**CCTV Machine Learning Using Artificial Intelligence is Here to Assess Cured-In-Place Pipe (CIPP)**

Closed-Circuit Television (CCTV) inspection has been a mainstay for condition assessment of wastewater collection networks for nearly sixty years. Yet, its inability to identify or measure leaks in joints and lateral connections and consistently find or quantify leaks in newly installed Cured-In-Place Pipe (CIPP) has been key factors for many cities, consulting engineers, and contractors to investigate Machine-Learning using Artificial Intelligence (AI) to replace manual CCTV observations and coding.

This paper presents the first comprehensive assessment of CCTV AI suppliers and their ability to complete and report CCTV accurate, reliable, and repeatable inspection results.  In addition to identifying the top suppliers of machine-learning systems able to automatically identify visual sewer main & lateral defects, results will be provided of independently administered competitive benchmarks comparing machine v. manual-based coding systems.

Case studies of leading cities adopting this AI-CCTV to enhance their ongoing condition assessment programs will also be discussed.

CCTV inspection utilizing AI and Machine-Learning is here.  And, based on successful benchmarks comparing manually-prepared and machine-based CCTV inspection reports, cities are able to greatly improve their visual inspection results. With repeatable and unambiguous results, not prone to operator bias, the adoption of machine-enhanced CCTV inspection represents a breakthrough in the use of visual inspection.

Several important questions will be answered by this paper, including:

- How CCTV AI may impact the assessment of CIPP?
- What systems are rated highest in their CCTV recognition using either WRc or NASSCO standards?
- How much does CCTV AI cost?
- Why cities, contractors, and consulting engineers should adopt AI-CCTV?