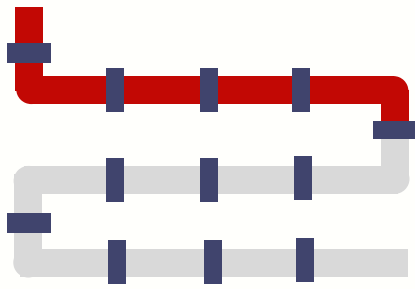


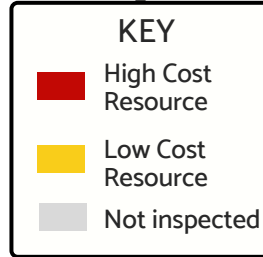
How Little Rock Water Reclamation Authority Moved from a Time-based to a Condition-based Sewer Cleaning Strategy using Acoustic Technology

Before Acoustic Inspection

Time-based Cleaning Strategy

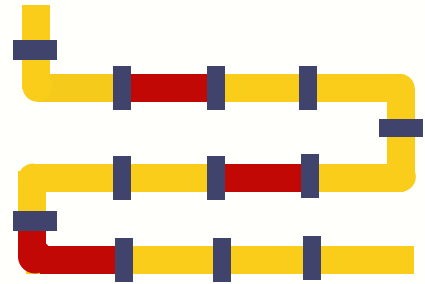


40% of total small diameter system serviced annually (100% using high-cost resource)



With Acoustic Inspection

Condition-based Cleaning Strategy

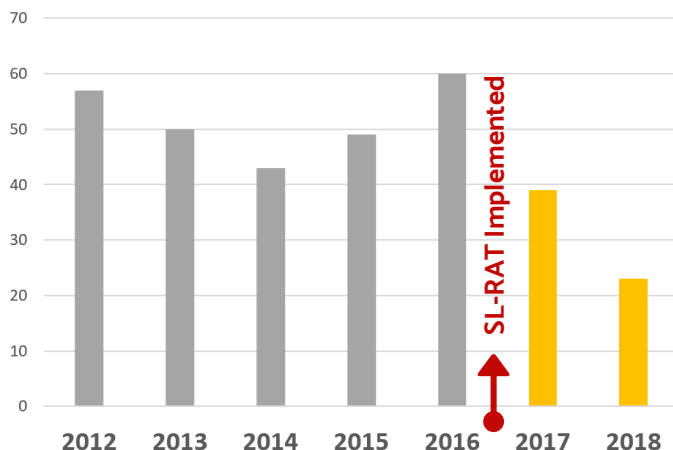


100% of total small diameter system serviced annually (20% using high-cost resource)

With a time-based maintenance program, Little Rock annually serviced 40% of their small diameter collection system using high-cost resources such as CCTV or cleaning. Some of these serviced segments had plenty of flow capacity, while blockages in other parts of the system were being missed and causing overflows. Little Rock looked to enhance their program by inspecting more and reducing overflow count.

In January 2017, Little Rock launched their acoustic program to rapidly screen 100% of their small diameter pipes for blockages at very low cost. They focused high cost resources such as cleaning and CCTV on the 20% of the system that received poor acoustic scores. By deploying resources based on condition, rather than time, Little Rock reduced time spent cleaning clean pipes. While the crews spent less time cleaning, they removed more debris and significantly reduced SSO's.

Sanitary Sewer Overflow Count at LRWRA Before and After Implementing Acoustic Technology



Does it work?

Comparing Little Rock's maintenance program performance from 2016 to 2017

- 35%** Reduction in SSO's (64% reduction in 2018)
- 32%** Reduction in linear feet cleaned
- 116%** Increase in cubic debris removed
- 0%** Change in number of personnel