
APPENDIX E: FURTHER READING, RESPONSIBLE MANAGEMENT ENTITIES

establishing
successful RMEs

FACT SHEET

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Water Environment Research Foundation
Collaboration. Innovation. Results.

what is an RME and why do we need them?



**READ THIS
FACT SHEET IF...**

**you are new to the
decentralized waste-
water systems field.**



The term “Responsible Management Entity” (RME) was coined by the EPA in its *Voluntary National Guidelines for the Management of Decentralized (Onsite and Cluster) Wastewater Systems*. Briefly, the EPA defines an RME as a legal entity responsible for providing management services to ensure that decentralized onsite or clustered wastewater treatment facilities meet established criteria. (See www.epa.gov/owm/septic/pubs/septic_guidelines.pdf.)

Decentralized wastewater treatment systems encompass both onsite systems serving a single property and cluster systems serving multiple properties. Decentralized systems were long regarded as a temporary stopgap until centralized sewerage services could be provided. That changed when a review by the EPA in 1997 concluded that decentralized wastewater systems could be “a cost-effective and long-term option for meeting public health and water quality goals,” provided these systems were adequately managed.

“Adequate management” depends on the situation. It certainly includes proper design, installation, and ongoing operation and maintenance. The EPA identifies a broad range of management levels, where increased management controls correlate with increased risks to public health and the environment and/or complexity of treatment technology. For example, in low-risk contexts—where there are few serious consequences from failure—maintenance reminders to homeowners can achieve adequate manage-

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ment—the homeowner awareness management level in the EPA’s terminology. Increased probability or consequences of failure require management by competent professional service providers rather than leaving the responsibility with property owners, be they residential, commercial, institutional, or industrial.

LEVELS OF MANAGEMENT

The EPA groups RMEs and associated service providers according to the level of management required:

- **Maintenance Contracts.** The local regulatory authority (e.g. a public health regulator) requires property owners to have contracts with appropriately qualified, and in some cases certified, service providers to ensure proper and timely site and soil evaluation, design, installation, and professional maintenance.
- **Operating Permits.** The local regulatory authority implements a management program that issues permits to property owners for operating their systems, with conditions and requirements for proper maintenance. The operation and maintenance must be carried out by qualified, and often certified, service providers. The authority monitors and enforces compliance, and may or may not act as the service provider.

CONFUSING TERMINOLOGY

Terminology in this field can be confusing. Some people prefer the term “distributed” to “decentralized.” The basic idea is a focus on responsible management of small-scale wastewater systems (from a single lot to a few thousand households). Many different kinds of organizations could do this, which is why the EPA chose the generic term of “Responsible Management Entities.” This terminology leaves the field open to public organizations such as existing municipal or regional utilities, as well as private organizations such as wastewater pumpers looking to expand their business by taking on responsibility for the systems they service.

However, “public” and “private” also mean different things to different people in different states, and those terms can also come together—for example, through publicly regulated, privately owned utilities. Then there’s the issue of how regulations determine what kinds of management are required and what kinds of organizations can supply it, and these change from state to state, and sometimes county to county. The goal of these fact sheets is to help clear a path through this confusion.

For more on terminology, see the CIDWT’s Decentralized Wastewater Glossary at www.onsiteconsortium.org.

- **RME Operation and Maintenance.** The public health and/or environmental risks are high enough to require management by a qualified organization on behalf of the property owners. The regulatory authority permits the RME

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to take on obligations to meet compliance on behalf of property owners, in exchange for a fee. The RME does not own the infrastructure, so this situation is also known as “contract operation.”

- **RME Ownership.** The RME owns all the infrastructure assets including systems located on private (e.g., residential, commercial, institutional, etc.) property. For users, the service provided appears equivalent to centralized services with the RME taking on all the associated obligations to ensure performance in exchange for a fee for services. In many states, statutes mandate that RMEs providing sewerage service to multiple properties for a fee be chartered as public utilities, either governmental or private.

RME VS. SERVICE PROVIDER

In practice, there is disagreement about precisely what should constitute an RME. According to some, including the EPA in its *Voluntary National Guidelines*, the term RME should be restricted to those organizations to which the regulatory authority issues an operating permit—as in the last two scenarios described above. In practice, though, individual organizations may reflect mixtures of the scenarios outlined above.

The goal of these resources is to provide guidance for professional service provider organizations that have the necessary technical, managerial, and financial skills to ensure both their own long-term viability and the long-term performance of decentralized systems. To that end, these resources use the terms “RME” and “service provider.”

“RME” is intended in the restricted sense outlined above—that is, a permitted organization with ultimate compliance responsibility. “Service provider” is intended to cover all the other kinds of organizations involved in implementing distributed wastewater management, such as contract operation and maintenance providers; water authorities supplying contract operation services to property owners; technology suppliers who include operation and maintenance contracts within their sales; etc. Other organizations may be neither RMEs nor service providers but have important roles in some contexts and can benefit from these resources. These organizations include homeowners’ associations and developers.

The context determines which type or types of RMEs and service providers may be most appropriate (*Fact Sheets #2, #3, and #4*). The status of the communities and treatment systems that RMEs and service providers work with is a strong determinant of the types of organizations involved (*Fact Sheets #2 and #4*).

For example:

- Existing communities with older systems seldom have an RME. They are more likely to have service provider arrangements through maintenance contracts or operating permits issued to the property owner.
- Existing communities with new treatment systems may engage with either RMEs or service providers. The fact that systems have been replaced suggests a higher risk situation, so it is likely that permits of some kind will be necessary.
- New developments with new treatment systems are the preferred situation for RMEs since this allows the organization to avoid the risks associated with taking on old systems with unknown histories and unpredictable futures.

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A rural electric cooperative offers wastewater services.

Connexus Energy, a rural electric cooperative in Minnesota, joined forces with an existing provider of operations and maintenance services for decentralized wastewater systems (Eco-check—see *Fact Sheet #7*) to become the RME Connexus Waterways. Connexus Energy is able to utilize its existing administrative systems to offer wastewater services to a portion of its customers.

CLASSIFICATIONS

RMEs and service providers may also be characterized by type of organization (*Fact Sheets #2 and #4*). These may include:

- Government-owned public utilities.
- Privately owned, publicly regulated utilities.
- Limited liability, for profit entities.
- Private not-for-profit organizations (such as cooperatives) that provide services and can make a profit but cannot take those profits out of the corporation.

Yet another way to characterize RMEs is by the other types of services or asset and environmental protections they offer—for example, electricity, drinking water, stormwater management, centralized wastewater, or water-shed protection.

The resources presented here are intended to help new and existing RMEs, service providers, and associated entities work out how to develop and improve their managerial and financial capacities in order to be successful. Consulting with various advisers, including an attorney, will likely be part of this process. These resources complement the many existing resources that focus on technical management of decentralized systems. See EPA's *Handbook for Managing Onsite and Clustered (Decentralized) Wastewater Treatment Systems* at www.epa.gov/owm/septic/pubs/onsite_handbook.pdf, as well as other related resources in the *Guide to the Fact Sheets*.

This fact sheet was prepared by the Institute for Sustainable Futures at the University of Technology Sydney in Australia and Stone Environmental, Inc., in Vermont.

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working within the local context



**READ THIS
FACT SHEET IF...**

**you want to work out how
the local context will affect
what kind of organiza-
tion you set up and how it
functions.**



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The existing situation strongly influences the kind of business a Responsible Management Entity (RME—*Fact Sheet #1*) or other service provider may conduct and whether that business can be successful. Given this, it pays to understand the local and regional context before creating a detailed business plan (*Fact Sheet #8*).

The local context has many dimensions. Key among them is the state of the public mandate. Is there a proven need for wastewater management services based on sound evidence of an existing or impending threat? On the other hand, what is the value proposition? How will prospective customers gain value from this initiative? Some other influential dimensions include:

- Existing infrastructure for wastewater treatment and its management.
- Environmental conditions including climate (temperature, rainfall), soils, drainage, and proximity to water tables and sensitive environments.
- People, groups, and personalities.
- History and norms of the region.
- Demographics and ability to pay.
- Trends in population growth or decline, land use, and settlement patterns.
- Availability of investment capital.

Better management of existing on-lot systems.

In Paradise, California, widespread onsite system failures and high bacteria counts in streams and some wells near a commercial development were drivers for an expensive sewer plan. Residents voted down that plan, and an onsite wastewater management zone—a legal entity under California law—became the means for the municipality to manage all systems in town via operating permits.

Such a zone, which allows a community to implement management and enforcement programs for its own onsite wastewater treatment system (OWTS), had already been formed to manage OWTS outside the proposed sewer service area. When the sewer proposal was abandoned, this zone encompassed the entire town.

- The competition: who provides what services already, and by extension, what is missing?
- Regulations, an important topic, addressed further in *Fact Sheet #3*.

There is a wide range of public and private possibilities for RMEs and service providers, each with their own pros and cons (*Fact Sheets #1 and #4*). At the outset, all possibilities should be on the table. Decisions about the governance model and structure of your organization are best made by systematically assessing the opportunity through a business planning process (*Fact Sheet #8*). This process includes:

- Gathering information about what's needed and what's available (this fact sheet).
- Recognizing what regulations apply (*Fact Sheet #3*).
- Identifying what is possible, feasible, and desirable.

Below, these dimensions are organized into a set of core questions, with answers, discussion, and case examples particular to the distributed wastewater sector.

CORE QUESTIONS FOR MOVING INTO THE DECENTRALIZED WASTEWATER BUSINESS

Assess existing wastewater treatment and management. What is the state of the public mandate? What defines the need and the value proposition (e.g., public health, environment, economics, social equity)?

Assess stakeholders. Is there support for RME services or for centralized sewers? Are there local action groups, regulators, or customers willing to pay?

Assess revenue base. Are there enough customers? Can they pay what you need? Will you have a monopoly?

Assess availability of capital. Can you raise the funds through public or private debt or equity financing?

Assess regulatory landscape. Do local regulations for corporate formation, utility operation, and environment/public health protection support your preferred organizational structure?

ASSESS EXISTING WASTEWATER TREATMENT AND MANAGEMENT.

What is the state of the public mandate? Is there a need for RME services? Is there a need for some other kind of service provision? What kinds of pressures exist? What type of service matches these contextual factors?

EXISTING AUTHORITY ADOPTS DECENTRALIZED APPROACH FOR NEW DEVELOPMENTS.

The Mobile Area Water and Sewer System (MAWSS), in Alabama, is a substantial urban water and wastewater utility that operates a centralized sewer system and three treatment plants. The utility was faced with

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Early engagement pays off.

In Warren, Vermont, Stone Environmental, Inc., worked on behalf of the town to conduct an assessment of local wastewater treatment needs in tandem with public meetings and regular progress mailings. Workers were in regular communication with both the select-board and members of the citizen Wastewater Action Committee.

When the assessment's lot-by-lot confirmations turned up enough problems to warrant a village-level solution, committee members held neighborhood potluck meetings to answer questions and concerns. The eventual outcome was a successful bond vote and 85% voluntary participation in the resulting community wastewater project.

To meet requirements for grant and loan funding, most components of the community system needed to be owned and managed by the town (as would be the case with a centralized sewer). The engineer and the committee worked together to make sure that the resulting sewer ordinance and user-fee structure were sensitive to residents' concerns about cost and ownership of on-lot system components.

the need to make decisions about extending its service area across a topographic divide to serve an expanding suburban area west of Mobile. Developers began to request sewer service in this area, and the MAWSS staff and board determined that providing remote wastewater service could be worthwhile. MAWSS installed several decentralized systems, which are owned and operated by the utility through a collaborative arrangement with developers.

RESPONDING TO DEVELOPMENT PRESSURE.

Depending on the situation, centralized management of decentralized systems may be used to encourage or limit growth.

In contrast to the MAWSS example above, residents of Stinson Beach, California, rejected a sewer proposal because of concerns about growth. Instead they embraced the idea of an onsite wastewater management district as a means of managing both wastewater infrastructure and what was viewed as excessive development.

HIGH SEWER COSTS DRIVE DECISIONS TO SUPPORT DECENTRALIZED SYSTEMS.

The high capital costs and ongoing operation and maintenance costs of centralized sewers are a factor in many of the examples in these fact sheets.

For MAWSS, an existing utility, it made financial sense to install and operate decentralized systems outside the utility's service area rather than extend sewers. In Broad Top/Coaldale, Pennsylvania, and Warren, Vermont, the high cost of an initial centralized sewer proposal took serious consideration of any sewer, including lower-cost alternatives, off the table for a period of several years. In both of these cases, decentralized alternatives were eventually implemented with the local municipality as the RME.

ASSESS STAKEHOLDERS.

Is there support for an RME or some other kind of service provision? What are the local public perceptions about past or failing systems? If the locals are used to "wearing pegs on their noses in the rainy season," how will they respond to an increased rate burden? Or to paying for what was formerly a "free" service? What will it take for you to build enough support?

Learn about and develop relationships with those who can help you and those you may need to win over. Engage early and often—and as appropriate to each group's power and interest. Local decision-makers need to be in favor of RMEs and/or O&M service provision, rather than replacement of onsite systems with centralized sewers.

Stakeholders include those external and internal to your organization. External stakeholders can include homeowners, other landholders and land managers, installers, realtors, developers, regulators, the local health department, environmental groups, and others. Make use of available resources for developing good relationships with these stakeholders, such as the set of communication tools about building partnerships, bringing ideas to the community, and strategies for success on the Livable Communities website administered by WERF at www.werf.org/livablecommunities/tool_comm.htm.

Lack of opportunity for engagement leads to high cost outcomes.

The City of Marco Island in southwest Florida was incorporated in 1997, and, in 2003, it acquired the water and wastewater system from a private owner for the sum of \$85 million. In 2006, it released a utility expansion plan (UEP) predicated on replacing failing septic systems with centralized sewers.

The UEP remains controversial because property owners face high costs for uncertain gains. Assessments are typically about \$20,000 per lot, plus a contribution to the expansion of about \$5,000 per lot. Lower-cost alternatives based on improving the management of existing septic tanks to get equivalent environmental outcomes were not seriously considered.

At the 2008 election, the candidates were split down the middle about whether to continue the program or to cancel it. Their analyses of the costs and benefits of the program differed by more than \$50 million. (See www.marcoeagle.com/news/2008/jan/26/marco-islands-divisive-campaign-issue-sewer-system/.) The seven-year, \$100 million program is continuing.

Assuming your organization is already up and running, internal stakeholders include employees, supervisors, and contractors already providing services. Ask yourself some basic questions about taking on responsibilities for decentralized systems:

- Can you survive for an extended period of time with minimal income from the proposed business?
- Do you have an adequate labor force already, or will you need to hire?
- Will your staff need training? (See Fact Sheet #8 for incorporating staffing/training needs into your business plan.)
- Will you need additional licenses? (See Fact Sheet #3 to identify relevant regulations and their impact.)

DON'T GIVE UP YOUR DAY JOB.

Getting started as an operation and maintenance (O&M) provider can take some time, and it could easily be years before you break even. Among other things, it depends on whether O&M is mandatory or not, your customers' willingness to pay, and your capacity to sell your services and build up enough of a customer base to cover your costs.

Trapper Davis is now a successful provider in Virginia. After three years, he employs two maintenance staff and services about 1,200 individual advanced treatment systems. It wasn't always so.

Initially, the state did not mandate maintenance, and Trapper realized that building up a financially sustainable customer base was going to take a long time. He reduced this through a wise decision to align himself with an equipment manufacturer who required initial two-year O&M contracts. Even so, alternate income was necessary in the early days. Now, however, because Trapper built good relationships with them and delivered a good service, his customers are sticking with him even after the initial arrangement expires, and they are recommending him to others.

ASSESS REVENUE BASE.

There are many dimensions to consider in getting a handle on your revenue base. Refer to the regulatory (Fact Sheet #3) and business planning (Fact Sheet #8) fact sheets, and think about honest answers to these questions:

- Are there enough customers?
- What kind of value proposition will work for them?
- What kind of need do they perceive? If this is different from the real public health, environmental, economic, or social equity need, how will you convince them of that?
- Can they pay you what you need to be paid to provide service?
- Do they pay for wastewater treatment services currently?
- Will they accept paying for increased management? This is especially

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State revolving funds support individual and cluster investments and upgrades.

In a few states, revolving funds support onsite wastewater repairs and upgrades.

The Pennsylvania Infrastructure Investment Authority (PENNVEST) can fund any owner and/or operator of a sewer system to construct a new or improved system to correct public health, environmental, compliance, or safety deficiencies. This includes individual on-lot systems as well as community scale investment.

For example, Chatham Township's municipal authority received more than \$300,000 in 2008 at an interest rate of 1% over 25 years to upgrade distributed systems for 35 households whose income is below the state median. The project includes five individual on-lot systems, two community on-lot systems, and the replacement of 27 septic tanks, along with an ongoing management program.

relevant to developing a business dealing with existing systems, where historic costs are often unrealistically low due to a lack of maintenance and management.

- Are your services mandated? What will you do if customers don't pay? Can you enforce collection? Can you work with another service provider (such as electricity or municipal water) that would be willing to enter into a disconnect agreement for non-payment?
- Is there another service that's needed locally that you can offer to reduce your overhead and increase your revenue (e.g., trash collection, storm-water management, etc.)? What long-range forecasts are available?
- What are the growth projections for your service area? What does the local planning and zoning commission have to say about how they might be serviced? What are the implications for your future customers?

ASSESS AVAILABILITY OF CAPITAL.

Is there capital available for this type of activity? What is your access to state revolving funds (SRF)? Some states restrict SRF access to governmental units. Other states allow easy access for property owners to revolving funds. For example, the Ohio Water Development Authority (OWDA) has a range of wastewater loan programs, including programs that target villages and areas of economic hardship. In addition, the OWDA, like many other state agencies, offers linked deposit loans, which are bank loans at reduced interest rates, to provide individuals, private entities, or governmental agencies with low-cost capital for onsite wastewater systems that provide non-point source pollution control outcomes. (See www.owda.org or www.decentralizedcentral.org.)

INNOVATIVE PHILANTHROPY FOR COMMUNITY DEVELOPMENT FINANCING.

ShoreBank Enterprise Cascadia's (SEC) Septic Loan program has a goal to inspire homeowners to invest in their wastewater assets by repairing or replacing poorly functioning systems.

SEC is a not-for-profit philanthropic organization whose mission is to enhance the economic, social, and environmental wellbeing of the Pacific Northwest. Its focus is improving the water quality in Hood Canal by supporting local businesses and residents. Its intent is to follow public policy rather than to make it.

Rates and terms for loans are indexed to homeowners' income and credit status, and to property sales. Responsibility for choosing designers, installers, and O&M providers rests with the property owner. SEC provides lists of registered service providers and ensures property owners have funds set aside to pay for O&M. Follow-up O&M is a condition of the loan.

The outcome is that all the incentives are pulling in the same direction, so onsite and cluster system performance in the region is improving without unbearable costs to property owners. While SEC is not an RME, its innovative approach creates a demand for high quality, financially viable service providers.

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The Rural Utilities Service of the US Department of Agriculture has a revolving fund to assist small rural communities in meeting their water and wastewater needs. These grants are available to legally established, private, tax-exempt, non-profit organizations. (See www.usda.gov/rus/water/.)

The Rural Community Assistance Program (RCAP) also administers grants and revolving funds programs from the USEPA and other sources, and works with rural communities at a local level to address their wastewater problems. Check the RCAP in your region.

ASSESS REGULATORY LANDSCAPE.

Please refer to *Fact Sheet #3* for further detail on what to look for and how to assess this area and local regulatory processes. In the best situation, local regulations for management would already be in place, or at least the regulatory community would be moving in that direction. Decision-makers must be in favor of operations and maintenance for RMEs to be successful.

BRINGING IT ALL TOGETHER.

Having assessed these five areas, to assure that they do not preclude adequate technical options, ask:

- Do you know enough to a) make a good decision, and b) effectively start up and run this type of service? If not, what else do you need to know?
- Are there precedents for this type of service in this local area/region or this state? If not, why not? What are the key barriers? What would make them surmountable?

Undertaking a business planning process can help to answer these questions. (See *Fact Sheet #8*, which also suggests places to go to for help.)

This fact sheet was prepared by the Institute for Sustainable Futures at the University of Technology Sydney in Australia and Stone Environmental, Inc., in Vermont.

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operating successfully as a governmental organization



READ THIS FACT SHEET IF...

your organization is a governmental organization and you need help to start managing or to improve your management of decentralized wastewater systems. You might be a water or wastewater authority, special district, county health department, or a staff member of a similar organization.

If you are new to decentralized wastewater, do your research before choosing a business structure and management approach. Organizational structures that are encouraged for RMEs in one state may be prohibited by statute in another! (See Fact Sheet #4 for further information.)



LOCAL CONDITIONS SHAPE WHAT IS POSSIBLE.

Regulations are key determinants of business structure and operations.

- Most governmental organizations that function as responsible management entities (RMEs) or service providers are structured as special purpose districts, county health districts, regional water or wastewater authorities, or governmentally owned or chartered entities. (For an explanation of an RME, see *Fact Sheet #1*.)
- Unlike privately owned utilities, governmental utilities are seldom required to have rates approved by state-level Public Service Commissions or Public Utilities Commissions. (The state of Pennsylvania is a possibly unique exception to this rule.) However, user fees and service charges must be in line with both the expenses incurred by the utility to provide service and the ability of customers to pay for service (*Fact Sheets #2 and #3*).

Most governmental organizations taking responsibility for decentralized systems are responding to a problem.

Problems driving the need for management of decentralized systems may be related to development pressure, water quality, resource degradation, or a legacy of under-performing onsite wastewater infrastructure. Some governmental RMEs own the on-lot infrastructure. The more common scenario

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Goals/missions for some existing governmental entities acting as RMEs for decentralized systems.

- Protect or improve water quality in a given area. (See the discussion of Loudoun Water in Virginia on the next page.)
- Increase management of decentralized systems to maintain control of community character by avoiding sewerage. (See the sidebar about Paradise Wastewater Management District in California in Fact Sheet #2.)
- Allow development or increase development densities outside of sewered areas. (See Fact Sheet #2 for a discussion of Mobile Area Water and Sewer System in Alabama.)

is that they own collection, secondary treatment, and reuse infrastructure. Availability of funds often drives ownership. In some states, funding opportunities are restricted to governmental utilities that own the entire system. Often, the issues facing governmental RMEs and service providers revolve first around getting stakeholder buy-in to repair or manage existing systems, and then around meeting environmental regulations.

MAKING YOUR SERVICE VALUED.

“Successful RMEs—public or private—operate in a climate where the general public accepts the need for management and is willing to pay for it.” —Yeager et al., Business Attributes of Successful RMEs, 2006

While this quotation is undoubtedly true, the difficulty lies in creating that acceptance and willingness if it does not already exist. Fundamentally, management of decentralized wastewater systems is about environmental and public health accountability.

Developing multiple strategies to ensure customer interest and compliance is essential. Sewer and wastewater customers often undervalue this service, particularly in a retro-fit situation. They may not have had to pay for wastewater service before, or perhaps have had a much lower level of service, provided at a much lower cost.

Credibility and trust will influence which paths will work and which won't, as well as what is possible (or not) for a governmental RME or service provider. Even though a governmental organization may have good enforcement strategies and regulatory backup—and can require customers to pay for RME service just as they would for centralized wastewater service—communication with customers and others will demonstrate the clear value of an RME. (Also see Fact Sheet #10.) Some ideas:

- Run an educational campaign to raise awareness of the severe risks associated with malfunctioning systems and of any known actual pollution of local ground or surface waters by existing onsite systems.
- Engage customers, county or state health and environmental regulators outside your organization, local government officials, service providers, and other stakeholders in creating a vision or target—for example, a 50% reduction in malfunctioning or inadequate systems within 10 years, or a quantifiable improvement in river health.
- Participate in public planning or municipal visioning processes to build rapport and trust with other local officials and others.
- If development pressure is the issue, then engage the developers, as did the Mobile Area Water and Sewer System (Fact Sheets #2, 9, and 10).

Developing the confidence of potential customers is critical, as is considering the benefits of collaboration with other agencies and stakeholders. To be successful, it is essential that you work closely with your key stakeholders.

PLANNING YOUR GOALS AS AN ORGANIZATION.

The goal for governmental utilities providing RME or other services may not be to make a profit, but rather to protect a resource, fix a problem, or prevent unnecessary public infrastructure expenditures by instead implementing cost-effective distributed systems management.

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Established water utility district sets up successful RME operations.

The Consolidated Utility District of Rutherford County (CUD) is the largest rural water services provider in Tennessee and has been operating for more than 40 years. Rapid growth brought new subdivisions to the county, and in 2002 CUD opened a wastewater department to offer wastewater services as well as water services to new customers.

Cost as well as the state's restrictions on discharging to streams made decentralized technology the best choice. The technology is simple and watertight—recirculating sand filters and subsurface drip dispersal fields—and ensures no infiltration or inflow. Wet weather overflows are a thing of the past.

Developers build the infrastructure to CUD's specifications and transfer ownership to CUD to operate and manage in perpetuity. Ownership includes on-lot tanks and pumps on private property as well as the land for the treatment plant and drip field. CUD now has permits in about 30 subdivisions and serves about 2,500 customers. At least another 1,600 lots are planned for the future.

Broadening your goals may be one way to ensure the financial viability of operating a management service for decentralized systems. For instance, consider innovative revenue streams by making use of the outputs of decentralized systems (such as using nutrients or clean water for recycling). Think outside the box for other revenue sources, such as land value capture, consortia, or other services such as garbage removal.

Determine goals early in your organizational planning processes and use the goals to guide your later decisions (Fact Sheet #8).

In some situations, particularly where a need or resource crosses jurisdictional boundaries, your original business structure may not be what you end up using to provide RME services.

CENTRALIZED MANAGEMENT MAKES GOOD SENSE

It makes good environmental and business sense for centralized water and wastewater authorities to expand into centralized management of decentralized onsite or community systems.

Loudoun Water (formerly Loudoun County Sanitation Authority) in Virginia serves the unincorporated portions of the county—around 55,000 customers in all, or 175,000 people. Loudoun Water is actively expanding into centralized management of community systems in rural parts of the county, taking on operation and in some cases ownership of systems previously run by villages, hamlets, towns, schools, and the parks and recreation department. In 2007, the number of community systems it operated grew by 32%.

Loudoun Water has the proven expertise and ability to manage these systems, bill customers appropriately, adhere to regulations, perform timely maintenance, and employ sufficient staff to cover all operational demands. Because of its centralized operations, Loudoun Water can realise economies of scale in providing these services, so the cost to the system owner is about the same. The benefits are significant: system owners avoid the headache of trying to manage something they don't fully understand, and the number of system violations has been reduced to near zero.

COMMON PROBLEMS TO BE OVERCOME.

It takes time to accept new ideas.

Your proposal might be new to the region or might require a change in an existing organization with an established way of doing things. Be patient. Starting with these fact sheets, point to related success stories nearby or elsewhere, and enlist opinion leaders. The Water and Environment Research Foundation (WERF) has a great set of resources on communication for creating change at www.werf.org/livablecommunities/tool_comm.htm.

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Cooperation and hard work can overcome problems.

In Washington Island, Wisconsin, a handful of town leaders and citizens worked tirelessly to establish a decentralized wastewater management program when a plan for centralized treatment fell through due to high costs. They worked hard through the early 1990s to establish community consensus around the program and to convince county and state regulators the approach could work.

This fact sheet was prepared by the Institute for Sustainable Futures at the University of Technology Sydney in Australia and Stone Environmental, Inc., in Vermont.

Starting capital is not enough to support operating expenses.

Often an RME is not able to access all the capital it needs to fund its initial years of operation. There can be ways around this, depending on your situation.

- Other facets of the organization may initially support the new RME's operating expenses. For a governmental entity, this might mean using existing staff more effectively or raising permitting fees; for a utility authority, it might mean allocating general fund reserves toward the new service.
- Some functions can be outsourced—to other facets of the existing entity, for example, or as a partnership with another organization. Billing is a great example. It requires specialized skills, tools, and knowledge to set up from scratch, but it is relatively easy to extend existing systems.
- Some governmental utility RMEs save significant funds by requiring private developers to build systems that the RME then takes over and owns, operates, and maintains.
- Some governmental utilities (special districts, utility authorities, etc.) may be able to use bond issues to raise initial capital or as the local match to state revolving fund loan funds—or other financing vehicles traditionally employed by public utilities that offer centralized water or wastewater services. This solution would be state-specific; often SRF is limited to infrastructure improvements, not management. (See Fact Sheets #2 and #9 for more financing options.)

A wide range of systems or technologies in various states of repair already in the ground.

Experienced RMEs know that taking on management of existing systems can be a nightmare, unless existing systems are required to be upgraded to comply with existing regulations or related performance standards before the RME accepts ownership or maintenance responsibility.

Other hurdles you may encounter and some strategies for overcoming them.

- Insufficient stakeholder interaction can literally break an RME management endeavor. (See Fact Sheet #2 for ways to overcome this and initiate interaction with stakeholders.)
- Regulators may be unfamiliar with, or even hostile to, the concept of RMEs or decentralized systems. Engage all relevant parties early and often. Do your homework and go to meetings prepared with current or past examples of your work or of similar projects.
- Non-payment and late payment can be major problems and therefore require anticipation and mitigating strategies (Fact Sheets #3, 6 and #9).
- Staff management skills may need to be developed through formal courses such as those provided by the Consortium of Institutes for Decentralized Wastewater Treatment (www.onsiteconsortium.org), through mentoring with an existing RME, or through involvement in national, state, and regional organizations pertaining to decentralized wastewater (e.g., NOWRA, Virginia Onsite Wastewater Recycling Association, or the New England Interstate Water Pollution Control Commission).
- Keeping up to date with best practice principles, the latest management technologies and systems, and new regulations can be time consuming. Join a local or federal organization so the information comes directly to you.