

September 20, 2022

Ms. Antonina Tantillo  
Town Manager  
Town of Townsend  
141 Main Street  
Townsend, DE, 19734

**RE: Surface Water Matching Planning Grant Program  
Townsend Station Stormwater Televising Review  
Town of Townsend  
RVE File#: DNTET101**

Dear Ms. Tantillo,

**Remington & Vernick Engineers (RVE)** has recently reviewed the stormwater sewer pipe televising as provided from Standard Pipe Services, LLC (SPS) on August 9, 2022. The original submission was made and reviewed on July 9, 2022. Upon review, RVE offers the following assessment and recommendations to rehabilitate the stormwater sewer system:

<b>Section</b>	<b>Recommendation</b>	<b>Lining Linear Feet</b>	<b>Number of Point Repairs</b>
CB 1-CB 2:	Recommend relining the entirety of the 75 linear foot pipe.	75	0
CB 2-CB 3:	Recommend relining the entirety of the 151 linear foot pipe.	151	0
CB 3-CB 3A:	Recommend point repair approximately 8.8 linear feet downstream from CB 3.	0	1
CB 3A-EW 3B:	Recommend point repair approximately 3.6 linear feet downstream from CB 3A.	0	1
EW 01-CB 09:	No rehabilitation recommended.	0	0
CB 17-CB18:	No rehabilitation recommended.	0	0
CB 16-CB 18:	No rehabilitation recommended.	0	0
CB 18-CB 20:	No rehabilitation recommended.	0	0
CB 20-CB 19:	No rehabilitation recommended.	0	0

CB 20-CB 22:	Recommend relining the entirety of the 72 linear foot pipe.	72	0
CB 22-CB 21:	Recommend relining the entirety of the 25 linear foot pipe.	25	0
CB 22-CB 24:	Recommend relining from CB 22 until 45 linear foot pipe downstream of CB 22 and point repair approximately 168.2 linear feet downstream from CB 22.	45	1
CB 09-CB 23:	Pipe penetration (potentially gas piping) approximately 17 linear feet downstream of CB 09 should be removed and the line reexamined.	0	1
CB 24-CB 23:	Recommend relining the entirety of the 40 linear foot pipe.	40	0
CB 24-CB 14:	No rehabilitation recommended.	0	0
CB 14-CB 4:	Recommend point repair approximately 2.1 linear feet and 135 linear feet upstream from CB 4. Note that there is a unknown pipe penetration to this storm sewer line that is approximately 150 feet away from a recently observed sinkhole.	0	2
CB 4-CB 5:	Recommend relining the entirety of the 34 linear foot pipe.	34	0
CB 8-CB 5:	Recommend relining the entirety of the 34 linear foot pipe.	23	0
CB 5-EW 3:	No rehabilitation recommended.	0	0
CB 10-CB 9:	No rehabilitation recommended.	0	0
CB 10-CB 12:	Recommend relining from CB 10 until 150 linear foot pipe downstream of CB 10.	150	0
CB 12-CB 15:	Recommend relining the entirety of the 157 linear foot pipe.	157	0
CB 15-CB 6:	Recommend point repair approximately 113.8 linear feet downstream from CB 15.	0	1
CB 6-CB 7:	No rehabilitation recommended.	0	0
CB 7-EW 2:	No rehabilitation recommended.	0	0
CB 46-CB 45:	No rehabilitation recommended.	0	0
CB 48-CB 46:	Recommend relining approximately 100 linear feet upstream to 130 linear feet from CB 48.	30	0
CB 48-CB 47:	No rehabilitation recommended.	0	0

CB 48-CB 49:	Recommend point repair approximately 70.2 linear feet downstream from CB 48.	0	1
CB 40B-CB 40A:	No rehabilitation recommended.	0	0
CB 40A-CB 39:	Recommend point repair approximately 57.6 linear feet upstream from CB 40A.	0	1
CB 40A-CB 41:	No rehabilitation recommended.	0	0
CB 42-CB 41:	Recommend point repair approximately 20.2 linear feet upstream from CB 42.	0	1
CB 42-CB 44:	No rehabilitation recommended.	0	0
CB 43-CB 44:	No rehabilitation recommended.	0	0
CB 44-CB 49:	Recommend point repair approximately 43.3 linear feet downstream from CB 44.	0	1
CB 49-CB 25:	Recommend point repair approximately 32.8 linear feet and 90.5 linear feet downstream from CB 49.	0	2
CB 25-EW 5:	No rehabilitation recommended.	0	0
CB 50-CB 51:	No rehabilitation recommended.	0	0
CB 51-CB 52:	No rehabilitation recommended.	0	0
CB 52-EW 4:	No rehabilitation recommended.	0	0
CB 26-CB 27:	No rehabilitation recommended.	0	0
CB 27-CB 29:	Recommend relining the entirety of the 324 linear foot pipe.	324	0
CB 28-CB 29:	No rehabilitation recommended.	0	0
CB 29-CB 31:	No rehabilitation recommended.	0	0
CB 30-CB 31:	Recommend relining the entirety of the 116 linear foot pipe.	116	0
CB 31-CB 33:	Recommend relining the entirety of the 131 linear foot pipe.	131	0
CB 32-CB 33:	Recommend point repair approximately 10 linear feet upstream from 32.	0	1

CB 33-CB 34:	No rehabilitation recommended.	0	0
CB 35-CB 36:	No rehabilitation recommended.	0	0
CB 36-CB 38:	Recommend point repair approximately 16.6 liner feet and 207.6 liner feet downstream from CB 36.	0	2
CB 38-CB 37:	No rehabilitation recommended.	0	0
CB 38-CB 34:	Recommend point repair approximately 49.1 linear feet downstream from CB 38.	0	1
CB 34-EW 3:	No rehabilitation recommended.	0	0
<b>Total</b>		<b>1373</b>	<b>16</b>

RVE has implemented the naming convention given to stormwater sewer pipe runs as used in the SPS reports. On the attached plan set, please see the color-coding legend to identify the locations and recommendations. The recommendations provided are not considered emergencies. However, these rehabilitation efforts should be scheduled and completed within 5-10 years to extend the use of the existing stormwater sewer system.

Presently approximately 1,421 linear feet of repair is recommended (1,373 of linear feet of Full-Length, 48 linear feet of Point Repairs). Note that typical point repairs are 3 feet in length to assure complete coverage of defects. Based on recent lining rates, the work can be completed at approximately \$50 per linear foot. This suggest that an amount of approximately \$72,000 should be budgeted to complete this project. Be advised that these prices are subject to inflation and may be higher if the project is separated into smaller segments.

Should you have any questions or require an additional information, please contact our office in Newark, DE at (302) 266-0212.

Sincerely,  
**REMINGTON & VERNICK ENGINEERS**  
 By

Edwin Van-Otoo, P.E. MSEM  
 Town Engineer

EVO/jeb

cc: Christopher J. Fazio, P.E., C.M.E., Executive Vice President