

COUNTY OF ERIE
DEPARTMENT OF ENVIRONMENT & PLANNING
DIVISION OF SEWERAGE MANAGEMNT
**** MEMORANDUM ****

FROM: Matt A. Salah, P.E., Sr. Coordinator of Sewer Construction Projects
TO: ECSD No. 2 Board of Managers
DATE: March 28, 2024
RE: Erie County Sewer District (ECSD) No. 2
8 Gowans Road, Angola

Per the Board request on February 1, 2024, the Division of Sewerage Management (DSM) prepared a feasibility analysis to service 8 Gowan Rd and the surrounding area.

Three (3) options were considered for possible routes to extend the public sewers and provide sewer service to the home located at 8 Gowans Rd, Angola. Each option had two (2) alternatives that were evaluated, one consisted of a gravity sanitary sewer system while the other consisted of a Low-Pressure Grinder (LPG) system. For options layout see maps in **Appendix A**. As you will note, due to technical reasons related to the topography, only those options with an LPG system were feasible.

Option 1

Extend the sewers in an easterly direction from an existing manhole ECSD No. 2 fronting 72 Mill St., then to Gowans Rd. This extension would consist of 950 feet to **service a total of 3 existing homes**, 4 & 8 Gowans Rd. and 116 Mill St.

Alternate 1

A gravity system of 8-inch diameter polyvinyl chloride (PVC) pipe and four (4) manholes. Approximately 200 feet of the 950 feet of new sewer was evaluated to be insulated and hung along the side of the bridge over Big Sister Creek (BSC). This alternate cost estimate to construct is approximately \$390,000. However, the topography of this sewer route will not allow for such design. The manhole fronting 72 Mill St. has an approximate invert of 643' and when considering a minimum slope for the proposed sewer of 0.4%, the pipe could not be buried on the opposite side of the creek.

Alternate 2

An LPG system that consists of 950 lineal feet of 2-inch diameter polyethylene (P.E.) forcemain pipe and 3 individual LPG pumps. Approximately 200 feet of the new

forcemain would be insulated and hung along the side of the bridge over BSC. This alternate cost estimate to construct is approximately \$350,000.

Option 2

Extend the sewers in an easterly direction from an existing manhole fronting 53 Maple St., then northeasterly along the Railroad northwesterly right-of-way line then to Gowans Rd. and Mill St. This extension would consist of 1050 feet to **service a total of 3 existing homes**, 4 & 8 Gowans Rd. and 116 Mill St.

Alternate 1

A gravity system of 8-inch diameter PVC and three (3) manholes. Approximately 200 feet of the 1050 feet would be a twin 6-inch diameter siphon under BSC. The siphon would require one chamber on each side of the creek crossing. This alternate cost estimate to construct is approximately \$850,000. Also note, the required scouring velocity in the siphon would not be attained due to the proposed low flow from 3 homes and hence this alternate is not feasible.

Alternate 2

An LPG system that consists of 1050 lineal feet of 2-inch diameter P.E. forcemain pipe and 3 individual LPG pumps. Approximately 200 feet of the 1050 feet would be constructed under the BSC bed. This alternate cost estimate to construct is approximately \$410,000.

Option 3

Extend the sewers in a southerly direction from an existing manhole fronting 6825 Industrial Pkwy., then southwesterly along the northwest right-of-way of Delameter Rd. then to Gowans Rd. This extension would consist of 3300 feet to **service a total of 7 existing properties**. Only 6 properties are within the bounds of ECSD No. 2, they are 4 & 8 Gowans Rd and 116, 154 & 164 Mill St., and 8752 Delameter Rd. The 7th property is located at 8730 Delameter Rd., and it is outside the bounds of ECSD No. 2.

Alternate 1

A gravity system of 3300 feet of 8-inch diameter PVC pipe and nine (9) manholes. This alternate cost estimate to construct is approximately \$1,260,000. However, the topography of the sewer route will not allow for such design. The ground elevation at the downstream manhole location on Industrial Pkwy. is almost 40' higher than Gowans Rd.

Alternate 2

An LPG system that consists of 3300 lineal feet of 2-inch diameter P.E. forcemain pipe and 6 individual LPG pumps. This alternate cost estimate to construct is approximately \$1,140,000.

Taxes

The 2024 sewer taxes collected from the parcels that would receive additional benefit from each option are listed in **Appendix B**.

In 2024 the ECSD No. 2 Flat Usage fee is \$335.00, and the Footage is \$1.00 per foot. A typical home with 100 feet of frontage and assessed at \$100,000.00, would pay \$100 in footage charge and \$180 in assessed valuation sewer taxes, respectively.

Therefore, the total sewer taxes collected from such a typical home in ECSD No. 2 would be \$610.00 (\$335+\$100+\$180). At this time, the properties listed pay only assessed valuation charges.

Summary

For each alternate, a detailed cost estimates are attached, see **Appendix C**.

The summary engineers' estimates are as follows:

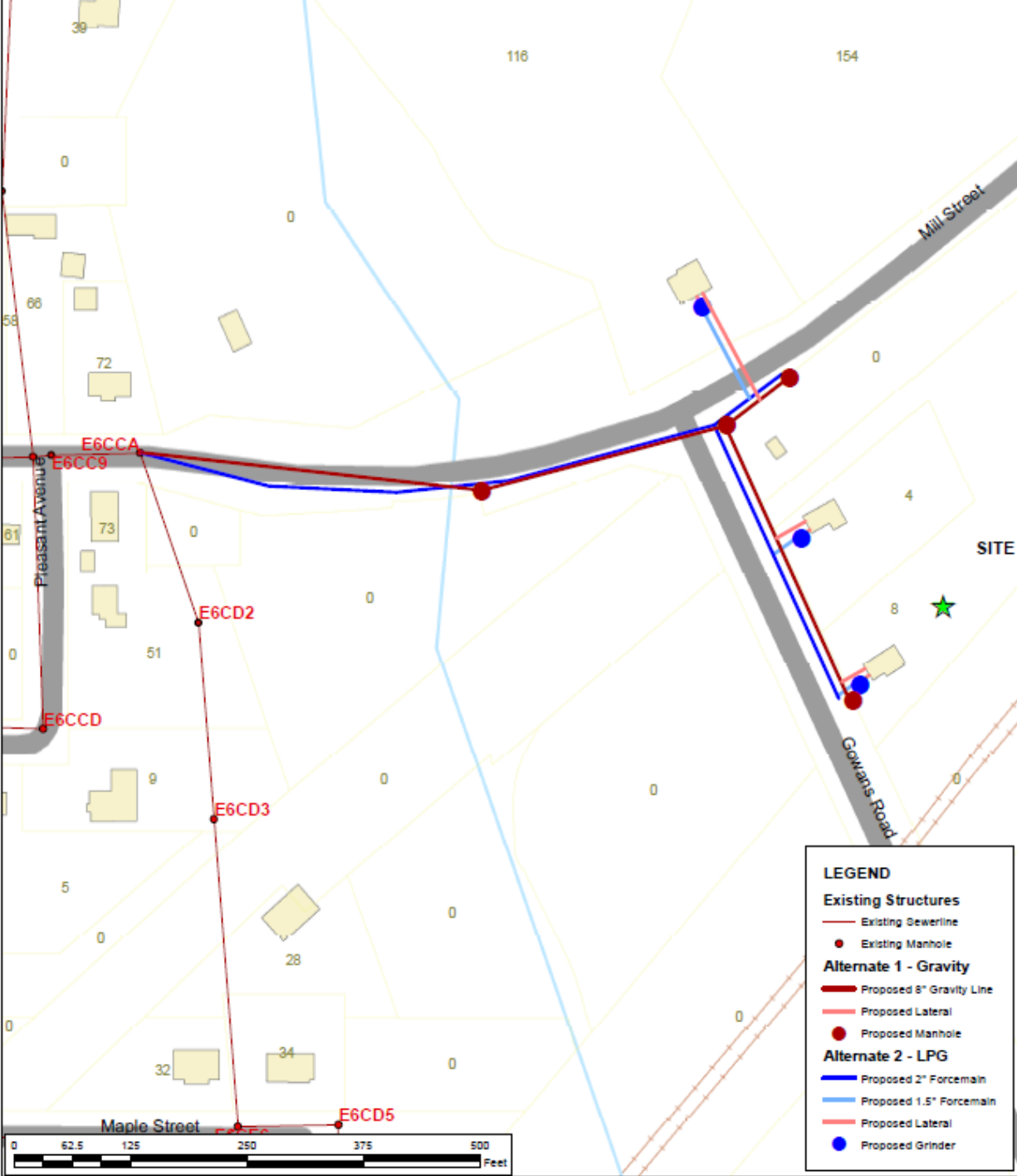
TOTAL COST			
	OPTION 1	OPTION 2	OPTION 3
ALTERNATE 1	\$390,000	\$850,000	\$1,260,000
ALTERNATE 2	\$350,000	\$410,000	\$1,140,000

The cost-effective type and route to construct would be what was described in Option 1, under Alternate 2. According to the 2024, the sewer taxes paid by a typical home in ECSD No. 2 is \$610. The Return on Investment (ROI) for this option would be more than 190 years ($\$350,000/(\$610 \times 3)$) based purely on capital costs and not including operation and maintenance.

APPENDIX - A

MAPS OPTIONS LAYOUT

**Erie County Sewer District No. 2
Project: 8 Gowans Road
Map 1, Option 1
Alternates 1 & 2**



LEGEND

Existing Structures

- Existing Sewerline
- Existing Manhole

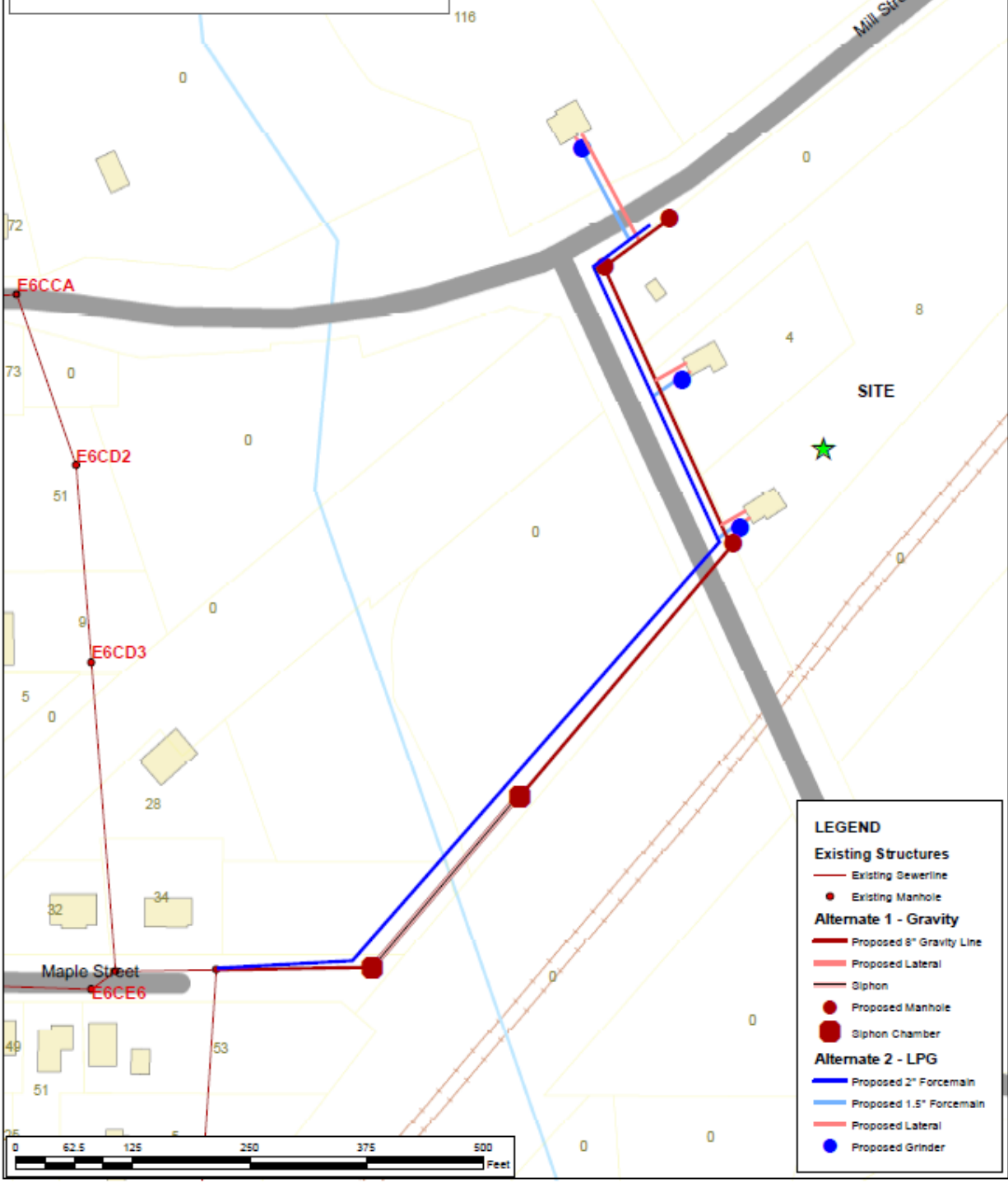
Alternate 1 - Gravity

- Proposed 8" Gravity Line
- Proposed Lateral
- Proposed Manhole

Alternate 2 - LPG

- Proposed 2" Forcemain
- Proposed 1.5" Forcemain
- Proposed Lateral
- Proposed Grinder

**Erie County Sewer District No. 2
Project: 8 Gowans Road
Map 2, Option 2
Alternates 1 & 2**



LEGEND

Existing Structures

- Existing Sewerline
- Existing Manhole

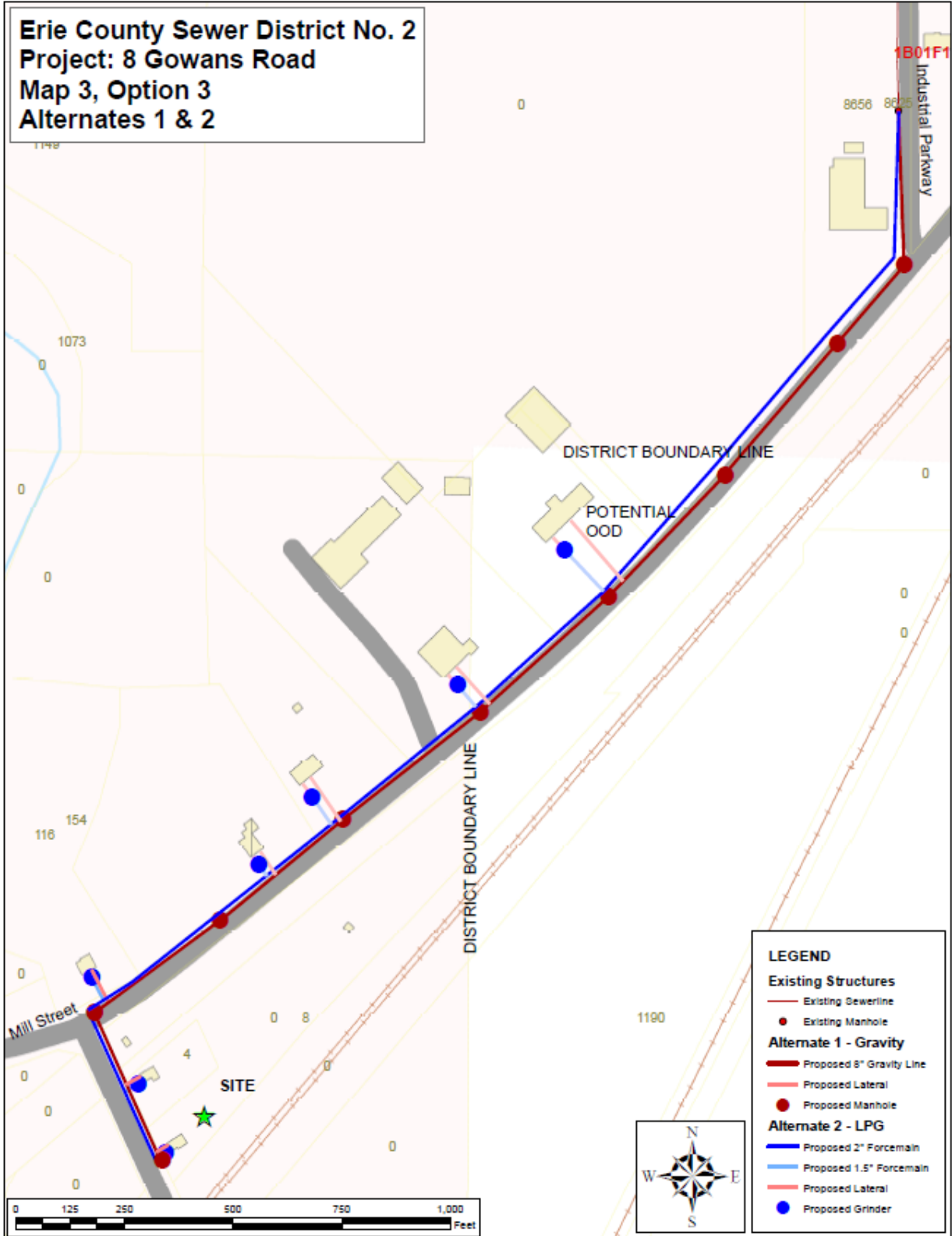
Alternate 1 - Gravity

- Proposed 8" Gravity Line
- Proposed Lateral
- Siphon
- Proposed Manhole
- Siphon Chamber

Alternate 2 - LPG

- Proposed 2" Forcemain
- Proposed 1.5" Forcemain
- Proposed Lateral
- Proposed Grinder

**Erie County Sewer District No. 2
Project: 8 Gowans Road
Map 3, Option 3
Alternates 1 & 2**



LEGEND

Existing Structures

- Existing Sewerline
- Existing Manhole

Alternate 1 - Gravity

- Proposed 8" Gravity Line
- Proposed Lateral
- Proposed Manhole

Alternate 2 - LPG

- Proposed 2" Forcemain
- Proposed 1.5" Forcemain
- Proposed Lateral
- Proposed Grinder

APPENDIX - B

CURRENT Taxes Collected FOR EACH OPTION (2024)

						2024	2024-Total Taxes Collected					
Option 1	Option 2	Option 3	House No.	St./Rd.	AV	Sewer Taxes	Notes	Option 1	Option 2	Option 3		
Y	Y	Y	2	Gowans	\$ 33,300.00	\$ 60.00	Vacant					
Y	Y	Y	4	Gowans	\$ 85,000.00	\$ 152.00						
Y	Y	Y	8	Gowans	\$ 45,000.00	\$ 80.00						
Y	Y	Y	116	Mill	\$ 62,000.00	\$ 111.00		\$ 403.00	\$ 403.00			
		Y	154	Mill	\$ 100,000.00	\$ 180.00						
		Y	164	Mill	\$ 112,500.00	\$ 302.00						
		Y	8752	Delameter	\$ 775,000.00	\$ 222.00	Partially in the District					
		Y	0	Delameter	\$ 58,600.00	\$ 105.00	Vacant			\$ 1,212.00		
			8730	Delameter	Not in the Sewer District							

APPENDIX - C

Alternates Engineers' Estimates

ENGINEER'S ESTIMATE - GRAVITY SYSTEM									
ERIE COUNTY SEWER DISTRICT NO. 2				DATE: 3/25/2024					
PROJECT:		8 GOWANS ROAD		FILE NO.: TBD					
		ANGOLA, NY							
CONTRACT NO.:		TBD							
ITEM	DESCRIPTION	UNIT	UNIT PRICE	OPTION 1		OPTION 2		OPTION 3	
				ALTERNATE 1		ALTERNATE 1		ALTERNATE 1	
				QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
1	Mobilization	EA	\$1,500.00	1	\$1,500.00	1	\$1,500.00	1	\$1,500.00
2	Traffic Control	WEEK	\$6,000.00	2	\$12,000.00	2	\$12,000.00	3	\$18,000.00
3	Clear and Grub	SY	\$38.30	25	\$957.50	615	\$23,554.50	850	\$32,555.00
4	Utility Support Crossings	EA	\$200.00	1	\$200.00	1	\$200.00	1	\$200.00
5	Utility Support Poles	EA	\$700.00	5	\$3,500.00	6	\$4,200.00	17	\$11,900.00
6	Sewerline 8"	LF	\$215.00	750	\$161,250.00	1050	\$225,750.00	3300	\$709,500.00
7	AG Insulated 8" Pipe	LF	\$325.00	200	\$65,000.00	0	\$0.00	0	\$0.00
8	Siphon Cost	LS	\$350,000.00	0	\$0.00	1	\$350,000.00	0	\$0.00
9	Manholes	VLF	\$1,800.00	32	\$57,600.00	24	\$43,200.00	72	\$129,600.00
10	Lateral 4-6"	LF	\$170.00	150	\$25,500.00	445	\$75,650.00	635	\$107,950.00
11	Manhole Coring	EA	\$740.00	1	\$740.00	1	\$740.00	1	\$740.00
12	Shrub Hedge Replacement	LF	\$400.00	25	\$10,000.00	25	\$10,000.00	170	\$68,000.00
13	Restoration Non-Pavement	SF	\$2.43	2000	\$4,860.00	5215	\$12,672.45	5774	\$14,030.82
14	Restoration Pavement	SF	\$33.00	325	\$10,725.00	285	\$9,405.00	1160	\$38,280.00
15	Restoration Driveway	SF	\$17.50	0	\$0.00	100	\$1,750.00	600	\$10,500.00
16	Contingency		10%		\$35,383.25		\$77,062.20		\$114,275.58
				TOTAL:	\$389,215.75	TOTAL:	\$847,684.15	TOTAL:	\$1,257,031.40
				Notes: The cost is theoretical only. The ground elevation profile does not allow this design.		Notes: The cost is theoretical only. Insufficient flow is available to maintain minimum scouring velocity in the siphon.		Notes: The cost is theoretical only. The ground elevation profile does not allow this design.	

ENGINEER'S ESTIMATE - LOW PRESSURE GRINDER SYSTEM									
ERIE COUNTY SEWER DISTRICT NO. 2					DATE: 3/25/2024				
PROJECT:		8 GOWANS ROAD			FILE NO.: TBD				
		ANGOLA, NY							
CONTRACT NO.:		TBD							
ITEM	DESCRIPTION	UNIT	UNIT PRICE	OPTION 1		OPTION 2		OPTION 3	
				ALTERNATE 2	ALTERNATE 2	ALTERNATE 2	ALTERNATE 2	ALTERNATE 2	
				QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
1	Mobilization	EA	\$1,500.00	1	\$1,500.00	1	\$1,500.00	1	\$1,500.00
2	Traffic Control	WEEK	\$6,000.00	2	\$12,000.00	2	\$12,000.00	3	\$18,000.00
3	Clear and Grub	LF	\$38.30	25	\$957.50	615	\$23,554.50	850	\$32,555.00
4	Utility Support Crossings	EA	\$200.00	1	\$200.00	1	\$200.00	1	\$200.00
5	Utility Support Poles	EA	\$700.00	5	\$3,500.00	6	\$4,200.00	17	\$11,900.00
6	Forcemain 2" Public	LF	\$200.00	750	\$150,000.00	1050	\$210,000.00	3300	\$660,000.00
7	AG Insulated Forcemain	LF	\$300.00	200	\$60,000.00	0	\$0.00	0	\$0.00
8	Grinder Pumps	EA	\$10,500.00	3	\$31,500.00	3	\$31,500.00	6	\$63,000.00
9	Forcemain 1.5"	LF	\$175.00	150	\$26,250.00	285	\$49,875.00	635	\$111,125.00
10	Manhole Coring	EA	\$740.00	1	\$740.00	1	\$740.00	1	\$740.00
11	Shrub Hedge Replacement	LF	\$400.00	25	\$10,000.00	25	\$10,000.00	170	\$68,000.00
12	Restoration Non-Pavement	SF	\$2.43	2000	\$4,860.00	5215	\$12,672.45	5774	\$14,030.82
13	Restoration Pavement	SF	\$33.00	325	\$10,725.00	285	\$9,405.00	1160	\$38,280.00
14	Restoration Driveway	SF	\$17.50	0	\$0.00	100	\$1,750.00	600	\$10,500.00
15	Contingency		10%		\$31,223.25		\$36,739.70		\$102,983.08
				TOTAL: \$343,455.75		TOTAL: \$404,136.65		TOTAL: \$1,132,813.90	
				Notes:		Notes:		Notes:	