Affordable Wastewater Solutions That Fit Your Community

For more than 30 years, Orenco Systems®, Inc. has helped communities all over the world find affordable solutions to a variety of wastewater problems.

Orenco's founders began researching effluent sewer collection systems and packed bed filter treatment systems in the 1970s. The company was incorporated in 1981 and started providing carefully engineered equipment and design support. Today, more than 700 communities — municipalities, subdivisions, planned communities, worker camps, resorts, RV parks, and mobile home parks — are meeting their wastewater needs with Orenco products and services. And Orenco's Community Systems division continues to provide communities with a variety of support services. A list of our services is on the back.

The map below shows the location of many of these communities, including 10 that we profile briefly, in the following pages.

Orenco®

Changing the Way the World Does Wastewater®

1-800-348-9843
+1 541-459-4449
www.orenco.com
www.vericomm.net

Affordable Wastewater Solutions

Hillsdale, New York

System size:
72 connections
120 homes and businesses
35,000 gpd design max flow

A classic New England village between the Hudson Valley and the Berkshires, Hillsdale has beautiful countryside, a quaint town square, well-to-do "weekenders" from Manhattan, and failing septic systems. In fact, the town has been under a consent order from the state's Department of Environmental Conservation since 1990. Hillsdale's consulting engineers, Clark Engineering & Surveying, recommended an Orenco® effluent sewer followed by an AdvanTex® Treatment System. Originally, the plans included a four-cell constructed wetlands for nitrogen-polishing before dispersal. Because the AdvanTex System is able to meet the TN requirement on its own, the town was able to remove the wetlands from the permit, saving approximately $200,000. Grants and no-interest loans from a variety of sources funded the project. Construction started in fall 2007, and the system was fully installed in fall 2008. The Town Sewer District is the operator and service provider. With this system in place, Hillsdale resolved its consent order with a long-term, village-wide solution that protects public health and the environment, at a total cost of $15,000 per home.

Wickford Village, Rhode Island

System size:
80 homes and businesses
30,000 gpd design max flow

A regional developer wanted to convert a military housing complex in the Wickford Village area to affordable housing. But replacing or rehabilitating the outdated and infiltration-prone gravity collection system serving the complex would have been prohibitively expensive because of the gas, electric, and water lines surrounding it. As an alternative, the consulting engineer recommended that two-inch diameter force mains be installed inside the existing eight-inch diameter gravity main, eliminating the need for trenching or boring around existing utilities and reducing infiltration. This installation was accomplished with minimal disruption at an affordable cost. Following the collection system, an AdvanTex textile filter manufactured by Orenco processes the wastewater to advanced treatment levels before it is discharged below the surface.

Glenwood, Alabama

System size:
130 connections

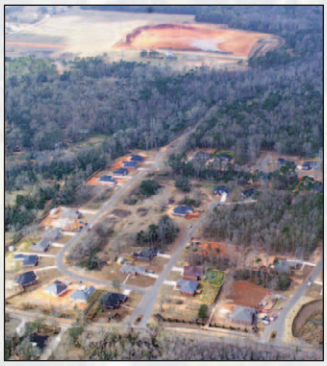
This community needed a collection system to transport its sewage to the nearest municipal sewer. Unfortunately, the nearest municipal sewer was seven miles away. Glenwood selected an Orenco effluent sewer that uses an underground tank at each home with a lightweight but powerful 1/2-hp pump, which pumps the filtered effluent to the neighboring city, without a single lift station. Small diameter pipes (2-in. to 6-in.) were used for the service lines and main lines, which were installed following the contours of the land. With an effluent sewer, no large-diameter pipes, deep excavations, or manholes were required. The low-impact installation cost less and caused less disruption to the community than a traditional gravity sewer. And because the effluent is conveyed to a neighboring sewer system, no treatment system was needed and total project costs were substantially reduced.

Mobile, Alabama

System size:
14 separate systems
47 subdivisions

With more than a dozen utility-maintained decentralized systems in the region, Mobile has become a showcase for Orenco's wastewater technologies. South Alabama Utilities maintains most of them. In the late 1990s, the managers of this water and gas utility realized they needed to provide wastewater services to new subdivisions or risk losing customer share. Since then, SAU has installed Orenco effluent sewer collection systems serving 47 subdivisions, followed by 14 AdvanTex treatment plants in various locations. When all the developments are built out, SAU's facilities will have the capacity to handle half-a-million gallons of wastewater per day. At peak design flows, that's enough capacity to handle 2,000 new homes.

Mobile, Alabama



The Township of Hillsdale, New York

Wickford Village, Rhode Island

Solutions That Fit Your Community

Lake City, Michigan

System size:
378 connections

Like many cities in Michigan, this community wanted to take advantage of the regulatory, operational, and cost benefits of a wastewater treatment lagoon. An Orenco effluent sewer system was installed, and filtered effluent (which has already received primary treatment at each property's underground tank) is pumped to the community's lagoon. Because effluent sewer collection systems are a fraction of the cost of gravity sewers, Lake City significantly minimized its need for upfront loans and grants. Since no solids flow through the system, small mainlines and low-cost air release valves (like those used in water delivery systems) contributed to the savings in installation costs. Moreover, since effluent sewer lines typically don't require pigging or flushing, operational costs are reduced as well.

Bethel Heights, Arkansas

System size:
470 connections

This Northwest Arkansas town was growing rapidly in widely dispersed areas. It needed to accommodate its new developments with municipal wastewater services, but it also needed a wastewater solution that required minimal upfront expense. After researching its options, Bethel Heights selected a modular, "pay as you build" technology. An Orenco effluent sewer with an AdvanTex textile media filter has been installed in phases, allowing for capacity on demand, and, more importantly, the ability to defer costs until new developments broke ground. Had Bethel Heights chosen a typical gravity sewer system, the city would have needed a large up-front loan to cover the cost of the collection system (which makes up approximately 70-80% of total project costs), as well as rapid connections to fund the payments. Bethel Heights' sewer bond was paid off in 2013, 20 years ahead of schedule.

Amesville, Ohio

System size:
76 connections
30,000 gpd design max flow

A rural Ohio village of fewer than 200 people, Amesville was discharging thousands of gallons of partially-treated sewage into its watershed, daily, because of failing septic systems. Even though the need for new wastewater infrastructure was evident, the village couldn't afford an expensive conventional solution. Several possible technologies were reviewed, and three solutions were evaluated in detail: conventional gravity, individual on-site treatment units, and cluster decentralized options. In comparing both capital and O&M costs for these three solutions, the decentralized option was much less expensive. Because of its relatively more affordable costs, Amesville chose to install an Orenco effluent sewer with three clusters of AdvanTex treatment systems. This decentralized wastewater system — the first in Ohio — is now meeting strict NPDES discharge requirements. Two Village residents share the system's minimal part-time operator duties, and residential sewer rates are less than $33 per month.

Victoria, PEI

System size:
63 connections
50,000 gpd design max flow

Victoria, PEI, needed to replace its antiquated septic systems with an environmentally-sensitive, cost-effective solution that could accommodate the highly-variable daily flows common to summer vacation destinations. Although the many eco-based activities in picturesque Victoria made it ripe for expanded tourism, provincial regulators would not approve new development until the village solved its septic problems. As community leaders searched for an affordable, sustainable solution, they had specific parameters in mind. They needed a compact solution that would function well as part of an integrated, watershed-based approach. Also, because of public concern that treated effluent might negatively affect the nearby harbor, direct effluent discharge to the bay was not an option. Victoria chose an Orenco Effluent Sewer and AdvanTex Treatment System with a mixture of both STEG (effluent gravity) and STEP (effluent pumping) equipment. A scalable system, all ten AdvanTex AX100 pods are used for peak summer flows, while in the winter, only three pods are needed, thus conserving energy and extending equipment life. The system can also be easily expanded to accommodate future development and is so reliable that only a part-time operator is needed. Victoria's wastewater system has won several awards, most recently the 2011 "Sustainable Community Award" from the Federation of Canadian Municipalities.

Amesville, Ohio

Photo courtesy of Gary Goosman

Bethel Heights, Arkansas

Victoria, Prince Edward Island

Photo courtesy of Ron Garnett, AirScapes.ca

Lacey, Washington

System size:
3,750 connections

Located about 50 miles south of Seattle, the City of Lacey was incorporated in 1966 and, by 2000, its population had grown to 31,000. Lacey lacked the wastewater infrastructure to accommodate this growth, and expanding its infrastructure using a traditional sewering approach would have been very costly. In the mid-eighties, the city looked to Orenco effluent sewers as a solution, and in 1986, the first system was installed. Today, Lacey has a 33-square-mile wastewater service area that includes approximately 100 miles of gravity sewer mains with 11,550 connections and 46 miles of effluent sewer mains with about 3,750 connections.

Diamond Lake, Washington

System size:
530 connections

In the early 1970s, residents of Diamond Lake, Washington knew that something had to be done about their wastewater because the lake was being destroyed by leaking septic tanks and failing drainfields. The community needed federal funding assistance but, even so, a gravity system was out of the question. After nearly 15 years of research and planning, the commission decided on an Orenco effluent sewer. Construction began in 1987 and, as it turned out, 25 percent of the excavation had to be blasted for the tanks and collection lines. Had the engineers known about the rock, the gravity sewer cost estimates would have been even higher. More than 25 years later, the community continues to be happy with its system. Homeowners pay a nominal amount for their wastewater service, and the lake has completely recovered.

Lacey, Washington

Diamond Lake, Washington

Equipment **Plus** Support Services

Orenco now employs about 280 people and sells its equipment through a network of about 300 points of distribution. Our products have been installed throughout North America and in more than 70 countries around the world.

While Orenco is well-known for its carefully engineered and reliable wastewater systems, we do more than simply supply equipment. If you are having difficulty in any of the following areas, Orenco can help. Call 800-348-9843 for assistance with ...

- Planning
- Regulatory compliance and approvals
- Life cycle cost analysis
- Equipment packages
- Financing
- Design and construction
- Contractor pre-qualification
- Construction management
- Ordinance development
- Rate setting
- O&M protocols
- Asset management

Orenco Systems®, Incorporated

814 Airway Avenue
Sutherlin, OR 97479 USA
T: 800-348-9843
T: 541-459-4449
F: 541-459-2884
www.orenco.com
www.vericomm.net

ABR-SMALLCOMM-1
Rev. 1.2, © 09/14