



Collect. Purify. Restore.

PRESTWICK AND CLUBHOUSE NEIGHBORHOOD MEETING

January 18, 2012



VS ENGINEERING, INC.

Civil • Structural • Transportation • Environmental



Insituform[®]

Clean water for the world.

PROJECT NEEDS

- District experiences
 - High Infiltration Rates
 - Root Intrusion
 - Broken and Collapsed Pipes
 - Leaking Manholes

These Cause Increased Costs at
Lift Stations and Treatment Plant
Plus Increased Maintenance

+0220.7ft↑

WCCD

Avon

02223

Cobblestone Rd

02222

VCP Vitrified Clay Pipe, C Circular



+0202.0ft↑

WCCD

Avon

02217

Beechwood Circle

02219

VCP Vitrified Clay Pipe, C Circular

Roots Medium Barrell, from 02 to 10
o'clock, 25 %, within 8 inch: YES

+0159.1ft↑

WCCD

Avon

02257

Beechwood dr

02258

PVC Polyvinyl Chloride, C Circular

Obstacles Pipe Material, 35 % of cross sectional area, from 09 to 03 o'clock, Remark: Pipe through Main

+0081.3ft↑

WCCD

Avon

02245a

Beechwood Road

0244a

VCP Vitrified Clay Pipe, C Circular





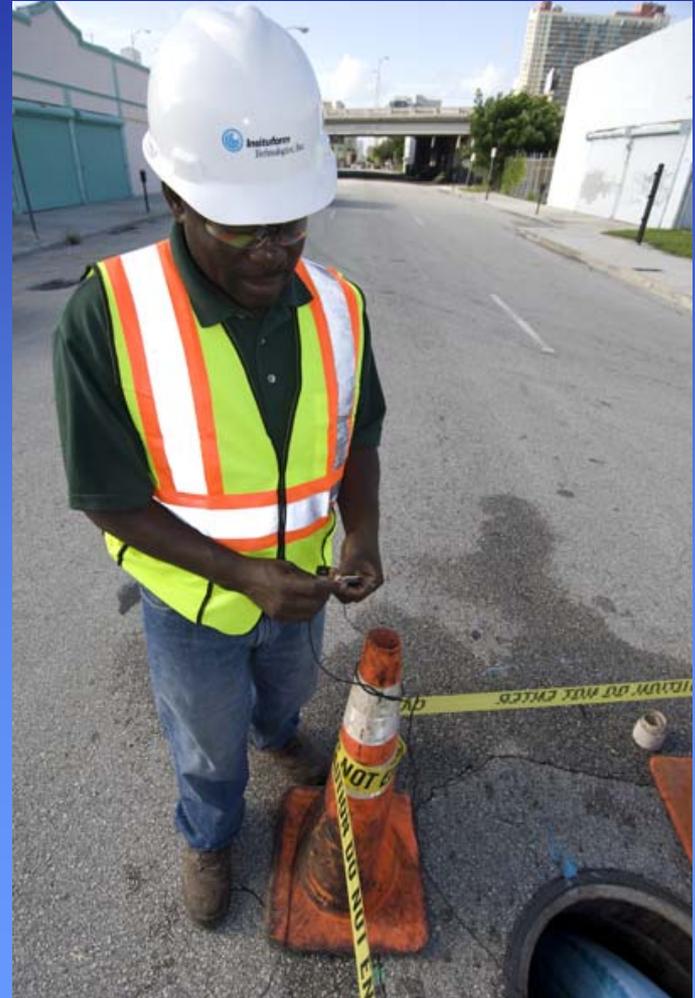
— Gravity Sewers requiring CIPP

PROJECT EXPECTATIONS

- Reduce Inflow and Infiltration
- Restore Structural Integrity of the Infrastructure
- Reduce Future Maintenance and Repair Costs

Safety

- Insituform boasts a superior safety rating to its industry competitors
 - EMR rating is currently .84 compared to industry standard of 1.00
- Each Insituform employee is trained in safety measures and we continually aim for zero incidents company-wide
 - RIR for 2006 decreased to 2.89



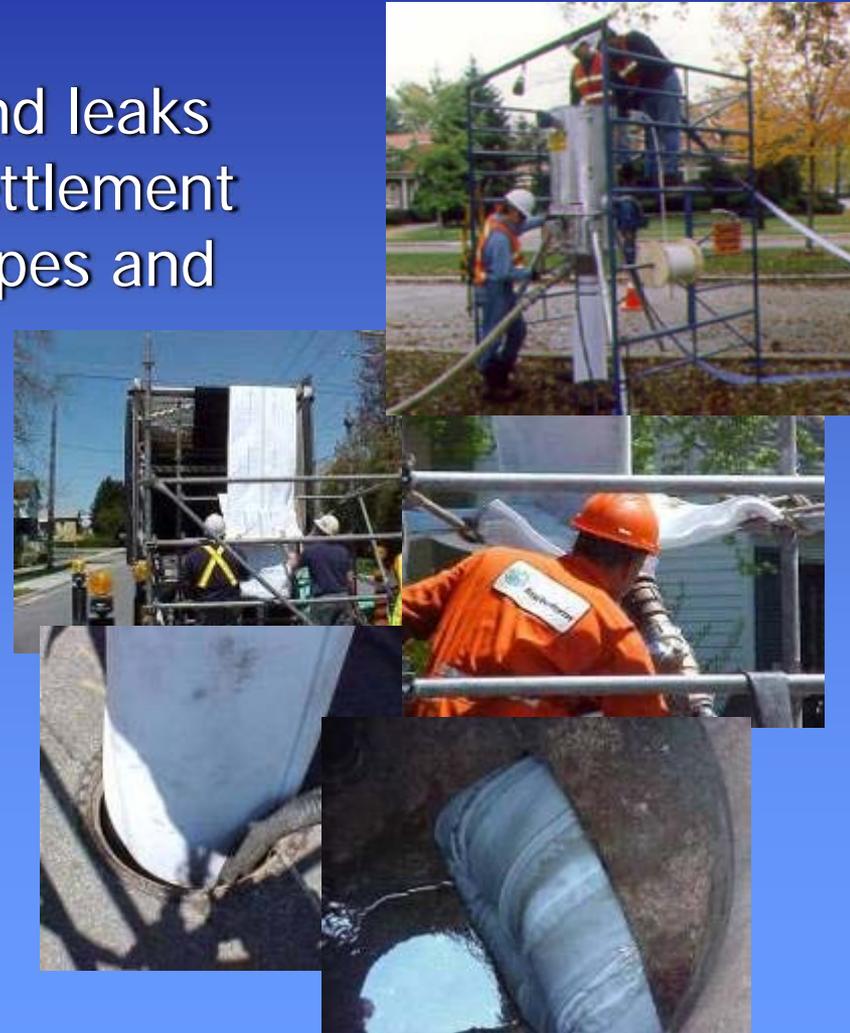
What is CIPP?

- Developed in 1971, cured-in-place pipe (CIPP) is a trenchless technology developed by Insituform
- The end product is a jointless, seamless, pipe-within-a-pipe that protects against spills, breaks and pipeline leakage
- Insituform has installed over 15,000 miles of CIPP and has been the industry leader for over 35 years

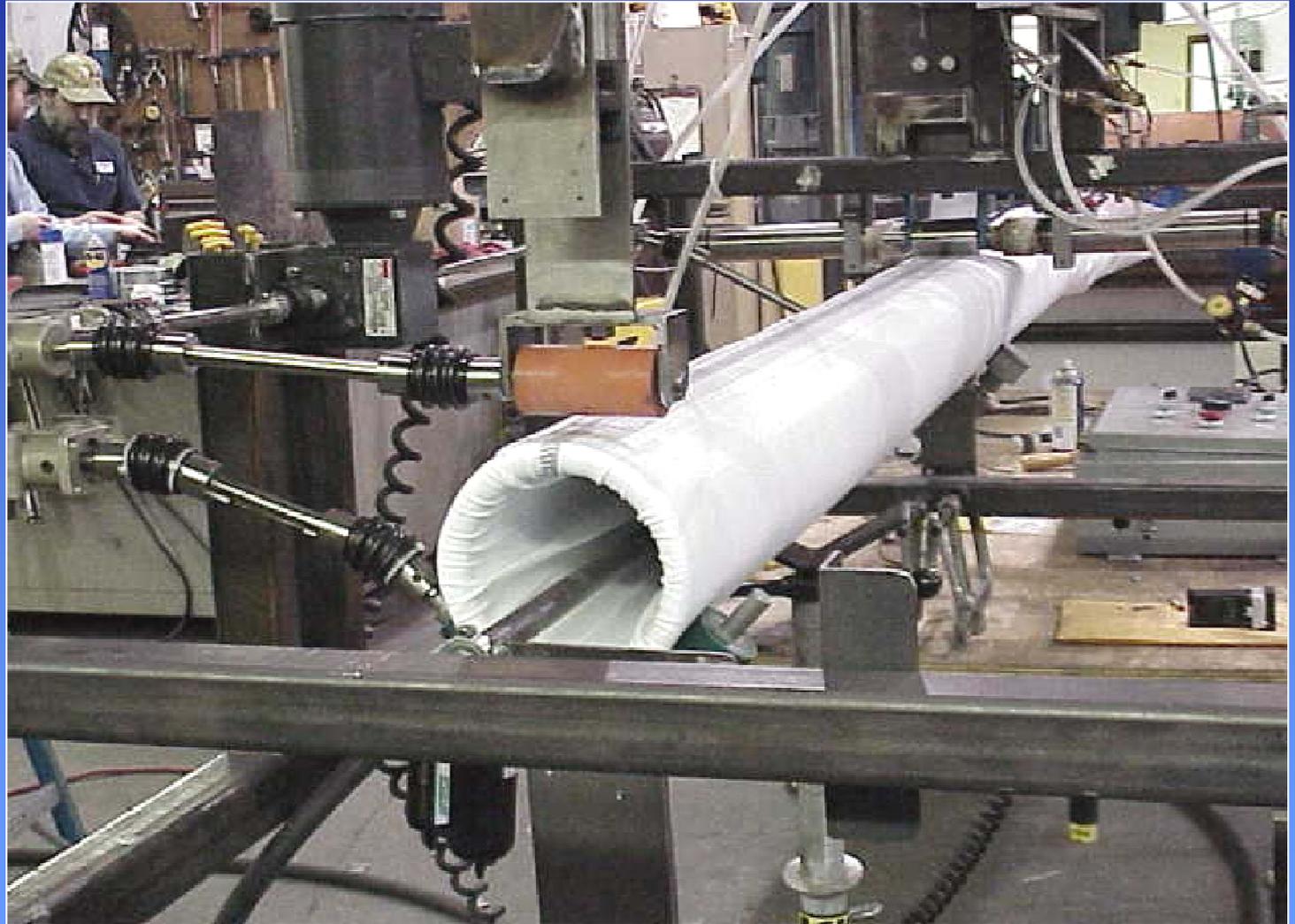


Benefits

- Reduces infiltration and exfiltration
- Restore structural integrity
- Eliminate joints, root intrusion and leaks
- Prevent sinkholes and surface settlement
- Suitable for irregularly shaped pipes and changes in pipe diameter
- Increase flow capacity
- Protect pipes from corrosion
- Increase pipe strength
- Reduce maintenance



Tube Manufacturing



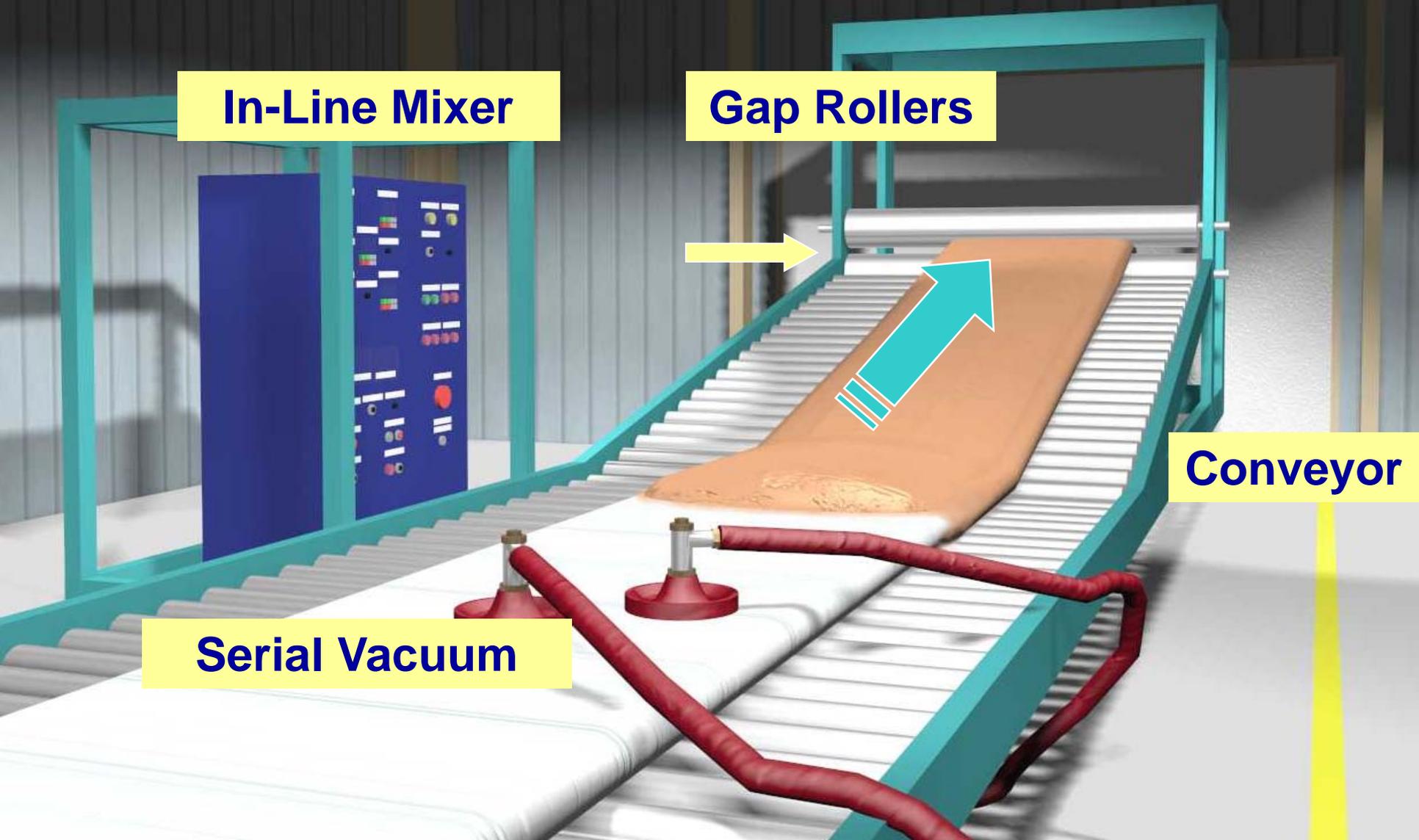
Tube Wet Out Process

In-Line Mixer

Gap Rollers

Conveyor

Serial Vacuum

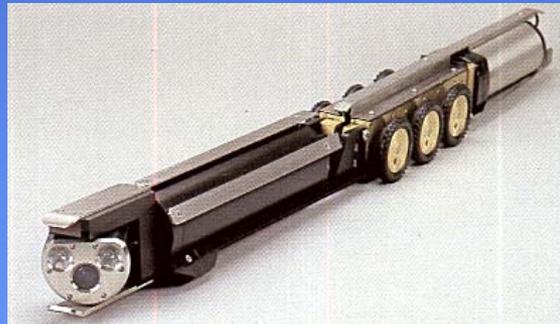


CIPP Installation

- Clean and Televisize
- Manufacture and “wet-out” materials
- Install and cure CIPP
- Reinststate service connections and flow.

CCTV

- Pre-installation Inspection
- Identify Service Connections



CIPP Installation

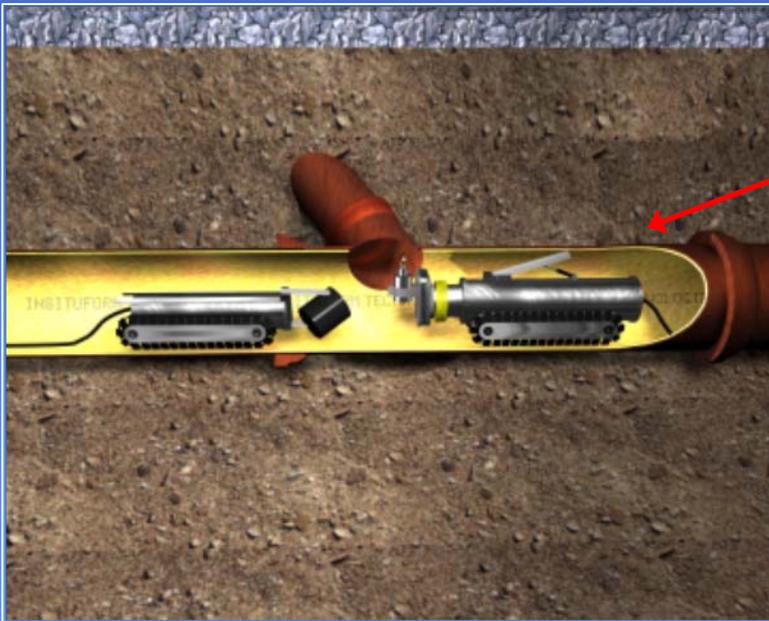


- The tube is inserted into an existing host pipeline
- The tube is inflated to the size of the host pipe
- The CIPP tube is cured
- Ends are cut



Curing

- Hot water or steam
- Laterals are reinstated using a robotically controlled cutting device



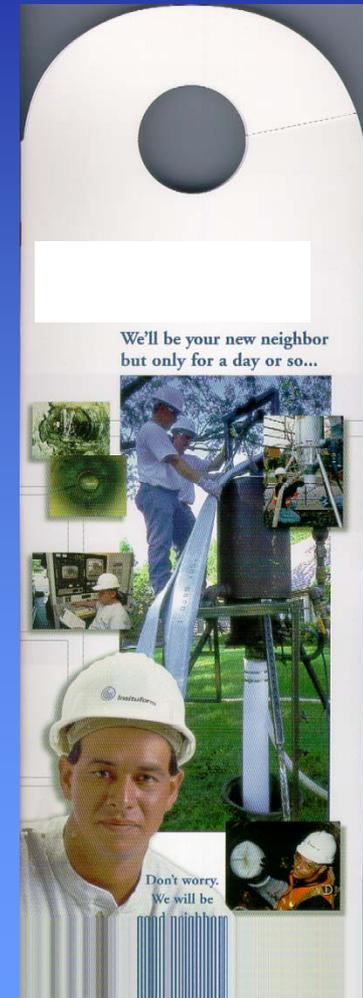
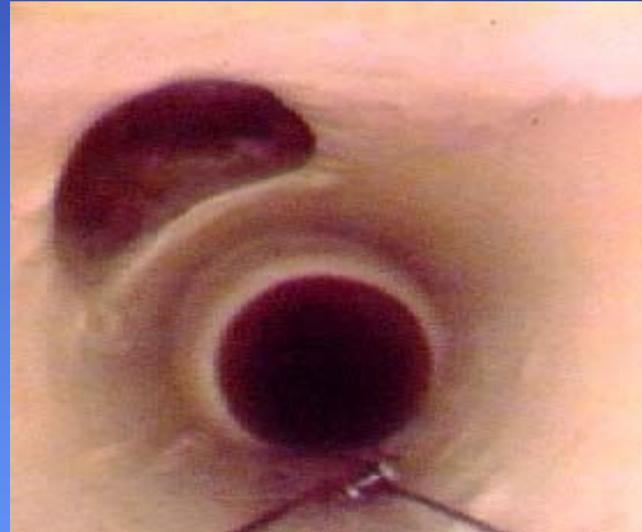
Service Lateral
Reinstatement

Air Inversion/Steam
Cure



Reinstatement of Service Connections

- Out of service - Written Notification
- Reinstatement



Before and After



Before

After





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INSITUFORM CONTACT INFORMATION

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West Central Conservancy District

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QUESTIONS?



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