A Utility Approach
To
Decentralized Wastewater Management

May 1, 2006

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1. Introduction

The purpose of this discussion is to establish how one would create a utility to serve as the designated Responsible Management Entity (RME) under the EPA guidelines and what the roles and responsibilities of that entity would most likely entail. The EPA began the discussion about RME's with the first Report to Congress on the status of decentralized wastewater system in the late 1990's. There have since been a number of subsequent reports and guidelines issued by the EPA, each one further advancing the concept and developing more detail. The concept of the RME was further defined in an EPA document entitled "Guidelines for Management of Onsite and Decentralized Wastewater Systems", published in 2003. In each progressive publication the definition of RME changes somewhat, but throughout this brief history, it is always put forth as five levels of system management control beginning with Level 1 being a very low level of control and increasing up to Level 5 being complete control. Sometimes the segmentation is referred to as Model Programs and sometimes it is referred to as RME's and sometimes it's a blend of the two with Model Programs being the first three levels and RME being the last two levels.

In the 2003 Guidelines document, the various levels of control were put forth as follows:

Model Program 1 — System Inventory and Awareness of Maintenance Needs:
EPA recommends this as a minimum level of management. Model Program 1 applies where conventional onsite systems, owned and operated by individual homeowners, are sited in areas of low environmental sensitivity, i.e., no site or soil restrictions such as a high groundwater table or drinking water wells in close proximity. Model Program 1 is intended to raise the local regulatory agency's awareness of the location of systems, raise homeowners' awareness of basic system needs, and ensure homeowner compliance with basic maintenance requirements. This program also serves as a starting point for communities to have basic data to determine if higher management levels are necessary.

Model Program 2 — Management Through Maintenance Contracts: EPA recommends this program where sites with limiting conditions, such as small lot sizes, or restrictive soil conditions (i.e., slowly permeable soils, shallow soils with limited treatment capacity or high ground water table) are encountered in a small portion of a community. These limiting conditions require improved effluent dispersal to the soil or additional treatment units such as media filters or aerobic treatment units, and are typically operated through contract with equipment vendors. Model Program 2, therefore, sets higher expectations than Model Program 1 for a regulatory program and for educating homeowners.

Model Program 3 — Management Through Operating Permits: This program is recommended in situations where the receiving environment indicates a need for advanced levels of treatment, such as an unconfined aquifer used as a drinking water supply or a fish spawning area. Model Program 3, consistent with the increasing risk, recommends setting measurable performance standards and ensuring compliance by issuing renewable operating permits that indicate specific performance criteria to be

achieved. The regulatory agency monitors these systems for compliance with the performance criteria.

Model Program 4 — Utility Operation and Maintenance: This program is appropriately applied where engineered designs, such as aerobic treatment units, are required to overcome site, soil, or environmental conditions that are not conducive to conventional or alternative onsite technology. Frequent monitoring and maintenance are needed in these situations. Model Program 4 recommends that a public/private utility be responsible for operation and maintenance to ensure maintenance needs are met.

Model Program 5 — Utility Ownership and Management: Model Program 5 represents the management needs of a more complex program where a very high level of control is required due to public health or environmental concerns. It includes the public/private utility as the designated management entity that both owns and operates the onsite systems in a manner analogous to a publicly owned wastewater utility. This program is similar to the utility concept in Model Program 4. Under this level of management the utility maintains total control of all aspects of management, not just operation and maintenance.

From the Utility perspective, interest really lies in the concepts of Level 3, 4 and 5, but all five are included merely for completeness. It is important to understand that these descriptions are merely attempts to build clarity and they do not represent a real model or a rigid definition. I believe that the most appropriate definition of duties should be tailored to meet the needs of each specific state or region and the ultimate RME entity that best fits a specific region may look like a blend of those spelled out by the EPA. Specific regional considerations need to address:

- The specific rules and regulations of the target state or region
- The existing regulatory structure within the target state what agencies oversee wastewater activities
- The technologies allowed or required by the local authorities
- The natural constraints and specific environmental objectives that exist in each location.

In March 2003, EPA released *Voluntary National Guidelines for Management of Onsite and Clustered (Decentralized) Wastewater Treatment Systems.* As of September 2004, five states had adopted the Management Guidelines: Arizona, Florida, New Jersey, North Carolina and Rhode Island. These states are mostly likely to be the first to take an active role in implementing the RME approach and be the first to advance this concept, although local needs may drive other states or regions as the needs arise.

This all points to the growing need to have utility organizations step forward to service decentralized wastewater systems in the US. It is likely that this same utility need already exists with regards to decentralized water supplies and will soon evolve with regards to decentralized stormwater management systems, but these topics are less urgent and are generally not discussed in the same context as decentralized wastewater systems.

2. The Utility As A Centralized Service Provider

For the purposes of this discussion, the term "utility" refers to some form of infrastructure that provides public services such as gas, water or electricity. For the most part, utilities operate as monopolies within defined service territories. The monopoly aspect is a matter of practicality and efficiency. It would be impractical for many utilities to have competing assets within the same service territory given the high cost of the asset and the need to have that asset serve as many customers as possible in order to be most affordable.

The following are some general characteristics of utilities:

- Utilities are asset based institutions that focus on building and maintaining infrastructure that provides specific vital customer services
- Utilities are either government owned or government regulated - many operate as departments within public bodies while others are stand-alone government or quasi-governmental entities such as districts or authorities
- Privately owned utilities are regulated to
    - Limit profits – monopolistic characteristics require government regulation of profits to assure fair rates and good asset management behavior.
    - Control and assure specific service levels- through adopted tariffs, government regulators generally oversee utility customer service provisions to assure that quality service and fair treatment of customers is provided
    - Limit service territory to stay within government granted franchise areas
- Utilities that are government owned are often heavily subsidized by government grants and loans that are supported by tax dollars

With the advance of modern technology, the landscape of the utility world has changed rapidly over the past 20 years. In several sectors there are nontraditional service providers offering competition to what were once strictly monopolistic utilities. Phone service is one prime example of this situation. With the advent of cellular phone service, local phone companies which were originally created within sole service franchise areas are now facing competition from wireless service providers to the extent that some customers rely solely on wireless phone service. Cable television service is another asset based utility industry that faces stiff competition from satellite wireless service providers.

There are similar trends in the power generation business where several years ago cogeneration became cost effective and popular amongst industrial power users thereby allowing them to provide on-site generation of power for their own use and potential sale to outside customers. In addition, the growing popularity of solar photovoltaics and

wind power represent another non-utility power supply solution to what was once strictly a utility business.

Even though some of the recent changes have been dramatic, centralized monopolistic utilities still play the primary role in public service and will continue to do so for many years into the future. The recent utility business changes that are being experienced in the phone, cable and power industries will definitely continue, but as demand for services grow and as the population continues to shift, centralized services will continue to play vital role in our society.

The water and wastewater utilities in the US have faced a much lesser degree of competitive changes by comparison to other utilities. This is mostly due to the fact that water resource management in itself is a very local matter.

- Water is heavy and difficult to transport over long distances making it by nature a local issue.
- Water is cheap because it falls from the sky and it does not command the prices and revenue margins that are associated with other utilities
- Pollution control regulations generally require that contamination be treated before discharges impact downstream communities, so this also becomes a local matter except in the largest regional systems.

That is not to say there have been no changes in the water and wastewater utilities. There have been many, but the industry is highly fragmented into 54,000 separate water systems and 16,000 separate wastewater systems and that only counts those that are considered centralized. In addition there are 25 million households being served by individual/decentralized wastewater systems and probably an equal or greater number being served by individual/decentralized water systems. As a result of this fragmentation, the water and wastewater industry has not experienced the rapid technological innovations found in other utility based industries.

Whereas, there have not been major structural changes in the water and wastewater industry, there have been some very interesting changes in related industries that point to a some interesting future possibilities:

- The beverage industry now sees bottle water as one of the fastest growing market sectors with reports indicating a continued 10% growth rate in the near future. The water utility industry did not create this change, the consumer found a preferred method of furnishing itself with at least a small portion of its potable water supply.
- Point of use treatment devices are a rapidly growing market with many forms of water filtration and purification devices now being installed in individual homes and buildings. Large businesses such as General Electric and Maytag are offering sophisticated in-home treatment systems for water purification.
- Wastewater reuse is growing in acceptability and affordability and many examples exist where this is occurring on a decentralized basis.
- The EPA has ramped up the urgency and attention given to decentralized wastewater systems and the connection between nonpoint source pollution, TMDL's and individual septic systems is now becoming widely recognized.

It is very likely that the water resource industry in general is poised for significant change in the near future. Changes that could possibly be as dramatic as those witnessed in other utilities.

3. How Water and Wastewater Utilities Are Regulated

The regulation of water and wastewater utilities is substantial and multifaceted. Essentially, there are three regulation paradigms; public health, environmental and financial. Each regulatory entity provides various regulations, standards, permitting regimes and enforcement. The public health and environmental regulators dictate to a large degree what services the utilities must provide, how these services are to be provided and to whom. The public health and environmental regulations are often overlapping in jurisdiction and implementation and sometimes are found within one regulatory body. The financial regulators dictate how much the customer will pay, how they will be charged, under what terms they will be charged and how much the utility must provide in financial reserves. In the case of the private for-profit utility, the financial regulator also determines how much profit is allowed.

The public health and environmental regulations are normally uniform and apply to all utilities regardless of how they are owned or operated. That is to say, publicly owned utilities are generally faced with the same regulations as privately owned utilities because these regulations are designed to protect the customer. This is not the case with regards to the financial regulations. For publicly owned governmental or quasi-governmental utilities, the financial regulations are generally not rigorous and in some states are non-existent. Where financial controls are lacking, local politics provide a basic means of self control. When problems occur or rates escalate, the incumbent party is generally replaced by the voting public. This is not a very efficient system of control and it often leads to under-funded utilities, lack of capital planning and poor asset management.

In the case of for-profit privately held utilities, state level financial regulators control water and wastewater utilities in a manner similar to power, gas and phone utilities. The utilities operate on a rate-based-rate-of-return system whereby they are allowed to earn a profit based on how much equity they have invested in their assets. Across the US, utility financial controls generally follow this approach. The allowed profit is somewhat tied to other market return rates such as the interest rate on long term investments. The objective of the financial regulator is to allow the utility to earn enough to encourage investment while keeping returns commensurate with the risks of the utility business. Utility business is considered a relatively low financial risk and therefore the profits are lower then what would be found in higher risk industries. The financial regulator wants the utility to be financially healthy while not overcharging the customer.

There are similar but different financial models for the governmental and the for-profit private utilities. The governmental side utilizes a user charge system that establishes necessary reserve funds that are required to repair replace and expand services to

customers. The governmental entities have the benefit of being tax exempt and eligible for federal grants and low interest loans, thereby helping keep costs lower. Only recently has the federal government attempted to provide uniformity in the accounting mechanisms utilized by public entities to assure that all cities and towns are treating all assets in a similar manner. Again, this is a somewhat less rigorous accounting standard then is applied to privately held companies that must follow Generally Accepted Accounting Principals (GAAP) and must adhere to the specific State's Public Utility Commission's regulations.

For-profit private utilities operate under accounting systems that includes depreciation of all assets as a means of funding repair and replacement requirements as well as system upgrades. Private entities are generally not eligible for federal funding except from certain water supply funds. Private entities also pay income taxes and often pay additional franchise taxes depending on the rules of the individual states. Private utilities have access to private financing vehicles and the financial regulators generally like to see the utility maintain a healthy combination of debt and equity investment. In most cases the target split between debt and equity is a 50:50 or a 60:40 ratio. This balance between debt and equity is designed such that it establishes the necessary financial austerity to allow the utility to attract loans from financial institutions while it also provides enough return to attract equity from private investments, generally through the stock markets. Private utilities also have the benefit of being able to serve larger customer bases whereas governmental utilities are normally limited to service within a specific political jurisdiction or geographical boundary. This gives private utilities the opportunity to grow and gain economy-of-scale advantages that can be very significant.

Overall, these various characteristics balance out and both governmental and private utilities provide viable service delivery mechanisms. The method of choice will vary depending on the political nature of each area and various market drivers. Private utilities will be more attracted to places where growth rates are higher and where the financial regulations are more favorable. Governmental utilities will be more prolific where existing governmental utilities already exist and where regionalization is favored politically. States without strong regional forms of government are generally less well suited to utility services and in these cases the utilities will normally expand from existing urban centers.

4. The Utility As A Decentralized Service Provider

The question at hand is how can the centralized utility model that exists within our water and wastewater industry be adapted to the decentralized wastewater industry. Again, this same question probably applies to the decentralized water industry and will someday apply to the decentralized stormwater industry, but for the purposes of this discussion will focus on the decentralized wastewater industry only.

As with the significant changes that have affected the other utility businesses in the US, this shift to decentralized services will require a rethinking of some of the business

behaviors and control mechanisms typical of utilities, in particular it requires a customer perspective that is unique for this industry. The wastewater industry generally worries about the regulator and compliance issues without thinking very much about the customer's attitudes, desires or possible choices. However, as decentralized services evolve they open up the possibility of varying services to fit the needs of the specific customer thereby allowing varying service levels and risk sharing.

Across the US, there are several decentralized wastewater utilities evolving that are providing identical or similar services to larger centralized service providers. One key to the success of these early entries into this market has been an ability to centralize management without having to centralize the physical asset itself. With modern technology, there is no reason why a decentralized wastewater customer can not obtain the same level of service as a customer that is connected to a centralized systems.

Vertical integration of services has been another key to success. Without a utility, the customer is faced with sorting out the rules, regulations, professionals, suppliers, contractors, etc. which leads to inconsistent design approaches, non-standardized equipment and very unpredictable performance results and no one entity with clear responsibility and liability when problems arise. With a decentralized utility, considerable efficiencies are gained by vertically integrating the complete delivery mechanism to include standardized designs, equipment and services such that performance can be assured and liability is well defined within one entity.

In New Jersey, the Applied Water Management Group has obtained a uniform rate and tariff that allows all customers within that state to participate in the same decentralized wastewater system. In this manner, even though the systems are small, they behave collectively as one large utility. Applied Water Management is part of American Water, the largest water utility in the US and this represents the first foray of a large water resource utility into this arena. They are carrying this model to Delaware, Virginia and Connecticut. The Applied Water Management Group model follows the USEPA protocol as a Level 5 Responsible Management Entity, where the service provider owns the assets that provide the service and retains all responsibility for proper operation and maintenance. This fits the classic utility model described earlier that applies to most asset based utilities in the US.

In other states there are various forms of RME's evolving also, but they each have their own unique approach and characteristics. This follows from the fact that each state has unique utility regulatory requirements from both the financial regulatory side and the environmental/health regulatory side. While some states require higher degrees of wastewater treatment and controls, others have stronger financial control and reporting requirements for utilities. One problem often faced stems from the fact that some states do not regulate wastewater utilities from a financial perspective as they do water utilities. In this case enabling legislation is often required to implement the appropriate financial controls. This is generally not a difficult matter because the financial regulations are normally well established for the water utilities and they can readily apply directly to the

wastewater utility without too much deviation. Considerations specific to metering and service shut-off are unique to wastewater, but most other provisions directly apply.

5. Applying the Responsible Management Entity (RME) Concept

As discussed earlier, the USEPA has established the RME concept as the next step in regulating decentralized wastewater systems in the US. It is now recognized that decentralized systems are a permanent fixture of our overall wastewater infrastructure and that they need to have the same level of management as provided all other utilities. The difficulty with developing the RME concept is that there are widely varying views and needs with regards to how much control is needed and how it should be applied.

To provide some context to this subject, the EPA has issued several proclamations on this subject:

> ***EPA'S VISION***
> *Decentralized wastewater treatment systems that are appropriately managed, perform effectively, protect human health and the environment, and are a key component of our nation's wastewater infrastructure.*
>
> ***EPA'S MISSION***
> *EPA will provide national direction and support to improve the performance of decentralized systems by promoting the concept of continuous management and facilitating upgraded professional standards of practice.*
>
> ***STRATEGIC GOALS AND ACTIONS***
> *This program strategy builds upon EPA's 2003–2008 Agency Strategic Plan, which identifies septic systems as a source of pollution. The program strategy includes the principles and strategic goals that will guide EPA's decentralized wastewater program over the next five years. To accomplish these goals, EPA will implement a series of actions internally and externally through partnerships with state and local governments and national organizations representing practitioners and the public (see Key Strategic Goals and Actions section).*

To begin to define what one must do to implement an RME/Utility it is important to understand the various tasks and responsibilities identified by EPA and to review how they envisioned them being assigned to various entities. We are not beginning with a clean sheet of paper when we look at the subject of decentralized wastewater systems and the RME concept. There are already a myriad of state and local regulations and regulatory bodies that are involved in this subject and it would not be practical or wise for the EPA to simply dictate a new paradigm. To approach the subject gently, the EPA along with an extensive stake holders group has put forth a menu of services and service providers and attempted to define specific roles and responsibilities of each.

This EPA menu is only a sample meant to serve as a guide and the redistribution of these tasks is required for each emerging RME based on the specifics of its service area. The

following three tables summarize a very subjective ranking of the various tasks for RME Levels 3, 4 and 5 as defined by the EPA in an attempt to assess the levels of effort and responsibility that each service provider incurs. As mentioned earlier, RME Levels 1 and 2 do not readily fit the service requirements one would normally associate with a utility and they have not been addressed here. It is interesting to note that RME Level 4 requires the highest level of overall effort because there is considerable duplication of responsibility illustrating that this model is not the most efficient.

These tables only provide an idea of how a Model is structured and what the RME/Utility and other parties are expected to provide. In reality, the EPA has not distributed the responsibilities in a manner commensurate with other typical utility business models, but instead the models seem to reflect the existing status quo of the decentralized wastewater business as it currently exists. Therefore, to take this subject one step further I have designed a hybrid version of the menu that loosely defines how a utility might fulfill the various service requirements of the RME.

This hybrid model was conceived to provide a more compelling offer to the local authorities with regards to service value and efficiency of service delivery by eliminating most of the fragmentation in the service delivery chain. The hybrid RME/Utility is the last table in the following series.

Summary of EPA Management Models 3 through 5 and AWM RME Utility

This is a subjective evaluation of the level of effort required to carry out the duties of each task by each entity, or service provider. A more detailed evaluation of actual man hours and costs would be much more accurate. This simple illustration does point out how much effort is required by the Regulatory Authority to keep all of these entities in line and functional. It is only with the hybrid utility model that the bulk of the responsibility shifts away from the Regulatory Authority and to the RME/Utility.

Extensive Responsibility = 5 **Very Limited Responsibility = 1**

Clerico's Summary of Decentralized Wastewater System Responsibilities
RME Level 3

Entities	Regulatory Authority	Service Provider	Inspector - Operator	Designer Installer Contractor		RME/ Utility	Owner User	Developer Pump and Haul		
Tasks To Be Performed										
Public Education	4	2					1			7
Planning	3							1		4
Performance	3						5			8
Training & Certification	3	3					1			7
Site Evaluation	3	4					1			8
Design	3			5			1			9
Construction	3			3	5		2			13
Operation & Maintenance	4		5				4		4	17
Residuals Management	2								2	4
Compliance & Monitoring	5						2		2	9
Corrective Action	4		2	2	5		3			16
Records, inventory, report	4		4				3		1	12
Financial Assistance	5									5
	46	**9**	**11**	**10**	**10**	**0**	**23**	**1**	**9**	119
Responsibility Share	**39%**	**8%**	**9%**	**8%**	**8%**	**0%**	**19%**	**1%**	**8%**	100%

Extensive Responsibility = 5 **Very Limited Responsibility = 1**

Clerico's Summary of Decentralized Wastewater System Responsibilities
RME Level 4

Entities / **Tasks To Be Performed**	Regulatory Authority	Service Provider	Inspector - Operator	Designer Installer Contractor		RME/ Utility	Owner User	Developer Pump and Haul		
Public Education	3	2				2	1			8
Planning	3					3		1		7
Performance	3					4	3			10
Training & Certification	2	2				2	1			7
Site Evaluation	3	4					2			9
Design	3			5			2			10
Construction	3			3	5		3			14
Operation & Maintenance	4		5			5	3		4	21
Residuals Management	2					2			2	6
Compliance & Monitoring	4		4			4				12
Corrective Action	5		2	2	5	2	3			19
Records, inventory, report	5		4			2	2		1	14
Financial Assistance	5					2				7
	45	**8**	**15**	**10**	**10**	**28**	**20**	**1**	**7**	144
Responsibility Share	**31%**	**6%**	**10%**	**7%**	**7%**	**19%**	**14%**	**1%**	**5%**	100%

Extensive Responsibility = 5 **Very Limited Responsibility = 1**

Clerico's Summary of Decentralized Wastewater System Responsibilities

RME Level 5

Tasks To Be Performed	Regulatory Authority	Service Provider	Inspector - Operator	Designer Installer Contractor		RME/ Utility	Owner User	Developer Pump and Haul		
Public Education	3	2				2	1			8
Planning	3					3		1		7
Performance	3					5	2			10
Training & Certification	2	2				2				6
Site Evaluation	3	4				2				9
Design	3			5		1				9
Construction	3			2	5	2				12
Operation & Maintenance	4		5			5	3		4	21
Residuals Management	2					2			2	6
Compliance & Monitoring	4		4			4				12
Corrective Action	4		2	2	5	4				17
Records, inventory, report	5		4			2			1	12
Financial Assistance	5					2				7
	44	**8**	**15**	**9**	**10**	**36**	**6**	**1**	**7**	136
Responsibility Share	**32%**	**6%**	**11%**	**7%**	**7%**	**26%**	**4%**	**1%**	**5%**	100%

Extensive Responsibility = 5 **Very Limited Responsibility = 1**

Clerico's Summary of Decentralized Wastewater System Responsibilities
Hybrid RME/Utility Concept

Entities / Tasks To Be Performed	Regulatory Authority	Service Provider	Inspector - Operator	Designer Installer Contractor	RME/ Utility	Owner User	Developer Pump and Haul		
Public Education	1				5	1			7
Planning	3				4				7
Performance	3				5	2			10
Training & Certification	2				5				7
Site Evaluation	3				5				8
Design	3				5				8
Construction	3				5				8
Operation & Maintenance	3				5	3			11
Residuals Management	2				4				6
Compliance & Monitoring	4				5				9
Corrective Action	4				5				9
Records, inventory, report	5				5				10
Financial Assistance	5				5				10
	41	**0**	**0**	**0**	**0**	**63**	**6**	**0**	**0**	110
Responsibility Share	**37%**	**0%**	**0%**	**0%**	**0%**	**57%**	**5%**	**0%**	**0%**	100%

6. Summary and Conclusion

There are many variables and many considerations with regards to establishing an RME to meet the needs and desires of the regulators and residents of any one area. As a result, there are many alternatives that will evolve and be viable. The concept of utilizing exiting private utility models as one alternative is compelling because it offers the ability to gain economies of scale and to offer services that are tailored to specific customer desires.

As an example, there is no reason why a utility could not have an established rate and tariff structure that would allow customers to join the utility under either Level 3, 4 or 5, with hybrid models developed for each so that the various services are consolidated into

one responsible entity, the RME, to the greatest degree possible. Whereas, the above tables only reflect the levels of responsibility for providing specific services, they do not illustrate the distribution of financial responsibility. It is clear that the homeowner retains all of the financial responsibility for system installation and repair under Level 3 (as well as Levels 1 and 2), shares the responsibility under Level 4 and transfers the responsibility entirely to the RME under Level 5. Obviously, the cost of service under Level 5 will be much greater then under Level 3. Why should the homeowner be forced into any one of these alternatives when it is possible to allow them a choice that best fits their needs and desires?

Some RME proposals have met strong opposition from the public because joining the RME is generally mandatory and the level of service is already defined. Creating a mandatory RME that does not allow for customer choices is likely to spur opposition and disdain. People are generally opposed to having an unsolicited entity thrust upon them and they view this as an infraction on their rights as free citizens. Yet, people generally understand and appreciate the need for good public health and strong environmental protection. It would be much preferable and less offensive to allow the homeowner the option of selecting what level of service is desired and what level of risk they desire to retain or transfer. Under Level 3 they would be licensed and monitored, but retain all of the direct control and risk while under Level 5 they would be not have any direct control, but they would also have no risk.

To adapt the traditional utility business model to any of these three levels of service, a hybrid of each would be created to enhance the efficiency of the service delivery and to provide the same level of stability found in other utility sectors. Ultimately, this would provide the best alternative for RME implementation because it lessens the burden on municipal government and it improves the efficiency of the service by gaining the benefit of a larger customer base that spans municipal and even regional boundaries.

The RME concept is discussed herein from the perspective of on-site wastewater management, but the same theory would apply to on-site wells and on-site stormwater management. Even though individual well water supply and stormwater management are not as pressing at the moment, establishing integrated water resource management infrastructure is a key consideration for the future and any efforts put towards establishing an independent RME for septic systems should consider and allow provisions for RME management of individual wells and decentralized stormwater management systems in the future.