



SEWER SYSTEM ANALYSIS

OVERVIEW

Five years ago, the city cleaned and televised most of the sewer system and inventoried each manhole. The inventory also included a citywide review of the age and condition of the mains. In 2019, the deficiency range for this project was scored from 2 to 3.6 on scoring (5 is the worst). The score is an average of all five categories; thus, the deficiency score is used as a benchmark. However, scores of individual categories need to be considered when deciding on repair and replacement. Photos of 20 of the various deficiencies identified throughout the City of Crosby area are available on this flier and online.

PROJECT SCOPE

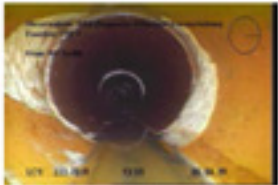
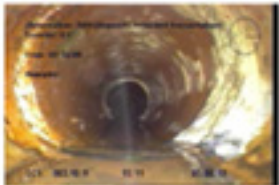
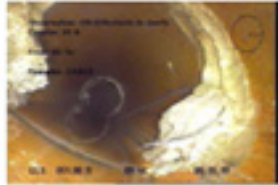
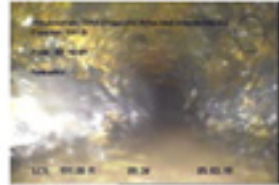

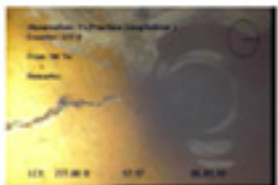
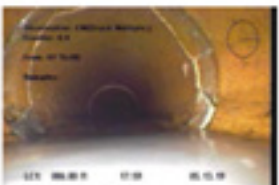
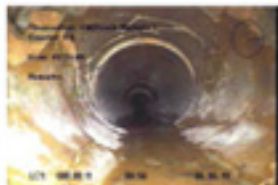
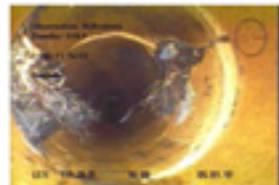


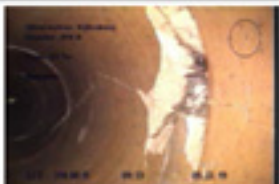
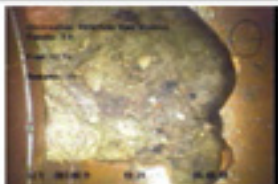
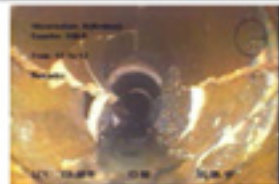


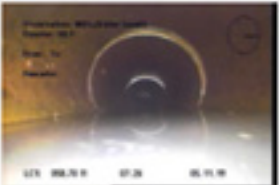
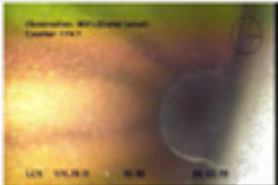
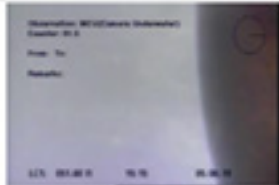

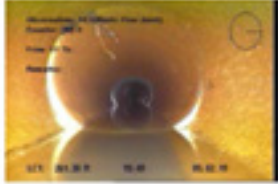

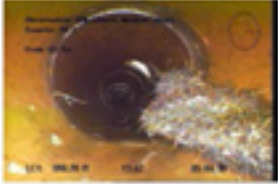
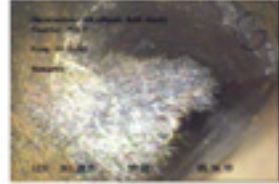

The project focuses on addressing deficiencies in the sewer system. The Hendrickson-Holmes project will address 1/5 of the identified sewer mains needing improvement. The bury depth of the mains is marginal, with less than seven feet in four dead ends at four dead ends. The shallow depth leads to frozen mains during harsh winters. The slope of the existing mains is insufficient through 6.5 blocks, leading to sewer deposits and blockage. The planned project addresses about half of these problem areas, approximately three blocks. As the sewer mains continue to age, the frequency and severity of the defects will increase, leading to more challenges for the system. Ultimately, this will mean more blockages, costly emergency repairs, and negative environmental impacts.

POPULATION IMPACT

Approximately 17% of the city's population (180 out of 1068) will benefit directly from this project. This represents roughly 1/5 of the mains identified for improvement, allowing us to estimate that about 20% of the identified mains will be addressed.

DEFICIENCIES

1. Deposits - build up in the pipe that restricts flow and can cause backups.
2. Cracking - first indication the pipe's structural integrity is starting to fail.
3. Structural - occurs after cracking, pieces of pipe missing or deformed/collapsing, restricts flows, causes backups, and is detrimental to the environment.
4. Surcharge - portions of the sewer where the level of sewage in the pipe is greater than the average flow. This is often a result of improper slope or sags in the main, which increases deposits and blockage.
5. Roots - Tree roots seek a water source, typically through pipe joints or cracks and missing pipes. This creates blockage and backups.

		Priority Scoring Legend				
		1	2	3	4	5
Deposits	Exhibits Little or No Defects					
Cracking						
Structural						
Surcharge						
Roots						

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