

2024 Capital Watermain Improvement Projects

October 10, 2023

Where We've Been

- 2022-Developed Capital Improvement Plan for Water Distribution System
 - Approved by Commission November 22, 2022

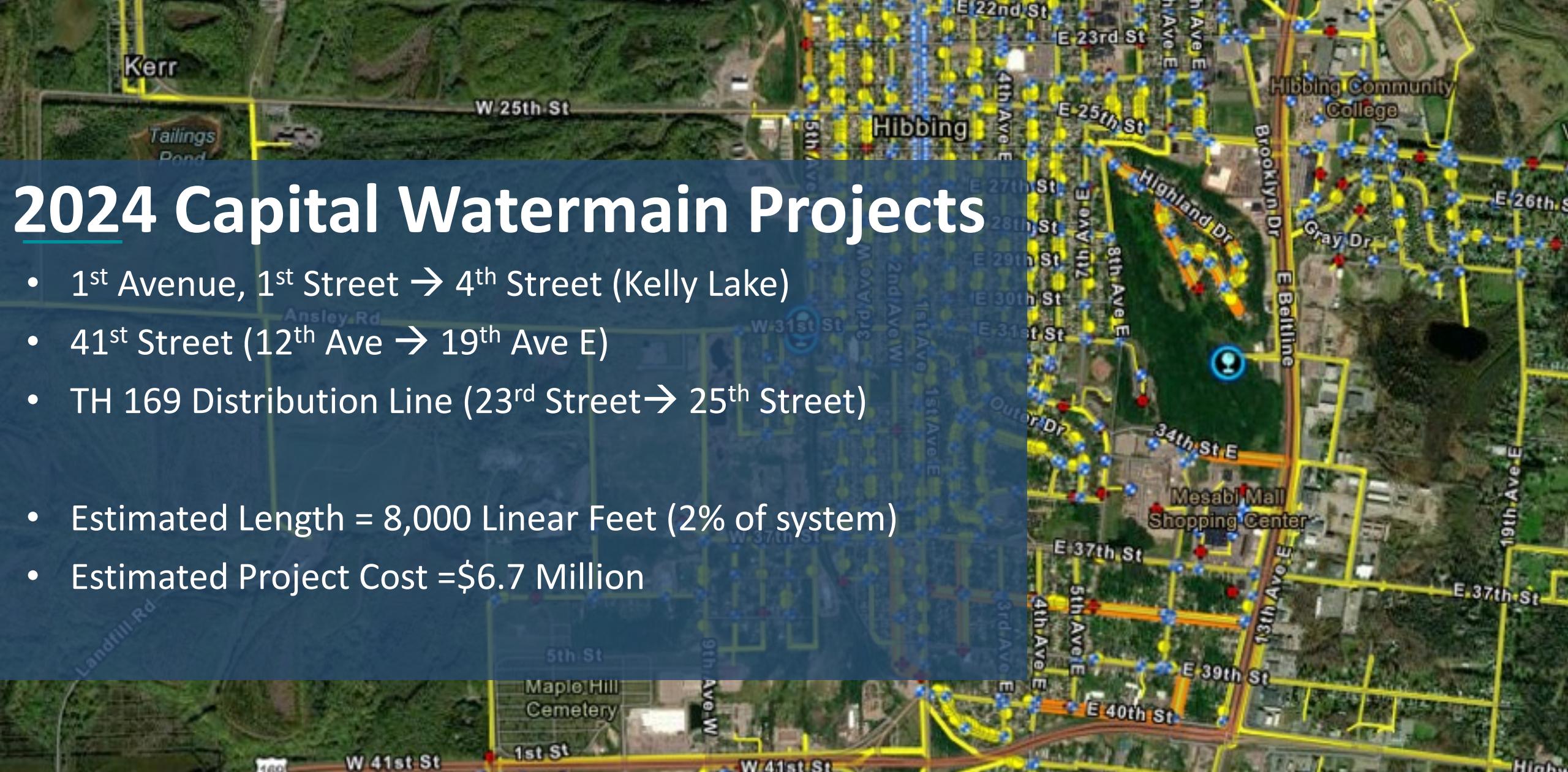
Watermain Capital Improvements 2023 - 2027					
Project	2023	2024	2025	2026	2027
Stuntz Drive & Hematite Street	\$ 2,077,000.00	-	-	-	-
18th Avenue & 27th Street	\$ 2,248,000.00	-	-	-	-
Minnesota Street & 8th Avenue	\$ 2,617,000.00		-	-	-
3rd Avenue East (31st to 22nd)	-	\$ 4,523,000.00		-	-
5th Avenue East (31st to 24th)	-	-	\$ 3,405,000.00		-
First Avenue (4th to 1st - Kelly Lake)	-	-	\$ 2,119,000.00	-	-
West Wegner Road to 41st St.	-	-	-	\$ 5,264,000.00	-
41st Street (12th Ave E to 19th St E)	-	-	-	-	\$ 2,367,000.00
19th Avenue E (28th St to 34th St)	-	-	-	-	\$ 2,326,500.00
Total	\$ 6,942,000.00	\$ 4,523,000.00	\$ 5,524,000.00	\$ 5,264,000.00	\$ 4,693,500.00

Future Projects 2028 - 2032	
Old Highway 169	Existing 12" HDPE installed 2016, dead end main not in service.
Kitzville Loop (11th St to 1st St)	Existing 6" main 11th Street to RR Xing, 4" main RR Xing to 1st Street, inactive due to leaks.
Scranton Meter to Well House	Existing 12" main, Scranton well no longer in use.
19th Avenue East (34th St to 169)	Existing 8" main, high break frequency.
3rd Avenue (4th to 1st - Kelly Lake)	Existing 6" main installed 1918, high break frequency.
City-wide Hydrant Maintenance	Repair or replacement of broken or malfunctioning hydrants.



2023 Capital Watermain Improvement Projects

- Replaced 8,000 LF of Watermain, 32 Hydrants & 71 Gate Valves
- 18th Avenue, 26th Street and 27th Street
 - Original Budget = \$1,013,053.00
 - Estimated Final Cost = \$875,000.00
- Stuntz Drive and Hematite Street
 - Original Budget = \$1,207,796.00
 - Estimated Final Cost = \$1,103,000.00
- Minnesota Street and 8th Avenue
 - Original Budget = \$1,785,000.00
 - Estimated Final Cost = \$1,775,000.00
- 2023 Fire Hydrant Replacement Project
 - Original Budget = \$276,878.00
 - Estimated Final Cost = \$276,878.00
- Southview Water Supply Protection Project
 - Original Budget = \$174,995.00
 - Estimated Final Cost = \$174,995.00



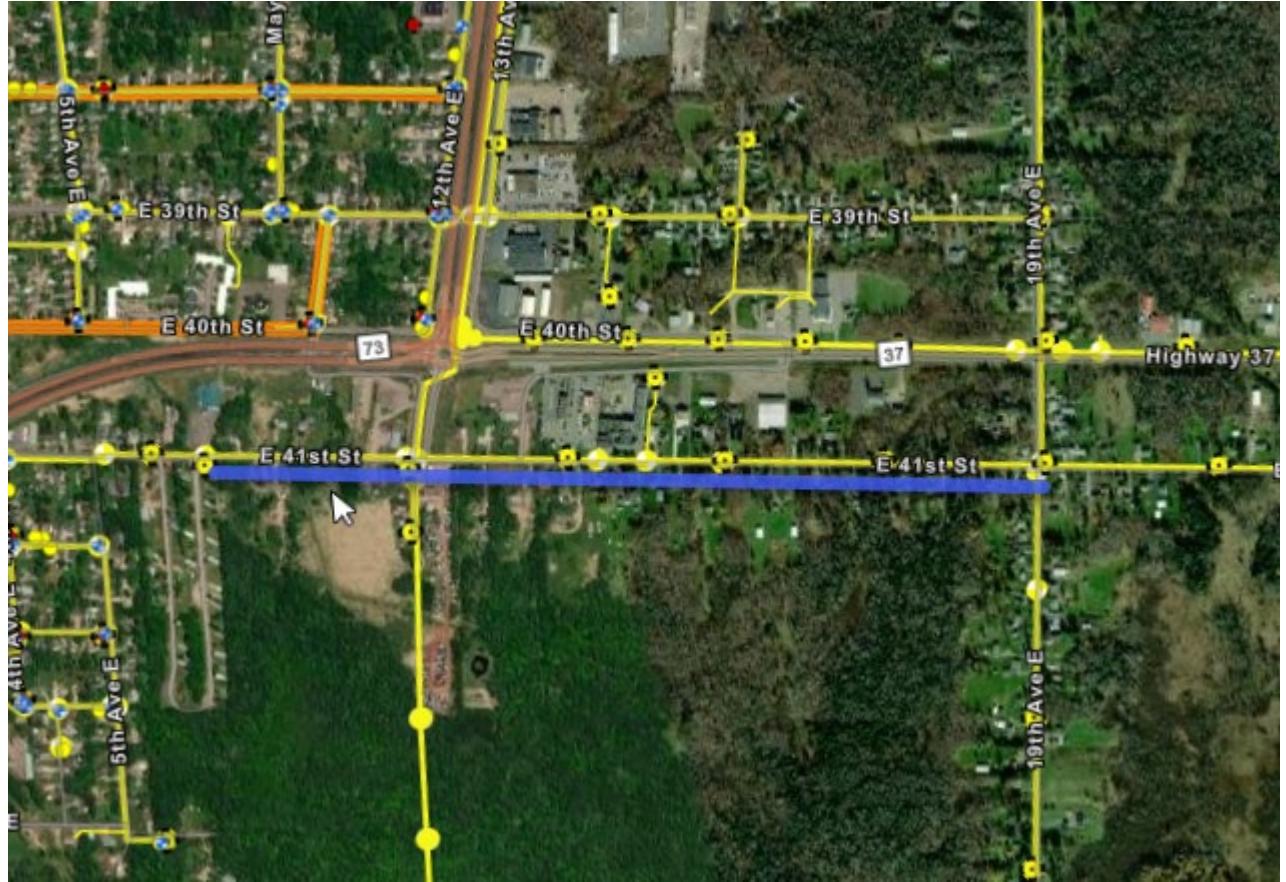
1st Avenue, 1st Street → 4th Street (Kelly Lake)

- Existing 6" Cast Iron Pipe
- Installation date unknown
- Breaks recorded: 10
- Estimated Project Cost = \$2.5 Million



41st Street (12th Ave E → 19th Ave E)

- Existing 8" Cast Iron Pipe
- Installation date unknown
- Breaks recorded: 7
- Candidate for CIPP Pressure Lining
- Estimated Cost = \$2.6 Million
- Potential Saving if Lined = \$500,000-1,000,000



TH 169 Distribution Line (23rd St → 25th St)

- 72+ Hour Outage in July 2023
- Caused by failed pipe
- Candidate for CIPP Pressure Lining

- Estimated Construction Cost
 - \$1.5 Million (Open Cut)
OR
 - 2.0 Million (Directional Drill)
OR
 - \$1.5 Million (CIPP Lining)





Pressure Installation

Ductile Iron Pipe Before

CIPP After

Pressure Cured-In-Place-Pipe

Internal Pressure Capacity

250 psi (safety factor of 4)

Up from 150 psi

Typical Maximum Install Length

Large – 1,200 feet

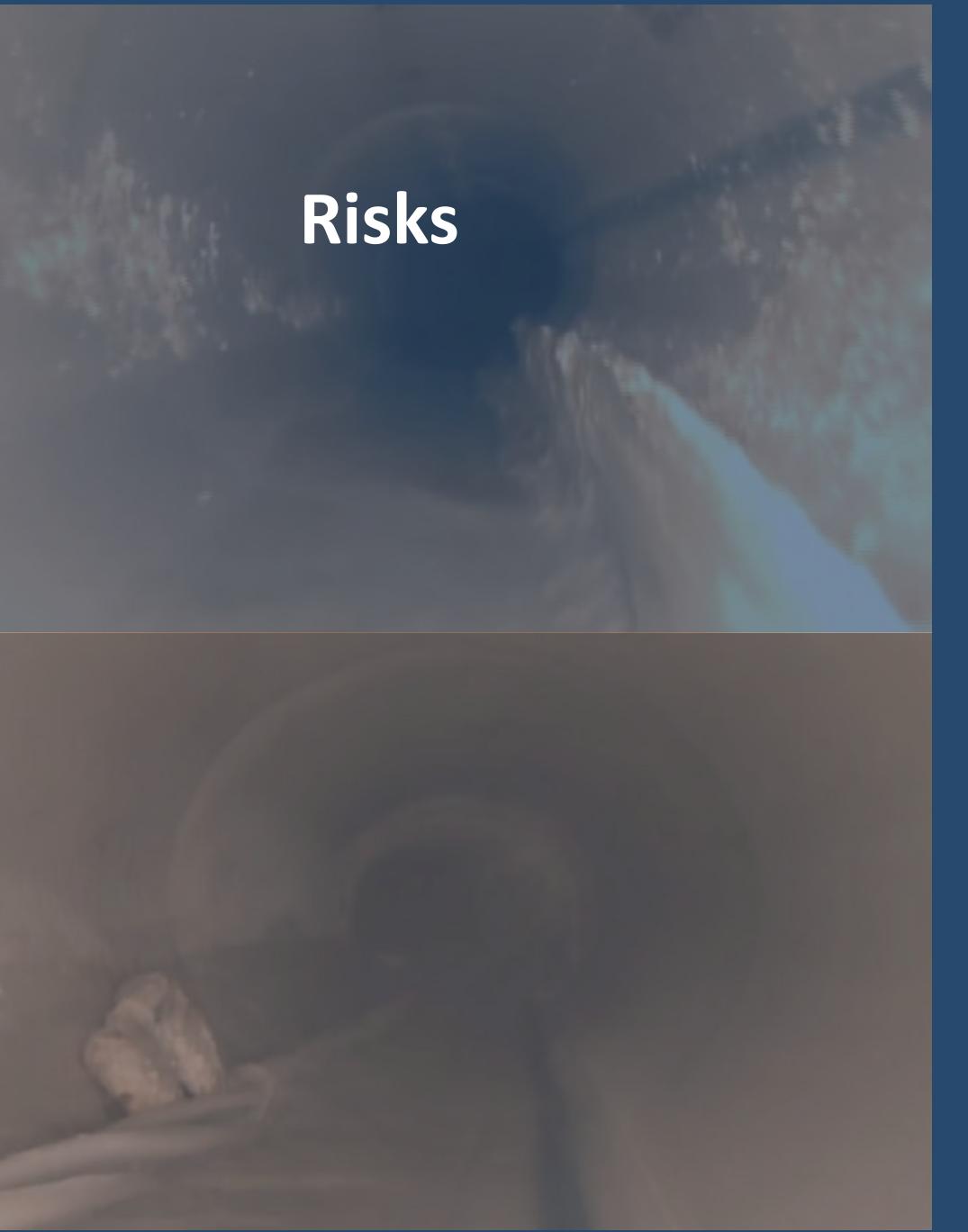
Small – 800 feet

Bends

Up to 45 degrees

Wrinkling/capacity issues





Risks

Defects

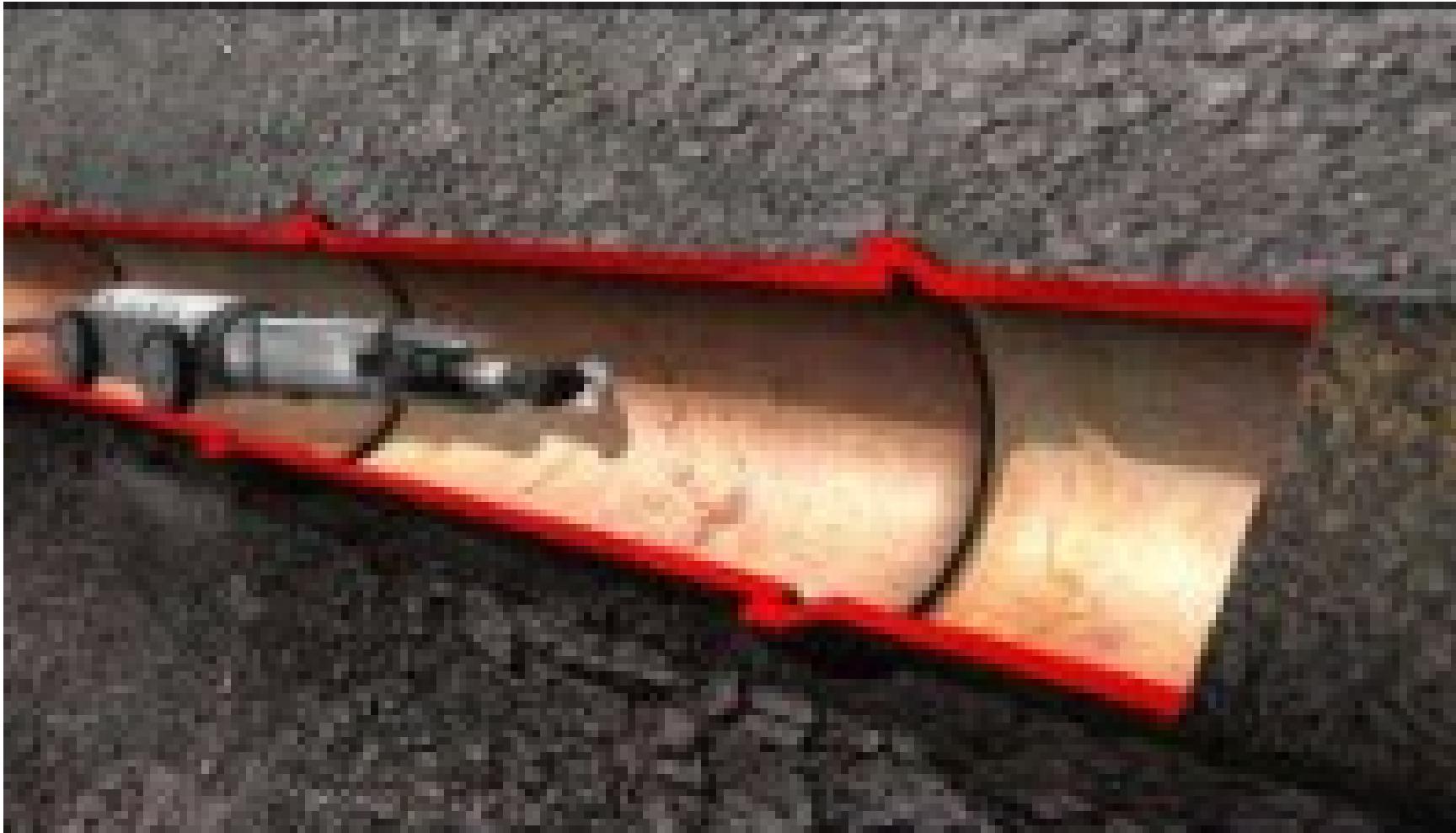
- Over-sized liner
- Liner too-thin
- Pipe not cleaned beforehand
- Capacity issues
- Ground water washes away resin before it cures

Difficult to Fix

- Cut out defect and reline
- Pipe capacity issues
- Open excavation replacement of pipe
- Settlement and sag issues



Watermain Lining



Beyond 2024

- 2025 –
 - 5th Avenue Watermain Reconstruction (31st to 24th Street) - \$4.5 Million, 4,000 Linear Ft of Watermain
- 2026
 - 3rd Avenue East Watermain Reconstruction (31st to 22nd Street) - \$5.5 Million, 4,800 Linear Ft of Watermain
- 2027
 - 19th Avenue Watermain Lining(28th St → TH 169) – \$2.8 Million, 7,500 Linear Ft of Watermain
 - West Wegener Road to 41st Street (Lining Candidate) - \$5.5 Million, 5,500 Linear Ft of Watermain
- 2028
 - 19th Avenue Watermain Lining(28th St → TH 169) – \$2.8 Million, 7,500 Linear Ft of Watermain
 - 3rd Avenue (4th Ave ↗ 1st Ave, Kelly Lake) - \$3.0 Million, 3,000 Linear Ft of Watermain