



Engineering & Public Works Department

SUBJECT: 2020 Sewer Repair and Valve Installation Program

MEETING DATE: October 13, 2020

FROM: [Brigitte Berger-Raish](#), P.E., Director of Engineering and Public Works
[Dan Manis](#), P.E., Village Engineer
[Danielle Horn](#), P.E., Project Manager

BUDGET IMPACT:	2020 Available Budget	\$389,000
	Contract Award	\$339,130
	Over/(Under) Budget	(\$49,870)

Recommended Motions

Move to approve a contract in an amount not-to-exceed \$339,130 with Bolder Contractors of Cary, IL, for the 2020 Sewer Repair and Valve Installation Program.

Background

On an annual basis, the Engineering and Public Works Department crews televise and inspect sewers on streets scheduled for resurfacing as part of an upcoming annual road program. Using this system, Village staff can identify potential issues with the sewer system and schedule repairs that require street openings prior to constructing new pavement. Additionally, the Engineering and Public Works Department performs sewer televising in sewers that surcharge during rain events. This investigation is necessary to ensure that the surcharging was not a result of pipe blockages or failures that could result in reduced flow.

The televising results are used to determine segments of the sewer system that are in need of repair as part of the annual Sewer Repair Program. Some of the more common sewer defects which warrant repair are cracked and collapsed pipe, pipe with large holes and voids, poor service connections with voids, and pipe which has settled. In addition to increasing flow, many of the repairs also reduce inflow and infiltration which can contribute to sewer back-ups.

The scope of work for this project includes sanitary sewer repairs, backfilling of excavations, and pavement patching. This contract also includes replacing broken shutoff valves on the water distribution system. Operational valves are an important component of a reliable and efficient water distribution system. The new valves will reduce the number of residents impacted by water main shut downs during maintenance or emergency repairs in the event of a water main break.

Discussion

The 2020 Sewer Repair and Valve Installation Program was advertised for construction on the Village's website and DemandStar.com on September 11, 2020. Project plans and specifications were developed by engineering staff. The project has six qualified bidders. Bids were opened on October 6, 2020 and are summarized below.

Bidder	Base Bid	Alternate Bid¹
Bolder Contractors	\$252,115	\$339,130
A Lamp	\$264,820	\$374,670
Performance Construction & Engineering	\$382,995	\$511,946
Berger Excavating Contractors	\$439,655	\$567,475
Lenny Hoffman	\$491,068	\$610,639
Acqua Contractors	\$1,032,000	-
Engineer's Estimate	\$275,850	\$394,085

¹ The alternate bid included items in the base bid plus four additional streets with sewer repairs and one additional valve installation.

Bolder Contractors provided the lowest qualified base bid of \$252,115 and alternate bid of \$339,130. Staff recommends awarding the alternate bid to take advantage of competitive bid pricing and reduce the backlog of critical sewer and valve repairs. Bolder last worked in the Village in 2017 when they successfully performed an emergency sewer repair at the Lake and Laramie intersection. Prior to that, they completed the 2005 East Side Relief Sewer work and performed well. In addition, Bolder's references for more recent projects were checked, and all were favorable. Based on their competitive bid and qualifications, the Engineering & Public Works Department recommends awarding the 2020 Sewer Repair and Valve Installation Program to Bolder Contractors for the alternate bid amount of \$339,130.

The 2020 Sewer Repair and Valve Installation Program will begin in late October and be completed by mid-December.

Budget Impact

The 2020 Sewer Repair and Valve Installation Program will be paid for as follows:

Account Name	Account	2020 Budget	2020 Available Budget¹	2020 Estimated Expense	Over/ (Under) Budget
Sewer Main Repairs	40807090-470400-80707	\$337,000	\$317,000	\$260,962	(\$56,038)
Valve Installations	41838090-470550-80900	\$88,000	\$72,000	\$78,168	\$6,168 ²
Total Program		\$425,000	\$389,000	\$339,130	(\$49,870)

¹ Portion of budget funds have been used for soil borings and environmental services.

² This overage will be covered by savings from Lake and Central projects in the water enterprise fund.

Documents Attached

1. Bid Tabulation for the 2020 Sewer Repair & Valve Installation Program
2. CIP Detail Sheets

**2020 Sewer Repair & Valve Installation Program
BASE BID
Bid No. 20067**

				Engineer's Estimate		Bolder Contractors		A Lamp		Performance Construction & Engineering		Acqua Contractors		Berger Excavating Contractors		Lenny Hoffman	
NO.	ITEM	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
1	TRENCH BACKFILL	350	CY	35	\$ 12,250.00	50	\$ 17,500	37	\$ 12,950	75	\$ 26,250	75	\$ 26,250	75	\$ 26,250	1	\$ 350
2	PCC SIDEWALK R & R, 5" & 6", SPECIAL	50	SF	22	\$ 1,100.00	20	\$ 1,000	45	\$ 2,250	18	\$ 900	36	\$ 1,800	35	\$ 1,750	42	\$ 2,100
3	COMBINATION CONCRETE CURB AND GUTTER (B-4.12, B-6.12, B-6.18) R & R, SPECIAL	25	LF	70	\$ 1,750.00	80	\$ 2,000	90	\$ 2,250	57	\$ 1,425	82	\$ 2,050	130	\$ 3,250	116	\$ 2,900
4	CLASS D PATCH, 3-INCH, SPECIAL	135	SY	130	\$ 17,550.00	65	\$ 8,775	50	\$ 6,750	80	\$ 10,800	85	\$ 11,475	165	\$ 22,275	67	\$ 9,045
5	CLASS D PATCH, 4-INCH, SPECIAL	18	SY	130	\$ 2,340.00	70	\$ 1,260	120	\$ 2,160	90	\$ 1,620	100	\$ 1,800	200	\$ 3,600	176	\$ 3,168
6	CLASS D PATCH, 8-INCH, SPECIAL	16	SY	140	\$ 2,240.00	120	\$ 1,920	160	\$ 2,560	200	\$ 3,200	300	\$ 4,800	300	\$ 4,800	205	\$ 3,280
7	PAVEMENT PATCHING, COMPOSITE (9" PCC WITH HMA OVERLAY), SPECIAL	18	SY	200	\$ 3,600.00	170	\$ 3,060	200	\$ 3,600	275	\$ 4,950	400	\$ 7,200	500	\$ 9,000	244	\$ 4,392
8	SAN/STM/COM SEWER R & R,SPECIAL, 10" PVC, SDR-26 [ASTM D-3034] (REPAIR 5'-90' LENGTH)	22	LF	410	\$ 9,020.00	350	\$ 7,700	475	\$ 10,450	500	\$ 11,000	900	\$ 19,800	500	\$ 11,000	498	\$ 10,956
9	INSERTA TEE, 8" DIAM., 18" MAIN	15	EA	5,000	\$ 75,000.00	5,000	\$ 75,000	5,500	\$ 82,500	9,000	\$ 135,000	9,600	\$ 144,000	10,100	\$ 151,500	14,700	\$ 220,500
10	INSERTA TEE, 8" DIAM., 24" MAIN	7	EA	7,000	\$ 49,000.00	5,500	\$ 38,500	5,500	\$ 38,500	8,600	\$ 60,200	10,400	\$ 72,800	10,600	\$ 74,200	14,700	\$ 102,900
11	SEWER SERVICE R & R	1	EA	2,000	\$ 2,000.00	4,000	\$ 4,000	2,500	\$ 2,500	3,000	\$ 3,000	4,500	\$ 4,500	1,905	\$ 1,905	1,633	\$ 1,633
12	ADDITIONAL SAN/STM/COM SEWER PIPE R&R, 8" OR 10" OR 12" PVC, SPECIAL	20	LF	65	\$ 1,300.00	100	\$ 2,000	450	\$ 9,000	400	\$ 8,000	800	\$ 16,000	170	\$ 3,400	208	\$ 4,160
13	NEW GATE 6" VALVE WITH 48" VAULT, SPECIAL	4	EA	8,500	\$ 34,000.00	8,000	\$ 32,000	5,500	\$ 22,000	7,200	\$ 28,800	6,900	\$ 27,600	10,500	\$ 42,000	13,835	\$ 55,340
14	WATER MAIN LINE STOP, 6", SPECIAL	1	EA	7,000	\$ 7,000.00	5,000	\$ 5,000	5,000	\$ 5,000	6,500	\$ 6,500	14,000	\$ 14,000	11,000	\$ 11,000	8,636	\$ 8,636
15	REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES, NON-SPECIAL WASTE, SPECIAL	25	CY	80	\$ 2,000.00	100	\$ 2,500	50	\$ 1,250	100	\$ 2,500	65	\$ 1,625	95	\$ 2,375	80	\$ 2,000
16	SOIL DISPOSAL ANALYSIS	1	EA	2,700	\$ 2,700.00	500	\$ 500	2,500	\$ 2,500	1,000	\$ 1,000	1,500	\$ 1,500	2,500	\$ 2,500	1,900	\$ 1,900
17	BYPASS PUMPING, SPECIAL	1	LS	1,000	\$ 1,000.00	1,000	\$ 1,000	5,000	\$ 5,000	2,000	\$ 2,000	20,000	\$ 20,000	7,250	\$ 7,250	1,125	\$ 1,125
18	EXPLORATORY EXCAVATION, SPECIAL	2	HR	650	\$ 1,300.00	1,200	\$ 2,400	500	\$ 1,000	425	\$ 850	900	\$ 1,800	1,000	\$ 2,000	1,085	\$ 2,170
19	STORM DRAIN INLET PROTECTION, SPECIAL	1	LS	3,500	\$ 3,500.00	2,000	\$ 2,000	2,000	\$ 2,000	500	\$ 500	1,000	\$ 1,000	5,000	\$ 5,000	3,373	\$ 3,373
20	TREE PROTECTION, SPECIAL	1	LS	2,000	\$ 2,000.00	1,000	\$ 1,000	3,000	\$ 3,000	1,500	\$ 1,500	125	\$ 125	2,500	\$ 2,500	500	\$ 500
21	SEEDING, SPECIAL	20	SY	25	\$ 500.00	20	\$ 400	30	\$ 600	20	\$ 400	50	\$ 1,000	20	\$ 400	91	\$ 1,820
22	SODDING, SPECIAL	20	SY	60	\$ 1,200.00	30	\$ 600	50	\$ 1,000	30	\$ 600	50	\$ 1,000	35	\$ 700	91	\$ 1,820
23	TRAFFIC CONTROL AND PROTECTION, SPECIAL	1	LS	35,000	\$ 35,000.00	32,000	\$ 32,000	31,000	\$ 31,000	60,000	\$ 60,000	5,875	\$ 5,875	26,000	\$ 26,000	25,000	\$ 25,000
24	PRE- AND POST SEWER VIDEO INSPECTION	1	LS	8,500	\$ 8,500.00	10,000	\$ 10,000	15,000	\$ 15,000	12,000	\$ 12,000	32,000	\$ 32,000	25,000	\$ 25,000	22,000	\$ 22,000
TOTAL BASE BID:					\$ 275,850.00		\$ 252,115.00		\$ 264,820.00		\$ 382,995.00		\$ 420,000.00		\$ 439,655.00		\$ 491,068.00

**2020 Sewer Repair & Valve Installation Program
ALTERNATE BID
Bid No. 20067**

				Engineer's Estimate		Bolder Contractors		A Lamp		Performance Construction & Engineering		Acqua Contractors		Berger Excavating Contractors		Lenny Hoffman	
NO.	ITEM	TOTAL QUANTITY	UNIT	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL	UNIT PRICE	TOTAL
1	TRENCH BACKFILL	475	CY	35	\$ 16,625.00	50	\$ 23,750	37	\$ 17,575	75	\$ 35,625	75	\$ 35,625	75	\$ 35,625	1	\$ 475
2	PCC SIDEWALK R & R, 5" & 6", SPECIAL	125	SF	22	\$ 2,750.00	20	\$ 2,500	45	\$ 5,625	18	\$ 2,250	32	\$ 4,000	35	\$ 4,375	31	\$ 3,875
3	COMBINATION CONCRETE CURB AND GUTTER (B-4.12, B-6.12, B-6.18) R & R, SPECIAL	38	LF	70	\$ 2,660.00	80	\$ 3,040	90	\$ 3,420	57	\$ 2,166	80	\$ 3,040	130	\$ 4,940	94	\$ 3,572
4	BRICK DRIVEWAY, R & R	25	SF	60	\$ 1,500.00	50	\$ 1,250	50	\$ 1,250	35	\$ 875	130	\$ 3,250	70	\$ 1,750	50	\$ 1,250
5	CLASS D PATCH, 3-INCH, SPECIAL	150	SY	130	\$ 19,500.00	65	\$ 9,750	50	\$ 7,500	80	\$ 12,000	80	\$ 12,000	165	\$ 24,750	70	\$ 10,500
6	CLASS D PATCH, 4-INCH, SPECIAL	67	SY	130	\$ 8,710.00	70	\$ 4,690	120	\$ 8,040	90	\$ 6,030	100	\$ 6,700	200	\$ 13,400	89	\$ 5,963
7	CLASS D PATCH, 8-INCH, SPECIAL	16	SY	140	\$ 2,240.00	100	\$ 1,600	160	\$ 2,560	200	\$ 3,200	300	\$ 4,800	300	\$ 4,800	205	\$ 3,280
8	PAVEMENT PATCHING, COMPOSITE (9" PCC WITH HMA OVERLAY), SPECIAL	64	SY	200	\$ 12,800.00	150	\$ 9,600	200	\$ 12,800	275	\$ 17,600	400	\$ 25,600	500	\$ 32,000	214	\$ 13,696
9	SAN/STM/COM SEWER R & R,SPECIAL, 10" PVC, SDR-26 [ASTM D-3034] (Repair 5'-90' length)	40	LF	410	\$ 16,400.00	400	\$ 16,000	475	\$ 19,000	500	\$ 20,000	900	\$ 36,000	640	\$ 25,600	639	\$ 25,560
10	SAN/STM/COM SEWER R & R,SPECIAL, 12" PVC, SDR-26 [ASTM D-3034] (Repair 5'-90' length)	69	LF	450	\$ 31,050.00	300	\$ 20,700	500	\$ 34,500	550	\$ 37,950	875	\$ 60,375	350	\$ 24,150	419	\$ 28,911
11	SAN/STM/COM SEWER R & R,SPECIAL, 15" PVC, SDR-26 [ASTM D-3034] (Repair 5'-90' length)	25	LF	500	\$ 12,500.00	350	\$ 8,750	525	\$ 13,125	600	\$ 15,000	900	\$ 22,500	335	\$ 8,375	348	\$ 8,700
12	INSERTA TEE, 8" DIAM., 18" MAIN	15	EA	5,000	\$ 75,000.00	4,800	\$ 72,000	5,500	\$ 82,500	9,000	\$ 135,000	9,600	\$ 144,000	10,100	\$ 151,500	14,700	\$ 220,500
13	INSERTA TEE, 8" DIAM., 24" MAIN	7	EA	7,000	\$ 49,000.00	4,800	\$ 33,600	5,500	\$ 38,500	8,600	\$ 60,200	10,400	\$ 72,800	10,600	\$ 74,200	14,700	\$ 102,900
14	SEWER SERVICE R & R	7	EA	2,000	\$ 14,000.00	2,000	\$ 14,000	2,500	\$ 17,500	3,000	\$ 21,000	4,500	\$ 31,500	1,905	\$ 13,335	1,633	\$ 11,431
15	ADDITIONAL SAN/STM/COM SEWER PIPE R&R, 8" OR 10" OR 12" PVC, SPECIAL	20	LF	65	\$ 1,300.00	100	\$ 2,000	450	\$ 9,000	400	\$ 8,000	800	\$ 16,000	170	\$ 3,400	208	\$ 4,160
16	NEW GATE 6" VALVE WITH 48" VAULT, SPECIAL	5	EA	8,500	\$ 42,500.00	8,000	\$ 40,000	5,500	\$ 27,500	7,200	\$ 36,000	6,900	\$ 34,500	10,500	\$ 52,500	13,835	\$ 69,175
17	WATER MAIN LINE STOP, 6", SPECIAL	1	EA	7,000	\$ 7,000.00	5,000	\$ 5,000	5,000	\$ 5,000	6,500	\$ 6,500	14,000	\$ 14,000	11,000	\$ 11,000	8,636	\$ 8,636
18	REMOVAL AND DISPOSAL OF REGULATED SUBSTANCES, NON-SPECIAL WASTE, SPECIAL	25	CY	80	\$ 2,000.00	100	\$ 2,500	75	\$ 1,875	100	\$ 2,500	65	\$ 1,625	95	\$ 2,375	80	\$ 2,000
19	SOIL DISPOSAL ANALYSIS*	1	EA	2,700	\$ 2,700.00	500	\$ 500	2,500	\$ 2,500	1,000	\$ 1,000	1,500	\$ 1,500	2,500	\$ 2,500	1,900	\$ 1,900
20	BYPASS PUMPING, SPECIAL	1	LS	1,000	\$ 1,000.00	1,000	\$ 1,000	5,500	\$ 5,500	3,000	\$ 3,000	20,000	\$ 20,000	7,250	\$ 7,250	1,125	\$ 1,125
21	EXPLORATORY EXCAVATION, SPECIAL	2	HR	650	\$ 1,300.00	1,200	\$ 2,400	500	\$ 1,000	425	\$ 850	800	\$ 1,600	1,000	\$ 2,000	1,085	\$ 2,170
22	STORM DRAIN INLET PROTECTION, SPECIAL	1	LS	3,500	\$ 3,500.00	3,000	\$ 3,000	2,000	\$ 2,000	500	\$ 500	1,000	\$ 1,000	5,000	\$ 5,000	7,300	\$ 7,300
23	TREE PROTECTION, SPECIAL	1	LS	2,000	\$ 2,000.00	1,000	\$ 1,000	3,000	\$ 3,000	2,500	\$ 2,500	125	\$ 125	2,500	\$ 2,500	600	\$ 600
24	SEEDING, SPECIAL	30	SY	25	\$ 750.00	20	\$ 600	30	\$ 900	15	\$ 450	50	\$ 1,500	20	\$ 600	91	\$ 2,730
25	SODDING, SPECIAL	30	SY	60	\$ 1,800.00	30	\$ 900	50	\$ 1,500	25	\$ 750	50	\$ 1,500	35	\$ 1,050	91	\$ 2,730
26	LANDSCAPING ALLOWANCE	1	LS	5,000	\$ 5,000.00	5,000	\$ 5,000	5,000	\$ 5,000	5,000	\$ 5,000	5,000	\$ 5,000	7,500	\$ 7,500	2,500	\$ 2,500
27	TRAFFIC CONTROL AND PROTECTION, SPECIAL	1	LS	50,000	\$ 50,000.00	42,000	\$ 42,000	31,000	\$ 31,000	60,000	\$ 60,000	5,460	\$ 5,460	26,000	\$ 26,000	30,000	\$ 30,000
28	PRE- AND POST SEWER VIDEO INSPECTION	1	LS	8,500	\$ 8,500.00	12,000	\$ 12,000	15,000	\$ 15,000	16,000	\$ 16,000	46,000	\$ 46,000	25,000	\$ 25,000	35,000	\$ 35,000
TOTAL BASE BID:					\$ 394,085.00		\$ 339,130.00		\$ 374,670.00		\$ 511,946.00		\$ 612,000.00		\$ 567,475.00		\$ 610,639.00

Sewer Main Repairs	2020	\$ 337,000	Operating
Sewer Fund-Sewer Improvements-Sewer	2021	\$ 346,000	
Collection System	2022	\$ 355,500	
	2023	\$ 367,000	
	2024	\$ 378,000	

X	Critical
-	Recommended
-	Contingent on Funding



Failed Sewer

Failed Sewer

Sewer in Good Condition

Original Purchase Date & Cost

N/A

Funding History

2019	\$327,500	Operating
2018	\$421,270	Operating
2017	\$309,000	Operating
2016	\$197,305	Operating
2015	\$280,483	Operating
2014	\$275,298	Operating
2013	\$202,785	Operating
2012	\$366,486	Bond

Project Description & Justification

The sewer repair program includes excavating and replacing portions of the sewer system, including addressing defective manholes and sewer service connections as necessary. Deteriorated sewer mains and service connections are identified by the annual sewer televising program, while the operations side of Engineering and Public Works identifies defective structures in need of replacement. It has been the Engineering & Public Works Department’s practice to televise, review, and repair all sewers beneath the streets selected for the annual road program to minimize future disruptions to the new pavement. In addition, with the prevalence of rain events the past several years, many additional sewers were televised because of poor system performance.

This project focuses on repairing sewers which show signs of collapse, excessive cracking, voids or gaps between pipes, and faulty service connections which may prove problematic to the functioning of the sewer main and have to be repaired before the sewers can be eligible for sewer lining. In addition, this annual expenditure will address the deterioration of the sewer system by increasing sewer capacity, reducing sewer backups, improving the pipe’s structural integrity, and protecting the investment in the newly paved streets.

Project Update

Funding projections for FY 2024 have been added.

Project Alternative

The alternative to the sewer replacement program is to repair sewers on an emergency basis. Reacting to sewers that have already collapsed will result in sewer backups and street sinkholes and cost the Village more than through a proactive main repair program.

Operating Budget Impact

Is this purchase X routine or non-routine?

ROUTINE	
Department Budget	Sewer Capital
Account Number Description	Sewer Main Repairs
Account Number	40807090-470400-80707

Distribution System Valve Improvements	2020	\$ 88,000	Operating
Water Fund- Distribution Improvements	2021	\$ 90,500	
	2022	\$ 93,000	
	2023	\$ 95,500	
	2024	\$ 97,500	

- X Critical
 - Recommended
 - Contingent on Funding
-

Original Purchase Date & Cost

N/A

Funding History

2019	\$67,600	Operating
2018	\$67,600	Operating
2017	\$62,500	Operating
2016	\$62,500	Operating
2015	\$62,500	
2014	\$123,000	
2013	\$122,000	
2012	\$71,000	
2011	\$61,800	
2010	\$60,000	

Project Description & Justification

This project is for the installation of new gate valves and the replacement of broken existing valves on the water distribution system as selected by Public Works. The new valves are installed to comply with Village Code (18-1.1).

The Village had been installing approximately four or five new valves each year at locations determined by the Public Works Department, however, only three valves were installed in 2016 due to both pricing increase and larger valve sizes, and only 3 valves were installed in 2017 due to pricing increases. Additionally, approximately 30 inoperable valves were identified by the valve exercise program in 2017, which is nearly 60% complete. It is anticipated a total of 60 inoperable valves will need to be addressed as the valve exercise program continues. Staff recommends replacing 4-5 valves annually.

Project Update

The 2020-2023 budgets have been changed to reflect a 4-5 valve annual replacement program. Budget projections for FY 2024 have been added.

Project Alternative

The alternative is to fund the program at the previous level of \$67,600 and complete three or four valves per year.

Operating Budget Impact

Is this purchase *routine* X or *non-routine* _____?

ROUTINE	
Account Number/Description	41838090-470550-80900 Valve Installations
Maintenance Costs	Public Works/ Water Fund
Personnel Costs	Valve Installations
Training Costs	41838090-470550