

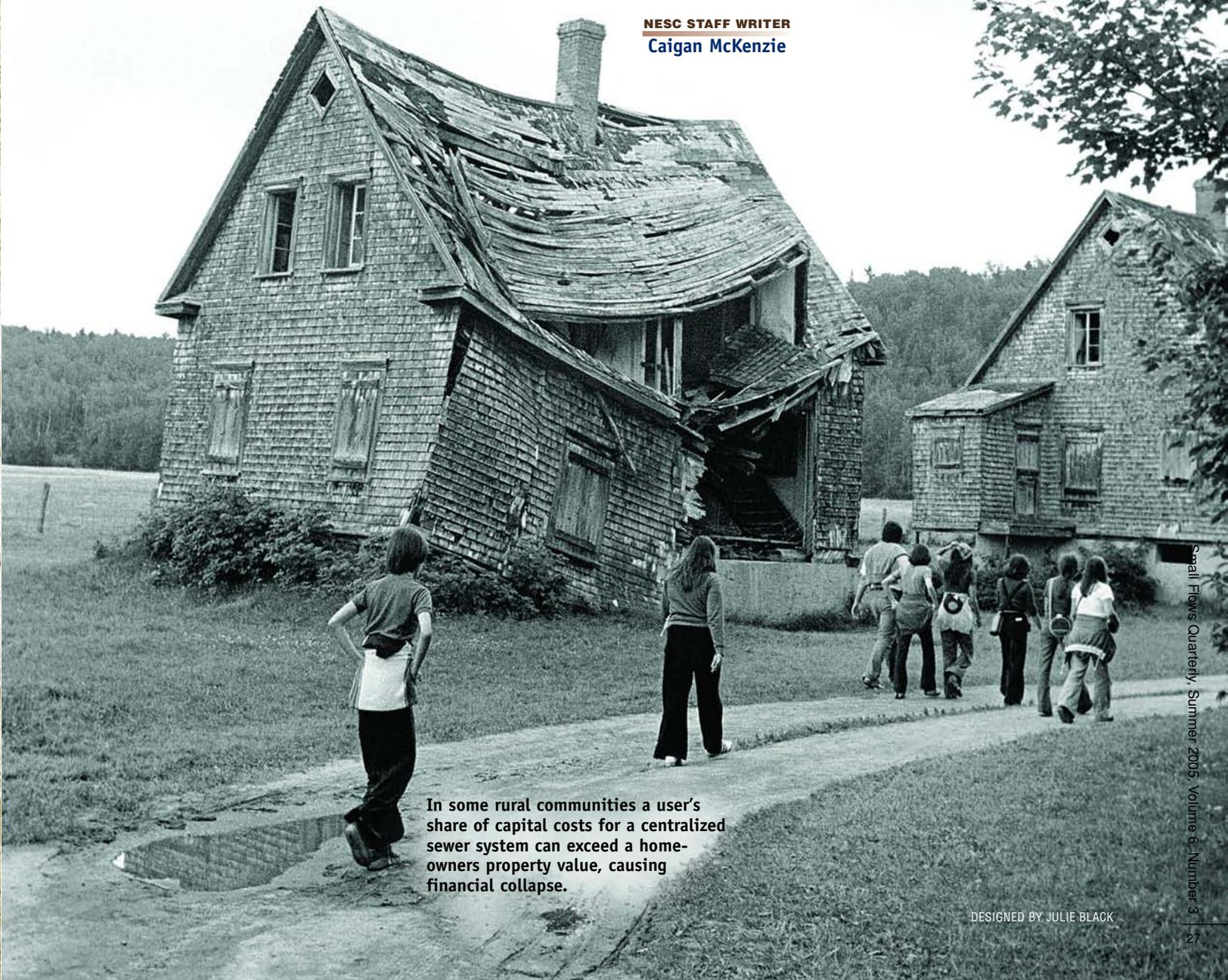
The High Price of Ignorance

Many Indiana communities think they have only two options for solving their wastewater problems: building sewers or doing nothing. The first option could mean soaring capital costs and user rates, while the second option could mean polluting the environment and risking public health.

"We knew we had to help communities find another option," said Richard Wise, president, Indiana Capacity Center for Management of Onsite/Decentralized Systems, Inc. (ICCMODS).

NESC STAFF WRITER

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In some rural communities a user's share of capital costs for a centralized sewer system can exceed a home-owners property value, causing financial collapse.

DESIGNED BY JULIE BLACK

Demographics Support Need for Innovative/Alternative Systems

An ongoing survey of more than 500 unsewered communities in Indiana, (updated in year 2000) found that:

- 78 percent of rural communities have fewer than 100 homes to support a sewer project,

infrastructure in communities statewide. For large, densely populated areas, centralized sewer systems were traditionally selected, but for rural and sparsely populated areas, these systems were unaffordable. The user base could not support high per capita construction costs or pay for the competent wastewater professionals needed to

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- 62 percent are predominately low to moderate income, with a number of fixed-income retirees,
- 74 percent are unincorporated, and
- 56 percent directly discharge untreated wastewater to the environment via community tile systems or individual tile surface discharges.

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Affordability

Since the passage of the Clean Water Act, Indiana has received millions in federal dollars to construct and upgrade its wastewater

operate, manage, and update such complex facilities.

"For many of these smaller communities, capital costs would be \$15,000 to \$25,000 per connection, and user rates would be \$60 to \$120 per month," Wise said. "It is just impractical to think there is enough funding and resources to sewer the entire state of Indiana. We should be focusing on improving the viability of onsite systems through technology and management models, which have greatly improved in recent years."

"People live in these communities because of affordability," Trinkle, said. "In some communities, a user's share of capital costs can equal, or even exceed, a homeowner's property value. A bottom line like that paralyzes a community. Officials throw up their hands and say they can't afford it."

Photos on pages 28 and 29 by Julie Black

Working with Small Communities Through RCAP

Before ICCMODS, Wise and Trinkle worked at the Indiana Rural Community Assistance Program (RCAP), assisting small, rural communities with their drinking water and wastewater infrastructure development.

"What we found was a serious disconnect between the communities that we were trying to assist and the consultants that were trying to advise them," Wise said. "Many of these consultants were promoting only traditional sewers and traditional treatment works, but we knew that the U.S. Environmental Protection Agency (EPA) had affirmed in its 1997 *Response to Congress on Use of Decentralized Wastewater Treatment Systems* that the onsite option was a viable and affordable alternative,



particularly in rural areas, if properly designed, installed, and managed. This support of innovative/alternative (I/A) systems is a significant departure from previous national policies.”

Concerned that communities were not being given all the information that they needed to make an informed decision, Wise and Trinkle began to intercede in communities that they targeted as good candidates for the onsite option.

“In a couple of cases, we were able to assist communities in soil evaluations on land that they could potentially acquire,” Wise said. “The consultant’s charge for this would have been hefty, but we were able to get the soil evaluation accomplished at a fraction of their cost because of our relationship with a number of soil scientists across the state, county health departments, and Purdue University.”

Educating Regulatory Agencies

Wise and Trinkle were heartened by their accomplishments in assisting communities in pursuing the onsite option, but their successes were not always easy to achieve. They found resistance to the onsite option from the Indiana Department of Environmental Management (IDEM). IDEM is the regulatory agency that consultants would cite when disregarding onsite system options. “We knew we had to help educate the folks at IDEM to get their support,” Trinkle said.

Through their efforts and the efforts of a number of onsite wastewater stakeholder groups in Indiana, IDEM is drafting operational guidelines for certain onsite cluster systems that operate under their jurisdiction. Traditionally, operational

guidelines are left up to the Indiana State Department of Health (ISDH) because of their experience with onsite systems across the state. Drafting operational guidelines, however, does not mean IDEM has given their support.

Concerns about Groundwater Contamination

The groundwater and other permitting sections of IDEM still have reservations about the viability of onsite systems and their long-term impacts to groundwaters of the state. According to Wise and Trinkle, IDEM’s major concern is nitrates. Groundwater rules in Indiana set nitrate limits at 10 milligrams per liter, and IDEM is not convinced that onsite systems can meet this limit.

The ISDH supports approval and use of onsite systems and has been discussing the issue with IDEM over the past four years, working to reach an agreement that will be acceptable to both state agencies. The issue of groundwater contamination by onsite systems is such a volatile environmental and public health issue that recent Indiana legislation, (HEA 1017)IC 13-18-17-5, effective March 16, 2004, exempted certain onsite systems from nitrate groundwater standards, prohibited ISDH from adopting nitrate numerical criteria from Indiana’s groundwater standards, voided any ISDH rules in affect that may apply such standards, and required ISDH and IDEM to study the environmental and health effects, fiscal impacts, and mitigation barriers of nitrate in groundwater.

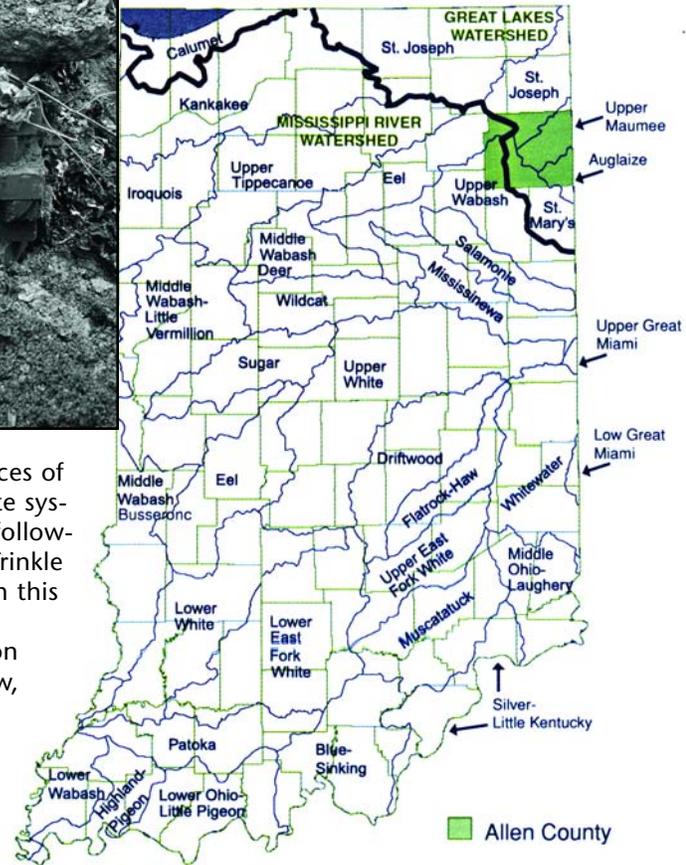
Onsite Systems Legislation

“In 2000, we worked with other stakeholder organizations to help educate legislators and communities about the viability of onsite systems and the need for management,” Wise said. “A hot topic of debate in the Indiana General Assembly is that sewage openly runs in community storm drains, ditches, creeks, and ponds in neighboring yards, polluting our lakes, rivers, and streams.

“Newspapers across Indiana have published numerous articles about this subject. Because of these debates and newspaper articles, the state appointed a legislative arm, the Environmental Quality Service Council Septic System Subcommittee, to review onsite issues.”



Graphic by Purdue University Cooperative Extension Service



A number of stakeholder organizations spoke before this new legislative committee about onsite system problems in late summer and fall of 2000, including:

- the U.S. EPA's Office of Water Management;
- Purdue University;
- ISDH;
- Indiana Utility Regulatory Commission;
- Indiana State Budget Agency;
- Indiana Environmental Health Association;
- Indiana Onsite Wastewater Professionals Association;
- Indiana Regional Sewer District Association;
- Indiana Department of Environmental Management;
- LaGrange, Marion, Wells, and Allen County Health Departments;
- the Nature Conservancy;
- Acorn Technical Group; and,
- the Indiana Rural Community Assistance Program.

"RCAP's presentation focused on methods for solving sewage disposal problems for a number of unsewered rural communities in Indiana. We stressed looking at onsite cluster systems for communities that had fewer than 150 connections for a sewer system. We also stressed the importance of developing state support for management of these systems and incentives for self-help initiatives for communities. Cluster systems would keep costs down," Wise said.

"Based on the information that the EQSC Septic System Subcom-

mittee gathered, nine pieces of legislation regarding onsite systems were introduced in following legislative sessions," Trinkle said. "That's unheard of in this state."

Based on this legislation push, Indiana passed a law, IC-36-11, that allows the formation of county onsite waste (septic system) management districts at the local level. So far, only Allen County has formed one. "We think it's because management districts haven't been adequately promoted," Wise said.

Allen County Implements Individual Surface Discharging Systems

Allen County petitioned the state legislature to pass a law that approved individual surface discharging systems. New onsite systems were failing in less than one year in this county. Based on fieldwork through Purdue University, the state health department, and soil scientists, Allen County was identified as one of several recession glacial moraine counties. Soil characteristics were very tight, not allowing water to flow through the soil. A law, unique for this county, allowed them to permit surface discharging systems as long as the county implemented a management program for surface discharging and soil-based onsite systems.

The ISDH, IDEM, and EPA Region 5 were involved in formulating operating guidelines that Allen County had to meet under the new law.

From RCAP to ICCMODS

Because of their strong support of onsite systems, particularly onsite

cluster systems, Wise and Trinkle wanted to devote more time toward helping communities with these systems than their schedules at RCAP would allow. So, Wise and Trinkle established ICCMODS as a nonprofit 501(c)(3) education and survey center and departed RCAP in 2003. The center's primary goal is to promote best management practices of onsite/decentralized wastewater systems that would solve small, rural community wastewater problems. Systems the center promotes are low-cost alternative collection and treatment technologies that disperse treated effluent onsite into the soil.

"Operation and management of onsite systems is not mandatory, but it is critical to keeping onsite systems functioning properly," Wise said. "Everyone in the wastewater field recognizes it. Indiana continues to try to recover from problems with onsite systems that were caused by a lack of operations and management. Management is just now starting to have its heyday."

According to a recent and ongoing RCAP survey, a 1997 Purdue University study, and information from the ISDH, approximately 25 percent of the more than 800,000 homes in unsewered areas of Indi-

ana have inadequate, outdated, failing, private sewage disposal systems that pollute waterways and surface and groundwater supplies.

"A large number of this 25 percent predates any state regulation, Wise said. "Many of these homes were converted to indoor plumbing when it became available but still currently don't have a septic system. Direct discharges to ditches, storm drains, or field tiles are very common in small towns."

ICCMODS' Objective

"We want to serve as a best management and education clearinghouse for small communities in Indiana," Trinkle said. Some of the ways in which the center achieves this objective is through data collection and dissemination; showcasing successful communities and promoting site visits; providing technical assistance; helping communities secure funding; and educating communities, consultants, and other stakeholders.

ICCMODS began to survey the state's existing onsite cluster systems in 2003. Their goal is to survey 25 of the existing 50 cluster systems and 25 I/A wastewater projects funded by EPA under the old construction grants program. A number of the I/A projects use the same wastewater components that are used in cluster systems, for example, septic tank effluent pumps, grinders, and vacuums. ICCMODS has completed 60 percent of its survey.

Avoiding Unwarranted Connection to Municipal Treatment Plant

The Spencer county health department contacted ICCMODS about five small, rural communities that were targeted to be connected to a newly established municipal treatment plant in the City of Rockport. These communities (Richland, Hatfield, Eureka, French Island Boat Club, and areas along SR 66 and 161) were identified by an engineering firm as communities with failing onsite systems.

Rockport had established the treatment facility to support anticipated urban growth, and the promoters of the facility began to look for surrounding communities that could contribute flows to the fledgling new plant, according to Wise and Trinkle.

"Some people were concerned about the prospect of paying \$80.00/month sewer bills and the way things were going and asked us to provide educational data about onsite cluster systems," Wise said. "The regional sewer district that had been formed to encompass the boundaries of these five communities held a public hearing, which we attended. In a follow-up meeting put together by the public, we presented information about cluster systems and management of these systems. Other onsite wastewater professionals attended the meeting and provided information as well. The public used this information to help determine which method of wastewater treatment would be best for them.

"To date, the majority of residents in the communities have refused to sign over property easements. The project has not gone forward, partly, we think, because of our efforts in educating the communities about onsite being a viable option."

"Unfortunately, all these communities have the onsite option readily available to them, but it is not being promoted to them by enough well-meaning consultants," Trinkle said. "The problem, we think, is that consultants are doing the studies and, therefore, have control of the outcome of the studies. They can include or exclude onsite as an option. They can make the outcome support their recommendation by pricing onsite options up there with traditional sewer systems."

ICCMODS Helps Waste Haulers

Usually ICCMODS becomes involved in a community because the state asks for their assistance. Recently, the state rule for land application changed, and a number of septic waste haulers were unable to meet the new stringent requirements. After talks with regulators and haulers, ICCMODS developed and distributed a survey to haulers to collect additional data. ICCMODS also visited a pretreatment facility in northern Indiana where haulers were having a similar scenario. A private company resolved the problem by establishing a pretreatment facility. ICCMODS met with the owner/operator of this facility to see if a similar facility could be used in other areas.

"A septage hauler in a neighboring county is planning to also establish a pretreatment facility," Trinkle said. "He

plans to dewater and make the filtrate acceptable to the town's wastewater treatment plant and then sell the byproduct. We helped him with zoning the facility through the county." The waste hauler survey is still ongoing. Results should be available in late 2005.

Future Case Studies

Results of the survey that ICCMODS received U.S. EPA funding for are being posted to its Web site (www.iccmuds.org). In the near future, the site will identify selected case studies of onsite cluster systems in operation in Indiana. Most of the communities that ICCMODS has worked with are still in the preliminary stages of implementing onsite cluster systems.

IOWPA/ Purdue University Demonstration Site

ICCMODS is assisting the Indiana Onsite Wastewater Professionals Association (IOWPA), Purdue University, and ISDH to set up an onsite wastewater training center. Purdue University has already selected a facility; IOWPA will donate the equipment and supplies. ICCMODS is hoping to also find funding that will support this effort.

"We would like to take a community full circle," Wise said. "We want to get them organized by having them establish an ad hoc committee that we could educate about the problems they are experiencing and how to solve them. Next, we want to help them identify the management entity they need and assist them in developing it. We would identify potential funding for the project and participate in public meetings to educate the residents. Finally, we would like to help them operate the system and use it as a model for other communities. As a 501(c)(3), we're constantly looking for funding and donations to support the efforts of the Center to help Indiana improve the management of decentralized onsite sewage disposal systems."

For more information, contact ICCMODS, Inc. at (317) 328-1917 or e-mail Wise at iccmuds@iccmuds.org. You can also access the Indiana Capacity Center for Management of Onsite/Decentralized Systems, Inc. Web site at www.iccmuds.org.

Editor's Note: At print time, it was learned that Trinkle has left ICCMODS to work for IDEM.