TOWN OF SOUTHAMPTON COMMUNITY PRESERVATION FUND
VILLAGE OF SAG HARBOR

PHASE II SEWER SERVICE EXPANSION AREA
ENGINEERING DESIGN
INDEX

Existing Conditions. Sag Harbor (foreground) and Sag Harbor Cove (top). Source: SOMAS

***Note: Village Board resolution to be provided under separate cover.**

SAG HARBOR VILLAGE
PHASE II SEWER SERVICE EXPANSION AREA ENGINEERING DESIGN NARRATIVES

PROPOSAL SUMMARY

As a step towards mitigating existing water quality issues in area surface waters, the Village of Sag Harbor plans to construct Phase II of its sewer service area expansion to collect and convey approximately 65,000 gallons per day (GPD) of sanitary wastewater generated within The Phase II area to the existing Village of Sag Harbor Wastewater Treatment Facility (WWTF). Parcels within the Phase II study area currently utilize onsite wastewater treatment systems (OWTS) in an area identified as high priority for sewering in the Village Sewer Master Plan. Treated effluent discharged from the WWTF has nitrogen concentrations that are better than any approved onsite septic system. Therefore, the Village's WWTF will prevent nitrogen-rich onsite wastewater point sources from continuing to discharge to the ground, thereby contributing to the improvement of water quality in the Peconic Estuary.

CPF funds will support the cost of professional engineering services to prepare engineering report, secure regulatory approvals, and prepare contract documents (plans and specifications) suitable for bidding. The project will advance the Village to a state of readiness for construction. It is estimated that when complete, Phase II sewering will connect 217 parcels to the WWTF, leading to a reduction in nitrogen loading to groundwater by 11,872 pounds per year.

The design flow will support existing development and is not intended to accommodate new growth.

ITEM 3. PROJECT DESCRIPTION

3a. EXISTING CONDITIONS

Sag Harbor and Sag Harbor Cove are listed as Impaired waterbodies in the NYSDEC Priority Waterbody List.[1] They are included in the Peconic Estuary Pathogen TMDL to address shellfishing impairments. Multiple studies confirm that the water quality impairments are caused largely by nitrogen loading due to onsite septic systems.

The *Assessment of Water Quality in Marine Waters Surrounding Sag Harbor Village, 2018-2019* by Dr. Christopher Gobler, Stony Brook University (2020) [2] found that:

- Multiple water quality impairments were observed; Nitrogen, low oxygen, reduced water clarity, algal blooms, rust tides, and pathogenic bacteria were all detected at levels exceeding state and federal guidance values.
- Nitrogen was the nutrient promoting algal growth and, in turn, rust tides, low water clarity, and low oxygen.

[1] Available at https://www.dec.ny.gov/data/WQP/PWL/1701-0035.html?req=47664
[2] https://www.sagharborpartnership.org/uploads/1/0/4/2/104256339/sag_harbor_2019_draft_final_report.pdf

- Given the ability of N to increase phytoplankton biomass, the exceedance of guidance values for total N, algae, and water clarity, and the occurrences of harmful rust tides that are promoted by excessive N, reductions in N loading across the region are warranted.

- Wastewater from on-site septic systems was the primary source of nitrogen in Sag Harbor and Sag Harbor Cove.
    - Nitrogen loading analyses indicated that septic tanks and cesspools were the strongest source of N for both the Cove, the Inner Harbor and the Harbor, representing 70% of the total load.

- Upgrading septic systems and/or connecting homes to the sewage treatment plant will reduce the incidence of rust tide, algal blooms, and hypoxia while improving water clarity.
    - The report noted that nitrogen discharge from the Village's existing wastewater treatment facility (<5 Mg/L) is better than any approved onsite septic system, including the newer I&A treatment systems.

Refined Assessment of Water Quality in Marine Waters Surrounding Sag Harbor Village, 2020, prepared by Dr. Gobler, concluded:

> "Given the connection between excessive N and water quality impairments, reductions in N loading across Sag Harbor are warranted. Nitrogen loading analyses indicated that septic tanks and cesspools were the strongest source of N for the Harbor, representing 90% of the total load. Given this, upgrading these systems and/or connecting homes to the sewage treatment plant would be the effective mitigation approaches." (Page 15)

Yearly testing and reporting by Dr. Gobler, of SOMAS including the most recent March 2023 report based on 2022 testing, has confirmed the need for nitrogen mitigation in the priority areas addressed by this application, with sewering being the preferred method due to the "remarkably low level of nitrogen output of the WWTP" (3/2/23 presentation to the Village Harbor Committee by Dr. Gobler).

The Village of Sag Harbor *Water Quality Improvement Project Plan* (WQIPP), completed for the Village by the firm Nelson, Pope & Voorhis (NPV) in August 2016,[3] indicated:

- With many small developed lots in proximity to TMDL waterbodies and in high groundwater areas, it is likely that on-site sanitary treatment systems are contributing to local water quality impairments. Sag Harbor is included in the NYSDEC MS4 Pathogens TMDL Retrofit Area.[4]
- The Village of Sag Harbor's lowest topographic elevations occur along its extensive shorelines and northeastern boundary, where shallow depth to groundwater is also evident.
- Greater than 50% of the Village lies within the 0-2 year groundwater contributing area to local surface waterbodies.
- As the WWTP was known to have excess capacity, it was recommended that the Village investigate the feasibility of expanding the sewer service area.

[3] Available at: http://sagharborny.gov/DocumentCenter/View/136/2016-Water-Quality-Improvement-Plan-PDF?bidId=
[4] Retrofit Program Plan Guidance Document For Pathogen Impaired Watershed MS4s on Long Island (2013). NYSDEC. Available at: https://www.dec.ny.gov/docs/water_pdf/rppgdpiwms4li.pdf

Earlier studies that have informed the proposed project include:

- "Suffolk County Subwatersheds Wastewater Management Plan", Camp, Dresser & McKee, February 2020, recommends a 62-81% reduction of nitrogen loading to the marine waters of the Village.
- The Peconic Estuary Program (PEP) 2020 Comprehensive Conservation and Management Plan[5] identifies high levels of nutrients, particularly nitrogen from non-point sources such as residential septic systems, as a contributing factor to observed water quality problems in the estuary.
- Local Waterfront Revitalization Program. Adopted 1986, and amended 2006, currently undergoing update, recognizes that nitrogen from onsite wastewater systems is a treat to area water quality
- "Triennial Review of Coliform Data, Shelter Island Sound-South, Shellfish Land Number 18S, Towns of Southampton, East Hampton and Shelter Island, 2013-2017", NYSDEC, Shellfish Growing Classification Unit, June 2018.
- "Engineering Report, Village of Sag Harbor Wastewater Treatment Plant, Plant Capacity for Future Expansion of Sewer District", Dietrich Engineering, P.C., June 2018.
- "Sewer Capacity Study, Sag Harbor," Cameron Engineering, May 2014. This was part of a larger Suffolk County study for extension of existing sewer districts within the County.
- "Planning Strategies for the Village of Sag Harbor", Interscience Research Associates Environmental Planning & Development Consulting, 2008, recommended investigation of strategies to improve management of sanitary wastewater for the purpose of natural resource protection.

3b. How the project addresses the issue in the context of reduction as per the CPF WQIPP

The Village will retain a qualified consultant to evaluate the Phase II Sewer Extension Area, prepare an engineering report, support legal regulatory approvals, and prepare plans and specifications required for construction bidding. This section explains the Phase II Expansion Study Area and the engineering scope of work for this funding request.

Phase II Expansion Area Description

The Village, with CPF funding support, commissioned Cameron Engineering to prepare a Sewer Master Plan in 2020. The goal of the plan is to provide guidance to the Village on the management of wastewater generated by residents and its downtown commercial district. The Master Plan, which in its draft format is already supporting implementation efforts, is nearly complete. Its findings include:

- Available capacity at the WWTF is estimated at 90,000 GPD.
- A total of 16 potential new sewersheds were identified based on physical boundaries, groundwater travel time, receiving waterbodies, topography, soil characteristics and other considerations.
- The sewersheds were prioritized based on a weighted scoring system to identify impact on Village water bodies. Factors include groundwater flows to receiving waterbodies, amount of residential nitrogen, density of residential nitrogen, depth to groundwater, percent of non-vacant parcels, and number of buildings within or near very poorly drained soils. Sewersheds with a higher score indicate a higher priority for upgrade.

[5] Available at https://www.peconicestuary.org/ccmp2020/

Phase I Sewer Expansion Area: To date, using grants obtained by both the Town of Southampton (TOS) and the Town of East Hampton (TOEH), the Village has conducted and completed the detailed engineering for two of the highest ranked sewersheds, Sewershed K and Sewershed L. The Village has completed the Engineering Report, survey, soil borings, detailed drawings for gravity sewers, detailed technical specifications for both of these sewersheds. The Village has completed the SEQRA process for the expansion of sewers into these two areas. These two areas are being called Phase I in the Sewer Master Plan. The bidding process is ready to be undertaken once the financing for one or both sewersheds is secured. Combined projected sewage volume for K and L is approximately 25,000 gallons per day. The amount of nitrogen to be removed from extending sewers into K and L is estimated at 635 pounds per year.

Phase II Sewer Expansion Area: The Village has carefully evaluated the next areas for sewering. A review of each of the highly ranked sewersheds as identified in the Master Plan was conducted and an assemblage of the most appropriate parcels was developed.

Table 1: Sewershed Table with Phase I and Phase II Sewer Extension Information

Sewershed ID	No. of Parcels	Phase I	Phase II	Percentage of Parcels included in Sewer Extensions	Sewershed Matrix Score
A	77				1.7
B	145				1.75
C	180				1.6
D	69				1
E	***135***		***75***	***56%***	***2.35***
F	***132***		***38***	***29%***	***2.05***
G	129				2.25
H	***92***		***91***	***99%***	***2.1***
I	***182***		***53***	***29%***	***2.3***
J	116				1.75
K	***44***	***44***		***100%***	***3***
L	***40***	***40***		***100%***	***2.3***
M	83				1.4
N	102				1.25
O	163				1.9
P	168				1.9
Totals	**1,857**	**84**	**257**		

Between Phase I and Phase II, the currently identified capacity of 90,000 gallons will be allocated. **Figure 1** shows the proposed boundaries of the Phase II study area. **Figure 2** shows the proposed boundaries overlaid on the specific portions of the sewersheds that are aggregated for the Phase II study area. **Figure 3**

shows the topography of the proposed Phase II study area. **Figure 4** shows the travel time of the OWTS effluent to reach the Village's receiving waters.

Figure 1

Figure 2

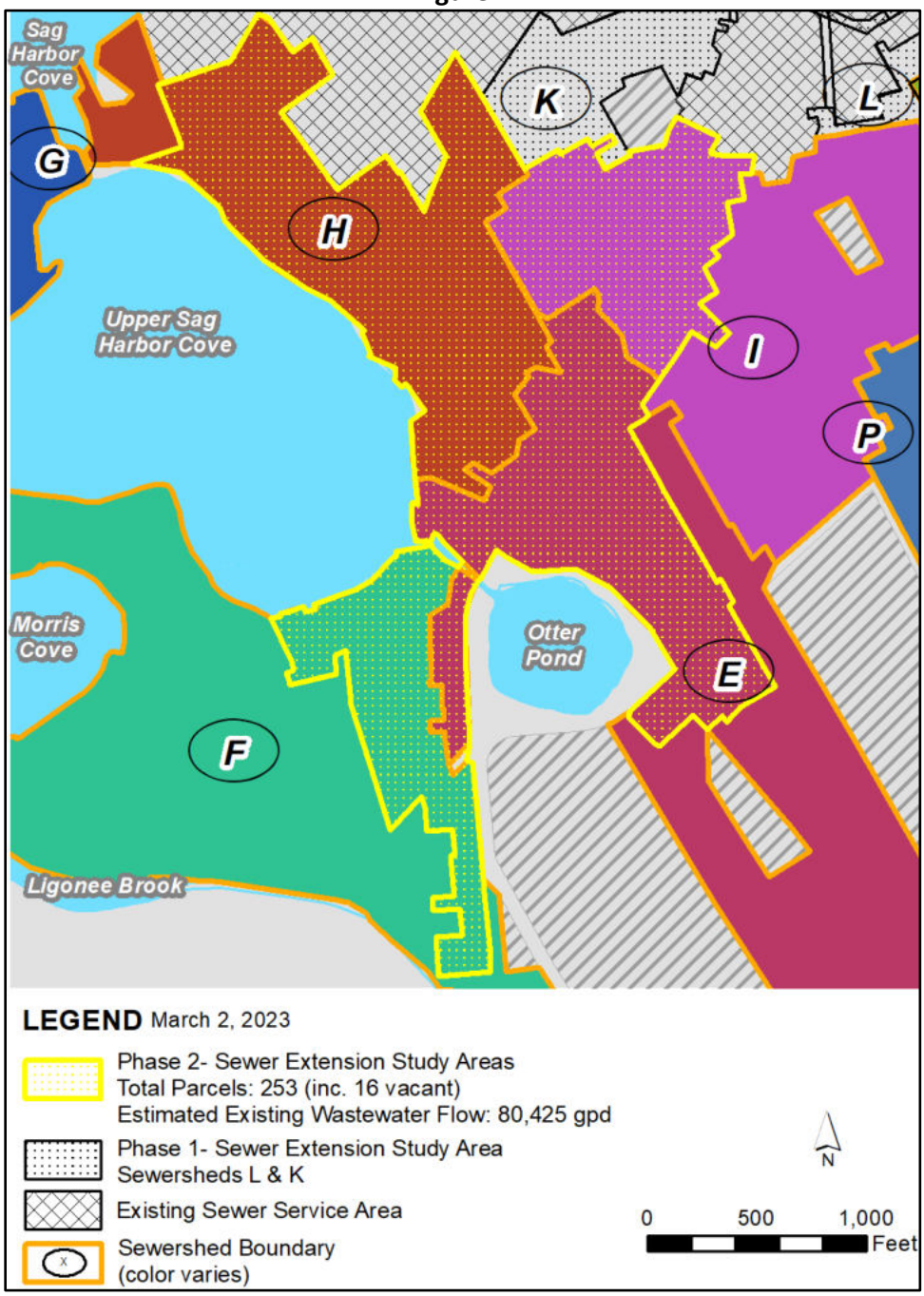

Sag Harbor Cove
G
H
K
L
Upper Sag Harbor Cove
I
P
Morris Cove
Otter Pond
E
F
Ligonee Brook
LEGEND March 2, 2023
Phase 2- Sewer Extension Study Areas
Total Parcels: 253 (inc. 16 vacant)
Estimated Existing Wastewater Flow: 80,425 gpd
Phase 1- Sewer Extension Study Area
Sewersheds L & K
Existing Sewer Service Area
Sewershed Boundary
(color varies)
N
0
500
1,000
Feet

Figure 3

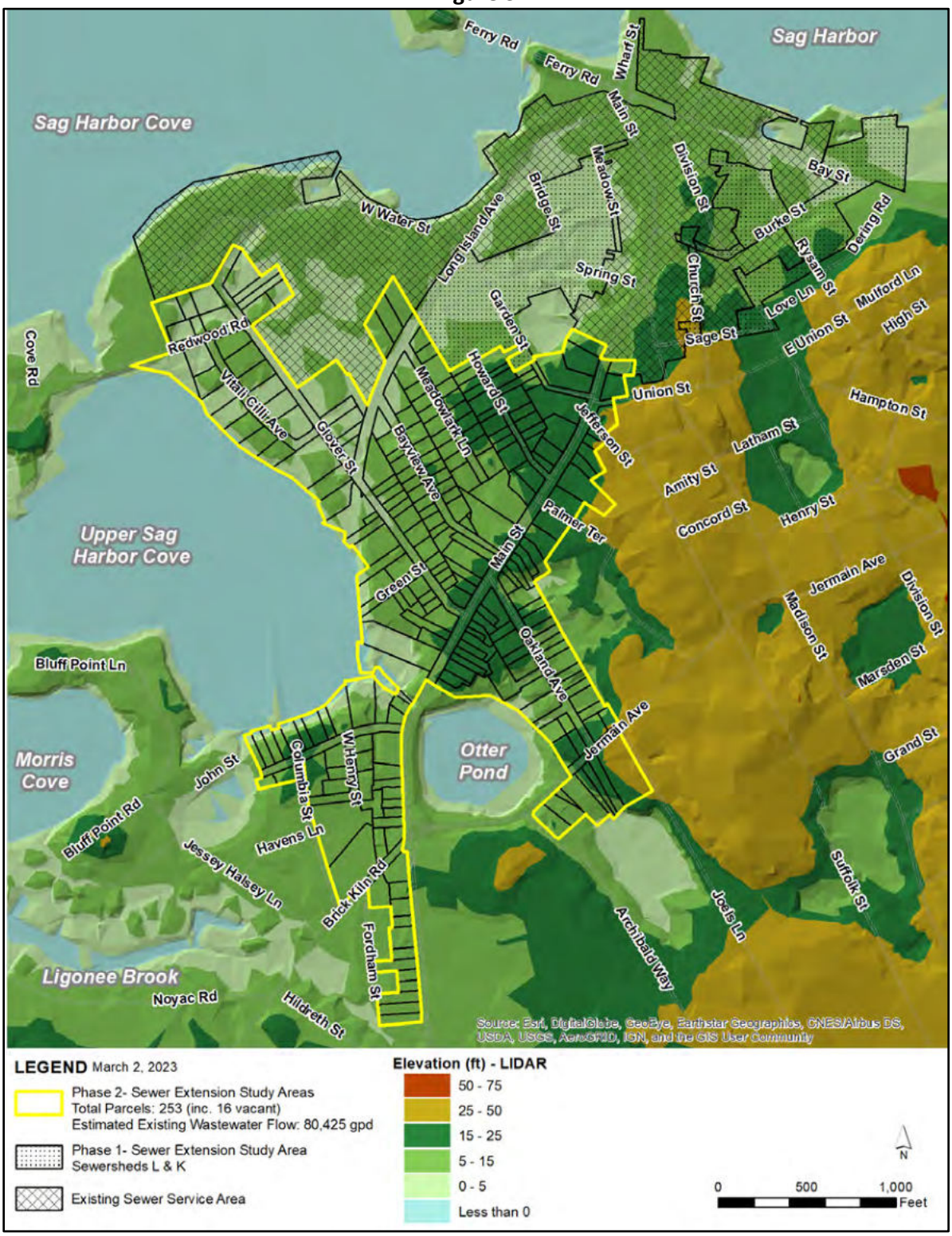
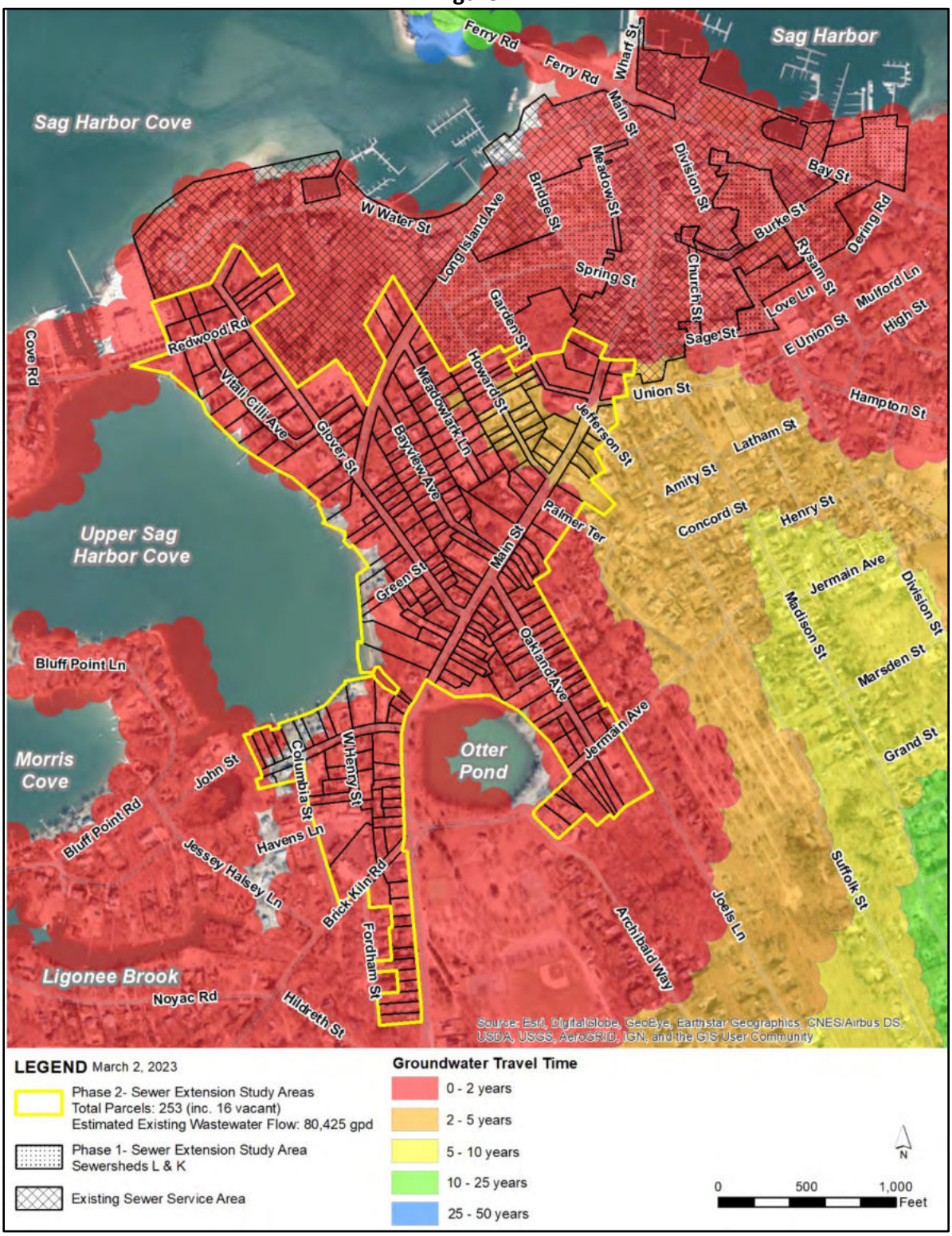

Sag Harbor
Sag Harbor Cove
Upper Sag Harbor Cove
Morris Cove
Otter Pond
Ligonee Brook
Ferry Rd
Wharf St
Main St
Meadow St
Division St
Bay St
Burke St
Dering Rd
Rysam St
Love Ln
Mulford Ln
High St
E Union St
Sage St
Church St
Spring St
Garden St
Bridge St
W Water St
Long Island Ave
Redwood Rd
Cove Rd
Vitali Cilli Ave
Glover St
Meadowlark Ln
Howard St
Bayview Ave
Jefferson St
Union St
Hampton St
Latham St
Amity St
Concord St
Henry St
Palmer Ter
Green St
Jermain Ave
Madison St
Marsden St
Grand St
Suffolk St
Joels Ln
Archibald Way
Oakland Ave
Bluff Point Ln
John St
Bluff Point Rd
Jessey Halsey Ln
Havens Ln
Columbia St
W Henry St
Brick Kiln Rd
Fordham St
Noyac Rd
Hildreth St
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
LEGEND March 2, 2023
Phase 2- Sewer Extension Study Areas
Total Parcels: 253 (inc. 16 vacant)
Estimated Existing Wastewater Flow: 80,425 gpd
Phase 1- Sewer Extension Study Area
Sewersheds L & K
Existing Sewer Service Area
Elevation (ft) - LIDAR
50 - 75
25 - 50
15 - 25
5 - 15
0 - 5
Less than 0
N
0
500
1,000
Feet

Figure 4


Sag Harbor
Sag Harbor Cove
Upper Sag Harbor Cove
Morris Cove
Otter Pond
Ligonee Brook
Ferry Rd
Wharf St
Main St
Meadow St
Division St
Bay St
Bridge St
W Water St
Long Island Ave
Burke St
Dering Rd
Rysam St
Spring St
Church St
Love Ln
Mulford Ln
High St
Garden St
Sage St
E Union St
Redwood Rd
Cove Rd
Howard St
Union St
Hampton St
Vitali Cilli Ave
Meadowlark Ln
Jefferson St
Latham St
Glover St
Bayview Ave
Amity St
Palmer Ter
Concord St
Henry St
Green St
Jermain Ave
Madison St
Bluff Point Ln
Oakland Ave
Marsden St
Grand St
John St
Columbia St
W Henry St
Bluff Point Rd
Havens Ln
Jessey Halsey Ln
Brick Kiln Rd
Suffolk St
Joels Ln
Archibald Way
Fordham St
Noyac Rd
Hildreth St
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
LEGEND March 2, 2023
Phase 2- Sewer Extension Study Areas
Total Parcels: 253 (inc. 16 vacant)
Estimated Existing Wastewater Flow: 80,425 gpd
Phase 1- Sewer Extension Study Area
Sewersheds L & K
Existing Sewer Service Area
Groundwater Travel Time
0 - 2 years
2 - 5 years
5 - 10 years
10 - 25 years
25 - 50 years
N
0
500
1,000
Feet

It is noted that if all of the existing 257 parcels within the proposed Phase II Study Area were connected, the projected sewage flow could exceed the target of 65,000 gpd. The Phase II Study area evaluation will evaluate these parcels to determine the most appropriate expansion area configuration, taking into account water quality benefits, cost and other factors. If appropriate, consideration will be made to plan for "dry sewers" in some locations within the overall study area, where this would be cost effective for a future Phase III expansion. Such future expansion would be built in coordination with a capacity increase in the WWTF.

Engineering Scope of Work

The Village will retain a qualified consultant to prepare an engineering report, support legal regulatory approvals, and prepare plans and specifications required for construction bidding. Tasks are as follows:

Engineering Design Report: Prepared in accordance with Ten State Standards, provides basis of design of the new sewers, identifies projected flow from the sewershed, locates the sewers, size of the sewers, slope of the sewers, type of piping, connections, service connection locations, construction techniques and cost estimate.

Survey and Utility Markouts: A qualified and experienced surveyor will engage an approved markout firm to identify utilities using information provided by the utility owners. Utilities to include gas, water, electric, cable and telephone. Following utility markout a surveyor will proceed to conduct a topographic survey (NAVD 88) for curb to curb within the areas to be sewered. Survey to pick up street features, including curbing, drainage structures, existing sewers (connection points), utility markouts, water boxes, etc. Survey files to be in latest version of AutoCad and will be used for design of the sewer plan and profiles.

Detailed Design (Public ROW): Detailed drawings prepared by engineers and designers showing the alignment, depth and location of new sewer piping both in Plan view and Profile view in accordance with Ten State Standards requirements for piping depth, size and slope. Field work will be conducted to determine location of house service connections. Information provided by utility markout and surveyor will allow design engineer to show utility crossings and potential utility conflicts requiring relocations. Road restoration design to be included. Specifications will be prepared including a "Front End" that provides contract language for the construction work. Included are sections on Bid Bond, Performance Bond, Insurances, Payment, Labor Rates and the General Conditions as to how the construction work is to be undertaken and administered by the Contractor. "Technical Specifications" will be prepared that will detail the materials to be used, installation requirements, sheeting, shoring dewatering, testing procedures, manufacturer approvals, safety plans, approval and acceptance procedures and project closeout.

The design drawings for the sewer extension will be submitted to both the New York State Department of Environmental Conservation and the Suffolk County Department of Health Services. Comments from the agencies will be incorporated into the design documents. Additional permits such as disposal of dewatering flow will be identified in both the Engineering Report and the contract documents. Contractors will be required to file for these permits prior to construction activities.

Detailed Design (Parcels): LPS systems necessitate some homeowner investment in site plan preparation and installation of equipment on the homeowner's property. In order to lower potential barriers to homeowners connecting to the system, the Village is taking a lead role in site plan development for each

property. Should funding be made available for design of individual parcel LPS systems (locating, piping to and from unit, existing utilities and electrical routing and requirements) the design drawings will include an individual site plan for each of the parcels showing existing conditions and proposed installation. Site plans will be suitable for submission to permitting agencies and for construction documents. This is further discussed in the cost section of this proposal.

Borings/Geotechnical: A requisite amount of soil borings will be performed and a geotechnical report will be prepared to provide subsurface information to the design engineer. Information will determine if any subsurface conditions exist that may require special foundations for sewer pipe support. Borings will be drilled to a minimum of 20 feet and will note groundwater elevation if encountered. Information will be used to determine if sheeting and dewatering of trench will be required.

Cost Estimating: Upon completion of the 90% level of the Contract Documents (Plans & Specifications), a qualified and experienced firm specializing in construction cost estimating will be engaged to develop a detailed cost estimate for the sewer work.

Map & Plan: The Map & Plan provides initial boundaries of the benefitted area, sewage flow projections based on Ten State Standards, technical details on the proposed sewer infrastructure (30% design), and cost estimates and tax implications for the debt service for the sewer installation and yearly operations and maintenance (O&M) costs for maintaining the new infrastructure. A final Map & Plan would be prepared once final boundaries are set as per public input and Village approval.

Administration: Cameron Engineering will work with Village officials, Sewer Committee members, and the Village Attorney in shepherding the sewer extension through the design and permitting process. Meetings will be conducted on a regularly scheduled basis, communications including emails, texts and written progress reports will be prepared throughout the project. Assistance on fund development and grant reporting will be provided.

The scope of work will position the Village to immediately proceed to bidding for the sewer expansion.

3c. Narrative describes proposed technology in sufficient detail and includes information on its demonstrated efficacy in similar setting (may include published data).

The Village's WWTF is operated under the provisions and effluent limitations of a New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) permit (NY0028908). The WWTF discharges through an outfall located at the bulkhead of the WWTF site. The WWTF has a design capacity of 250,000 gallons per day (GPD). While the peak monthly average is well below this volume, the WWTF can see a daily peak flow approaching 150,000 gpd in the busy summer months of June through September. This leaves approximately 90,000 gpd of excess capacity. The plant utilizes a sequential batch reactor, which processes the influent using an ultra-violet light system to kill the bacteria prior to outflow. **Figure 5** depicts the existing collection system. **Figure 6** provides aerial views of the plant. As noted, the Phase I sewer service area expansion is expected to utilize 25,000 gpd of available excess capacity. Phase II is expected to utilize the remaining 65,000 gpd. A future Phase III is expected to utilize an expanded plant capacity of up to 70,000 gpd.

Lab tests performed by Long Island Analytical Laboratories, Inc. indicate that the WWTF performs at a high level of efficiency. Tests performed in August 2022 determined that the nitrogen measurement was 2.3 Mg/L. Further, the fecal coliform count was less 2.0 MPN/100 ml.[6] The 2022 Discharge Monitoring Report (DMR) to the New York State Department of Environmental Conservation (DEC) shows the last 2022 rolling average for Total Nitrogen at 2.1 pounds per month total discharge loading at a 3.6 mg/l average concentration. By contrast, the WWTF permitted effluent is 10 Mg/L, our local groundwater is 4-4.5 Mg/L, and I/A systems are permitted at 19.00 Mg/L.

Figure 5. Existing Sag Harbor Sewer Service Area Collection System

Figure 6. Sag Harbor Sewer Service Area and Village Boundary, and WWTF

[6] Long Island Analytical Laboratories, Inc.

3d. Narrative indicates how the project supports Town of Southampton, Suffolk County, NYSDEC Long Island Nitrogen Action Plan (LINAP) or other adopted goals/policies.

Town of Southampton Water Quality Improvement Project Plan (2016): The plan indicates that:

- The highest concentration of nitrogen from septic systems to the Peconic Estuary originates primarily from Sag Harbor, Riverhead and Montauk (p. 29).
- The primary source of pollution to the Town's waters originates from onsite cesspool and septic systems, and that the bulk of the Town's attention at the onset of the CPF funding program will be focused on reducing those loads (p.20).
- All Village coastline that lies within the Town of Southampton is situated in a high priority area, as shown on the attached map. The high priority area includes substantial portions of the areas that are targeted for sewer service expansion.

Suffolk County Comprehensive Water Resources Management Plan[7]: The plan identifies Sag Harbor Cove and Connected Creeks as Wastewater Management Area 10 (page 6-10) and determines that the area is a wastewater management Priority Rank 2 area with an overall ideal water quality goal of 81 percent. Page 6-19 states that residential neighborhoods surrounding Sag Harbor Cove "scored in favor of sewering due to their proximity to the existing WWTF and the ecological rank of Priority Rank 1. In addition, Sag Harbor Cove is identified as potentially requiring nitrogen load reductions above the reduction that could be achieved through the use of I/A OWTS alone to meet water quality goals. The proposed project is directly supportive of these findings by advancing efforts to connect the targeted neighborhoods to the WWTF.

Long Island Nitrogen Action Plan (LINAP)[8]: Goal 4.a.a is to develop "action plans which contain near term actions that will reduce nitrogen pollution to groundwater and surface waters." The proposed project is directly supportive of this goal as it will lead to implementation of wastewater system improvements that will reduce nitrogen pollution to groundwater and surface waters (page 7).

Peconic Estuary Program (PEP) Comprehensive Conservation and Management Plan[9]: Within the Clean Water Goal, Objective E calls for decreasing negative impacts from legacy, current and future nutrient inputs. The proposed project is directly supportive of this goal as it will enable the Village to connect properties in a high priority area to the WWTF, thereby reducing nitrogen and other pollutants entering the estuary. The sewershed is identified as a high priority based on proximity to WWTF, proximity to surface water, groundwater depths/travel times, and nitrogen removal potential.

Sag Harbor Village Water Quality Improvement Plan (WQIPP)[3]: As previously noted, the proposed project is supported by the following WQIPP recommendation:

- Potential Expansion of Sag Harbor Wastewater Treatment Facility District: conduct feasibility study to determine to advisability of extending the area served by the Village wastewater treatment facility, which is operating below capacity. (Page 6.)

[7] Available at: https://suffolkcountyny.gov/Portals/0/formsdocs/planning/CEQ/2020/RevisedComplete%20SWP2-21-20.pdf
[8] Available at: https://www.dec.ny.gov/docs/water_pdf/linapscope.pdf
[9] Available at: https://www.peconicestuary.org/ccmp2020/

Sag Harbor Village Sewer Master Plan: The project implements a recommendation of the Sag Harbor Sewer Master Plan to utilize available capacity of the WWTF to extend the sewerage system to the high priority parcels.

4. WATER QUALITY BENEFIT

4a. Identify Nitrogen, Pathogen or Pollutant of Concern (POC) including Existing Condition and Target Reduction.

Nitrogen reduction expected to be achieved by connecting up to 65,000 gpd from the Phase II sewer expansion area is estimated at 11,872 pounds per year. The currently proposed sewer expansion study area has a total of 253 parcels. Using standard Suffolk County Department of Health Services sewage flow factor of 300 gpd per single family residence approximately 217 parcels could be connected. As stated above, dry sewers may be installed in the roadways but not all parcels would be connected at time of installation of sewers in the ROW. This could change based on actual sewage flow records from the Village's WWTP that may indicate that additional capacity exists above the preliminary projections.

4b. Describe plans for collecting and reporting on water quality over time.

The water quality monitoring activities initiated by SOMAS in 2018 will continue to be supported by the Village moving forward.

4c. Indicate useful life of proposed technology (must meet or exceed five years).

A sewer system will meet or exceed the five-year threshold required by CPF. The proposed low pressure pumping system force main is expected to have a minimum of a 30-year service life. Fittings, valves and other ancillary equipment associated with the force main would be expected to have a 10-15 year service life.

Should the Village elect (subject to construction grant funding) to provide the residential LPS pumping units, it would be expected that some components of the units such as the fiberglass housing and piping would have a greater than 20-year service life. Pumping units would be expected to have a 10-15 year service life with routine maintenance being performed in accordance with manufacture's recommendations by qualified service technicians.

SECTION 5. COST FACTORS

5a. Explain how you have confirmed that the proposed budget is reasonable, appropriate, and necessary. If available, please provide any and all estimates or documentation of how costs were determined.

The proposal budget was developed by Cameron Engineering based on professional engineering principles and practices, as well as current market research. As demonstrated in the attached statement of qualifications, Cameron has extensive experience in the planning, design and engineering of sewer systems in Suffolk County, and knowledge of current market conditions. Accordingly, the firm provided a detailed rationale for the itemized budget as discussed below.

For engineering design related services for the design the Phase II Sewer Service Expansion Area the following costs are anticipated:

No.	ITEM	COST		
		ROW	PARCELS	TOTAL
1	Engineering Design Report	$ 40,000	$ 5,000	$ 45,000
2	Survey & Utility Markouts			
2a	ROW	$ 277,550		$ 277,550
2b	Parcels	$ -	$ 197,925	$ 197,925
3	Detailed Design			$ -
3a	ROW	$ 600,000		$ 600,000
3b	Parcels	$ -	$ 200,000	$ 200,000
4	Borings / Geotech	$ 70,000		$ 70,000
5	Cost Estimating	$ 45,000	$ 5,000	$ 50,000
6	Map & Plan	$ 30,000		$ 30,000
7	Project Administration	$ 20,000	$ 8,000	$ 28,000
	Total Cost	$ 1,082,550	$ 415,925	$ 1,498,475

Cost estimates provided by qualified subcontractors will be performed in the middle and end of the detailed design. As the public will weigh in on the project, it is possible that the final boundaries of the proposed Phase II sewer expansion could be adjusted as a result of public input. Expanding the proposed areas of sewering and or the number of parcels that would be surveyed and connections designed would add time as additional survey and engineering would be required.

5b. Describe any matching funds to be provided

The Village is seeking funds from the Southampton Town CPF Water Quality program to support the proposed scope of work. Village contributions to the project which are not reflected in the grant budget include:

- In-kind staff and consultant resources for project management, administration and grant writing
- Continued public and private Village funding of yearly water quality monitoring, testing and reporting by Dr. Gobler of SOMAS including the most recent report based on 2022 water testing.

Additional leveraged support includes studies that informed development of the Sewer Master Plan. These include:

- 2018 study of several sewer service expansion options, prepared by Dietrich Engineering ($10,455) and funded by the Village.
- A two-year water quality and testing study performed by Dr. Christopher Gobler of SOMAS. The full cost of the study was approximately $70,000, with the majority of funds provided by the Village Harbor Committee.
- Town of East Hampton CPF 2020 award for $72,400 to fund 50% of the cost for preparing the Sewer Master Plan, as well as the Map and Plan for Phase I (Sewersheds L and K).

5c. Explain why the project cannot proceed and intended benefits cannot be achieved without external funding. Please describe how the project will proceed if funds awarded are lower than requested or if there are cost overruns.

The Village has advanced its efforts to the extent that financial resources allow and cannot proceed with additional engineering services without external funding support. As noted above, the Village provided partial funding for the SOMAS study and self-funded the previous WWTF capacity studies. It also plans to support additional water quality monitoring.

If funds are awarded at a lower level than requested, the Village will continue to seek other sources of funding to make up the shortfall, though this may affect the project timeline and delay the intended water quality improvement outcomes. Suffolk County Water Quality grants and NYS Consolidated Funding Application programs generally follow an extended timeline due to annual funding cycles and lengthy contracting procedures.

The Village is well positioned to avoid cost overruns. Its engineering consultant has researched project costs based on professional knowledge of tasks required and current market conditions. We have proposed the most complete, reasonable cost estimate possible at this point in time. The consultant procurement process will require bidders to provide itemized cost proposals, and cost will be a consideration in scoring. The resultant consultant contract will outline clear deliverables and performance expectations, with payments tied to completion of deliverables.

With regard to future construction, the Village is actively investigating strategies for a diversity of funding streams.

6. MANAGEMENT, EXPERIENCE, ABILITY

6a. Describe applicant's experience in completing similar projects

In addition to the Sewer Master Plan and planning the Phase I Sewer Service Area Expansion, the Village has completed a number of planning studies, including but not limited to:

- Local Waterfront Revitalization Program. Adopted 1986 and amended 2006. Currently undergoing update.
- "Planning Strategies for the Village of Sag Harbor." Interscience Research Associates Environmental Planning & Development Consulting, 2008.
- Water Quality Improvement Project Plan. Nelson Pope & Voorhis, 2016.
- "Engineering Report, Village of Sag Harbor Wastewater Treatment Plant, Plant Capacity for Future Expansion of Sewer District." Dietrich Engineering, P.C., June 2018.

The Village will oversee delivery of the funded scope of work under the direction of Trustee Aidan Corish. Since his tenure as Trustee began in 2017, his accomplishments have included helping to implement the first ever continuous water quality testing initiative in association with SOMAS; initiating the project to expand the WWTF service areas to reduce the amount of nitrogen entering the waterways; and working continuously to secure grants for infrastructure projects. His oversight will occur in coordination with Village Administrator Kate Locasco, who will be responsible for financial administration; and

Superintendent of Public Works Dee Yardley who is responsible for managing the Village WWTF. Trustee Corish will ensure public engagement via meetings of the Village Trustees.

Qualifications of the Cameron Engineering team are attached. Cameron has been retained to prepare the Sewer Master Plan, including the Map & Plan for Phase I, and to provide support for shaping the scope of work, timeline and budget for this grant request.

6b. Describe community support or opposition to project. If there is opposition, explain how this is to be addressed.

Numerous community organizations have expressed support for the project and have contributed to funding for the continued water quality testing and reporting which is considered to be a cornerstone of the project. With the leadership of the Village's Harbor Committee and various Village community stakeholders, sufficient funding was raised to award a grant to the SUNY School of Marine and Atmospheric Sciences at Stony Brook to complete the 2020 study authored by Dr. Gobler. Materials from their website and social media are available upon request. These studies and reports have continued to be funded each year with the most recent report having been presented by Dr. Gobler in March, 2023.

News coverage includes the following articles:

- "Sag Harbor Launches Water Quality Initiative." *East End Beacon,* June 1, 2018
- "Sag Harbor Begins to Weigh Expanding Sewer Plant Service Area." *Sag Harbor Express*, February 6, 2019
- "Study Suggests Boaters May Be Releasing Septic Waste in Sag Harbor." *Sag Harbor Express*, February 12, 2020
- "Sag Harbor Will Seek Funding for Sewer Engineering Study." *Sag Harbor Express*, March 10, 2021
- "Sag Harbor Village Board Takes First Look at Sewer Master Plan." *Southampton Press*, September 14, 2022
- "Sag Harbor Sewer Extension Recommended for CPF Support by East Hampton Town Water Committee." *Southampton Press*, September 21, 2022
- "Sag Harbor Receives Grant for Sewage Line Expansion From Southampton Town." *Southampton Press*, January 4, 2023

The sewer project is discussed regularly at public meetings of the Sag Harbor Village Trustees. Most recently was a presentation of the Sewer Master Plan on September 14, 2022.

Village officials have engaged community members in discussions about sewering with responses being generally positive. Community outreach and education efforts will be ongoing in order to ensure the public remains engaged and informed.

6c. Describe any permits needed and timeframe/status of approvals.

No permits are required for development of plans and specifications, however regulatory approvals required for construction will be addressed during the design process.

7. MAINTENANCE/MONITORING/EVALUATION

a. Please describe the proposed plan for on-going maintenance and evaluation including who will be responsible for the maintenance and monitoring. Please include how it will be funded.

The water quality monitoring activities initiated by SOMAS in 2018 will continue to be supported by the Village.

The Map and Plan, as well as the engineering report will detail operations and maintenance requirements for the sewer system on Village ROW; these will be the responsibility of the Village.

8. DURATION OF THE PROJECT

a. Provide a projected project timeline

The project will begin upon execution of the contract with the Town of Southampton and issuance of NTP to the selected engineering consultant.

Task	MONTH									
	1	2	3	4	5	6	7	8	9	10
Survey ROW	x	x	x	x	x	x				
Survey Parcels			x	x	x	x	x			
Borings/ Geotech		x	x	x						
Specifications	x	x	x	x	x	x	x	x		
Detailed Design ROW			x	x	x	x	x	x	x	
Detailed Design Parcels				x	x	x	x			
SEQRA	x	x	x	x	x	x	x	x	x	x
Cost Estimating					x				x	
Permits/Approvals						x	x	x		
Public Outreach		x			x			x		x
Map & Plan						x	x	x	x	x

As noted in the table above, it is anticipated that the design phase will require approximately 10 months to complete. Specific tasks include Engineering Report, Survey and Utility Location of ROW, Survey and Utility Location on Parcels, Soil Borings and Geotechnical report, Technical Specifications, Drawings, SEQRA process, permit applications, and public participation and outreach workshops.

b. If project is multi-year or phased, provide a breakdown of budget and milestones.

N/A

10. SUSTAINABILITY

The WWTF is located in the 500-year flood zone (Zone AE). The sewerage system includes flood hazard areas and Sea, Lake and Overland Surge from Hurricanes (SLOSH) maps.

The Village is a stakeholder in the 2020 Suffolk County Multi-Jurisdictional Hazard Mitigation Plan. This plan addresses flood mitigation needs and will preserve Village eligibility for future FEMA funding opportunities for capital projects needed to mitigate the flood hazards at the WWTF. Planning and engineering services related to the proposed project have and will continue to incorporate flood mitigation as well as shallow groundwater issues. New sewer lines to be installed will use plastic piping with O-rings at the joints, so that any rise in groundwater level will not negatively impact the system. Likewise, manhole inserts will prevent surface flood waters from entering manholes at the street level. Due to high groundwater conditions, use of Low Pressure Pumping Units (LPS) are likely to be favored over conventional gravity piping that would be very costly to install.

Town of Southampton CPF Water Quality Improvement Project Plan

NOYAC

1

Project Location

High Priority Area
Medium Priority Area
NYS DEC 303d Impaired Waterbodies (2014)
Protected/ Public Parcels

0 1,550 3,100 6,200 Feet

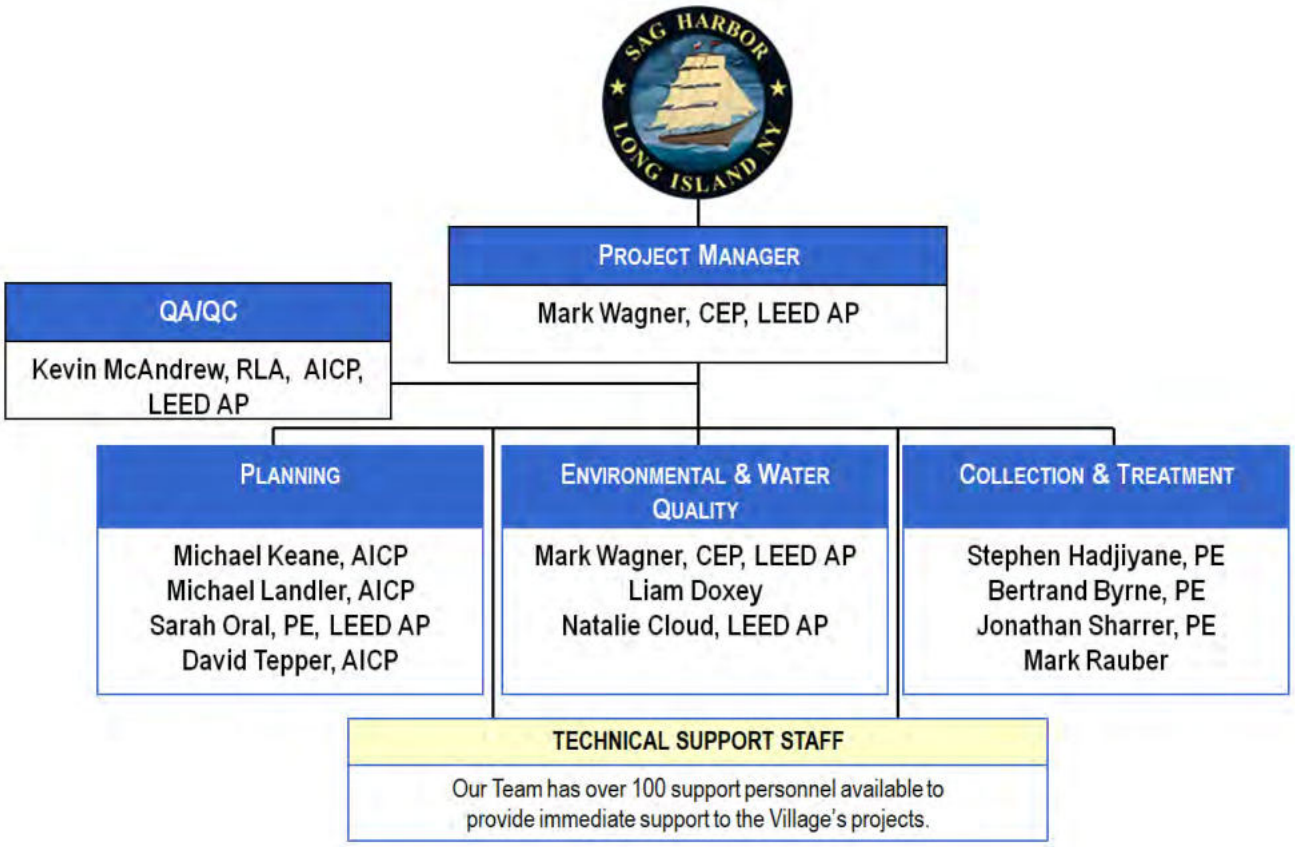
N W E S

Prepared By:The Town of Southampton Dept of Geographic Information Systems Date: 7/5/2016 - MAP ID: 2514

Staffing

Professional Management and Staff
Cameron Engineering is comprised of highly qualified planners, engineers, environmental scientists and landscape architects. This Village of Sag Harbor project will be properly staffed to take into account the strengths of the Firm and maximum utilization of its resources.

Organization Chart



Key Personnel

Mark Wagner, CEP, AICP, LEED AP - As Principal and Manager of Water and Wastewater Engineering, Mr. Wagner is extensively involved in the management and coordination of all projects involving wastewater collection, conveyance, treatment, operations and maintenance of municipal treatment facilities and solid waste treatment and management. Areas of responsibility include project planning, design, construction administration, providing operator training and technical assistance, processing systems troubleshooting, facility start-ups, regulatory interfacing, cost analysis and project permitting. Mr. Wagner has been with the firm since 1985. He has an excellent relationship with the local (SCDHS) and State (NYSDEC) regulatory agencies. Mr. Wagner is also a Grade 4A Certified Wastwater Treatment Plant Operator. Projects of note conducted under Mr. Wagner's direction include the Consolidation of the Villages of Lawrence and Cedarhurst Wastewater Infrastructure, Bergen Point Sewage Treatment Plant 120 MGD Ultraviolet Disinfection, Village of Greenport Water Pollution Control Plant BNR/UV Upgrade, City of Glen Cove BNR/UV Upgrade, City of Long Beach Total Residual Chlorine, Greater Atlantic Beach Water Reclamation TRC and Ammonia Reduction Project, and management and supervision of the Cedar Creek WPCP.

Mr. Wagner has been involved in the start up of processing systems, troubleshooting, and providing technical assistance to both municipal and private operators. He is a Certified Grade 4A Wastewater Treatment Plant Operator (Certificate No. 7146). He has been a Course Instructor for NYSDEC approved certification courses for over 35 years and has been involved first hand with the training of over 830 wastewater treatment operators. Mr. Wagner will serve as both the Program Manager and Project Manager.

Stephen Hadjiyane, P.E., BCEE – Mr. Hadjiyane has over 30 years of experience in the design and construction of wastewater treatment, pumping stations, and collection systems. His experience includes dry and wet pit submersible pumps, vertical shaft pumps, and ejector pumps. His broad experience in process design, mechanical pump systems, hydraulics, screening equipment's, and electrical/instrumentation is perfect for this assignment. His experience includes several Rockland County Sewer District No. 1 pump station improvements and chemical bulk storage facilities. His wastewater treatment plant and pump station experience includes upgrades to numerous projects for New York City Department of Environmental Protection, Nassau and Suffolk Counties, and Town of Greenwich, CT.

Michael Keane, AICP - As a Manager of our Land Use and Environmental Planning Group, Mr. Keane provides expertise in matters that concern both the natural and built environments. As an Urban Planner with 13 years of private and public sector experience, he has the proven expertise in managing complex land use and environmental planning projects across a broad spectrum of geographies. In land use projects, he addresses social, economic, and environmental issues in a manner that respects community needs, protects the environment, and satisfies fiscal realities.

Resumes follow this page.

Mark Wagner, C.E.P., LEED AP

Partner, Water & Wastewater Engineering

Education:
Bachelor of Science
Oceanography
Florida Institute of Technology

Licenses/Registrations:
Licensed Operator Grade 4A
New York State Wastewater Treatment

Certifications:
LEED Accredited Professional

Certified Environmental Professional (ABCEP)

Affiliations:
Energeia Partnership – 2017 Molloy College
New York Water Environment Association

- Partner, Energeia Partnership
- NYWEA Board of Directors
- Chairman, Long Island Chapter: 2003
- Board of Directors, Long Island Chapter: 1997 – 2004
- Former Chair, NYWEA Plant Operations and Maintenance Committee

Awards:

- NYWEA John Chester Brigham Award 2017
- NYWEA, Bob Carballeira Distinguished Service Award, 2014
- NYWEA, Milton T. Hill Award, 2005
- NYWEA, David Flaumenbaum Safety & Training Award, 2002
- NYWEA, Outstanding Operator, 1991
- NYWEA, Chapter Achievement Award, 1990

Years with this Firm: 34

Years with other Firms: 7

As Partner in charge of Water and Wastewater Engineering, Mr. Wagner is extensively involved in the management and coordination of all projects involving wastewater collection, conveyance, treatment, operations and maintenance of municipal treatment facilities and solid waste treatment and management. Areas of responsibility include project planning, design, providing operator training and technical assistance, systems troubleshooting, facility start-ups, regulatory interfacing, cost analysis and project permitting. Mr. Wagner has been the Project Manager for several sewer and storm water planning studies including the Village of Sag Harbor, Village of Southampton, Center Moriches, Smithtown/King's Park, Villages of Lawrence and Cedarhurst Consolidation and Rocky Point Downtown Study, the Five Towns Drainage Study and the SCDPW I/I Study.

Mr. Wagner is currently serving as the Partner-in-Charge on our Village of Sag Harbor's On-Call Engineering Services Agreement. He oversees the execution of current task orders including the wastewater management master plan, the Village's sewage treatment plan, the sewer rehabilitation system, and UV system engineering.

Mr. Wagner has a thorough understanding of regulatory issues relating to sewage collection and treatment including SPDES permits, Total Maximum Discharge Limitations (TMDLs), effluent limitations, Ten State Standards for design of systems as well as the SEQRA environmental review process.

Treatment plant upgrades performed under his direction include the Village of Greenport BNR, City of Glen Cove BNR, Greater Atlantic Beach Water Reclamation District Upgrade and Ammonia Reduction with Total Residual Chlorine reduction. Bergen Point Ultraviolet Light, City of Long Beach post Sandy improvements and Total Residual Chlorine reduction.

He has been involved in numerous facility start-ups throughout New York, New England and California. He is a Certified Grade 4A Wastewater Treatment Plant Operator (since 1978). He has been a Course Instructor for NYSDEC approved certification courses for over 36 years and has been involved first hand with the training of over 830 wastewater treatment operators. Mr. Wagner has participated in the Operators Challenge on both the State and National Levels.

As an Accredited Professional in Leadership in Energy and Environmental Design, Mr. Wagner has fostered green and sustainable design and operation features where appropriate. He has been highly successful in assisting clients in obtaining NYS Clean Air/Clean Water Bond Acts, American Reinvestment and Recovery Act (ARRA) as well as water quality improvement grants.

Mr. Wagner also leads the company's efforts in providing stormwater management services including development of planning documents, detailed design, permitting and construction management services.

Mr. Wagner has significant experience in solid waste management. He has been involved in permitting of off-island municipal solid waste transfer, disposal and yard waste composting projects. He coordinated the design and permitting of one of the largest outdoor biosolids and paper mill waste composting projects in NY State. Additionally, he has been involved in municipal solid waste characterization studies, permitting (6 NYCRR Part 360) of mixed waste processing facilities, transfer stations and yard waste composting operations.

CAMERON ENGINEERING

Kevin M. McAndrew, RLA, AICP, LEED AP

Partner, Civil Engineering, Site Development & Landscape Architecture & Planning

Education:
Bachelor of Landscape Architecture
SUNY College of Environmental Science and Forestry in association with Syracuse University

Mr. McAndrew has served as an adjunct professor at Polytechnic University where he lectured on land planning, zoning, and site engineering matters.

Licenses/Registrations:
Registered Landscape Architect:
New York
Florida

Certifications:
LEED Accredited Professional

American Institute of Certified Planners

Affiliations:
Tesla Science Center Advisory Committee: Committee Member

American Planning Association - Member

American Society of Landscape Architects

Long Island Builders Institute (LIBI)

Long Island Real Estate Group (LIREG)

New York State Council of Landscape Architects – Past Board Member

Design Professionals Coalition of Long Island President: 1997

Nassau Land Trust – Past Board Member

Years with this Firm: 19

Years with other Firms: 17

Kevin M. McAndrew, RLA, LEED AP – As Partner of Civil Engineering, Site Development and Landscape Architecture& Planning, Mr. McAndrew leads the firms design efforts associated with our land development projects and planning initiatives including downtown re-development projects for planning projects, Transit Oriented District (TOD) and Mixed-use projects, streetscapes, open space/park/plaza designs and planning initiatives. Mr. McAndrew is a registered landscape architect, certified planner and LEED AP professional with over 34-years of experience in master planning, site planning, zoning expertise, environmental assessment including visual resource assessment and green infrastructure design. Mr. McAndrew co-managed the City of Cortland DRI Strategic Investment Plan. Mr. McAndrew has been responsible for our site design efforts associated with transformative hamlet center and downtown re-development projects including Wyandanch Village, Town of Babylon Copiague Commons, Town of Babylon Greentek Living, Village of Amityville (current TOD project) One Third Avenue, Village of Mineola Village Green, Village of Mineola (current Mixed-use and TOD project) Mill Creek Residential, Village of Hempstead Mill Creek Residential, Village of West Hempstead Mr. McAndrew has also managed our municipal streetscape projects, parks/open space projects, institutional and higher education campus planning/site design and all residential sectors including low-density single family subdivisions, townhouse/condominium developments and rental communities.

Mr. McAndrew has participated in a lead role in each of the featured relevant experience for this proposal:

- Town of Hempstead – TOD Study for Inwood and North Lawrence
- Village of Port Jefferson - Comprehensive Plan/SEQRA Services
- Village of Southampton – Zoning Study
- Medford Vision Update – 112 Corridor Zoning
- Town of Hempstead – Franklin Square Revitalization Study
- Town of Cordlandt – Gyrodyne Medical Oriented District (MOD)/Zoning
- Amityville Transit Oriented Development (TOD)/SEQRA
- City of Cortland – Downtown Revitalization Initiative – Round 2
- City of Long Beach – Comprehensive Plan/SEQRA Services
- Town of Hempstead – Golf Course Moratorium
- Stasi Westbury
- Wyandanch Village – Mixed Use/Transit Oriented Development
- Copiague Commons
- One Third Avenue Apartments – Mineola
- Village Green – Mineola
- Village of Roslyn – SEQRA Services
- Baldwin Grand Avenue

CAMERON ENGINEERING

Michael R. Keane, AICP

Manager, Land Use and Environmental Planning

Education:
Master of Urban Planning
Hunter College
City University of New York, 2009

Bachelor of Arts
History
University of Massachusetts - Amherst, 1998

Certifications:
Member
American Institute of Certified Planners (AICP)

Affiliations:
Member
American Planning Association
Urban Land Institute

Speaking Engagements:
New York University
Adjunct Professor of Urban Planning
2012 to Present

APA 2018 National Planning Conference, New Orleans – "The Art of Private Practice Planning"

Years with this Firm: 1

Years with other Firms: 12

As a Manager of our Land Use and Environmental Planning Group, Mr. Keane provides expertise in matters that concern both the natural and built environments. As an Urban Planner with 13 years of private and public sector experience, he has the proven expertise in managing complex land use and environmental planning projects across a broad spectrum of geographies. In land use projects, he addresses social, economic, and environmental issues in a manner that respects community needs, protects the environment, and satisfies fiscal realities.

Mr. Keane's area of expertise includes City and State Environmental Quality Review (CEQR/SEQR), National Environmental Policy Act (NEPA), zoning and land use planning, and site and master plan development. He has a unique understanding of the land use process and the ins and outs of the environmental analysis. He has represented clients before governmental authorities responsible for approving major land use actions undergoing environmental review.

Mr. Keane is a recent addition to Cameron Engineering and brings a wealth of experience and knowledge. His previous work includes serving as the environmental planning lead responsible for overseeing the preparation and review of environmental planning documents for projects undergoing environmental review for the Grand Central Terminal Train Shed Rehabilitation Project, MTA Metro---North Railroad (NEPA), and the Empire Corridor Syracuse Congestion Relief Project, New York State Department of Transportation (NEPA; SEQR).

Serving as a Senior Environmental Planner and Senior Project Manager, Mr. Keane collaborated on dozens of environmental planning projects, including area-wide and site-specific land use actions subject to CEQR and the New York City Uniform Land Use Review Procedure (ULURP) process. Mr. Keane has directed the preparation of environmental assessment and impact statements that resulted in project approval, and advised clients on a wide range of land use, zoning, and regulatory matters to support the use and development of land in New York City. Notable project experience includes Bay Street Corridor Rezoning (CEQR EIS). 69-02 Queens Blvd. Mixed Use Development (CEQR EAS; ULURP), Avenues: The World School (CEQR EAS), 45 Broad Street Development (CEQR EAS; ULURP), and 1125 Whitlock Mixed---Use Development (CEQR EAS; ULURP).

In his earlier career, Mr. Keane collaborated on major planning initiatives throughout the Northeast and internationally, including municipal-wide and regional comprehensive plans, zoning code amendments, and visual impact analyses. This included the Capital City of Hanoi – 2030 Master Plan, City of Stamford Master Plan, Rockland County Master Plan, City of Mount Vernon Master Plan, Nassau County Master Plan, Village of Port Chester Master Plan, and Town of Mamaroneck Inclusionary Housing Zoning Text Amendment and SEQR EIS.

Mr. Keane's experience includes time spent as an Urban Planner with the Office of Manhattan Borough President, Scott Stringer in 2008. In this role he collaborated on the preparation of the Borough President's West Harlem Special District Proposal, several recommendations of which were incorporated into the Department of City Planning's zoning text amendment for the 90-block area in West Harlem. City Council approved the rezoning in November 2012.

CAMERON ENGINEERING

Michael E. Landler, AICP

Planning Director

Education:
Master of Planning
University of Virginia

Bachelor of Arts – Urban Planning
University of Illinois at Urbana-Champaign

Affiliations:
American Institute of Certified Planners, Member

American Planning Association, Member

Years with this Firm: 1

Years with other Firms: 20

Mr. Landler has over 20 years of extensive planning experience working for both municipalities and private consulting firms. Mr. Landler has a Master of Planning Degree from the University of Virginia, with an emphasis on land use and housing, in addition to a Bachelor of Arts Degree in Urban Planning from the University of Illinois at Urbana-Champaign. His planning career has spread from Nevada, California, to New York, providing exceptional planning expertise with specific municipal experience in Westchester County, including the Towns of New Castle and Pound Ridge, and the Village of Pleasantville. Provided services included the review and compilation of project oversight reports, and the drafting of new local laws, resolutions, ordinances and amendments. Past experience has also included performing research and composing Environmental Impact Statements. He was responsible for all SEQRA-related documentation required by the municipalities that he served as a planning consultant. The comprised the completion of all letters and documentation for both Type I and Type II designated projects, including the establishment of a lead agency, the completion of a determination of significance, as well as the drafting of negative declarations.

Current projects include:

- **Carlls Path, Deer Park - Proposed Multi-Family Residential Development** – Cameron Engineering is providing Civil Engineering services for the approximately 24 acre site, located on Carlls Path, in Deer Park which is currently utilized for storage/warehousing purposes. The project sponsor is seeking an application to the Town of Babylon to re-zone the property and construct over 400 residential rental units and an assisted living facility.
- **Gyrodyne – Town of Cortlandt Medical Office District** – The Town of Cortlandt has established a Medical Office District (MOD) to support the creation of a mixed-use commercial center in the area surrounding the New York Presbyterian Hospital facility. Cameron Engineering is assisting Gyrodyne with the development of a sustainable mixed-use campus plan with medical office space and residential units. Cameron is responsible for the preparation of a DEIS for the project.
- **Town of Hempstead - Transit Oriented Development (TOD) Study** - The Town of Hempstead is evaluating an amendment to its Building Zone Ordinance to enable the creation of a Transit Oriented (TO) Zoning District in the vicinity of the Inwood and Lawrence Long Island Railroad (LIRR) stations. Cameron Engineering is providing Planning Services for an initial zoning analysis, build-out analysis and market analysis study to be prepared to assist the Town in determining the various zoning approaches and zoning elements that should be included in any future TOD ordinance in the vicinity of the studied locations.
- **Town of Hempstead – Franklin Square Revitalization Study -** The Town of Hempstead is evaluating an amendment to its Building Zone Ordinance to facilitate real estate investment and revitalization efforts in the hamlet of Franklin Square. Cameron Engineering is providing Planning Services for an initial zoning analysis, build-out analysis and market analysis study to be prepared to assist the Town in determining the various zoning approaches and zoning elements that should be included in any future ordinance in the vicinity of the studied location.
- **Long Island Transfer Development Rights Project Development** – Cameron Engineering is preparing a regional GEIS for a model TDR program that can be used voluntarily by municipalities on Long Island that protects land by redirecting development from sending areas to receiving areas that can accommodate safe growth and development.

Sarah Oral, P.E., LEED AP BD+C

Project Manager

Education:

- B.S. Civil Engineering, Tulane University
  Recipient of Distinguished Honor Scholarship
- Accident Reconstruction Training, The Traffic Institute of Northwestern University

Licenses/Registrations:

Professional Engineer: NY

LEED Accredited Professional with a specialty in Building Design and Construction - U.S. Green Building Council Certification

Affiliations:

- American Society of Civil Engineers
- Institute of Transportation Engineers
- New York Statewide Accident Reconstruction Society
- U.S. Green Building Council, Long Island Chapter Sustainable Transportation Committee, Current Member
- Vision Long Island, Current Board Member
- Village of Roslyn Board of Trustees. Current Trustee
- Village of Roslyn Planning Board, Former Member (2012-2013)
- Roslyn Gardens Board of Directors, Former Director (2010-2013)

Years with this Firm: 4

Years with other Firms: 12

Ms. Oral has 16 years of experience in land development with a focus on civil engineering and traffic engineering. She has been responsible for traffic, transportation, drainage and sanitary system analysis and design, computer aided traffic flow modeling, the preparation and review of traffic impact studies, parking studies, traffic calming studies and signal warrant studies including data collection and engineering analysis. Ms. Oral has created site plans including the design of parking layouts, and has designed various roadway improvements, road diets, Complete Streets design elements, Smart Growth concept integration, bicycle and pedestrian facilities, and maintenance and protection of traffic plans. She has performed access management and design, as well as Transit Oriented Development (TOD) design and analysis. Sarah has expanded her planning expertise in the fields of climate change mitigation and adaptation. She is currently serving as Long Island coordinator for the Clean Energy Communities program for the New York State Energy Research and Development Authority (NYSERDA).

Ms. Oral also provides forensics engineering evaluation of roadway safety, traffic flow, and pavement marking and signage design, and accident reconstruction analysis via vehicle dynamics, mechanics, and road characteristics. Ms. Oral also has experience with field inspection of on-site and off-site drainage and paving, field surveying and data reduction. She possesses a working knowledge of federal, state, and local specifications, standards, and procedures, and all work complies with the Federal MUTCD, NYS Supplement, ADA, & AASHTO standards.

Ms. Oral has been qualified as a traffic engineering expert for multiple Towns and Villages throughout Nassau and Suffolk Counties. She has also been qualified as a roadway design expert by the New York State Court of Claims.

- **ESD Downtown Revitalization Initiative – Round Two - City of Cortland** – Performed background research, site visits, Committee and public engagement meetings; conducted stakeholder interviews; prepared components of the Downtown Cortland Strategic Investment Plan: Downtown Profile and Assessment; Public Engagement Plan; Project Profiles; Logging public response to aspects of the Strategic Investment Plan; Assistance with Project Prioritization; and weekly Project Management with State DRI coordinators.
- **Climate Smart Communities, Long Island** – Long Island Coordinator for Climate Smart Communities. Recruits Long Island municipalities into the program, creating educational handouts and information packets, facilitating several educational workshops and seminars, securing regional experts for presentations, and the establishment of a project website. She also established the Long Island CRS Users Group to support and educate communities about FEMA's National Flood Insurance Program Community Rating System, and distributes highlights and follow up to those involved in the Users Group, including State agencies, within 2-3 days of all meetings.
- **Cortlandt Manor Medical Oriented District (MOD)** – Order of magnitude traffic mitigation for the proposed MOD overlay zone, review proposed MOD zoning requirements and similar local zoning codes for successfully executed regulations.
- **Copiague Commons, Copiague** – Performed an area-wide analysis of traffic impacts to congested intersections, signal mitigation to improve Level of Service, integration of Transit Oriented Development concepts to take advantage of the site's close proximity to the LIRR, and traffic calming and streetscape improvements to support improved conditions for pedestrian and bicycle traffic.
- **Peconic Care, Calverton** - Performed transportation engineering tasks including an analysis of a potential railroad crossing and the subsequent gates and signalization that would be required. Other tasks included analyzing traffic impacts to the local roadway network and potential mitigation measures to offset any negative impacts.
- **Town of Babylon, Alternatives Analysis for the Route 110 Corridor –** Provided engineering services to determine the preferred trunk line alignment along a 5-mile section of Route 110 for Bus Rapid Transit (BRT). Plans included conceptual alignment and typical sections, with stations and connections to local feeder routes.

David Tepper, AICP

Planning / GIS

Education:
Master of Planning
University of Southern California

Bachelor of Arts
Sociology
University of Southern California

Certifications:
AICP
American Institute of Certified Planners
American Planning Association

Years with this Firm: 7

Mr. Tepper has extensive experience as an Urban and Environmental Planner and serves as the technical lead on SEQRA projects for the firm. Mr. Tepper's SEQRA experience includes preparation of SEQRA documents, environmental analyses and environmental impact statements for a variety of projects, including planning initiatives, development applications and public infrastructure projects. He also serves as lead on the firm's Geographic Information Systems (GIS) projects - providing oversight for the integration of GIS with the firm's ongoing projects. He offers valuable experience in the development of spatial databases for municipal and county governments and regional planning entities including cadastral, transportation, environmental and demographic data. He has utilized GIS extensively in numerous planning initiatives, including: comprehensive/master plan updates, growth management plans, community vision plans, alternatives analyses, buildout analyses and infrastructure needs assessments.

- **Village of Amityville Transit Oriented (TO) Code and DGEIS** – Helped develop the new transit oriented zoning district for the Village of Amityville, including language for zoning amendments/ordinance. Also prepared the Draft GEIS for the TO District, including detailed analyses on land use and zoning, community character, community services, taxes and economic impacts, noise, air quality, and alternatives analyses.
- **Cortland Downtown Revitalization Initiative (DRI)** – Performed project analyses, background research and conducted stakeholder interviews to guide the Cortland DRI planning process. Prepared components of the Downtown Cortland Strategic Investment Plan to describe the City's needs, history, and revitalization potential. Helped to craft and execute a fully-developed Public Engagement Plan and participated in all public meetings in Cortland.
- **Nassau County Infill Redevelopment Feasibility Study** – Created GIS maps, existing conditions reports and performed related analyses for 21 different LIRR stations in Nassau County to assess the overall development infill potential for each station area. Based on these existing conditions reports and several rounds of public input, Nassau County ultimately selected three station areas that showed the most potential for infill development.
- **City of Long Beach Comprehensive Plan Update –** Prepared the majority of the City's Comprehensive Plan update and associated SEQRA-required environmental analyses. Work included detailed land use and economic development recommendations considering downtown revitalization (zoning changes, streetscape enhancements and market analyses), multi-modal traffic enhancements, Complete Streets initiatives, parking management strategies, stormwater management improvements, and various coastal resiliency measures tailored to Long Beach. In addition, detailed development scenarios were prepared and analyzed for key areas including the Central Business District and Civic Core, the Oceanfront and the Bayfront along the north shore of the City. This project involved major public outreach efforts, including open public meetings, targeted focus group sessions, key stakeholder consortiums and an array of online/print/phone campaigns to expand and enhance public participation. **Southampton Sewer Study –** Prepared a Full Environmental Assessment Form (FEAF) and Expanded Environmental Assessment, including a detailed buildout analysis to assess impacts of sewers on downtown growth and development. The preparation of the FEAF and Expanded Assessment incorporated review of prior studies, reports, and memoranda related to potential sewering and development of the Village, review of the Draft GEIS prepared by Suffolk County for non-sewered study areas and the preparation of a Negative Declaration for the Village.
- **New York Rising - Community Reconstruction (NYRCR) Plans** – Provided various GIS mapping services/analyses, drafted conceptual/final NYRCR plans, and participated in numerous committee meetings and public engagement events for all of the Suffolk County NYRCR communities affected by Superstorm Sandy.

CAMERON ENGINEERING

Liam Doxey

Civil Engineer

Education:
Bachelor of Science
Civil Engineering
Stony Brook University, Stony Brook NY

Certifications:

- OSHA 10 Hour Construction Safety & Health
- LIRR Roadway Worker Protection
- Soil Density Testing
- Concrete Field Testing

Years with this Firm: 1

Mr. Doxey has a Bachelor's Degree in Civil Engineering from Stony Brook University. While attaining his degree, Mr. Doxey gained experience in seawall replacement, developing a feasibility study and also worked on water treatment plant design, solar module design, land surveying, conducted materials testing (i.e.; steel, concrete, asphalt) as well as geotechnical testing analyzing properties of soils, including permeability, consolidation, and compression tests, using the ASTM manuals. He is currently working on many of the firm's civil engineering projects for various municipal clients.

- **Sag Harbor On-Call Engineering Service Agreement** – Cameron Engineering was awarded a two-year agreement to provide engineering services to all Sag Harbor village-owned property. Mr. Sharrer is currently involved with providing services to the Village of Sag Harbor for its wastewater treatment plant, review of sewer connection applications and data review.
- **Village of Island Park, Flood Protection for the Major Infrastructure Phase II –** Cameron Engineering is developing a plan to improve the Village resiliency. The project is funded by and conceived by the Federal Emergency Management Agency's Hazard Mitigation Grant Program, administered through the New York Stated Division of Homeland Security. Hydraulic and tidal surge modelling are being conducted to optimize storm drainage and coastal barrier design. Tidal gates, barriers and sea walls are being evaluated and a Benefit Cost Analysis (BCA). Improvements under the evaluation include tidal gates, barriers and sea walls, outfall tide flex valves, drainage system improvement, stormwater pumping/ diversion, beach stabilization/replenishment, temporary/potable cofferdams. Project features include stormwater/tidal surge modelling, tidal gates/barriers and sea walls, FEMA, NYSDEC and ACOE permitting, beach stabilization/ replenishment.
- **City of Long Beach, City of Long Beach Disaster Management Response and Recovery Services Contract** - Cameron Engineering was tasked with the preparation of a Hazard Mitigation Proposal (HMP) to accompany the City Hall Project Worksheet (PW) for the hardening of City Hall. The purpose of the HMP is to identify the infrastructure improvements necessary to harden both City Hall and the City's firehouse which is at elevation 8 to protect City Hall to the Base Flood Elevation (BFE) 12.6 plus one (1) foot. Hardening to this elevation will protect the lower floor of City Hall including the mechanical and electrical systems that provide utilities to the City Hall. Similarly, protection of the adjacent fire house to the Base Flood Elevation (BFE) 12.6 plus one (1) foot will prevent flood waters from entering the building and damaging equipment and building systems.
- **City of Long Beach, Water Purification Plant, Hazard Mitigation** - The City owns and operates a Water Purification Plant (WPP) located on Park Place. The WPP sustained damage during Superstorm Sandy. Damage from surge waters entering the WPP occurred to the process equipment, pumps, motors, sensors, actuators and automated control systems. The damage occurred in the generator room, chlorine storage and distribution room, maintenance room, alum storage and distribution room, pump room, general storage tank, booster pump station and at Well Houses # 9, #11, #13, #15, #16, # 17, and #18. Cameron Engineering is providing engineering services to the City for the required improvements to its Water Purification Plant.

Previous Experience:

Nassau County Department of Public Works, Westbury, NY
Department of Civil Engineering
As an Intern, Mr. Doxey prepared resurfacing plans and traffic marking specifications, for various county-owned roadways, in AutoCAD and Civil3D. He also accompanied professional engineers on site investigations to obtain design measurements and assess damage to pavement, curbs, storm drains, traffic loops, etc. His duties included creating cost estimates and providing Field Inspector services

CAMERON ENGINEERING

Natalie Cloud, LEED AP

Environmental Engineer

Education:
Bachelor of Science
Environmental Engineering
State University of New York at Buffalo

Certifications:
LEED Accredited Professional - U.S. Green Building Council Certification

Affiliations:
New York Water Environment Association

Years with this Firm: 13

Years with other Firms: 5

Ms. Cloud currently assists in the design of the Firm's projects within the areas of new water and wastewater systems and design. Her duties include project engineering analysis and calculations, conceptual design, preparation of plans and specifications, and report writing. Her experience includes water distribution system design and modeling. Ms. Cloud conducts shop drawing reviews and attends meetings on behalf of clients as part of the construction phase services.

Ms. Cloud's experience includes:

- **Sag Harbor On-Call Engineering Service Agreement** – Cameron Engineering was awarded a two-year agreement to provide engineering services to all Sag Harbor village-owned property. Ms. Cloud is currently involved with providing services to the Village of Sag Harbor for its wastewater treatment plant, review of sewer connection applications and data review.
- **Suffolk County Sewer District Capacity Study, Suffolk County, NY:** Manage-Analysis five existing sewered areas: Sag Harbor, Port Jefferson, Patchogue, Riverhead and Calverton. The Study included existing and projected wastewater generation rates on a per parcel basis. A collection system analysis was performed and recommendations for infrastructure upgrades were provided. The Study provided aid to Suffolk County in determining the availability of existing treatment capacities.
- **Rocky Point Sewering Feasibility Study, Rocky Point, NY:** Managed study and contributed research/conceptual design layouts of traditional and alternative sewering within the study area. Included economic feasibility and impact. GIS data compilation, database development and spatial analysis to aid alternative scenarios development and feasibility analysis.
- **Smithtown and Kings Park Feasibility Study, Smithtown, NY:** Build-out Analysis of two downtown business districts with wastewater generation rates. GPS field surveys were performed to determine existing and proposed conditions. Preliminary sewering design layouts were completed which Included vacuum-assisted sewers and the expansion of the existing wastewater treatment plant. GIS was a key component in analyzing the two separate study areas with combined design layouts and recommendations.
- **Forge River Watershed Plan, Mastic-Shirley area, NY:** Compiling watershed inventory and characterization, environmental/spatial analyses, and the development of management strategies through GPS and GIS data.
- **Malverne Stormwater System mapping, Malverne, NY:** GIS modeling of the entire stormwater system of Malverne, including natural features of the system. Assembling a GIS model of the stormwater system via integration of historic plans and diagrams and field-collected inventory data.
- **City of Long Beach Wastewater Treatment Plant Sandfilter Repairs** – In the wake of Superstorm Sandy, Cameron Engineering is assessing in the rehabilitation and construction repairs to the City of Long Beach's Wastewater Treatment Plant's sandfilter building in order to reduce total suspended solids within the treatment process.
- **Greater Atlantic Beach Water Reclamation District - Atlantic Beach, NY**-Preparation of Phase II Facility Improvements Plans and Specifications which address improvements at the facility based on NYSDEC modifications to the plant's permit. Includes the addition of a Dechlorination Facility, sodium bisulfite chemical feed system and a lift station to provide for series flow to the Trickling Filter process in order to reduce ammonia nitrogen concentrations. Provided field supervision during construction.
- **Belgrave Water Pollution Control District** - The project included the upgrade of the District's secondary treatment plant to achieve the NYSDEC requirements for nitrogen reduction by 2014 and Total Residual Chlorine (TRC) limitations.

CAMERON ENGINEERING

Stephen Hadjiyane, P.E., BCEE

Senior Associate, Technical Advisor

Education:
Education:
Master of Science
Environmental Engineering
Manhattan College, Bronx, NY

Bachelor of Science
Chemical Engineering
SUNY Buffalo, Buffalo, NY

Associate of Applied Science
SUNY Farmingdale
Farmingdale, NY

Licenses/Registrations:
Professional Engineer:
NY, CT, MA

Certifications:
Board Certified Environmental Engineer (BCEE)

Affiliations:
Past Chair/Member, New York Water Environmental Association Long Island Chapter, 1990 - Current

Member, Long Island Water Conference, 2000 - Current

Awards:
Chapter Achievement Award, New York Water Environmental Association, Long Island Chapter - 2014

Environmental Engineer Award, New York Water Environmental Association - 2016

Years with this Firm: 1

Years with other Firms: 33

Mr. Hadjiyane is a Professional Engineer in New York, Connecticut and Massachusetts and a Board-Certified Environmental Engineer (BCEE) with 30 years of experience. He works with the Water/Wastewater group in designing and managing projects while providing QA/QC oversight for the delivery of high quality work products.

Throughout his 30-year career, Mr. Hadjiyane has played a key role managing and directing strategic wastewater infrastructure projects to protect and enhance New York's water resources. He has been a trusted advisor for Nassau and Suffolk Counties, Rockland County, Westchester County, and for the New York City Department of Environmental Protection.

Responsibilities include providing a technical advisory role on complex projects, performing quality assurance/quality control, and directing and supervising engineering projects for the firm. Specializing in designs for wastewater and water treatment facilities, and stormwater pumping stations, background includes the design of activated sludge, extended aeration, and nitrogen removal treatment systems. Experienced in the design of sludge thickening, solids dewatering, and odor control systems. Also experienced in the design of vertical and horizontal centrifuge pumps, as well as extended shaft and pumps operating on variable frequency drives. Pumping system design experience includes vertical turbine, submersible, progressive cavity, rotary lobe, plunger, and wet- and dry-pit pumping systems. Experience leading thickener system upgrades includes progressive cavity and torque flow pumping systems needed for thickener underflow, transfer, and mixing systems.

His project experience includes:

- **Sag Harbor On-Call Engineering Service Agreement** – Senior Engineer assisting with operational assistance at the Village's sewage treatment plant including evaluating odor controls and UV Disinfection system upgrades, sewer rehabilitation and lining repairs and review of sewer connection applications..
- **SCDPW, Brentwood Sewer Feasibility Study –** Project Manger developing a feasibility report to review the current and future infrastructure to improve the economic, housing opportunities and environmental aspects of the downtown Brentwood area. The purpose of the feasibility study is to evalaute sewer optoins and provide a strategy for commercial development for revitalization efforts.
- **Great Neck Water Pollution Control District, Manhasset Sanitary Sewer Feasibility Study** – Project Manager performing a sewer feasibility studies The first study focuses on the downtown Manhasset commercial area located on Plandome Road. The second study area is the residential area west of Plandome Road from Colonial Parkway to the north and Shore Road to the south. Evaluating sewer options that include gravity/pump stations, and low pressure sewers. Developed construction cost estimated and benefit cost analysis.
- **Village of Hempstead, Sewage Collection Systems –** Senior Engineer performing hydraulic analysis on sewer system to determine if new sewer availability request for connecting to the Village's sewer system can be approved. Developed sewer flow projections for future planning and development.
- **Bay Park Sewage Treatment Plant Improvements, Nassau County, NY, Nassau County Department of Public Works.** Project Director responsible for providing design engineering and construction services for the rehabilitation of the Bay Park sewage treatment plant grit removal facility. Prepared technical design report evaluating grit removal technologies to replace the existing detritus with vortex-style units. Report included a flow assessment of the incoming plant flows, design basis for vortex-style grit removal units, design basis for grit handling equipment, proposed grit removal facility preliminary layout and hydraulic profile, and estimated construction costs. Prepared contract bid documents for improvements to the existing facility including new vortex grit removal systems, grit pumps, grit classifiers and cyclones, new isolation slide gates, new sodium hydroxide and hypochlorite storage and feed systems, new odor control system, hazardous gas monitoring system, new process monitoring control system, and new heating, ventilation, and air-conditioning (HVAC), fire alarm, and electrical systems. Also prepared detailed maintenance of plant operation procedures to maintain operation of the plant during construction.

CAMERON ENGINEERING

Bertrand A. Byrne, P.E.

Civil Engineer, Water Distribution Systems

Education:
Doctor of Philosophy
Water Resources
Rutgers University, NJ (In progress)

Masters of Science
Water and Wastewater Treatment
Rutgers University, NJ, 2014

Bachelor of Science/Civil Engineering
Howard Engineering, DC, 2001

Licenses/Registrations:
Professional Engineer: New York / Florida

Certifications:
Associate Project Management Certification

Affiliations:
Tau Beta Pi
WEF
NSPE
AWWA

Awards:
ASCE (National Capital Section) Student Award (2000)

Years with this Firm: 8

Years with other Firms: 23

Mr. Byrne is experienced in hydraulic and hydrologic modeling, water supply and distribution systems. Experience also included leakage investigation and performance analysis, project management and construction management. Competent in many areas of engineering consultancy: including civil/environmental engineering, master-planning, project management and construction management.

Mr. Byrne's experience includes:

- **Suffolk County Sewer District Capacity Study, Suffolk County, NY:** Manage- Analysis five existing sewered areas: Sag Harbor, Port Jefferson, Patchogue, Riverhead and Calverton. The Study included existing and projected wastewater generation rates on a per parcel basis. A collection system analysis was performed and recommendations for infrastructure upgrades were provided. The Study provided aid to Suffolk County in determining the availability of existing treatment capacities.
- **Village of Hempstead, Sewage Collection Systems –** Mr. Byrne is performing hydraulic analysis on sewer system to determine if new sewer availability request for connecting to the Village's sewer system can be approved. Mr. Byrne also assisted in developing sewer flow projections for future planning and development.
- **Suffolk County DPW - Infiltration and Inflow (I/I) Study** - Prompted by concerns over aging infrastructure and the identification of extraneous flows during storm events, the SCDPW contracted Cameron Engineering to conduct an infiltration and inflow study in portions of its Southwest Sewer District. With the aid of a GIS, Cameron Engineering inventoried and analyzed the physical condition of the sanitary sewer collection infrastructure in two study areas, the Brightwaters and West Islip collection areas.
- **Village of Hempstead, Sewer Evaluation** – The project involved the development of a hydraulic model that will be used to simulate existing and future demand conditions and identify system deficiencies under these conditions. The project included the development of a GIS database of the Village's sewer collection system from record drawing and field surveys that was used to build the model. Upon completion the hydraulic model was handed over to the Village to be used on an ongoing basis to assist in the evaluation of future transmission and distribution improvements.
- **Tohopekaliga Water Authority (Florida) Master Plan –** This project involved the development of hydraulic models of water distribution systems and wastewater collection systems to populate a capital improvement plan with future water and sewer improvements needed to address future population growth in Kissimmee Florida. The model required extensive digitization of record drawings and the assignment of relevant attribute data to digitized infrastructure and the incorporation of existing GIS data from other sources.
- **Seminole County (Florida) Master Plan –** This project involved the development of hydraulic models of water distribution systems and wastewater collection systems to populate a capital improvement plan with future water and sewer improvements needed to address future population growth in Seminole County, Florida. The model required extensive digitization of record drawings and the assignment of relevant attribute data to digitized infrastructure and the incorporation of existing GIS data from other sources.
- **Nassau County DPW Five Towns Study, Nassau County, NY –** Superstorm Sandy impacted the Five Towns area of Nassau County with coastal storm surge related flooding. H/H modeling was used to assess existing storm drainage system deficiencies under various rainfall and tailwater conditions and to develop and test flood mitigation alternatives for stormwater runoff, coastal storm surge and stormwater runoff in combination coastal storm surge related flooding.

Jonathan J. Sharrer, P.E.

Engineer

Education:
Bachelor of Science
Environmental Engineering
SUNY College of Environmental Science and Forestry

Licenses/Registrations:
Professional Engineer:
New York

Affiliations:
New York Water Environment Association

Years with this Firm: *13*

Years with other Firms: 6

Mr. Sharrer is involved with the design of the Firm's projects within the areas of wastewater treatment plants, upgrading of existing treatment facilities and force main/gravity wastewater collection system designs. His duties include project engineering analysis, calculations, conceptual design, preparation of plans and specifications, drafting and report writing. His experience also includes investigating the feasibility of Horizontal Directional Drilling (HDD) for force main routing. Mr. Sharrer conducts shop drawing review and attends meetings on the behalf of clients as part of construction phase services.

Mr. Sharrer also provides construction management and observation services for sewage treatment plant upgrades, water main installation and sanitary sewer/force main projects. As a Field Representative, Mr. Sharrer ensures that contract requirements are met, such as verification of quantities and proper operation of installed equipment. He also conducts final inspections.

Mr. Sharrer's project experience includes the following projects:

- **Sag Harbor On-Call Engineering Service Agreement** – Cameron Engineering was awarded a two-year agreement to provide engineering services to all Sag Harbor village-owned property. Mr. Sharrer is currently involved with providing services to the Village of Sag Harbor for its wastewater treatment plant, review of sewer connection applications and data review.
- **Nassau County Consolidation of Sanitary Sewers in Villages of Lawrence and Cedarhurst, Nassau County, NY** - Preparation of Plans and Specifications for gravity collection, pump station and force main for the consolidation plan of Cedarhurst and Lawrence. Cameron Engineering conducted extensive surveys using GIS and ground truthing to map out several routing locations for the proposed force mains. Project included pipe jacking design for crossing wetlands adjacent to the Inwood Pump Station.
- **Nassau County DPW Barnes Avenue Sanitary Sewer Overflow Design, NY** – In the wake of Superstorm Sandy, The County directed Cameron Engineering to prepare a detailed Technical Design Report followed by the development of Contract Documents (Plans & Specifications) for a new 12 MGD flow diversion pump station and 3 mile 30" diameter force main to transfer sewage from the Village of Hempstead to North Merrick.
- **Club at Melville – Design of Pump Station and Force Main, Melville, NY -** Managed the design of an on-site sanitary sewer pumping station and force main system to collect and convey wastewater flow from a senior housing complex located on Deshon Drive in Melville. Provided hydraulic calculations to determine wet well/force main sizing and pump capacities, as well as design of pump station control building and components including standby generator, level control system, flow meter and provisions for a future odor control system. Performed construction management services, including periodic oversight of construction activities and field coordination between Contractors, Developer and on-site Construction Manager.
- **Suffolk County DPW Kime Avenue, West Islip, NY** - Cameron Engineering provided design engineering, permitting and construction oversight and administration services for the rehabilitation of an existing 48-inch diameter reinforced concrete sanitary sewer interceptor located beneath the Southern State Parkway and between Kime Avenue and Babylon Avenue in West Islip, New York.
- **Long Beach WPCP and Roosevelt Boulevard Pump Station Superstorm Sandy Emergency Repairs – Long Beach, NY –** Preparation of Plans and Specifications for the repair/replacement of plant process equipment, including but not limited to, pumps, valves, flow meter and clarifier drive units as a result of damages sustained from Superstorm Sandy. Provided construction administration services and periodic field supervision/oversight, which includes shop drawing submittal review, construction progress meetings and review of payment requisitions.

Mark P. Rauber

Engineering Director

Education:
Mechanical Engineering Northeastern University

OSHA 1910.120 Hazardous Waste Operations and Emergency Response

OSHA 1910.146 Permit Required Confined Space

Certifications:
Engineer-in-Training (EIT)

Affiliations:
American Society of Mechanical Engineers

New York Water Environment Association

Years with this Firm: 16

Years with other Firms: 16

Mr. Rauber has provided full service construction related services, including review of shop drawing, review/response to RFI's, comprehensive regulatory reporting, review and approval of payment requisitions and change order requests and has provided periodic site visits for project compliance, punchlist, startup and project certification of completion.

As lead Project Engineer, Mr. Rauber has provided comprehensive construction related services for several of the Firm's wastewater treatment facility improvement projects including, but not necessarily limited to, Nassau County Consolidation of Sanitary Sewer Services - Villages of Lawrence and Cedarhurst, Greater Atlantic Beach Water Reclamation District Phase II Facility Improvements, Phase I Facility Improvements at the Village's of Lawrence and Cedarhurst WPCP's and Phase II BNR Facility Improvement Project at the Village of Greenport WPCP. Mr. Rauber has also been instrumental for the design, construction oversight, startup, testing and operation of the Bergen Point WWTP, City of Glen Cove WPCP and Village of Greenport WPCP Ultraviolet (UV) Light Disinfection Systems.

Mr. Rauber's is also primarily responsible for design of the Firm's projects in the areas of wastewater collection, conveyance (i.e., pumping stations) and treatment with the upgrade of several existing and design of several new facilities. He has prepared Engineering Reports/Studies, developed hydraulic profiles/analyses, analyzed unit processes for compliance with regulatory and accepted design standards. He is also responsible for the development of contract plans and specifications, vendor analysis and probable construction cost estimates.

Mr. Rauber has also served as Project Engineer for several Sanitary Sewer Evaluation Studies (SSES) conducted for the Nassau and Suffolk County. His efforts have included flow studies, sewer condition evaluations, CCTV inspections, sewer lining, report preparation and recommendations. Based on his recommendations, Mr. Rauber has developed contract plans and specifications and provided construction oversight of the necessary improvements.

Project Experience includes:

- **Suffolk County Sewer District Capacity Study, Suffolk County, NY:** Manages analysis five existing sewered areas: Sag Harbor, Port Jefferson, Patchogue, Riverhead and Calverton. The Study included existing and projected wastewater generation rates on a per parcel basis. A collection system analysis was performed and recommendations for infrastructure upgrades were provided. The Study provided aid to Suffolk County in determining the availability of existing treatment capacities.
- **Nassau County DPW Consolidation of Villages of Lawrence and Cedarhurst Sewer Infrastructure, Lawrence/Cedarhurst, NY -** Based on recommendations provided by Cameron Engineering to an earlier Consolidation Master Plan, County moved forward with the closure of two aged treatment plants into the County's regional facilities. Cameron Engineering conducted extensive surveys using GIS and ground truthing to map out several routing locations for the proposed force mains.
- **Belgrave Water Pollution Control District, Great Neck, NY** - The project includes the upgrade of the District's secondary treatment plant to achieve the NYSDEC requirements for nitrogen reduction by 2014 and Total Residual Chlorine (TRC) limitations. Cameron Engineering completed an analysis of the District's existing outfall pipe which included both an overland and submarine component.
- **Nassau County DPW Barnes Avenue Sanitary Sewer Overflow Design, NY** – In the wake of Superstorm Sandy, The County directed Cameron Engineering to prepare a detailed Technical Design Report followed by the development of Contract Documents (Plans & Specifications) for a new 12 MGD flow diversion pump station and 3 mile 30" diameter force main to transfer sewage from the Village of Hempstead to North Merrick.