SHANNON CITY, IOWA

PROBLEM
Small communities like Shannon City face significant challenges in managing individual wastewater systems. The small, rural community had neither the technical nor financial resources to support upgrades of substandard systems and remove straight pipe discharges draining untreated sewage into city ditches.

SOLUTION
City officials partnered with the Southern Iowa Rural Water Association (SIRWA) authority to design, build, own, and operate individual and clustered wastewater systems for the community.

USDA Rural Development
210 Walnut Street, Room 873
Des Moines, IA 50309
www.usda.gov/rus

CONTACT
Jim Carroll, State Engineer
p: (515) 284-4136
e: jim.carroll@ia.usda.gov
Southern Iowa Rural Water

Association
1391 90th Street
Creston, IA 50801
www.sirwa.org

CONTACT
Dan McIntosh, System Manager
p: (641) 782-5744
e: dmc@sirwa.org

OVERVIEW

Shannon City

Est. Population: 71

The majority of individual systems that served Shannon City, a small town with a population of 76, did not meet state code requirements. As a result, untreated sewage entered city ditches and receiving streams of the Grand River Basin. The town commissioned a study of wastewater alternatives after the Iowa Department of Natural Resources (IDNR) required the town to upgrade its systems. The study's authors concluded that a decentralized wastewater treatment system was a viable option for the town. Shannon City partnered with the SIRWA and the U.S. Department of Agriculture (USDA) Rural Development Program to design, finance, and construct a new wastewater system owned and operated by SIRWA. The wastewater program consists of:

- **Operating permit and routine inspection requirements**
- **Use of site-specific evaluations and plans to select and design systems**
- **Maintenance program, reporting, and recordkeeping administration**
- **Collection of water quality sampling data**
- **Grant of property easements**

- **Authority to enforce requirements**

RURAL WATER ASSOCIATION SERVES AS RME
SIRWA, which provides drinking water to 10,000 customers, assumed the RME role in Shannon City. SIRWA has experience with operating wastewater systems in nine small Iowa communities, mostly consisting of gravity collection with treatment by facultative lagoons.

SIRWA designed a project composed of a variety of treatment systems so as to provide affordable and effective wastewater service for the community. Each property owner in Shannon City signs an easement allowing SIRWA to design, finance, install, own, operate, and maintain a wastewater treatment system on his/her land.

OPERATING PERMITS
SIRWA operates the systems under Iowa Department of Natural Resources operating permits which specify operating and yearly sampling requirements. A citywide ordinance prescribes enforcement provisions. SIRWA reports annual inspection and monitoring results to state and county health officials.

FUNDING SOURCES
The Shannon City project cost $468,000—about $10,400 per home served. A significant portion of the cost was covered by a USDA Rural Development Program grant and loans from other sources. The O&M user fee is a flat rate of $18 per month.

RESULTS
In 2003 and 2004, SIRWA placed 34 peat filters, eight lateral line absorption systems, and one existing gravity-fed, single-pass sand filter into operation. SIRWA chose the peat filter system because of its small footprint and ease of media replacement compared with a sand filter. The installed systems replaced non-functioning septic systems with appropriate wastewater treatment units and eliminated straight pipe sewage discharges into roadsides, other ditches, and surface waters. The new systems comply with IDNR operating permit requirements and function properly with centralized management.

References and Resources

Carroll, J.A. 2005. Lessons Learned from a Model 5 EPA Management Program for Onsite Wastewater Systems. In Proceedings of 2005 National Onsite Wastewater Recyclers Association Annual Meeting, Cleveland, OH.

Population data—City data - Shannon city, 2010. **http://www.city-data.com/city/Shannon-City-Iowa.html**