BEFORE THE TENNESSEE REGULATORY AUTHORITY

NASHVILLE, TENNESSEE

January 28, 2005

IN RE:	)	
	)	
FORUM TO GATHER INFORMATION ON THE CERTIFICATION, PERMITTING, AND INSTALLATION OF WASTE WATER SYSTEMS	)	**Docket No. 04-00434**
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REPORT AND RECOMMENDATION

During the October 11, 2004, TRA Conference the Directors addressed the procedures of the Authority in considering petitions to provide wastewater services. In particular, the Directors voiced concern regarding the two petitions seeking to serve the same area, coordination between the Authority and the Tennessee Department of Environment and Conservation, and concerns of municipalities and public utility districts.

To address the current procedures and responsibilities the Tennessee Regulatory Authority ("TRA") and the Tennessee Department of Environment and Conservation ("TDEC") held a Wastewater Forum on December 9, 2004. This forum was held to gather information regarding: (1) various opportunities providers have to serve customers; (2) environmental concerns; (3) effect of Public Chapter 1101; (4) public protection contingency plans; and (5) need for additional rules and regulations. In an effort to encompass all issues important to state government, a wide range of public agencies including TML, TACIR, CTAS, and NRRI[1] were invited to participate in this forum.

Background

Wastewater providers are required pursuant to Tennessee Code Annotated §65-4-201 to obtain a certificate from this Authority prior to construction and operation of a system. Before issuing a certificate the Authority must determine by hearing that "the present or future public convenience and necessity require or will require such construction, establishment, and operation...." In making this determination the Authority considers the managerial, financial and technical capability of the applicant.

The number of wastewater providers seeking authority to offer service is increasing. During the year of 2003 there were fourteen (14) petitions filed, and in 2004 there were twenty-

[1] TML (Tennessee Municipal League), TACIR (Tennessee Advisory Commission On Intergovernmental Relations), CTAS (County Technical Assistance Service), NRRI (National Regulatory Research Institute)

three (23) petitions filed. One of the primary reasons for this increase is due to the development of residential subdivisions in geographic areas where the soil is not suitable for private septic tanks. The TRA considers applications from alternative providers for authority to provide these wastewater services in instances when the established local government does not want to provide wastewater services in a given area. Occasionally, multiple applications for the same area are received by the Authority.

Forum

The intended purpose of the forum was to ensure that the TRA and TDEC coordinate efforts in permitting and granting public utility status to wastewater companies, to ensure there is a plan for ongoing operation and maintenance of these systems, and to work with the industry to devise measures to accomplish the goals of continued operations and safe and healthy wastewater systems for the public.[2] The industry representatives' cooperation was a valuable source of information to the various state entities in developing future policy in this area. They provided invaluable assistance through sharing their particular knowledge of the history, geographical landscape and market environment relating to the expansion of providing a needed service to Tennessee residents.

Commissioner Betsy Child from TDEC noted that accountability to the citizens of Tennessee is a responsibility that must be fulfilled by state agencies and the best way to ensure this accountability is to plan for the long term and consider how decisions are integrated into the whole. While noting that the systems in place possess the necessary technology, the duties of the TRA and TDEC include "...being protective of the environment, and also looking at how we ensure long-term economic viability when it comes to development in areas that might not otherwise be able to use another type of system."[3]

[2] TRA Transcript, December 9, 2004, pg 4
[3] TRA Transcript, December 9, 2004, pg 7

Presenters

Mr. Jeffrey Cox with IRM Utility, Inc. emphasized the need for his company to continue to provide services for sustainable development. Mr. Cox stated that stricter discharge and loading limits on streams are increasing the significance of beneficial reuse systems that recharge the groundwater rather than channel the wastewater effluent directly to the streams. Therefore, public utilities providing and managing this service, rather than inexperienced property owners, provides accountability to the TRA and TDEC. As public utilities, the wastewater providers are willing to work with small communities to assist in obtaining necessary management skills to operate their systems The wastewater providers also encouraged the regulators and industry to work as a team.

IRM asserted that there are four major areas that determine the ongoing viability of this industry The first is the technical oversight of TDEC in permitting the projects. The governing rules of the TRA to protect the public are a second area. The third is that the industry is comprised of professionals that work within boards and codes of ethics for the business. The final area is the ethical practices within the personal integrity of the people in this industry For these reasons, performance bonds are not necessary for each project. Additionally, IRM argued the cost of a bond for each service area would be costly and could increase consumers' rates dramatically. If it is determined that a bond is necessary, the industry prefers a single bond of reasonable size for the entire service area

Mr. Charles Pickney with Tennessee Wastewater Systems, Inc pointed out, "In 1997 the EPA reported to Congress – and this was a very significant turning point for our nation. Basically it was an admission that there was never going to be enough money to provide central sewer for all the needs across the country "[4] In this report the EPA put Congress on notice that something else had to happen and believed that adequately managed decentralized wastewater systems were a way to meet the demand. Mr Pickney believes there is a responsibility for the TRA, TDEC and the wastewater providers to work together so that people are not deprived of needed wastewater services. Tennessee Wastewater also proposed that regulations be changed to

[4] TRA Transcript, December 9, 2004, pg 29

allow watershed permitting[5] per utility, thus allowing the company to go into a particular watershed and ascertain the needs.

Senator Robert Rochelle, addressing Public Chapter 1101,[6] appeared on behalf of Tennessee Wastewater. Public Chapter 1101 established growth boundaries and planned growth areas for local governments. The cities and counties worked together to establish growth boundaries for the cities, thus allowing them easier annexation of planned growth areas. In Wilson County, where Senator Rochelle serves as attorney and secretary for the Wilson County Water and Wastewater Authority, the franchise service area has been established. This Wastewater Authority determines approval of any company wishing to build a wastewater system based on financial capability, contract terms and perpetual maintenance of the system. Should anything ever happen to a wastewater company the Wilson County Authority will assume operation and maintenance of the system.

The final presenter for Tennessee Wastewater, Mr. Michael Hines, suggested that a determination of viability by the TRA should be a pre-requisite for TDEC issuing a permit. Performance bonds are an alternative for the TRA to ensure that if anything goes wrong there are funds available to remedy the problems. Mr Hines suggested that criteria be jointly established by the TRA, TDEC and Consumer Advocate and Protection Division of the Office of the Attorney General in order to evaluate a potential provider of service. He emphasized that developers are restrained in purchasing land while awaiting approval for certification by the TRA, permit issuance by TDEC, and timely reports and orders memorializing these decisions

Dr. John R. Sheaffer, Ph.D., with Sheaffer International, highlighted that while the population is increasing, our available land is remaining constant. This requires a comprehensive review of wastewater requirements regarding whether the wastewater will be reclaimed or reused. The Clean Water Act requires that wastewater systems be integrated with other activities such as agriculture, silviculture and aquaculture products.[7] Because there is no more lnd and no more water, Dr. Sheaffer cautioned that one must take a comprehensive approach regarding water and land in order for things to work. He commended TDEC for its

[5] Some wastewater providers suggest that geographical areas ("watershed areas") be assigned to specific providers (similar to gas and electric providers' service areas)
[6] Tenn Code Ann § 6-58-101 et seq. passed May 1, 1998
[7] TRA Transcript, December, 9, 2004, pg 48

understanding of the need for integration and believes the TRA can assume a new role regarding the needed comprehensiveness.

Ms. Melissa Stanford from the National Regulatory Research Institute (NRRI) at Ohio State University noted that the National Association of Regulatory Commissioners water committees recently expanded responsibilities to include wastewater indicating that wastewater issues are becoming more dominant and regulatory oversight is necessary Her review of other state actions reveals there are three general areas to determine a viable wastewater system· financial, technical, and managerial capability and commitment. States are becoming increasingly aware of the necessity for contingency plans to ensure that existing systems will be able to continue operation should the business fail for some reason. Areas being considered are carrier of last resort, posting of bond or other type of surety, joint management, sharing arrangements, estate planning and abandonment statutes. Interagency collaboration is also taking place in other states While this collaboration may be in the form of meetings and/or memoranda of understanding, good communication between the agencies is vital for things to work well.

Ms. Stanford asserted that states are reviewing the rates of wastewater systems to ascertain if they are sufficient to cover future costs necessary for maintaining the systems. In Delaware, all companies have been ordered to come before the Commission for a rate review and include with these filings a proposed wastewater system improvement charge. Other states approving a similar charge include Pennsylvania, Illinois and Ohio. This charge is targeted to cover "documented sewage disposal problems and also for relining, replacements, and main extensions..."[8] In some cases, however, the rules are broad and the revenue has been used to install new systems. Officials in West Virginia stated that sewer companies needed the authority to arrange for the disconnection of water service for nonpayment of sewer service.

Ms. Stanford closed with remarks about the substantial amount of time that is necessary to solve these problems because of their unique differences and because of the intergovernmental aspects of building effective working relationships. Decentralized systems are an area "that's really ripe for further study and innovation."

[8] TRA Transcript, December 9, 2004, pg 65

Mr. Ed Polk, manager of the permit section of the Division of Water Pollution Control (WPC) in the Department of Environment and Conservation, stated that this division is charged with the protection of the State's waters under the Tennessee Water Quality Control Act. WPC currently writes permits for over nine thousand facilities across the state. One segment of these activities that has gained considerable attention in recent years is decentralized wastewater treatment. WPC is receiving between 40 and 50 applications per year on decentralized wastewater treatment systems. Most of the systems are developing around major metropolitan growth areas. The State Operating Permit (SOP) issued for these systems includes a number of requirements. Monitoring report data to date indicate that most systems produce a good quality effluent going to the land application step.

TDEC is not without some concerns relative to these systems. One is the long-term viability of the land application areas. A major concern involves the assurance that operation and maintenance will continue for these systems. Where private companies are responsible for the operation, there is concern regarding what would happen if the operating company goes out of business. There must be safeguards to assure that proper operation is not interrupted.

TDEC is also concerned regarding the use of decentralized systems to serve very small numbers of homes (i.e. 1 to 10 homes) One concern is the economic viability of operating such systems as they lack the economy of scale available for the larger subdivisions. Also, from the technical standpoint, the biological treatment systems are more likely to be upset by improper discharges from a single homeowner where there are few other homes attached to the system.

An additional concern involves the impacts of decentralized wastewater on local governments and their growth planning. Municipalities and public utilities commonly design, finance and construct treatment facilities for growth. Conflicts must be avoided where decentralized systems overlap these growth areas.[9]

[9] TRA Transcript, December 9, 2004, pgs 83-99

Discussion

Providers recognize that a bond or some type of surety may become necessary in order to ensure consumers receive and continue to receive wastewater services. They do, however, suggest that the TRA develop financial criteria for the bond so that a bank or bonding company would know the value of the risk. Mr. Pickney suggested that after an up front evaluation by TRA that there should be a requirement to post a minimum $500,000 bond to be a utility company. At least two providers said that rates which included "built in" escrow amounts (to cover on-going maintenance and equipment failures) may be an alternative to bonds.[10]

Tennessee Wastewater Systems, Inc. representatives feel that service suspension (due to customers not paying their bill) is a necessity and have included the appropriate language in the company's tariff. Dr. Schaffer did not view this issue as a concern stating "you have to have a social conscience" and, "we will never, ever do that." Mr. Cox said that the consumers' contracts could contain provisions similar to homeowners' association fees that would allow liens to be placed on property if fees were not paid.[11] NRRI reported that companies in other states wanted authority to arrange for the disconnection of water service for nonpayment of sewer service.

The wastewater providers asserted that time constraints demanded that they initiate the TDEC permitting process and the TRA CCN process almost simultaneously. Their concern addressed the time needed for a hearing and questioned whether this matter could be expedited. The providers were informed that the hearing process is a statutory requirement and ensures that the public is made aware and protected [12] In an effort to streamline the process, it was decided that the Legal Departments of both the TRA and TDEC would investigate the possibility of jointly issuing a notice for both the permits and certificate hearings. Additionally, TRA and TDEC representatives urged wastewater providers to submit complete applications in order to avoid subsequent data requests. Chairman Miller also stated that he would confer with the TRA General Counsel to see if TRA could issue a provisional certification subject to the approval of departmental permits.

[10] TRA Transcript, December 9, 2004, pgs 102-103
[11] TRA Transcript, December 9, 2004, pg 134
[12] TRA Transcript, December 9, 2004, pg 135

In summary, it is clear that steps need to be taken by this Authority to ensure the continued viability of wastewater providers and health protection of users and the environment. Previous actions of other states addressing these same concerns offer alternatives to resolve these issues but Tennessee must take the initial steps to put in place the necessary safeguards. Therefore, I believe it is necessary for the TRA to direct its legal staff to draft legislation relating to bond and/or other security requirements for presentation to the General Assembly this legislative session. In addition, this agency should promulgate Rules necessary to implement any enacted legislation to carry out its statutory duties and protect the interests of consumers The authority should also initiate a process addressing the issues relating to abandonment of wastewater service including actions necessary to ensure that customers continue to receive wastewater service.

Ms. Stanford with NRRI identified memoranda of understanding between agency partners that are being incorporated in other states. These memoranda set forth the collaboration between the agencies in order to streamline the process for providers to receive permits and certificates. Such a memorandum of understanding between the Tennessee Department of Environment and Conservation and the Tennessee Regulatory Authority could be beneficial to both agencies in expediting requests for the provision of wastewater services. I would, therefore, recommend that the Legal Staff of each agency be directed to meet and present a Memorandum of Understanding for approval by each agency

Recommendation

1 The General Counsel or his designee should meet with TDEC and present to this Authority, for approval, a Memorandum of Understanding addressing any processes that can be implemented to improve communication between the departments and provide the most effective service to the citizens of Tennessee.

2 The TRA should prepare and present to the General Assembly, this session, legislation authorizing the TRA to establish by rule the requirement of a bond and/or other security to ensure the continued operation of wastewater utilities or of a particular project proposed by a wastewater utility If authorized, the TRA should establish the form of such bonds and/or other security and the circumstances under which a bond and/or other security may be required

3 The TRA should open a rulemaking docket to consider the adoption of rules for the regulation of wastewater companies, to include, but not be limited to, the provision of escrow accounts for ongoing maintenance, standards for termination of service for non-payment, procedures for abandonment and receivership, and any other rules necessary to protect the interests of consumers

4 The TRA should take the necessary steps to coordinate the grant of any Certificate of Public Convenience and Necessity for wastewater services with the appropriate local government entity with authority over such services

Respectfully submitted,

Chairman Pat Miller,
Tennessee Regulatory Authority

BEFORE THE TENNESSEE REGULATORY AUTHORITY

IN RE:

WASTEWATER FORUM

WASTEWATER FORUM

TRANSCRIPT OF PROCEEDINGS

Thursday, December 9, 2004

Reported By:

Susan D. Delac, RPR, CCR

APPEARANCES:
Mr. Jeffrey W. Cox, Sr.
IRM Utility, Inc.

Mr. Charles Pickney, Jr.
Mr. Bob Pickney
Tennessee Wastewater

Senator Robert Rochelle

Mr. Michael Hines
Southeast Environmental Engineering
John R. Sheaffer, Ph.D.
Sheaffer International

Ms. Melissa J. Stanford
National Regulatory Research Institute
Ms. Darlene Standley
TRA Staff

Mr. Edward M. Polk
Tennessee Dept. of Environment
and Conservation

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(The aforementioned cause came on to be heard on Thursday, December 9, 2004, beginning at approximately 9:00 a.m., before Chairman Pat Miller, when the following proceedings were had, to-wit:)

CHAIRMAN MILLER: Good morning. I would like to welcome everyone to the workshop this morning. I want to start out by thanking Commissioner Betsy Child for agreeing to participate and help sponsor this with me.

I think it's a very important issue that we need to take a step back and look at just what we're doing when we're permitting and certifying these wastewater companies as public utilities.

The purpose of today's workshop is to ensure that our two agencies coordinate our efforts in permitting and granting public utility status to wastewater companies, to ensure that there is a plan for the ongoing operation and maintenance of these systems, and to work with the industry to devise measures to accomplish the goals of ongoing and safe and healthy wastewater systems for the public.

This is not a meeting to complain about wastewater systems. We have permitted these systems, we plan to permit these systems and certify

them as public utilities in the future. But this meeting is designed for the purpose of ensuring the systems we do put in are put in in the proper manner, and that we've provided a plan for the ongoing operation and maintenance of those systems.

So if anybody is here, this is not the forum to complain about these systems. So if that's your purpose here today, you're in the wrong place.

I've also run into, in the process of certifying these as public utilities, larger public policy issues that are created by the permitting and certification of these systems, for instance, the impact on Public Chapter 1101 and how that affects growth in the state of Tennessee.

With the new technology that is provided by these systems, legislation enacted years ago, a few years ago to ensure proper growth is the impact, because now the technology that the old utility systems were -- that required a great deal of infrastructure and overhead are being -- are not necessary for some of these systems.

So I felt it important to invite a wide range of public agencies, TML, TACIR, CTAS, to make sure that while these aren't within the purview of this agency or Commissioner Child's agency, they are

issues that are important to state government and that everybody ought to be aware that are going on. So I invited a large group of people to make sure that everybody was aware of what was going on here in our narrow focuses.

So I would like to now ask Commissioner Child to comment.

COMMISSIONER CHILD: Thank you very much, Commissioner Miller. And I would like to publicly thank you for taking the lead in initiating this meeting this morning, and also thank Commissioner Tate for being here as well.

This is exactly the kind of forum that as Environment and Conservation, we welcome. It represents being proactive, it represents front end management. And, also, there are four values that drive our department, and one is accountability.

We know that the best way to be accountable to all of the citizens that we serve is to plan for the long term and to look at how our decisions are integrated into the whole. And, again, the best way is to get all stakeholders to the table and have open and candid discussions and make sure that we're all doing the right thing for the long term.

This morning I know a number of you

came in and drove in, I'm certain, during the rain storms this morning. And when I think about an area between Rhea and Hamilton County, the Saile Creek area -- some of you will be familiar with that area.

Right now Saile Creek, in a major rain storm, loses between 10 and 15 feet of bank per significant rain storm.

And what happens there is both on the Ridge and Rhea County and Hamilton County, there was appropriately permitted development. When you look at the overall impact of what happened on those two ridges, it had a devastating effect on the Soddy-Daisy community.

And what we want to do in looking at these systems which do have sound technology and, I agree, we're not here today to criticize this technology. What we're here today is to ensure between our two agencies that we are being accountable to the state, being protective of the environment, and also looking at how do we ensure long-term economic viability when it comes to development in areas that might not otherwise be able to use another type of system.

So, again, I want to thank you, Chairman Miller, for initiating this this morning.

There are a number of technical experts from Environment and Conversation that are here with me this morning. Ed Polk -- Ed, if you will raise your hand. Ed will be doing a presentation later this morning.

And seated next to Ed is Alan Leiserson from our general counsel department. He will take the lead on this initiative for our department.

Next to Alan is Saya Qualls. Saya, if you would raise your hand. Some of you know Saya. I think the most common thing I hear about Saya is that this is a woman that can handle pressure; she's got to have ice water in her veins. Saya does a tremendous job for the state of Tennessee.

And also Paul Davis who heads up our water pollution control department and also does a great job. So I appreciate having their fine expertise as backup this morning.

Tim Schawarz is also here, our legislative liaison. He's somewhere in the audience. Tim, I didn't want to not recognize you.

So, again, thank you for giving us this opportunity, and I look forward to the discussion.

CHAIRMAN MILLER: Thank you for participating, Commissioner.

Director Tate, do you want to make any comments?

DIRECTOR TATE: I just want to reiterate, thanking you, Chairman Miller, for setting this up. I think this is yet another example of the TRA moving into more proactive and proconsumer, and educating, and providing new information. So thank you, and also for reaching out to the department.

And, Commissioner Child, we grew up together, so it's fun to be back together in a situation like this. We're Murfreesboro girls, and so I thank you for being here.

And, Chairman Miller, again, I very much appreciate you doing this for the state and for the TRA.

CHAIRMAN MILLER: To begin this morning, we're going to start out with presentations by industry members.

Just to let everybody know, we'll have these presentations, we'll take a short break at about 10:45, and then we'll conclude. At about 11:15 we'll take a lunch break. We'll have presentations early this afternoon by Ms. Melissa Stanford from the National Regulatory Research Institute at Ohio State University. And then as the Commissioner indicated,

Mr. Ed Polk will give a presentation. And then we'll follow up with a panel discussion where the industry members and our staffs, and hopefully the Commissioner and Director Tate will participate in discussing some of the specific issues that we have concerns about.

So with that I will turn it over to Mr. Jeffrey Cox who represents Integrated Resources Management, Inc.

MR. COX: Thank you. Where do you want us to do the presentation? Right here?

CHAIRMAN MILLER: That would be fine.

MR. COX: Right here is fine? All right. Well, thank you. Firstly, I would like to thank --

CHAIRMAN MILLER: Do you need the lights out?

MR. COX: Well, for the first couple of moments I just wanted to show just a couple of slides that will give you a little bit of background about us.

But, personally, I wanted to thank the Tennessee Department of Environment and Conservation and, of course, the TRA, for having us all here. I think it's a wonderful country that we have here that

we're able to work closely with the private sector and the government together working as a common goal to protect the environment, to service our customers, and to work as a team to get that accountability that you were talking about. I think that's very important and this is a great opportunity for all of us.

The topics that you've given us to talk about are all pretty interwoven. As we've said, the accountability here, we've got the environment that we're working with, we've got the customers that we're working with. And when we approach anything and say in the conversations today about concerns, I think we need -- we are basically talking about all of these different issues, the regulations and everything as working as a team. So these are all pretty much the same.

We have a broad spectrum that we have to deal with going from all the way to very rural agricultural areas to highly technical wastewater systems and the environment and all.

And we've got a slide here that kind of shows the balance of all of these. That's where you get agriculture and bring it into the city and have a common ground with everything.

But the main concerns are actually the

warnings of our streams and our quality of waters in Tennessee. And this is important because economically people come to Tennessee to enjoy the environment and, of course, we live here and consume these waters and work in these areas. So it's very significant.

Our mission is, we are -- our goals, while servicing the needs of the public, of the community, is so recycle the valuable resources in a way that's environmentally sensible while being economically worthwhile. Any good recycling program is not really effective if it's not economically worthwhile to the developers. And me and my competitors, we've all worked very hard on coming up with alternatives to work out in the rural parts of the communities.

We're basically, as you know, we're all privately owned public utility companies that have come before the TRA to get a certificate of public convenience and necessity to work, you know, in service areas outside these target districts.

Now, Ms. Tate, you had mentioned at one time you would like to have a workshop where you could see systems and look at systems and see pictures of those. We're prepared to do that, but I don't think this is the time and place for that. And if at some

time you would like to have us come in and show you a little more detail, come out to see us in East Tennessee where we are, please come out any time. But I'm going to forgo that at this point in time.

We've been in the industry for 24 years, and we see the need for continuing with providing services for sustainable development.

Development is going to occur in Tennessee. It's going to occur more and more in rural areas because of the demand and the desire to be out into the communities that are country-like and in country-like settings. We have a great diversity in geomorphological land forms or just dirt. The dirt is different in different places. And some it, it perks, and some of it doesn't.

What we intend to do is provide services in areas, but we do not at all intend to put systems on areas that are not suited for this type of disposal of wastewater disposal. That's real important to keep in mind.

We feel that it's a great opportunity for our niche in this industry. We're providing services for small businesses and residential communities. With the onset of stricter discharge and loading limits on streams, beneficial reuse systems are

a very significant part of wastewater treatment. We recharge the groundwater systems instead of channeling water directly to the streams.

A big benefit to the regulators is that there is accountability with our industry now. When we have industry out here and have a public utility manage the wastewater systems, you folks can sense some accountability. You don't have necessarily a property owners association, a homeowners association, nor a developer that possibly doesn't have any experience in wastewater treatment.

Now, you'll have groups of people that may have combined people in their business of 60 to 70 years of experience in the wastewater industry. So that helps you as regulators get accountability and qualified people in the management of these systems. I think we all bring that to the table here as privately owned public utilities.

With regard to the opportunities, we don't discriminate against large systems approved under provisions of the divisional groundwater protection. Some of our competitors do, but we feel -- I've been in this industry 24 years, and we've done large drain fields for nursing homes, hospitals, schools, things of that nature, that are handled not under the auspices of

water pollution control but the division of groundwater protection.

And at this point in time the division of groundwater protection really doesn't have a way or a mechanism of allowing me to manage a large system. So they are basically operated by the developer with a contractual agreement to Bob Cox's office. And they then will have a property owners association or a homeowners association that finally the developer turns it over to.

And a lot of those folks -- also in the division of rainwater protection, they don't have a monthly requirement or any requirement of a licensed operator operating most of those systems, and they're just basically handled until there's a problem; there's not a whole lot of maintenance done on them.

We at IRM are very open to working with these kinds of systems. And we actually have a contract at this point in time for a large groundwater system. And I like to work close with the division of groundwater protection in order to make this transition so we could operate this system versus just letting the homeowners, you know, operate it without having anybody on the board. Well, when the homes are built, that's how they build their boards. And you don't know if

somebody is going to buy in there that has any experience in this industry. So we would like to work with you and to see if you can help us with those regards.

We are prepared to work with communities with low to moderate income, and also communities that have poor ability to pay indexes. And we live up in upper East Tennessee, we have a lot of counties that just have small cities, they have small little communities that operate small plants, or some of them don't even have plants in the counties.

And we would love to go in there and get some of these small communities a management ability that they would be able to go out and staff and put together. We can go in and help them within the municipalities to provide service to these areas that are needing service. That's one of our good opportunities, I think.

We are well received within the county mayors community. The county mayors, we've given presentations at some of their workshops, and they are very open. We get pulled over right after the workshop and they say I've got this problem, I've got this problem, I need this, I need that. So I really feel that that's going to be a good opportunity for us.

With regard to environmental concerns, I think that us doing a good job -- the division of water pollution control does an excellent job with monitoring permits with the requirements that they're working with us on.

I think that all of us need to really work and consider the sites that we're approving. I am a soil scientist and a certified soil scientist by the state of Tennessee to do maps for drain field systems and for drip irritation systems and all.

And I've seen -- when we did the first ones back in the '80s, I would prepare a very thick report. And that report would show quite a bit of information about saturated hydraulic conductivity, a lot of technical information.

I'm going to get away from the technical part of that and just tell you that what I've seen in the industry is they're now accepting soil maps that are made for drain fields for drip field considerations. It's a whole different technology. I've seen soils that are mapped greater than 75, not suited for drain fields, turn around and be used for these.

We at IRM are not doing that at all; we will never do that. We see soils that don't go for

drain fields; there's a reason for that. So then we feel it's necessary to do on-site saturated hydraulic conductivity testing and other activities that will more determine a loading rate versus having a blanket two acre, two and a half acre inches a week, and if you put this on you could put it on a parking lot or anything.

You know, I think that's a flaw in the system that I've seen in the industry that could happen. And if that happens and then there's a failure, I can see a forum coming in later that says, hold on, we're going to stop this until we research this.

And I think this is the time now to move forward. And I don't think that that's a big thing right now. But I could see the possibility with more and more servers and providers that don't have soil backgrounds, that that could be an area that could become a problem.

So I don't want our industry, our competitors, or anybody, to get reckless here with these kinds of rules. I think we need to work as a team and help the regulators come up with a good plan for that. I know that was attempted at one time, and then it just kind of dropped.

With regard to the effective Public Chapter 1101, like I said, there's going to be sustainable development. You know, building houses doesn't make babies come and people, it's that the people need houses. And we have a lot of folks that live in rural communities that don't have infrastructure, that don't live near cities. And this is going to dictate really how cities and communities should grow.

And I do see that in areas that have high commercial or high tourism, things for the state that really does help the state's growth, those different tourism areas are being looked at a little bit differently.

But those areas need to be looked at differently in certain growth patterns and services and all in a unique way, but allow the rural communities to be able to put in some areas that have some tourism or some, I guess, seasonal-type homes where people come and visit and have getaways and things from different areas. And I think we would really be hurting the rural communities if we limit that ability for the tourism.

Also, out in the areas like that by allowing small commercial lots that are out in the

agriculturally zoned areas and all, by doing that and allowing smaller lots and all, we can get services out there like convenience stores and things of that nature on these smaller systems versus drain fields and all. And it can become more practical if these properties don't have to be real large and can be serviced by these systems.

Basically, in summary, again, the counties, they don't have to have the personnel to operate these types of systems. And most of this outside the urban growth boundaries is in the counties, and the county mayors are very excited about that. So we would not want these kinds of systems to be peculiar to outside those areas at all. We would want to welcome them so the county mayors can see their property values increase and services increase as well as the fire departments, schools, nursing homes, things of that nature.

Now, how am I doing on time, Mr. Hutton?

MR. HUTTON: You're okay.

MR. COX: Okay. I just have a few more comments. For surety for the public with regard to bonding regulations and things of that nature, there's four major things that really govern how we act

and how good a job we do at this point in time.

The Tennessee Department of Environment and Conservation is working with the direction of the 1971 Clean Water Act. We are regulated and watched and have good permitting procedures and things that I think are adequate at this time, you know, barring looking into some of the soil applications and things. But we are governed by that agency and by the Tennessee Regulatory Authority and their implied rules that we have an obligation to serve. We need to get out there and do a good job. There's provisions in the rules that say, you know, we need to manage these systems that we take on, there's rules of when we can build them and what needs to be done prior to that.

And I think that's an excellent, you know, combination of the two, a technical organization and an organization that's here to make sure that we're not out there gouging the public at all with high costs or anything, but also that we are able to charge fair rates that keep our business going, and that we're able to provide and make sure that those people have a wastewater system in the future.

And I think the combination of those two checks and balances make this whole program work

real well.

The next is the ethical practices within our own professions. Us as publicly owned private utilities, we all are basically -- most of us are groups of engineers, surveyors, soil scientists, and technical people that also work within boards and under codes of ethics for our businesses.

And the fourth one which I think is really the most important is the ethical practices within our personal integrity. I think none of these things work if we don't have the personal integrity. And I think with these kinds of forums and this kind of action and interaction that we can all have a relationship and know where is the real integrity in this industry and be able to make some judgments in those regards.

Now, for new developments, local planning, county planning, city planning, they typically require bonding for these systems. When we are signing a plat and we're going to the courthouse to say services here are going to be provided, there's bonds that are put -- made by the developers or construction individuals to these county agents, county planning areas.

And not only that, we require these

also because we're not going to put our names on the line unless these people have put up appropriate funds to provide this service to these communities.

So already for the construction of the system, I think there's already a lot of local checks and balances that you folks may not even need to really worry about in the construction end of it.

On the end where you're concerned about possible performance of the system and operating the system in the future, there's been a requirement in TDEC that had a $75,000 number. And to just work off of that number briefly, if that was handled on every project and held at $75,000, there would be, for a small community of ten, the bonding on that through our insurance companies is $25 per thousand. Or that would be, you know, around $1800 a year.

If you just have a home or a subdivision of ten lots or so, that would be $187 per year per customer, or $15.62 a month.

Well, their bills are like $35. That would add again, you know, another half of what their bill is again. So that would be pretty high.

And then if you did that over a lot of subdivisions in a lot of areas and between my competitors and myself, the insurance companies would

be getting a tremendous amount of money. But, really, we're going to be there for the long haul because you folks are making sure that we don't charge too much but we do charge enough to be there.

And, you know, the only reason why we wouldn't be there, we would find that out every year because we come to you folks and put in our annual report and you see that things aren't working right, that the expenses are higher than the services. And these folks here would know that we're not meeting discharge criteria and things.

And so you-all would know that pretty fast if we're capable of going, and these checks and balances could happen fairly fast.

So, actually, bonding of every project like that, I think it would be pretty hard on the consumer. Just that simple example shows there would be a pretty big portion of their bill.

And I think if you folks want some surety from us, maybe we could propose that we -- each utility could have a single bond, and that bond be made on a forum to one of you two, or jointly you two groups, and that that bond could be of a reasonable size, and that it could be spread out through all of our service area and not be a burden on the consumer

and the ratepayer. But still we would have something there for you folks for some surety in administration should you need it, but it would be something that would be reasonable but not hard on the consumers.

And each project we look at in our county, the county we have now, is all self-supported. Each project would be looked at every year, we will see whether the cost of operating the system because of something they're putting in the system or loading or whatever, is inappropriate. It may cost us more. We will then come to these folks and say here are the reasons we might need to charge some more for this, you know, because of these reasons. But then they would make the decisions if we were justified to do that.

Each project accounts on its own. So that's another reason why I don't feel it's necessary to have it, it's going to be monitored pretty close.

I don't feel we need more regulations. If we in the industry do a good job within the rules that we have, there would be no need to add regulations, and that's what I ask of all of the industry.

In summary, I know that the last few months we've been trying -- it's been trying with all the interventions we've had and everything. And I can

see we've had competitors wanting exclusive areas in counties that we've been working in for over 20 years and doing soils work and doing on-site wastewater systems for 20 years, and they want exclusions in that county.

And then we have got public utilities -- this is something that we have just seen that's pretty interesting. That when we come in and we get a letter from a public utility that says, no, we don't service this area, and then all of the sudden we come to the TRA and say we want to service this area and it's in somebody's area, boy, their eyes light up and they say hold on a second. And this is kind of the greedy nature of the public utility districts. And we're going to see that, you know, and we'll try to educate them.

But I think some of these incidences we've seen lately is because the industry is getting just used to seeing us now, and that might be why some of those occur.

And I want you to realize that we are not like that. We are a company that we want to be where we're wanted. If we see anything like that where, you know, a utility doesn't want that to happen or there's anybody that has any problem with it, we're

going to pull out, we're not going to have that be a problem. But also, please be patient with us. Thank you.

CHAIRMAN MILLER: Thank you, Mr. Cox. Any questions, Director Tate?

DIRECTOR TATE: No.

CHAIRMAN MILLER: Okay. Well, before we proceed with Mr. Pickney, if you-all would indulge me. Stumbling through my opening remarks I forgot to recognize a very important person to me, Senator Bob Rochelle, who, in a large measure, had a lot to do with me being here. And I appreciate him coming down and being here today. And he is also the architect of Public Chapter 1101. So his expertise is welcome and essential to us. So thank you. Thank you for being here.

Mr. Pickney, do you want to -- and however you want to do it. If you're more comfortable sitting down, that's fine. I don't know how you want to operate your presentation.

MR. PICKNEY: Thank you, Chairman Miller. I need to show some slides.

CHAIRMAN MILLER: Okay.

MR. PICKNEY: I just want to say thanks to you, Chairman Miller, and Commissioner Child

and Director Tate. We appreciate the opportunity to have a workshop like this where we can come together and discuss how to do better, how all of us can do better together.

Hopefully we can see these slides as we go. What I would like to do today, we've got four people who are going to be speaking very briefly. I'm going to be speaking about serving customers, my brother Bob is going to address environmental concerns, Senator Rochelle has been kind enough that he's going to speak a little bit about 1101. And he is the attorney for the Wilson Water and Wastewater Authority. And they have had a good bit of experience of how decentralized wastewater is impacting 1101 issues. So I am grateful for him to be here and make some comments.

And then Mike Hines who manages our East Tennessee territories is going to be addressing the public protection and need for maybe changes of some rules and regulations.

Tennessee Wastewater has a goal, a mission of basically providing sustainable wastewater infrastructure at a reasonable cost wherever it's unavailable now, and that's basically anywhere across the state of Tennessee.

Just to kind of put a little background here, this is a huge issue nationally, that when you look at infrastructure, typically new homes can get electricity, they can get safe drinking water, but wastewater service is a problem. 30 percent of new homes do not have access to municipal sewers.

And Jeff Cox mentioned the Clean Water Act was basically passed to try and help our nation clean up our streams and to protect our water and our environment.

We've spent $62 billion over about a 20-year period. Most of this money, however, went to the larger cities, the Nashvilles, the Memphises; basically the smaller towns still have a lot of needs.

In 1997 the EPA reported to Congress -- and this was a very significant turning point for our nation. Basically it was an admission that there was never going to be enough money to provide central sewer for all the needs across the country. So something else had to happen.

And in this report the EPA told Congress that their view was that decentralized wastewater systems were the way to meet many, many of the needs of the country. And they underscored adequately managed decentralized wastewater system.

To put things down to local situations, statewide, last year over 19,000 new homes in Tennessee were on septic tanks and leach fields. And essentially the majority of these had no access to centralized sewer. And just experience shows us that a large number of these are going to fail.

And just looking at this as a society, as a state, we can do better. We have the technology today, the management system is in place, to put infrastructure in that won't fail. And we've got many, as you saw, 19,000, many customers in this state that have needs that are not being met. And I feel that we've got some regulatory issues with TDEC and some policies, some things that we need to talk about, and I think it's an opportunity today to do some of those things.

Some of the barriers are just time, and you're working through processes and so forth, so a big concern. And one of the things that Jeff brought up earlier, just a larger political concern of sustainability. If we're in talking to a planning commission, Tennessee Regulatory Authority, or a local county mayor, their concern is if this subdivision of a hundred homes in my county goes in, is this utility going to be around 20, 30, 40 years from now to take

care of this need.

Basically, we're needing to serve those large unmet needs in the state. And I think there's a responsibility for TRA, TDEC, all of us public utility providers to try to work together to get solutions for the people that need it.

And something that I feel strongly about, if you look at the way utilities are done, whether it's a gas company, electric provider, or whatever, that you don't have small little territories, individual plots of land where you've got five different utilities working in a three-mile square area essentially stepping on one another. It's a very inefficient, ineffective way to provide services.

Basically a territory needs to be looked at to optimize the delivery of services from a cost effective standpoint particularly.

And as far as environmental concerns, I'm going to let my brother Bob come up and speak about that.

CHAIRMAN MILLER: Thank you.

MR. BOB PICKNEY: The environmental concerns are really what drives our industry. And I guess to take a snapshot, and this is kind of something we worked on in Wilson County for a while, but this is

typical of most municipal systems in the state of Tennessee, that the flow into the treatment plant varies widely from when it's really dry to when it's really wet.

And in looking at Lebanon's report last year -- and I'm not just picking on Lebanon because it's convenient, it's fairly typical.

But the flow goes to as low as 1.2 million to 12 million, and essentially the same amount of water is being sent out to the customers every day. So the best we can guess, we're not sure, but roughly 3.5 to 4 million gallons a day, in really dry periods we're losing 2 or 3 million gallons a day directly into the groundwater. That's untreated raw sewage going directly to the subsurface infrastructure or the streams.

When it's raining, and obviously we've got huge amounts of I and I, and we're a hundred to 200 percent flow coming into the plant, and this is fairly typical. And so it's a very important concept. And so that's what we're working towards.

And so what we're really talking about in most cases is groundwater pollution in a decentralized world, or stream pollution in a point discharge world.

Statewide in Tennessee, over 60 percent of our water wells will test positive for fecal bacteria during a year. That's a phenomenal number.

In Wilson County we know that it's over 95 percent of the water wells are contaminated. That is a pretty, I think, damming statement that we need to deal with. And it didn't happen overnight. We've got lots of blasting -- we've literally got hundreds of thousands of blasting and conventional systems in Wilson County. So we've got huge issues there. We've got thousands of failing systems, and right now we have no really efficient way to correct them.

So what we think, and I say we, I'm from Tennessee Wastewater, and I think much of the industry, we understand that we really should be looking at watershed planning and use the DMDL as a guide.

And one of the things that I would love to be able to see is to issue watershed permits per utility so that we can go into a particular watershed, look at what its needs are. Every watershed in the state of Tennessee is somewhat different. Many of the departments stay the same, some of them may not.

So one of the proposals we'd put out there is to change the permitting so really going more towards the watershed permitting. And the other key part is the storm water.

One neat thing about the decentralized world is we allow the planning process to accomplish a lot more so that we can have cluster-type designs, we can protect creeks and streams and that kind of stuff, and we can accommodate a more innovative storm water plant as part of that infrastructure.

So storm water and the wastewater are going to be coming together, at least we think, in the next many years.

With that brief environmental part, I'll turn it over to Mike Hines.

MR. PICKNEY: I'm sorry, Bob. Senator Rochelle is going to speak first.

MR. BOB PICKNEY: I'm sorry. Senator Rochelle.

MR. PICKNEY: I think this microphone is working, if you want to sit here.

SENATOR ROCHELLE: All right. Thank you. Thank you for allowing me to be with you today. I signed up to come and listen today because this is an area that I've had a great deal of interest in for a

long period of time.

As was stated, I was involved as a sponsor of Public Chapter 1101, and as a result of that effort was asked by Mr. Pickney to possibly address that issue some.

But I handled some other legislation. I'm very proud to say I was the sponsor of the bill that created the TRA too.

CHAIRMAN MILLER: Thank you.

DIRECTOR TATE: Thank you.

SENATOR ROCHELLE: And, Commissioner Child, I want to say to you that in my role as an attorney for the Water and Wastewater Authority and as a senator, I have great respect for the folks in your department. We're very fortunate in Tennessee to have the type of expertise that's available to us and the employees that are dedicated to the public good. And so you can be very proud of your association with the department.

Public Chapter 1101 addressed a lot of things. The key to it was establishing a process where local governments could establish what we call growth boundaries and planned growth areas. This was primarily to address annexation problems.

We had hundreds of lawsuits pending

all across the state of Tennessee on fights between cities and counties and counties and cities about who could annex where and who would provide what services.

What 1101 did was provide a process where cities and counties primarily could get together and talk that through, and they established growth boundaries for cities.

Inside those areas cities are able to annex easier, and it's more likely it will be upheld in court. Outside the growth boundaries, they're less able to annex freely, and they have a greater burden to carry if the matter is carried to court.

In regard to this particular issue, growth boundaries, of course, are a factor to be considered, but you're going to have many factors. They come into play in this issue of decentralized wastewater treatment service.

In Wilson County where I have another role, I'm the attorney and secretary for the Wilson County Water and Wastewater Authority and have been for almost 30 years, Wilson County, they say we have one rock in Wilson County, the problem is it covers the whole county.

We have had tremendous problems over the years as all the growth came in from Davidson

County with how to handle wastewater services, and we've had septic tanks. Because the growth was coming, they used septic tanks; the environment has paid the price.

Many years ago the board that I serve on and represent said that it was the highest priority to establish -- find some way to provide wastewater treatment services, and we have done that. Pursuant to the statute, enabling statute, we have declared and established our franchise, our service area. I don't know who it was talking about those greedy public service -- oh, it was this guy here -- the greedy public service companies.

But in this case the Water and Wastewater Authority has been able to establish a service area, and then through the process of approving a service provider we required anyone who wants to build one of these in our system to come in and show financial solvency to our board, agree to the terms of the contract, and that is that whatever they build they're expected to maintain in perpetuity.

And the Pickneys have a company, Wilson On-Site LLC, that provides that service. They have been approved as a provider. They bring each proposal before our board. We give notice to the

governmental entities that are close by, and then once a site is approved and the developer or the lot owner or the homeowner provides through a contract with the Pickney Company to build the system, and then the Pickney Company is responsible for maintenance and operation and making sure they meet the requirements of the state.

And if anything ever happened to the company, then my board as a governmental entity stands behind it, stands behind the system, and will come in and assume operation and maintenance.

Very frankly, we don't see that happening, but as a lawyer and dealing in an area that is somewhat new, we tried to anticipate the worst. And so we feel that we have adequate backups.

We've declared our service area all the area outside the city limits of the three cities in Wilson County.

If at any time I or the agency that I represent can be of assistance to you, we want to offer to do so. Our executive director is here today to stay up to date and current on issues in this regard.

I'm very proud of each of your agencies for calling this hearing and for having a sit-down and talking it through. That's the way you

solve problems.

Thank you very much for allowing me to be with you today.

CHAIRMAN MILLER: Thank you, Senator.

MR. HINES: Thank you, ladies and gentlemen. My name is Michael Hines. I'm the founding principal of Southeast Environmental Engineering in Knoxville. As Charles mentioned, my company manages all of Tennessee's wastewater systems operations in the eastern third of the state.

In the next few minutes I'm going to talk briefly about public protection, bonding issues, regulatory considerations, regulatory opportunities primarily in these four areas shown, financial viability of utilities, how do we assure operation and maintenance is provided and ongoing, then a couple of issues regarding the process that your two agencies -- the processes that your two agencies have for approval of the systems and of the utilities.

Why is financial viability important? Both of your agencies are charged to protect the public. In one case you're protecting the public and the environment from health and pollution issues, and the other case you're ensuring that the public is receiving the service that you regulate in a fair and

economical manner.

The TRA assurance on the viability of the utility is very much necessary to TDEC. TDEC is in the business of permitting owners of systems. And if TRA says this entity is a public utility then TDEC can permit that utility. If the utility is not viable, TDEC has problems. They've had this kind of issue with homeowners associations where they just simply cease to exist.

So the two agencies have to work together to assure the viability of the utilities. How do you achieve that? Well, a couple of ways. There has to be some sort of criteria for acceptability. Just because you've got a pickup and a shovel and 25 bucks to pay the filing fee doesn't mean that you're a utility.

It may require -- and let me skip that.

Performance bonds is another way. If you intend to be a public utility in any state, you ought to have the financial resources to pay the performance bonds which then provides a fairly high degree of protection for the Public Service Commission agency to know that if something goes wrong they do have access to funds to fix things.

That criteria is going to have to be developed. And, obviously, TRA is probably the entity best suited to develop that, what this criteria should be.

Then there needs to be some mechanism which allows for review of the proposed utilities or applicants to see that they meet up with that criteria, that they satisfy the criteria. And that may involve some sort of review committee within the staff or review committee made up of staff and representatives from the AG's consumer advocate office, from TDEC, and TRA.

How do we assure operations and maintenance? Well, first off, you have to have some assurance that that utility that you're permitting and approving has demonstrated financial and technical viability.

I don't know whether TRA ever follows up with its customers, but it would be fairly easy for TRA staff to periodically send out some kind of written survey or make telephone calls to some randomly selected number of customers and say how is your sewer utility doing. You might find out all sorts of good things.

And, then again, performance bonds, a

very critical part. Performance bonds, again, as Jeff said, it doesn't do much good to have a bond in every project; bookkeeping becomes horrendous, let alone the cost.

But any utility that's viable certainly ought to be able to post a minimum bond of a half million dollars. That bond payable to TRA would then provide protection both to TRA and TDEC. Or maybe you make it payable to both -- I'm not a bonding person -- but there are mechanisms to set that bond up such that it provides protection of both agencies.

In the case of the processes involved, we see delays in the approval process on the part of both agencies. Some of these delays are related to staffing, some delays are related to just the procedure process that's put in place, the step-wise nature that is set up, and so forth.

But each agency needs to understand that none of us can proceed to reach any kind of accord with proposed developers or customers until we go through that process to get TRA to say, yes, you get the territory. And that's a very long and involved process.

The customers. In most cases, in our larger customers where they're developing tracks of

land, they can't even purchase that land, or they won't purchase that land, until they have some confirmation, at least something warm and fuzzy that the utility is going to be approved to provide the service, and that TDEC is going to permit a system on that piece of land to provide the service.

So if it takes a year or whatever it takes to get those approvals, it really ties the developers up. Because these people come up, they're looking for land, they find one, half a dozen people are all trying to get the same piece of land, they want to move.

We've got formalized processes in both agencies. The TRA board takes the request from the utility, staff reviews it, it gets scheduled for board action. Sometimes those activities take quite a bit of time.

I don't know how you do expedited staff review. I know how I did it in the state that I ran, but every state has to deal with that in a different fashion.

But we've got to be able to ensure clients that the process is going as rapidly as the system can be designed to process stuff.

The same is true for hearing requests.

Again, I'm not the lawyer or any lawyer, but there are criteria in many areas where public hearings are allowed. There are criteria for what constitutes an acceptable request for a public hearing. In some states that request has to be germane to the topic. In other words, you can't request a public hearing just because you don't like the guy that's applied for the permit.

In Illinois, when I worked in Illinois, hearing requests were not accepted except in writing, and if they were not germane to the permitting issue or whatever the issue, they were rejected.

In this state, if you call or if you write a letter and say I want a hearing, you get a hearing. And they're not always related to the issue that's on the table. That needs to be addressed.

And then we need timely reports. Once the hearing is done, there's a record of decision, or some decision document that comes out, and that needs to come out in an expedited fashion.

TDEC permitting processes. We have a process, we go through permitting and then plan review. If you're creative, you can do both of those somewhat at the same time, but there's still a very lengthy time period in there that is required. And, again, the

agency needs to assure that we're not backlogging projects unnecessarily.

Public notice provisions. I've already touched on that. If you're going to have a public notice requirement, there ought to be criteria for what is an acceptable request for a hearing, and then there needs to be an expedited hearing process.

Bob touched on this, and we have proposed this before. These types of systems, and essentially all of the systems that are going in for these decentralized systems fall in a couple of major categories. You can almost do cookie-cutter design, just have a different set of plans for each size. You can do general or watershed permitting where you pre-permit, if you will. If you're going to have a project and it's going to use this technology under these conditions with this kind of waste stream, then you're already approved. You've got to submit notice of intent, you've got to submit soils, maps, whatever. But we don't go through the whole 90- to 120-day permitting and plan review process.

And with that, Charles, do you have some summary comments?

MR. PICKNEY: No.

MR. HINES: Thank you.

CHAIRMAN MILLER: Any questions? Comments? Thank you.

I think Dr. Shaeffer is our next presenter from Shaeffer International.

DR. SHEAFFER: Chairman, Commissioner, thank you for the opportunity to meet with you. And I want to start maybe a little differently than what was done this morning.

And I'd like to mention that it was a very significant event that occurred in November, just a few days ago. And what it was is we added 6 million people to the world population, and we didn't add any water or any land. So the way we managed land and water last month isn't good enough for this month.

You can bring that down to Tennessee; there were some suggestions. But the point is, if we have the same amount of land and water but much more population pressure on it, I think it means that we've got to look at wastewater in a more comprehensive manner. We can't look at wastewater as a single purpose event. It's got to be integrated with a lot of other things.

And I would like to, first of all, raise the point that all our water is used water; there's been no new water created on the globe.

I remember testifying in the Senate committee. Somebody asked me if we were running out of water. And I said, Have we shipped any off the globe? Well, the answer was, no. Then, obviously, we have the same amount of water we've ever had.

And I held up a glass and I said, You never had a glass that didn't go through seven Indians and 50 buffaloes before you got it, but you like to think it was made new for you, what you had this morning.

But it's all used water. And when we deal with wastewater, we only have two choices: Do you want to relocate it or do you want to reclaim and reuse it. You write books on both ways.

Now, the Shaeffer system was developed with the idea that we're going to reclaim and reuse all our wastewater. And we mention the goals of the Clean Water Act -- or we don't mention the goals, we mention the Clean Water Act.

But the first goal for the nation is no discharge of pollutants in the groundwater or the surface water. In other words, we're to reclaim and reuse our wastewater. And it addresses sludge which has become a big problem. We don't want to develop techniques that generate sludge, septic tanks that have

to be pumped. Irrespective of where the water goes, everything's got to be some place. And, obviously, we've got to eliminate odors.

And if you read the Clean Water Act, it says that management of the waste are to be integrated with recreation and open space areas. And it says we're supposed to reclaim and reuse water in the production of agriculture, silviculture, aquaculture products. In other words, it's to result in a stream of benefits. We're not just trying to see can we make the best wastewater system, it's got to be integrated with a lot of other activities.

And if we glance at newspapers, what's the big thing today? Carbon sequestering. The same for the Wall Street Journal.

And do you know what? The way we manage wastewater can greatly accelerate carbon sequestering. I can take an acre of land and put it in certain vegetation and irrigate it with reclaimed water and sequester 300 tons of carbon which today is selling on the Chicago Client Exchange at $2 a ton. And if I would sell it in Europe it's right now $10 a ton.

And so you see you've got to put things together because there's no more land and there's no more water. So we've got to think

comprehensively how we're going to make things work.

And I feel to make things work -- the Shaeffer technology uses two things, time and air. And the neat thing about it, they are available everywhere; you know, wherever you go there is time and there is air.

Now, in a Shaeffer system we treat it for 36 days. And then we have the capability of further treatment and storage for another 56 days.

Now, relate that to one day or four hours or two days, and it's quite different. And when we do that, we incorporate an entire range of technologies. We have an aerobic decomposition in the system, we have aerobic biological treatment, we have physical chemical oxidation. And one of the big things we got to be worried about is pharmaceuticals. If you don't have a long treatment time, they go right through the treatment processes and we see fish becoming sterile.

I suppose the fish all have low blood pressure because the high blood pressure medicine goes right downstream unless we have time. And we incorporated time because we knew we had to deal with these compound pharmaceuticals.

And you may have heard me say the way

to deal with the high cost of drugs is move people downstream and treat the water and you'll get those drugs.

But the point is, we incorporated a range of technologies, no chemicals being bought, just time and air. And I think when you reclaim and reuse the water, a lot of that reuse is going to be above the ten-year flood plane. So you can have an acre of land that stores flood water so it's mitigating floods, it completes the nutrient cycle, the nutrients that we eat go through us, we use it to grow more plants, and it also sequesters carbon.

And I think we've got to look at this technology and say, you know, with a decision on wastewater we are mitigating floods, we're cleaning up the water, and we're cleaning up the air. You've got to have some mechanism to pull this all together.

And I think that if you read the Clean Water Act, it talks about revenues generated by the reclamation and the reuse of that water, and that they are to be used to finance other environmental improvements.

So I believe that when we reclaim and reuse water, we start generating a flow of revenue. Maybe it doesn't cover all the cost, but it leads in

the direction of generating revenue. And I believe if you don't generate revenue, sustainability is a hollow word. It's sustainable as long as you keep paying for it.

People ask me at times, they say, well, we're going to make a sustainable project. And I say, well, how are you going to do it? They say, well, we're going to get a government grant. Well, that's not sustainable. It's sustainable when it can generate revenues that can pay for the approach.

And I had Bob doing slides -- but we've got to deal with the farm city loop, and we've got to complete the nutrient cycle.

We all talk about hydrologic cycle, but we're not taught the nutrient cycle. And I feel when you take wastewater and put it in the context of the entire environment, you'll find that some of our regulations ought to be rethought because we don't have regulations that address wastewater management in a comprehensive setting. They address wastewater management strictly as wastewater management.

And I must say -- and with Mr. Davis and Ed Polk there and Saya Qualls, I've talked about these things. And you're fortunate because they really understand as well or more than I do about this need to

integrate things.

And I feel that TRA can really play a new role and help with the comprehensiveness that's really needed because we keep adding people. And every month -- doesn't that scare you, another 6 million?

You know, we would have to build Chicago and Cook County every month to maintain the status quo, and we're not doing that. So we're just making situations worse and worse. As my kids say, it gets worser each month.

And I feel that there's technologies being developed, and there's a number of projects at TDEC right now to exhibit that we're not going to relocate our waste, we're going to reclaim and reuse them beneficially. So I feel that this needs to be considered pretty much around the state.

And, Bob, why don't we just shoot through all these. Well, you're going a little fast, but there are pictures, there are slides there of a number of projects that are being developed. So I'll stop at that.

Okay. There's one other item I wanted to mention. Thompson Station is like a PGA. And the technology can start as low as one house and can go up into the millions of gallons. And Thompson Station

embarked on a plan to design for one million gallons to build for 500,000 gallons and to start operating at 300,000 gallons a day. And the entire system can then be doubled.

And when you have a technology like that, the increases are marginal, they're not linear. In other words, to go from the 500,000 to a million as in times two, it's like times maybe 35 percent. So it works like that.

And Cartwright Creek Utility, you know, has been brought up here. And it's a 250,000-gallon a day system. And we want to extend that to 700,000. And the newer homes added pay the cost of taking a discharging system and/or reclamation and reuse system.

Go on, Bob, as fast as we can. I think we're out of time.

There's an example of a system. And you see million-dollar houses right around the banks of it. Keep going. And we mention about nine point sources, and we feel you've got to go with nonstructural drainage. And we irrigate parks, we make recreational features. We've got to get multiple use of the land. We sequester carbon so we get cleaner air.

And that's one of Jack Nicklaus's signature golf courses. And the treatment cells are now surrounded by multimillion dollar houses.

Another new community that uses a -- features kind of a wildlife preserves. So I think, Bob, we ought to just run down through them.

So, anyway, that's a nutshell of what I think. We've got to broaden our thinking. It doesn't mean that things we're doing now are wrong and shouldn't be done, I'm just saying we've got to start thinking about what's occurring.

And to put our waste in rivers, all of Tennessee ends up in the Gulf of Mexico. And right now there's 7,800 square miles of water in the Gulf of Mexico with no life, and that's because of the nutrient discharge coming in from the Mississippi River. So that should make us all think about how we can do things better.

So thank you for hearing me.

CHAIRMAN MILLER: Thank you, Dr. Sheaffer. We appreciate your presentation here today.

At this point we're going to take about a 10-minute break. And when we come back we'll hear from Ms. Melissa Stanford.

Decentralized Wastewater Systems in Tennessee

- Where are we today?
- Where are we going?

DEC
Environment & Conservation

TDEC Division of Water Pollution Control Permit Program

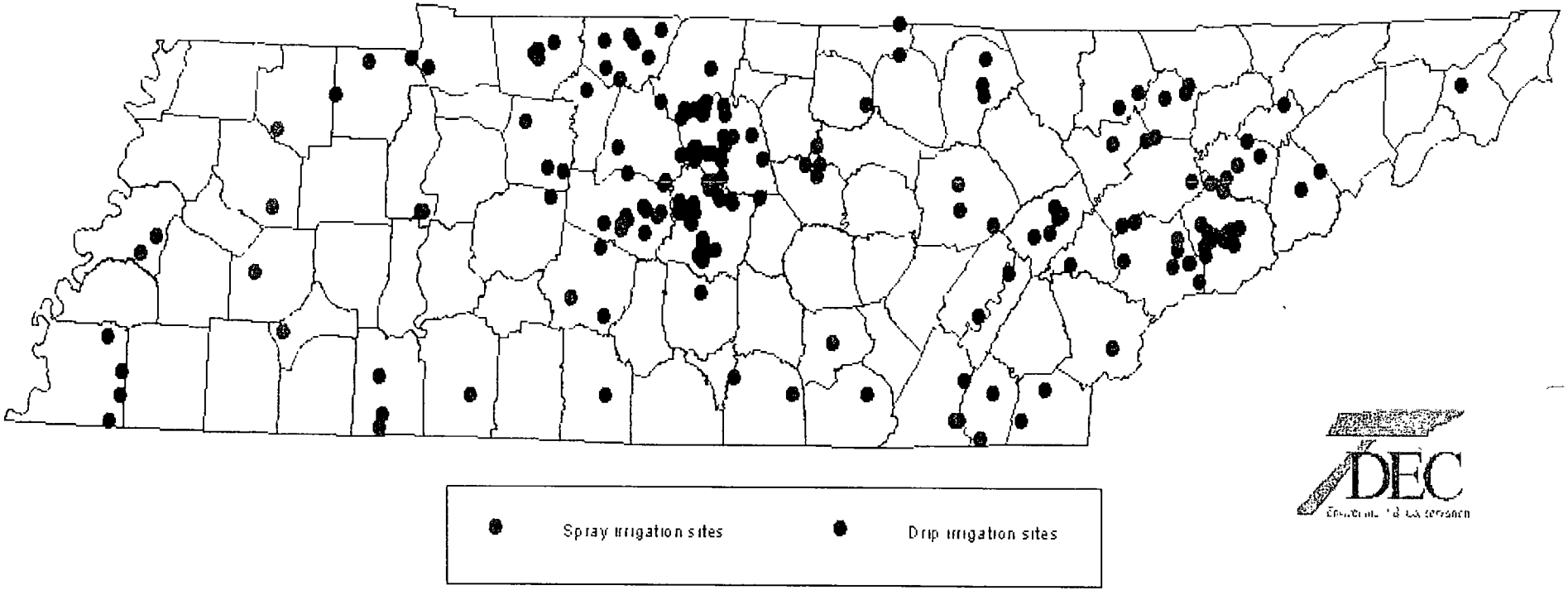
- 9331 Permits Administered
  - 345 State Operating Permits
    - » (No Discharge)
  - 6120 Facilities under General Permits
  - 857 Individual NPDES Permits
  - 1500 Aquatic Alteration Permits
  - 481 Mining-Quarry, Clay, Sand & Gravel
  - 28 Interbasin Water Transfer

Municipal and Domestic Wastewater Permits

- 584 Municipal and Domestic NPDES Discharge Permits
- 183 Decentralized Wastewater Treatment Systems (Non-Discharging)

DEC
Environment & Conservation

Where are the Systems?



Systems by County

- 25 Rutherford
- 20 Wilson
- 17 Sevier
- 11 Williamson
- 9 Blount
- 8 Davidson
- 7 Robertson

5 Jefferson
5 Montgomery
5 Roane
4 Cumberland
4 Dickson
1-3 41 Counties

Who are the Permittees?

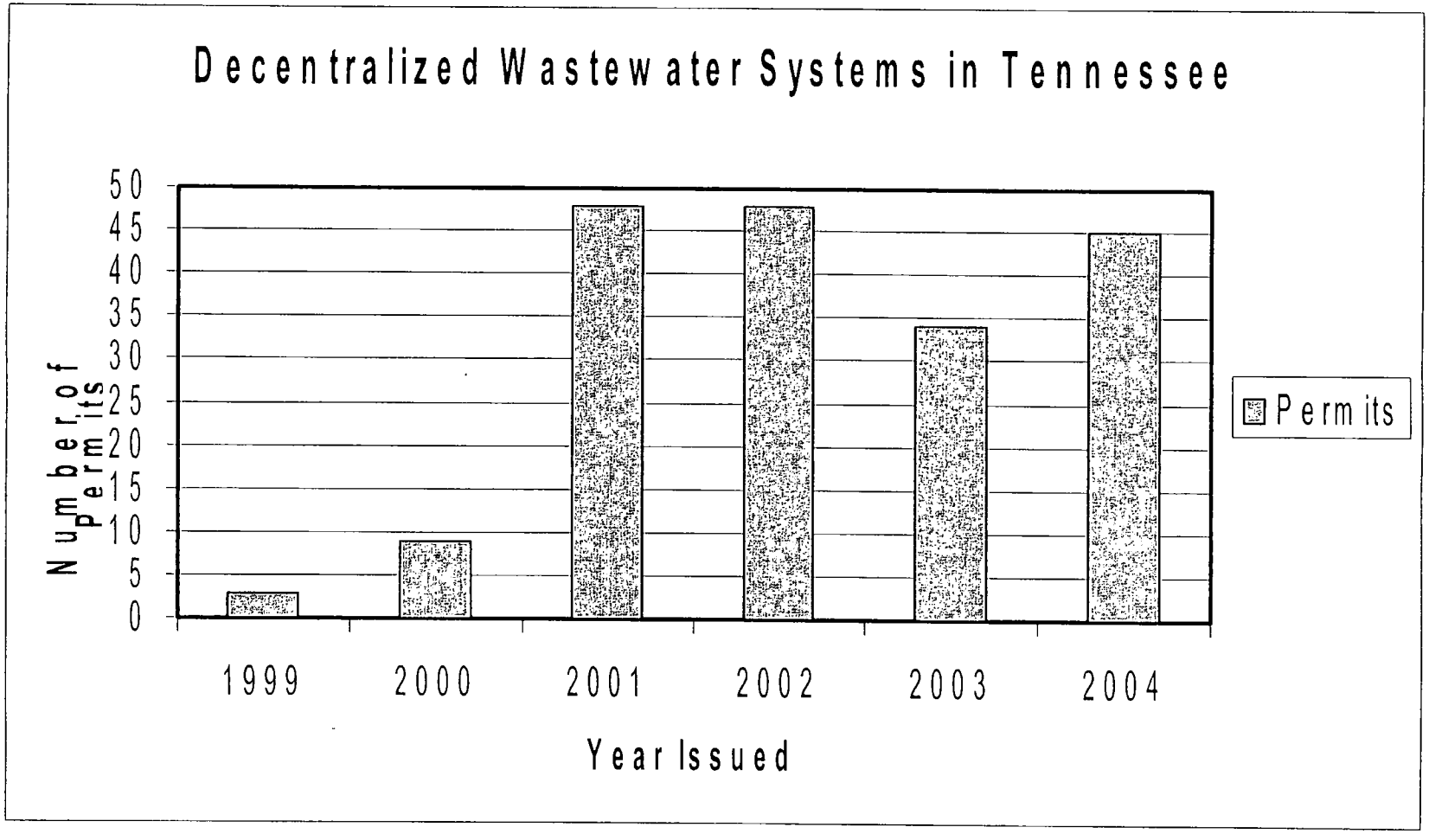
- 35 Facilities / 10 Public Utility Districts
- 17 Facilities / 1 Wastewater Authority*
- 58 Facilities / 5 Privately Owned Public Utilities (under TRA)
- 14 Facilities / 9 County School Boards
- 17 Facilities / Private Resorts, RV Parks, etc.
- 8 Facilities / State Parks/Rest Areas

Size of Systems
(Based on Design Capacity)

	Flow (Gal/Day)	Homes/Units Served	People Served
Median	18,000	50	290
Largest	675,000	1,930	6,750
Statewide Capacity	6,600,000	18,000	77,000

DEC
Environment & Conservation

Decentralized Waste Treatment Permit Activity



Treatment Technology

- The treatment process can generally be divided into three parts:
  - Primary treatment
  - Secondary treatment
  - Land application

Treatment Technology

- Primary Treatment
  - Septic Tank
  - Grinder Pumps

DEC
Environment & Conservation

Treatment Technology

- Secondary Treatment

  - Recirculating Filters - 145 systems
  - Lagoons - 34 systems
  - Other - 4 systems

Treatment Technology

- Land Application
  - Drip Irrigation - 153 systems
  - Spray irrigation - 30 systems

State Permitting Requirements (Current)

- Submittal of Engineering Report and Design Drawings
- Use of a Trained Biological Natural System Operator
- Sampling and Testing of Secondary Effluent:
  - Flow – 1/month
  - BOD – 1/quarter
  - Ammonia – 1/quarter

State Permitting Requirements (Current)

- Other Requirements Applied Where Applicable:
  - Buffers
  - Fencing
  - Disinfection
  - E. coli Limit 23/941 per 100 ml
  - BOD Limit 45 mg/l
  - Nitrate Limit 10 mg/l

How Well Do the Systems Work?

- Past 2 Year Record for 10 Systems in Rutherford County

Parameter	Avg	Max
BOD_5	<5	<5
Ammonia	<0.1	2.2
Fecal Coliform	<2	3300

Decentralized Wastewater Treatment Concerns

- Long Term Viability of Land Application Areas
- Operation and Maintenance
- Use by Single Family Residences
- Local Government Concern for Growth Planning

DEC
Environment & Conservation

What's Ahead at TDEC

- Review of Design Criteria
- Revisit Allocation of Responsibilities between Division of Water Pollution Control and Division of Groundwater Protection

Tennessee Regulatory Authority
Wastewater Forum

Presented By

John R. Sheaffer, Ph.D.

Chairman, Sheaffer International

Each month **6 million** (+/-) people are added to our planet's populations

Each month NO land or water is **added** to our planet.

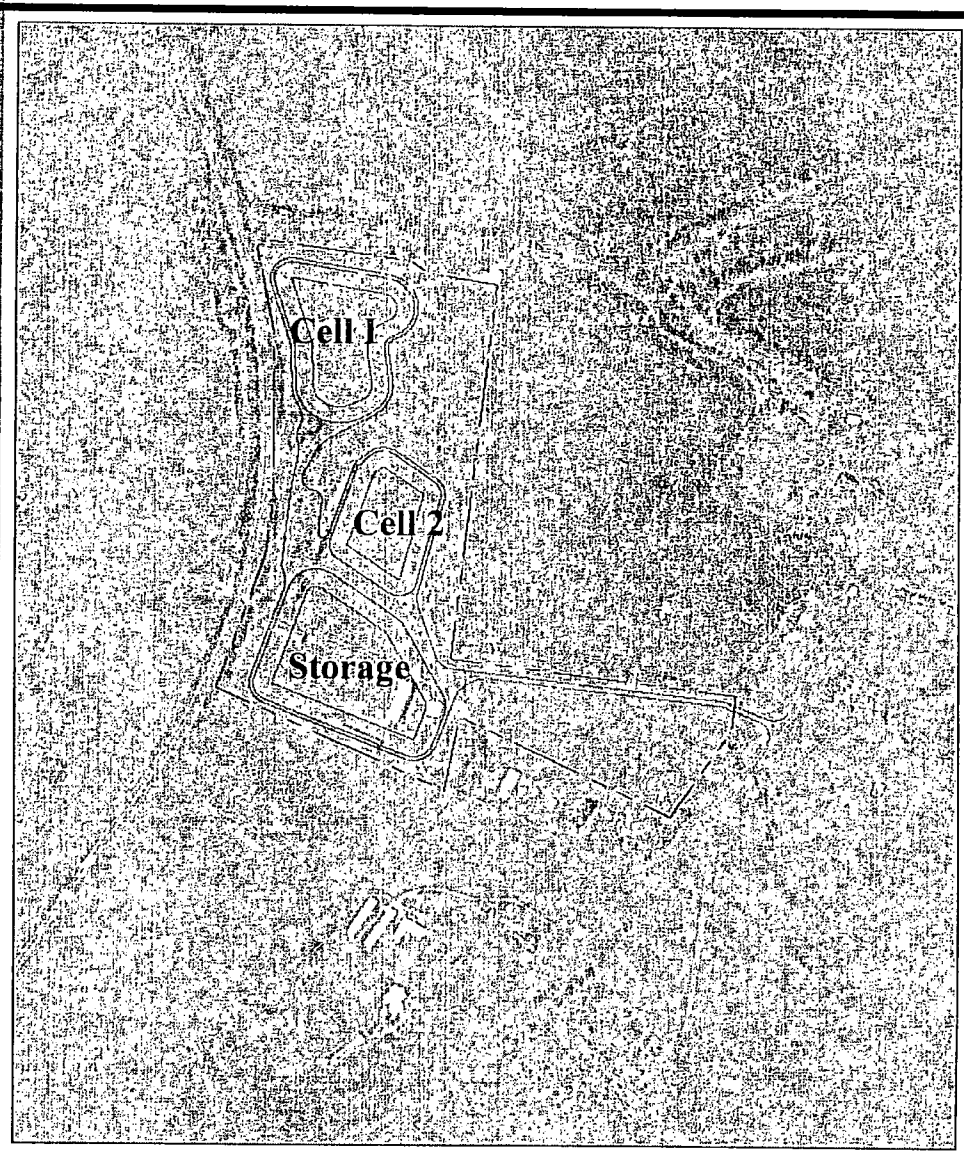
This means one simple thing

The management of land and water needs to be more efficient this month than it was last month to meet the needs of a growing population.

The Sheaffer Systems are Flexible to Growth Planning Needs

- Can accommodate any number or type of housing, at any density and flow.
- Can be constructed on soils not suitable for septic tanks.
- Reclaimed water can be irrigated on 'tight' soils.
- Irrigation can be interrupted when necessary.
- System can be planned to readily expand and adjust.

Thompson's Station: A Working Example



Sheaffer System designed for flow rate of **1 million gallons per day** (mgd).

Can be readily expanded to **2 million gallons per day.**

Phase I of Construction: **500,000 gallons per day** (gpd).

Phase I of Operation: **300,000 gallons per day.**

Cartwright Creek Utility

- Sheaffer System will service **500 Existing Homes.**
- Expanded to serve **500 Existing Homes on Failing Septics.**
- Expanded to serve **1000 New Homes.**

Total Flow Rate = 700,000 gpd

1000 NEW TAP-ON FEES **PAYS FOR THE COST** (DESIGN AND BUILD) OF CONVERTING FROM A DISCHARGING SYSTEM TO A RECLAMATION AND REUSE SYSTEM.

Discharging Wastewater to the Harpeth River is Eliminated!!!

Environmental Benefits of Water Reclamation and Reuse

- **No Sludge**

With the elimination of sludge production, there is no costly relocation to a landfill or potential harm of applying to land.

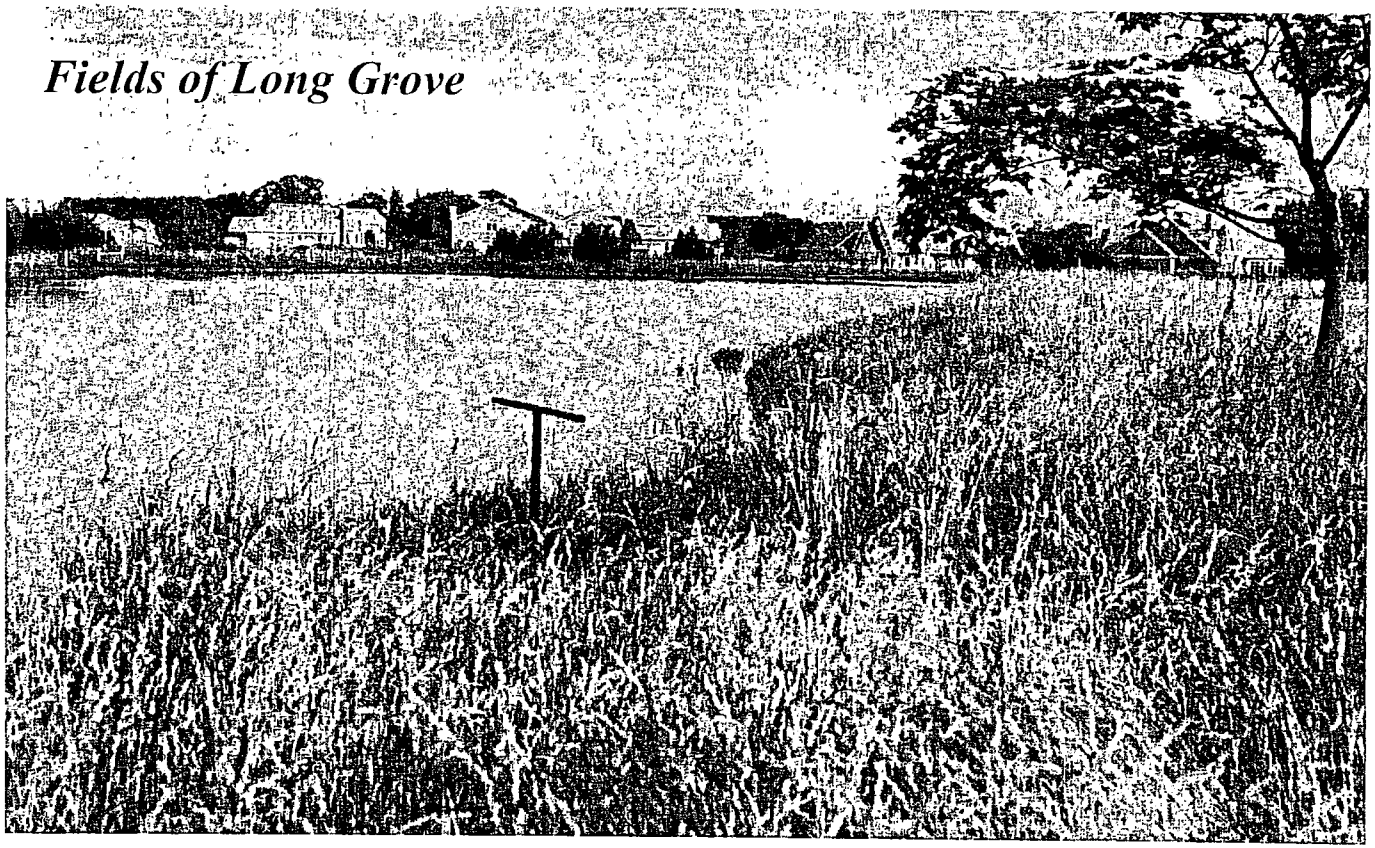
- **No Discharges** into nearby creeks, streams and rivers.

Water is efficiently reused to irrigate cropland, forests, parks and open space.

- **No Odors**

There are no foul-smelling odors that escape the ponds, so the ponds are desirable to live amongst.

Point-Source Pollution

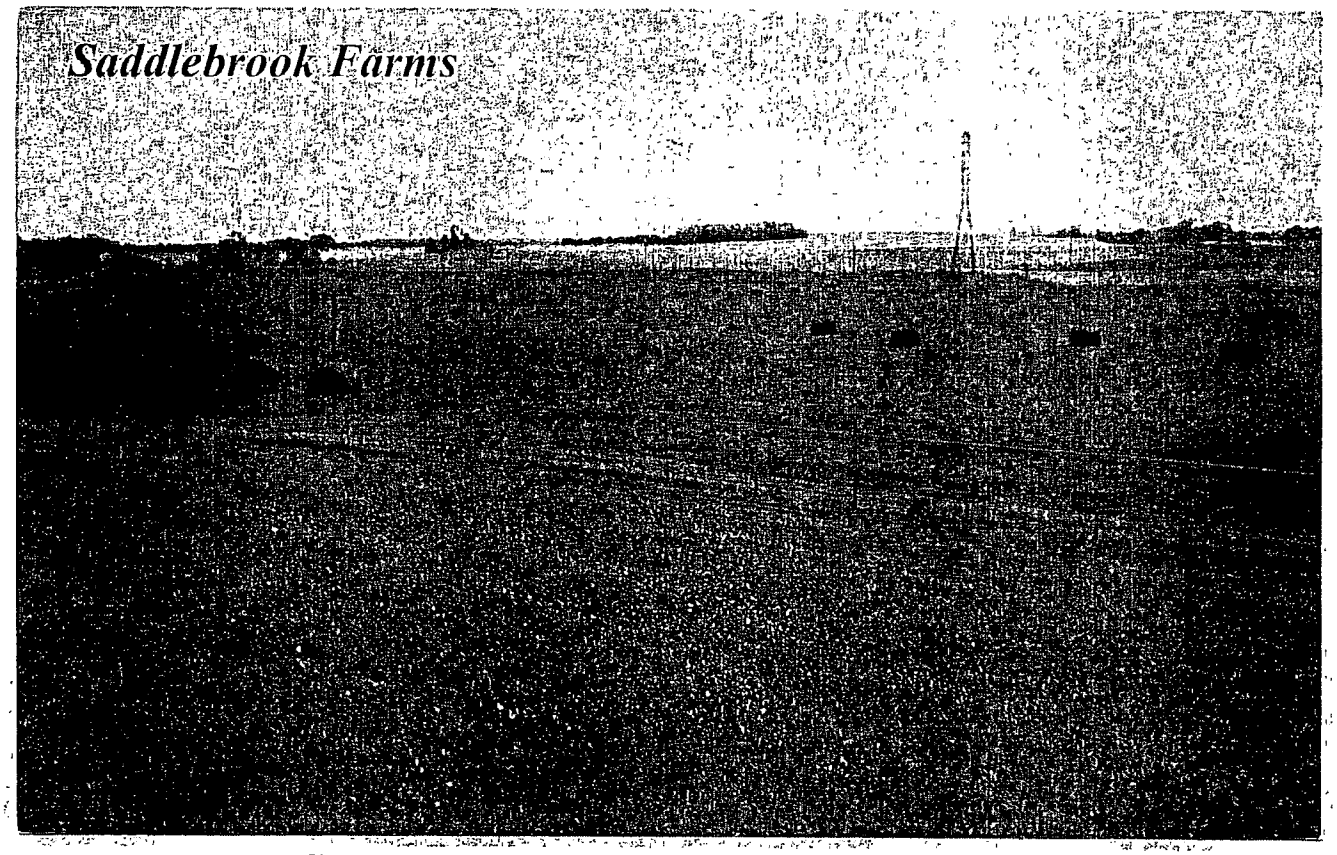


Onsite wastewater reclamation and reuse system ensures the development will reuse all wastewater efficiently and not discharge any into nearby creeks and rivers

Non-Point Source Pollution

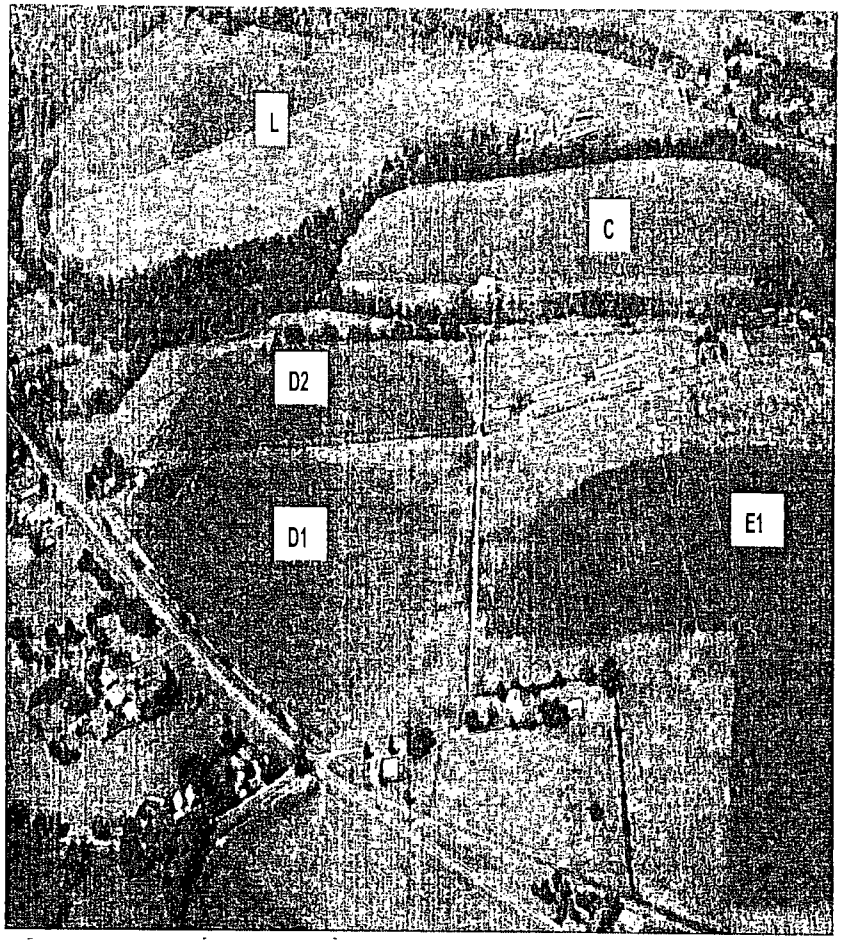
Engineered grassed swales serve as slow-flow stormwater flow paths, filtering out non-point sources of pollution.

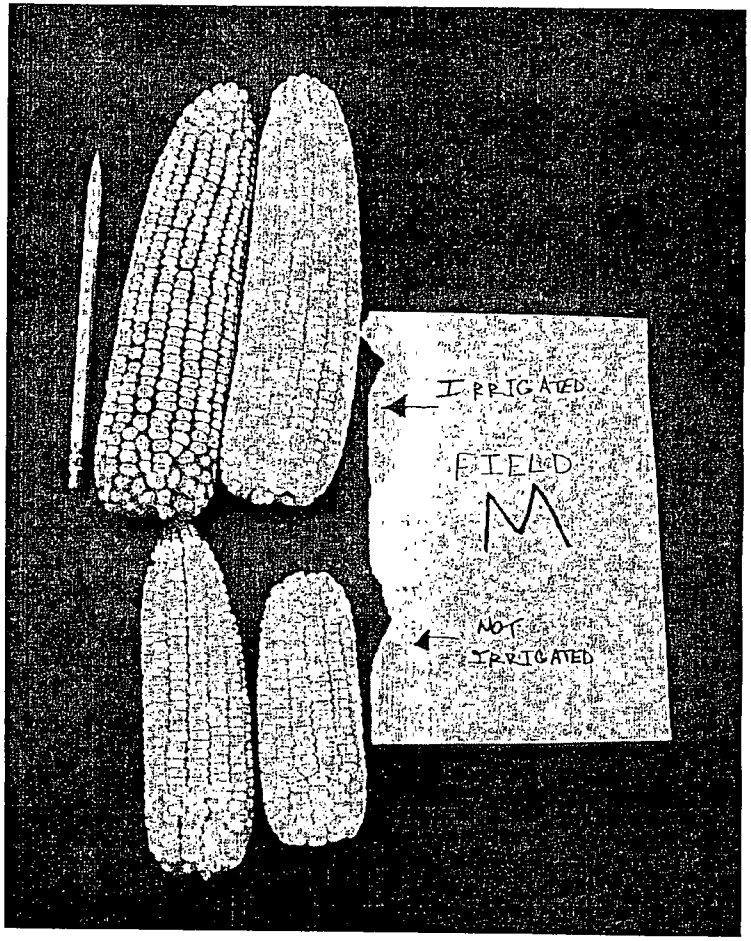
Sustainable Farmland



Farmland is preserved with a constant supply of nutrient-rich irrigation water.

More Productive Farmland





Farmland at North Fork is **sustained** and **crop yields increase** with steady supply of water.

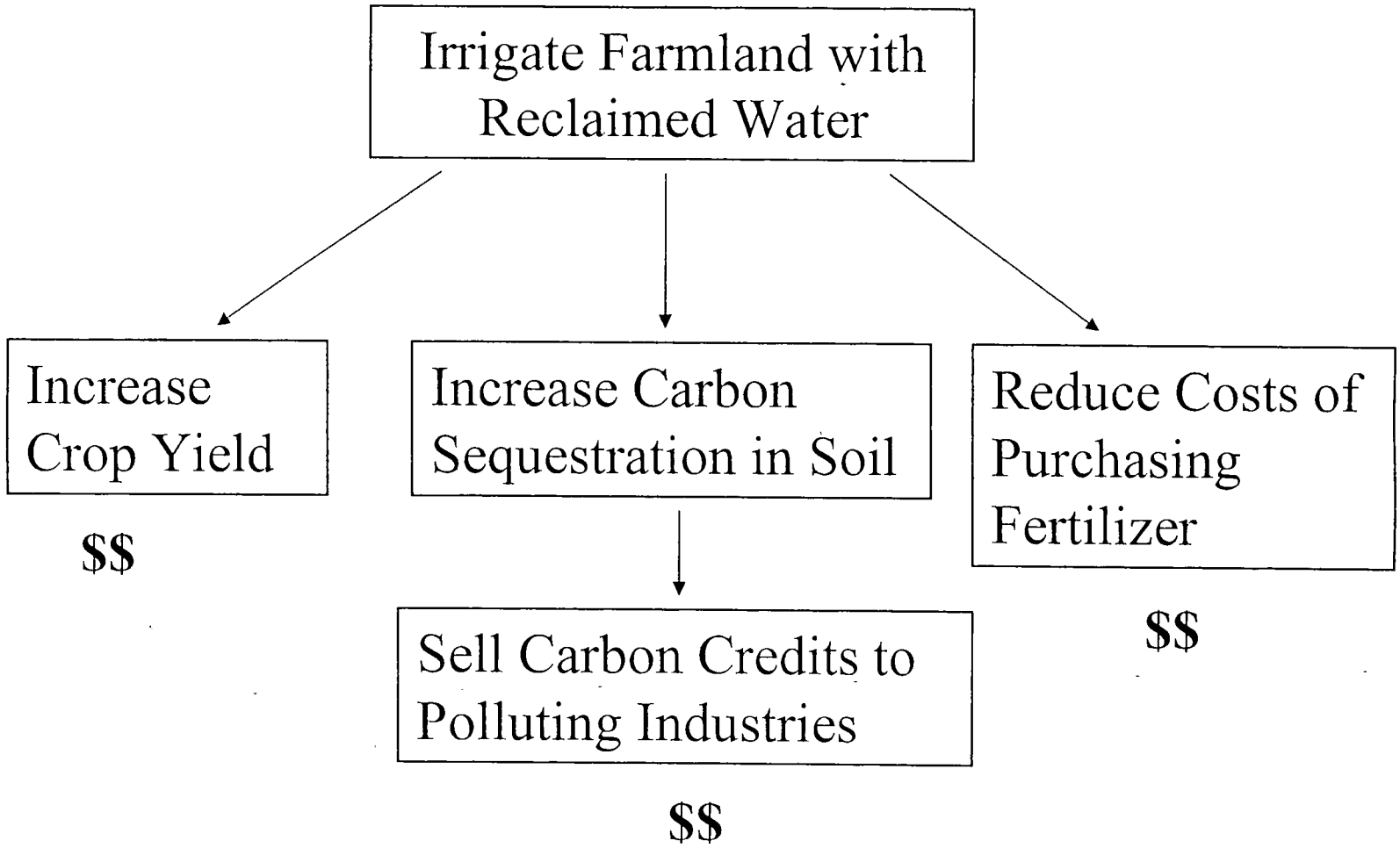
Carbon Sequestration

Fields of Long Grove

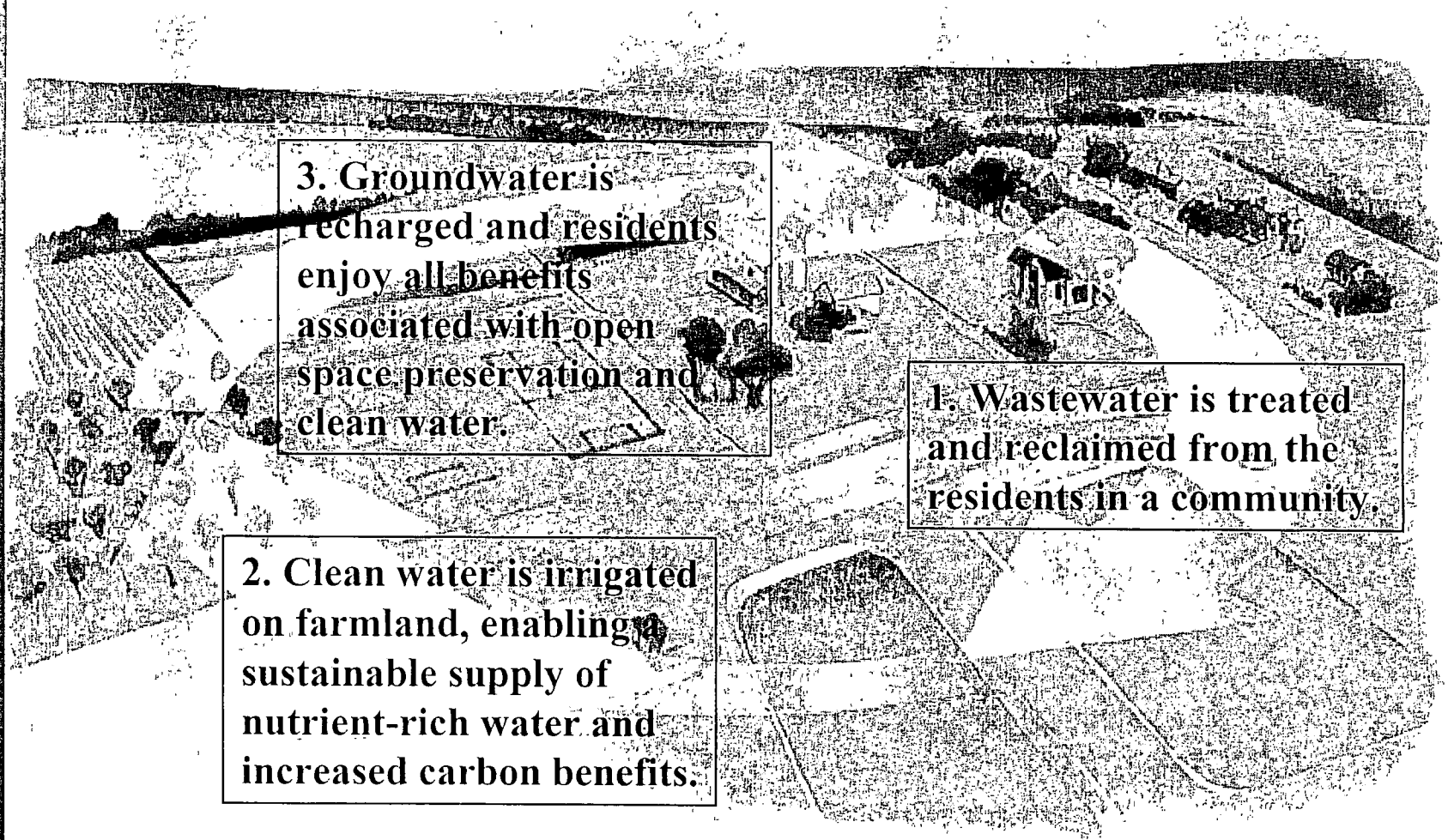
Irrigated land will increase plant and soil **sequestration of carbon.**

Value of Farmland Increases

ADD NEW REVENUE SOURCES TO FARMLAND



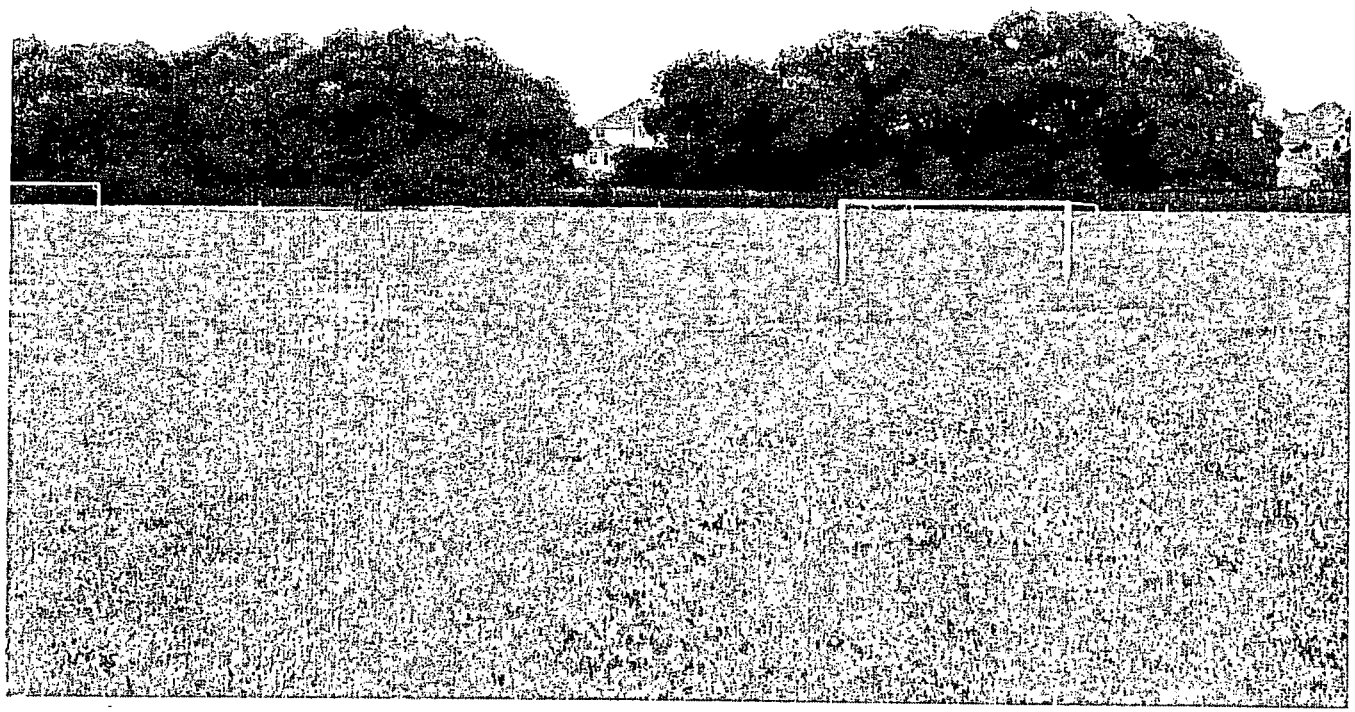
The Farm-City Loop



"Pollutants are Resources out of Place"

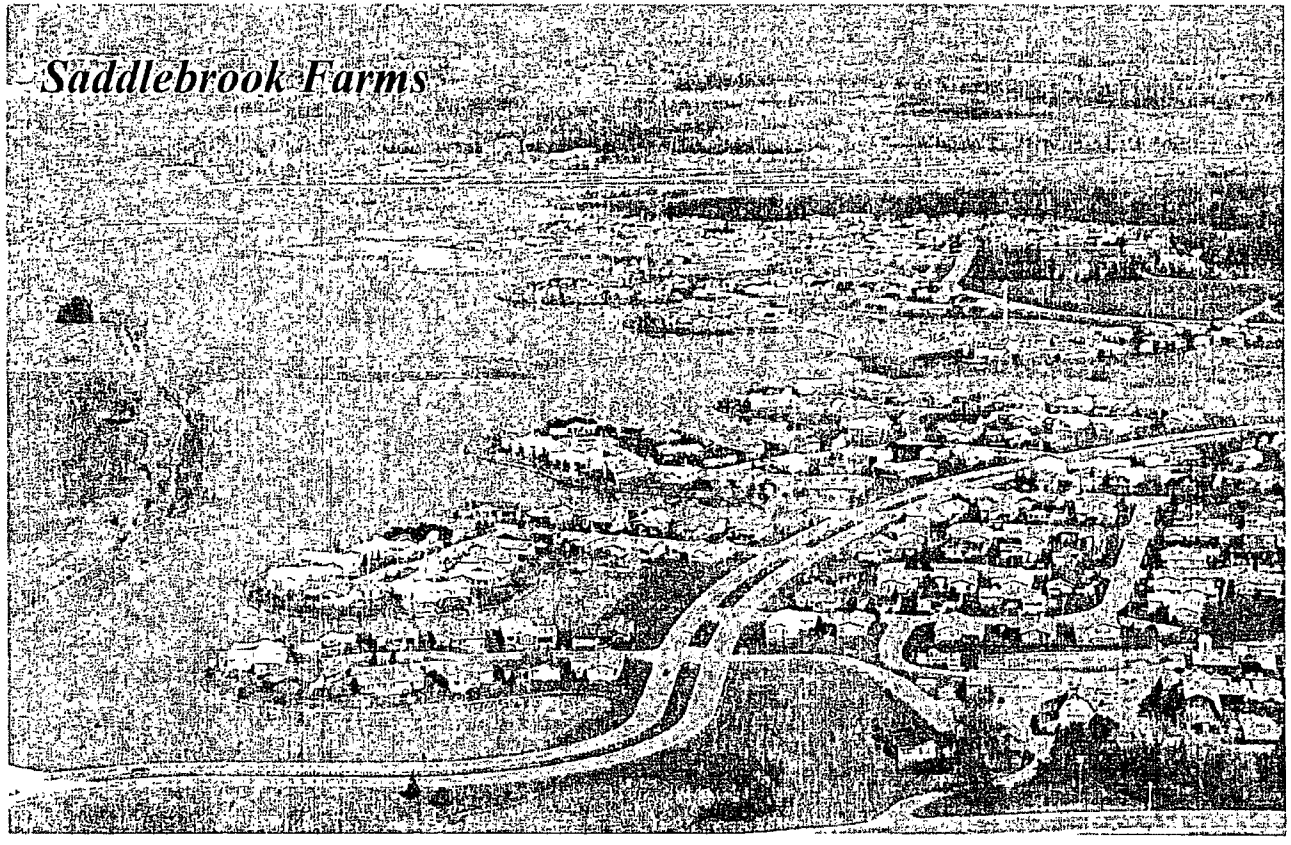
Parks and Fields

Willowmere



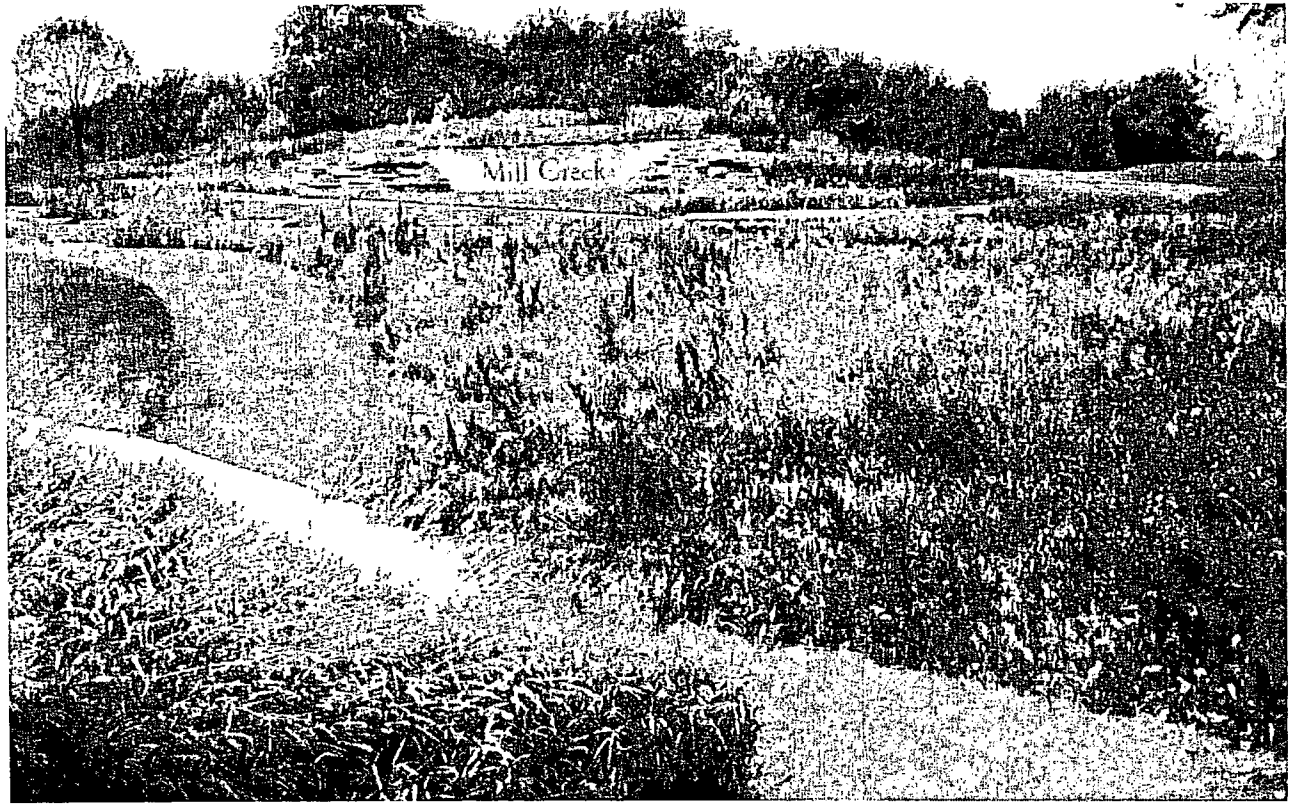
Open space parks and fields will stay green with irrigated reclaimed water.

Recreational Benefits



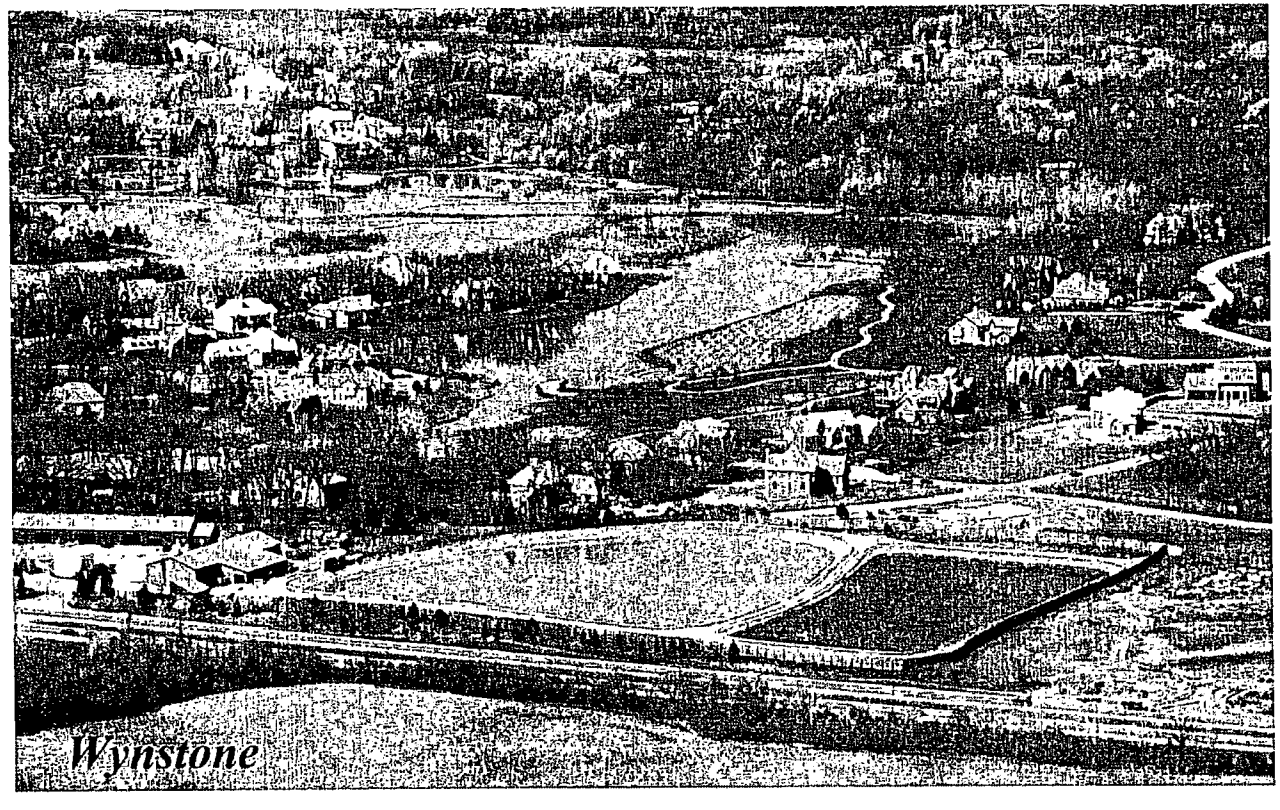
Retention ponds augment stormwater runoff storage, as well as increase **recreational appeal** and preserve and create **wildlife habitats**.

Air Quality



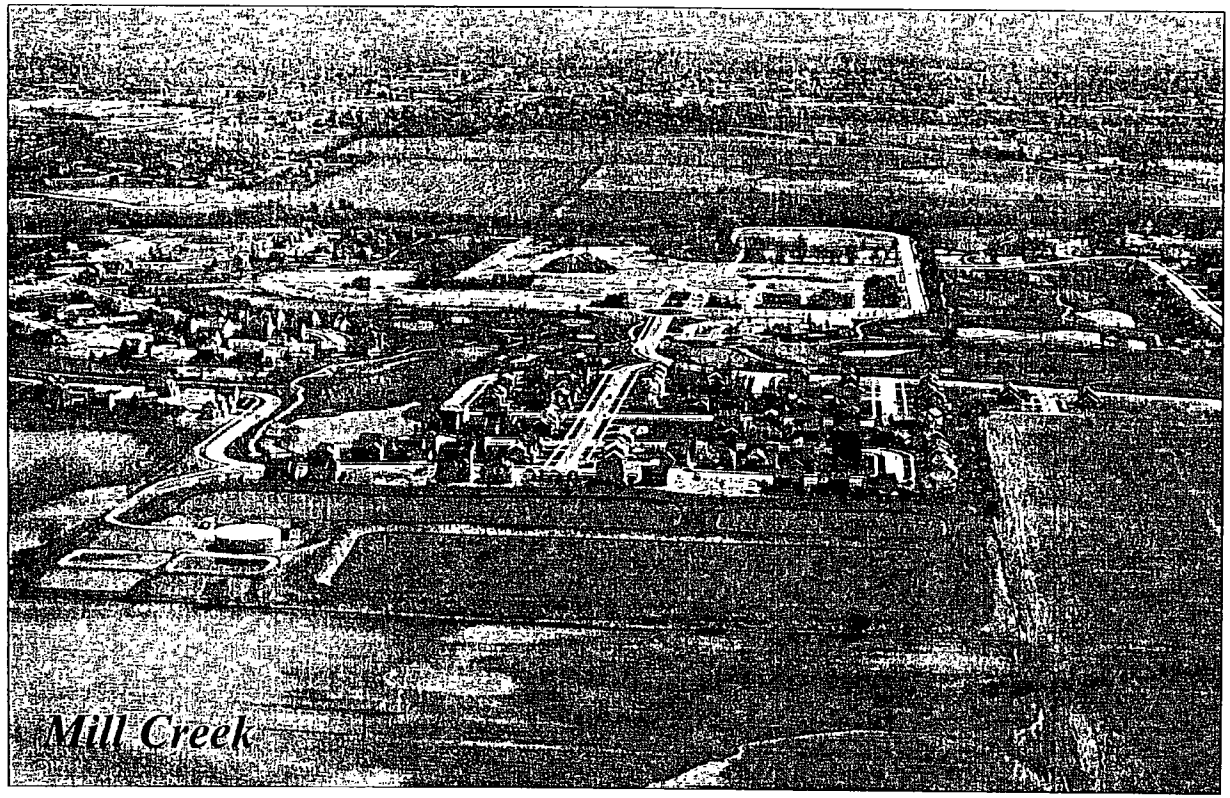
Trails added throughout the development encourages **non-motorized vehicular travel**.

Land Planning



Clustered housing manages growth and deters from the continuation of linear, urban sprawl.

When responsible, 'smart' planning measures are taken, the **greenway perimeter** of a development will serve as a **buffer for the community**, while blending it into the **rural character** of the surrounding area.



How are Current Planning Measures Affected?

A Sheaffer System allows for flexible growth options.

The System design inherently plans for expansion, therefore

Performance Bonds

Conventional Discharging Systems

- Liabilities
- Subject to Changing Rules/Regs
- Performance bond used for a frequently failing and unreliable system.

A Sheaffer System

- Creates Benefits
- Revenue Sources
- Internal Demand for Water

THESE **NEEDS** AND **BENEFITS** DRIVE THE SYSTEM'S PERFORMANCE AND ACCOUNTABILITY.

Rules and Regulations

A Sheaffer System

- Encourages Reclamation and Reuse through **Incentives.**

- Monetary Motivations Eliminate the Need to Regulate what Enhances the Public's Quality of Life.

Compare this to Conventional Discharging Systems which Must Always be Regulated to Minimize Adversities.

nrri
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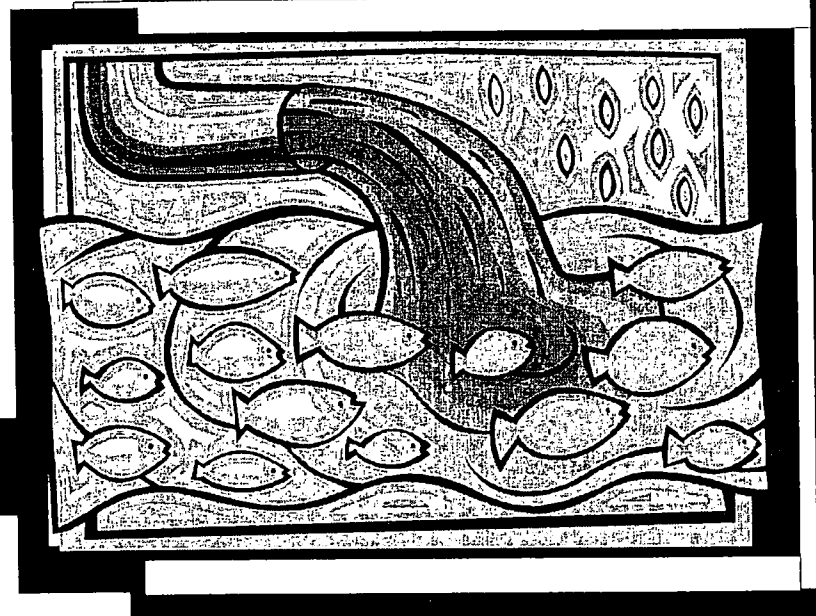
Tennessee Regulatory Authority Wastewater Workshop



Options in Wastewater Viability

A Presentation to the:

Tennessee Regulatory Authority

By Melissa J. Stanford

National Regulatory Research Institute

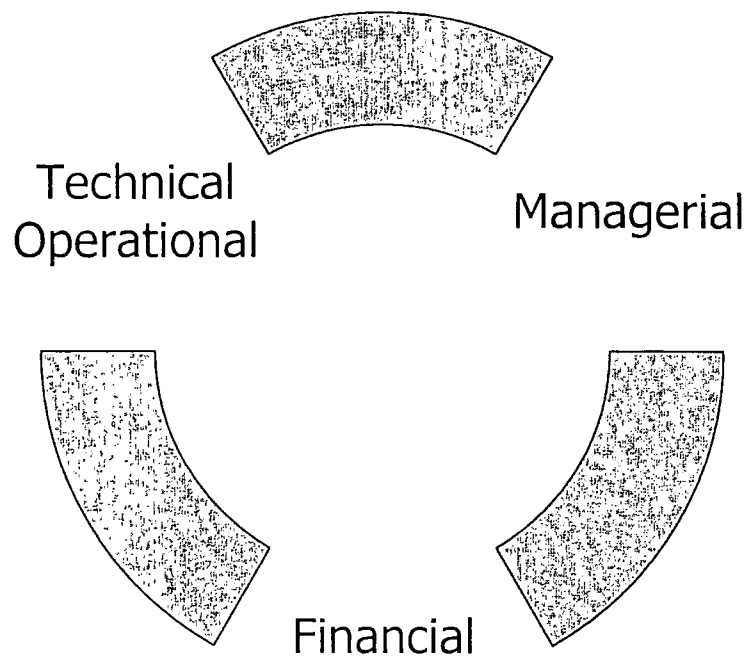
December 9, 2004

About the NRRI

- Located at the Ohio State University
- Official Research Arm of the National Association of Regulatory Commissioners
- Selected Services and Events include:
  - Commissioners Summit (Jan. 16-18, 2005)
  - Tutorials, Training and Facilitation
  - Information Clearinghouse
  - Research, Reports on Current Regulatory Issues
  - Service to NARUC Committees
  - www.nrri.ohio-state.edu

Key Elements in Viability

A viable system has the sustainable financial, technical and managerial ability to meet performance and regulatory requirements in the long-term.



Commission Approaches to Viability

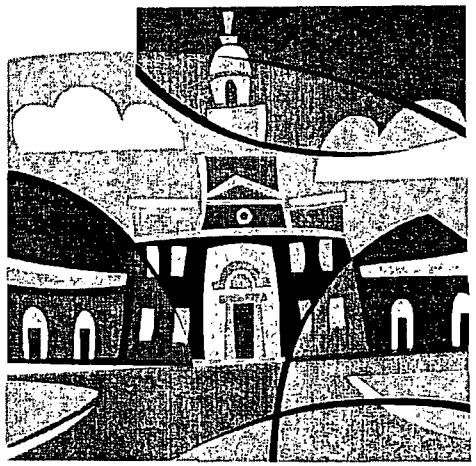
- Stringent Criteria for Certification
  - Show me the money !
  - Do you have a business plan ?
  - Are you willing to charge ?
  - Have neighbors and other stakeholders been informed?
  - Has the primacy agency provided necessary operating permits?
- Contingency Plans and Mechanisms
  - Provider of last resort?
  - Posting a bond or other surety?
  - Estate Planning?
  - Abandonment Statute?
- Consideration of Alternative Options
  - Structural Consolidation ?
  - Sharing Arrangements?
- Interagency Collaboration – formal and informal
  - Memoranda of Understanding?
  - Ongoing Communication?

Stringent Certification Requirements (Viability Screening)

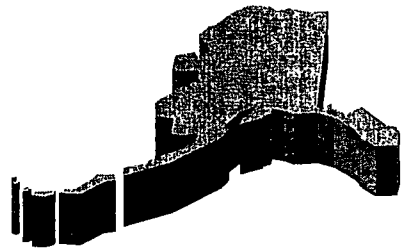
- Using thorough certification requirements forces potential wastewater utility owner to carefully consider what is involved in building, owning and operating a wastewater treatment plant and whether he has what it takes to do it, do it right and keep it going over the long haul
- Dollars+Facts+Figures+Plans+Past History or Reputation+Consideration of Alternatives+Judgement

Relevant Approaches and Activities

At Selected State Commissions



Regulatory Commission of Alaska (RCA)



- RCA Notice of Inquiry – R-04-04: Stakeholder process to craft a consensus plan to attain long-term sustainability (small wastewater, water and electric).
- Rate levels necessary to replace grant-funded plant?
- Can we also keep rates affordable ?
- Alaska is considering options including allowing depreciation of contributed plant.
- Tiered, simplified certification regulations became effective in July 2004
  - Pre-application
  - Provisional certification
  - Traditional certification

Delaware Public Service Commission

- Authority to regulate wastewater utilities > 50 customers, rulemaking October 2004
  - All (new and existing) to come in for rate review
  - All to file Wastewater System Improvement Charge (WSIC)
  - CPCN requirements include: corporate history, affiliates info., financial statements, disclosure of past compliance problems, proof of liability insurance.

Infrastructure Replacement Surcharges

- Wastewater System Improvement Charge (DE)
- Collection System Improvement Charge (PA)
- Qualifying Infrastructure Improvement Projects (IL)
- System Improvement Charge (OH)

Charge added to rates to collect a targeted amount of revenue to solve documented sewage disposal problems, relining, replacements, main extensions, other

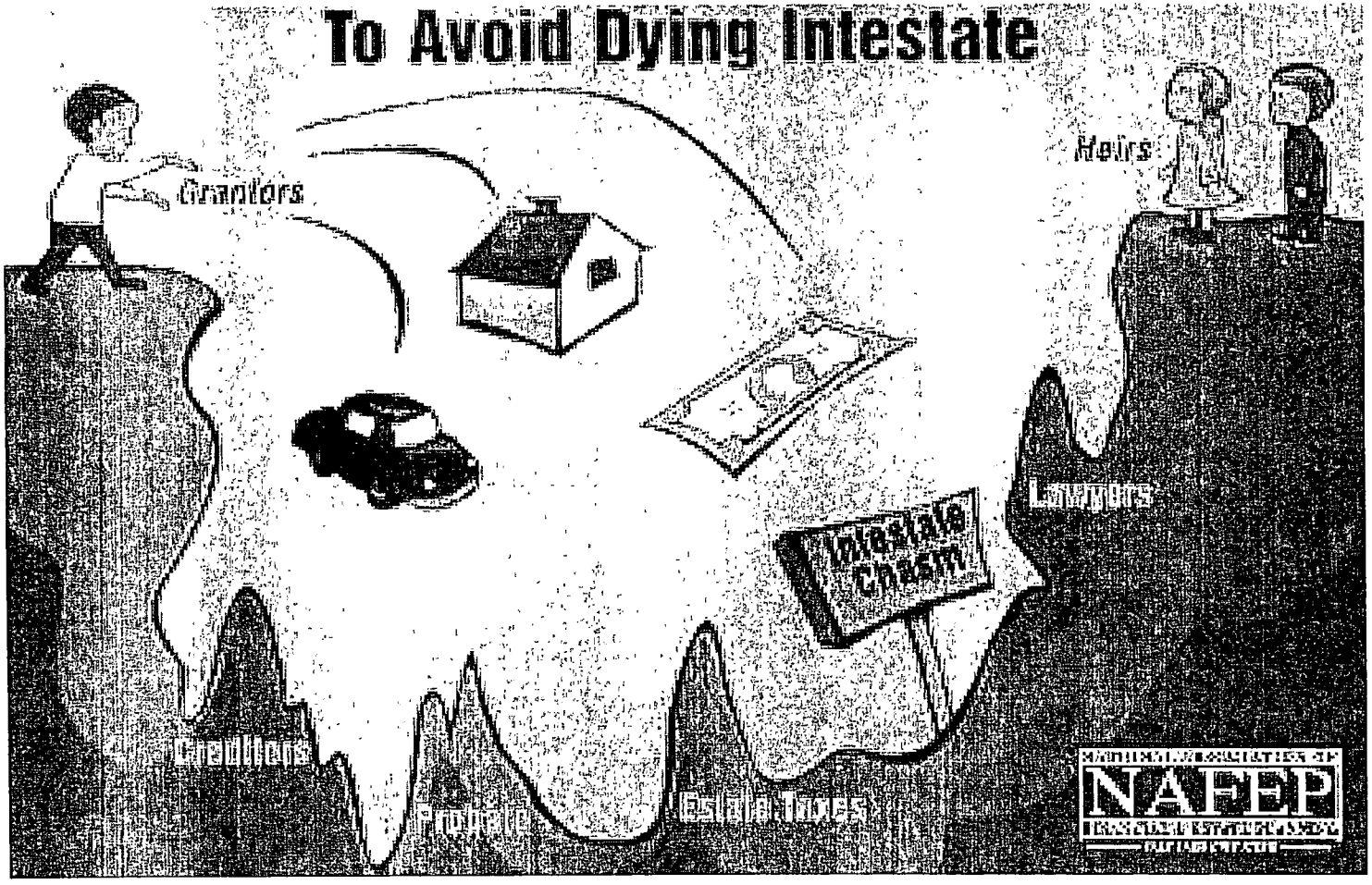
Florida Public Service Commission

- CPCN
  - Must project operating expenses out to 80% capacity
  - Must consider alternative options
  - Provision of service consistent with wastewater portion of local comprehensive plan approved by Dept. of Community Affairs
  - Do you really want to be in the water business?
- Interagency cooperation-MOUs with 5 water allocation agencies, the Dept. of Community Affairs and the Dept. of Environmental Protection
- County is provider of last resort by law
- Problem of troubled municipal systems being given to PSC to regulate
- Must notify PUC if filing bankruptcy; county appoints a receiver
- Abandonment Statute – 367.165

Missouri Public Service Commission

- CPCN
- Use financial information+judgement
- Engage in "estate planning"
  - Estate Planning – the acquisition, preservation and ultimate disposition of assets and liabilities.
- Receivership available – used as stopgap last resort
- PSC could benefit from authority to be involved in sale of stock
- Interagency cooperation – formal Memorandum of Understanding, informal dialogue

When a small utility fails to plan for getting out of the business.....it's like a person dying without a will

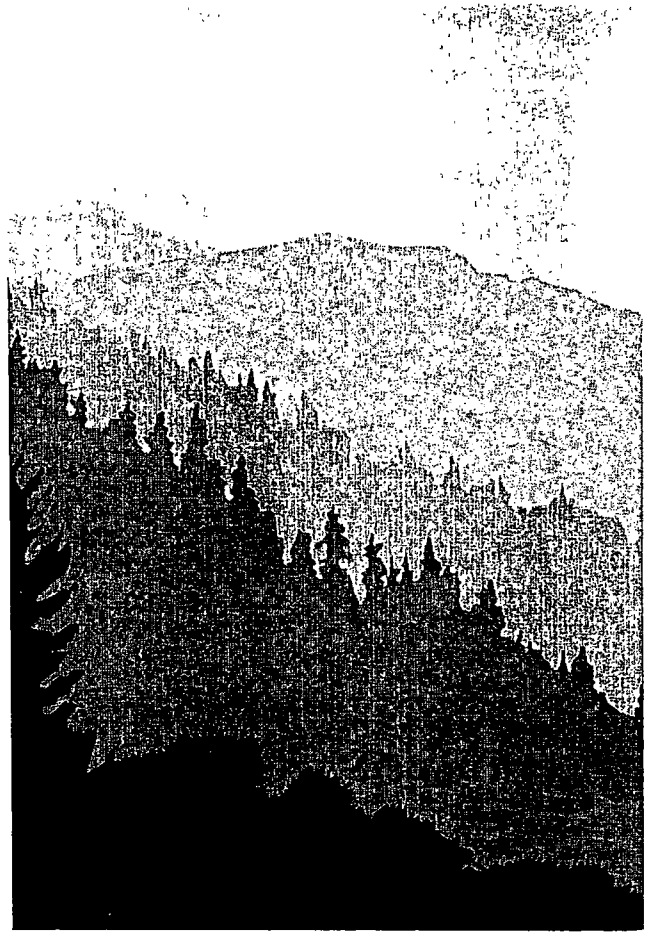


New Mexico Public Regulation Commission

- CPCN
  - Financial feasibility
  - Conformance with:
    - minimum standards of design, construction, operation
    - Provisional customer service rules and regulations
- Have required new utilities to develop initial rates based upon a fully developed system methodology, acting as if 90% of the customers that the system could support were actually taking service
- Problem of system being denied a CPCN then becoming a co-operative and outside jurisdiction
- Have used contract operator to run bankrupt system until eventual municipal takeover
- Considering acquisition incentives

North Carolina Utilities Commission

- CPCN
  - Corporate structure
    - Proposed service areas
    - Proposed rates
    - Number of customers
  - Financial statements
    - Capital structure
  - Requires a bond - once a completed application is filed, the Public Staff investigates and makes a recommendation as to whether the request should be approved and recommends the appropriate bond amount for the particular franchise request



§ 62-110.3. Bond required for water and sewer companies (N.Carolina)

No franchise may be granted to any water or sewer utility company until the applicant furnishes a bond, secured with sufficient surety as approved by the Commission, in an amount not less than ten thousand dollars ($10,000) with the amount based upon:

(1) Whether the applicant holds other water or sewer franchises in this State, and if so its record of operation,

(2) The number of customers the applicant now serves and proposes to serve,

(3) The likelihood of future expansion needs,

(4) If the applicant is acquiring an existing company, the age, condition, and type of the equipment, and

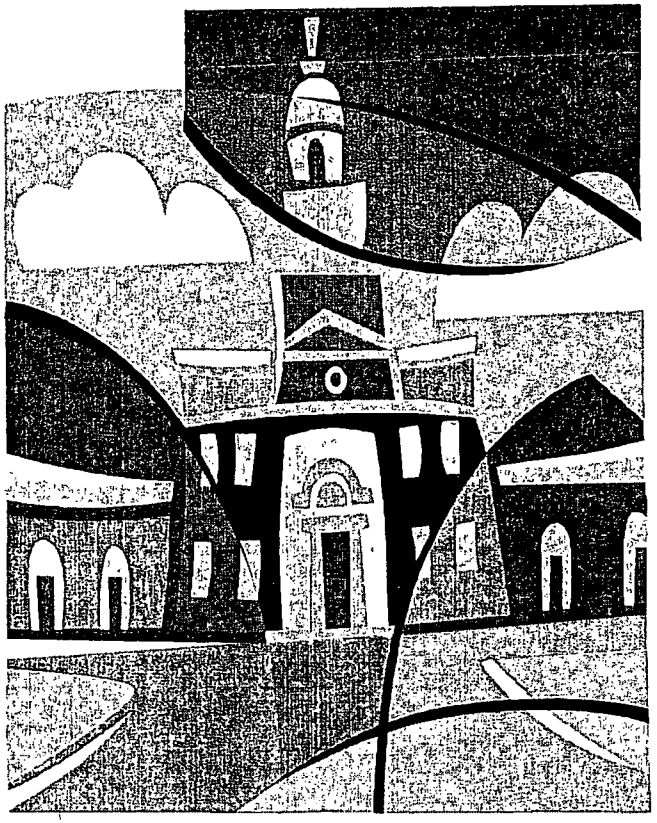
(5) Any other relevant factors, including the design of the system. Any interest earned on a bond shall be payable to the water or sewer company that posted the bond.

Public Utilities Commission of Ohio

- CPCN
  - Financial, EPA Permit to Install in place, no larger entity available to serve
- System Improvement Charge (new regulation applicable to wastewater and water utilities)
- Problem of homeowner operator
- Ohio EPA emphasizing regional approaches
- Small WW permitted on condition that county will eventually operate

Pennsylvania Public Utilities Commission

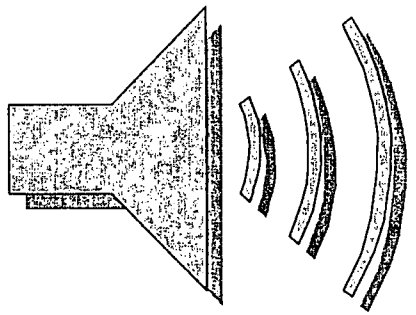
- CPCN
  - Indicators of financial fitness
  - Corporate structure
- Collection System Improvement Charge (CSIC)
- Interagency task force, 2 memoranda of understanding (Dept. of Environmental Protection, Pennvest – a low interest funding authority)
- Acquisition Incentives
  - Allow acquisition adjustments
  - Mandatory Takeover authority – used sparingly



West Virginia Public Service Commission

- Problem of small sewer utilities operating without a CPCN
- Sewer cos. need authority to disconnect *water* service for non-payment of sewer bills
- Alternate main extension proceedings – apply when developer builds & neighboring utility operates – less rigorous screening process
- Bill providing PSC with authority to mandate takeover failed
- Request larger systems to assume ownership

Resounding Themes

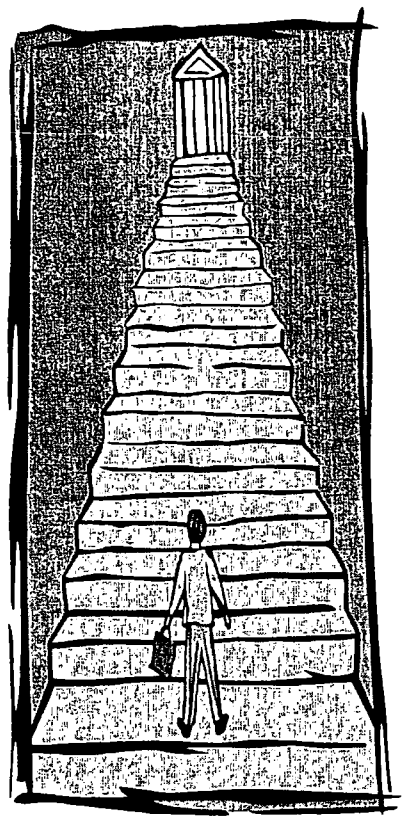


- CPCN can prevent some but not all non-viable systems from getting into the WW business
- Requires intestinal fortitude to charge/ensure sufficient rates up front to sustain operations and provide reserves
- Teaming with primacy agency and local governments important perhaps essential
- Customer/home buyer education could play a part
- One approach does not fit all nor solve all small system problems
- Creative problem solving, relationship building and persuasion play a part
- Requires substantial time and effort by Commission Staff
- Wastewater regulation issue is ripe for further study and innovation
- Problem of escapees from regulation becoming non-sustainable likely to endure suggesting need for regional cooperation or extension of regulatory authority beyond IOUs

NRRI's Next Steps

- Continue collecting and reviewing data on wastewater regulatory techniques

- With expectation to publish an overview and comparison of Wastewater Regulatory Approaches



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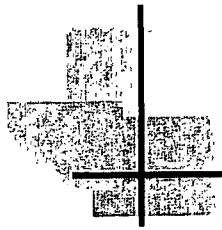
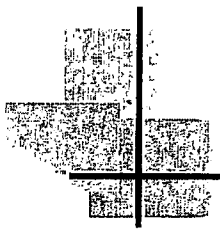


Tennessee Wastewater Systems, Inc.

Charles Pickney

President



Tennessee Wastewater Systems, Inc.

Mission Statement:

To provide sustainable wastewater infrastructure at a reasonable cost where it is presently unavailable

A NATIONAL PROBLEM

- Lack of permanent wastewater infrastructure

- 37% of new homes do not have access to municipal wastewater systems

1972 Clean Water Act

- 62 Billion dollars in taxpayers money spent to upgrade municipal systems

- Very little money spent for rural and small community level infrastructure

1997 EPA Response to Congress

- Decentralized Systems are cost effective option for meeting long term public health and water quality needs…

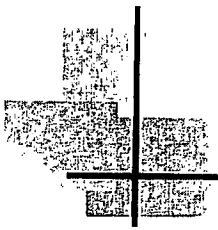
- Adequate management is the key to successful decentralized systems…

Tennessee

- Last year over 19,000 new homes in Tennessee had septic tanks and leach lines installed
- Over the next several years a large number will fail
- We have the technology and management entities in place to avoid these failures and serve this customer base

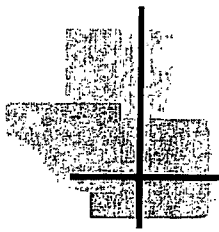
Single Family Residences

- Many thousands of customers with unmet needs
- Current TDEC regulations discourage utility service
- TDEC policies limit available technology to solve wastewater problems



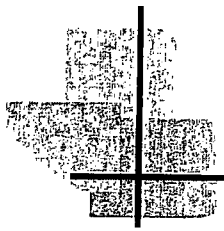
Barriers to Providing Service

- Regulations and process delays severely limit delivery of solutions
- Political concern for sustainability
- General lack of knowledge concerning availability of decentralized systems



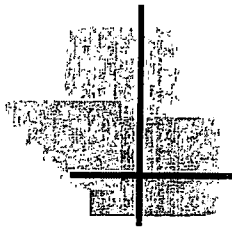
Increased Service to Customers

- TRA, TDEC and the public utilities are charged to deliver environmentally safe, reliable and cost effective wastewater solutions
- Service territories must be planned to provide service and infrastructure over the next 20 to 40 years
- Service territories must be sized to optimize delivery of wastewater service
- Multiplicity of utilities in small service areas will lead to inefficient delivery of service



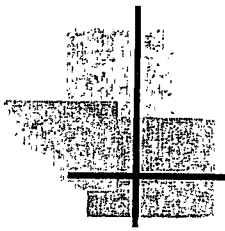
Environmental Concerns

- Release of raw sewage into environment from central systems
  - Typical System – City of Lebanon
    - Flow into Treatment plant:
      - During Dry periods < 1.2 MGD
      - During Rain Season >12 MGD
    - Water sold to sewer customers: 3.5 - 4 MGD



Environmental Concerns

- Ground Water Pollution:
  - Statewide
    - Over 60% of water well samples contaminated with fecal bacteria
  - Wilson County
    - Over 95% of all wells are contaminated with E-coli and other pathogens
  - Thousands of failing septic systems with no approved correction under current regulations



Environmental Concerns

- Current lack of comprehensive watershed planning regarding waste load allocation
  - Permits could be issued by watershed to utilities using TMDL as guide
  - Decentralized systems allow environmentally sensitive layout and design for wastewater and storm water for new developments

TRA/TDEC Regulatory Considerations

- Financial Viability of Utilities
- Operation and Maintenance Assurance
- TRA Process Time for Certification
- TDEC Permitting Process Time

Financial Viability of Utilities

- Importance
  - Protection of public
  - Assurance for TDEC
  - Most frequently raised issue
- How to Achieve
  - Financial Criteria for acceptable Utility
  - Performance Bonds

Financial Criteria

- TRA develop financial viability criteria

- Create review committee with representative from Consumer Advocate, TDEC, and TRA to conduct evaluations

Operation and Maintenance Assurance

- Demonstrated financial and technical viability
- Random TRA survey (written or telephonic) of selected customers
- Performance bonds

Performance Bonds

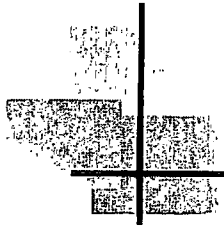
- Amount
  - Adequate to cover operations and maintenance until adequate escrow
  - Minimum Bond of $500,000
- Payable to TRA

Rules and Regulations

- Unnecessary Delays in TRA and TDEC approval processes
- Importance
  - TRA certification required prior to agreement with developer
  - Customers need timely confirmation of utility availability to purchase land
  - Utility needs timely TDEC permitting to confirm availability of service

Rules and Regulations

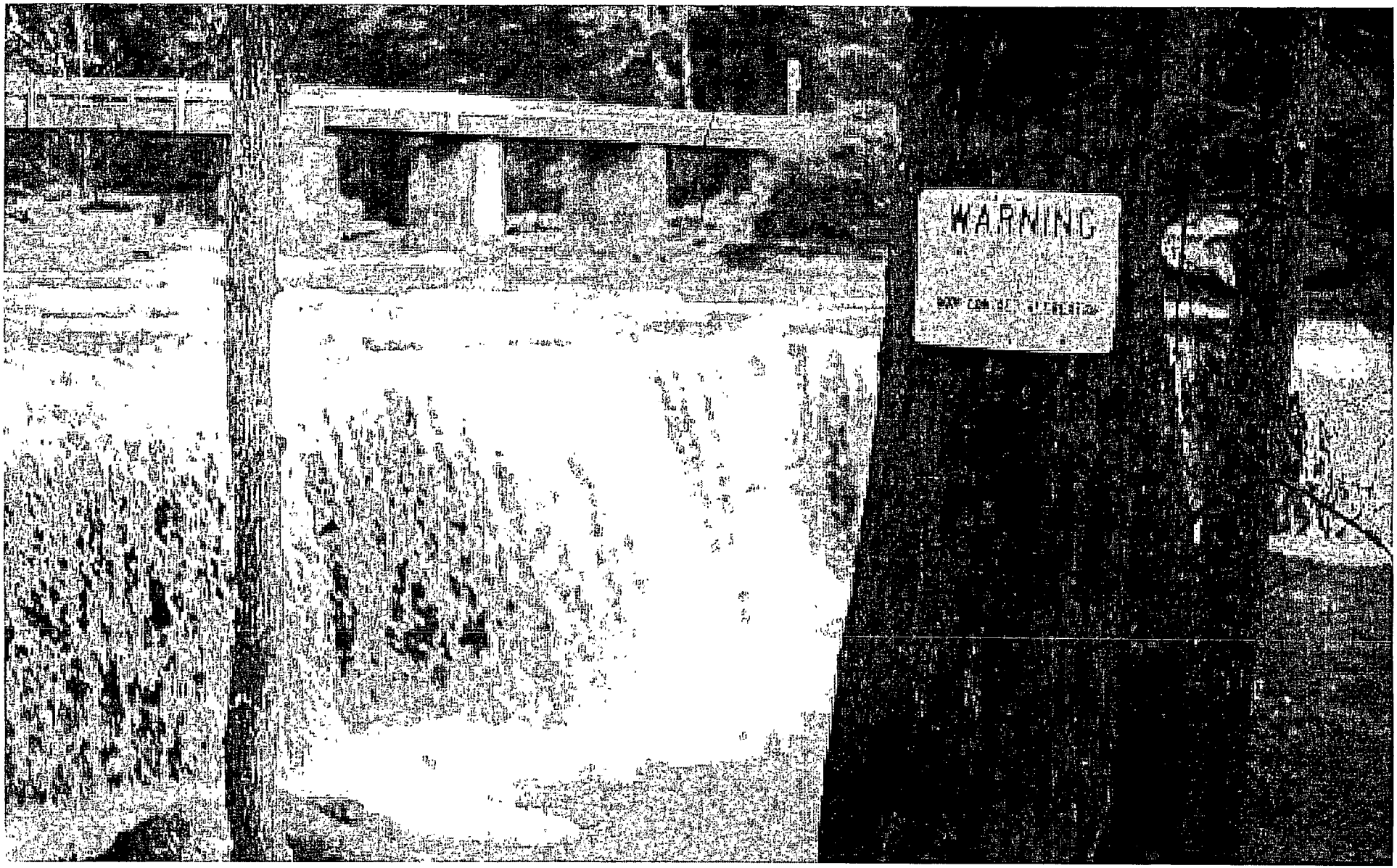
- TRA Board Actions
  - Expedited staff review and Board scheduling
  - Expedited Order preparation and issue
- Requests for Hearing
  - Criteria for accepting hearing requests
  - Timely scheduling of hearing
  - Timely report from hearing officer



Timely TDEC Permitting

- Expedited preliminary engineering report review and draft permit issue
- Public Notice provisions
  - Criteria for scheduling public hearings
  - Expedited Record of Decision release
- General / Watershed Permit for utility systems

Waste Water Solutions


WARNING

Mission

- Our goal while serving the needs of the public and community, is to recycle valuable resources in a way that is environmentally sensible while being economically worthwhile.

IRM Utility, Inc.

Who Is IRM Utility?

- A privately owned, public utility authorized by the Tennessee Regulatory Authority with a certificate of convenience and necessity to service areas in Tennessee outside of chartered utility districts.

The Future of Waste Water Solutions

- Federal Regulation
- State 303D List

IRM™
Utility, Inc.

Cost and Engineering Considerations

- Economical Remediation
- Economical Collection Systems
  - STEP and STEG
  - Conventional Gravity
- Economical Treatment
- Expansion Friendly