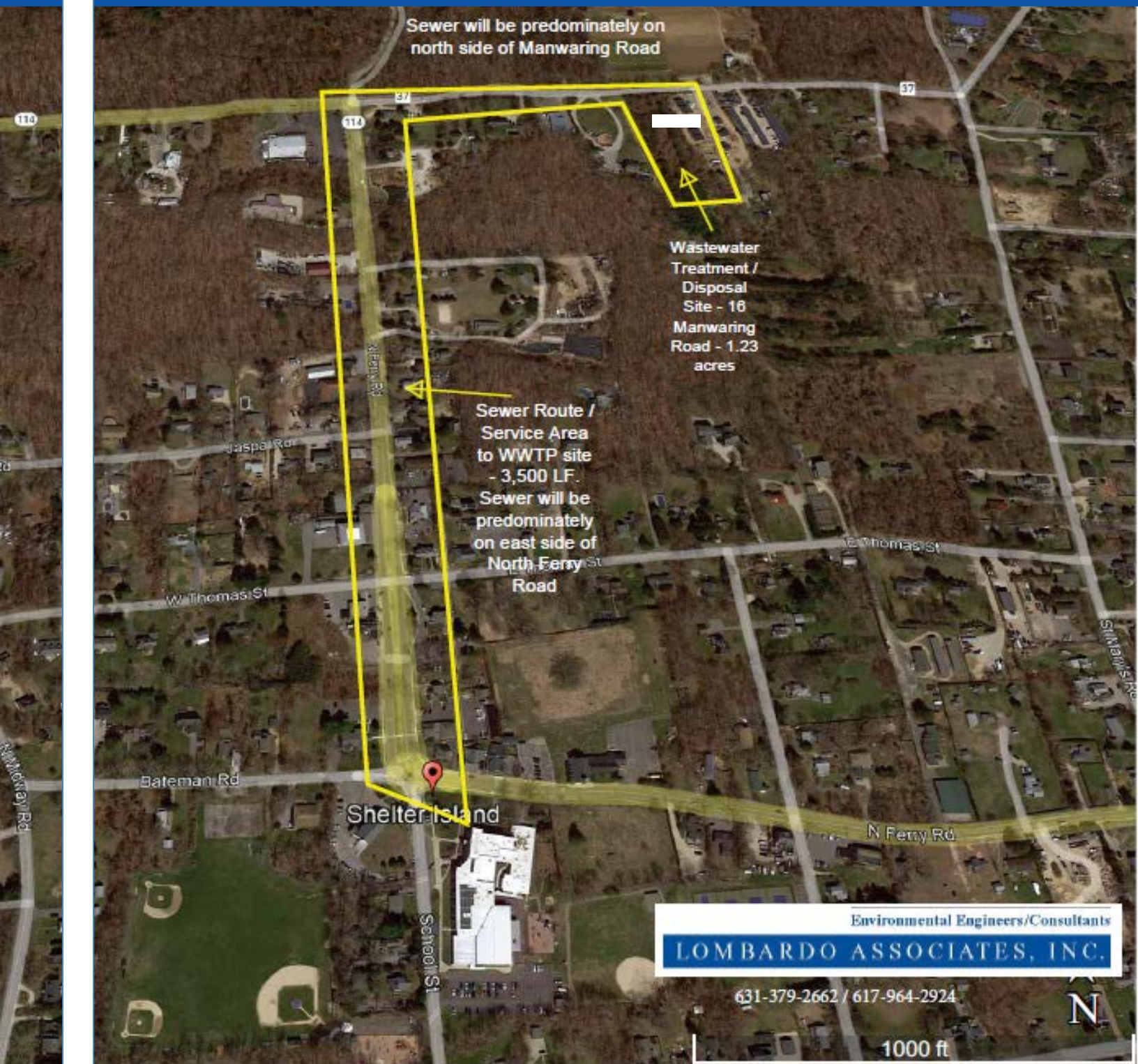


# Shelter Island Center Municipal Wastewater Treatment System Project Expanded Services Proposal - DRAFT



Submitted to:  
**Town of Shelter Island  
38 North Ferry Road  
Shelter Island, NY 11964-0907  
May 23, 2022**

Environmental Engineers/Consultants  
**LOMBARDO ASSOCIATES, INC.**  
188 Church Street, Newton, Massachusetts 02458  
53 Hill Street, Southampton, NY 11968

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## 1. INTRODUCTION

The Town of Shelter Island (TSI) retained Lombardo Associates, Inc. (LAI) by its August 25, 2021 Agreement to engineer a Shelter Island Center Municipal Wastewater Treatment System. The Agreement Scope of Services consisted of tasks and associated budgets as listed on Table 1-1.

**Table 1-1 TSI-LAI Agreement Municipal Wastewater Project Tasks and Budgets**

Shelter Island Municipal WWTF Project		
Task No.	Task Description	Task Fee
<b>Task 1</b>	<b>Study, Assess &amp; Report Feasibility Alternative Wastewater Management Approaches</b>	
	1.1 Design Flows & WW Char. of Municipal Buildings	\$ 1,189
	1.2 Additional Potential Centralized Sites	\$ 1,807
	1.3 Available Area Analysis	\$ 2,384
	1.4 WWMS Options Overview / Selection for Analysis	\$ 1,477
	1.5 Required Area Analysis	\$ 4,591
	1.6 WWMS Scenarios / Selection	\$ 2,572
	1.7 Life Cycle Costs & Cost / Benefit Analysis of WMS Scenarios	\$ 2,366
	1.8 Engineering Plan for Preferred Center WMS	\$ 4,591
	1.9 Communications - Meetings	\$ 5,538
	<b>Subtotal</b>	<b>\$ 26,514</b>
<b>Task 2</b>	<b>Engineering Fee Estimates</b>	
	2.1 Engineering Fees	\$ 1,189
	<b>Subtotal</b>	<b>\$ 1,189</b>
<b>Task 3</b>	<b>Design of Center Wastewater Plan</b>	
	3.1 Field Investigations / Survey Work	\$ 10,978
	3.2.1 Design Basis Report	\$ 8,240
	3.2.2 Plans & Specifications & Permitting	\$ 30,488
	<b>Subtotal</b>	<b>49,706</b>
<b>Task 4</b>	<b>Prepare Plans for Bidding</b>	
	4.1 Plans, Specs & project manual	\$ 2,225
	<b>Subtotal</b>	<b>\$ 2,225</b>
<b>GRAND TOTAL</b>		<b>\$79,634</b>

During the conduct of the work, the Town and Shelter Island Union Free School District agreed that the Shelter Island School should be part of the Municipal Wastewater System. Table 1-2 presents a listing of wastewater design flows for the municipal buildings and school. As shown, design flows increased from 4,215 gpd to 6,195 gpd, an increase of 47%. LAI prepared an Engineering Plan dated December 30, 2021 and updated through Jan. 11, 2022, that:

- ✓ Concluded that individual system repairs were not viable due to minimum setback requirements from private wells
- ✓ Proposed a municipal wastewater system with treatment and disposal at the Klenawicus Airfield property, including performance of soil borings and analysis of climate change to confirm site's technical viability. Property's use for wastewater system was reviewed with Town attorney

**Table 1-2 Wastewater Design Flows**

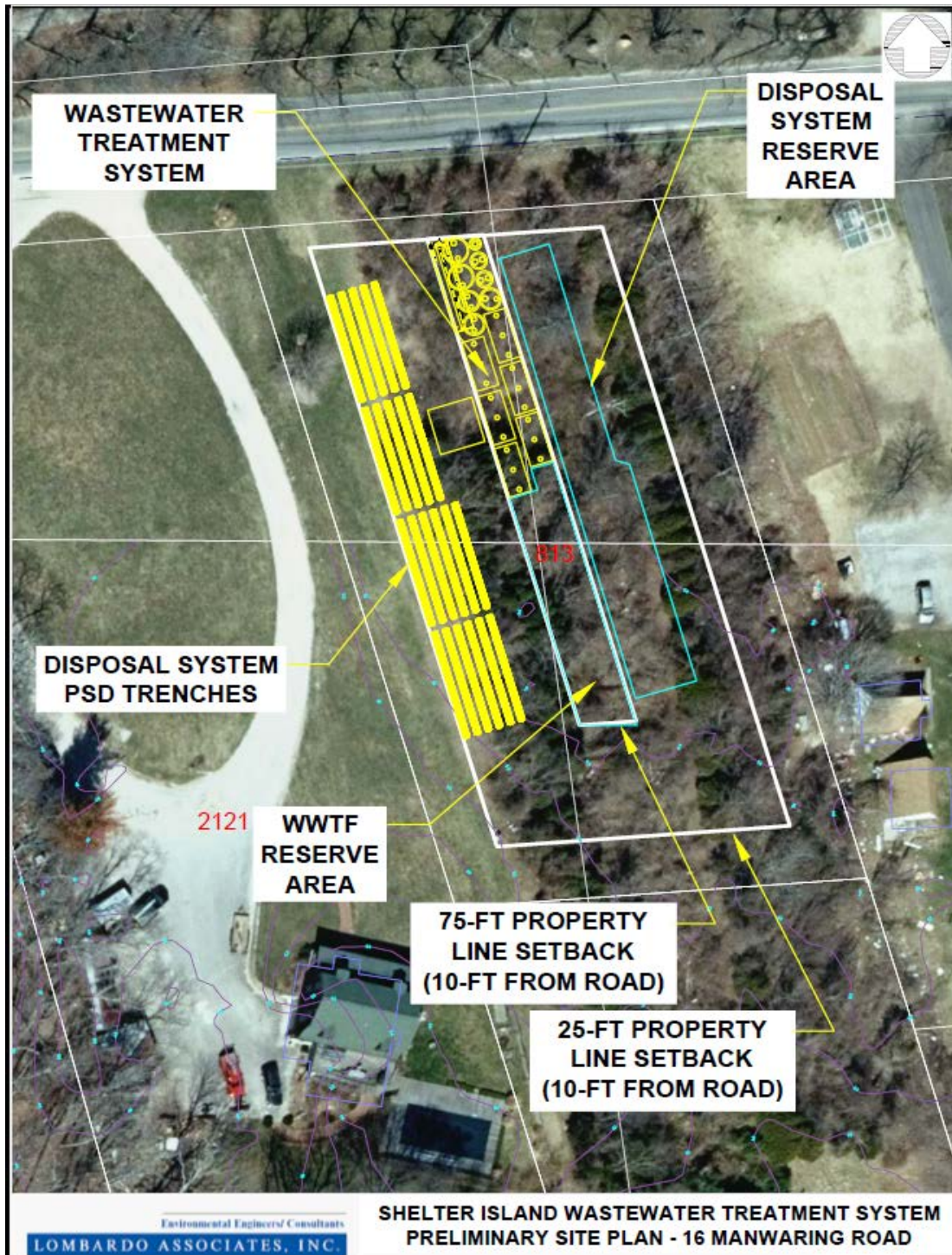
Shelter Island Center Municipal Wastewater Treatment Project										
Parcels to be Served + School										
Parcel Count	Parcel Use	Square Footage of Building(s)			Total	Approx Flow (gpd)	Hydraulic Load (gpd/sf)			Est. Design Flow (gpd)
1	Public Library	3,258	3,066		6,324		0.03	0.06		282
2	Fire Depart Center Fire House	8,793			8,793		0.03			264
3	Town Youth Center / American Legion Hall (one facility with multiple purposes)	3,792	3,792		7,584	2,538				2,538
4	Town Assessors + Tax Receivers Office Bldg.	3,929	720	896	5,545		0.06	0.06	0.06	333
	Town Hall Building + Engineering Depart. Building									
5	Town-owned residential housing	2,135			2,135	440				440
6	Police Depart. HQ	1,716	1,716		3,432		0.06	0.06		206
7	Justice Court Building	1,270	1,270		2,540		0.06	0.06		152
									SubTotal	4,215
School	Students & Staff	Code flow	7.5		gpd/person					1,980
									Grand Total	6,195

Original project budgets were based upon seven (7) individual properties wastewater system upgrades or a small sewer system with a nearby wastewater treatment/disposal system. Per Table 1-1, it is noted that original design budget was ~ \$7,100 / property for design and permit efforts.

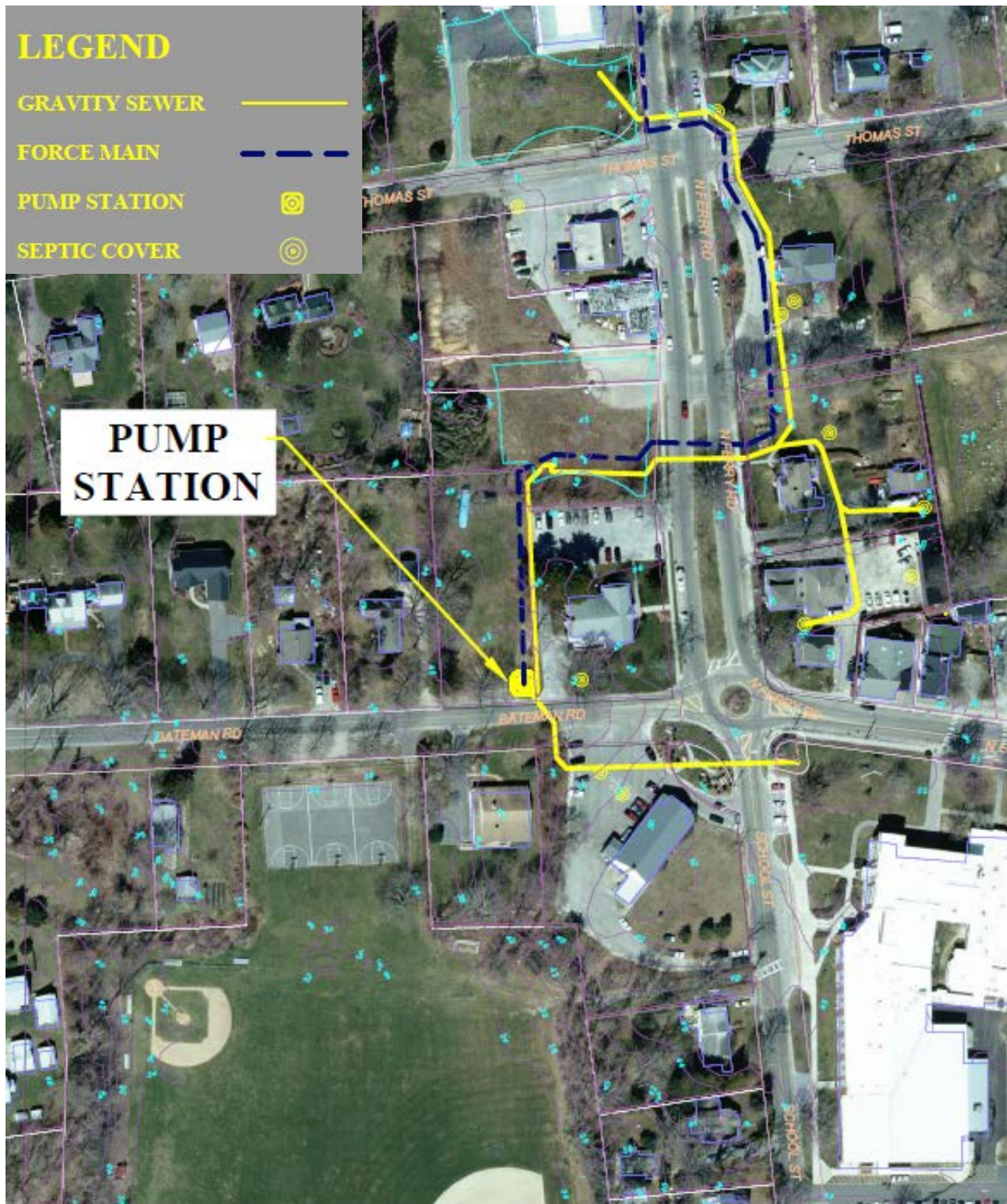
During public review of the proposed municipal wastewater plan, a number of issues arose that led the Town to identify a preferred property at 16 Manwaring Road. LAI assessed the technical viability of the site based upon readily available information (i.e., no soil borings) and concluded the property was technically viable. Figure 1-1 is the revised municipal buildings wastewater sewer and wastewater treatment/disposal system layout. Figure 1-2 presenting a preliminary layout of the wastewater treatment and disposal system at 16 Manwaring Road. Figure 1-3 is the detailed sewer system layout at the municipal buildings.



**Figure 1-1 SI Municipal Wastewater System Layout**



**Figure 1-2 SI Municipal WWTP Preliminary Layout - 16 Manwaring Road**



**Figure 1-3 Municipal Bldgs – Connection to Sewer Preliminary Layout**

Due to the project required changes that include:

- a. Addition of school with associated sewer and wastewater flow
- b. Additional analysis of multiple properties, including Sylvester Manor and 16 Manwaring Road
- c. Addition and expanded tasks to design and permit the wastewater system that include:
  - i. Survey of proposed sewer route – approximately 3,500 linear feet
  - ii. Property boundary survey and topographic drawing of 16 Manwaring Road
  - iii. Borings along the sewer route
  - iv. Soil boring at 16 Manwaring Road
  - v. Design Issues
    - 1. New electric service from PSEG will be required at 16 Manwaring Road along with an emergency generator.
    - 2. Proposed pump station at Library will need to have emergency generator either provided or via connection to existing emergency generator at Town Hall / other municipal building. Library pump station preliminary sizing demand is 8.3 kw. Will need documentation that capacity exists and is allocated for Library PS
    - 3. Add technology for treating emerging contaminants
  - vi. Permits
    - 1. NYSDoT permit for utilities in State Road Right-of-Way (ROW). Depending on final ROW boundaries, easements may be needed from private property owners along the sewer route
    - 2. NYSDEC SPDES Discharge permit. Suffolk County Department of Health Services permit is not required as NYSDEC permits all municipal facilities with flows > 1,000 gpd.

Consequently, there is a need for this project Agreement Amendment # 1 to increase project scope and budget.



## 2. PROPOSED SCOPE OF SERVICES

### **Task 5.1 Revise Engineering Plan for Town Selected Wastewater Management Plan**

LAI will revise the January 2022 Engineering Plan to reflect the Town selected 16 Manwaring Road wastewater treatment and disposal site.

The revised Engineering Plan will include updates on:

- ✓ Preliminary wastewater system layout and hydraulic profile
- ✓ Total lifecycle costs, including capital costs and annual O&M costs
- ✓ Estimated user charges based upon various levels of grant funding
- ✓ Nitrogen load reduction

### **Task 5.2 Additional Design Services**

Associated with the 3,500 LF of sewers, additional design services are needed for:

- a. Borings along sewer route every 300 – 400 feet to provide subsurface information for potential construction bidders. Work will be performed by MBE firm.
- b. Survey along sewer route to define existing conditions and enable location of sewer in ROW. It is noted that an alternative route to 16 Manwaring Road is via East Thomas and St. Maris Roads. The alternative route is ~ 1,500 feet longer, however would be primarily on Town roads and avoids sewer on ~ 2,000 LF along State Route 114.
- c. Property line survey with topography at 16 Manwaring Road
- d. Design efforts with larger sewer system and wastewater treatment and disposal system

Associated with the wastewater treatment / disposal system at 16 Manwaring Road, additional design services are needed for:

- e. Landscape architecture for new site with adjacent developed properties and increased public sensitivity on site development
- f. Electrical engineering for new electric service and emergency generators
- g. Design efforts with larger wastewater treatment and disposal system.

### **Task 5.3 Additional Permitting Services**

Associated with the Town selected sewer and wastewater treatment/disposal system, additional permitting services are needed for:

- a. NYSDOT Construction in ROW permits.
- b. NYSDEC SPDES permit

### **Task 5.4 Public Participation / Meetings**

LAI will participate in up to three (3) virtual public meetings with the Town and public to review project status and respond to questions.

### 3. PROPOSED BUDGET & SCHEDULE

Table 3-1 presents the existing engineering design budget along with budget for Amendment # 1 Scope of Services.

The requested amount of Amendment #1 is \$96,646 resulting in total engineering design fees of \$150,013. As construction costs are estimated at \$3,000,000 +/-, design fees as a % of construction costs are approximately 5% - well below engineering industry standards.

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**Table 3-1 Existing & Proposed Amendment # 1 Budget**

Shelter Island Municipal WWTF Project												
Task No.	Task Description	PSL 200	PF/NL 175	GR 140	TBD 80	MC 100	60	Total Hours	Sub- total (\$)	Sub- total Expenses	Task Fee	
<b>Task 2</b>	<b>Engineering Fee Estimates</b>											
	2.1 Engineering Fees	2.00	0.00	4.00				4.00	10	\$ 1,200	\$ 236	\$ 1,436
	<b>Subtotal</b>	<b>2.00</b>	<b>0.00</b>	<b>4.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.00</b>	<b>4.00</b>	<b>10</b>	<b>\$ 1,200</b>	<b>\$ 236</b>	<b>\$ 1,436</b>
<b>Task 3</b>	<b>Design of Center Wastewater Plan</b>											
	3.1 Field Investigations / Survey Work	4.00		8.00					12	\$ 1,920	\$ 9,058	\$ 10,978
	3.2.1 Design Basis Report	12.00		40.00					52	\$ 8,000	\$ 240	\$ 8,240
	3.2.2 Plans & Specifications & Permitting	40.00		120.00	0.00	48.00			208	\$ 29,600	\$ 888	\$ 30,488
	<b>Subtotal</b>	<b>56</b>	<b>0</b>	<b>168</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>272</b>	<b>39,520</b>	<b>10,186</b>	<b>49,706</b>	
<b>Task 4</b>	<b>Prepare Plans for Bidding</b>											
	4.1 Plans, Specs & project manual	4.00		8.00				4.00	16	\$ 2,160	\$ 65	\$ 2,225
	<b>Subtotal</b>	<b>4.00</b>	<b>0.00</b>	<b>8.00</b>	<b>0.00</b>	<b>0.00</b>	<b>4.00</b>	<b>4.00</b>	<b>16</b>	<b>\$ 2,160</b>	<b>\$ 65</b>	<b>\$ 2,225</b>
<b>Task 5</b>	<b>Amendment # 1 Additional Services</b>											
	5.1 Revise Engineering Plan	40.00	8.00	40.00		8.00			96	\$ 15,800	\$ 474	\$ 16,274
	5.2 Additional Design Services	40.00	8.00	40.00		40.00	12.00		140	\$ 19,720	\$ 35,392	\$ 55,112
	5.3 Additional Permitting Services	32.00	16.00	40.00		32.00	16.00		136	\$ 18,960	\$ 1,169	\$ 20,129
	5.4 Meetings	16.00		4.00		4.00	4.00		28	\$ 4,400	\$ 732	\$ 5,132
	<b>Subtotal</b>	<b>128.00</b>	<b>32.00</b>	<b>124.00</b>	<b>0.00</b>	<b>84.00</b>	<b>32.00</b>	<b>400</b>	<b>\$ 58,880</b>	<b>\$ 37,766</b>	<b>\$ 96,646</b>	
<b>GRAND TOTAL</b>		<b>190.00</b>	<b>32.00</b>	<b>304.00</b>	<b>0.00</b>	<b>132.00</b>	<b>40.00</b>	<b>698</b>	<b>\$101,760</b>	<b>\$48,253</b>	<b>\$150,013</b>	
Shelter Island Municipal WWTF Project - Expenses												
Estimated Direct Costs						Subcontractors						
Task No.	Task Description	Travel		Borings	ST	Survey	Landscape	Printing & Telecom	Electrical	Architect	Task Expenses	
		Air / Hotel Trips	Car & Dollars	MWBE		Utilities Loc	Architect	Telecom	Engineer	Misc. Other	Total	
<b>Task 2</b>	<b>Engineering Fee Estimates</b>											
	2.1 Engineering Fees		\$0					\$36		\$200	\$ 236	
	<b>Subtotal</b>	<b>-</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$36</b>	<b>\$0</b>	<b>\$200</b>	<b>\$ 236</b>	
<b>Task 3</b>	<b>Design of Center Wastewater Plan</b>											
	3.1 Field Investigations / Survey Work		\$0			\$9,000		\$58			\$ 9,058	
	3.2.1 Design Basis Report		\$0					\$240			\$ 240	
	3.2.2 Plans & Specifications & Permitting		\$0					\$888			\$ 888	
	<b>Subtotal</b>	<b>-</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$9,000</b>	<b>\$0</b>	<b>\$1,186</b>	<b>\$0</b>	<b>\$0</b>	<b>\$ 10,186</b>	
<b>Task 4</b>	<b>Prepare Plans for Bidding</b>											
	4.1 Plans, Specs & project manual		\$0					\$65			\$ 65	
	<b>Subtotal</b>	<b>-</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$65</b>	<b>\$0</b>	<b>\$0</b>	<b>\$ 65</b>	
<b>Task 5</b>	<b>Amendment # 1 Additional Services</b>											
	5.1 Revise Engineering Plan		\$0					\$474			\$ 474	
	5.2 Additional Design Services	2	\$1,200	\$10,350	\$2,000	\$2,250	\$7,000	\$592	\$7,000	\$5,000	\$ 35,392	
	5.3 Additional Permitting Services	1	\$600					\$569			\$ 1,169	
	5.4 Meetings	1	\$600					\$132			\$ 732	
	<b>Subtotal</b>	<b>4</b>	<b>\$2,400</b>	<b>\$10,350</b>	<b>\$2,000</b>	<b>\$2,250</b>	<b>\$7,000</b>	<b>\$1,766</b>	<b>\$7,000</b>	<b>\$5,000</b>	<b>\$ 37,766</b>	
<b>GRAND TOTAL</b>		<b>4</b>	<b>\$2,400</b>	<b>\$10,350</b>	<b>\$2,000</b>	<b>\$11,250</b>	<b>\$7,000</b>	<b>\$3,053</b>	<b>7000</b>	<b>\$5,200</b>	<b>48,253</b>	

								Construction costs (CC)	\$ 3,000,000	
								Engineering Design Fee	\$ 150,013	
								Eng as % of CC	5.00%	
Revise Engineering Plan	40.00	8.00	40.00	0.00	8.00	0.00	96	\$ 15,800	\$ 474	\$ 16,274
Sewer Design	48.00	16.00	100.00		60.00	18.00	242	\$ 33,480	\$ 23,701	\$ 57,181
WWTP Design	48.00	0.00	128.00	0.00	50.00	0.00	226	\$ 32,520	\$ 20,777	\$ 53,297
Permitting	48.00	8.00	24.00	0.00	14.00	16.00	110	\$ 16,720	\$ 3,000	\$ 19,720
Engineering Fee Estimates	2.00	0.00	4.00	0.00	0.00	4.00	10	\$ 1,200	\$ 236	\$ 1,436
Prepare Plans for Bidding	4.00	0.00	8.00	0.00	0.00	2.00	14	\$ 2,040	\$ 65	\$ 2,105
										\$ 150,013
	190	32	304	0	132	40	698	101,760	48,253	

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