New research expected to help utility companies predict service life of pipelines

January 23 2012

Regression models presented in the American Society of Civil Engineers' *Journal of Infrastructure Systems* by researchers at Syracuse University's L.C. Smith College of Engineering and Computer Science are expected to help utility companies predict the service life of wastewater pipeline infrastructure and take a proactive approach to pipeline replacements and maintenance.

Ossama (Sam) Salem, Yabroudi Chair of Sustainable Civil Infrastructures and professor of construction engineering and management at L.C. Smith, and his Ph.D. student Baris Salman, developed various statistical prediction models using data obtained from the Metropolitan Sewer District of Greater Cincinnati, Ohio, to generate deterioration models that will help in the decision-making process regarding future infrastructure development.

"The models presented in this paper allow utility and wastewater management companies to develop a sound maintenance plan and predict potential failures," Salem says. "This has impact not only economically, but socially and environmentally as well."

As wastewater utilities seek to implement asset management strategies to help justify and optimize their expenditures, understanding the current and future behavior of wastewater lines may help utilities mitigate costly emergency repairs. The deterioration models developed by Salem and Salman are expected to assist utility officials in assessing risk and identifying pipes that have the highest probability and consequences of

failure. Doing so will allow utilities to proactively prevent problems, rather than simply reacting to fix problems after they occur.

While the presented models are useful for the data set provided, their applicability to different sewer systems depends on the characteristics of those particular networks. Since weather conditions, soil properties and construction methods vary among cities and among infrastructure systems, different deterioration patterns may be observed in different regions.

More information: The published article is titled "Modeling Failure of Wastewater Collection Lines Using Various Section-Level Regression Models" and its abstract can be found online at ascelibrary.org/iso/resource/1 … 5_s1?isAuthorized=no

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