized systems by a responsible management entity that owns and manages individual and cluster systems within its service area.

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
PUBLIC EDUCATION AND PARTICIPATION	**Regulatory Authority**[2]	Educate Owners on purpose, use, and care of treatment system. Hold public meetings to inform the public of proposed program and/or rule changes. Provide public review and comment periods of any proposed program and/or rule changes.
	Public	Be informed of existing and any proposed program and/or rule changes Review and comment on proposed program and/or rule changes.
PLANNING	**Regulatory Authority**	Coordinate program rules and regulations with state/tribal/ local planning and zoning and other water related programs. Evaluate potential risks of wastewater discharges on receiving environments during the rule making process. Evaluate impacts of rules on residuals management. Inform local planning authority of rule changes and recommend their evaluation of potential impacts on land use.
PERFORMANCE REQUIREMENTS	**Regulatory Authority**	Establish performance requirements necessary to protect public health and water resources for each defined receiving environment in the Regulatory Authority's jurisdiction.
	RME	Operate system to comply with performance requirements stipulated in the operating permit. Prevent direct and indirect human contact with raw and partially treated wastewater. Install watertight and structurally sound treatment tanks.
SITE EVALUATION	**Regulatory Authority**	Codify prescriptive requirements for site evaluation procedures.
	RME	Retain a certified/licensed contractor to construct system.
DESIGN	**Regulatory Authority**	Administer plan review program for engineered designs to meet stipulated performance requirements. Require routine operation and emergency contingency plans necessary to prevent catastrophic failures to be submitted with the design documents. Codify prescriptive, pre-engineered designs for treatment sites meeting prescriptive site criteria.
	RME	Retain a certified/licensed Practitioner to prepare system design.
CONSTRUCTION	**Regulatory Authority**	Administer a permitting program for system construction, which includes Regulatory Authority acceptance of proposed system siting and design plans. Require designer's certification that system construction complies satisfactorily with approved plans.
	RME	Retain a certified/licensed contractor to construct system

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity
* Added activities to program elements from preceding management model

TABLE 1.5 (CONTINUED): MANAGEMENT PROGRAM 5
RESPONSIBLE MANAGEMENT ENTITY (RME) OWNERSHIP

PROGRAM ELEMENT	RESPONSIBLE PARTY	ACTIVITY [1]
OPERATION & MAINTENANCE	**Regulatory Authority**	Administer a program of renewable/revocable operating permits issued to the RME, stipulating system performance and compliance monitoring requirements renewable upon documented compliance with operating permit stipulations. Track and review compliance monitoring reports for timely submittal by the RME and to ensure the system is operating within its performance requirements stipulated in the operating permit.
	RME	Operate and maintain the system in accordance with the stipulated operating permit requirements. Submit compliance monitoring reports to the Regulatory Authority according to the schedule stipulated in the operating permit.
RESIDUALS MANAGEMENT	**Regulatory Authority[2]**	Administer a tracking system for residuals hauling, treatment, and disposal in accordance with 40 CFR Part 503 *Use and Disposal of Sewage Sludge*, 40 CFR Part 257, and applicable state/tribal/local requirements.
	RME or Practitioner	Comply with applicable federal, state, tribal, and local requirements in the pumping, hauling, treatment, and disposal of treatment system residuals.
TRAINING AND CERTIFICATION/ LICENSING	**Licensing Board/ Regulatory Authority**	Administer a tracking system for residuals hauling, treatment, and disposal in accordance with 40 CFR Part 503 *Use and Disposal of Sewage Sludge*, 40 CFR Part 257, and applicable state/tribal/local requirements.
	RME or Practitioner	Comply with applicable federal, state, tribal, and local requirements in the pumping, hauling, treatment, and disposal of treatment system residuals.
INSPECTIONS/ MONITORING	**Regulatory Authority**	Administer program for monitoring timely submittals of acceptable compliance maintenance reports. Perform system inspections randomly and/or at time of operating permit renewal.
	RME	Submit compliance monitoring reports to Regulatory Authority as stipulated in operating permit. Submit compliance inspection report signed/sealed by a certified/licensed inspector prior to applying for renewal of operating permit.
CORRECTIVE ACTIONS AND ENFORCEMENT	**Regulatory Authority**	Negotiate compliance schedules with RME for correcting documented non-compliance items. Administer enforcement program including fines and/or penalties for failure to comply with compliance schedule. Require system inspections by certified inspector at time of operating permit renewal.
	RME	Comply with terms and conditions of the negotiated compliance schedule.
RECORD KEEPING, INVENTORY, & REPORTING	**Regulatory Authority**	Administer a database inventory (locations, site evaluations, record drawings, permits, and inspection reports)of all systems within the jurisdiction Maintain a certified/licensed Practitioner listing. Administer a tracking system for operating permits. Administer a compliance reporting database. Administer financial, management, and technical audits of RME.
FINANCIAL ASSISTANCE & FUNDING	**Regulatory Authority**	Provide the legal and financial support to sustain the management program. Provide listing of financial assistance programs available to Owners and the qualifying criteria for each program.

[1] Detailed activity components of each element are presented in the Management Handbook
[2] The party having primary responsibility for the activity
***** Added activities to program elements from preceding management model

sufficient regulatory authority may not be provided to achieve success. Whether rule changes or statutory changes are necessary will depend on the model selected and the local ordinances, state statutes, and case law. Legal review of the model needs and regulatory authorities provided by state and local governments will be necessary.

A true performance management program (Management Program Models 3 and above) will require a performance code similar to this model framework which follows. Adoption of a rule or ordinance patterned after this framework may conflict with existing state rules and therefore likely will require statutory revisions. The local authority should be aware of this need and be prepared to request and support such changes.

Other program elements may have multiple options that are being used by various local authorities around the country. When program gaps have been identified, it would be prudent to become informed of the various options used in other localities and how they might be integrated with the program under development within the constraints of the local circumstances.

Adoption of Management Tools

Local resources are typically limited. Administration of a performance management program will require substantially more activity. While the local authorities typically have performed most of the activities associated with their programs, a performance management program shares these activities between the local authority, system owner, service providers, and, where they exist, responsible management entities. However, the administration of the rule, the record keeping associated with it, education of the public, and rule enforcement can stress the local resources. The tendency is to be satisfied with a lessor program because of the concern for the commitment of resources required. Alternatively, management tools can be sought and applied to lower the "costs" of implementation so an appropriate program can be implemented. Automated data management systems are either available today or can be developed to reduce the time and costs of the program. Such tools might include geographic information system (GIS) and data base supported application, permitting, compliance monitoring, inspection, and data storage and retrieval systems. With such tools, time required for administrative activities can be reduced to allow regulators to spend more time with property owners and service providers providing education, compliance assistance, and enforcement.

Training and Education

Both practitioner training and property owner education are essential components of a performance management program. State licensing or certification programs should be considered to provide the necessary training for practitioners. However, the training provided by existing programs may be designed only for a prescriptive program. If so, the "needs to know" topics that are necessary for the performance program should be identified and presented to the state to be incorporated into the state's program. If the state is unable or unwilling to accommodate training based on a performance program, then the local authority will need to consider how best to provide the needed training. Suitable outside programs may be available or "advanced certifications" could be offered to supplement the state's program.

Public education will require a new focus since performance management programs require that system owners take full responsibility for their systems (except in Management Program 4). The owners must be fully aware of their responsibilities and how they can be fulfilled effectively. This will require a continuous education program involving press releases, newsletters, radio and television spots, public meetings, etc. This is an extremely important element to which a commitment must be made if compliance is to be achieved.

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MODEL CODE FRAMEWORK FOR PERFORMANCE MANAGEMENT OF ONSITE/CLUSTER WASTEWATER SYSTEMS

VERSION 1.1

PREPARED FOR

IRON RANGE RESOURCES AND REHABILITATION BOARD
AND
NORTHERN MINNESOTA CONSORTIUM OF COUNTIES

PREPARED BY

AYRES ASSOCIATES

UNIVERSITY OF MINNESOTA-DULUTH
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Saint Louis County
Department of Public Health &Long Term Medical Care
Public Health Division

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MODEL CODE FRAMEWORK
FOR
PERFORMANCE MANAGEMENT OF ONSITE/CLUSTER WASTEWATER SYSTEMS

Chapter 100
Onsite and Cluster Wastewater Treatment Systems

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CHAPTER 100

Onsite and Cluster Wastewater Treatment Systems

This model code framework for performance management of onsite and cluster wastewater treatment systems presents the describes the regulatory program elements and their purposes considered necessary to effectively manage and maintain onsite system performance in a manner that protects public health and sustains environmental quality. The framework is meant to provide a guide to regulatory agencies in development of rigorous onsite system regulatory programs that meet the agencies' specific needs within the resources available to them.

SUBCHAPTER I: PURPOSE, OBJECTIVES, PRINCIPLES, AND SCOPE

This subchapter describes the purpose of the framework, its objectives, the principles on which the framework is based, and the scope of the framework's application.

100.100 Purpose

The purpose of this model code framework is to provide a flexible structure that can be used by regulatory agencies to develop customized, comprehensive programs to protect public health, safety, welfare, and the environment by regulating the management of onsite wastewater treatment systems to ensure performance requirements are sustained throughout their life cycles.

The framework outlines a program that is intended to ensure onsite and cluster system performance continuously complies with specific and measurable requirements that have been established to protect public health and sustain environmental quality.

100.110 Objectives

100.111 To establish performance requirements for onsite wastewater treatment systems to protect human health and sustain environmental quality.

Defensible methods that are based on rational procedures, sound environmental resource data, and public participation must be instituted for establishing performance requirements for onsite/cluster wastewater systems appropriate for the sites on which the systems are to be built and operated.

100.112 To ensure that the performance of all onsite/cluster systems is maintained in compliance with the stipulated performance requirements.

Mechanisms must be provided for regular compliance monitoring reporting to enable the regulatory authority to determine compliance with the performance requirements, identify necessary corrective actions and to ensure system performance is returned to compliance in a timely manner.

100.113 To maintain practitioner knowledge and competence to deliver effective services in accordance with the rules and prevailing standards of care.

Training and certification/licensing must be required of all service providers to develop and maintain their competence. The certification/licensing must provide a mechanism to revoke the right to practice of a provider who performs services in a negligent or unlawful manner.

100.114 To provide guidelines for standard practices which have been proven capable of meeting the established performance requirements to assist owners and practitioners in implementing and operating onsite systems.

Prescriptive requirements for siting, design, and operation of onsite and cluster wastewater treatment systems that are deemed to satisfy the performance requirements under specific applications should be appended to the code. Design guidelines that may be followed for engineered designs which follow generally accepted engineering practices and include generally accepted design criteria for unit processes capable of meeting the performance requirements also should be appended to the code.

100.115 To allow innovative and alternative technologies and practices for onsite wastewater treatment to encourage the best management practices for the application.

Innovative and alternative technologies and practices should be encouraged to continuously upgrade management practices and incorporate technological advances.

100.116 To regularly perform improvement reviews of the management program including its statutory laws, administrative rules, and administration to identify program shortcomings and plan corrective actions.

The laws, administrative code and their administration by the regulatory authority must be reviewed and evaluated regularly to determine whether the program reflects current standards of practice and is fairly and consistently implemented. Strategies and schedules for needed improvements identified during the reviews must be implemented.

100.120 Principles

This model code framework is built upon basic principles that provide the foundation for elements of the performance code that are necessary to achieve the program objectives.

100.121 Performance management program requirements are development neutral.

A performance management program is obligated to permit an onsite wastewater system on any lot of record where the appropriate management controls are in place for the environmental sensitivity, population density, and/or treatment system complexity needed unless otherwise prohibited by land use plans or zoning ordinances. Therefore, the program must support and be coordinated with local land use plans and zoning ordinances rather than used as a de facto zoning tool. Implementation of this rule should only occur in jurisdictions where comprehensive land use plans have been adopted.

100.122 The potential risks to public health and environmental quality from onsite/cluster systems should be maintained within an acceptable limit over the range of permitted applications.

As the risk of non-compliance increases (e.g. increases in environmental sensitivity, treatment system complexity, population density, daily wastewater flows, or wastewater strength), management control should increase proportionately to ensure the risk to public health and the environmental quality remains within the acceptable limit.

100.122(a) Treatment performance requirements must be appropriate to protect public health and sustain environmental quality.

Treatment performance requirements should be based on risks for human exposure and the resources to be protected taking into account the assimilative capacity and vulnerability of the receiving environment.

100.122(b) Performance requirements may vary with environmental sensitivity, population density, and treatment processes and equipment used.

Performance requirements for treatment, operation, maintenance, and management programs need not be uniform for all onsite wastewater systems, but may vary to reflect the sensitivity of the specific receiving environment and the potential for public exposure.

100.122(c) The necessary management controls and the associated regulatory framework must be implemented before onsite wastewater systems are permitted.

Management requirements must increase as the potential risk associated with environmental sensitivity, population density, wastewater characteristics, and/or treatment technology complexity increase. Therefore, the requisite management functions must be in place before system permits are issued for development on sites with greater associated risks.

100.123 Onsite wastewater system compliance should be based on system performance relative to the established performance requirements.

Compliance with this code should be determined by the measured ability of treatment systems to meet the established performance requirements. For prescriptive system designs that are deemed to satisfy the established water quality requirements, performance monitoring may be limited to confirming that the systems receive the necessary routine maintenance in a timely manner.

100.123(a) Performance requirements must be specific and measurable.

Performance requirements must specify measurable outcomes that are desired of the treatment system (e.g. maintenance requirements and schedules, effluent quality, point of discharge, safety). The standards may be numerical or narrative with clearly defined requirements or outcomes.

100.123(b) Performance requirements must be achievable.

Prohibitions to development on lots of record must not be created by unattainable or unreasonable performance requirements unless based on known public health or environmental quality risks.

100.123(c) Treatment systems must regularly demonstrate compliance with the performance requirements established by permit.

The local unit of government must be able to require owners of permitted systems to monitor and document compliance with the stipulated performance requirements at any time during the term of the operating permit.

100.124 Administration of the program must be consistent and equitable.

The regulated public must perceive the code to be appropriate for the stated purpose and consistently enforced in an equitable manner.

100.124(a) Code provisions and requirements must be purposeful, clearly stated, enforceable, and enforced.

Code provisions and requirements must have clear purposes that are objective, credible, and based on good science and sound reasoning. They must be enforceable and consistently enforced or removed from the code.

100.124(b) Administration of the program should be compliance seeking rather than enforcement driven.

The goal of the program is to achieve performance compliance of all onsite wastewater systems. When violations occur, voluntary compliance must be sought. If violations continue, fines and/or penalties must be levied.

100.124(c) Authorities and responsibilities of the local unit of government, owner, and service providers must be clearly defined and maintained.

Owners, service providers, and regulators have specific legal authorities and responsibilities that must be honored. Under appropriate conditions, the authorities and responsibilities may be legally delegated to others.

100.130 Scope

The scope of system applications to which the code applies must be clearly described. (The scope of the code could be limited to such things as new construction, modifications or repairs to existing systems, treatment capacity, commercial systems, areas with acceptable comprehensive land use plans, etc.)

SUBCHAPTER II: PROGRAM ADMINISTRATION AND COMPLIANCE MANAGEMENT

The purpose of this subchapter is to clearly establish requirements and procedures for program administration, facility permitting, and permit enforcement.

100.200 Purpose, Authority, and Related Provisions

The purpose of this section is to clearly state the purpose of this rule and the statutory authority of the agency or department to promulgate and administer this rule, to adopt relevant existing rules by reference, to clarify the validity of this rule, and to limit the extent of the agency's or department's liability in administering this rule.

100.201 Purpose

To protect public health, safety, welfare, and the environment by requiring that onsite and cluster system performance be maintained in compliance with reasonable specific and measurable standards stipulated by the Regulatory Authority.

100.202 Authority

Promulgation, administration, and enforcement of this rule is pursuant to the authority granted in Minnesota Statutes, (Chapters 103F, 103G, 115, and 116) and Minnesota Rules, Chapter 7080.0305 (Subpart 6).

100.203 Standards and rules adopted by reference

100.203(a) The following rules are hereby adopted in their entirety by reference and made part of this rule as if fully set forth herein.

(1) Federal regulations

Applicable federal regulations such as U.S. EPA Underground Injection Control Program Class V rules, Clean Water Act rules, and Drinking Water Act rules would be referenced here as appropriate.

i. Underground Injection Control Program: All subsurface wastewater treatment systems discharging to the groundwater that treat sanitary wastes from residences or non-residential buildings serving more than 20 persons per day are defined as Class V Underground Injection Wells and are regulated under Title 40 Code of Federal Regulations, Parts 9, 144, 145, and 146.

ii. Clean Water Act: Discharges of a pollutant from a point source to waters of the United States is prohibited by the Clean Water Act (CWA) Section 301(a)), unless that discharge is authorized by a National Pollutant Discharge Elimination System (NPDES) permit under Section 402 (or section 404 wetlands) of the CWA. The release of wastewater (either untreated, partially treated, or fully treated) from a pipe or seep that reaches or can reach surface waters (even if dry most of the year) is illegal unless authorized by an NPDES permit. The NPDES permit establishes necessary technology-based and water quality-based terms, limitations and conditions on the discharge to protect public health and the environment.

iii. Drinking Water Act: The 1996 Amendments to the Safe Drinking Water Act require states and tribes to implement Source Water Assessment and Protection (SWAP) programs which assess areas serving as sources of drinking water, identify potential threats, and implement protection efforts.

(2) State regulations

Applicable sections of state regulations such as onsite wastewater treatment rules, septage management rules, and recreational vehicle waste tank disposal rules would be referenced here as appropriate.

i. All wastewater treatment systems that discharge to surface waters or above the ground surface must obtain and comply with either a State Disposal System (SDS) or National Pollutant Discharge Elimination System (NPDES) permit issued by the Minnesota Pollution Control Agency (MPCA).

ii. All wastewater treatment systems that discharge to the soil and/or groundwater must meet the separation requirements promulgated by the Minnesota Department of Health (Chapters 4720 "Public Water Supplies" and 4725 "Wells and Borings", of *Minnesota Rules*).

(3) Local ordinances

Applicable local ordinances would be referenced here as appropriate.

100.203(b) The above referenced rules are hereby amended below.

As permitted by the issuing agency, the rules referenced above can be amended or modified here to eliminate potential conflicts with this rule or to make them more appropriate to local conditions or constraints.

100.204 Validity

The validity of any part of this rule shall not be affected by the invalidity of any other parts of this rule where the part can be given effect irrespective of any invalid part or parts.

100.205 Liability

Any liability or responsibility shall not be imposed upon the department or agency or any of its officials, employees, or other contract agent, its employees, agents or servants thereof for damage resulting from the defective construction, operation, or abandonment of any onsite or cluster treatment system regulated under this rule by reason of standards, requirements, or inspections authorized hereunder.

Liability of the Regulatory Authority must be limited to effectively administer this rule. However, the courts might not extend the limits of liability to actions of employees or agents who assume authority for or direct actions of Owners or service providers, which are not expressly stated as responsibilities assigned to the Regulatory Authority in this rule.

100.210 Delegation of Authority

The purpose of this section is to allow the delegation of the authority to administer this rule in part or in whole to a local authority. The conditions under which the authority is given and the extent to which the authority is delegated must be clearly stated.

100.220 Advisory Committee

The purpose of an advisory committee is to advise Regulatory Authority by providing technical assistance, periodically evaluating the regulatory program effectiveness in achieving its purpose and goals, and recommending needed program improvements.

100.221 Functions

The advisory group shall consult with the department with respect to implementation and administration of this rule and to make recommendations regarding program improvements. The advisory group may provide technical assistance regarding establishment of performance requirements and evaluation of treatment technology design and performance, conduct periodic program audits to report on the effectiveness of the rules and their administration with respect to their intent and application, and provide other support where needed in the development and performance of the regulatory program. The focus of the advisory group is to be only on the regulatory program. It is not to advise on specific regulatory actions except as they relate to overall program procedures.

100.222 Membership

Membership shall consist of representatives from stakeholder groups and citizens as appropriate. The number of committee members shall be at least 5 but no more than 15. Department staff shall not be committee members but shall provide administrative support to the committee and may attend meetings of the group at the discretion of the committee.

100.223 Appointments and terms

Members shall be appointed for 3 year staggered terms. Their terms may be renewed. The members shall serve without compensation. Expenses to attend committee meetings shall be reimbursed by the department according to department reimbursement procedures.

100.224 Administration

The committee shall be chaired by a committee member appointed by the committee members for a term not to exceed 3 years. The chair shall be responsible for establishing meeting agenda, meeting dates, and meeting locations. Agenda items shall be determined by the committee and may include any aspect of the program. Department staff shall provide administrative support as needed and requested by the committee chair. Department staff may suggest meeting agenda items.

100.225 Meeting frequency

The committee shall meet as often as deemed necessary by the committee chair. At a minimum, the committee shall meet twice annually.

100.230 Definitions

The purpose of this section is to define key words in a clear and simple manner to enable the reader to understand their meaning within the context of this rule. (Definitions should be italicized or otherwise distinguished wherever they appear to alert the reader that the highlighted word has a specific meaning within this document.)

100.231 "Abandonment Certificate" means a certificate issued by the Regulatory Authority to confirm that an onsite or cluster wastewater system has been abandoned in a manner acceptable to the Regulatory Authority and in accordance with the prevailing rules.

100.232 "Abandonment Plan" means a written plan describing the methods and procedures that will be used to abandon a wastewater treatment system which must be reviewed for compliance with accepted practices and an Abandonment Permit issued by the Regulatory Authority before implementation.

100.233 "Advisory Committee" means a committee of program stakeholders appointed by the director of the Regulatory Authority to consult with the authority, evaluate program effectiveness, and provide technical assistance.

100.234 "Best management practice" means the best available demonstrated management technology, process, method, or other means to achieve the performance requirements in the most reliable and consistent manner.

100.235 "Board of Adjustment" means a board established by county ordinance with the authority to order the issuance of variances, hear and decide appeals from and review any order, requirement, decision, or determination made by any administrative official charged with enforcing any ordinance adopted pursuant to the provision of sections 394.21 to 394.37 of the Minnesota Statutes, order the issuance of permits for buildings in areas designated for future public use on an official map and perform such other duties as required by the official controls.

100.236 "Certificate of Construction" means a certificate signed and/or sealed by a licensed/certified designer or the Regulatory Authority that the construction of a wastewater treatment system was completed in substantial conformance with the approved system plans and specifications and the terms and conditions of the Construction Permit.

100.237 "Certificate of compliance" means a certificate issued by a licensed/certified Inspector certifying that an onsite/cluster system has been inspected and deemed to be in compliance with applicable requirements of this rule.

100.238 "Class V injection well" means a shallow well used to place a variety of fluids directly below the land surface including a domestic onsite wastewater system serving more than 20 people. USEPA and delegated state groundwater programs permit these wells to inject wastes below the ground surface provided they meet certain requirements and do not endanger underground sources of drinking water. Class V motor vehicle waste disposal wells and large-capacity cesspools are specifically prohibited (see 40 CFR Parts 144 & 146).

100.239 "Cluster system" means a wastewater collection and treatment system under some form of common ownership that collects wastewater from two or more dwellings or buildings and conveys it to a treatment and dispersal system located on a suitable site near the dwellings or buildings.

100.2310 "Commercial wastewater" means an onsite treatment system treating wastewater that has characteristics other than typical domestic wastewater or treating wastewater with an average daily flow greater than 2,000 gallons per day.

100.2311 "Compliance Monitoring Report" means a report submitted to the Regulatory Authority by the wastewater system Owner providing documentation of completed system performance monitoring as stipulated in the Operating Permit for the wastewater system.

100.2312 "Construction Permit" means a permit issued by the Regulatory Authority allowing construction of a wastewater treatment system in accordance with the approved plans and specifications submitted by the property Owner.

100.2313 "Compliance plan" means a plan negotiated with the Regulatory Authority by a system Owner to correct, repair, replace, or otherwise remediate an onsite/cluster treatment system that is not in compliance with the applicable requirements of this rule.

100.2314 "Compliance schedule" means a specific schedule with milestones agreed upon between the Regulatory Authority and onsite/cluster system Owner to complete the Compliance Plan.

100.2315 "Deemed to Satisfy" means a wastewater treatment system is accepted as meeting the stipulated performance requirements without the need for performance monitoring.

100.2316 "Design flow" means the volume of wastewater for which an onsite/cluster system is designed to treat.

100.2317 "Domestic wastewater" means wastewater with characteristics of that generated from a typical domestic residence.

100.2318 "Draft Operating Permit" means a written document issued by the Regulatory Authority in response to a Notice of Intent to Construct or Repair a Private Wastewater Treatment System submitted by the property Owner that states the preliminary determination by the Regulatory Authority of the performance requirements and other terms and conditions that would be stipulated for the proposed wastewater treatment system on the Owner's property.

100.2319 "Engineered System" means a system design that is developed for a specific property using generally accepted design criteria appropriate for the site conditions encountered.

100.2320 "Episaturation" means a condition in soils where water saturated soil layers overlie unsaturated layers within 200 cm (80 inches) of the ground surface.

100.2321 "Generally Accepted Engineering Design Criteria" means design criteria for wastewater treatment systems that are well-documented in published literature and manuals which, if followed, result in systems that are capable of achieving specific performance under specific site conditions.

100.2322 "Groundwater" means subsurface water occurring in soils and geologic formations that are fully saturated either year-round or seasonally, including, but limited to perched saturated zones.

100.2323 "High strength waste" means a wastewater that has constituent concentrations substantially greater than domestic wastewater.

100.2324 "Imminent threat to health and safety" means conditions that pose an unacceptable risk to public health and safety requiring its immediate elimination.

100.2325 "Industrial wastewater" means any water-carried or liquid waste resulting from any process or industry, manufacture, trade, business, or activity listed in §100.242(d)(2).

100.2326 "Innovative" means a developed treatment process, technique, and/or component that has not been fully proven under the circumstances of its contemplated use.

100.2327 "Interim Permit" means a permit issued in lieu of an Operating Permit by the Regulatory Authority to implement an approved plan to remediate the performance of an existing wastewater treatment system that is not in compliance with its Operating Permit.

100.2328 "Land Use Authority" means the agency, department, or other entity with the legal authority to administer zoning ordinances, land use policies, and building permits.

100.2329 "Notice of Intent to Construct or Repair a Private Wastewater Treatment System" means a notice submitted by the intended wastewater treatment system Owner to the Regulatory Authority describing the property and environment, characteristics of the wastewater to be treated, and the proposed point of discharge.

100.2330 "Notice of violation" means a written document issued by the Regulatory Authority notifying a system Owner that the Owner's onsite/cluster treatment system has been observed to be in violation of the applicable requirements of this rule.

100.2331 "Onsite Wastewater Treatment System" means a wastewater treatment facility that relies on natural processes and/or mechanical components to collect, treat, and disperse or reclaim wastewater from a single dwelling or building.

100.2332 "Owner" means the owner of record of an onsite/cluster wastewater treatment system.

100.2333 "Performance Requirements" means water quality, maintenance, or other requirements stipulated by the Regulatory Authority in an Operating Permit with which the operation of the wastewater treatment system must comply.

100.2334 "Practitioner" a licensed/certified business or individual who is qualified to provide onsite/cluster wastewater services including site evaluation, design, construction, operation, pumping, inspection, or other services relating to the installation, operation, maintenance, or abandonment of an onsite/cluster treatment system.

100.2335 "Pre-engineered" means a prescriptive onsite/cluster wastewater system design that is provided by the Regulatory Authority which is deemed to meet the stipulated performance requirements on properties with specific site conditions.

100.2336 "Public waters" means any waters or wetlands as defined in Minnesota Statutes §103G.005, subdivision 15, or identified as public water or wetlands by the inventory prepared pursuant to Minnesota Statutes, §103G.201.

100.2337 "Receiving environment" means the physical environment into which treated or partially treated wastewater is dispersed.

100.2338 "Record drawings" means a set of drawings that document the final in-place location, size, and type of all onsite/cluster system components including the results of materials testing and a description of conditions during construction of the system.

100.2339 "Redoximorphic features" means a color pattern formed in the soil matrix by the processes of reduction, translocation, and oxidation of iron and manganese compounds in intermittently saturated soils.

100.2340 "Regulatory Authority" means the agency, department, or other entity with the legal authority to administer this rule.

100.2341 "Residuals" means the solids generated and/or retained during the treatment of wastewater. The solids include trash, rags, grit, sediment, sludge, septage, scum, grease, as well as those portions of treatment systems that have served their useful life and require disposal such as the sand or peat from a filter. Because of their different characteristics, management requirements can differ as stipulated by the appropriate Federal Regulations.

100.2342 "Septage" means the liquid and solid materials pumped from a septic tank during cleaning operations.

100.2343 "Type I System" means a "pre-engineered" or prescriptive design for a one or two family dwelling that is "deemed to satisfy" the performance requirements stipulated by the Regulatory Authority on properties meeting specific site criteria.

100.2344 "Type II System" means an "engineered" design following generally accepted or prescriptive design criteria which is "deemed to satisfy" the performance requirements stipulated by the Regulatory Authority for the designated receiving environment.

100.2345 "Type III System" means a system that uses an "innovative" process or component, or is an "engineered" design that uses design criteria outside Generally Accepted Design Criteria which is claimed to be able to meet the performance requirements stipulated by the Regulatory Authority for the designated receiving environment. The validity of such processes, components, or designs must supported by scientific principles or operating performance documentation.

100.240 Rule Application

The purpose of this section is to define the limits to the application of this rule with respect to onsite/cluster wastewater treatment systems.

100.241 Effective date of rule. The provisions set forth in this rule shall become effective on [*insert the effective date of this rule*]

100.242 Applicability. This rule applies to:

100.242(a) All owners or intended owners (individuals, partnerships, corporations, etc.) of onsite/cluster wastewater treatment systems.

100.242(b) Any person who participates in any activity associated with the siting, design, construction, installation, alteration, repair, extension, operation, maintenance, permitting, inspection, or investigation of onsite or cluster wastewater treatment systems.

100.242(c) Any governmental entity that is, or desires to be, designated as an authorized agent.

100.242(d) Types of facilities

(1) New lots of record

Treatment systems for lots recorded after [*insert the effective date of this rule*] where public sewerage is not provided or deemed available must comply with the provisions of this rule at the time of permit application and with applicable municipal or county zoning ordinances, codes and regulations.

What is meant by "deemed available" must be defined in the rule prior to rule promulgation.

(2) Characteristics of wastewater treated

The provisions of this rule apply only to the treatment and dispersal of sanitary waste, and to the transport and disposal of associated septage and grease. They do not apply to wastewater containing waste from any other activity including, but not limited to, activities under the Standard Industrial Classification (SIC) Codes established by the U.S. Office of Management and Budget listed below. Systems designed to treat only sanitary wastewater from such facilities may be approved.

SIC CODE(S)	INDUSTRY CATEGORY
753-7549	Automotive Repairs and Services
7231,7241	Beauty Shops, Barber Shops
7211-7219	Laundry Cleaning and Garment Services
4911,4925,4931, 4939	Electric, Gas Services (Power Generation Gas Production only)

SIC CODE(S)	INDUSTRY CATEGORY
4011-4581	Transportation (Maintenance only)
8062-8069	Hospitals
2000-3999	Manufacturing
2000-2099	Food Products
2100-2199	Tobacco Products
2200-2299	Textile Mill Products
2300-2399	Apparel and Other Finished Products made from Fabrics and Similar Materials
2400-2499	Lumber and Wood Products, except Furniture
2500-2599	Furniture and Fixtures
2600-2699	Paper and Allied Products
2700-2799	Printing, Publishing, and Allied Industries
2800-2899	Chemicals and Allied Products
2900-2999	Petroleum Refining and Related Industries
3000-3099	Rubber and Miscellaneous Plastics
3100-3199	Leather Tanning and Finishing
3200-3299	Stone, Clay, Glass, and Concrete Products
3300-3399	Primary Metal Industries
3400-3499	Fabricated Metal Products (except Machinery, and Transportation Equipment
3500-3599	Industrial and Commercial Machinery and Computer Equipment
3600-3699	Electronic and other Electrical Equipment and Components, except Computer Equipment
3700-3799	Transportation Equipment
3800-3899	Measuring, Analyzing, and Controlling Instruments; Photographic, Medical and Optical Goods; Watches and Clocks
3900-3999	Miscellaneous Manufacturing Industries

100.242(e) Determination of applicability

A person who engages or intends to engage in an operation or activity that may result in a discharge regulated under this rule may submit a Notice of Intent to Construct or Repair a Private Wastewater Treatment System to the Regulatory Authority to determine the applicability of this rule to the operation or activity.

100.243 Retroactivity

100.243(a) All systems

Except as explicitly set forth in this section (§100.243(b), all provisions of Chapter 100 shall apply to any onsite or cluster wastewater system regardless of the date on which it was permitted.

100.243(b) Existing permits

Existing permits for constructed systems or non-expired permits for new systems or system upgrades yet to be completed, which were issued prior to [*insert the effective date of this rule*] and are in compliance with the rules at the time the permits were issued remain valid under the terms of the original permit until their original expiration date.

100.243(c) Non-permitted systems

Existing non-permitted systems shall be brought into compliance and permitted in accordance with the provisions of this rule.

100.243(d) Non-compliant systems

If any system is not in compliance with its existing permit regardless of the date of issuance, the system shall be upgraded in accordance with the provisions of this rule or as allowed by the Regulatory Authority.

100.243(e) Facility expansions

Expansions of facilities permitted prior to [*insert the effective date of this rule*] must be expanded in accordance with the provisions of this rule at the time the expansion is commenced.

100.244 Prohibitions

100.244(a) It is unlawful for any person to maintain, occupy, or use any building intended for habitation that is not provided with a wastewater treatment system, that disposes of wastewater in a manner that does not comply with the provisions of this rule, or that creates a nuisance.

100.244(b) It is unlawful for any person to construct, maintain, or use any wastewater treatment system regulated under this rule that results in raw or partially treated wastewater seeping to the ground surface or flowing into any surface water.

100.244(c) It is unlawful for any person to discharge raw or treated wastewater into any well or boring as defined in Minnesota Rules, Chapter 4725, or any other excavation in the ground that is not in compliance with this rule.

100.244(d) It is unlawful for any person to discharge into any treatment system regulated under this rule any hazardous or deleterious material that adversely affects the treatment or dispersal performance of the system.

100.245 Abandonment

All systems no longer in use, including any system taken out of service prior to [*insert the effective date of this rule*] shall be properly abandoned in accordance with the provisions in this rule.

100.250 Facility Permitting and Agreements

The purpose of this section is to establish a permitting and agreement system that results in coordination between the Regulatory Authority and the Land Use Authority and ensures Owner and system compliance with this rule throughout all phases of a system's life including planning, siting, design, construction, operation, rehabilitation, and abandonment.

100.251 General

Wastewater treatment system installation, construction, operation, maintenance, or repair shall not commence or continue unless the Owner possesses an appropriate and valid construction, or operating permit.

100.252 Draft Operating Permit

The Draft Operating Permit is not an enforceable permit. It is only a draft of the preliminary performance stipulations that the Regulatory Authority anticipates incorporating into the Operating Permit that will be issued after the applicant's system is constructed. This provides the applicant with the performance and monitoring requirements needed to design a treatment system acceptable to the Regulatory Authority. The applicant may ask for reconsideration of the draft stipulations if the applicant has reason to believe they are inappropriate.

100.252(a) Purpose

The purpose of the Draft Operating Permit is 1) to confirm the intended use of the property conforms to the local land use plan, and 2) to provide the prospective wastewater treatment system Owner with performance, monitoring and reporting requirements appropriate for the site characteristics and proposed development which are necessary for system design.

100.252(b) Applicability

(1) All applicants filing a Notice of Intent to Construct or Repair a Private Wastewater Treatment System shall receive a written draft Operating Permit except when waived

by the applicant under the conditions in §100.252(b)(2). The draft Operating Permit shall include:

i. Certification by the Land Use Authority that the intended property use complies with the current land use plan.

ii. Preliminary performance requirements appropriate for the location, receiving environment, and nature of the proposed development.

iii. Preliminary monitoring and reporting requirements.

(2) Draft Operating Permits for systems that are Type I or Type II designs intended to serve single family homes may be waived by the applicant in lieu of a meeting with the Regulatory Authority to discuss preliminary performance requirements at the time of application.

100.252(c) Application requirements

Notice of Intent to Construct or Repair a Private Wastewater Treatment System form provided by the Regulatory Authority shall be submitted to the Regulatory Authority. The application shall include:

(1) Applicant name, current mailing address, and telephone number

(2) Legal description of the property, parcel number, and address

(3) Description of the proposed use and development of the property

(4) Expected period of use of the facility (necessary only if the use of the facility is expected to change within 10 years of the date of application)

(5) Plot plan of the property, adjacent properties, and proposed buildings, wells, driveways, etc.

(6) Certificate of Land Use Conformance to local land use plan issued by the Land Use Authority

This requirement can be eliminated if the Regulatory Authority were to notify the Land Use Authority of the application immediately upon receipt from the applicant. The Land Use Authority would provide the Regulatory Authority its acceptance or denial of the intended use of the property. If denied, the Regulatory Authority would return the application stating the reason for denial and referring the applicant to the Land Use Authority for assistance.

(7) Completed site evaluation of the property to determine the suitability of the property for wastewater treatment and dispersal performed by a certified site evaluator

(8) Payment of an application review fee established by the Regulatory Authority

100.252(d) Regulatory Authority response

(1) The Regulatory Authority shall determine the performance requirements appropriate for the location, site characteristics, and nature of the proposed development in accordance with Subchapter III of this rule.

(2) Within 10 working days of the date of receipt of the Notice of Intent to Construct or Repair a Private Wastewater Treatment System, other required information, and fee payment the Regulatory Authority shall, except as waived by the applicant in §100.252(b)(2):

i. Provide a Draft Operating permit to the applicant that stipulates the preliminary performance, monitoring, and reporting requirements for the proposed discharge in accordance with §100.254(d).

ii. Deny the application and explain in writing why the application is denied and the procedures for appeal.

100.252(e) Disputes

The applicant may contest any or all of the stipulations in the Draft Operating Permit by providing documented of reasons why the Regulatory Authority should reconsider the stipulations in accordance with Subchapter III of this rule.

100.252(f) Transfers

The terms and conditions stipulated in the Draft Operating Permit are not transferable from the Owner (applicant) to another party.

100.252(g) Revisions

The Regulatory Authority may revise the Draft Operating Permit at any time prior to issuing the final Operating Permit. Revisions may be necessary as the result of new information regarding the intended receiving environment, rule changes, or because of false statements or misrepresentation of facts by the applicant.

100.253 Construction Permit

100.253(a) Purpose

The purpose of the Construction Permit is to ensure that the proposed wastewater treatment system is designed by a certified designer and in accordance with the requirements stipulated by the Regulatory Authority and is installed or constructed by a certified contractor in accordance with the approved plans.

100.253(b) Application

Design documents shall be submitted to the Regulatory Authority for the following:

(1) Installation or construction of a new onsite/cluster wastewater treatment system.

(2) Replacement or modification to an existing onsite/cluster wastewater treatment system or component.

100.253(c) Submittal requirements

Application form provided by the Regulatory Authority including:

(1) Applicant name, mailing address, and telephone number.

(2) Draft Operating Permit reference number and date of issue (must be within 12 months of date of this submittal) unless waived by the Owner in accordance with §100.252(b)(2).

(3) Description of expected wastewater influent characteristics including:

i. Estimated flow volume per day determined in accordance with accepted estimating guidelines or metered flow in gallons per day as described in §100.423(a).

ii. Estimated pollutant concentrations from residential and non-residential establishments as described in §100.423(b).

(4) Topographic map, or other appropriate map approved by the Regulatory Authority, of the location of the property boundaries and contiguous land area showing the known use of adjacent properties, and all known water well locations within at least 100 ft of the property boundaries.

(5) Scaled site plan showing property lines, structures, wells, topography, benchmarks, and soil boring locations and elevations.

(6) Treatment system design documents signed and/or sealed by a licensed designer showing plot plan of the system, site drainage features, description of the treatment processes or technologies proposed to meet the performance requirements stipulated in the Draft Operating Permit, design criteria and computations, and material and equipment specifications.

(7) Design justification and/or documented experience with innovative technology and/or components for a Type III design.

(8) Proposed point of compliance of the system and an estimation of the discharge impact area of the system (*e.g.* direction and extent of plume).

(9) Construction plan including site access, traffic areas, materials and equipment storage areas, and areas not to be disturbed.

(10) Management plan prepared in accordance with §100.425(b) describing how the system will be managed to maintain performance.

(11) Contingency plan prepared in accordance with §100.425(b) describing how the system will be operated during periods when the system does not comply with its Operating Permit.

(12) Payment of application review fee as determined by the Regulatory Authority.

100.253(d) Regulatory Authority response

(1) The Regulatory Authority shall review the design documents and supporting documentation, construction plan, management plan, and contingency plan to evaluate whether the system can reasonably be expected to perform as required in the Draft Operating Permit.

(2) Within 40 working days from the date of the permit application other required materials, and fee payment in accordance with sub. (c), the Regulatory Authority shall:

i. Issue a Construction Permit

ii. Deny the Construction Permit application explaining in writing to the applicant the reasons for denial and the procedures for appeal.

100.253(e) Appeals

The applicant may appeal the Regulatory Authority's decision to deny issuance of the Construction Permit in accordance with rules of the Board of Adjustment (MR 394.36).

100.253(f) Expiration

(1) The Construction Permit is valid for a period of no more than 2 years from the date of issuance unless extended or renewed in accordance with §100.253(g) or until satisfactory completion of construction or installation, whichever is shorter.

(2) The Construction Permit shall be voided after satisfactory completion of construction or installation of the system or modification. Final record drawings shall be submitted to the Regulatory Authority with a signed and/or sealed statement that construction or installation was completed in satisfactory conformance to the approved design documents.

This provision is included to track the status of the construction permit. A mechanism is needed to close the construction permit file. If construction does not proceed within two years, the permit is voided automatically as provided in (1) above. However, if construction is completed within the two year period, a formal closure is needed to ensure the proper construction documents are submitted and recorded. This is provided in (2) above.

100.253(g) Extensions and renewals

(1) Extension

The term of the Construction Permit may be extended once over the life of the permit for a period of no more than 6 months by the Regulatory Authority if construction is commenced prior to the original expiration date of the permit.

(2) Renewal

i. The Construction Permit must be renewed if the existing permit has expired or modifications are made to the approved design or management plan.

ii. The application for renewal of a Construction Permit shall be made in a format prescribed by the Regulatory Authority contingent upon the ability of the proposed treatment system to conform to the requirement of this rule at the time the permit is renewed. The Regulatory Authority may require resubmission of the application for review.

100.253(h) Transfers

A Construction Permit may not be transferred from the permitted party to a second party. The second party must apply for a new Construction Permit, which will expire two years from the date of issuance of the new permit.

100.253(i) Revocation

(1) The Regulatory Authority may revoke a Construction Permit issued under this section for any false statements or misrepresentations of facts on which the Construction Permit was issued.

(2) Notice of revocation and the reasons for revocation shall be conveyed in writing to the Owner.

(3) If revoked, installation or modification of a treatment system may not commence or continue until a valid Construction Permit is obtained.

100.253(j) Posting

The Construction Permit shall be posted on the property in such a location and manner so that the permit is visible and available for inspection until construction is completed and certified by the designer or Regulatory Authority.

100.254 Operating Permit

100.254(a) Purpose

The purpose of the Operating Permit is to ensure that the performance of the treatment system is sustained throughout the service life of the system by stipulating clear, specific, and measurable performance, monitoring, and reporting requirements and by allowing periodic performance reviews by the Regulatory Authority.

100.254(b) Application

(1) An Owner shall not place into service a new or renovated treatment system until the Regulatory Authority receives final record drawings and a signed and/or sealed certificate from the designer in accordance with 100.253(f)(2) that the system was constructed in satisfactory conformance with the approved drawings.

(2) Prior to placing a new or renovated treatment system into service, the Owner shall be in possession of a valid Operating Permit issued after construction is complete and certified in accordance with 100.253(f)(2) and before wastewater may be discharged to the system.

100.254(c) New Operating Permit

(1) Application for an Operating Permit for a new treatment system shall be made on a form provided by the Regulatory Authority including:

i. Applicant name, mailing address and phone number.

ii. Construction Permit reference number and date of issue.

iii. Final record drawings of the treatment system.

iv. Operation and maintenance manual in accordance with §100.424(b).

v. Payment of application review fee as determined by the Regulatory Authority.

(2) Regulatory Authority Response

i. The Regulatory Authority shall review the final record drawings, operation and maintenance manual, and contingency plan to assess the capability of the treatment system to meet the performance requirements. The Regulatory Authority also shall review the terms and conditions in the Draft Operating Permit and revise them, if appropriate. The Operating Permit stipulations shall include numerical performance requirements based on the receiving environment (§100.300), narrative or numerical compliance monitoring requirements, compliance monitoring reporting requirements, and an expiration date by which time the permit must be renewed if operation of the system is to be continued.

The numerical performance requirements are to be based on the receiving environment as described in §100.300. However, the Regulatory Authority may choose not to require monitoring of treatment performance directly in lieu of other requirements. For example, if the treatment system is a Type I, the stipulated requirements may require the Owner only to perform routine maintenance tasks within specified periods of time because the performance of Type I systems is well proven when they are properly maintained on sites meeting the specified criteria. Type II systems may be treated similarly in some cases but periodic water quality sampling may be required to ensure the treatment process is performing as intended. Stipulated requirements for Type III systems likely would be numerical water quality requirements measured prior to dispersal.

The compliance monitoring and reporting requirements should be based on the known or unknown consistency of the system's performance. The more consistent the expected performance, the less frequent the monitoring and reporting needs to be.

The term of the permit should be based on the known or unknown reliability of the system's performance and the potential risks to public health and the environment if the system failed to perform to its requirements. If the system is a Type III, using a complex treatment process with limited performance data, the permit period might be 1 year or less. As its performance is demonstrated over time, the term of the permit can be changed at the time the Operating Permit is renewed.

ii. Issuance of final Operating Permit with an established expiration date by which time the permit must be renewed in accordance with 100.254(d).

100.254(d) Renewal

(1) To prevent expiration of the current permit, the Owner shall be notified by the Regulatory Authority at least 90 calendar days prior to expiration of the Operating Permit. The Owner must apply for renewal at least 30 working days before the expiration date.

(2) Application shall be made on a form provided by the Regulatory Authority including:

i. Applicant name, mailing address and phone number.

ii. Reference number of current Operating Permit.

iii. Any and all outstanding Compliance Monitoring Reports as required by the Operating Permit.

iv. Certified treatment system inspection signed and/or sealed by a certified designer, maintenance contractor, or operator at the discretion of the Regulatory Authority.

v. Any revisions made to the operation and maintenance manual.

vi. Payment of application review fee as determined by the Regulatory Authority.

(3) Regulatory Authority response

i. The Regulatory Authority shall review the compliance monitoring reports, certified inspection reports, record drawings, operation and maintenance manual, and contingency plan to assess the compliance of the Owner with the monitoring and reporting requirements and the capability of the treatment system to meet the Operating Permit terms and conditions.

ii. The Regulatory Authority shall review the terms and conditions stipulated in the current Operating Permit and may revise the terms and conditions to comply with changed conditions or changed requirements of this rule.

iii. Issuance of a renewed Operating Permit with an established expiration date by which time the permit must be renewed in accordance with this section.

(4) The Regulatory Authority may not amend an existing permit to reflect changes in this rule until which time the permit term has expired and is renewed unless an amendment is necessary to eliminate an imminent threat to public health or safety.

(5) If the Regulatory Authority determines that the system is not operating in compliance with the Operating Permit or the Owner is not complying with the monitoring and/or reporting requirements of the permit the Regulatory Authority shall negotiate compliance plan and schedule with the Owner to achieve compliance. After a compliance plan is negotiated, an Interim Operation Agreement shall be negotiated in accordance with §100.255.

100.254(e) Compliance Monitoring

Performance monitoring of an onsite wastewater treatment system shall be performed by the holder of the Operating Permit or a licensed operator hired by the holder of the Operating Permit in accordance with the monitoring frequency and parameters stipulated in the permit. All monitoring reports shall be certified by the Owner or licensed operator and submitted to the Regulatory Authority on a form provided by the Regulatory Authority. The report shall contain:

(1) Owner name and address

(2) Operating permit number

(3) Average daily flow since last compliance monitoring report

(4) Description of type of maintenance and date performed

(5) Description of samples taken (if required), analytical laboratory used, and results of analyses.

(6) Problems noted with the system and actions proposed or taken to correct them.

(7) Name, signature, license and license number of the licensed professional who performed the work.

100.254(f) Appeals

The applicant may appeal the Regulatory Authority's decision to deny issuance of the Operating Permit in accordance with rules of the Board of Adjustment (MR 394.36)

100.254(g) Expiration

(1) Operating Permits shall be valid for a specific term stated on the permit as determined by the Regulatory Authority.

(2) An Operating Permit must be renewed prior to its expiration in accordance with §100.254(d). If not renewed prior to its expiration, the Regulatory Authority may require the system to be taken out of service until which time the permit is renewed. If not renewed within in 90 calendar days of the expiration date, the Regulatory Authority may require that the system be abandoned in accordance with 100.256.

100.254(h) Transfers

The Operating Permit may not be transferred from the Owner to another party. However, the Regulatory Authority shall not terminate the current permit until 30 calendar days after the date of sale unless an imminent threat to public health and safety exists. The Regulatory Authority may require a performance inspection of the treatment system signed and/or sealed by a licensed designer, contractor, or operator. If the Regulatory Authority requires such an inspection, it must provide written reasons to the Owner prior to the inspection unless performance inspections are required of all permit transfers.

100.254(i) Revocation

(1) The Regulatory Authority may revoke any Operating Permit issued under this section for any false statements or misrepresentations of facts on which the Operating Permit was issued.

(2) Notice of revocation and the reasons for revocation shall be conveyed in writing to the Owner.

(3) If revoked, the Regulatory Authority may require that the treatment system be taken off line and/or the abandoned in accordance with 100.256.

(4) At the Regulatory Authority's discretion, the Operating Permit may be reinstated upon the Owner taking appropriate corrective actions.

100.255 Interim Operating Agreement

100.255(a) Purpose

The purpose of the Interim Operating Agreement is to establish an agreement between the Owner and Regulatory Authority for a specific Compliance Plan and schedule for completion, and to allow close oversight of the plan's implementation by the Regulatory Authority.

100.255(b) Application

(1) The Owner of a treatment system that receives a Notice of Violation for a system that is violating a condition or conditions of its Operating Permit shall not be permitted to continue operation of the system unless the Owner has obtained an Interim Operating Agreement based on a Compliance Plan approved by the Regulatory Authority.

(2) The Owner shall submit an Interim Operating Agreement application on or before the date specified by the Regulatory Authority on the Notice of Violation.

100.255(c) Submittal requirements

The Owner shall submit an application form provided by the Regulatory Authority including:

(1) Reference number of current Operating Permit.

(2) Compliance Plan signed by the Owner that includes:

i. A description of specific actions that will be taken by the Owner to bring the system into compliance with this rule.

ii. A schedule indicating the dates by which each action will be completed in an manner acceptable to the Regulatory Authority. The schedule shall not exceed 24 months from the date the notice of violation was issued.

(3) Relevant supporting documentation as appropriate.

(4) Payment of application review fee as may be assessed by the Regulatory Authority.

100.255(d) Regulatory Authority response

(1) The Regulatory Authority shall review the Compliance Plan and any supporting documentation to evaluate the appropriateness of the plan to achieve system compliance.

(2) The Regulatory Authority may request additional information or recommend revisions to the Compliance Plan that are deemed necessary to achieve system compliance.

(3) Within 20 working days of receipt of the permit application or receipt of any requested additional documentation or revisions the Regulatory Authority shall:

i. Approve the Interim Operating Agreement and suspend the existing Operating Permit.

ii. Deny the Interim Permit application explaining in writing to the applicant the reasons for denial, resubmittal procedures and the procedures for appeal.

iii. Revoke the current Operating Permit if the Owner fails to negotiate a Compliance Plan acceptable to the Regulatory Authority within a reasonable time period from the date of the Notice of Violation.

100.255(e) Appeals

The applicant may appeal the Regulatory Authority's decision to deny approval of an Interim Operating Agreement in accordance with rules of the Board of Adjustment (MR 394.36)

100.255(f) Expiration

(1) The Interim Operating Agreement is valid for a stipulated period of time determined by the Regulatory Authority to be necessary to successfully implement the Compliance Plan, but no longer than the term of the prior Operating Permit unless extended or renewed in accordance with §100.254(d) or until satisfactory completion of construction or installation, whichever is shorter.

(2) The Interim Operating Agreement shall be voided after satisfactory completion of the Compliance Plan, as documented by a certificate signed and/or sealed by a certified designer, contractor, or operator.

100.255(g) Extensions and renewals

(1) Extension

The term of the Interim Operating Agreement may be extended at the discretion of the Approving Authority.

(2) Renewal

i. An Interim Operating Agreement must be renewed if the existing term of the agreement will expire before the Compliance Plan has been completed or modifications are made to the approved Compliance Plan.

ii. The application for renewal of an Interim Operating Agreement shall be made in a format prescribed by the Regulatory Authority. The Regulatory Authority may require resubmission of the application for review.

100.255(h) Transfers

The Interim Operating Agreement may not be transferred from an Owner to another party.

100.255(i) Revocation

(1) The Regulatory Authority may revoke an Interim Operating Agreement under this section for any false statements or misrepresentations of facts on which the Interim Operating Agreement was issued.

(2) Notice of revocation and the reasons for revocation shall be conveyed in writing to the Owner.

(3) If revoked, operation of the treatment systems must cease until a valid Interim Operating Agreement is approved by the Regulatory Authority.

100.256 System Abandonment Agreement

100.256(a) Purpose

The purpose of the System Abandonment Agreement is to ensure that a treatment system no longer in service is abandoned in a manner that protects public health, safety and water quality within a reasonable time following decommissioning. It also terminates all permits associated with the system.

100.256(b) Application

(1) Whenever the use of a system is discontinued following condemnation or demolition of a building served by the system, or following connection to a municipal or private sanitary sewer, further use of the system for any purpose shall be prohibited and the system shall be abandoned unless, after inspection, the Regulatory Authority determines the system is in compliance or can be brought into compliance with this rule.

(2) Continued use of a treatment tank where the tank is to become an integral part of a sanitary sewer system requires the prior written approval of the Regulatory Authority.

(3) The Owner of any treatment system without a valid or pending Operating or Interim Operating Agreement shall be issued a Notice of Violation and must abandon the system in accordance with this section before the date specified by the Regulatory Authority on the Notice of Violation.

100.256(c) Notification requirements

(1) The Owner shall notify the Regulatory Authority in writing that a treatment system is to be abandoned, the abandonment procedures that will be followed, and the expected date of completion 14 calendar days before abandonment is to commence.

(2) The written notification shall include:

i. Reference number of current or previous Operating Permit or Interim Operating Agreement.

ii. The reason(s) for abandonment.

iii. A brief description of the proposed abandonment method if different than that published by the Regulatory Authority.

100.256(d) Regulatory Authority response

(1) The Regulatory Authority shall review the request and, if necessary, may request additional information or recommend revisions to the proposed abandonment method that are deemed necessary to achieve satisfactory system abandonment.

(2) Within 10 working days of receipt of a satisfactory request, the Regulatory Authority shall:

i. Issue a written approval to the property Owner to proceed with the abandonment.

ii. Void any existing construction, operating, and interim permits for the system.

100.256(e) Certification of Completion of Abandonment

Upon completion of abandonment, certification signed/sealed by a licensed contractor shall be submitted to the Regulatory Authority.

100.256(f) Expiration

(1) Abandonment must be successfully implemented within 6 months of issuance of the written approval to abandon the system

(2) If abandonment is not successfully completed or a signed/sealed Certification of Completion of Abandonment not submitted within 6 months of receipt of written approval, the system shall be considered in violation of this rule and appropriate action to achieve compliance of the system.

100.256(g) Extensions and renewals

The term of the Abandonment Agreement may be extended at the discretion of the Regulatory Authority.

100.256(h) Transfers

The Abandonment Agreement may not be transferred from an Owner to another party. Abandonment must be implemented and completed successfully prior to transfer of property ownership unless the buyer submits an application for an Operating Permit or Interim Operating Agreement.

100.260 Fees

100.261 Permit fees shall be established periodically by the Regulatory Authority and published.

100.262 A surcharge of up to $5.00 may be placed on any or all permit application fees at the discretion of the Regulatory Authority to support research relevant to the advancement of onsite wastewater treatment practices and application. The research surcharge shall be deposited in an individual account designated for research purposes only.

100.263 All fees, except the research surcharge, shall be deposited in an individual account trust fund to be used to meet the costs of administering the onsite wastewater treatment program.

100.270 Compliance Management

Assurance that compliance with the rule is difficult but necessary in any regulatory program. The responsibility for compliance is the holder of a permit or approved agreement. The Regulatory

Authority has responsibility to see that compliance is sustained through education outreach, permitting, compliance monitoring, verification inspections, and enforcement actions.

100.271 Education Outreach

The goal of the Regulatory Authority is rule compliance rather than enforcement. Education of system Owners and users is an effective way of achieving cooperation and rule compliance. Distribution of educational materials and programs through various forms of media shall be made. The Regulatory Authority shall provide published educational materials and reminders to each permit holder on request and with any mailings to permit holders regarding the construction, operation, maintenance, and management of onsite wastewater systems.

100.272 Contingency Plan

100.272(a) A written contingency plan as required in section 100.425(b) shall be implemented immediately upon observation of a malfunction. If the actions described in the contingency plan fail to correct the malfunction so that the system can be put back in normal operation, or if wastewater is discharged on the surface of the ground, the Regulatory Authority must be notified within 5 working days of the incident.

100.272(b) If it is necessary to make physical changes to the system to enable normal operation, a compliance schedule must be negotiated with the Regulatory Authority and application made for an interim operating permit within 30 days of the incident. If the malfunction creates an imminent threat to public health or safety, corrective actions may proceed immediately by a licensed contractor or operator. If such action is necessary, the Regulatory Authority must be notified the first possible working day after the malfunction is observed. Failure to comply with this paragraph is considered a violation of the Operating Permit.

100.273 Inspections and Monitoring

100.273(a) Right of entry

The Regulatory Authority may enter a property at any reasonable time to inspect and/or monitor a treatment system. As used in this paragraph, "property" does not include a residence or private building.

100.273(b) Inspections

(1) Site conditions

The Regulatory Authority may inspect the property at any reasonable time following submittal of the Notice of Intent to Construct or Repair a Private Wastewater Treatment System and site evaluation report to confirm reported site conditions and system siting plan.

(2) Construction

The Regulatory Authority may inspect the system at any reasonable time during the construction the system and during system start-up prior to issuing a Certificate of Occupancy.

The system designer must provide the final construction inspection to certify that the system was constructed in substantial accordance to the construction documents. Any inspection by the Regulatory Authority is only for purposes of confirmation.

(3) Operation

The Regulatory Authority may inspect and/or monitor an existing system at any reasonable time to confirm compliance with this rule. The property Owner shall be notified of an intended inspection by the Regulatory Authority 5 working days prior to the inspection. Prior notification is not required if the Regulatory Authority has reason to believe that a rule violation exists.

(4) Abandonment

The Regulatory Authority may inspect an abandoned system during or within 60 days of abandonment.

(5) Time of Title Transfer

i. A compliance inspection shall be performed by a licensed inspector within two years prior to the time of transfer of title to the facility served by the onsite wastewater treatment system. If weather conditions preclude inspection at the time of transfer, the inspection may be completed as soon as weather allows provided that the seller notifies the buyer in writing of the requirements of this rule, but in no event later than six months after the transfer. A certified inspection report shall be submitted to the Regulatory Authority and buyer on a form provided by the Regulatory Authority.

ii. The following transactions shall not be considered transfers of title for purposes of this rule:

- Taking a security interest in a property, including, but limited to, issuance of a mortgage;
- Refinancing a mortgage or similar instrument, whether or not the identity of the lender remains the same;
- A change in the form of ownership among the same Owners, such as placing the facility within a family trust of which the Owners are the beneficiaries, or changing the proportionate interests among a group of Owners or beneficiaries;
- Adding or deleting a spouse as an Owner or beneficiary; or a transfer between spouses during life, out right or in trust; or the death of a spouse;
- The appointment of or a change in a guardian, conservator, or trustee.

iii. Any portion of the system found not to be in compliance with this rule shall be corrected in accordance with this rule and a Compliance Plan submitted by the current or future Owner and approved by the Regulatory Authority in accordance with §100.255.

(6) Change in use or expansion

i. A compliance inspection shall be performed by a licensed inspector prior to a change in use or expansion for which a building permit or occupancy permit from the local building inspector is required. The inspection shall determine whether a system upgrade will be necessary either to correct any portion of the system not in compliance or to meet any new requirements stipulated for the new use. A certified inspection report shall be submitted to the Regulatory Authority on a form provided by the Regulatory Authority.

ii. Upgrades to accept increases in actual or design flows or increases in pollutant loads above the existing approved capacity shall be in accordance with this rule. Upgrades are not required if the existing system was designed and constructed to accept design flows resulting from the change in use or expansion of use.

iii. Whenever an addition to an existing structure which changes the footprint of a building with no increase in design flow is proposed, the system inspection shall be an assessment to determine the location of all system components, including any reserve treatment area, in order to ensure that the proposed construction will not be placed upon any of the system components or reserve areas. If official records are available to make a determination regarding

location of system components and reserve area, an inspection is not required for footprint changes.

iv. Any corrections or upgrades required shall be completed in accordance with this rule before a certificate of occupancy is issued for the new use.

100.274 Compliance Monitoring

100.274(a) The Regulatory Authority shall review Compliance Monitoring Reports. If violations of the Owner's Operating Permit is noted appropriate action shall be taken by the Regulatory Authority.

100.274(b) Failure to submit a Compliance Monitoring Report shall be considered a violation of this rule and appropriate action shall be taken by the Regulatory Authority.

100.275 Enforcement Actions for Violations

100.275(a) Notice of Violation

The Regulatory Authority shall issue a Notice of Violation when a violation of this rule has occurred. The notice shall include:

(1) A description of the violation including specific reference to the provisions of law or rule allegedly violated.

(2) A description of the rights and obligations of the Owner and the appropriate responses according to this rule.

(3) A specific date by which time the Owner must respond to the Regulatory Authority.

100.275(b) Interim Operating Agreement

If a violation of an Operating Permit occurs or the Owner is in violation of this rule for failure to obtain a Construction or Operating Permit, the Regulatory Authority shall attempt to negotiate a suitable Compliance Plan and schedule with the Owner in accordance with §100.255.

100.275(c) Permit revocation

(1) The Regulatory Authority may revoke any permit issued under this rule for any false statements or misrepresentations of facts on which the permit was issued.

(2) Notice of revocation and the reasons for revocation shall be conveyed in writing to the Owner.

(3) If revoked for cause, any actions that are allowed under the permit must not commence or continue until a valid permit is obtained. All conditions of the original permit also are revoked and the conditions of a new permit are at the discretion of the Regulatory Authority.

100.275(d) Citations

(1) The Regulatory Authority may issue a citation that may contain an order of correction or an order to pay a fine, or both for failure to comply with this rule.

(2) The citation must be in writing and must describe the particular violation, including specific reference to the provisions of law or rule violated.

(3) The Regulatory Authority shall inform the recipient, by written notice of the right to an administrative hearing to contest the citation within 21 calendar days after the date the citation is received. The citation must contain a conspicuous statement that if the recipient fails to pay the fine with the time allowed, or fails to appear to contest the citation after having requested a hearing, the recipient has waived the recipient's right to contest the citation and must pay the amount up to the maximum fine.

(4) The Regulatory Authority may reduce or waive the fine imposed by the citation. In determining whether to reduce or waive the fine, the Regulatory Authority must consider the gravity of the violation, the recipient's attempts at correcting the violation, and the recipient's history of previous violations.

(5) Any person who willfully refuses to sign and accept a citation issued by the Regulatory Authority commits a misdemeanor, punishable by imprisonment.

(6) The Regulatory Authority shall deposit any fines it collects in a trust fund for use in providing services relative to this rule.

(7) This section does not prohibit the Regulatory Authority from enforcing this rule by any other means. However, the Regulatory Authority must elect to use only a single method of enforcement for each violation. Any fines or penalties that are not waived but are unpaid may be posted to the Owner's property tax account.

100.275(e) Right of Remediation

(1) If an onsite wastewater treatment system is causing an imminent threat to public health or safety and the Owner fails to comply with orders issued by the Regulatory Authority, the Regulatory Authority shall revoke the operating permit and may, at its discretion, enter the property to remediate the condition. Remediation may include abandonment.

(2) Costs expended by the Regulatory Authority in remediation or abandonment will be assessed to the Owner. Any unpaid remediation costs to the county shall be posted to the Owner's property tax account.

(3) The Owner shall obtain a new Operating Permit or Interim Operating Agreement. Failure to obtain an Operating Permit or Interim Operating Agreement shall constitute a separate violation.

100.280 Record Keeping

100.281 The Regulatory Authority shall maintain a current record of all permitted systems. The record shall contain all permit applications, permits issued, fees assessed and received, design documents, construction documents, photographs, compliance monitoring reports, correspondence, and other records relevant to each system.

100.282 The Regulatory Authority shall obtain a roster of all professionals who have valid licenses to provide onsite wastewater treatment services in the Regulatory Authority's jurisdiction. This record shall be updated quarterly and used to determine whether a service provider, acting as an Owner's agent is licensed to practice in the jurisdiction.

SUBCHAPTER III: PERFORMANCE REQUIREMENTS FOR TREATMENT SYSTEMS

The purpose of this subchapter is to create a procedure or procedures for establishing appropriate onsite/cluster system performance requirements necessary to protect public health and water resources in the various receiving environments that treated wastewater may be dispersed. Under a performance code, treatment systems must not be prohibited without cause in any area or on any lot of record. Cause can be created by zoning ordinances that prohibit development in specific areas or by insufficient administrative rules and oversight capacity of the Regulatory Authority to adequately ensure that suitable system management is sustained.

Multiple receiving environments may be designated within a jurisdiction. Each receiving environment may require its own specific performance requirements. A single set of performance requirements may be used for all receiving environments encountered, but only if the requirements are sufficient to protect public health and water resources in each environment.

100.300 Purpose

To establish clear, specific, and consistent procedures for evaluating potential receiving environments and determining specific and measurable minimum performance requirements for onsite/cluster systems that are sufficient to protect public health and water resources.

100.310 Receiving Environment Evaluation

100.311 Receiving environment delineation

100.311(a) The Regulatory Authority or other designated authority shall develop and promulgate clear and specific procedures for identifying, describing, and delineating receiving environments within its jurisdiction. The designated environments shall be delineated on maps accompanied with comprehensive narrative descriptions of the identifying characteristics of each. Land use zoning, development density, soil characteristics, topography, geology, depth to groundwater, characteristics of the aquifer, proximity to surface waters, and proximity to water supply wells, and well design and construction are among the elements that must be considered in delineating receiving environments.

100.311(b) The receiving environment delineations should be reviewed regularly and revised as necessary to reflect the promulgated procedures for delineating those receiving environments because characteristics of receiving environments can change with time with changes in land use, availability of more accurate environmental data, or other causes.

100.312 Assessing receiving environment assimilative capacity

The Regulatory Authority or other designated authority shall develop and promulgate clear and specific procedures for assessing the assimilative capacity of each delineated receiving environment based on the environment's sensitivity to wastewater discharges. The site parameters and other considerations used to assess the assimilative capacities of the environments shall be listed and described. The results of the assessments shall also be published.

100.320 Performance Requirements Determination

The Regulatory Authority or other designated authority shall determine specific and measurable standards required for performance of any onsite/cluster systems operated in each of the designated receiving environments. Land use zoning, high public value lands, development type and density, soil characteristics, land forms and topography, geology, groundwater depth, aquifer characteristics, proximity to surface waters, distances to water supply wells, and well design and construction are among the elements that must be considered in determining performance requirements.

100.330 Public Participation

The Regulatory Authority or other designated authority responsible for delineating receiving environments and determining onsite/cluster treatment system performance standards should develop a public participation program that is implemented whenever receiving environment delineation and/or onsite/cluster treatment system performance requirements are established or revised.

100.331 Notice of Preliminary Decision

100.331(a) The Regulatory Authority or other designated authority shall publish a Notice of Preliminary Decision regarding the establishment of a new or revision of existing receiving environment delineation, and/or the establishment of new or revised onsite/cluster treatment system performance requirements for any delineated receiving environment.

100.331(b) The Regulatory Authority or other designated authority shall accept written comments from the public before a final determination on new or revised receiving environment delineation or performance requirements are made.

100.331(c) The written public comment period commences on the publication date of the Notice of Preliminary Decision and extends for 30 calendar days. Public hearing

100.332 Public hearing

100.332(a) The Regulatory Authority or other designated authority shall provide notice and conduct a public hearing to address a Notice of Preliminary Decision regarding a final determination on new or revised receiving environment delineation or performance requirements if:

(1) Significant public interest in a public hearing exists, or

(2) Significant issues or information have been brought to the attention of the Regulatory Authority or other designated authority that have not been considered previously in establishing new or revising existing receiving environment delineations or performance requirements.

100.332(b) If the Regulatory Authority or other designated authority determines that a public hearing is necessary, a public hearing shall be scheduled and the Notice of Preliminary Decision published at least once in one or more newspapers of general circulation where the affected delineated receiving environment is located.

100.333 Written public comment

100.333(a) The Regulatory Authority or other designated authority shall accept written public comment until the close of the public hearing record as specified by the person presiding at the public hearing.

100.333(b) The Regulatory Authority or other designated authority shall respond in writing to all written comments submitted during the written public comment period.

SUBCHAPTER IV: SITE EVALUATION AND DESIGN REQUIREMENTS

The purpose of this subchapter is to provide minimum criteria and acceptable procedures for property evaluations and system designs. Other criteria or procedures may be used by the evaluator or designer, but explanations and/or documentation must be provided to the Regulatory Authority to allow a determination whether the proposed criteria and procedures meet the intent and minimum requirements of this rule.

100.400 Purpose

The purpose of this subchapter is to specify the site characteristics which, at a minimum, must be observed, described, and evaluated on sites proposed for dispersal of wastewater, the procedures to be used in their evaluation, and the requirements for onsite/cluster system design submittals to the Regulatory Authority.

100.410 Site Evaluation

100.411 Site Evaluator

A site evaluator who has demonstrated qualifications and has been licensed or certified in accordance with Subchapter V of this code shall perform evaluations of sites proposed for dispersal of wastewater.

100.412 Site Characteristics and Evaluation Procedures

100.412(a) The site evaluator shall both assess the capability of the site to disperse satisfactorily the proposed wastewater discharge and evaluate the characteristics of the soils that exist below the site in accordance with the treatment system performance requirements stipulated for the particular receiving environment in which the system will operate.

The word "capability" is used rather than "suitability" because under a performance code the controlling factor will be the property's capacity to accept the treated or partially treated wastewater. Therefore, a property is "suitable" only if it has the capacity to disperse the wastewater in accordance with the stipulated performance requirements (whether surface water or groundwater discharge). The property's "capability" to treat

wastewater is a separate, but related, determination since sufficient unsaturated soil may or may not be "available" under the proposed hydraulic loading to provide final treatment of the wastewater. Together, these two site characteristics will determine the "suitability" of a treatment system for use. "Suitability" applies to the treatment system not to the property under a performance code..

100.412(b) At a minimum, the site evaluator shall note and evaluate the following characteristics on each site using USDA NRCS nomenclature:

Refer to the Field Book for Describing and Sampling Soils or the Soil Survey Manual both published by USDA NRCS and available on the web at: www.statlab.iastate.edu/soils.

(1) Topography, landscape position, vegetation, and surface drainage characteristics

i. The slope gradient and aspect of each landscape element shall be determined for each site investigated on the property.

ii. The surface morphometry (landscape positions) shall be described using standard nomenclature in accordance with USDA Natural Resources and Conservation Service for each reported site investigated on the property.

iii. Any vegetation types that favor wet or saturated soils must be identified using their popular name, if known, and their location on the property described.

iv. Any vegetation that will impact siting of the treatment system or will require removal prior to construction of the treatment system shall be noted.

v. Swales, depressions, and other drainage features on the property shall be located and described.

(2) Surface waters, rock outcrops and other natural features

i. Surface waters including permanent or intermittent streams, lakes, wetlands, and other surface water within or adjacent to the property shall be located and described.

ii. Rock outcrops within or adjacent to the property shall be located and described.

iii. Any other natural features that could impact the application and/or design of a treatment system shall be located and described.

(3) Soil profiles

i. Soil profiles within the proposed treatment site on the property shall be described from excavated soil pits or other methods approved by the Regulatory Authority.

Soil pits that will be entered shall be excavated and/or shored in accordance with OSHA requirements.

ii. A sufficient number of profiles shall be described to adequately determine the variability of the soils on the proposed treatment site.

iii. The following soil characteristics described in accordance with USDA Natural Resources and Conservation Service nomenclature shall be included for each profile observed:

- Horizons

  The distance from ground surface to the top and bottom of each horizon observed shall be measured and the distinctness and topography of the horizon boundaries described.

- Color

For each horizon identified, the matrix color and the quantity, size, contrast, and color of any redoximorphic features present shall be described. Color descriptions must be in accordance with the Munsell® color system (Munsell Color, New Windsor, NY, www.Munsell.com).

- Texture

  For each horizon identified the texture class shall be described including any appropriate texture modifiers.

- Structure

  For each horizon identified, the grade of structure observed and the size, and type for grades 1-3 shall be described.

- Consistence

  For each horizon identified, the resistance to penetration shall be described.

- Depth to saturated zones and bedrock

  For each soil profile described, the depth to any water or bedrock observed shall be measured from the ground surface. Also, the depth to the estimated seasonally high zone of saturated soil based on redoximorphic or other appropriate features shall be measured similarly. For systems that are to treat more than 2000 gallons per day, the potential for groundwater mounding below the system shall be evaluated.

- Depth to flow restricting horizons

  For each soil profile described, the depth from ground surface to any horizon that appears to restrict downward water flow shall be measured. Such horizons may be discerned by evidence of episaturation above the horizon.

(4) Surface elevations

i. A permanent benchmark shall be identified or established for the property and located on the plot plan of the property.

ii. Surface elevations and relative locations of each soil pit or boring shall be measured relative to the benchmark.

iii. A topographic survey shall be performed at a scale sufficient to provide 1-2 foot surface contours over the treatment site. The degree of slope and slope aspect can be substituted for the topographic survey if the site topography is a simple planer slope.

(5) Property land uses and cultural features

i. The current and historical land use of the property and adjacent properties shall be determined and described.

ii. Cultural features such as buildings, wells, roads, driveways, and other features that may impact treatment system location shall be located and described for the property and adjacent properties.

(6) Available area

i. The available area for construction of the treatment system shall be determined for the property considering relevant horizontal setback distances from features on the property or adjacent properties that may be required by state and local codes such as:

- Private, municipal, or other water supply wells
- Buried water supply piping, power lines and other public or private utilities crossing the property
- Buildings or other property improvements
- Property boundaries and easements
- Surface waters and floodplains

100.413 Property Evaluation Report

100.413(a) The results of the property evaluation including the following items shall be submitted to the Regulatory Authority with the Notice of Intent to Construct or Repair a Private Wastewater Treatment System in accordance with §100.252(b).

(1) Description of the property

i. Name and mailing address of the property owner

ii. Address and legal description of the property

iii. Parcel Identification Number

(2) Date and time of day the evaluation was performed and weather conditions such as cloud cover, temperature, and precipitation.

(3) Plot plan to scale of the property including:

i. All property boundaries

ii. Buildings, roads, driveways, and other property improvements existing and proposed

iii. Existing easements

iv. Wells or proposed well locations on the property and adjacent properties within 250 feet of the property's boundaries

v. Topography of the proposed treatment site(s)

vi. Surface waters, rock outcrops, and drainage features

vii. Soil pit or boring locations with surface elevations

viii. Location of a permanent bench mark and its elevation

ix. Outline of available treatment area(s)

(4) Soil Descriptions

(Forms for reporting the soil profile descriptions may be obtained from the Regulatory Authority.)

(5) Estimate of the treatment capability and dispersal capacity of the available site(s)

(Forms for reporting the treatment capability and dispersal capacity may be obtained from the Regulatory Authority.)

100.420 Design Requirements

100.421 Designer

Except as provided in §100.552(c), a designer who has demonstrated qualifications and been licensed or certified in accordance with subchapter V of this code shall design all onsite/cluster systems and certify that the construction of the system substantially complies with the approved design documents.

It is important that the designer observes construction and certifies that the construction complies substantially with the approved design documents since the designer is responsible for the design and best knows the basis of the design. The designer's presence during critical periods of construction is critical to review with the contractor any field changes necessary because of conditions unknown during design. This requirement may be waived for Type I designs, which are prescriptive designs provided by the Regulatory Authority.

100.422 Design Wastewater Characteristics

100.422(a) Design Flow

(1) The design flow shall be based on the average daily peak flow expected from the building to be served by the treatment system.

(2) Average daily peak flow volume may be estimated in accordance with estimating guidelines provided by the Regulatory Authority.

(3) Metered flow may be used to establish the design flow if an appropriate factor of safety is applied to accommodate any potential increases in flow anticipated due to changes in use of the building over time and uncertainties that the metered flow data is not completely representative of typical of average daily peak flows. The meter must be recorded daily for at least 30 consecutive days during a typical peak flow period or as otherwise directed by the Regulatory Authority.

(4) If the daily water use at an establishment varies substantially and consistently over each 24 hour period or between days of the week (*e.g*. church, supper club, office building) an acceptable flow equalization method may be used to attenuate the peak flows to reduce the design flow to the average daily flow.

100.422(b) Characteristics

(1) The type of establishment to be served by the treatment system shall be described using the following descriptors and modifiers:

i. Residential

- Single family
- Duplex
- Multi-family

ii. Commercial

- Lodging
- Food service
- Laundry
- Industrial (toilet waste only)
- Other (describe)

(2) The mass or concentrations of pollutants in the wastewater stipulated in the Draft Operating Permit under design flow conditions shall be estimated for non-residential establishments using one or more of the following methods if approved by the Regulatory Authority:

i. Published guidelines acceptable to the Regulatory Authority

ii. Analytical results from wastewater samples taken following appropriate sampling and analytical protocols

iii. Wastewater quality data collected from similar establishments

100.423 System Types

The types of systems that can be permitted by a regulatory program will vary with the Management Program Model selected. The recommended Management Program Models for the types of systems described below are provided in the following table.

Model Program	Type I System	Type II System	Type III System
1	✓		
2	✓	✓	
3	✓	✓	✓
4	✓	✓	✓
5	✓	✓	✓

100.423(a) Type I System

(1) Type I System is a "pre-engineered", prescriptive Design Package approved by the Regulatory Authority for treating wastewater on sites with a specific set of site characteristics. The Design Package, provided by the Regulatory Authority, stipulates the wastewater characteristics and site conditions that must be met for the system to achieve a declared performance capability.

(2) Type I Systems that are sited, designed, constructed, operated, and maintained in full accordance with the Design Package conditions and specifications, are "deemed to satisfy" the declared performance capabilities by the Regulatory Authority. As such, routine water quality monitoring and reporting is not required.

(3) Type I Systems that are not sited, designed, constructed, operated, and maintained in full accordance with the Design Package specifications may be reviewed or re-permitted by the Regulatory Authority as Type II or Type III Systems as described in §100.423(b) and (c).

100.423(b) Type II System

(1) Type II System is an "engineered" system designed in accordance with generally accepted engineering design criteria approved by the Regulatory Authority for treating wastewater within a designated range of characteristics using a particular treatment process or processes on sites with a designated range of site characteristics. The generally accepted criteria are presented in a Design Guideline provided by the Regulatory Authority. The Design Guideline stipulates the range of wastewater characteristics and site criteria for which the system may be permitted to achieve a declared performance capability. If the performance capability can vary with the generally accepted engineering design criteria used in design, the range of expected performance should be stated in the Design Guideline.

(2) Type II Systems that are sited, designed, constructed, operated, and maintained in accordance with the Design Guideline, are "deemed to satisfy" the performance capabilities declared in the Design Guideline. As such, routine water quality monitoring and reporting is not required.

(3) Type II Systems that are not sited, designed, constructed, operated, and maintained in accordance with the Design Guideline may be reviewed or re-permitted by the Regulatory Authority as a Type III System as described in §100.423(c).

100.423(c) Type III System

(1) Type III System is an innovative system that uses treatment processes or technologies for which generally accepted engineering design criteria do not exist

but are supported by sound scientific principles and operating performance documentation or Type I or Type II systems that are designed or used outside the recommended guidelines provided by the Regulatory Authority for such systems.

(2) Type III Systems shall be routinely monitored for specific parameters and at frequencies specified by the Regulatory Authority and stipulated in an Operating Permit to determine continued compliance.

100.424 Design Documents

100.424(a) Design documents shall be submitted to the Regulatory Authority for review prior to issuance of a Construction Permit.

100.424(b) The design documents shall contain the following:

(1) Description of expected wastewater influent characteristics as described in §100.422.

(2) Scaled site plot plan as described in §100.413(a)(3).

(3) Treatment system design documents signed and/or sealed by a licensed or certified designer including:

i. Description of the proposed system including:

- System type (I, II, or III) and the design documents used. If Type III, design justification and/or documented experience with innovative technology and/or components for Type III design shall be provided as requested by the Regulatory Authority.
- The performance requirements that the system is designed to meet as stipulated in the Draft Operating Permit.
- The Design Package or Design Guideline used (Type I or II) or a description of the treatment processes or technologies proposed (Type III).

ii. Scaled plan, profile and detail drawings of the system showing final grading and drainage. Proposed point of compliance of the system and an estimation of the discharge impact area of the system as required by the Regulatory Authority, *e.g.* direction and extent of plume.

iii. Design criteria and computations used in system design (Type II and III).

iv. Material, equipment, and construction specifications.

(4) Construction plan including site access, traffic areas, materials and equipment storage areas, and areas not to be disturbed.

(5) Management plan including:

i. Description of the system and each component

ii. Description of how the system operates

iii. System drawings and equipment specifications

iv. Description of routine maintenance, maintenance procedures, and schedule of maintenance

v. Operating procedures for periods of unusual flows or operating conditions

vi. Emergency operation procedures

vii. Troubleshooting guide to diagnose malfunctions

(6) Contingency plan describing what measures will be taken to prevent violations of the Operating Permit or stipulated performance requirements when wastewater flows exceed the treatment capacity or treatment malfunctions occur.

SUBCHAPTER V: TRAINING, LICENCING, AND CERTIFICATION OF BUSINESSES AND PRACTITIONERS

The increased complexity of onsite wastewater systems, continuing changes in treatment technology, and the need to protect groundwater and watersheds make it essential that the site evaluation, design, construction, operation, maintenance, and regulation of treatment systems be performed only by qualified individuals. The intent of this subchapter is to allow the practice of onsite wastewater system services and regulation and enforcement only by individuals who demonstrate competence in their respective area of practice and perform their services in professional manner. A training, licensing (and/or certification), and disciplinary program for all practitioners and regulatory staff is created with the intent to cause uniform and consistent application of practices, standards, and enforcement of the rules.

100.500 Purpose

In order to safeguard life, health, and property, and to promote public welfare, it is in the public interest to limit the practice of onsite wastewater treatment services including site evaluation, design, construction, operation, maintenance, and regulation, to individuals licensed under this rule. The increased complexity of onsite wastewater treatment systems, changes in treatment technology, and the need to protect groundwater and watersheds make it essential that qualified individuals perform such services. The purpose of this subchapter is to create a licensing program administered by a public board of peers for all onsite wastewater system practitioners and regulatory staff that establishes minimum training, competency criteria, and standards for professional conduct.

Note that Chapter 115.56 of the Minnesota Statutes prohibits local units of government from requiring additional local "licenses" for "individual sewage treatment system professionals." The statute is silent with respect to certifications. Clarification is needed to determine whether a local unit of government can require additional certifications for individual service professionals. Currently, the state requires licenses only of businesses and not individuals. A business qualifies for a license if 1) it has at least one "designated registered professional with specialty area endorsement meeting the conditions of 7080.0710; 2) general liability insurance as required by part 7080.0710; and 3) a corporate surety bond as required by part 7080.0710.

Certify: to attest as meeting a standard

License: permission granted by competent authority to engage in a business or occupation

100.510 Scope

100.511 It is unlawful for any individual, including engineers licensed under Minnesota Rules Chapter 1800, to practice or offer to practice onsite wastewater treatment system services as defined and administered by this rule, or use the title licensed or certified onsite wastewater treatment system site evaluator, designer, contractor/installer, operator, maintainer, or regulator respectively unless licensed in accordance with this subchapter.

100.512 Exceptions. Section 100.511 shall not apply to inspection and service work done by employees of insurance companies, their agents, or insurance rating bureaus.

100.520 Professional Conduct

100.521 Scope

This rule is applicable to and binding upon each person, corporation, or partnership subject to the regulatory jurisdiction of the board and each person subject to the control of the licensee.

100.522 Imputed knowledge of professional responsibility

Each licensee who holds a certificate of licensure issued by the board is charged with knowledge of this rule. As a condition of licensure and in the exercise of the privileges and rights granted by the certificate of licensure, the licensee shall subscribe to and agree to comply with the provisions of this rule regarding professional conduct and practice to the public and to the board.

100.523 Personal conduct

A licensee shall avoid any act which may diminish public confidence in the profession and shall, at all times, conduct himself or herself, in all relations with clients and the public, so as to maintain his or her reputation for professional integrity.

100.523(a) False statements and nondisclosure.

A licensee shall not submit a materially false statement or fail to disclose a material fact requested in connection with the application for certification or licensure.

100.523(b) Knowledge of unqualified applicants.

A licensee shall not further the application for certification or licensure of another person known by the licensee to be unqualified in respect to character, education, or other relevant factor.

100.523(c) General prohibitions. A licensee shall not:

(1) Circumvent a rule of professional conduct through actions of another.

(2) Engage in illegal conduct.

(3) Engage in conduct involving dishonesty, fraud, deceit, or misrepresentation.

(4) Engage in conduct that adversely reflects on the licensee's fitness to practice the profession.

(5) Permit the licensee's name or seal to be affixed to plans, specifications, or other documents that were not prepared by or under the direct supervision of the licensee.

100.523(d) Conflict of interest

A licensee shall avoid accepting a commission where duty to the client or the public would conflict with the personal interest of the licensee or the interest of another client. Prior to accepting such employment the licensee shall disclose to a prospective client such facts as may give rise to a conflict of interest.

100.523(e) Improper solicitation of employment

(1) A licensee shall seek and engage in only the work or employment the licensee is competent and qualified to perform by reason of education, training, or experience.

(2) A licensee shall not falsify or misrepresent the extent of the licensee's education, training, experience, or qualifications to any person or to the public; or misrepresent the extent of the licensee's responsibility in connection with any prior employment.

(3) A licensee shall not transmit, distribute, or publish or allow to be transmitted, distributed, or published and false or misleading information regarding the licensee's own qualifications, training, or experience or that of his or her employer, employees, associates, or joint ventures.

100.523(f) False or malicious statements

A licensee shall make no false or malicious statements which may have the effect, directly or indirectly, or by implication, of injuring the personal or professional reputation or business of another member of the profession.

100.523(g) Knowledge of improper conduct by others

(1) A licensee who has knowledge or reasonable grounds for believing that another member of the profession has violated any statute or rule regulating the practice of onsite wastewater treatment services shall have the duty of presenting such information to the licensing board.

(2) A licensee, when questioned concerning any alleged violation on the part of another person by any member or authorized representative of the board commissioned or delegated to conduct an official inquiry, shall neither fail nor refuse to divulge any such information as the licensee may have that is relevant.

100.524 Action by Other Jurisdictions

Convictions of a felony without restoration of civil rights or the revocation or suspension of the certificate of licensure of a licensee by another jurisdiction for cause without reinstatement would constitute a violation of law or rules and therefore, shall be deemed to be a violation of these rules of professional conduct.

100.525 Responsible Charge and Direct Supervision

100.525(a) A person in responsible charge of onsite wastewater treatment services means the person who determines the service policies and technical direction, advises with the client, superintends subordinates during the course of work and, in general, the person whose professional skill and judgement are embodied in the work.

100.525(b) A person in direct supervision of onsite wastewater treatment services means that person who is the employer, an employee of the same organization, or a person who is under contract to or from another organization and who is in responsible charge of the work and whose professional skill and judgement are embodied in the work. A person in direct supervision of work directs the work of other licensees, interns, or other persons assigned to the work and is in responsible charge of the work being supervised.

100.530 Licensure Board

100.531 Creation

A licensure board shall be created to carry out the provisions of this subchapter composed of members appointed by the appropriate state or local authority who:

- Are residents of the board's jurisdictional area,
- Have been engaged for at least ten years in the relevant practice for which the member represents, and
- Have been in responsible charge of work within the practice requiring licensure for at least 5 years.

Chapter 7080 of the Minnesota Rules includes a licensing and certification program that meets many of the objectives of this subchapter. Its primary weaknesses are 1) a licensing/certification class for practitioners and regulators qualified to site, design, construct, operate, maintain, and inspect advanced onsite/cluster treatment systems is not included in the program, and 2) enforcing compliance with the licensing/certification provisions of Chapter 7080 is not rigorous nor consistently applied. However, the licensing/certification program in Chapter 7080 provides a sound basic program that should be adopted by comity in this rule. Enhancement of the program to eliminate the weaknesses should be attempted at the state level but if unsuccessful, achieved through this rule.

The Board of Architects, Engineers, Land Surveyors, Landscape Architects, Geoscientists, and Interior Designers currently exists in the State of Minnesota. This board has established rules and procedures that are appropriately suited for the licensure of onsite wastewater practitioners. Inclusion of onsite wastewater licensing in this board should be considered.

100.532 Licensure Board duties

100.532(a) The board shall make all rules, consistent with the law, needed in performing its duties.

(1) Adopt rules to implement this subchapter.

(2) Fix standards for determining the qualifications of applicants for licenses including, but not limited to, relevant training and experience, evaluation of experience, examinations, and scope and standards of practice;

(3) Administer licensing examinations;

(4) Review and approve or deny initial and renewal license applications;

(5) Conduct investigations of complaints alleging violations of this chapter;

(6) Conduct adjudicative proceedings in accordance with the appropriate procedural rules.

(7) Take disciplinary action as provided in 100.580.

100.532(b) The board shall hold meetings at such times the board shall specify. Notice of all meetings shall be given in such a manner as the bylaws may provide. A quorum of the board shall consist of a majority of members of the board qualified to vote on the matter in question.

100.532(c) The board shall keep a record of its proceedings.

100.532(d) The board shall keep and provide upon request a register of all applicants for licensing. The register shall show for each applicant the date of application, name age, educational and other qualifications, place of business, and the place of residence, whether or not an examination was required and whether the applicant was rejected or a license granted, and the date of such action.

100.532(e) A roster showing the names and places of business or of residence of all licensed/certified onsite wastewater treatment system providers shall be updated no less than quarterly and posted on the worldwide web.

100.532(f) The board shall adopt and have an official seal, which shall be affixed to all licenses/certifications granted.

100.533 Board membership

100.533(a) Members of the board shall have been engaged in the practice of the relevant practice for which the member represents for at least ten years, and has been in responsible charge of work within the practice requiring licensure for at least 5 years.

100.533(b) The members shall consist of at least a board director, one soil scientist, one professional engineer, one contractor, one pumper, and one regulator. The total number of members shall not exceed 12.

100.533(c) The members of the board and individuals acting on behalf of the board are immune to liability in any civil action or criminal case based on any acts performed in the course of their duties under this subchapter, except for acts displaying intentional or willful misconduct.

100.540 Board Advisory Committee

100.541 If requested by the board, a board advisory committee shall be created which shall provide recommendations to the board concerning the implementation of this subchapter.

100.542 The board advisory committee shall consist of five members who have direct experience with onsite wastewater practices and who are otherwise eligible for licensure under this subchapter. Each member must be a resident of the board's jurisdictional area and must have a minimum of seven years of continuous experience with onsite wastewater systems immediately prior to appointment to the committee.

100.543 The board or its designated agent shall appoint qualified individuals that represent geographic and experiential diversity as much as possible. Terms shall be limited to a maximum of three years. Terms shall be staggered. No member may serve more than two consecutive terms.

100.544 At the request of the Board Advisory Committee, the board, or its designated agent, may appoint temporary additional members to the advisory committee for assistance with rule development, examination development, and technical advice on complaints. Temporary members must meet the same minimum requirements of the regular members. Terms of temporary members shall be limited to one year, but may for just cause be extended for up to one additional year.

100.550 Licenses/Certifications

100.551 Application

Licenses applicable to the type of service provided are required of individuals practicing onsite wastewater treatment system services.

The licensing requirement applies to all practicing professionals including engineers and soil scientists holding professional registrations under Minnesota Rules Chapter 1800. This is required because siting and design of onsite and cluster wastewater systems is not taught in most undergraduate or graduate programs. Therefore, it is necessary that such professionals be trained and demonstrate their competence under this licensing program.

100.552 Categories of licenses/certifications. (See Table 100.540-1 for conditions under which they are required.)

100.552(a) Site evaluator

(1) Licensed site evaluators must be able to:

i. Locate and delineate property lines, public and private utilities, easements, lot improvements, and any required setbacks.

ii. Landscape position, slope and aspect, floodplain, and vegetation type.

iii. Describe and interpret soil characteristics including horizons, depth, color, including redoximorphic features, structure, texture, consistence, and depth to seasonal and/or permanent saturated zones and bedrock using USDA NRCS nomenclature.

iv. Prepare scaled plot plans showing all relevant property features including delineation of areas considered most favorable for wastewater treatment.

v. Estimate the treatment capacity of each designated site including suitable mass and volumetric loadings.

(2) A site evaluator license is required for evaluating sites where Type II or Type III systems are to be used.

(3) Professional soil scientist registration in the State of Minnesota (Minnesota Rules Chapter 1800.3900) is required in addition to the site evaluator license for evaluating sites where Type III systems are to be used.

100.552(b) Designer

(1) Licensed designers must be able to:

i. Estimate current and future wastewater characteristics including average daily, peak, and seasonal volumes and pollutant concentrations and masses.

ii. Screen and select appropriate treatment trains capable of meeting the stipulated performance requirements based on the site evaluation.

iii. Calculate or otherwise determine component sizes and input requirements such as oxygen, chemicals, power, etc.

iv. Prepare a scaled plan, profile, and detailed drawings depicting the treatment system layout, dimensions, and material and equipment specifications.

v. Certify that each system designed that is constructed and/or installed is in accordance with the approved plans and specifications.

vi. Prepare record drawings of constructed and/or installed systems.

(2) A designer license is required to design all Type II or Type III systems. A designer's license is not required for Type I designs if designed by a licensed contractor (§100.542(2)), registered professional engineer, or registered soil scientist in the State of Minnesota.

(3) Professional engineer registration in the State of Minnesota (Minnesota Rules, Chapter 1800.2500) is required in addition to the designer license to design Type III systems.

100.552(c) Contractor

(1) Licensed contractors must be able to:

i. Perform acceptable site evaluations on properties where Type I designs will be used.

ii. Prepare designs and layouts for Type I systems.

iii. Construct, install, alter, repair, or replace Type I systems ensuring all work is done in accordance with the approved plans and specifications.

iv. Confirm site conditions are suitable for construction of the system.

v. Identify possible causes of observed problems with existing systems and provide appropriate upgrade, repair, and replacement advice to the owner.

vi. Prepare record drawings of constructed and/or installed systems.

(2) A contractor license is required to install Type I systems.

100.552(d) Advanced Contractor

(1) Licensed advanced contractors, in addition to the items listed in section 100.542 (c) (1) must be able to:

i. Construct, install, alter, repair, or replace Type II and Type III systems ensuring all work is done in accordance with the approved plans and specifications.

ii. Construct or install treatment processes or equipment used in Type II and Type III systems in accordance with the designer's and/or equipment manufacturer's specifications.

(2) An advanced contractor license is required to construct and/or install all Type II and Type III systems.

100.552(e) Pumper

(1) Licensed pumpers must be able to:

i. Determine if septage, waste activated sludge, grease, portable toilet wastes, or other wastewater residuals accumulated in wastewater treatment units require removal.

ii. Pump, haul, and dispose of wastewater treatment residuals in accordance with relevant federal and state rules and regulations.

iii. Clean building sewers, forcemains, distribution piping, and other treatment system appurtenances.

iv. Identify sources of clear water infiltration/inflow, deteriorating, damaged, or missing treatment system components, malfunctioning equipment, or other system problems and provide appropriate upgrade, repair, and replacement advice for Type I systems to the owner.

v. Provide operation advice to the owner of Type I systems.

(2) A pumper license is required for pumping, hauling, and disposing of residuals from Type I, Type II, and Type III systems.

100.552(f) Operator

(1) Licensed operators must be able to:

i. Understand the treatment processes used in the systems for which they provide operation services, and the type and schedule of routine maintenance tasks and emergency operation procedures for each.

ii. Perform or cause to be performed needed operation and maintenance in accordance to accepted procedures in a timely manner.

iii. Identify sources of clear water infiltration/inflow, deteriorating, damaged, or missing treatment system components, malfunctioning equipment, treatment process malfunctions or other system problems and provide appropriate upgrade, repair, replacement, and/or operations advice to the owner.

iv. Certify compliance monitoring reports in accordance with the system's current Operating Permit.

(2) An operator license is required to operate and maintain Type II and Type III systems.

(3) System owners may be exempted from this requirement.

System owners may be exempted because they are the responsible parties for the operating permits.

100.552(g) Inspector

(1) Licensed inspectors must be able to:

i. Evaluate and confirm the accuracy and completeness of site evaluations and their interpretation.

ii. Evaluate and confirm the appropriateness, accuracy, and completeness of system designs

iii. Conduct compliance inspections, permitting, and performance inspections activities.

(2) An inspectors license/certification is required of:

i. Inspectors in private practice who issue onsite/cluster system certificates of compliance.

ii. All regulatory staff who directly issue onsite/cluster system permits or certifications.

Table 100.540-1: Conditions under which license category is required

LICENSE	TYPE I SYSTEMS	TYPE II SYSTEMS	TYPE III SYSTEMS
Site Evaluator	Not required[a]	✓	Lic.+ Prof. Soil Sci. Reg.
Designer	Not required[b]	✓	Lic. + Prof. Engr. Reg.
Contractor	✓	Not qualified	Not qualified
Advanced Contractor	Not required[c]	✓	✓
Pumper	✓	✓	✓
Operator	Not required[d]	✓	✓
Inspector	✓	✓	Lic. + Prof. Engr. or Prof. Soil Sci. Reg.
Regulator	✓	✓	Lic. + Prof. Engr. or Prof. Soil Sci. Reg.

a. For Type I systems, a licensed contractor or a registered professional soil scientist may perform site evaluations.
b. For Type I systems, a licensed contractor or a registered professional engineer may prepare designs.
c. For Type I systems, an advanced contractor license is not required.
d. For Type I systems, operation and maintenance services may be performed by a licensed pumper.

100.553 Classes of licenses/certifications

100.553(a) Class I

Those licensed without examination during a two year period immediately following *[the effective date of this code]*. This class is restricted to those holding valid state certifications and who are in good standing on *[the effective date of this code]*.

100.553(b) Class II

Those licensed by comity. This includes any person who holds an unexpired certificate of registration or license issued by an appropriate authority outside the geographic jurisdiction of the board in which the requirements for registration or licensure are equal, in the opinion of the board, to those fixed by the board. Submittal of satisfactory exhibits of technical qualifications or an oral or written examination may be required by the board before comity is granted if the applicant's training and experience record, in the sole opinion of the board, does not clearly indicate the required qualifying experience.

100.553(c) Class III

Those licensed following an oral or written examination and have attained the necessary experience under a licensed/certified professional in accordance with section 100.553.

100.553(d) In-Training

Those who have passed the oral or written examination but have not attained the necessary experience.

100.560 Licensure/Certification Procedures

100.561 Forms and filing

100.561(a) Application for licensure/certification or license/certification renewal shall be under oath and made on forms prescribed and furnished by the board. The application must include statements, made under oath, demonstrating the applicant's education and work experience.

100.561(b) The applicant shall provide not less than 2 verifications of experience and personal character on forms provided by the board from professionals licensed under this chapter. The verifications shall be notarized.

100.561(c) The board shall determine an application fee for licensure. A non-refundable application fee must accompany the application. The fee shall include the cost of examination and cost

of issuance of the license/certification. An applicant who fails an examination may apply for reexamination. The board shall determine the fee for reexamination.

100.562 Examination

100.562(a) Examinations for each license category shall be offered at least once each year. The examinations may be written or oral at the discretion of the board. The examinations shall be based on the education, knowledge, skills, and experience that the applicant must have to perform the duties and responsibilities required of the licensed category.

100.562(b) If the term of the license is allowed to expire either for failure to renew or fulfill the continuing education requirement as required by section 100.560, reexamination is required after a 6 month grace period to fulfill all renewal requirements following the expiration date of the license.

100.562(c) An applicant who fails an examination is ineligible to retake the same examination for a period of at least 6 months.

100.563 Experience

100.563(a) An applicant must complete a minimum of 1year of active experience under the direct supervision of a professional with a valid license of the same category as that sought by the applicant. The licensed professional must certify in writing that the applicant has successfully completed the required term of experience under the licensee's direction.

100.563(b) Experience requirements shall be set by the board for each license category. Qualifying experience shall consist of varied, progressive, nonrepetitive, practical experience directly related to the nature of the work under the category of license sought by the applicant. A description of the experience shall be written in detail and submitted with the application for examination.

100.564 License/Certification Issuance

100.564(a) The board shall issue a license to any applicant who meets the requirements of this chapter. The license is valid for a term not to exceed 3 years. The issuance of a license by the board is evidence that the person named is entitled to the rights and privileges of the licensed category as long as the license remains valid.

100.564(b) Each person licensed under this chapter shall obtain. Reports, plans, specifications, certifications, and other documents developed under the requirements of this chapter must be signed and dated including the licensed person's license category and license number, or stamped (an inking stamp of a design authorized by the board) by the licensee who is responsible for the contents of the documents. Signature and/or stamping constitute certification by the licensee that the document was prepared by or under the direct supervision of the licensee.

100.565 Unlicensed Practice

It shall be a gross misdemeanor after *[effective date of this code]* for any person to:

100.565(a) Provide onsite wastewater treatment services without a valid and appropriate license as required by this chapter.

100.565(b) Purport to be qualified to perform such services with out a valid and appropriate license as required by this chapter.

100.565(c) Attempt to use the license or stamp of another.

100.565(d) Attempt to use a revoked or suspended license.

100.565(e) Attempt to use false or fraudulent credentials.

100.570 Education and Training

100.571 Beyond the education requirements determined by the board for application for licensure, no additional specialty training is required to apply for examination and licensure.

100.572 Continuing Education

100.572(a) Licensees under this chapter must meet the continuing education requirements for license renewal as stipulated by the board. At a minimum, 12 hours of relevant training or course work shall be documented for each 3 year license period. This continuing education requirement is not increased for multiple license categories. Any credit for continuing education hours earned in excess of those required under this chapter to carry over for future license terms shall be at the discretion of the board.

100.572(b) Only education and training accredited or otherwise approved by the board for continuing education credit may be used to maintain a license under this chapter. Nonaccredited training may qualify for continuing education credits only if approved and authorized by the board. The board shall establish minimum criteria that must be met for approval and authorization by the board. At a minimum, these criteria shall include:

(1) A written objective that describes the expected outcomes for the participant.

(2) A summary of the credentials of the person or persons conducting the training, which demonstrates each trainer's knowledge of onsite/cluster wastewater treatment and the specific subject are that for which the respective trainer will be responsible.

(3) A training plan that demonstrates how the course or workshop will meet the requirements of this chapter.

(4) A method for evaluating successful completion, including the form that will document course participation and successful completion, by each attendee.

(5) A description of the topics to be included and how much time will be spent on training in each topic area.

(6) A document signed by a representative of the sponsoring organization certifying that the sponsor will maintain records of participation, attendance, and successful completion for a minimum of three years.

100.580 License or Certificate Suspension, Revocation, Re-issuance, and Replacement

100.581 If the board has a reasonable basis to believe that a person has engaged in an act or practice that constitutes a violation of this chapter including fraud or deceit in obtaining a license/certification, attaching the licensee's or certificate holder's seal or signature to any report, plan, specification, or other document requiring sealing under this chapter not prepared by the person signing or sealing it or under that person's direct supervision, gross negligence, incompetency, or misconduct in the practice of onsite wastewater treatment services, upon conviction of any violations of this chapter or amendments thereof, or upon adjudication of incompetency has the exclusive power to:

100.581(a) Reprimand an applicant or licensee or certified professional.

100.581(b) Suspend, revoke, or refuse to renew a license/certification.

100.581(c) Deny an application for a license/certification.

100.581(d) Impose a civil penalty not to exceed $2,000 for each violation upon an applicant or licensee or certified professional.

100.581(e) Impose a fee to reimburse the board for all or part of the cost of the proceedings resulting in disciplinary action authorized under this chapter, the imposition of civil penalties, or the issuance of a cease and desist order.

100.582 If the board finds that enforcement action is necessary, it shall:

100.582(a) Provide written notice personally or by certified mail to the most recent address provided to the board of the licensee or certified individual containing, as applicable, the effective date of the violations constituting the basis for the enforcement action, the facts which support the conclusion that violations have occurred, specific actions necessary to fulfill the terms of the notice, and a statement that a licensee or certified individual who desires a contested case hearing, must file a written request with the board within a specified period after receipt of the notice.

100.582(b) If a hearing is requested, the enforcement action shall be stayed pending the outcome of the hearing. If the licensee or certified individual does not request a hearing within the specified period, the individual shall forfeit any opportunity for a hearing.

100.582(c) If the license/certification of the individual is revoked or suspended, the individual shall return the license/certification to the board.

100.583 The board may reissue a license/certification to any person whose license/certification has been suspended or revoked upon application for relicensure/recertification only after at least 1 year following the effective date of the revocation notice or after the specified time in the revocation notice, whichever is longer.