

2024 Capital Watermain Improvement Projects

October 10, 2023



Real People. Real Solutions.

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



2024 Capital Watermain Projects

- 1st Avenue, 1st Street → 4th Street (Kelly Lake)
- 41st Street (12th Ave → 19th Ave E)
- TH 169 Distribution Line (23rd Street → 25th Street)
- Estimated Length = 8,000 Linear Feet (2% of system)
- Estimated Project Cost =\$6.7 Million



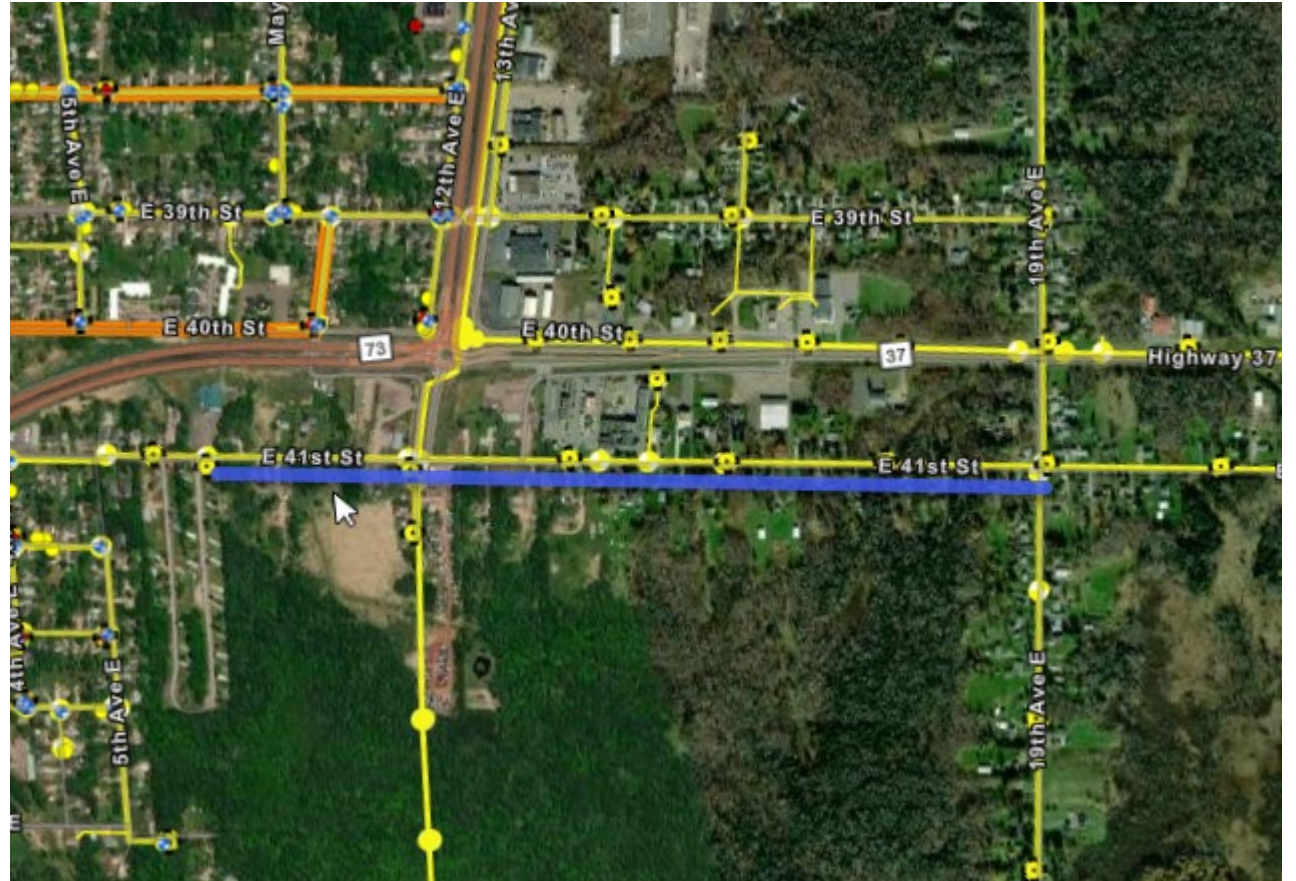
1st Avenue, 1st Street → 4th Street (Kelly Lake)

- 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