InfoSense, Inc
Innovating Acoustic Inspection Technology™

October 29th, 2013

Implementing an Acoustic Pipe Inspection Program Using the Sewer Line Rapid Assessment Tool

A Case Study on the City of Augusta

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Kevin Joyner – Augusta

Agenda

- Situation Overview
- Acoustic Inspection Technology
- Implementation Case Study
- Summary

Augusta Utilities Overview

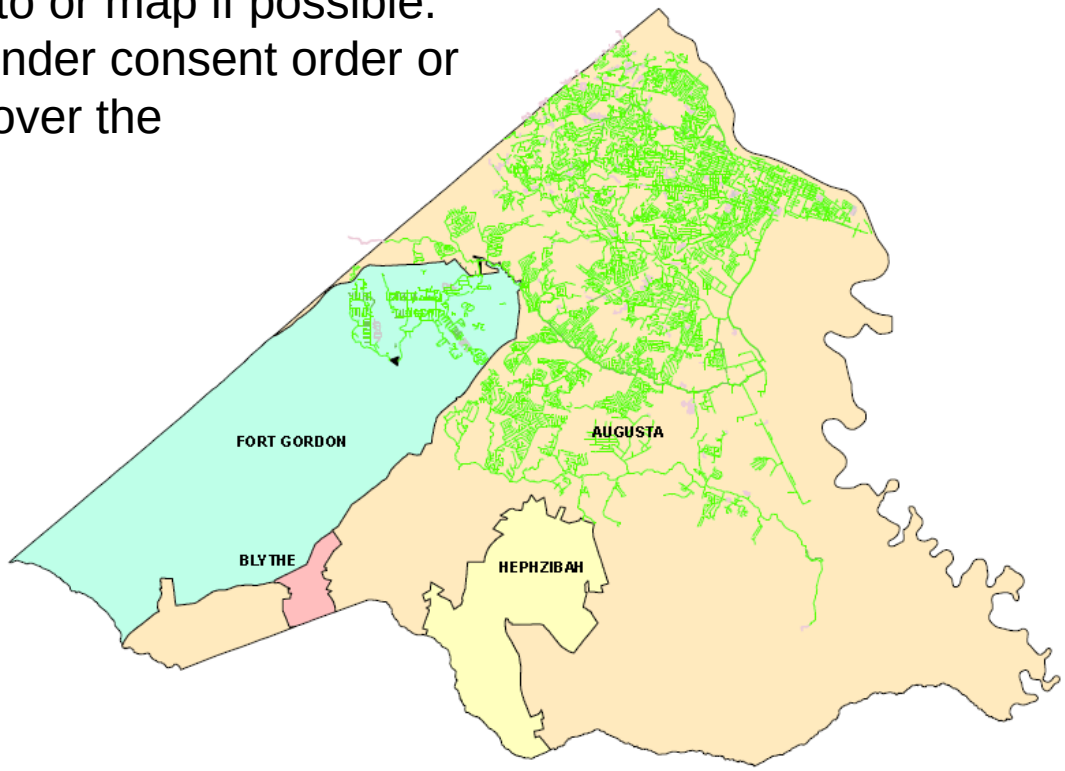
- Founded 1822
- Combined operations with Richmond County in 1996
- Population Served 190,000

- 1,040 miles of sewer pipe
- Covers 280 square miles
- Under GA EPD Consent Order

Reason for selecting the SL-RAT

- TBD…

Would like to set out the objectives the SL-RAT was desired to help achieve – here when first purchased and include a photo or map if possible. Possibly showing the areas under consent order or where SSO's have occurred over the



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Sewer Line Inspection Methods

- Manhole Inspection

- ***Acoustic***

- Zoom Camera

- Push Camera

- CCTV/Robotic Camera
- Pipe Wall Defect Scanners
- Pipe Profiling / Robotic Multi-Sensor

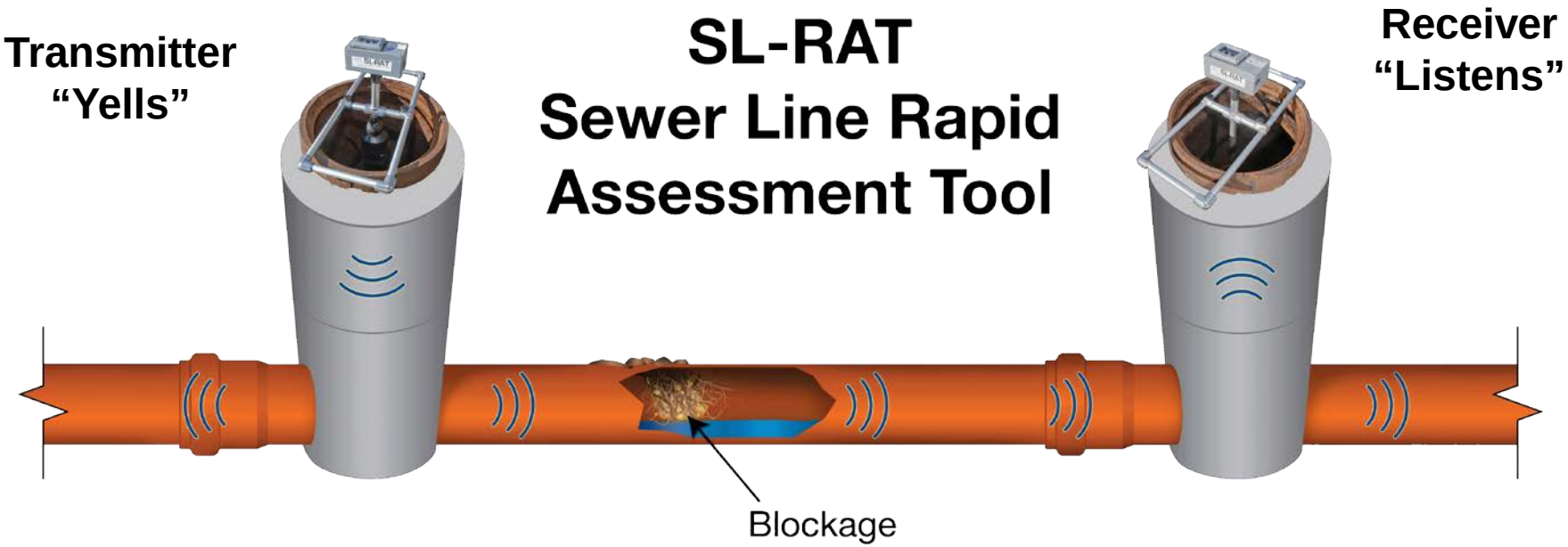
Active Acoustic Pipe Inspection Background

- Patented technology
- Gravity-fed sewer focus
- Winner 2012 WEF Innovative Technology Award

- Over 3.0M feet inspected
- Rapid assessment helps better focus cleaning and CCTV resources

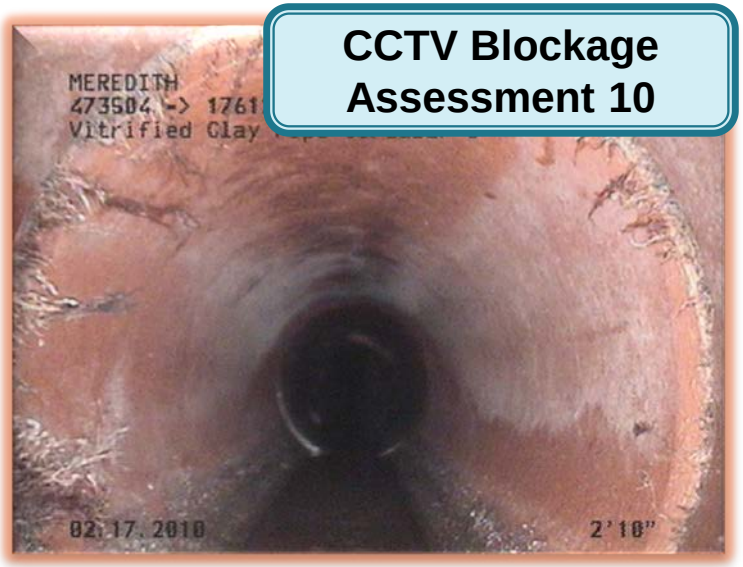
Acoustic Inspection Technology

- How Does it Work?



Visual Comparison

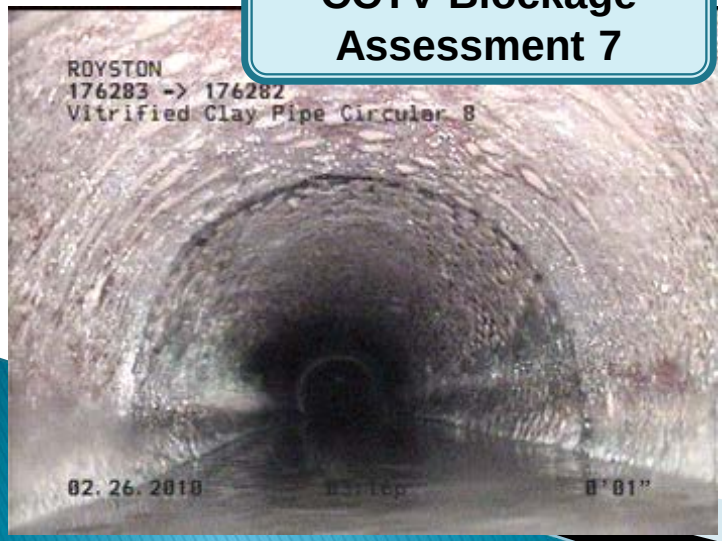
CCTV Blockage Assessment 10



CCTV Blockage Assessment 5

CCTV Robot was Able to Pass Through Root Fibers

CCTV Blockage Assessment 7



CCTV Blockage Assessment 2

CCTV Robot was Not Able to Pass Through Obstruction

Acoustic Inspection Technology

- Demonstration Video

Will include a video – just cannot get it sent via email…too big

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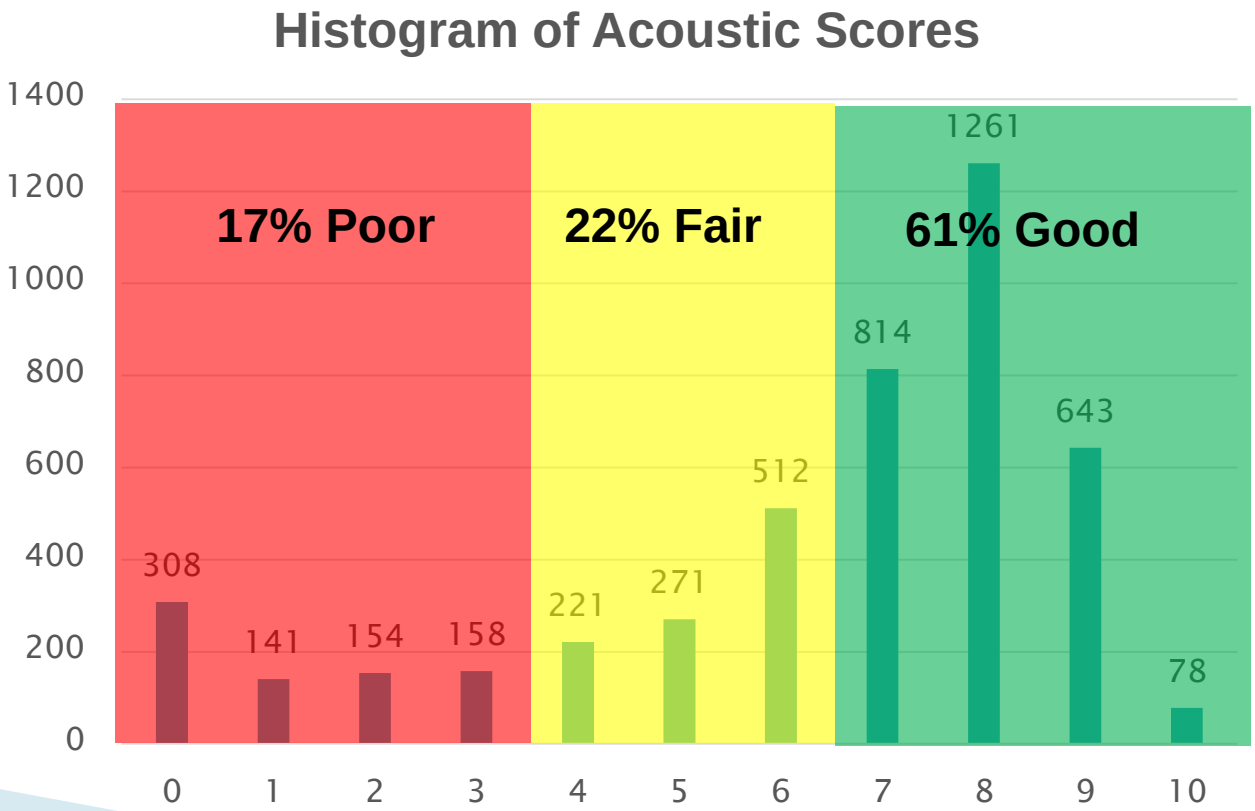
How it was operationalized

- 2 SL-RAT's
- Managed by Asset Management
- Run with 2 person crews per SL-RAT
- Averaging ~7500 feet/8 hour day per crew
- Plan out inspection areas based on tax-maps
- Combining with manhole inspection program

Results So Far…

- >4,500 segments inspected in ~9 months of work
- >9,000 manholes located and inspected
- >1 MILLION Feet (197 miles)



Process flow

Re-Charge SL-RAT

Print Maps & Give to Crew

1

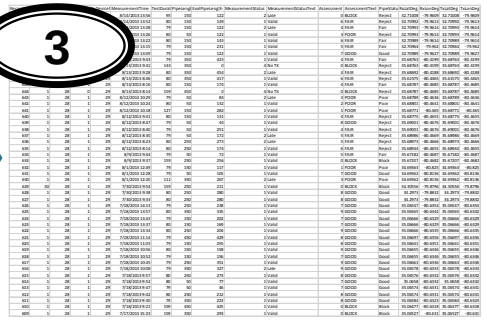
- Street Name
- Parcel Address
- Line Sizes

Conduct Inspections

2

Download SL-RAT

3



Create Base Report

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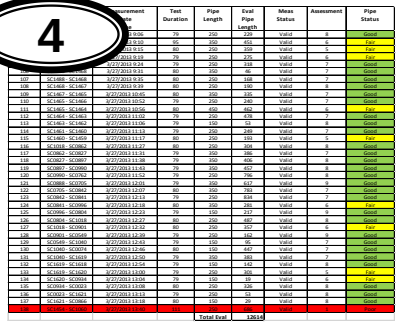

Map Out in GIS

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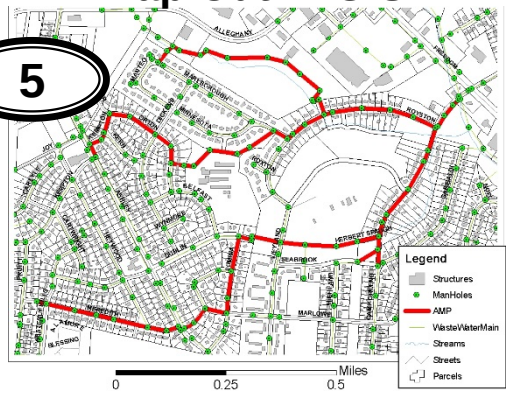
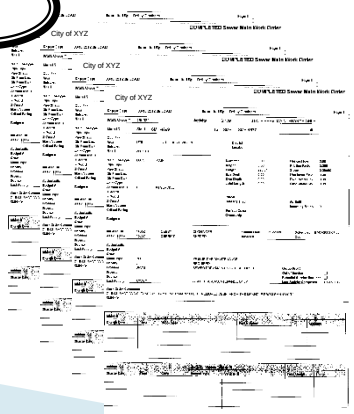


Generate Cleaning Crew Work Orders

6



Close Out

7

- QA Cleaning
- Fix GIS Issues
- Update Records
- Schedule Next Inspection

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Key Learnings

1. The SL-RAT is simple, reliable, and easy to use
2. Keep up with the data – DAILY! Backlogs can get overwhelming
3. Forces discipline in visiting every manhole – identify issues, update GIS records, etc
4. Has focused efforts on the 39% of segments that are Poor or Fair
5. Requires teamwork to achieve full potential – cleaning crews, GIS, inspection crews – must all work together
6. Future plans include conducting post-cleaning QA

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Additional Information

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