

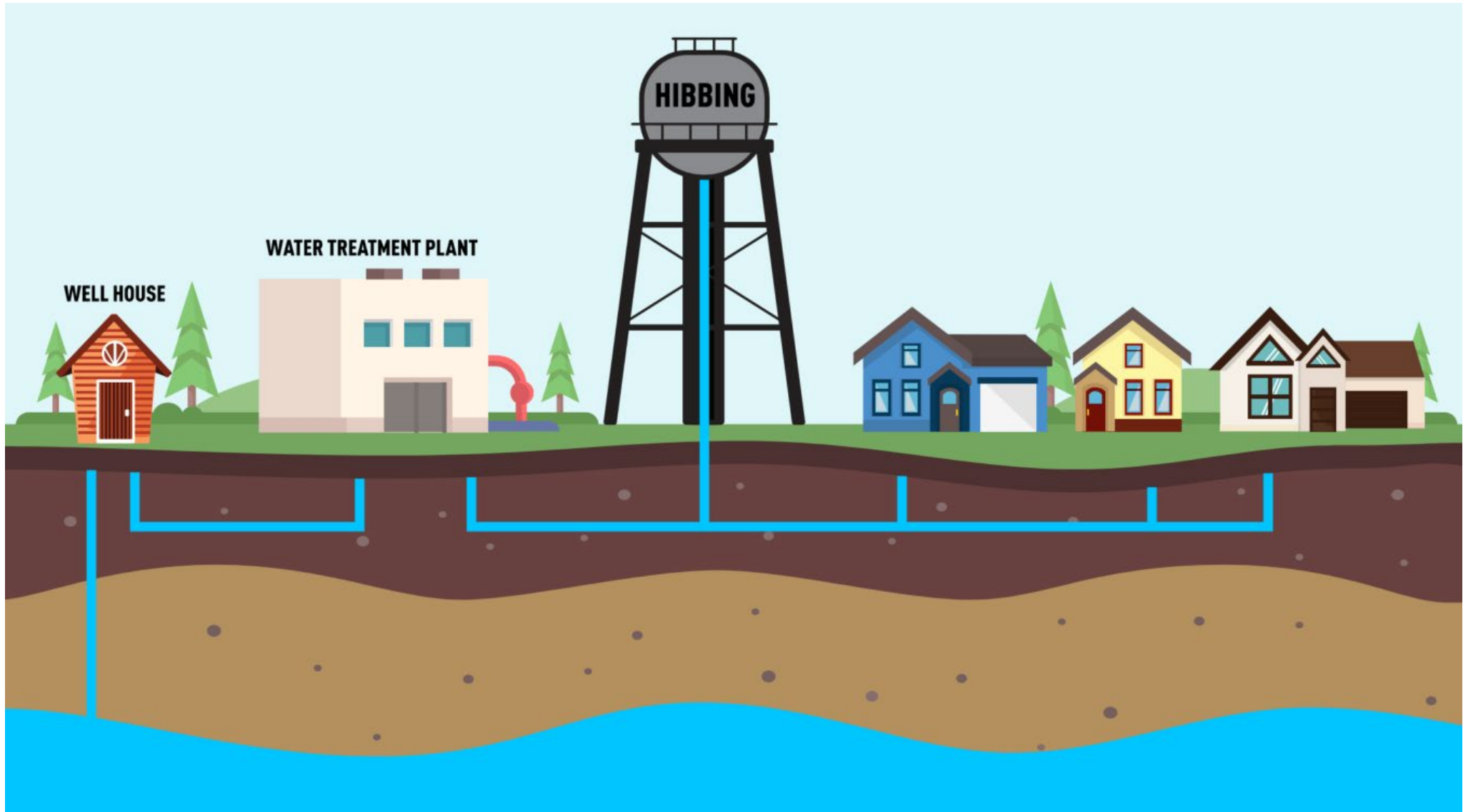
Water Treatment Plant Improvements

April 30, 2024



Real People. Real Solutions.

System Overview



System Overview



Existing South Treatment Plant

Underground Reservoir Constructed Around 1915

- Spalling Concrete
- Facility Cannot Produce Water Without Tank
- Bypass Being Installed



Existing South Treatment Plant

WTP Constructed in 1982

Failing Backwash Treatment System

Many Components Past Their Useful Life

- Valves
- Controls
- Chemical Feed Equipment



South Water Treatment Plant Improvements

- Construct Backwash Reclaim System
- Install New Filter Valves
- New Controls and Instrumentation
- Reservoir Bypass
- Replacement of Well 11
- Total Construction Cost Approximatley \$8.0M



Well 11

Beyond 2024

- East Well Field Development
- Carey Valley WTP (For East Well Field)
- Water Tower Reconditioning



Capital Watermain Improvements

April 30, 2024



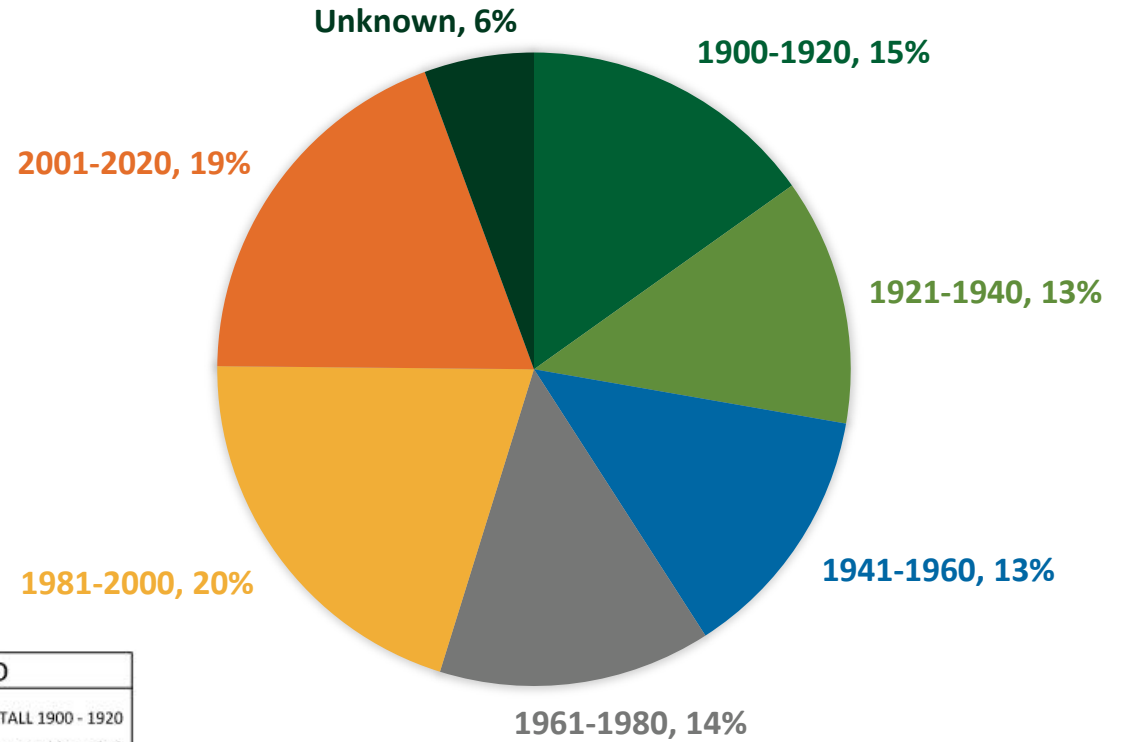
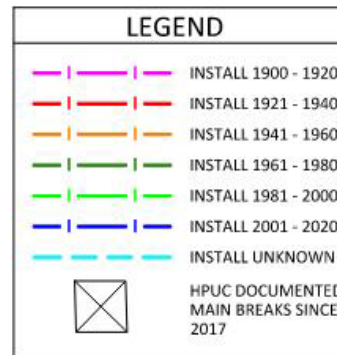
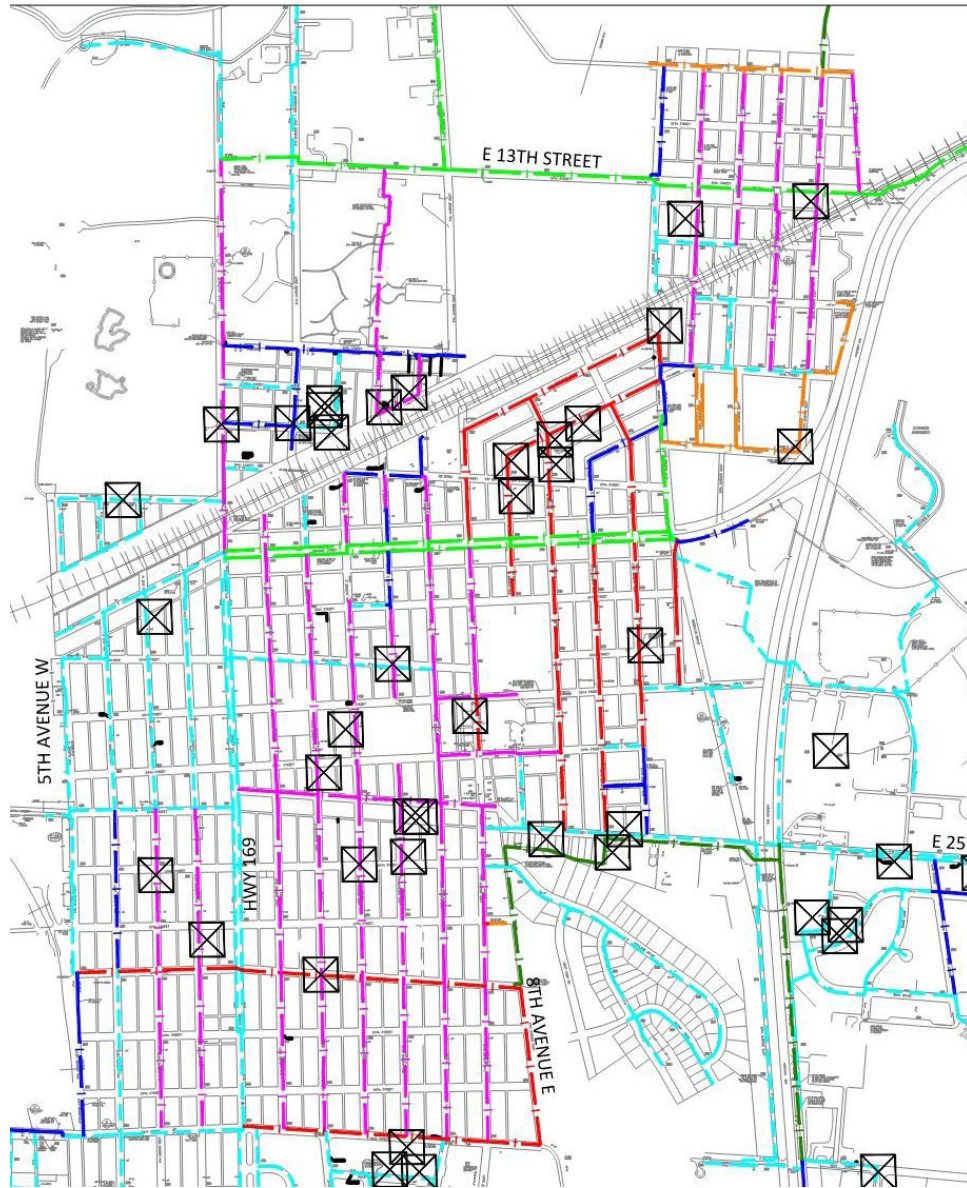
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Existing Watermain

- Average main breaks per year = 25
- Average cost per break = \$35,000
- Total cost per year = \$875,000

- 15% was installed prior to 1920
- 13% was installed between 1921-1940
- 6% is unknown





Capital Improvement Plan

Table 3.1 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 Wegener 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

*In coordination with City of Hibbing paving operations

Table 3.2 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.
West Wegener Road to Townline	Existing 30" main, high volume water losses during breaks.
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
- Stuntz Drive and Hematite Street
- Minnesota Street and 8th Avenue
- 2023 Fire Hydrant Replacement Project
- Southview Water Supply Protection Project





2024 Capital Watermain Projects

- 1st Avenue, Kelly Lake (1st Street → 5th Street)
- 41st Street (12th Ave → 19th Ave E)
- TH 169 Distribution Line (23rd Street → 25th Street)
- Total Length = 10,500 Linear Feet (3% of system)
- Estimated Project Cost = \$5.9 Million

1st Avenue, Kelly Lake (1st Street → 5th Street)

- Existing 6" Cast Iron Pipe
- Installation date unknown
- Breaks recorded: 10

- Project Cost = \$2.3 Million

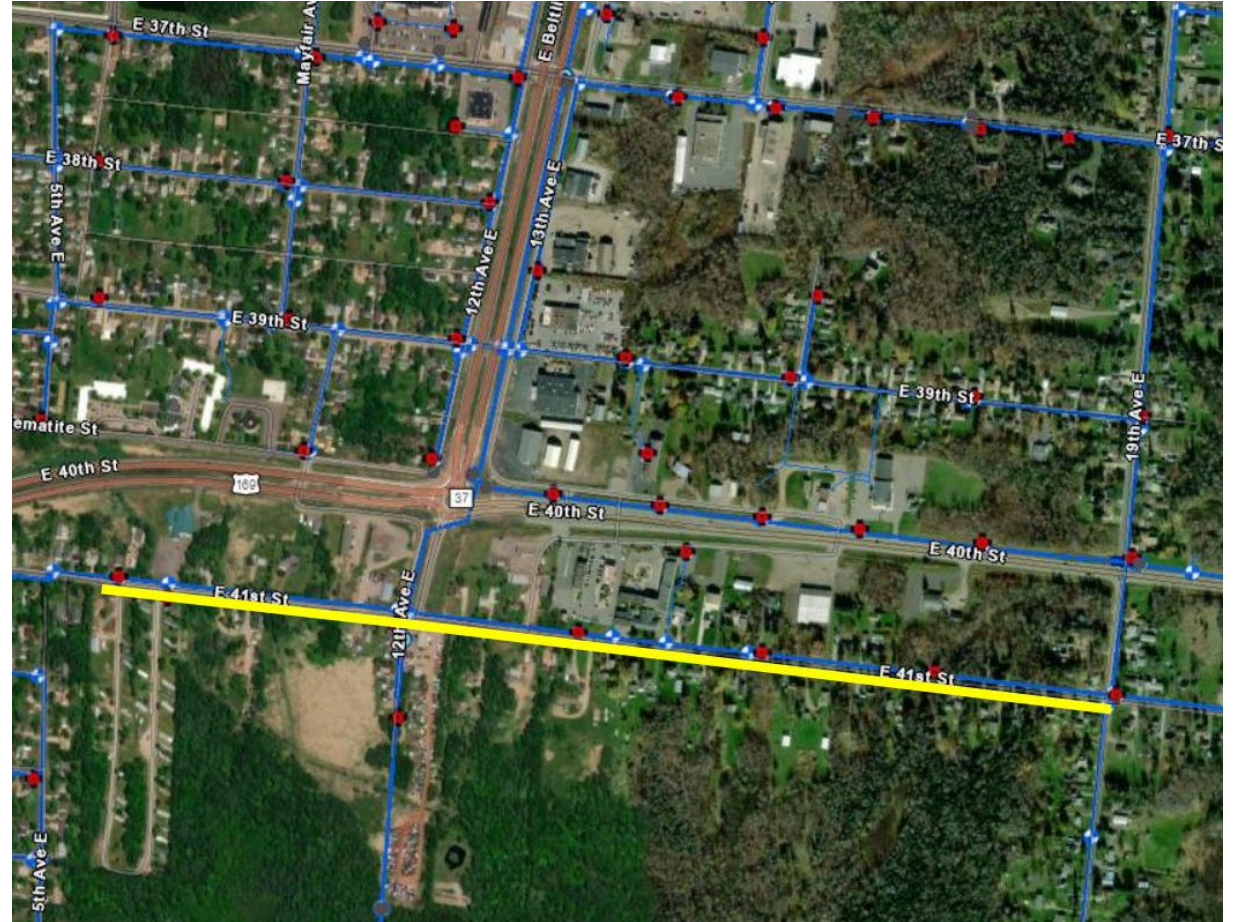


41st Street (12th Ave E → 19th Ave E)

- Existing 8" Cast Iron Pipe
- Installation date unknown
- Breaks recorded: 7

- Project Cost =\$2.1 Million

- CIPP Pressure Lining





Pressure Cured-In-Place-Pipe

Internal Pressure Capacity

250 psi (safety factor of 4)

Up from 150 psi

Typical Maximum Install Length

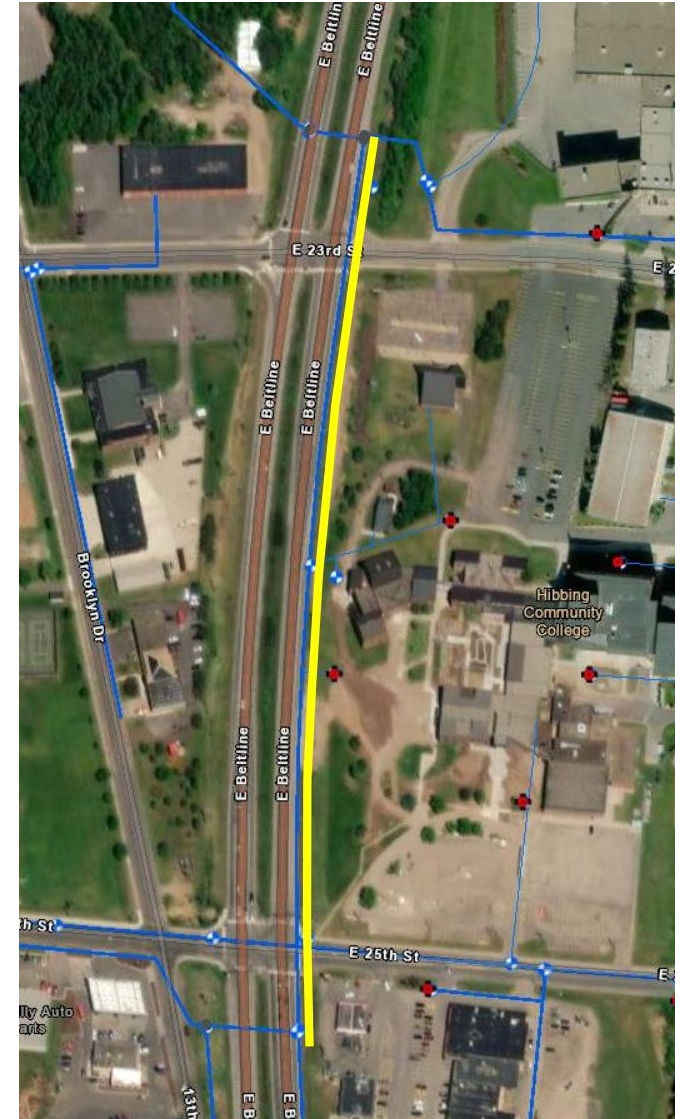
Large – 1,200 feet

Small – 800 feet



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

- 72+ Hour Outage in July 2023
- Caused by failed pipe
- Estimated Cost = \$1.3 Million
- Slip Lining





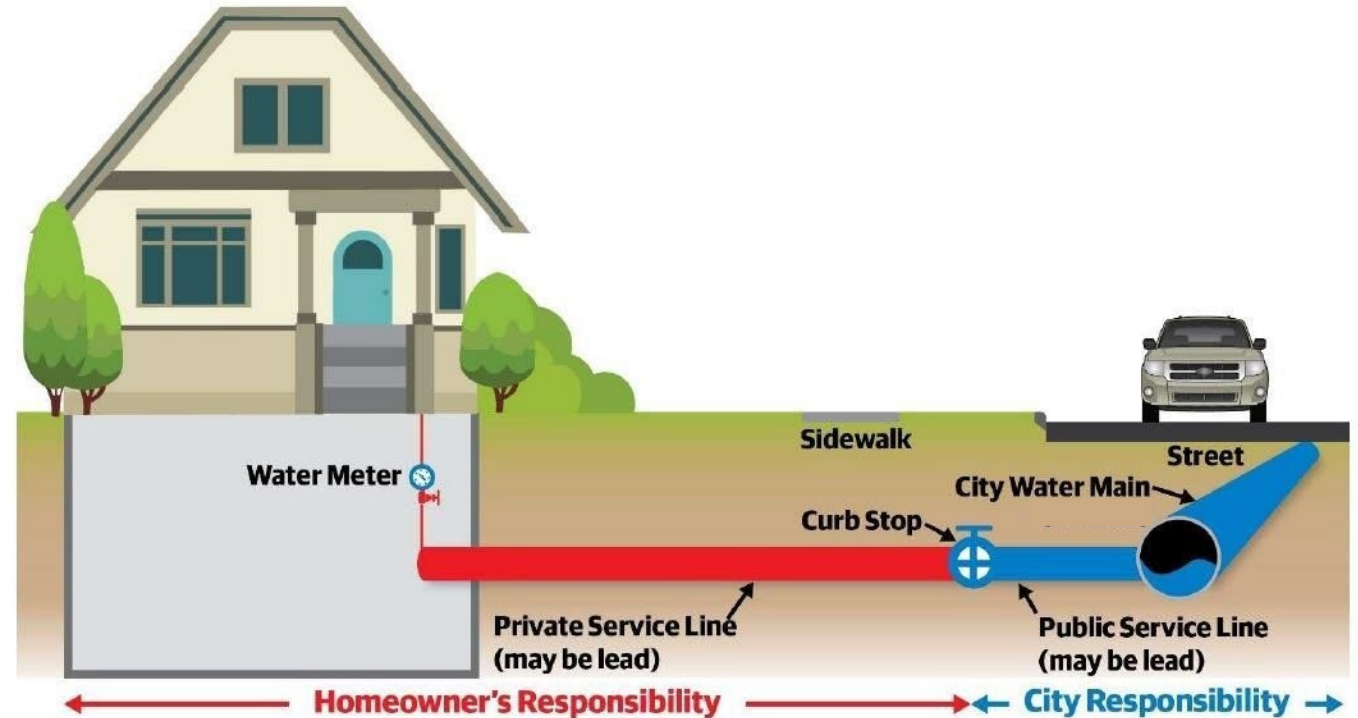
Slip Lining

- Typical Maximum Install Length
 - 600 feet
- Existing Pipe
 - 24" Ductile Iron
- New Pipe Size
 - 18" HDPE

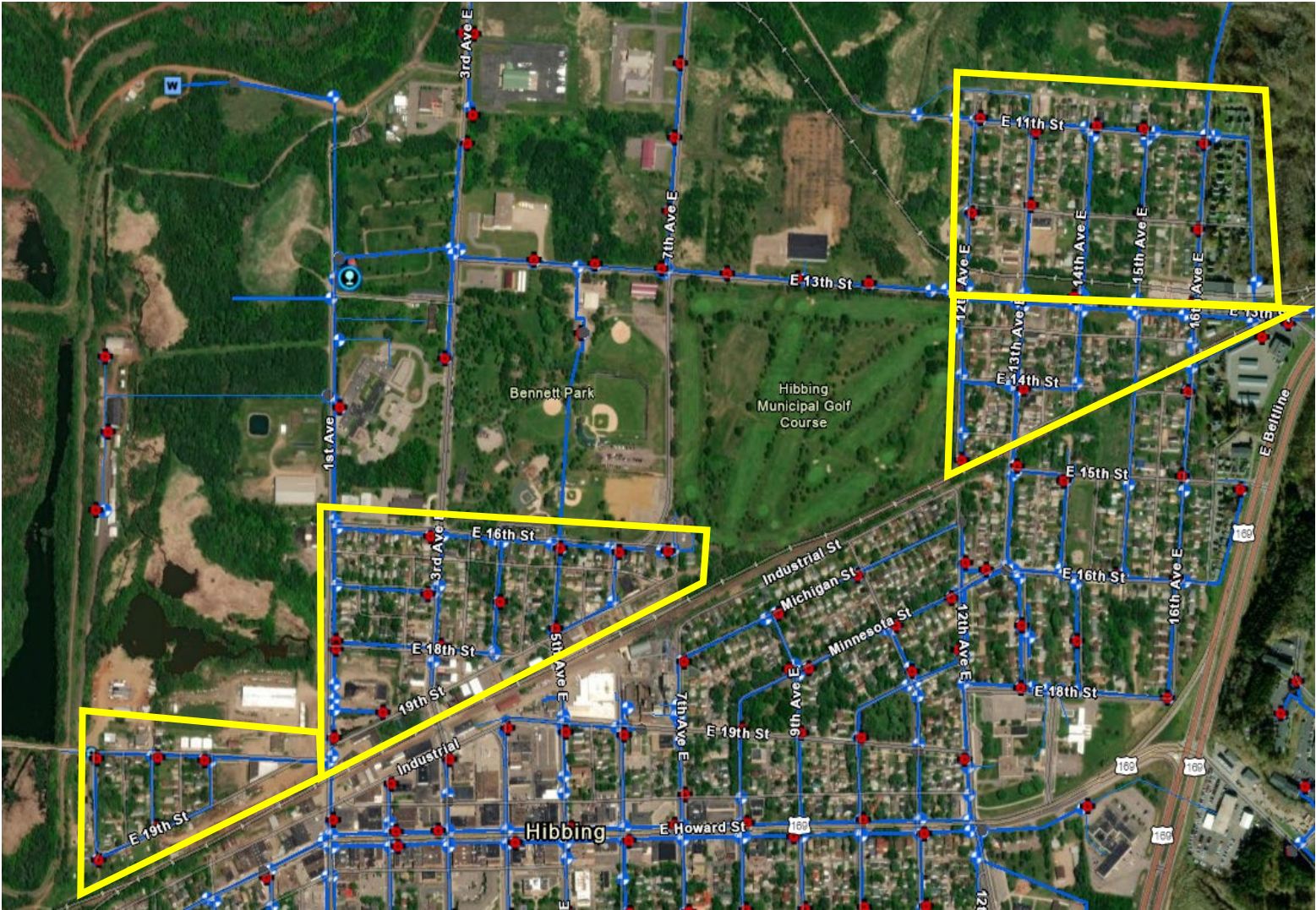


Lead Service Line Replacement Project

- Approximately \$1,000,000 in grant funds from Minnesota Department of Health to replace lead service lines
- Inspections to inventory lead on the homeowner's side



2024 Lead Service Replacement



Beyond 2024

- 2025 -
 - 2nd Ave E (S Inner to Outer Drive)
 - 23rd Street (Partner with City)
 - 30-inch Transmission Line
- 2026 - Kelly Lake (All remaining streets)
- 2027 - 25th Street (1st Ave to TH 169)
- 2028 - 3rd Ave E (22nd to 31st Street)



Questions

