The American Society of Civil Engineers estimates that almost $289 billion in capital improvements for wastewater will be required over the next 20 years—and three-quarters of that amount is needed for “big pipe” problems. WWD Managing Editor Elisabeth Lisican recently spoke with Grant Denn, senior manager of engineering projects for Orenco Systems Inc., about these problems and some viable solutions.

Elisabeth Lisican: What are some "big pipe" problems?

Grant Denn: The most significant are their lack of affordability and their impact on the environment. Big pipe systems have to be constructed for future build-out, so current customers have to fund oversized infrastructure for future build-out, so current customers are their lack of affordability and their "big pipe" problems?

Denn: Decentralized systems also are great for utilities expanding their reach—like South Alabama Utilities (SAU) in Mobile, Ala. SAU needed to provide wastewater services to new subdivisions or risk losing natural gas sales. Since the early 2000s, SAU has installed 60 miles of interconnected effluent sewer collection systems that flow to 14 decentralized treatment plants using treatment units that total more than 0.6-million-gal-per-day peak treatment capacity. Approximately 80% of the collection costs for decentralized systems are deferred until the homes are constructed, making the system affordable for current customers.

Lisican: What needs to change in terms of wastewater funding?

Denn: The biggest change that needs to occur is that the funders should not be "cost blind" when evaluating applications. They should specify the methods for evaluating cost options (50-plus years of lifecycle costing) and ensure that the cost target established by the U.S. Environmental Protection Agency for wastewater collection and treatment—2% of median household income—is incorporated into funding evaluations. In addition, funding agents should be provided with training on actual and reasonable cost scenarios for use in evaluating consultants’ options.

Lisican: Please cite some examples of successful decentralized systems and why they work.

Denn: My favorite example is Bethel Heights, Ark., population 2,300. In 1998, Arkansas passed a law allowing property owners to de-annex from a community if they couldn’t provide essential utilities (including wastewater) and annex to another community. Bethel Heights didn’t have a community sewer and began facing de-annexations and loss of tax revenue—which threatened its very existence. The city evaluated collection and treatment technologies and determined that effluent sewer followed by textile-fiber treatment was the answer. They installed one small treatment unit at the fire station and declared they were in the sewer business. Since that time, they have slowly built the system to the point where they now have capacity to serve more than 2,300 people—and the initial $1.3-million bond for the first phase was paid off 20 years ahead of schedule.

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