



July 8, 2025
REL Project 24-R0481

To: City of Crest Hill
1610 Plainfield Rd
Crest Hill, IL 60403

Attn: Ronald J. Wiedeman, P.E., City Engineer

RE: Sanitary Sewer Cleaning & Televising 2025 Review Summary

Dear Mr. Wiedeman:

Robinson Engineering, Ltd. (REL) has completed the review of the videos from the *Sanitary Sewer Cleaning and Televising 2025 Project* in the City of Crest Hill. This summary provides an overview of the deficiencies found in the collection system during closed-circuit television (CCTV) review, the recommended repairs and estimated repair costs.

Cleaning and Televising:

The cleaning and televising of the mainline sewers in the project area was conducted by Hoerr Construction, Inc. and completed in June 2025. The sanitary sewer was inspected with CCTV at the same time cleaning operations were conducted, and the footage was reviewed by REL. Pipe footage measurements were taken between each manhole-to-manhole section, and all service connections were documented. Defects and observations were identified by footage and clock positions, where 12 o'clock is the top of the pipe and 6 o'clock is the bottom. All pipe segments were ranked and reviewed by a National Association of Sewer Service Companies (NASSCO) certified inspector and reviewer. After review, each segment was assigned a lining priority ranking. This ranking is determined by the number of high priority defects, the rate of failure, and the consequence of failure. The condition and their lining priority ranking of the sewers reviewed are as follows:

Sanitary Sewer		Footage	Overall Percent of HPA	
✱ {	Lining Priority 5	668.0	LF	3.1%
	Lining Priority 4	2,582.1	LF	12.0%
	Lining Priority 3	396.0	LF	1.8%
	Lining Priority 2	1,311.0	LF	6.1%
	Lining Priority 1	906.0	LF	4.2%
	Lining Priority 0	15,617.6	LF	72.7%
Total:		21,480.7	LF	100%

It is highly recommended that all lining priority level 4's and 5's defects should be repaired. In this televising project, both level 4's and 5's total 15.1% of the sewer area. Cured-In-Place Pipelining will (CIPP) address most of the defects identified during televising operations, including small holes, fractures, and roots.

Mainline Defects Identified:

Prior to installing the liner, there are a few defects that need to be addressed. The defects that need to be addressed are mainline grouting and grout pipe seals. There are two (2) locations where infiltration gushers are recommended for grouting, and one (1) location where the pipe seals are leaking in a manhole. These mainline grouting locations will need to be addressed before the lining process to ensure a successful lining operation. These mainline defects identified and their recommended repairs are as follows:

Defect Identified	Number of Defects	Recommended Repair
Infiltration Gusher Joint	2	Joints To Be Grouted
Grout Pipe Seal	1	Grout Pipe Seal at Manhole

Infiltration Gusher: Two (2) joints have infiltration gusher defects on two (2) different pipe segments. To repair the infiltration at the joints, it is recommended to grout at these locations. The locations of the infiltration gusher main line defects are listed in the table below by the pipe segment bound between upstream and downstream manhole.

Upstream Manhole	Downstream Manhole	Street Name	Pipe Diameter (IN)	Total Pipe Length (LF)	Defect Location/s (LF)
22E27	22E26	Enterprise Blvd	21	186	158.0
21E	20E	Oakland Ave & Broadway St	27	340	216.6

Grout Pipe Seal: There is one (1) location where pipe seal defect is located. To repair the infiltration at the pipe seal, it is recommended to grout around the entirety of the pipe seal at the manhole where the locations it occurs at.

Upstream Manhole	Downstream Manhole	Street Name	Manhole w/ Pipe Seal Defect	Total Pipe Length (LF)
22E22	22E21	Enterprise Blvd	22E22	398

Conclusions and Recommendations:

Conclusions: Overall, the sanitary sewers reviewed are in fair condition, with ~15% having a lining priority of 4 or 5 rating. Map exhibits showing recommended lining priority and mainline grouting locations can be found in Appendix A – Sanitary Sewer Lining Priority and Repairs. Pipe reports and videos of pipe segments televised were saved to a solid-state drive and mailed to the City.

All pipes that received a lining priority of a 4 or 5 are highly recommended for CIPP lining. Repairs to these pipe segments may improve the structural integrity of the sewer system.

Recommendations:

1. Prepare A Comprehensive Cured-In-Place Pipe Lining (CIPP) and Grouting Program:
 - a. Due to the number of sewer defects identified, pipe segments in need of lining and grouting are recommended to be addressed as part of a comprehensive sewer repair bid package. This repair work may provide restoration of structural integrity and the lessening of extraneous flows at locations targeted for repair.
2. Cost Estimate:
 - a. REL has provided three (3) cost estimates for consideration to repair the defects identified. The first cost estimate will address all the lining priority 4's and 5's segments identified, and grouting. The second cost estimate will address only the grouting, and CIPP lining for all the pipe segments identified as a lining priority 4. The third cost estimate will address the segments identified as a lining priority 5 as well as the grouting.

Engineer's Opinion of Probable Cost Estimate 1: Includes Grouting and CIPP Lining for Pipe Segments Identified as Lining Priority 4 and 5 Only in 2025 dollars.

DESCRIPTION	UNIT	QTY	UNIT COST	VALUE
CURED-IN-PLACE PIPE LINER, 21"	FOOT	370.00	\$ 145.00	\$ 53,650.00
CURED-IN-PLACE PIPE LINER, 27"	FOOT	2,410.00	\$ 231.00	\$ 556,710.00
CURED-IN-PLACE PIPE LINER, 30"	FOOT	510.00	\$ 273.00	\$ 139,230.00
CUT PROTRUDING TAPS	EACH	3.00	\$ 340.00	\$ 1,020.00
SERVICE LATERALS TO BE REINSTATED	EACH	3.00	\$ 244.00	\$ 732.00
DYE TESTING OF PROPERTIES	EACH	1.00	\$ 1,000.00	\$ 1,000.00
JOINTS TO BE GROUTED	EACH	3.00	\$ 1,500.00	\$ 4,500.00
GROUT PIPE SEALS	EACH	3.00	\$ 1,000.00	\$ 3,000.00
			Subtotal	\$ 759,842.00
			Contingency 10%	\$ 75,984.00
			Construction Estimate	\$ 835,826.00
			Design Engineering	\$ 14,500.00
			Construction Engineering	\$ 20,000.00
			Total	\$ 870,326.00

Engineer's Opinion of Probable Cost Estimate 2: Grouting and CIPP Lining for Pipe Segments Identified as Lining Priority 4 Only in 2025 dollars.

DESCRIPTION	UNIT	QTY	UNIT COST	VALUE
CURED-IN-PLACE PIPE LINER, 21"	FOOT	160.00	\$ 145.00	\$ 23,200.00
CURED-IN-PLACE PIPE LINER, 27"	FOOT	1,950.00	\$ 231.00	\$ 450,450.00
CURED-IN-PLACE PIPE LINER, 30"	FOOT	510.00	\$ 273.00	\$ 139,230.00
CUT PROTRUDING TAPS	EACH	3.00	\$ 340.00	\$ 1,020.00
SERVICE LATERALS TO BE REINSTATED	EACH	3.00	\$ 244.00	\$ 732.00
DYE TESTING OF PROPERTIES	EACH	1.00	\$ 1,000.00	\$ 1,000.00
JOINTS TO BE GROUTED	EACH	3.00	\$ 1,500.00	\$ 4,500.00
GROUT PIPE SEALS	EACH	3.00	\$ 1,000.00	\$ 3,000.00
			Subtotal	\$ 623,132.00
			Contingency 10%	\$ 62,313.00
			Construction Estimate	\$ 685,445.00
			Design Engineering	\$ 13,500.00
			Construction Engineering	\$ 18,500.00
			Total	\$ 717,445.00

Engineer's Opinion of Probable Cost Estimate 3: Grouting and CIPP Lining for Pipe Segments Identified as Lining Priority 5 Only in 2025 dollars.

DESCRIPTION	UNIT	QTY	UNIT COST	VALUE
CURED-IN-PLACE PIPE LINER, 21"	FOOT	210.00	\$ 145.00	\$ 30,450.00
CURED-IN-PLACE PIPE LINER, 27"	FOOT	470.00	\$ 231.00	\$ 108,570.00
CUT PROTRUDING TAPS	EACH	3.00	\$ 340.00	\$ 1,020.00
SERVICE LATERALS TO BE REINSTATED	EACH	3.00	\$ 244.00	\$ 732.00
DYE TESTING OF PROPERTIES	EACH	1.00	\$ 1,000.00	\$ 1,000.00
JOINTS TO BE GROUTED	EACH	3.00	\$ 1,500.00	\$ 4,500.00
GROUT PIPE SEALS	EACH	3.00	\$ 1,000.00	\$ 3,000.00
			Subtotal	\$ 149,272.00
			Contingency 10%	\$ 14,927.00
			Construction Estimate	\$ 164,199.00
			Design Engineering	\$ 13,500.00
			Construction Engineering	\$ 18,000.00
			Total	\$ 195,699.00

We appreciate the opportunity to work with you on this important project and look forward to continuing to serve the City of Crest Hill's Engineering needs.

Very truly yours,
James Lustig



Resident Engineering Representative
(219)-488-4876
james.lustig@reltd.com

Enclosures: Appendix A – Sanitary Sewer Lining Priority and Repairs

cc – Julius Hansen – Crest Hill
cc – Dana West – REL
cc – Joe Sullivan – REL

CITY OF CREST HILL
2024 Sanitary Sewer Televising

STATUS MEETING AGENDA

Minutes will be provided following the kickoff meeting and will reflect our understanding of the discussions and decisions made during the meeting. Upon receipt of the minutes if you have any questions, additions, or comments, please contact us. We will consider the record to be accurate unless written notice is received within 10 working days of the date issued.

Location:City of Crest Hill (City Hall)
20600 City Center Boulevard
Crest Hill, Illinois 60403

Meeting Date:July 09, 2025

Start Time2:00 PM

1) Phone Numbers:

- a) City of Crest Hill
 - i) Ron Wiedeman 815-741-5122
 - ii)
- b) Robinson Engineering, Ltd (REL)
 - i) Office 815-806-0300
 - ii) Joe Sullivan 630-346-2877
 - iii) Mallory Weisbrodt 708-210-5689

2) Contracts Overview:

Project Scope21,480 LF Televising
.....21,480 LF of CCTV Review
.....

3) Cleaning and Closed-Circuit Televising (CCTV) (Basins 1, 4) Results:

- a) Televising and CCTV data review for 21,480 LF of pipe.
- b) Lining Priority – National Association of Sewer Service Companies (NASSCO) rankings
 - i) 5 – 3.1%, 668 LF pipe
 - ii) 4 – 12%, 2,582 LF pipe
 - iii) 0-3 – 84.8%, 18,230 LF pipe
- c) Additional work beyond cured-in-place pipelining (CIPP)

- i) 2 mainline joints to be grouted and grout the pipe seals at 1 manhole (22E22)
d) Recommended Repair Costs - \$870K vs. \$717K vs. \$196K

Engineer's Opinion of Probable Cost Estimate 1: Includes Grouting and CIPP Lining for Pipe Segments Identified as Lining Priority 4 and 5 Only in 2025 dollars.

Need Proposal

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Engineer's Opinion of Probable Cost Estimate 3: Grouting and CIPP Lining for Pipe Segments Identified as Lining Priority 5 Only in 2025 dollars.

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4) Next Step Recommendations:

- Cured-In-Place Pipelining Design, Construction and Oversight for the previously televised area
- Consider CCTV inspection in the next area
- Flow monitoring proposal for Diversion Structure