Pipeline

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Small Community Wastewater Issues Explained to the Public

MANAGEMENT PROGRAMS CAN HELP SMALL COMMUNITIES

The following, rather heated conversation between an engineer and a state regulatory official was overheard at a conference on wastewater treatment:

Engineer: "Why haven't you people learned to trust onsite wastewater treatment systems? I have stacks of data that show they work effectively. Why do you always want sewers even when onsite systems would be less expensive?"

State Official: "It's not that I don't trust onsite systems. I've seen onsite systems that work well, and I've seen centralized sewerage systems that have major problems. But centralized systems have an important advantage—they have centralized management and oversight and centralized operation and maintenance. So what if your onsite systems perform well? What kind of guarantee do I have that someone will inspect them and maintain them or fix them if they wear out or if something goes wrong? And how can I justify spending public money without that guarantee?"

In many small towns and rural areas where houses are spaced widely apart, septic systems and other onsite or small alternative wastewater treatment systems can be the most practical and least expensive way to treat household wastewater. In some communities, the cost per household of building and maintaining a centralized sewerage system and treatment plant could actually exceed property values! Yet, for several reasons, the idea of centralized wastewater treatment is often preferred, even in communities where decentralized treatment makes more sense.

Centralized wastewater treatment, as the state official points out, has certain obvious advantages that help account for its popularity. With most centralized systems, homeowners do not share any direct responsibility for overseeing system operation and maintenance. And given a choice, most people would prefer the convenience of being able to just flush and forget what they put down the drain.

In addition, onsite treatment has a poor reputation in some communities because of problems with system failures. But when properly sited, designed, constructed, operated, and maintained, these systems can be as effective and reliable as centralized systems. When onsite systems fail, it is usually because of poor planning, inadequate regulation, oversight, or maintenance, improper installation or operation, neglect, or a combination of these factors. In other words, onsite systems often fail because of a lack of adequate management.

Why Management Is a Good Idea

By implementing management programs, communities can control the effectiveness of wastewater treatment and help to protect public health and the environment. Management programs can take many forms and can vary in the level of responsibility they assume and require of system owners.

For example, septic tank/soil absorption systems, the most common type of onsite system used in the U.S., are not difficult to maintain. They have the potential to last as long as centralized systems and can save homeowners thousands of dollars. However, they must be properly designed, sited, and installed, and periodically inspected and pumped. Homeowners can easily help the performance and prolong the longevity of their systems through simple precautions, such as conserving water and not putting certain items into the system.

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Does my community need a management program?

Management Program Goals May Include . . .

- ensuring that individual systems in the community work properly and do not threaten public health, local water resources, or the environment.
- identifying all existing systems, assessing their performance, and correcting problems.
- ensuring that all new treatment systems in the community are correctly designed, sited, constructed, and installed.
- extending the lifespan of local systems as much as possible through ongoing maintenance, and reducing potential repair and replacement costs.
- educating homeowners about the importance of good system operation and maintenance practices, and encouraging their participation and support.
- ongoing monitoring of systems and record keeping.

Needs vary for every community that uses onsite and/or other small, individual wastewater treatment systems, but most communities would benefit from some type of organized management program for these systems. If a community has failing systems that are posing a risk to public health, there is an immediate need for action. Communities may also choose management programs to prevent such problems, to expand their treatment options, or to protect environmentally sensitive lakes, coastal areas, or aquifers.

For example, home aerobic units can provide wastewater treatment in some situations where septic systems are unsuitable. However, the effectiveness of aerobic systems absolutely depends on ongoing maintenance, and for this reason, they are not permitted in some areas. (*For more about aerobic systems, refer to the Winter 1996 issue of* Pipeline.) A community may create a management program that ensures that aerobic systems are adequately monitored and maintained.

Most communities already manage small systems to some extent through regulation. Local governments usually require permits for the installation of onsite systems. Site evaluations and inspection of new installations are also commonly required.

Regulation is a necessary management tool, but it rarely addresses such issues as the need for ongoing system maintenance, record keeping, operation practices, monitoring of systems, or homeowner education—all of which are important for ensuring effective system performance.

Many communities have found management programs to be a positive approach to ensuring that wastewater treatment systems continue to provide effective treatment and a useful mechanism for enforcing existing regulations. Of course, every community is unique and can include people with different points of view, different experiences with wastewater treatment, and different backgrounds. Some residents may be very interested in participating in the maintenance of their systems, while others may not want to be involved at all. Management programs should be custom-made to fit each community.

For a discussion of management program options, read the article beginning on page 3.

MANAGEMENT PROGRAMS CAN HELP SMALL COMMUNITIES

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Many homeowners do not know how to properly operate and maintain their systems, and may not be aware of the potential health risks associated with system failure.

In addition, there are other alternative treatment systems that are more complex than septic systems and require more frequent and specialized maintenance. Through a management program, a community can provide homeowner education, for example, and require that all systems be regularly inspected and serviced when needed.

In this issue of *Pipeline*, many of the options for community management of individual wastewater treatment systems are discussed and explained. Please feel free to share, copy, or distribute this information to others in your community. Articles in *Pipeline* can be reprinted in local newspapers or included in flyers, newsletters, and educational presentations. We ask only that you send us a copy of the reprinted article for our files.

If you have any questions or require further information about any of the topics in this newsletter, please contact the National Small Flows Clearinghouse at (800) 624-8301.

IN THIS ISSUE

MANAGEMENT PROGRAM OPTIONS

Communities that want to organize a management program for their small and onsite wastewater treatment systems must first identify goals for the program, taking into consideration the community's needs, what it can afford, and what level of service residents may want or expect (*see* Management Program Goals May Include . . . *on page 2*).

The challenge for communities is to strike a practical balance among these factors, and plan a program that residents will support. The scope of management programs can range from complete public responsibility for (and, in some cases, even ownership of) individual systems, to simple regulatory programs or public education initiatives.

While there is no set formula for communities to follow, most programs will include some attention to the following:

Assessing Current Systems and Planning for the Future

Communities will need to assess the status of current wastewater treatment and identify any problems that require immediate attention. Compliance with existing state and local regulations should be a priority.

Communities may choose to require homeowners to repair or replace failing systems, offer help to homeowners, or assume part or all of the responsibility for failing systems.

In some communities, information about the types or locations of systems that are being used is not readily available. Obviously, this information must be collected so that a relevant and effective management program can be developed. Some methods for gathering this information include surveying existing local or county records, mailing questionnaires to residents, and door-to-door surveys.

Communities should identify which treatment strategies will best serve their needs in the future so they can plan accordingly. Assessing existing systems can help with this. For example, communities need to know if certain areas are having problems because soil conditions are not appropriate for conventional drainfields. With this information, communities can make informed decisions about what treatment options to recommend or require in the future.

Supervising the Siting, Design, Construction, and Installation of New Systems

Over the years, the importance of overseeing certain aspects of new system construction has become apparent. Many system failures can be avoided with the supervision and control of certain phases in the life of a system.

Site evaluations, for example, should be performed by a sanitarian, engineer, soil scientist, or other qualified professional familiar with wastewater treatment and with soils, drainage patterns, and topography. An education/certification program for professionals who perform site evaluations is another option for communities. Proper site evaluations are critical for ensuring that systems are appropriately designed for local conditions.

Some important concerns related to location include the characteristics of the soil, the depth to the groundwater, the depth to bedrock or impermeable layers, landscape features, such as hilly terrain, and the location of wells or nearby bodies of water. If conditions of a location are unsuitable for a particular wastewater treatment system, the design must be changed or an alternative technology must be used. Having a qualified professional evaluate the site before systems are approved can make the difference in system performance and potentially save homeowners both money and time.

Proper construction and installation are also critical to system performance, so many management programs include supervision of these phases as well. Unless engineers and contractors have worked extensively with onsite or other small systems, they may not be familiar with certain system designs. There have been examples of septic systems that failed because they were installed backwards! Therefore, supervision of the different phases of construction and installation by a professional who is familiar with the systems being used would be a wise addition to any management program. Training and certification for these workers would also be desirable.

At a minimum, management programs should require final inspection of new systems when they're complete and before they're covered with soil.

Regular System Monitoring and Maintenance

A lack of adequate ongoing maintenance is one of the most common reasons that onsite systems fail. Many wastewater treatment technologies depend on regular maintenance to be effective. Systems should also be monitored so the need for repairs or maintenance can be identified and addressed quickly and/or regularly. One of the most important functions of a management program can be to require regularly scheduled inspections that include maintenance, if needed, as part of the visit.

For example, the sludge and scum layers in septic tanks need to be pumped periodically, and systems that use siphons or pumps, such as mound systems or sand filters, need upkeep for those parts as do other treatment systems with mechanical parts. Home aerobic units require regular inspection and maintenance and often come with a manufacturer's service contract for the first two years. A management program may require homeowners to renew these contracts after the initial two-year period.

Responsibility for initiating system maintenance can be assigned to the homeowner or to the management entity. The actual maintenance may be performed by a public employee, or a private contractor hired by the homeowner, the management authority, or the manufacturer if the unit or components are covered by service contracts or warranties.

There are dangers inherent in the inspection and maintenance of some systems. Septic tanks, for example,

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Public Education Benefits Sonoma County Program

"Ever since we started our public education program, life has been a lot easier around here," said Ted Walker of the Sonoma County California Permit and Resource Management Department, who, among his other duties, coordinates the county's alternative systems permit program.

"Now when we get calls from homeowners, the problems are a lot easier to deal with. Homeowners are better informed and more cooperative."

Site conditions in some areas of Sonoma County are not suitable for conventional septic system designs, so the program was formed to design, install, and manage systems with alternative designs. Systems in the program include mound systems, Wisconsin at-grade systems, pressure dosed systems, and intermittent and recirculating sand filters. There are approximately 2,200 systems in the program now, with about another 200 new permits being applied for each year.

"We began our education program when a survey we conducted revealed that around 50 percent of our homeowners knew almost nothing about their systems," Walker said. "Now we conduct classes for homeowners and the general public. We also have workshops for realtors, designers, consultants, and contractors, which are very well received."

In addition, the permit program mails information on individual system design, water conservation, system maintenance, and even how to detect and fix a running toilet. Homeowners with operational permits are motivated to learn because there is a potential for cost savings.

Owners who have systems with good track records can apply for extended two- or three-year permits, saving the $213 renewel fee for each year of the extension. To waive the fee, owners must fill out a self-monitoring checklist.

"The program has worked out very, very well." Walker said. "The only drawback is the program is so popular, it's sometimes hard to keep up."

MANAGEMENT PROGRAM OPTIONS

Continued from page 3

contain certain toxic gases that can be fatal. Septic tanks should never be entered or inspected alone. For this reason, it may be in a community's best interest to encourage that the inspection and maintenance of certain wastewater treatment systems be performed by qualified individuals. Some programs may require the certification and continuing education of maintenance professionals or of the homeowners themselves if they are to do any inspecting or reporting.

Another issue for communities to consider when planning the management of system maintenance is the accessibility of systems. If someone other than the homeowner is to perform regular maintenance or monitoring of the system, it will be necessary to obtain legal access to property in case work is to be done when nobody is home.

In addition, some systems have access ports that are buried underground, and homeowners often do not know the exact location of their systems. Communities may require the installation of risers (elevated covers) on all new and existing systems to make access quicker, easier, and safer.

If risers are located above ground, their covers should be locked or heavy enough so that children or unsuspecting neighbors are unable to remove them easily. One advantage of a comprehensive management plan is that access to systems can be addressed in the design stage.

Educating Homeowners

Even if homeowners are to assume only minimal responsibility, educating them about their systems and about the importance of wastewater treatment in general is a good idea.

For example, septic system owners should be informed of basic good operating practices, such as the importance of not flushing certain common household items, such as coffee grounds, cigarette butts, paper towels, condoms, grease, and certain chemicals into the system. Also, simple precautions like spacing out activities that require heavy water use, such as laundry, fixing leaky faucets and installing low-flow showerheads and toilets can go a long way toward prolonging the life of a septic system and some other onsite systems.

Most homeowners will welcome this type of information as long as it is presented in a positive way. For example, it is useful to include an explanation of how certain activities can help homeowners protect their systems, their drinking water resources, public health, and the environment. Potential cost savings should also be emphasized. *(For an example of a successful education program, see the story on Sonoma County at left.)*

Record Keeping

Maintaining a good record-keeping system is essential to the success of any management program. The location of individual systems, information on system users, permits, model names and numbers, system maintenance requirements and schedules for maintenance, and the results of inspections and site evaluations—all of this information is needed for the continuing guidance of the program.

Record-keeping systems that use electronic databases allow communities to analyze historical data, like the performance of a particular design in a particular area. Regardless of the type of system used, all records should be organized so information can be easily retrieved by all who need it, including new home buyers and those working with the systems.

in the works

The National Small Flows Clearinghouse (NSFC) is working on offering an information packet for local officials and other small community leaders. Although currently just in the planning stages, the packet will probably include sample legal documents and other materials used by small communities for organizing management programs.

See the list of resources available from NSFC on page 8, and look for more information about the packet in upcoming issues of *Pipeline*.

Management Tools and Strategies

There are numerous possibilities for communities that wish to organize successful management programs for their onsite and small community treatment systems. When planning a program, a community needs to consider its own individual needs and circumstances. Most communities can benefit by combining several techniques to implement their management programs. Here is a brief overview of some strategies used by small communities:

Regulation

Regulation is a necessary and useful tool and is the basis of many wastewater treatment management programs. The majority of states have codes for septic systems and other onsite and small community systems. However, the laws vary among states and even locally within states.

In small communities, local health departments are often charged with enforcing standards for onsite wastewater treatment. Through the use of permits, health departments may restrict the design possibilities for systems and require site evaluations, inspections, or surveillance of the construction and installation phases, and/or final inspection before approval. Permits also can be required to make alterations or extensive repairs to a system.

Inspections of existing systems may be required periodically or only at the point of sale of a property by law. Maintenance of existing systems is less frequently controlled and enforced successfully by regulation alone.

Other aspects of treatment often controlled by regulation are setback requirements for systems (the minimum distance required from nearby wells and bodies of water), what constitutes system failure, and actions that need to be taken in the event of system failure.

Enforcement, probably the most important and most costly part of any regulatory program, can be difficult unless systems already show signs of trouble. Repairing or replacing failing systems can be costly, and allowing systems to deteriorate does nothing to protect public health or the environment.

Therefore, it is generally agreed that regulation alone is not enough and that more comprehensive and preventative approaches to management are needed and can be more positive and cost-effective for homeowners.

Operating Permits

A different type of regulatory program has been successful in some communities. The performance-based approach of issuing operating permits to homeowners whose systems are in compliance with performance standards addresses the need for prevention and ongoing maintenance.

With this type of program, health department officials or other qualified individuals monitor the quality of the effluent (the treated wastewater coming from the system) and/or the quality of the groundwater or surrounding surface water sources. If the system appears to be in good

operating condition and water quality standards are met, the owner's permit is renewed.

Management authorities can offset or pay the costs of inspections and lab work by charging fees for permit renewals. Self-monitoring by owners and less frequent visits from inspectors for lower maintenance systems with good performance records can also decrease costs. Education programs can help system owners with self-monitoring, and at the same time make them more aware of their system's needs and the part that sound operating habits can play in prevention. Discounts on permit renewals for well-maintained systems can provide incentive to homeowners.

To read about an operational permit program in California, see the sidebar on page 4.

Certification

Another strategy used by many communities is the education and certification or licensing of inspectors, site evaluators, installers, and pumpers and haulers. Systems in every stage of existence should be managed by qualified professionals. Certification programs can prepare individuals to perform proper site evaluations, oversee the construction and installation of new systems, inspect existing systems, evaluate system performance and its impact on the environment, perform system maintenance and repairs, and educate homeowners about their systems.

For example, Pennsylvania has a training and certification program for sewage enforcement officers, who are qualified to perform site evaluations, and oversee construction and installation of systems. Only sewage enforcement officers are qualified to authorize new system permits.

Some programs offer or require the licensing or certification of pumpers and haulers, who can also learn to educate homeowners about proper operation. Maintenance and education may be performed by health department staff, contracted out to certified private firms, or homeowners may be required or encouraged to hire certified personnel.

Management Districts and Other Management Entities

Management programs can be administered and regulated by special entities formed expressly for this purpose, or by public agencies or other organizations that already exist. Possibilities for management entities will vary from state to state depending on the constitution and regulations in

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Are management programs expensive?

For many communities, money will be the most important consideration when choosing a management program. How expensive a program is depends on its scope and other factors like costs for materials and local labor. But when compared to the potential costs of constructing and maintaining a centralized treatment system, repairing or replacing failing onsite systems, or cleaning up a polluted water supply or aquifer, management programs can be much less expensive than no management at all.

Management programs also can benefit local economies and property values because they offer convenience, infrastructure maintenance, and extra protection for water resources. And by allowing for the use of alternative systems, management programs can help preserve the rural character of an area.

Management entities can be financed in a variety of ways. They may charge fees (such as permit fees, membership fees, annual service fees, or fees for specific services), levy taxes, issue bonds, and/or receive state or local funding. Areas that have several systems participating can often optimize costs on inspections or maintenance. Whether a program is considered to be expensive or not will also depend on the way money is collected from system owners and the cost per household.

Management Tools and Strategies

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each state. Sometimes enabling legislation must be passed in order to give entities the authority to manage systems.

Types of management entities include sanitary, water, and sewer districts; public utility districts, and multiple purpose special districts; existing state, county, and municipal authorities; rural utility cooperatives; private corporations; private nonprofit organizations (such as homeowner associations); and other public or private organizations. Such entities can be given the authority to centrally control the management of decentralized systems.

The scope of their authority can vary from total management of all aspects of wastewater treatment (even to ownership of all systems) to management of one aspect of treatment, such as maintenance.

For example, responsibilities of a management entity might include a few or several of the following:

- power to propose legislation and to establish rules and regulations for the program;
- land use planning, planning and approval of designs and applications for systems, and issuing permits;
- construction and installation of new systems or inspection and oversight of construction and installation;
- routine inspection and maintenance of all systems;
- management and regulation of septage handling and disposal;
- local water quality monitoring;
- administrative functions, bookkeeping, billing and processing payments;
- grant writing, fundraising, management of staff, and public relations;
- authority to set rates, collect fees, levy taxes, acquire debt, issue bonds, make purchases, and other financing powers;
- authority to obtain easements for access to property when needed, authority to enforce regulations and repairs or replacement of failed systems, authority to acquire land when necessary, and other legal functions;
- education, training, and certification programs for professionals, and education for homeowners and the general public; and
- record keeping and/or database maintenance.

The more comprehensive the program, the more likely that a community's onsite and small wastewater treatment systems will be consistently well sited, designed, installed, operated, and maintained.

Examples of both well established and newly formed management districts and other management entities can be found in Washington, New York, Texas, and California to name a few.

The National Small Flows Clearinghouse (NSFC) has case studies and information on a variety of management entities. See the list of contacts on page 7 and products on the back page for more information.

Town of Paradise, California

One example of a comprehensive management entity is the Town of Paradise Onsite Wastewater Management Zone (OWMZ) in Butte County, California. The zone was formed in August 1992 partially in response to a last-minute voter rejection of a centralized sewerage system for a commercial area.

Currently, with about 28,000 residents and 11,000 onsite systems on 16 square miles, Paradise is one of the largest unsewered incorporated towns in the U.S. The goals of the Town of Paradise OWMZ are to enhance water and environmental quality and to ensure the continued long-term service of the town's onsite systems.

According to Wes Greenwood, onsite sanitary official for the Town of Paradise OWMZ, the zone had sort of a rocky start. "In the beginning there was a lot of change," he said, "but I think we've made a lot of headway."

Part of the change was administrative—Greenwood is already the third manager of

Continued on next page

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the zone since 1992. One of his first jobs was reconciling the different approaches to onsite systems management that were being considered. The zone was somewhat ill-defined in the beginning, and the rules and regulations for implementing management needed to be hashed out.

"We are a full-service program," says Greenwood. "We issue permits for new onsite systems and for repairs of existing systems, which range from standard to a variety of alternative systems. We started monitoring existing systems in 1993—our goal is to have all systems evaluated by August 1998."

Systems are evaluated and maintained by professional pumpers and haulers, who are required to complete training and be licensed by the Town of Paradise OWMZ. Every time a system is pumped, a septic system evaluation report form is filled out and returned to the zone for review and processing. The evaluation report includes, among other criteria, a hydraulic loading test that scores the performance of the system from failing to excellent.

Based on the septic system evaluation report and considerations, such as the age of the system, past performance, and soil conditions, homeowners are issued operating permits that allow the continued use of the system for one to seven years. Annual operating permit fees (typically $14.40 per year) are charged to the owner of an individual onsite system to partially fund the operating expenses and services provided by the OWMZ.

Residents are billed for the annual operating permit fee as part of their water bill, which is sent out bimonthly, so residents pay approximately $2.40 per bill.

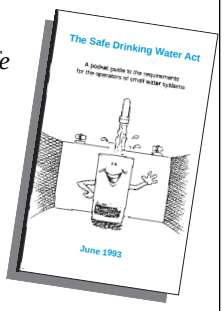
"The town council and the OWMZ worked out a deal with the local water utility where we paid to upgrade their computer billing operations, and in exchange, they do our billing for us," said Greenwood.

With this kind of determination, flexibility, and resourcefulness, the Town of Paradise OWMZ should achieve its goals.

Free drinking water guide available

Have you ever wished there were an easy-to-read, convenient summary of Safe Drinking Water Act requirements? Well there is, and it's available free from the National Drinking Water Clearinghouse (NDWC).

Developed by the U.S. Environmental Protection Agency's Region 9 office, this 82-page booklet is small enough to fit in a pocket and provides an easily understandable summary of drinking water standards, reporting requirements and other procedures. Appendices include details about the sources and health effects of drinking water contaminants, the rules governing lead and copper, and more.



For a copy of the Safe Drinking Water Act Pocket Guide, call the NDWC at (800) 624-8301, and request Item #DWBLRG25. A postage and handling charge will apply. To learn more about the NDWC's other services, also request a free information packet, which includes a products catalog and sample issues of the newsletters On Tap *and* Water Sense.

NSFC to offer new database

The National Small Flows Clearinghouse (NSFC) is currently gathering information for its new Contacts and Referrals Database. This database will provide information to small communities about organizations involved in wastewater issues at the national, state, and local levels.

Organizations to be included in the database offer assistance in a variety of ways—through research, facilities, funding, regulations, and technical outreach and training. Seventy organizations are already listed, including federal and state agencies, associations, colleges and universities

If you know of an organization that may want to be included in the Contacts and Referrals Database, call Crystal Stevens, coordinator, at (800) 624-8301, ext. 550.

CONTACTS

National Small Flows Clearinghouse (NSFC)

The National Small Flows Clearinghouse (NSFC), located at West Virginia University, can help small communities by providing information about wastewater treatment technologies and management strategies for small communities. The NSFC also offers materials that can be used to educate the public about different wastewater technologies and issues. The NSFC is funded by the U.S. Environmental Protection Agency and offers technical assistance and a variety of free and low-cost products to help small communities with wastewater issues. Some of these NSFC products are listed on the back page. You may contact the NSFC at (800) 624-8301.

Local Health Department

Residents of small communities interested in onsite system management should contact their local health department for referrals or for more information about local regulations and requirements. Health agencies and officials should work together with homeowners and businesses when developing management strategies for onsite systems. (Health departments are usually listed in the government section or blue pages of local phone directories.)

RESOURCES AVAILABLE FROM NSFC

To order any of the following products, call the National Small Flows Clearinghouse (NSFC) at (800) 624-8301, or write to NSFC, West Virginia University, P.O. Box 6064, Morgantown, WV 26506-6064. Be sure to request each item by title and item number. A shipping and handling charge will apply.

Onsite Management

This NSFC computer search on onsite wastewater treatment system management contains 373 abstracts of articles available for order from the NSFC. Topics include design, maintenance, cost-effectiveness, site selection, construction, and system planning. The price is $20. Item #WWBLCM05.

Management of Onsite and Community Wastewater Systems

This 238-page document provides a guide for developing an effective management program for alternative treatment technologies. Although originally prepared to respond to the requirements of the U.S. Environmental Protection Agency Construction Grants Program, the book is applicable to anyone interested in optimizing the performance of onsite or small community wastewater treatment and disposal systems. The price is $34.20. Item #FMPCMGO4.

Management Districts Information Packet

This compilation of papers describes management guidelines for planning and implementating onsite and other small community wastewater systems. Case studies of individual management districts are included. The price is $21.15. Item #WWPCGN70.

Wastewater Management in Unsewered Areas

This 25-minute videotape explains onsite system management and specific alternatives to the conventional septic tank/soil absorption system. Alternatives include recirculating sand filters, cluster soil absorption systems, and sand mounds. Aspects of system management implemented at Stinson Beach, California, and evaluation techniques used in Oregon are also discussed. The price is $20. Item #FMVTMG01.

Manufacturers and Consultants Database

This NSFC database can provide callers with a list of industry contacts for wastewater products and professional consulting. The database can serve as a resource for private citizens, engineers, health professionals, and local officials. For example, homeowners interested in onsite treatment can call the NSFC and request a search of consultants in their area. When requesting a search, please be sure to specify the topic and the item number. The price is 15 cents per page. Item #WWPCCM16.

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