



City-wide Sewer Cleaning and Closed-circuit Television Inspection Program

Data and Evidence Show the Path Forward

Program – Guiding Principles

- Do not operate pipes until failure.
- Address emergency repair needs upon identification.
- Identify pipes suitable for trenchless repair and rehabilitation methods.

Broken (B) - 122.50 ft.
Grade 4 - Facility ID 17935 - PRJ F7
% %
Clock to - 5 Clock from - 11

17935_5142019_B_122.5_U.jpg



Program – Objectives

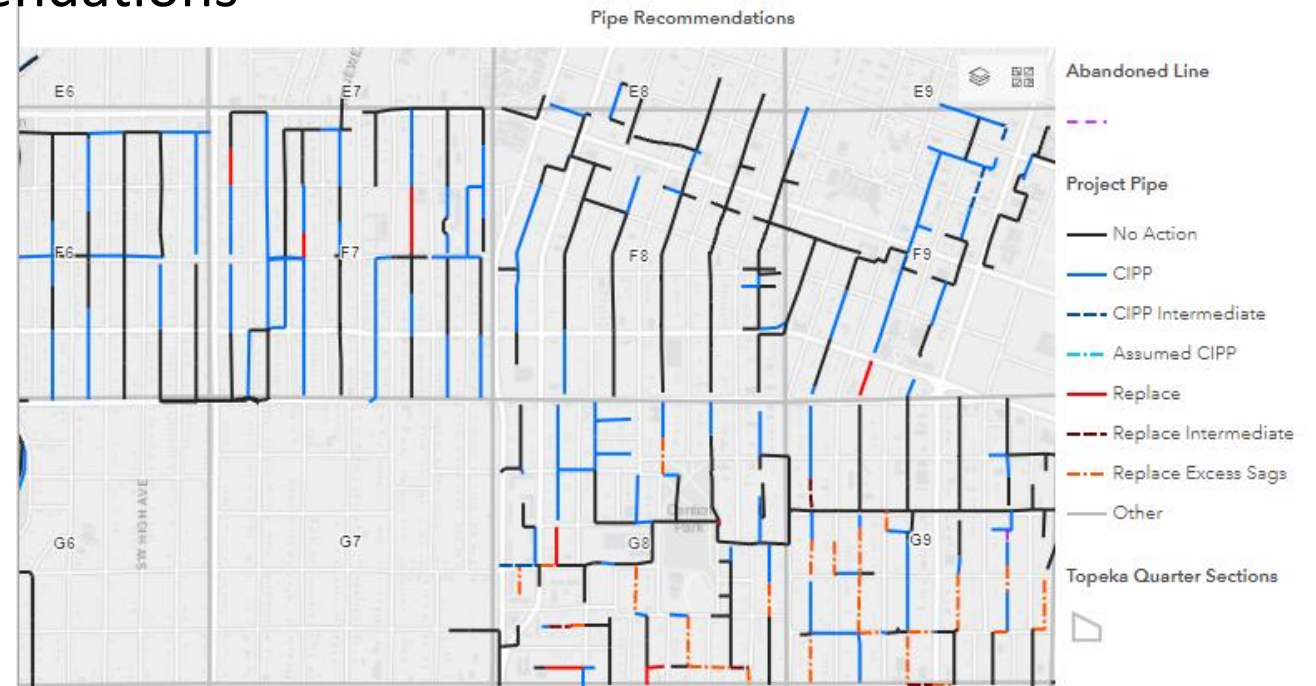
- Goals:
 - Annually clean and inspect approximately 10% of the approximately 872 miles of sewer pipe and associated manholes
 - Develop recommendations for prioritized, cost-effective collection system improvement projects
 - Prepare design packages to implement recommended improvement projects

Program – Progress to Date

- Program started in October 2018
- As of September 2021
 - 532,057 ft (100.8 miles) of pipe inspected (13 percent city-wide)
 - 2,478 manholes inspected (18 percent city-wide)
- Planned through June 2022
 - 423,666 ft (80.2 miles) of pipe planned for cleaning and inspection
 - 1,843 manholes planned for inspection
- Program progress severely hampered by Covid-19 pandemic during 2020

Program – Approach

- Cost-effective improvement recommendations for pipes and manholes
- Data-driven asset management methodology
 - Prioritize improvement recommendations
 - Prioritize future inspections
- Standardized cost factors that can be globally updated



Program Dashboard

Web-based repository of information that enables:

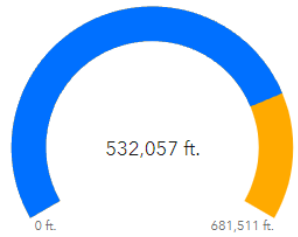
- Continuous monitoring of program progress
- Review of inspection scoring
- Rapid development of projects and cost estimates

Program Dashboard: Pipe Progress

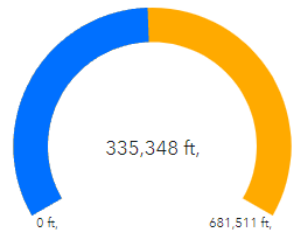


Pipes Inspected
532,057 ft.
 13% of City Inspected to Date

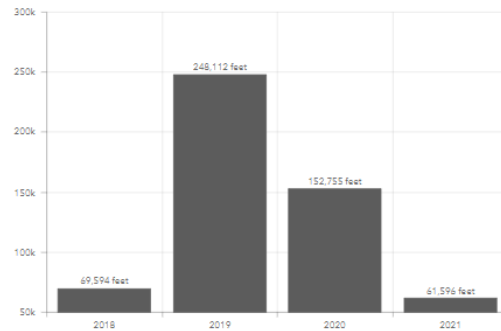
- Cleaning Suspended in 2019 per City's Request
 - 2020 work was delayed by three months due to Covid
 - Cleaning Continued in 2020 due to conditions preventing proper CCTV Inspection



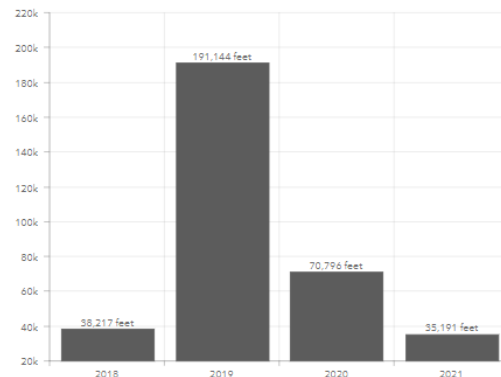
Contractual Pipes Completed to Date
 *Includes Uninspectable Pipe



Contractual Pipes Cleaned to Date



CCTV Inspected Pipe Footage by Year to Date

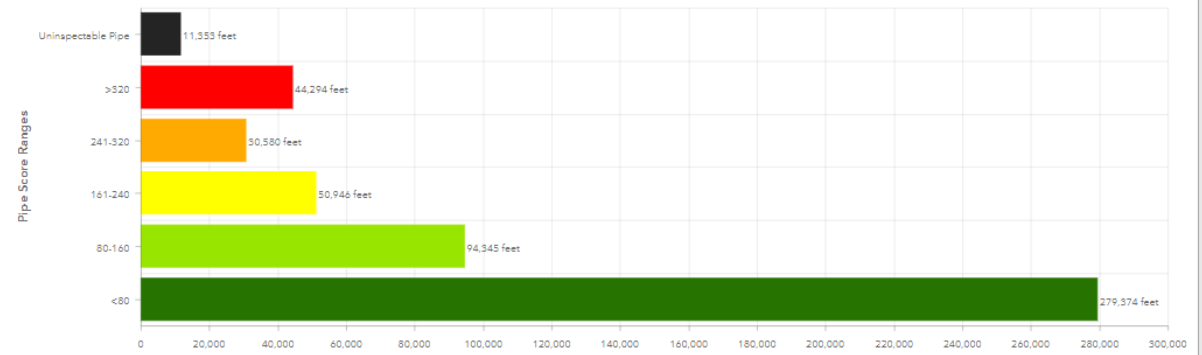


Pipes Cleaned by Year to Date

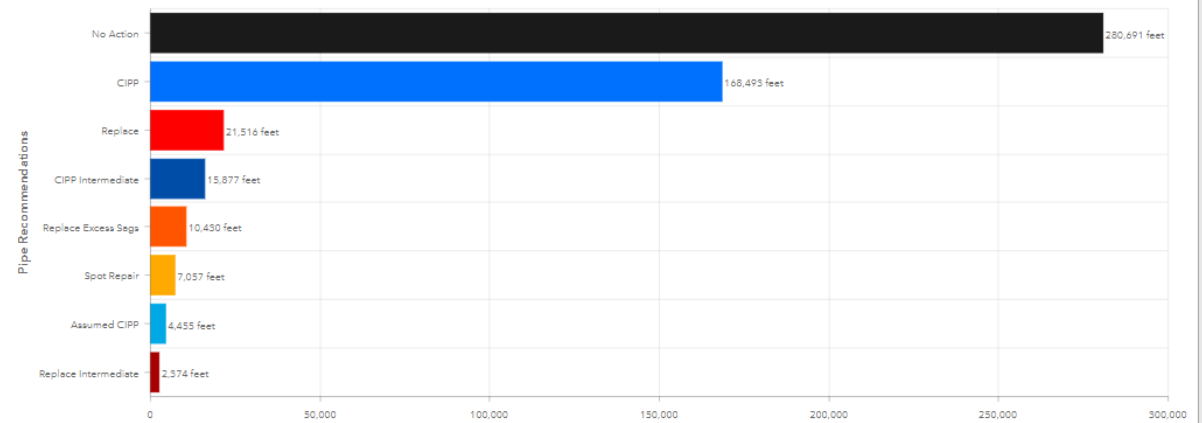
510,893 ft.
 Analyzed Pipe Footage

Last update: 4 minutes ago

Scores by Footage of Analyzed Pipe

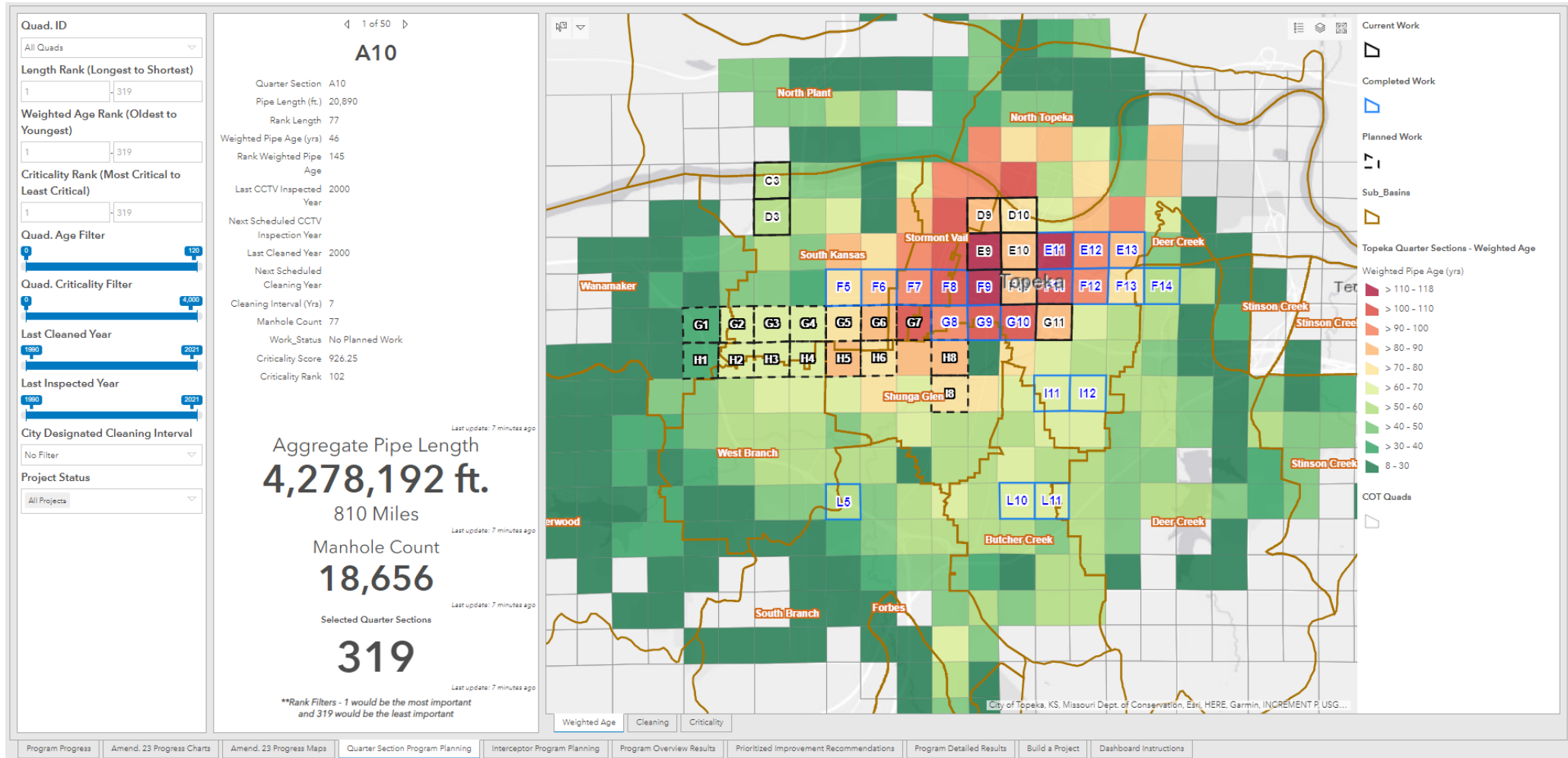


Recommendations by Footage of Analyzed Pipe



Pipe Progress | Manhole Progress

Program Dashboard: Planning




Program Dashboard: Detailed Results – Pipe Condition



Program Dashboard: Data Review


Structural Score



399.5

Last update: 2 minutes ago

O&M Score



236.5

Last update: 2 minutes ago

Defect Scoring

636

Defect Details

1 of 2


FID	290
Id	0
Quad_Label	F7
Letter	F
Number	7
globalid	{D8CBCAB3-25A3-4D3D-8872-5C57B9433393}
Pipe Length (ft.)	24,457
Weighted Pipe Age (yrs)	93
Last Cleaned Year	2,019
Last Inspected Year	2,019
Next Scheduled Cleaning Year	
Next Scheduled Inspection Year	
50th Percentile Pipe Age (yrs)	106
Rank_Length	48

Defect List

- Defect Score - F7
- Fracture Multiple (FM) - 6 Defect Score - F7
- Joint Offset Medium (JOM) - 6 Defect Score - F7
- Tap Factory Defective (TFD) - 6 Defect Score - F7
- Roots Fine Joint (RFJ) - 1 Defect Score - F7
- Deposits Attached Encrustation (DAE) - 3 Defect Score - F7
- Fracture Multiple (FM) - 6 Defect Score - F7
- Broken (B) - 14 Defect Score - F7**
- Tap Factory Defective (TFD) - 6 Defect Score - F7
- Fracture Multiple (FM) - 6 Defect Score - F7
- Tap Factory Defective (TFD) - 6 Defect Score - F7
- Fracture Multiple (FM) - 6 Defect Score - F7
- Roots Fine Joint (RFJ) - 1 Defect Score - F7
- Tap Factory Defective (TFD) - 6 Defect Score - F7
- Fracture Multiple (FM) - 6 Defect Score - F7
- Crack Multiple (CM) - 9 Defect Score - F7
- Crack Multiple (CM) - 9 Defect Score - F7
- Tap Factory Defective (TFD) - 6 Defect Score - F7
- Fracture Multiple (FM) - 6 Defect Score - F7
- Roots Fine Joint (RFJ) - 1 Defect Score - F7
- Fracture Longitudinal (FL) - 4.5 Defect Score - F7

Media

17935_5142019_B_122.5_U.jpg



USMH: 8898
DSMH: 8899

Broken Pipe

122.5 ft.

Attachments

- 17935_5142019_B_122.5_U.jpg

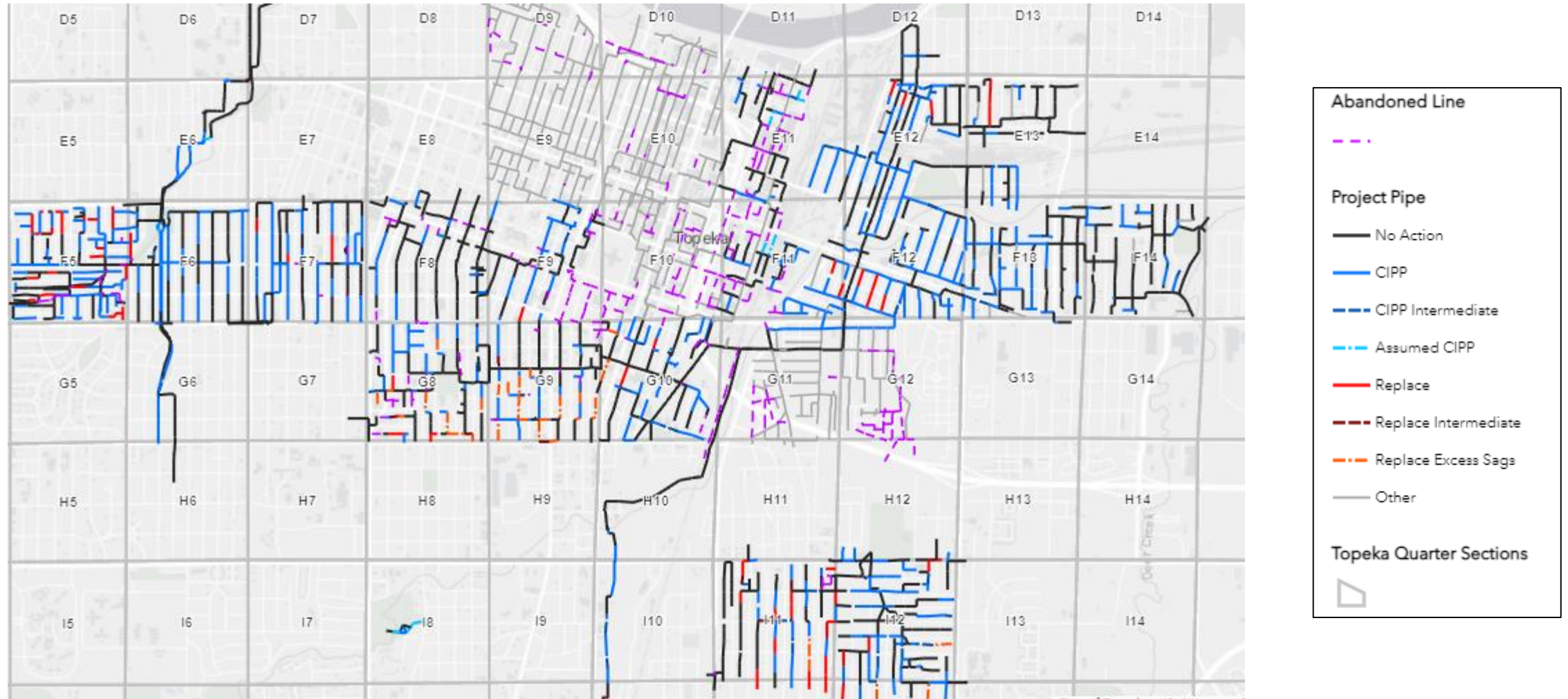
No Data

[Link to Video Directory](#)

City of Topeka, KS, Missouri Dept. of Conservation, Esr...

Last update: 2 minutes ago

Program Dashboard: Project Development



Looking Forward

- Next Steps

- Continue pipe and manhole inspections
- Continue refinement of Program Dashboard
- Continue development of pipe and manhole improvement plans

