

Hillsborough County Florida Public Utilities Department Awards 30-Mile 'Electro Scan' Sewer Assessment Project

Field Demonstrations with County Showed Benefits to Prioritize Rehabilitation Projects & Certify Post-Rehabilitation Watertightness Using FELL Technology

SACRAMENTO, CALIFORNIA, USA, August 6, 2019 /EINPresswire.com/ -- [Electro Scan Inc.](#) was chosen by the Hillsborough County, Public Utilities Department, Florida, to support its Inflow/Infiltration (I/I) study for the Dale Mabry Wastewater Collection Basin. The project will be conducted by Electro Scan's Field Services team using the company's patented Focused Electrode Leak Location (FELL) technology, in collaboration with the County's engineering consultant.



Electro Scan's Field Services Team Provides Hillsborough County With Leak Detection Services Using Its Patented Machine-Intelligent Non-Destructive Technology to Assess Existing Sewer Mains and Rehabilitated Lines.

The assessment project includes the evaluation of 155,000 linear feet (LF) or nearly 30-miles of sewer mains, ranging from 6 to 18 inches in diameter, located in 14 separate sub-basins within the larger Dale Mabry collection network.

“

Electro Scan is scalable, repeatable and quantitative.”

Richard Cummings, Director, Maintenance Division, Hillsborough County, FL

“Our goal is to reduce I&I and the first objective is finding out where it is happening,” stated Richard Cummings, Director, Field Service Maintenance Division, Public Utilities Department, Hillsborough County, Florida.

“Electro Scan is scalable, repeatable and quantitative,” stated Cummings. “We believe in the technology and hope to utilize Electro Scan in all future I&I studies, and if possible, procure Electro Scan for in-house work as well.”

Hillsborough County is the fourth largest water & wastewater utility in the State of Florida, part of EPA Region 4, with nearly 175,000 retail customer connections serving a 286 square mile area.

The County's entire wastewater collection system includes over 1,400 miles of gravity sewers and 788 lift stations, which transports & treats over 42 million gallons per day at 8 advanced water reclamation facilities.

The Dale Mabry Wastewater Collection Basin itself consists of over 900,000 LF, representing 12% of the County's total gravity sewer mains.

The County and its engineering consultant reviewed available desktop records to select the 155,000 LF of sewer mains to be FELL inspected. Key data sources included flow monitoring results, pipe installation dates, pipe construction materials, and previous legacy inspection methods.

Hillsborough County specified the use of Electro Scan's patented machine-intelligent technology to assess a variety of previously installed and rehabilitated pipes, including Cement Mortar-Lined Ductile Iron Pipe, Fold & Form, Polyvinyl Chloride, Polyethylene, Reinforced Concrete Pipe, Vitrified Clay Pipe, and Cured-In-Place Pipe.

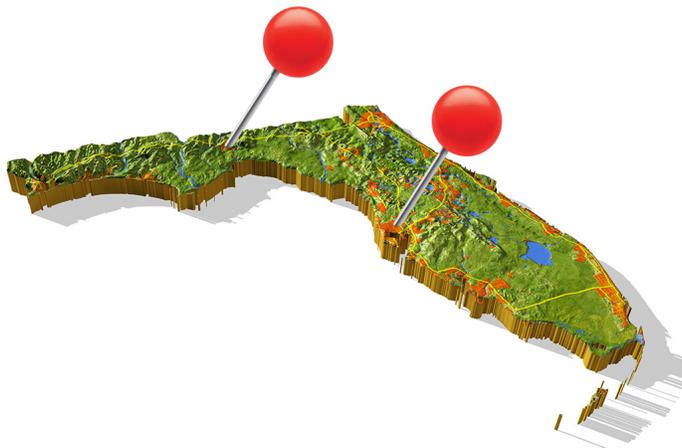
Smart cities and counties are changing how leaks are detected and quantified to help safeguard their citizens and protect their environment from sanitary sewer overflows, sewer backups, flooding, and drought conditions.

In addition to precisely locating each leak's location, within 0.4 inches or 1cm, Electro Scan's FELL technology also quantifies each leak's defect flow rate expressed in gallons per minute for use in rehabilitation prioritization and selection.

"Selecting FELL technology for this critical assessment project reflects the County's commitment to using advanced technologies to help develop strategic rehabilitation projects and provide stewardship of its available capital resources." stated Mike Condran, PE, Vice President, Southeast Region, Electro Scan, Inc.

"We are delighted to be working with Hillsborough County," stated Chuck Hansen, Chairman & CEO, Electro Scan Inc.

"Municipal utilities have used Closed-Circuit Television cameras to inspect the majority of their sewer systems without the ability to identify leak locations or their severity." stated



Hillsborough County, FL joins the City of Tallahassee in adopting Electro Scan Focused Electrode Leak Location (FELL) technology in the State of Florida.



Electro Scan's Water Jet Truck simulates fully surcharged lines to pinpoint leak locations and severity.

How FELL Finds Leaks in Clay Pipes?

Bell & Spigot Joint

6-Ring & Polyester Flexible Compression Joint

Polyurethane Compression Joint

15" Bell & Spigot Clay Pipe

FELL Finds & Measures Leaks at Each Joint

"Dip" in Current Where Spigot is Located, Due to Higher Electrical Resistance of Joint Sealing Material

FELL Finds & Measures Leaks Missed by CCTV

Open-End Joint

FIELD TIGHTENED END

FACTORY TIGHTENED END

12" Plain End Clay Pipe

FELL Assesses Both Field & Factory Tightened Leaks

"Dip" in Current Where Coupler is Located, due to Higher Electrical Resistance of Rubber Coupling Material

NO DEFECTS IDENTIFIED BY CCTV

3.4 GPM

Patented FELL technology automatically locates & measures the amount of electric current able to pass through both bell & spigot and open-ended joints of Vitrified Clay Pipe, showing scientifically confirmed pathways for infiltration.

Hansen.

"Today, leading municipal utilities, like Hillsborough County, can leverage previous investments in CCTV inspections by adding machine-intelligent probes to automatically assess their sewer mains to identify and quantify leaks for rehabilitation selection and post-rehabilitation acceptance testing," stated Hansen.

All work for the County will be performed by Electro Scan's Field Services team, in accordance with ASTM F2550, "Standard Practice for Locating Leaks in Sewer Pipes By Measuring the Variation of Electric Current Flow Through the Pipe Wall."



(Left) Chairman & CEO, Chuck Hansen sits on the back of one of his reengineered CCTV vans used for electro scanning. (Right) Example tests of an exhumed lined pipe with leaks measured by Electro Scan, not easily seen by CCTV cameras.

ASTM F2550 is now recommended for all pre-rehabilitation pipeline assessment and to ensure post-rehabilitation repairs & rehabilitation leaks have been fixed.

Today, a large percentage of North American pipe rehabilitation undergo little or no testing for watertightness with most agencies relying on video inspection and subjective manual assessments not easily replicated or interpreted.

For most repairs and rehabilitated pipes, CCTV is typically used to see that surface repairs and relined pipes appear smooth, construction debris has been removed, and customer laterals are open and unobstructed.

By temporarily simulating surcharged sewer main conditions during its non-destructive testing, Electro Scan's FELL technology methodically and precisely locates each source of infiltration and its severity.

In contrast to traditional manual-based CCTV camera inspections, the machine-based FELL probe travels at the rate of 45-60 feet per minute, without stopping, automatically locating leaks and severities without false, incomplete, or subjective readings.

Individual and cumulative baseline defect flows can be applied to 3D terrain models to better understand groundwater and hydraulic flows from service connection-to-lift station or treatment facility, to pinpoint rehabilitation selection(s) to eliminate sanitary sewer overflows and protect public health.

A key benefit of FELL technology is its ability to assess the watertightness of pipeline repairs and trenchless rehabilitation, as results do not require third-party data interpretation and are available online utilizing Electro Scan's exclusive service provider, [Hansen Analytics, LLC](#).

For instance, while Cured-In-Place Pipe (CIPP) materials have shown improvements since its introduction in the 1970s, the ability of contractors to obtain more consistent quality installations has not yet been demonstrated, thus requiring FELL standards to oversee pre- and post-rehabilitation quality control.

Last year, the North American market for CIPP was valued at over \$5 billion.

Electro Scan data can be accessed by licensed users of Hansen Analytics' Critical Sewers® hosted

cloud application that is also capable of storing Acoustic, CCTV, Laser, Smoke & Dye, and Sonar results for comprehensive data management, quality assurance testing, and executive dashboard reporting.

Elsewhere in Florida, the City of Tallahassee has surpassed 70,000 feet of Electro Scan inspections using its own FELL equipment added to its CCTV truck.

In late 2018, Electro Scan Inc. conducted a comprehensive three-day field demonstration project for Hillsborough County, surveying selected sewer mains in the County's North and South Service areas, working under the direct supervision of the County's Field Service Maintenance Division, and then comparing FELL results with previously televised sewer mains.

Results of Electro Scan's demonstration led the County to select FELL technology for the detailed field inspection of the Dale Mabry Basin.

An important company milestone was the addition of FELL technology in an EPA 2014 consent decree which recommended FELL condition assessment. This resulted from a comprehensive EPA-sponsored field benchmarking investigation on condition assessment technologies completed in 2011.

Then in 2015, Electro Scan Inc. formed a strategic partnership to offer its services in the United Kingdom with WRc plc (Swindon, England) developers of international standards for CCTV inspection and licensed for use in the U.S. market.

Earlier this year, Electro Scan's technology was included in the American Water Works Association (AWWA), Manual of Water Supply Practices, 'M77 Condition Assessment of Water Mains.'

With over half of all water mains made of plastic and leaks unable to be 'heard' or accurately detected using acoustic listening devices, Electro Scan testing is recommended for all pre-commissioned plastic pipe and CIPP lining, in place of hydrostatic pressure testing.

Electro Scan's professional services for the Hillsborough County project are valued over \$600,000 and expected to be completed this calendar year.

ABOUT ELECTRO SCAN INC.

Founded in 2011, the company designs, markets, and supports machine-intelligent products & services for pipe condition assessment, environmental compliance monitoring, and measuring rehabilitation effectiveness. In 2019, the company was selected by BlueTech Research as a Top 15 Water Technologies to Watch, Fast Company 50 World's Most Innovative Companies, GovTech100 Top Government Technologies, and Red Herring Top 100 North American Private Companies. Headquartered in Sacramento, California, the company sells and licenses equipment to local governments and utilities to conduct their own pipeline testing and offers a Technology-as-a-Service (TaaS) solution with certified independent contractors.

#acousticsensors

#astmf2550

#awwa

#awwam77

#cctv

#cipp

#datamanagement

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