



Pipe Bursting Water Mains

Process, Design, Construction,
and Model for Success

ACE23 – TUE02 – Utility and Asset Management

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Tuesday, June 13, 2023
11:00am -11:30am





Today's Discussion...

- What is Pipe Bursting?
- Pipe Bursting Systems
- What does Pipe Bursting look like?
- Why are these Cities and Agencies using Pipe Bursting?
- What are the Cost Savings using Pipe Bursting?
- What is their Model for Success?
- Questions





What is Pipe Bursting?

- Trenchless Replacement Technology – inside existing pipe and ROW
- Fracture Existing Pipe while pulling in New Factory Manufactured Pipe
- Replace Deteriorating and Capacity Deficient Pipelines
- Replace Existing Mains with Same Size or Larger Pipelines





Pipe Bursting Systems

Two Systems for Pipe Bursting

- Pneumatic

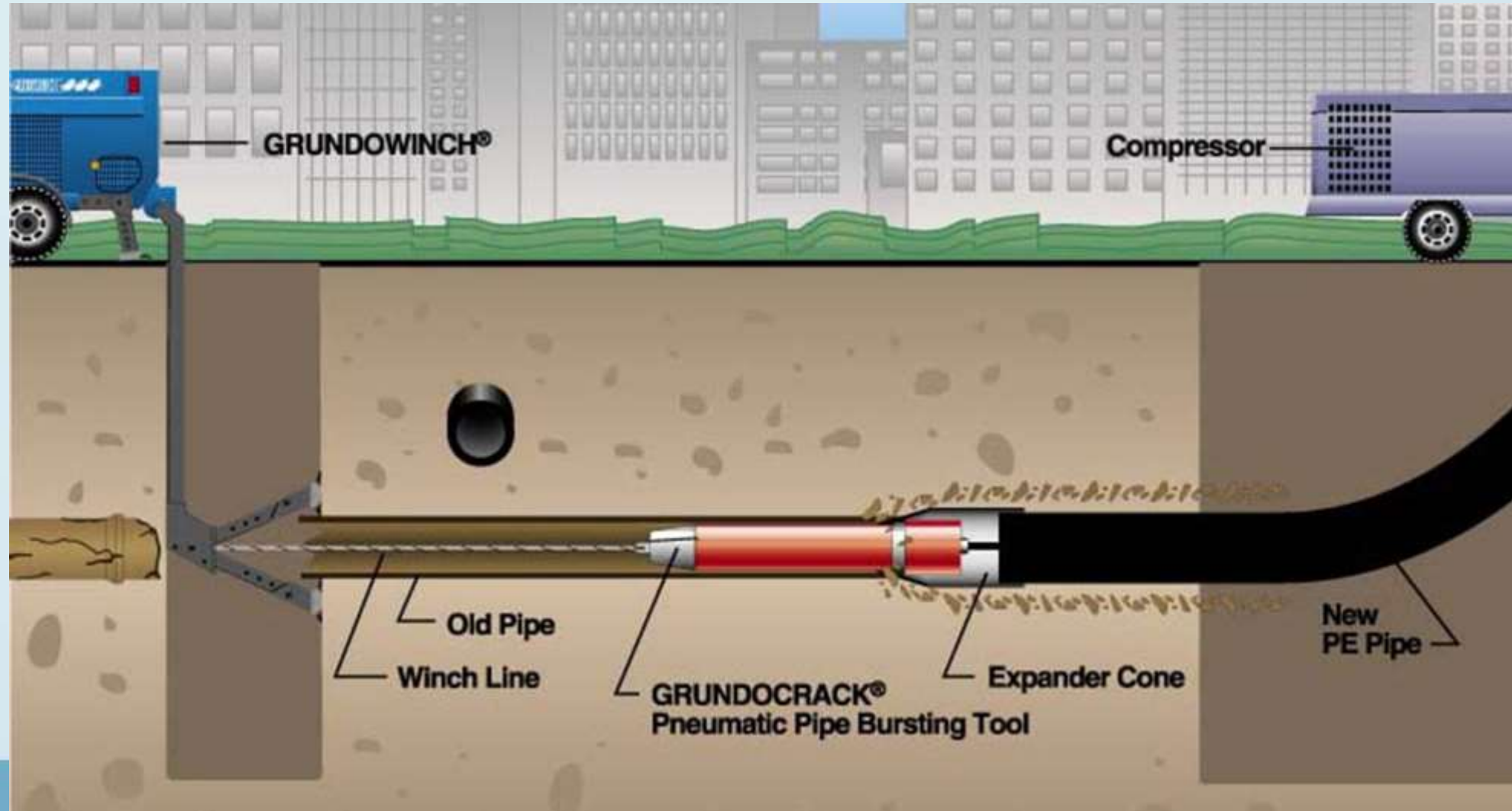


- Static



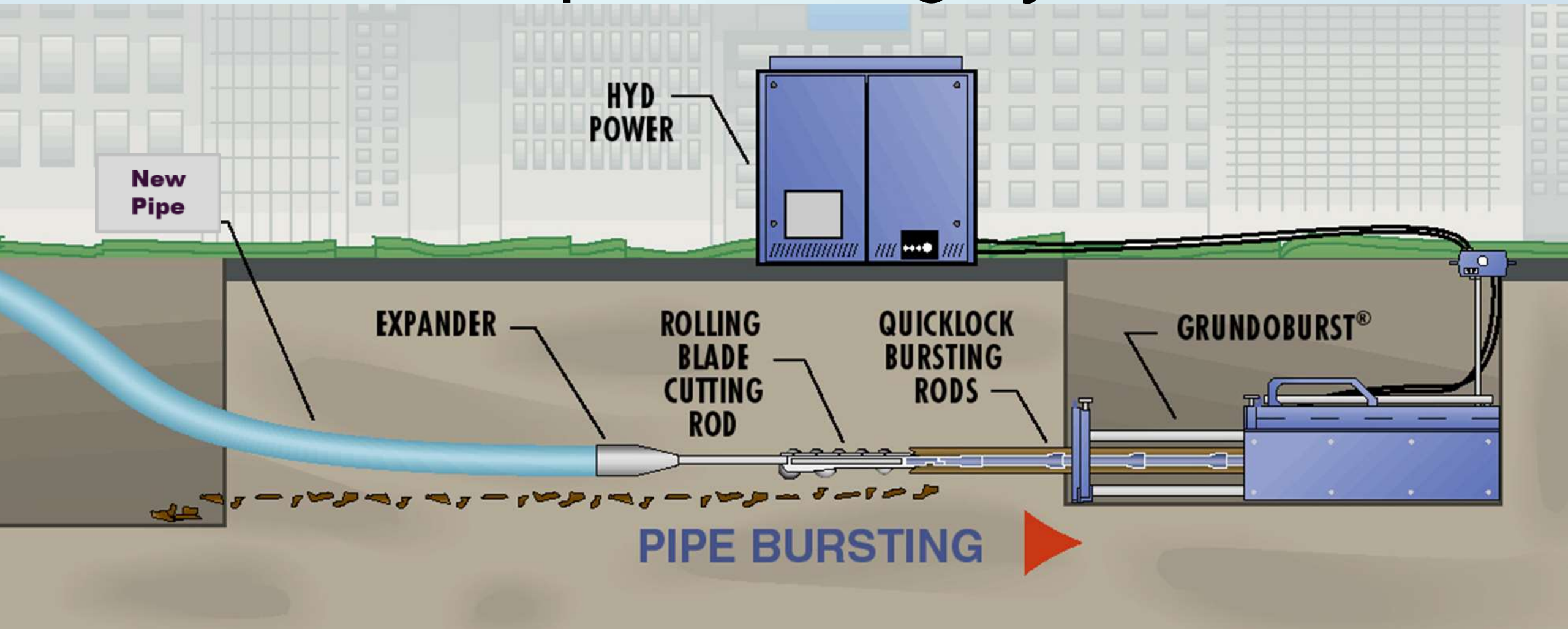


Pneumatic Pipe Bursting System





Static Pipe Bursting System





Design

- Simple plan or as-built drawing
- Gate valves, fire hydrants tees, crosses, offsets, point repairs
- Service laterals for bypass – sidelines





What does a Pipe Bursting Project Look Like?

Temporary Bypass Piping
“Sidelining”













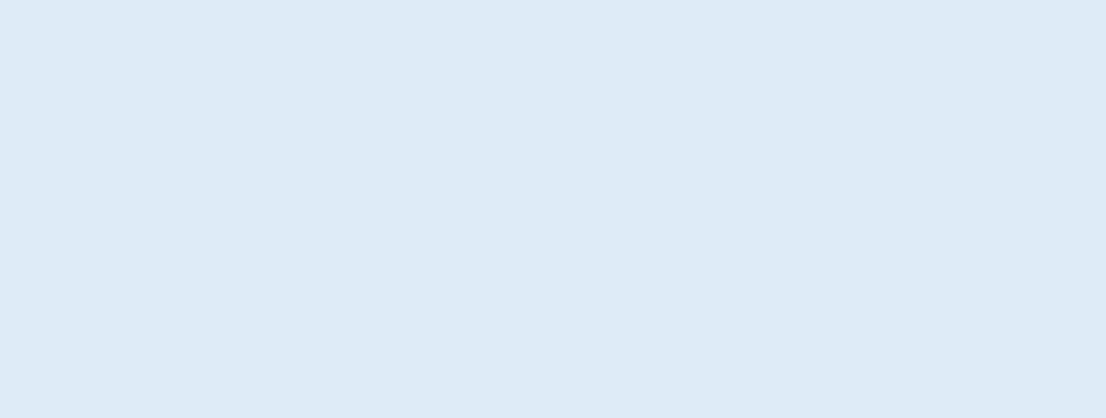


















































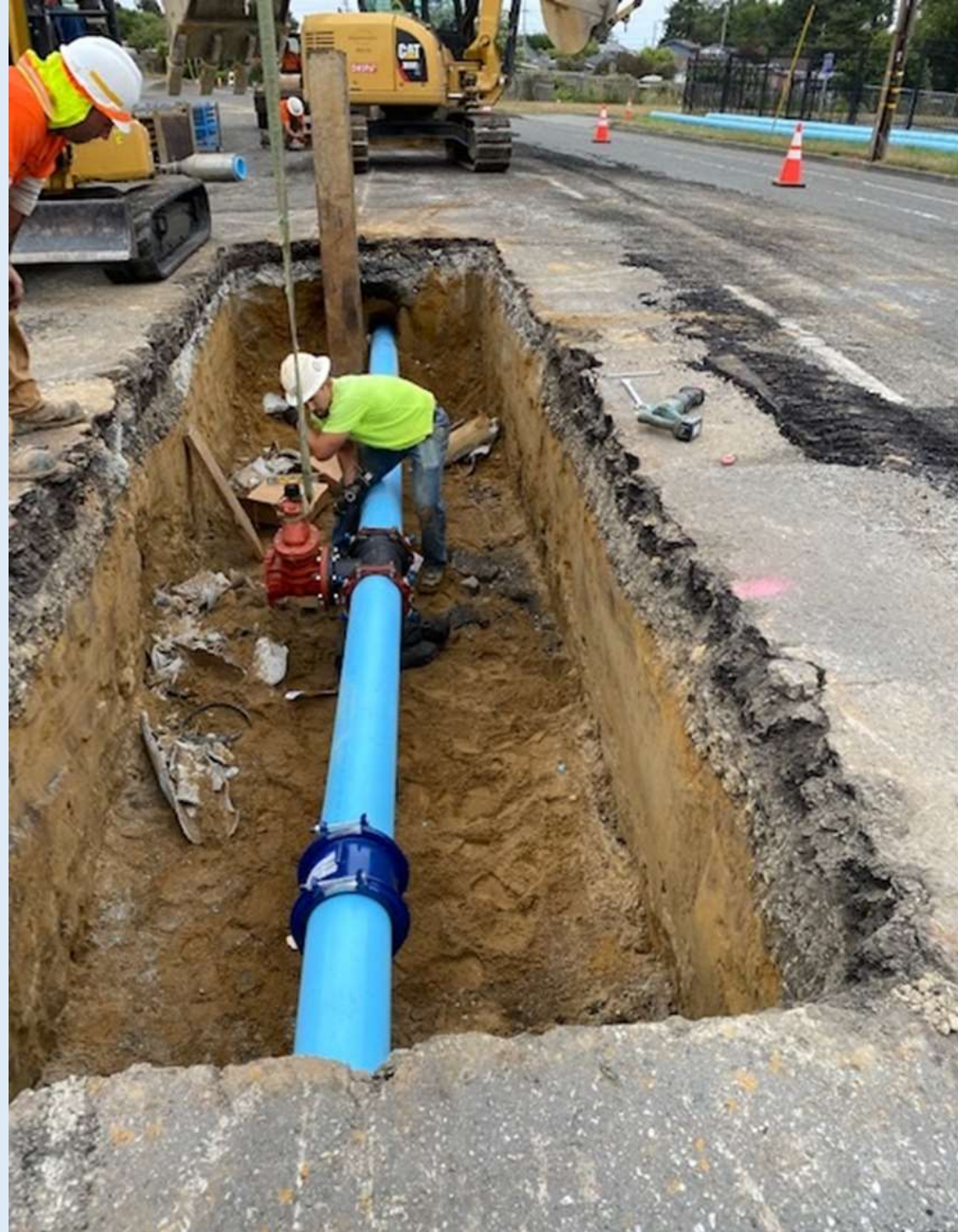






















- **Water Main - resurfacing**





Why are these Cities Using Pipe Bursting?

- Stop Leaks
- Improve Water Quality
- Improve Flow Characteristics
- New Mains & Appurtenances
- Save between 20% - 50% over open cut costs
- Minimize social impacts (traffic, dirt, dust)
- Reduce export and import of materials by 80%
- Reduce Carbon Emissions by 75%





Examples of Savings...

	<u>City of Billings, MT</u>	<u>Consolidated Water, CO</u>	<u>Cheyenne Water, WY</u>	<u>Lee's Summit, MO</u>	<u>Greensboro, NC</u>
<u>Approx. Footage thru 2014</u>	18,215	167,740	20,990	43,100	38,080
Existing Pipe Diameter	4-8"	4-8"	4-8"	4-8"	2-8"
New Pipe Diameter	8-12"	4-8"	8-12"	6-8"	6-8"
Savings over Open Cut	50%	50%	20%	23%	20% +



Examples of Savings...

City of Eureka, CA 2020

- 5,000' of existing 8" Cast Iron pipe pulling in new 8" FPVC

Pipe Bursting

Open Cut

Low Bidder

Bidder #2

Bidder #3

8-inch water per lf

\$75

\$158

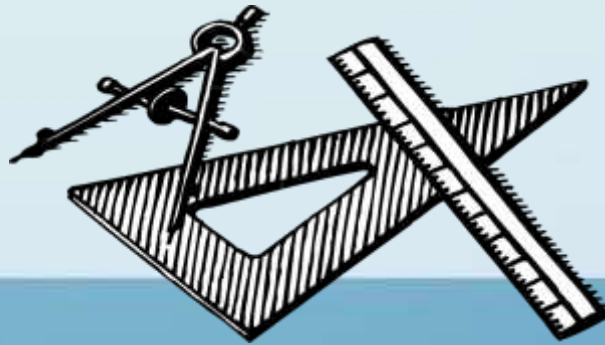
\$178

50% savings over open cut



What are these Cities Model for Success?

- Replace Existing Cast Iron, Asbestos Cement and Steel Pipes
- Projects of 3,000 linear feet or larger
- Residential Distribution Systems (Neighborhoods)
- Replace size to size or one upsize (4", 6", 8", 10", 12" mains)
- New pipe – FPVC, Restrained Joint PVC or HDPE
- Allow Agency Crew or Contractor to do ALL work
- Internal "Champion" – leader to drive new program and personnel





Pipe Bursting Water Mains

Questions?



TT TECHNOLOGIES

