

Presented at the 2018  
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# Performing Successful Large Diameter Pipe Inspections Under Variable Flow Conditions

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# 4 Quick Questions

- 1. Who works with difficult to access pipes?**
2. Do these pipes have variable flow conditions?
3. Are these large diameter pipes?
4. Have these pipes been inspected in the past decade?

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- Project Summary
- Inspection Challenges
  - Variable Flow Conditions
  - Difficult Access
- Closing





- **Project Summary**
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## Project Goals

- ***Produce*** benchmarks needed to assess risk
- ***Prioritize*** rehabilitation needs based on inspection results
- ***Provide*** consistency
  - National Association of Sewer Services Companies (NASSCO)



## Project Description

- Up to 108-inch pipe diameter
- 40 years+
- 2 PACP certified contractors
  - Pipeline Assessment Certification Program
- Inspections performed using:
  - Closed Circuit Television (CCTV)
  - Sonar

- Project Summary
- **Inspection Challenges**
  - Variable Flow Conditions
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## Varied Flow Conditions

- CCTV Inspections
  - TR-7000 Titan Storm Crawler
  - Aries Float Assembly
- Sonar Inspections
  - HD Profiler



### TR-7000 Titan Storm Crawler

- Navigates 18 to 200-in diameter pipe
- 4-Wheel chain driven
- Used for low flow inspections
- Interchangeable wheels
- Climb over most obstacles



### Aries Float Assembly

- Navigates pipe 36-in diameter and larger
- Float operates in varying flow rates
  - Dependent on line size/configuration
- Great for floating above obstacles
- Floated or pulled
  - Guide wire





### HD Profiler

- Used for Sonar capabilities
- Floating platform
- Navigates 20 to 84-in diameter
- Reaches up to 10,000 l.f.
- Prior cleaning not needed to inspect
- Works in fully-submerged pipes
- Capable of providing data on:
  - Sediment location
  - Sediment volume





# Inspection Challenges Varied Flow Conditions





### Difficult Access

- Along Banks of Major River
- Busy Roads





# Inspection Challenges

## Difficult Access





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# Inspection Challenges

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### Along Banks of Major River

- Kubota RTV Off-Road Inspection Unit
  - Capable of navigating rough terrain
  - Complete on board portable AREIS Saturn III inspection system



### Busy Roads

- Access Walk
  - Lane closure
  - Traffic control
  - Size of equipment





# Acknowledgements

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## Thank You

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