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Engineering firm aims to head off sewage overflows

By Shawn Wright

COURTESY OF APPLIED ENGINEERING TECHNOLOGIES INC.

Applied Engineering Technologies' "treatment shaft technology" stores and treats floods of wastewater from combined sanitary and storm sewers.

Saad Ghalib, founder and president of Ann Arbor-based **Applied Engineering Technologies Inc.**, has developed a patented method to make sewer treatment systems more environmentally friendly.

Applied Engineering's treatment shaft stores and treats overflows and helps alleviate the problem of combined storm and sanitary sewer overflows going into water systems untreated after large rainstorms.

Ghalib's treatment process provides large-scale storage and treatment, including skimming, settling, screening and disinfection.

"It cuts costs, is operationally friendly and requires less space than traditional systems," Ghalib said.

Applied Engineering is a small firm, with just Ghalib and his son, Aymen. The company is using **Public Works Consulting LLC** in Ann Arbor to market what's been named "treatment shaft technology," while Cary, N.C.-based **Process Wastewater Technologies LLC** is implementing the product.

Southfield-based IP law firm **Brooks Kushman PC** helped Ghalib file patents in the U.S. and overseas.

"It's quite a focus on cities in the Midwest and Northeast that still have combined sewer systems," said Kurt Giberson, president of Public Works Consulting. "We're trying to focus on the largest cities with the largest projects that would benefit. A lot of cities have made improvements, but most have quite a bit of work to go."

Giberson is marketing the treatment method to states including Illinois, Indiana, Ohio, New York, Pennsylvania and Kentucky.

"The cities that need this are in the hundreds," said Jim Heist, president of Process Wastewater Technologies. "We're seeing a groundswell of interest. Two years ago, it was hard to convince anyone to abandon tunnels, which has been the go-to for everyone.

"And if tunnels were too expensive, (cities) would just look for Band-Aids to keep them in the graces of regulators."

The **Environmental Protection Agency** cites combined sewer overflows as a significant source of pollution of surface waters, and the U.S. Clean Water Act calls for correction of water quality issues resulting from combined sewer overflows. The alternatives that cities have to take into consideration are tunnel storage and basins for combined sewer overflow treatment.

The treatment shaft requires a smaller construction area -- one-eighth the size of a regular wastewater basin, which is usually 200 feet by 800 feet -- that makes it suitable for very urbanized areas, Ghalib said. Ghalib's design saved Dearborn more than $150 million, according to a letter sent to Ghalib from State Rep. Gino Polidori, D-Dearborn. Dearborn's project became operational in late 2010, and two more projects are under construction.

"Too often, people are content to do what has been done in the past, rather than looking to the future," Polidori wrote. "Your innovative design ... serves as proof to other communities that looking for new solutions can be worth the investment."

Before founding Public Works Consulting, Giberson was Dearborn's director of public works for 16 years.

"I always felt it was the responsibility of cities to solve the problems associated with combined sewer systems," Giberson said. "We're still in the phase of getting the word out and educating everyone about the alternatives."

From 1998 to 2010, Ghalib was senior vice president for **NTH Consultants Ltd.** in Detroit. He was a consultant to Dearborn for overflow projects.

"I had the idea for this before I was a consultant," Ghalib said. "I thought there must be something cheaper and better to treat and store wastewater."

For its work in Dearborn, Applied Engineering received an award from the EPA highlighting performance and innovation.

From Applied Engineering's operation through consulting and licensing of the treatment shaft, Ghalib said he expects 2011 revenue to be more than $1 million.

Ghalib said the company also plans to pursue international clients.
