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- 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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Presentation Overview

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

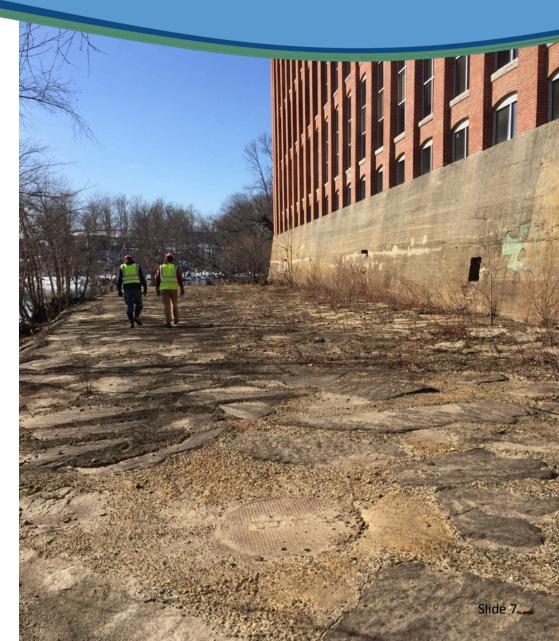




Presentation Overview

Project Summary

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Project Summary

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 Summary

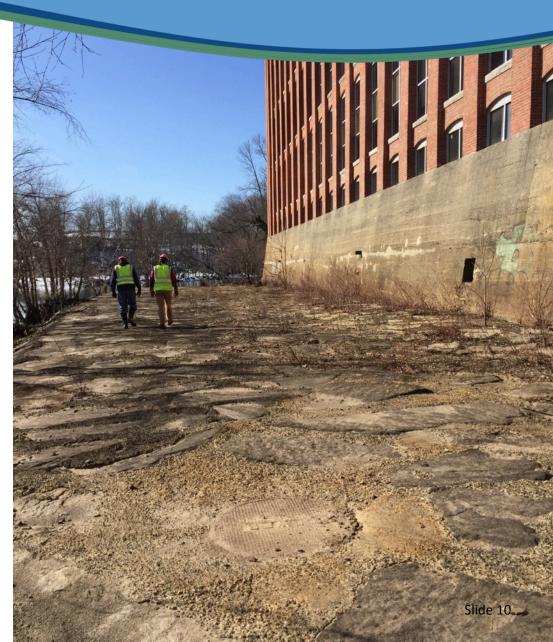
Project Description

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



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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











Difficult Access

- Along Banks of Major River
- Busy Roads



























Along Banks of Major River

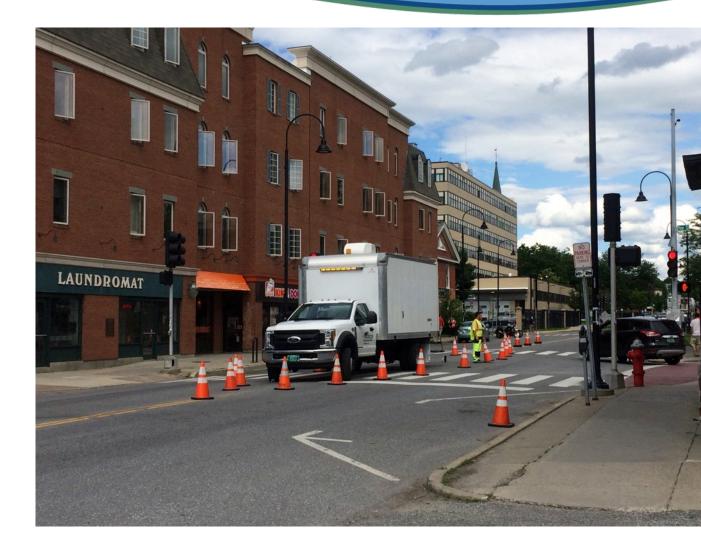
- Kubota RTV Off-Road Inspection Unit
 - Capable of navigating rough terrain
 - Complete on board portable AREIS
 Saturn III inspection system





Busy Roads

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





Acknowledgements









