

## Proposal for

Consulting Engineering Services for the Map & Plan Of a Wastewater Collection System for Downtown Montauk

RFP EH2020-101



09.24.2020

## Contact

**Christopher A. Weiss, P.E.**  
Vice President | Director of Wastewater Engineering

H2M architects + engineers  
538 Broad Hollow Road,  
4th Floor East  
Melville, NY 11747



631.756.8000 ext.1012



631.694.4122



cweiss@h2m.com

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TOWN OF EAST HAMPTON-PURCHASING DEPT. 159 PANTIGO ROAD EAST HAMPTON, NY 11937 PHONE: 631-324-4183 / FAX: 631-324-7895	Page 22 of 28
TITLE: CONSULTING ENGINEERING SERVICES FOR THE MAP & PLAN OF A WASTEWATER COLLECTION SYSTEM FOR DOWNTOWN MONTAUK	RFP NUMBER: EH2020-101

**APPENDIX C**  
**VENDOR INFORMATION PAGE**

VENDOR NAME: H2M architects + engineers

ADDRESS: 538 Broad Hollow Rd, 4th Floor East, Melville, NY 11747

CONTACT: Christopher A. Weiss, P.E., Vice President, Director of Wastewater Engineering

TELEPHONE: (631) 756-8000 x 1012 FAX: (631) 694-4122

E-MAIL: cweiss@h2m.com

TYPE OF ENTITY: CORP.  PARTNERSHIP  INDIVIDUAL

FEDERAL EMPLOYEE ID #: 11-2235604

OR SOCIAL SECURITY #: \_\_\_\_\_

DATE OF ORGANIZATION: 1933

IF APPLICABLE: DATE FILED: 1933

STATE FILED: NY

If a non-publicly owned Corporation:

CORPORATION NAME: H2M architects + engineers

LIST PRINCIPAL STOCKHOLDERS: (5% of outstanding shares)

Richard W. Humann, P.E., CEO/President Anthony P. Fisher, P.E., Senior Vice President

Dennis M. Kelleher, P.E., Executive Vice President

LIST OFFICERS AND DIRECTORS: NAME AND TITLE

see attached.

If a partnership:

PARTNERSHIP NAME: \_\_\_\_\_

LIST PARTNERS NAMES: \_\_\_\_\_

## H2M architects + engineers

### OFFICERS AND SHAREHOLDERS

NAME	TITLE
<b>Richard W. Humann, P.E.</b>	Chairman, Chief Executive Office, President
<b>Joseph M. Mottola, AIA</b>	Chief Operating Officer, Executive Vice President, Secretary
<b>Dennis M. Kelleher, P.E.</b>	Chief Market Director, Executive Vice President
<b>Steven J. Hyman, P.E.</b>	Principal Office Director, Executive Vice President
Gregory C. Smith, CPA	Chief Financial Officer, Executive Vice President, Treasurer
<b>Michael J. Bonacasa, AIA</b>	Senior Vice President
Jeffrey L. Czajka, P.E.	Senior Vice President
Anthony P. Fisher, P.E.	Senior Vice President
Michael N. Gentils	Senior Vice President
Michael W. Keffer, P.E.	Senior Vice President
Ronald B. Lanner, R.A.	Senior Vice President
Charles A. Martello, P.E.	Senior Vice President
James L. Neri, P.E.	Senior Vice President
Guy Y. Page, R.A.	Senior Vice President
Philip J. Schade, P.E.	Senior Vice President
Elizabeth C. Uzzo	Senior Vice President
Saverio J. Belfiore, AIA	Vice President
Steven C. Hearl, P.E.	Vice President
<b>Ernest V. Iannucci, P.E.</b>	Vice President
Paul R. Lageraaen, P.E.	Vice President
Sui Y. Leong, P.E.	Vice President
David L. Mammina, AIA	Vice President
Joseph A. Manzella, P.E.	Vice President
David J. Pacheco, AIA	Vice President
Kevin M. Paul, AIA	Vice President
Jay Pisco, P.E.	Vice President
Dennis A. Ross, AIA	Vice President
James Roberts, P.E.	Vice President
William Rockensies, P.E.	Vice President
Richard B. Schommer, P.E.	Vice President
Michael V. Tumulty, P.E.	Vice President
Christopher Weiss, P.E.	Vice President
Richard Wiedersum, AIA	Vice President
Veronica E. Byrnes, R.A.	Assistant Vice President
Patrick K. Cole, P.E.	Assistant Vice President
John R. Collins, P.E.	Assistant Vice President
Alexander Hochhausl, P.E.	Assistant Vice President
Robert E. Ikes, III, R.A.	Assistant Vice President
Michael W. Lantier, P.E.	Assistant Vice President
Robert J. Lucas, P.E.	Assistant Vice President
Kenneth A. Keltai, RLA	Assistant Vice President
Debra L. Mattina	Assistant Vice President
Matthew R. Mohlin, P.E.	Assistant Vice President
<b>Sharon Norton Remmer</b>	Assistant Vice President
Jamie Pizzardi	Assistant Vice President
William Rospars	Assistant Vice President
John Schnurr, P.L.S.	Assistant Vice President
Kevin M. Taylor	Assistant Vice President
Joseph Todaro, P.E.	Assistant Vice President

*Board of Directors in bold*

### OTHER SHAREHOLDERS

NAME	TITLE
Alison K. Auriemmo, P.E.	Senior Associate
Robert F. Bee, R.A.	Senior Associate
Philip Bianco	Senior Associate
Nicholas F. Bono, P.E.	Senior Associate
Anne Davis	Senior Associate
Kenneth R. Gehringer, AIA	Senior Associate
Sean T. Hoffman, P.E.	Senior Associate
Anthony W. Kim, P.E.	Senior Associate
Scott D. Lehn, P.E.	Senior Associate
Gregory J. Levasseur, P.E.	Senior Associate
Eric W. Maisch, R.A.	Senior Associate
Timothy J. McGuire, P.E.	Senior Associate
Kevin M. Medler, R.A.	Senior Associate
Richard Palladino	Senior Associate
Joel Richardson, P.E.	Senior Associate
Michael W. Weber, P.E.	Senior Associate



September 24, 2020

Jeanne Carroza, CPPB, Senior Purchasing Agent  
Town of East Hampton  
159 Pantigo Road  
East Hampton, NY 11937

**RE: Proposal for Engineering Services for the Map & Plan of a Wastewater Collection System for Downtown Montauk | RFP#: EH2020-101**

Dear Ms. Carroza:

Due to aging structures, future renovations, and the pressure to expand affordable housing, all while taking into consideration degradation of water quality from continued use of onsite wastewater disposal systems, compounded by sea level rise and increasing frequency of storm surge events, the Downtown Montauk Wastewater Collection System became a priority project in the Town of East Hampton Water Quality Improvement Plan. H2M proposes to address these issues by evaluating and identifying a cost-effective solution to collect, convey and treat wastewater within the Downtown Montauk priority areas identified by the Town, and summarize the findings in a map, plan and report compliant with New York State Town Law. **H2M architects + engineers (H2M)** looks forward to the opportunity to assist the Town in this undertaking, as we have been actively providing consulting services to municipalities across Long Island for 85+ years. Our local experience, qualifications, and professional expertise in wastewater planning and project development are key factors to assisting the Town in successfully implementing their vision for the Downtown Montauk Wastewater Collection System.

H2M has extensive experience related to developing engineering evaluations, plans, reports, and maps required to establish municipal districts and/or implement special improvements. Some examples of our work include the coastal communities of the Village of Westhampton Beach, Village of Patchogue, and Town of Riverhead where H2M is the current engineer of record for their wastewater collection and treatment systems. We are also actively providing consulting services to the Village of Southampton to evaluate sanitary infrastructure alternatives and assist with the formation of a Village sewer system. H2M has also completed projects for Suffolk County Department of Public Works (SCDPW) and other municipalities across Long Island, including similar maps and plans for the villages of Shirley, Bellport, and Mastic Beach, and the Town of Brookhaven.

H2M understands the importance of mobilizing for assignments quickly and having the resources available to execute projects on schedule and within budget. We are proposing many of the same staff that worked on these similar efforts for this project. Our expert team will be led by Senior Discipline Engineer Nicholas F. Bono, P.E., who will make sure all the Town's needs are being fulfilled in a timely, cost-efficient, and high-quality manner. Mr. Bono offers more than 17 years of experience leading wastewater projects including the preparation of engineering planning studies, maps and plans, engineering design reports and detailed plans and specifications. He has performed as the lead engineer on similar projects for the Villages of Westhampton Beach, Patchogue, and Southampton. Mr. Bono will work closely with H2M's in-house engineering staff, scientists, and planners as well as our proposed subconsultant, Mesiano Consulting, Inc. of Setauket, NY, who will assist the Town in identifying grant opportunities to pursue for future project funding.

H2M looks forward to the opportunity to serve the Town of East Hampton on this important project. Please feel free to contact me at (631) 756-8000 ext. 1012 or by email at [cweiss@h2m.com](mailto:cweiss@h2m.com) should you have any questions regarding our submission or require any additional information. Thank you for your consideration.

Very truly yours,  
**H2M architects + engineers**

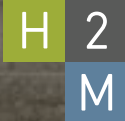
A handwritten signature in black ink, appearing to read 'CA Weiss'.

Christopher A. Weiss, P.E.  
Vice President | Director of Wastewater Engineering  
Engineering

A handwritten signature in black ink, appearing to read 'N. Bono'.

Nicholas F. Bono, P.E.  
Senior Discipline Engineer – Wastewater





Here at H2M, we value people.



H2M was organized in 1933 and founded on the principles of professional excellence, hard work, and integrity.

### Practical Approach. Creative Results.

H2M is a multi-disciplined professional consulting and design firm, proud of our long history of client service and consistent ability to meet tough architectural, engineering, and environmental challenges head-on. Since 1933, H2M has helped plan, design, and build many of our local communities: from water treatment facilities to firehouses, schools to road reconstruction, and Environmental Site Assessments (ESAs) to groundwater remediation. Since our early roots, our focus has remained steadfast: to provide quality service with sound judgment and serve our clients as an honest and professional resource. We offer a practical approach with creative results.

### Our Staff

H2M prides itself on the breadth of its comprehensive in-house service capabilities. With a diverse staff of over 470 engineers, surveyors, architects, scientists, planners, landscape architects, and technical support specialists, we offer our clients the benefit of a full "under one roof" consulting network.

66 Registered Architects

92 Professional Engineers

36 LEED Accredited Professionals

02 Registered Landscape Architects

06 Professional Planners

14 LEED Green Associates

08 Professional Geologists

02 Professional Land Surveyors

05 Licensed Site Remediation Professionals

### Operating Philosophy

The operating philosophy at H2M is based on the following core values:

#### Respect

We respect each other's ideas and contributions and are committed to open, honest communication.

#### Dedication

We are responsive to our clients' needs and go above and beyond to get the job done.

#### Integrity

We are honest and ethical in our business practices and build trust with our clients and staff.

#### Teamwork

We cooperate, collaborate and work together as part of a team.

#### Community

We are committed to the health of our local communities and our legacy.

#### Creativity

We believe in the importance of innovation and seek new, creative, and sustainable project solutions.

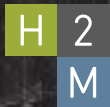
#### Practicality

We are dedicated to providing efficient, cost-effective solutions to our clients' problems.

#### Opportunity

Our success begins with our people. We value organic growth, empowering our employees, and fostering their development.





# H2M Services

## Architecture

- Architectural design
- Comprehensive grant programs
- LEED design processes
- Interior design
- Removal of barriers to the handicapped
- Master plans and revisions
- Needs assessments
- Planning studies
- Building conditions surveys
- Restoration of historic structures
- Restaurant and kitchen design
- Zoning ordinance review
- Educational facilities design
- Assisted living facilities design

## Civil/Site & Structural Engineering

- Roadway reconstruction and resurfacing
- Site plan design
- Street lighting
- Flood control and drainage
- Irrigation systems
- Sidewalks and curbs
- Storm drainage systems
- Water mains
- Local roadway study and design
- Subdivision design
- Streetscape design and improvements
- Parks, playgrounds, athletic fields
- Parking fields
- Highway planning studies
- Intersection design and improvements
- Visual impact analyses
- Resident engineering inspections
- Geographic Information Systems (GIS)
- Green infrastructure design
- Structural conditions assessments
- Structural building design
- Structural renovations/alterations
- Cause and origin investigations
- Retaining walls, bulkhead, and culvert design
- Storm hardening/resiliency
- Expert testimony

## Construction Phase Services

- Inspection
- Shop drawing review
- Scheduling
- Construction administration
- Site safety plans
- Grant administration
- MWBE/SDVOB compliance
- Startup
- Commissioning
- Drone progress photos
- O&M manuals
- Utility coordination
- Response to RFI's
- Job progress meetings
- Prepare punch list
- Project closeout
- Record drawings

## Environmental Services

- Air and water pollution control
- Hazardous waste management
- Hazardous materials storage design
- Waste minimization

- Environmental Impact Statements (EISs)
- Wetland delineation
- Environmental Site Assessments (ESAs)
- Environmental compliance audits
- Environmental permitting
- Site investigations
- Brownfield assessments
- Remedial investigations/feasibility studies
- Risk assessments
- Above and underground tank management
- Soil and groundwater remediation
- Soil vapor intrusion studies
- Regulatory compliance programs
- Industrial hygiene
- Indoor air quality
- CM/LBP/mold inspections and abatement
- Computer modeling
- Asbestos investigation and removal
- Geographic Information Systems (GIS)

## Land Surveying

- Boundary and title surveys
- Topographical surveys
- Horizontal and vertical control surveys
- Hydrographic surveys
- Route surveys
- Subdivision planning
- Sanitary and drainage study maps
- Legal descriptions
- Construction layout services
- As-built surveys
- Architectural surveys
- Structural surveys
- Under-construction inspection surveys
- Easement survey and description

## Landscape Architecture

- Tree inventory and assessment
- Tree mitigation
- Landscape design and restoration
- Conceptual site design
- Landscape planning
- Illustrative renderings
- Landscape architectural detailing
- Streetscape and urban design
- Parks and playgrounds design
- Campus landscape design
- Private estate and residential design
- Planting design
- Wetlands mitigation
- Green infrastructure

## MEP Services

- Electrical systems design
- Feasibility and implementation studies
- Power supply
- Exterior and interior building services
- Closed-circuit television security systems
- Emergency power generation
- Site/systems and load evaluations
- Energy studies
- Site lighting design
- Fire and security systems
- SCADA systems
- Utility company rebates and incentives
- HVAC systems design
- Heat and cooling load analysis
- Steam systems
- Hydronics

- Heat recovery systems
- Chillers and cooling towers
- Laboratory ventilation systems
- Site/systems evaluations
- Feasibility/implementation studies
- Energy conservation
- Cost/benefit analysis
- Commissioning/testing

## Planning

- Comprehensive Master Planning
- Community Visioning
- Zoning Ordinances and Analysis
- Redevelopment Studies and Plans
- Geographic Information Systems (GIS)
- Urban Design
- Design Guidelines
- Renderings
- Feasibility Studies and Conceptual Plans
- Downtown Revitalization
- Expert Private Testimony
- Municipal Board Representation

## Wastewater Engineering

- Characterization/quantification of waste
- Treatment facility evaluation
- Scavenger waste facility design
- Outfalls and leaching systems design
- Chemical feed systems design
- Monitoring and control systems
- Nutrient removal treatment systems design
- Facility planning studies
- Wastewater treatment studies
- Wastewater treatment plant design
- Wastewater reuse design
- Standby power systems
- Sludge thickening, dewatering
- Sludge treatment, disposal
- Odor control
- UV and chemical disinfection systems
- Sewer system extension planning
- User cost analysis
- Sanitary sewer design
- Sewer rehabilitation studies and design
- Infiltration/Inflow evaluation
- Pump station evaluations and design
- Odor control
- Security systems
- Geographic Information Systems (GIS)
- Discharge monitoring reports
- Plant performance monitoring
- Preparation of O&M manuals
- Facility start-up and operations
- Groundwater/effluent monitoring programs
- Operator training
- Industrial pretreatment programs
- Prepare/revise sewer use ordinance

## Water Engineering

- Supply well design
- Plant rehabilitation design
- Water treatment systems
- Water filtration systems design
- VOC removal treatment systems design
- Distribution system analysis and design
- Distribution hydraulic modeling
- Automated mapping/facilities mapping
- Storage tank rehabilitation/repainting
- Storage tank design
- Tank and coatings inspection
- Instrumentation and computer control designs
- Comprehensive groundwater modeling
- Geographic Information Systems (GIS)
- Aquatics and park design
- Public swimming pool design
- O&M programs
- Training programs
- Asset management

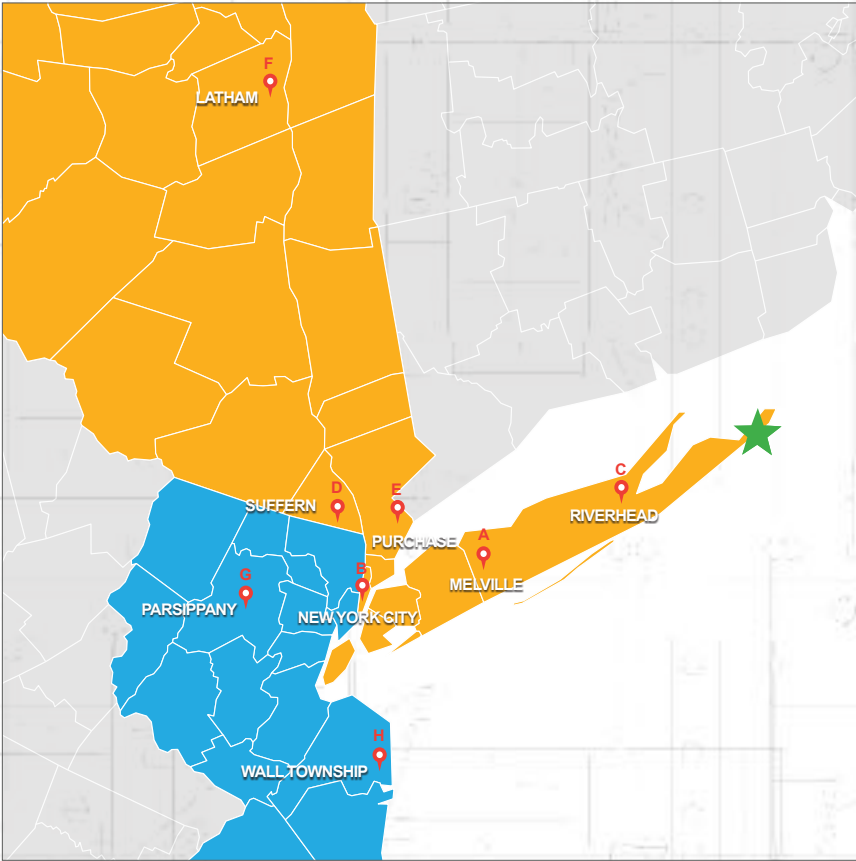
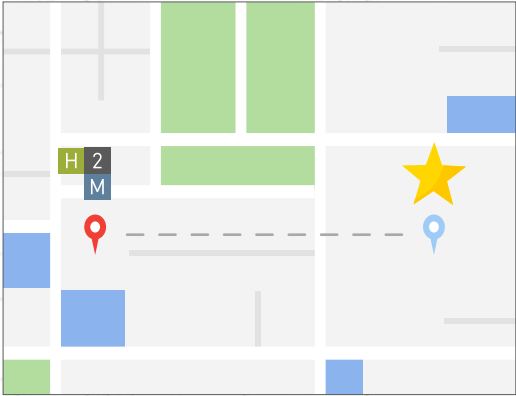


Distance from our Melville headquarters to the Town of East Hampton:

70 miles

### Office Locations

H2M serves the municipalities, public agencies, private utilities, and industries of the New York/New Jersey Metro Region, with eight office locations.



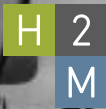
- A** 538 Broad Hollow Road, 4th Floor East Melville, NY 11747
- B** 132 West 31st St, Suite 604, New York, NY 10001
- C** 737 Roanoke Avenue, Riverhead, NY 11701
- D** 2 Executive Boulevard, Suite 401, Suffern, NY 10901
- E** 2700 Westchester Avenue, Suite 415, Purchase, NY 10577
- F** 3 Lear Jet Lane, Suite 205, Latham, NY 12110
- G** 119 Cherry Hill Road, Suite 110, Parsippany, NJ 07054
- H** 4810 Belmar Boulevard Wall Township, NJ 07753

“H2M” refers to H2M Architects, Engineers, Land Surveying and Landscape Architecture, D.P.C. and/or its subsidiary H2M Associates, Inc., and/or its affiliate H2M Architects & Engineers, Inc. and Pacheco Ross Architects, a division of H2M architects + engineers, as appropriate to the context. Pacheco Ross Architects was acquired by H2M in 2016, and specializes in the design of emergency response facilities. Each company’s professional resources are available to the others to the maximum extent permitted by applicable state laws. H2M will not practice, and should not be interpreted to be offering to practice, any professional service for which it and its cognizant employees are not properly licensed.

H2M Architects, Engineers, Land Surveying and Landscape Architecture, DPC (dba: H2M architects + engineers) is a NYS Design Professional Corporation. It maintains New York Certificates of Authorization to provide professional architecture, engineering, land surveying, and landscape architecture services.

H2M Associates, Inc. is a New Jersey business corporation. It is a wholly owned subsidiary of the parent company. It maintains New Jersey Certificates of Authorization to provide professional engineering, land surveying, and landscape architecture services.

H2M Architects & Engineers, Inc. is a New Jersey business corporation. It is an affiliate of the parent company, being under the ownership and control of a group of appropriately licensed officers of the parent company. It maintains New Jersey Certificates of Authorization to provide architecture and professional engineering services. It is also appropriately structured to maintain certificates of authority to provide architecture and professional engineering services in Connecticut, Massachusetts, and Pennsylvania.



## About H2M

Founded in 1933, H2M was initially oriented towards the planning and design of municipal infrastructure projects. The company's capabilities have since grown to include full professional services in architecture, engineering and environmental consulting.

H2M has been providing consulting engineering services to municipalities across Long Island for 85+ years. Our local experience, qualifications and professional expertise in wastewater planning and project development are important to assist the Town with the successful formation of the Downtown Montauk Sewer System. H2M understands the intricacies of planning for sanitary infrastructure in Suffolk County, and has the ability to carefully integrate affordability, environmental improvement, protection of public health and support of long-term economic stability into projects of this type - all while complying with the regulatory requirements of: Suffolk County Department of Health Services (SCDHS), United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), New York State Environmental Facilities Corporation (NYSEFC), New York State Municipal Law, and the New York State Health Commissioner.

H2M has its headquarters located at 538 Broad Hollow Road, 4th Floor East in Melville, New York, as well as offices in New York City, Westchester, Suffern, and Albany, NY and in Parsippany and Wall Township, NJ. H2M is a NYS Design Professional Corporation, licensed by the NYS Department of Education to provide professional engineering services in New York. H2M also has a fully owned subsidiary, H2M Associates Inc., and H2M Architects & Engineers Inc., as affiliated companies that can provide engineering and architecture services in New Jersey, respectively.

H2M currently has staff resources of 470 employees, including chemical, civil, electrical, environmental, mechanical and structural engineers, architects, planners, geologists, hydrogeologists, environmental scientists, surveyors, industrial hygienists, construction managers and related technical support personnel. All projects are carried out under the direction of one or more of the firm's officers and managed by senior staff professionals. As a result of the multi-disciplined nature of the firm, H2M is able to assign project teams composed of staff specialists in the appropriate discipline(s) to meet the specific needs of our clients and their projects.



**ENR**  
Engineering News-Record

### TOP DESIGN FIRMS



architects + engineers



RANKS

**No.226**

ON ENR'S TOP 500  
DESIGN FIRMS  
NATIONWIDE



RANKS

**No.22**

ON ENR'S TOP 100  
DESIGN FIRM  
NEW YORK REGION

## Qualifications in Wastewater Engineering

For over 85 years, H2M has been engaged in the planning, permitting, design and start-up of wastewater treatment, collection, and conveyance systems. H2M's Wastewater Division continually researches and evaluates new technologies and equipment for its ability to reduce life cycle costs while providing an easily operated and understood system that consistently achieves regulatory compliance.

H2M is an award-winning multi-discipline professional consulting and design firm that excels at managing complex projects while balancing the needs of its clients, costs, community, and environment. As a result of the multi-disciplined nature of the firm, H2M is able to assign project teams composed of staff specialists in the appropriate discipline(s) to meet the specific needs of our clients and their projects.

At H2M, we strive to fully understand the requirements of our clients and follow a unique problem solving approach that creates efficient, sustainable, and cost effective solutions that result in capital and operating cost savings for our clients.

We recognize the clarity and simplicity that a single point of contact within H2M can provide to the Town of East Hampton. H2M intends to provide a Project Manager who will meet the expectation, and also serve as a conduit to the entire resource of H2M.

Many clients have stated that the ability to deliver a quality product on time is the single most important factor in the selection of an A/E firm. An important factor which helps us to deliver projects in a timely manner is the fact that all personnel required for project assignments are under the control of the Principal in Charge. We believe the subsequent sections in this proposal demonstrate H2M's ability to complete the professional services to the Town.

H2M provides cost-effective and practical solutions to public and private sector clients for wastewater and other environmental challenges. The Clean Water Act, enacted in 1972, specifies regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment plant facilities, and manage polluted runoff. Some of the critical issues the law addresses are the requirement for states to develop Total Maximum Daily Loads (TMDL) to restore polluted waters and the need to upgrade, repair, or replace wastewater facilities and sewage collection and conveyance systems to meet the provisions of the law. H2M is experienced in developing compliance strategies that meet both existing rules and anticipated changes. Success in navigating these regulatory issues and other wastewater challenges requires a strong team of engineers with insight, wisdom and experience gained through exceptional completion of successful projects. Our wastewater division includes wastewater engineers, wastewater treatment plant operators, LEED APs, and specialists in the field of collection, conveyance, and treatment systems. Based on client needs and project requirements, H2M offers the following services:

- » Wastewater Treatment
- » Biological Nutrient Removal
- » Wastewater Collection/Conveyance
- » Wastewater Reuse
- » Scavenger Waste Treatment
- » Sewer System Evaluations
- » Sewer Use Regulations
- » Wastewater Treatment
- » Wastewater Characterization
- » Residuals Management
- » Facility Planning
- » Operation Consulting
- » Operation and Maintenance Manuals
- » Construction Administration/Inspection
- » Discharge Monitoring
- » Odor Control
- » Health and Safety Programs
- » Energy Audits and Commissioning
- » Emergency Planning
- » Security Systems
- » Emergency Power Systems
- » SCADA
- » Geographic Information System (GIS)
- » Permitting
- » Grant and SRF Loan Applications
- » Facility Resiliency
- » Asset Management
- » FEMA Reimbursement Coordination



**“H2M provides cost-effective and practical solutions to public and private sector clients for wastewater and other environmental challenges.”**

## ★ Bringing Technology to Our Project

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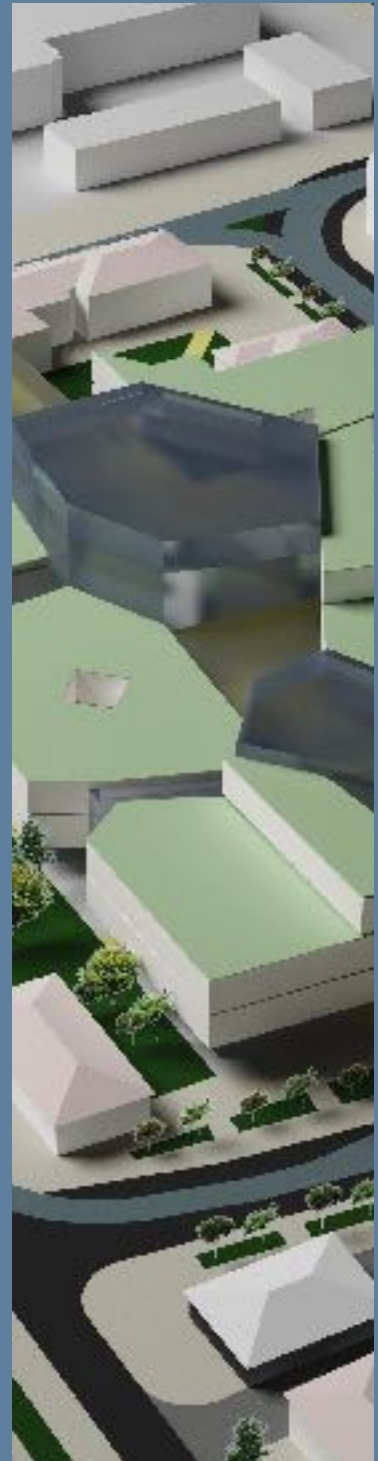
For more than 25 years, H2M has utilized the AutoDesk products featuring two-dimensional and three-dimensional CAD software for our building designs.

We maintain a library of standard details, manufacturers' details and symbol libraries to help in the creation of our drawing files. Using state-of-the-art computers, printers and plotters, we accomplish the varied needs of clients from traditional building designs to GIS mapping and more. Our team uses AutoCAD, REVIT BIM software, 3DS Max design software, and BSD SpecLink-e.

H2M's extensive GIS service offering was built upon our decades of municipal and private A/E experience. Our team of GIS professionals maintain technical fluency in ever-changing GIS industry software and practices. We take great pride in our ability to lead our clients to the most appropriate GIS solution for their need, regardless of size or complexity. With specialties spanning all aspects of geospatial data development and accessibility, our GIS team is equipped for any GIS challenge. Guiding our clients through each step of their GIS project, from conception through needs analysis, strategy, design, and delivery, we provide appropriate, functional, and practical GIS solutions with the latest technology to meet our clients' specific needs.

Our water and wastewater GIS solutions simplify operations and improve efficiencies, which saves you time and money. As a Business Partner with Esri, H2M employs the latest GIS technology to support local water and wastewater service providers. Our GIS services span the range from infrastructure mapping to CMMS integration, asset management and network modeling. Intelligent data is at the core of our service offering, providing the foundation for more complex and beneficial geospatial applications and integrations. Our services include data processing, mobile and online mapping, records and asset management, and remote access.

As discussed above, H2M provides engineering services on a wide variety of project types. H2M utilizes a project information management system (Newforma) to facilitate our staff's ability to file and manage project information. The primary benefits of Newforma are more efficient document management and retrieval, email management and construction contract administration. All project email, meeting minutes, correspondence, project photos, plans, specifications etc. are saved to the project through Newforma and electronically stored on our network. Action items can be assigned to project team members including external team members, and their status tracked through an automated logging system. Shop drawings are transmitted electronically and their status tracked through the automated logging system as well as RFIs, change order proposals, supplemental sketches, daily reports, and other construction related activities. Action items can also be incorporated into meeting minutes and carried over, as required, into future meeting agendas.







## Project Understanding and Approach

### Project Understanding

The environmental benefits of significantly reducing nitrogen pollution to Fort Pond, Fort Pond Bay, and Lake Montauk, while also providing economic growth within downtown Montauk, are core objectives of the Town Board that are not mutually exclusive in any way. It is clear that providing central sewage collection and treatment infrastructure is the means to achieving that end. Grants and low interest loans hinge on the ability of the Town to develop a sewer infrastructure plan that restores the ponds/bays/lake by significantly reducing sanitary system underflow and the pollution caused by failing cesspools and high groundwater conditions.

H2M has extensive experience providing planning, design and construction services to municipalities across Long Island for wastewater infrastructure projects further discussed in Tab 3 - Experience. H2M has developed real-world, cost-effective sewer plans for clients just like the Town of East Hampton. We understand that undertaking such a complex and large-scale project may seem overwhelming at first, however, by logically developing the project in manageable steps and comprehensively explaining each step to the Town and its impacted businesses and residents, it makes it less of a challenge to bring the project to fruition. **Figure 1 – Project Flowchart** (provided at the rear of this section) represents the major steps in forming a Downtown Montauk sewer area and shows the links and dependent tasks that takes the project from its start to finish. Please review and refer to the Project Flowchart to gain a full understanding of our technical approach. We have also prepared **Figure 3 – Sewer Area Formation Flowchart** (also provided at the end of this section) which diagrams our interpretation of New York State Town Law for forming a sewer area. All our clients retain a municipal attorney to manage the formation process.

In addition, we have also prepared **Figure 2 – Preliminary Service Area Map**, which is also located at the end of this section. While this map is preliminary in nature and has not been shown to the Town for input, it does provide a basis for our fee proposal and provides a starting point for the development of the map to form the sewer area. We discuss the Preliminary Service Area Map hereinafter in this section.

Providing central sewage collection and treatment infrastructure is the means to achieving downtown growth and environmental restoration of Fort Pond and Fort Pond Bay, along with Lake Montauk.



The Downtown Montauk Business District wants to continue to be a unique destination of wet and dry business, tourism, recreation, and commerce on the east end of Long Island. Located within the Town of East Hampton, the Montauk area is host to some of the most beautiful landscapes, golf courses, beaches, and homes in Suffolk County, that when combined with a vibrant downtown, will surely result in jobs, tax base growth, increases in home and business property values, and economic stability allowing other capital projects to be undertaken for the benefit of the community at large.

While Montauk is already a world class destination, its sanitary infrastructure can not meet its needs while providing for an appropriate level of environmental stewardship worthy of its unique natural setting. With the creation of a sewer district and installation of sewers and treatment capabilities, its downtown potential can be more fully realized. and then maybe reference the other villages.

The Town has historical roots in agriculture and maritime activities, with native ties to the fishing industry. The nostalgia felt within the Town has everlasting appeal for all who reside, conduct business, and vacation in the area.

Since the Montauk area was first settled in 1660, the area has grown to become one of the most popular destinations in the Hamptons. Over the years, the population within the Montauk area has transformed from a once predominantly seasonal community to more of a year-round community. The Montauk Highway businesses have maximized their growth potential for goods and services required to support tourism, as well as for those who reside year-round. The Montauk Highway area has expanded to its maximum, as local seafood markets, restaurants, and retailers prospered with the seasonal influx of tourists and part-time residents from the metropolitan New York City area.

**Suffolk County Water Quality Rules**

Specifically, Suffolk County Department of Health Services (SCDHS) enacted Article 4, Article 6, Article 7, and Article 12 of the Suffolk County Sanitary Code to form the rules and regulations on which to protect groundwater and public health in Suffolk County. Article 6 of Suffolk County Sanitary Code was enacted in 1980 to limit development density in Suffolk County based on location relative to water resources. Any development initiated after 1980 that would exceed the density limitations specified in Article 6 would be required to install onsite sanitary wastewater treatment system(s) or connect to an existing treatment system to ensure compliance with local regulatory requirements. It is for these reasons that the development of a sewer system with wastewater treatment would be beneficial to the social, economic, and environmental sectors of the Downtown Montauk Business Area.

**Prior Sewer Studies**

The Town of East Hampton has commissioned a number of studies in the past to evaluate the economic growth, environmental protection, and potential sewerage of the Montauk area. These studies include the following documents:

1. Wastewater Needs Analysis Report (2014)
1. Water Quality Improvement Plan (2014)
2. Comprehensive Town-wide Wastewater Management Plan (2015)
3. Lake Montauk Watershed Protection Plan (2014)
4. Downtown Montauk Wastewater Management Strategic Plan (2017)

Suffolk County wastewater flow restrictions hinders downtown growth of existing restaurants and nightspots.







## Surface Water and Groundwater Degradation

The surface water surrounding the Downtown Montauk Business District, which includes Fort Pond, Fort Pond Bay, and Lake Montauk, have all been identified as partially impaired water bodies and are on the Priority Water Bodies list prepared by the New York State Department of Environmental Conservation (NYSDEC). Each of these water bodies have been impacted by pathogens, excessive nitrogen loading, and algal blooms due to excessive nutrient loading from on-site wastewater treatment systems, boat pollution, and urban stormwater runoff. These drawbacks are directly correlated to the insufficient sanitary infrastructure within the densely developed tributary areas to these water bodies within the Montauk area.

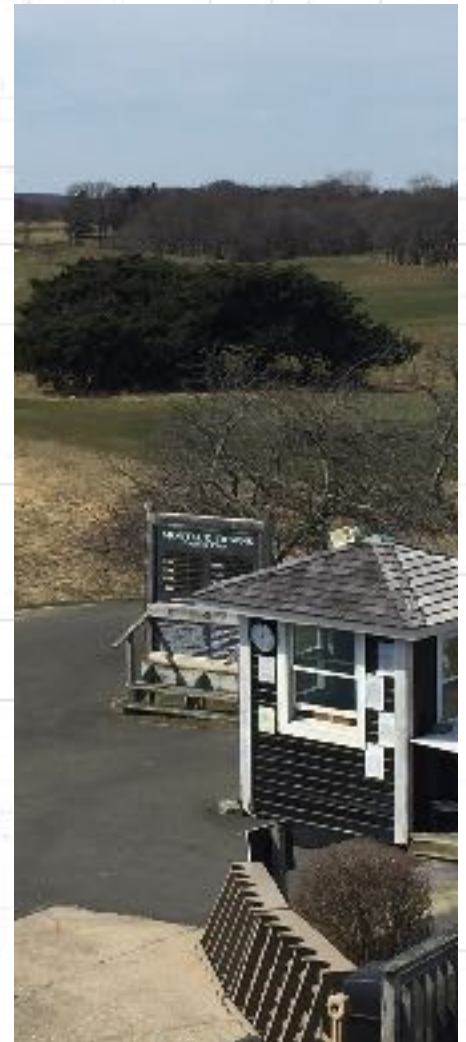
The Town adopted a sanitary system that was adequate for its time during initial development, consisting of cesspools, septic tanks, and leaching pools fitted to each individual property. These types of on-site wastewater disposal systems are common to most unsewered areas throughout Suffolk County, since the majority of the County was developed prior to the Clean Water Act (CWA) in 1972. The CWA provided the basic structure for regulating pollutant discharges into waters of the United States and resulted in the development of the Suffolk County Sanitary Code, which is currently used to regulate the discharge of contaminants in the County.

With very shallow depth to groundwater throughout parts of Downtown Montauk, nearly all the single-building sanitary systems are failing to accommodate the flow of wastewater they are designed to handle. The on-site wastewater disposal system effluent is loaded with nutrients, mainly nitrogen and phosphorus, which are discharged to the ground and ultimately reaches nearby surface waters via subsurface groundwater transport.

The excessive delivery of nitrogen from land into coastal waters can lead to a host of environmental problems including algal blooms, hypoxic zones, habitat loss, and acidification. These occurrences are acutely obvious within the regions of Fort Pond, Fort Pond Bay, and the south end of Lake Montauk. In recent decades, this region has become void of important habitats such as sea grass and important marine organisms such as hard clams. Concurrently, this region has experienced the continual symptoms of excessive nitrogen overloading, which result in intense brown tides, intense red tides, and low or no dissolved oxygen in areas of the bays and tributaries. While brown tides and low oxygen conditions are harmful to marine life, it is the red tides that occur in this region which produce the saxitoxin, a neurotoxin that causes paralytic shellfish poisoning, which can lead to serious human health syndrome.

In 2014, haphazard monitoring of red tide across the South Shore Estuary found extremely high densities of this red tide in adjacent communities. During 2014 and 2015, more than 30 sites across Long Island were monitored by the State University of New York at Stony Brook. Adjacent communities consistently had some of the lowest water quality across all of Long Island.

Excessive nitrogen loading is the root cause of water quality problems in Fort Pond, Fort Pond Bay, and areas of Lake Montauk. While sanitary underflow from the Downtown Montauk Business District mainly discharges directly to Fort Pond or the Atlantic Ocean, tidal exchange in the region makes the bay and lake both vulnerable to the nitrogen loading that emanates from the local community.



H2M will identify the sources of surface water degradation and to evaluate the impact of failing on-site systems on ground and surface waters.



Studies have determined that the primary source of nitrogen to these regions is from wastewater, specifically septic tanks and cesspools. All of these conditions are particularly acute within the Downtown Montauk Business District where the dense aggregation of cesspools and septic tanks are clustered around a shallow, poorly flushed water body. All of these observations clearly warrant implementation of intense nitrogen loading mitigation strategies for the Downtown Montauk Business District, which include the creation of a sewer system to collect and treat wastewater prior to discharging to the environment, as among the most effective means for mitigating the ongoing degradation of surface waters in the area.

The surface waters of Fort Pond and all tributaries have been identified as “Impaired” by NYSDEC within the most recent Priority Waterbodies List (PWL) update. All of these waters are located within the South Shore Estuary Reserve, which identifies aquatic life, such as shellfish, as being impaired. The PWL does not list “Nutrient” pollutants and “On-Site/Septic Systems” sources as the direct cause of these problems, but it is understood that if nothing is done to mitigate these pollutant pathways, the area will continue to suffer.

### Downtown Revitalization

Business development and revitalization also hinge upon functioning sanitary systems. Every building, whether residential or commercial, designed for any specific use, has a certain amount of wastewater flow that its sanitary system is engineered to handle. Zoning codes and restrictions for all building use is a factor used in determining the potential ways in which the spaces can be utilized. In Suffolk County, the areas where failing on-site systems exist as the predominant method of wastewater disposal are losing value as they cannot be used to their fullest extent. This is seen in the Downtown Montauk business area where many buildings cannot accommodate mixed-use, cannot have a wet license, and are not able to increase their maximum occupancy ratings.

Economically speaking, developing a sewer system can be a costly endeavor. The notion to develop a sewer system within the Downtown Montauk Business Area has been deliberated quite a few times, but consistently rejected as officials have stated it would cause too much of a financial burden on the community. One common misconception of developing a new sewer system in the Downtown Montauk Business Area is that it would have to be immediately available to the entire Montauk area. The sewer system will not move past the preliminary planning phase if the preliminary plan does not consider the financial sensitivity of the specific area where the project will take place. If the financial sensitivity of the community is understood, then the plan can be tailored in a way that makes fiscal sense to move past the preliminary planning stages and into actual implementation.

H2M’s evaluation of the sanitary infrastructure needs for the Downtown Montauk Business Area will be based on a strong public participation program that will identify and develop an understanding of the social, environmental, and economic needs of the community. Our team believes that the first phase of a Downtown Montauk-wide sewer system be focused on the priority business areas located along the Atlantic Ocean to South Erie Avenue and South Essex Street and South Emery Street. Providing sanitary infrastructure to these commercial areas will enable businesses the ability to grow, which will promote economic growth and allow the local economy to flourish, thus building a strong tax base. An increase in business activity will result in new locations for Montauk residents to avail themselves thereby promoting social growth within the community. The sewer



**“If the financial sensitivity of the community is understood, then the plan can be tailored in a way that makes fiscal sense to move past the preliminary planning stages and into actual implementation.”**



system would be planned to allow for expansion throughout the rest of the Montauk area in phases as the Town Board deemed fit.

### Grant and Loan Assistance

H2M has been very successful with providing municipalities the services needed to procure grant funding from local, state and federal government entities that fund such large sewer projects. H2M is largely experienced with the New York State Environmental Facilities Corporation (NYSEFC) Clean Water State Revolving Fund (CWSRF) Loan Program as well as various funding programs available through Suffolk County and the New York State Dormitory Authority (DASNY) that support projects to construct sanitary infrastructure and community development. H2M was successful in preparing the grant application for the Suffolk County Sewer Infrastructure Grant program that netted the Town of Riverhead a grant for \$8 million and the Village of Patchogue a grant for close to \$580,000.

H2M has very recently been successful in procuring grants and low interest loans in the amount of \$6.78 million dollars for the Westhampton Beach sewer project from the Community Preservation Fund (CPF) and New York State Environmental Facilities Corporation (NYSEFC).

Sources of grants are dwindling and are highly competitive. Support by Suffolk County and the Long Island Regional Economic Development Council are often a necessity to score high. Our plan would garner that support by showing how the Town’s plan to protect ground and surface waters fit County Executive Steve Bellone’s **Reclaim Our Water Initiative**. The potential for receiving Suffolk County grants improve if the Town aligns this project with the County’s initiative. H2M has been successful in helping the Town of Riverhead and the Village of Patchogue in aligning their projects with the County’s overall program to restore surface waters, and in the process has resulted in significant grant awards.

Our plan is to garner the support of the Economic Development Council and Suffolk County by showing how the Town’s plan to protect ground and surface waters match the objectives of County Executive Steve Bellone’s Reclaim Our Water Initiative.

### Technical Approach

- ◇ The key to making this project affordable is for the Town to obtain grants
- ◇ Grants are awarded if the applicant can present a conclusive argument that environmental degradation is occurring because of failing or non-conforming on-site systems
- ◇ H2M’s job – to provide the information that places the Town in a strong position to be awarded grants so this project moves forward

H2M is pleased to present our technical approach for the entire sewer system project as shown on **Figure 1 - Project Flowchart**. The project flowchart shows the phases required to plan, fund, design, construct, and operate a municipal sewer system and sewage treatment plant in Suffolk County. The flowchart is experienced based.





Our proposed procedure for implementing the Town's project is shown on the flowchart. There are seven phases that are necessary, namely:

- **Phase I - Map & Plan for Sewer System Formation (Includes Citizen Participation)**
- **Phase II - State Environmental Quality Review Act (SEQRA) Compliance**
- **Phase III - NYSEFC Project Listing and Loan Application**
- **Phase IV - Engineering Design Report**
- **Phase V - Construction Plans and Specifications (Design)/Bidding and Award**
- **Phase VI - Infrastructure Construction**
- **Phase VII - Startup and Training**

This proposal is for the completion of **Phases I and II**. Subsequent phases build upon the conclusions, recommendations, costs, and schedule developed in the Map & Plan and SEQRA determination.

### ► Citizen Participation Plan / Public Education

The Supervisor and Town Board are an integral part in public acceptance of the project and their welcome participation is a critical component of anything that occurs within the Town. As the elected officials of the Town, the residents will expect the Town Board to act on their behalf and to promptly address their concerns. Montauk is a close-knit community where word-of-mouth is as much a tool for explaining the project as other mass media techniques. Over the years, H2M has engaged with the public to deliver very costly and complex projects in an open forum discussion setting. It has been identified in the past that because sewer systems have not yet been developed in the immediate area, the tax paying audience does not know enough to justify the tax implications such a project would incur. Public education is a key element of every capitol project, but more so where the immediate need may not be fully recognized.

There has been a publicly known outcry from the business owners of Montauk that an affordable sewer system is a definite need for the community. The discussion has been brought forth to the public many times in the past decade. However, the majority of the residents and business owners in the area do not understand the full implications of a sewer system. It is completely necessary to educate the public, letting them know how their money will be spent on this project and allowing them to understand the positive impacts a sewer system will have in their area. It is to the benefit of the Town that H2M lend support for public discussions of the sewer system; what it means to their way of life, and the ways in which it will benefit their property values.

### ► Map & Plan

H2M proposes to prepare the Map & Plan / SEQRA for the Formation of the Downtown Montauk Business District Sewer System. One of the first questions that grant applications usually ask is: Has a sewer district (area) been formed? We surmise that the grant awarding agency is trying to determine the applicant's willingness to initially invest tax payer funds for the greater purpose of protecting the environment.



**“It is to the benefit of the Town that H2M lend support for public discussions of the sewer system; what it means to their way of life, and the ways in which it will benefit their property values.”**



## ► Wastewater Treatment

A key aspect of our Map & Plan is to determine the best and suitable location for a sewage treatment plant from a cost standpoint that is generally acceptable to the residents of the Town and Montauk area. It is highly unlikely that every resident will support the location of the facility – usually because of personal reasons not having to do with cost.

The Town, through the Downtown Montauk Waste Water Management Strategic Plan, dated December 14, 2017, and prepared by Lombardo Associates, Inc., has identified the following three potential options for the location of a sewage treatment plant:

1. Landfill/cell tower property
2. Dock/Star Island area
3. Montauk Manor/SCWA property

Other areas were mentioned in the RFP (i.e. NYS ROW, alternative sites) but were not detailed enough to be included in the scope of services and associated cost proposal at this time.

For clarity, the construction of the treatment facility at the landfill/cell tower will be known as “Option 1”, Dock/Star Island area as “Option 2”, and the Montauk Manor/SCWA property as “Option 3”.

There are underlying considerations that have to be considered with each option – the most important of which is: Does the Town wish to own and operate its own facilities or attempt to negotiate with an existing private STP in the area to handle the sewage flow generation?

If the Town owns and operates its own facilities, then the Town controls the size of the plant thereby controlling the developments that connect to it, whether it be inside the boundaries or as out-of-district connectees. H2M will provide the costs associated with each option, but ultimately the advantages and disadvantages associated with each must be assessed by the Town Board. We will present the pros and cons for each option. The EAF and Supplement will be based on the sewer system option and STP site selected by the Town Board.

H2M has provided objective evaluations for each and every sewer system formation Map and Plan we have prepared. Each Map & Plan is different and each begins with an analysis of various baseline studies and data specific for the project being considered. By studying the existing build-out and zoning within the Downtown Montauk Business District, H2M will identify preliminary service area boundaries to present to the Town Board and discuss where implementation of sanitary infrastructure could be most effective to result in net positive impacts to the environment and economy, and support future development visions identified in the Town’s Master Plan. For the Downtown Montauk Business District, data such as water use records, building sizes, tax map information, and sanitary system capacities will be evaluated along with the recommendations of service areas presented to the Town Board to determine the final boundaries of the sewer system service area on which the Map & Plan will be based.

H2M will utilize the sanitary waste flow projections for the Downtown Montauk Business District as detailed in the document entitled “Downtown Montauk Wastewater Management Strategic Plan” dated December 2017.



**“H2M will provide the costs associated with each option, but ultimately the advantages and disadvantages associated with each must be assessed by the Town Board.”**



With preliminary research complete, H2M has identified draft boundaries of the proposed sewer system service area. A preliminary evaluation has determined the build-out flow to be approximately 250,000 gallons per day (gpd) (summer flow projection). H2M has considered a non-contiguous service area which encompasses the Montauk Highway Downtown Business area. The boundaries of these areas can be seen on **Figure 2 – Preliminary Service Area** at the end of this section.

The following provides a summary of the flow calculation based solely on existing zoning:

Property Type	# of Prop.	% of Total Dev.	WW Flow (gpd)	% of Total
Vacant, Undeveloped or Unclassified	30		0	0%
Hotel	21	12.2%	134,500	45.7%
Restaurant	23	13.4%	58,430	19.9%
Other Commercial	73	42.4%	56,494	19.2%
Residential	55	32%	44,922	15.3%
Total Developed	172	100%	294,347	100%
Total - All	202			

Once the sewer system service area boundaries are confirmed with the Town, the next step is to identify potential treatment options. Currently, three options to provide sanitary wastewater treatment have been identified by previous consultants for the Town. An evaluation of “Option 1”, landfill/cell tower property, will be performed to determine how the existing STP infrastructure can be used to treat the additional flow that could be expected from Montauk. With about 250,000 gpd average daily flow expected from the proposed service area, the STP would need to be sized accordingly to accommodate SCDHS setbacks and disposal requirements. The treatment technology to be used would be detailed in the Engineering Design Report based on wastewater flow, strength and seasonal characteristics that would be conducted under a future phase of work.

The alternative “Option 2” is to construct the STP at the Dock/Star Island area utilizing a treatment process that can achieve the limit of technology for nutrient removal. Option 2 would mean that the Town would need to acquire property for the construction of a new STP, with room for staging and expansion as required by current regulations and would require the New York State Legislature to review existing legislation and any impediments to expansion that may exist.

The alternative “Option 3” is to construct the STP at the Montauk Manor/SCWA property which would also require negotiations with the water authority to purchase the property.

► Sewer System

In order to finalize the sewage piping to the treatment system, the next stage of the process is to determine the sewer network layout. Over years of research and development, H2M has found the cost effective form of sewage collection

We estimate that the build-out flow for the first phase of the Montauk project might be around 300,000 gallons per day.





for areas plagued with shallow groundwater and undulating terrain to be the Low Pressure Sewer Systems (LPSS). Gravity sewers are always considered due to their relatively low operating costs, however, they become cost prohibitive when installation requires deep excavations, dewatering and removal and disposal of unsuitable fill materials. As such, the collection system will be evaluated based on the final service area boundary to determine the cost effective alternative which may consist of a combination of low pressure sewers and gravity sewer configurations. The sewer network layout will depend on the availability of land in desired areas to construct pump stations and on the response of the Town Board concerning the final service area boundary.

The outcome of this project and the selections of the treatment and collection system configurations will be based on the final service area boundary relative to build-out flow and ultimately total cost impact to the rate payers. When evaluated, the initial costs of the project will be in the form of construction, planning, and engineering. The Map & Plan is designed to also evaluate the annual operation and maintenance costs of the sewer system, once started, and the tax implications and user fees determined thereafter.

To assist the Town in evaluating cost effectiveness and determining an effective cost distribution scenario, H2M will prepare a financial model as part of the scope of services to clearly depict how project costs will cascade down to ratable tax payers for various grant, debt service and cost allocation scenarios. The model will be used to make real-time adjustments to variables in the model to reflect how tax payer rates will be affected. This ability has been a very useful tool in assisting other clients with making clear-concise determinations in selecting cost-effective financing requirements to implement future phases of work.

► **Environmental Research, Modeling, and Outreach**

In addition to the public outreach, the water quality expertise of Dr. Timothy Hazlett of H2M will be used to educate the public of the environmental considerations on this project.

Dr. Hazlett has 28 years of experience in developing, applying, and supporting groundwater models for a variety of problems. These problems have included groundwater flow and also the fate and transport of contaminants; precisely the types of skills needed to evaluate the potential impacts of the Montauk sewer project on both groundwater levels and nutrient (water quality) conditions.

Dr. Hazlett will provide written assessments regarding the current status of water quality within the Montauk region. He will refine the existing nitrogen loading models for the region to create a watershed model specifically for the Fort Pond Area to determine the precise nitrogen loading rates and sources of nitrogen. This information will be presented to the public to show the specific details of what their sewage is currently doing to their natural environment and assets. Next, he will use this refined model to consider the creation of a sewage treatment plant to treat wastewater and remove nitrogen from this watershed. Finally, he will consider how the precise nitrogen mitigation strategy will alter water quality at Fort Pond.

► **State Environmental Quality Review Act (SEQRA)**

The SEQRA and its implementing regulations as set forth in 6 NYCRR Part 617 requires the incorporation of environmental factors into the planning, review, and

H2M will prepare a financial model to show the Town how project costs will be financed for various grant, debt service and cost allocation scenarios.



**“Over years of research and development, H2M has found the cost effective form of sewage collection for areas plagued with shallow groundwater and undulating terrain to be the Low Pressure Sewer Systems (LPSS).”**



decision-making processes of government agencies, and requires that agencies determine whether the actions they undertake may have a significant impact on the environment. Working with the Town Board, who we assume will serve as Lead Agency for SEQRA review, H2M will prepare environmental review documentation in accordance with the requirements of SEQRA.

The RFP indicates that based on a preliminary assessment, the Town Board anticipates classification of this project as an Unlisted Action and that once this is confirmed, an uncoordinated review process would be utilized. The Town has also indicated in the RFP that an EAF with Supplement for specific issues to be determined in consultation with the Town would be utilized to comply with SEQRA. H2M has a thorough understanding of the SEQRA process and has successfully prepared EAFs, Expanded EAFs with Supplements, Generic Environmental Impact Statements (EIS) and Draft EIS documents for many project types. H2M will support the Town in confirming the appropriate course of action to comply with SEQRA.

As an initial step in the environmental review process, H2M will review prior studies, reports and other relevant documentation related to the development of a Town sewer system including the previously referenced studies, commissioned by the Town related to the development of a Downtown Montauk wastewater collection system and the Town of East Hampton Comprehensive Wastewater Management Plan.

H2M will prepare the Long EAF Parts 1 and 2, which will document the characteristics of the project, the environmental features in the project area and facilitate identification of pertinent issues for analysis in the Supplement. The EAF Supplement will assess both the construction and operation of the Sewer District and Sewage Treatment Plant (STP) (the "Proposed Action"). Where potential adverse impacts are anticipated, mitigation measures to minimize or avoid them will be identified and described. Potential beneficial impacts associated with, for example, water quality improvements, would also be discussed.

We anticipate that the EAF Supplement would likely include the following topics:

- Project description and environmental setting
- Surface water, groundwater, and critical environmental areas
- Public policy/local waterfront revitalization program
- Cultural resources
- Visual resources
- Noise and odors
- Growth inducement
- Construction

**Project Description and Environmental Setting:** This section will identify the Proposed Action, its purpose and need, describe the site's setting, and describe conditions with the Proposed Action once it is operational. The Project Description will also include figures depicting the proposed project location, and discussion of the required approvals.

**Groundwater, Surface Water and Critical Environmental Areas (CEAs):** H2M will review available data regarding groundwater quality, elevation, and direction of groundwater movement, as well as location of public water supplies in or near the Study Area. The nitrogen loading analysis results prepared by Dr. Tim Hazlett



**“H2M will prepare the Long EAF Parts 1 and 2 which will document the characteristics of the project, the environmental features in the project area and facilitate identification of pertinent issues for analysis in the Supplement.”**





under Environmental Research, Modeling, and Outreach will be utilized to support this supplemental assessment. The Proposed Action replacement of onsite septic systems is expected to benefit water quality over time, and this will be generally described.

In addition, the presence of mapped Critical Environment Areas (CEA)s will be addressed, as applicable, for example, if the proposed Landfill/ Cell Tower Property site is chosen as the STP location as it is located within mapped CEAs including Hither Woods and the Special Groundwater Protection Area (SGPA). The Supplement will examine the consistency of the Proposed Action with these designations.

**Cultural Resources:** Review of the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) Cultural Resources Information System (CRIS) database revealed that each STP site is located in an archeologically sensitive buffer area and the sewer district area is within an archeological buffer area as well as proximate to historical sites. The initial cultural resources review will entail consultation with the OPRHP State Historic Preservation Office (SHPO) to review appropriate protections or further study necessary for these resources, if any. Should Phase IA or Phase IB archaeological survey be required, these would be provided as an additional service under a separate proposal.

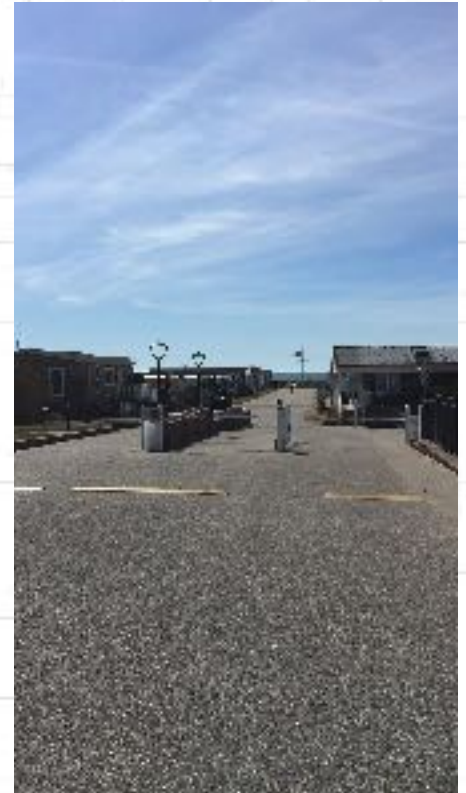
**Noise and Odors:** The Proposed Action STP has the potential to generate noise and odor impacts associated with its operations involving the processing and treatment of wastewater. Appropriate measures to minimize, avoid and mitigate these will be identified and described based on the site selected for the STP.

**Visual Resources:** This section will assess the STP construction for consistency with visual character and resources of the area, including proximate Scenic Areas of Statewide Significance as presented in the Town of East Hampton report from January 2010 if applicable. The assessment will be conducted consistent with the New York State Department of Environmental Conservation policy "Assessing and Mitigating Visual Impacts (NYSDEC 2000).

**Public Policy:** East Hampton Town has an adopted Local Waterfront Revitalization Program that presents policies guiding development within the coastal boundary. The Montauk downtown commercial district sewer district and the STP sites are within the boundaries of this zone and thus the Proposed Action will be assessed for consistency with LRWP policies.

**Growth Inducing Impacts:** At this time, it is anticipated that that sewers will be sized to accommodate the needs of existing developments which would not encourage significant growth. In the event that the Town wished to provide capacity to accommodate growth, H2M would prepare a separate proposal for a build-out analysis and the impacts of the potential build-out. This analysis would compare the development permitted when limited by sewer capacity and the development that could occur as a result of sewer capacity becoming available under as of right zoning. Sewer capacity can be a limiting factor to development, and growth associated with sewer installation can also bring additional traffic, increase the need for community services and change the character of the community. This supplement section will discuss all of these factors associated with the construction of the system.

**Construction Impacts:** This section will identify the construction period associated with the Proposed Action, including its duration, the types of activities required, and potential short-term disturbances to noise, traffic, soils and topography and



**“H2M will review available data regarding groundwater quality, elevation, and direction of groundwater movement, as well as location of public water supplies in or near the Study Area.”**



other environmental resources. Disturbance associated with the Proposed Action is expected to be greater than one acre, triggering the need for a Stormwater Pollution Prevention Plan (SWPPP). Methods identified in the SWPPP to minimize erosion and sedimentation and manage post construction stormwater quality and quantity as applicable will be identified. Though the sewer district construction will occur proximate to both freshwater and tidal wetland areas, construction would be confined to streets. Once the specific location of the STP has been identified, the level of disturbance to natural areas may require assessment. In the event that construction would occur outside of paved roadways and natural area disturbance is proposed, an ecological study may be required, and would be provided as an additional service.

H2M would submit the EAF and Supplement for Town review and respond to Town comments revising the documentation to address comments received. Following this and in consultation with the Town, a determination of significance for Town review and adoption would be submitted. The determination of significance would be prepared in accordance with the requirements of 6 NYCRR Part 617.7 and contain a reasoned elaboration supporting the decision making set forth by the Town. Should significant impacts or additional areas of study not identified above be identified and further SEQRA review required, H2M would provide a proposal for the additional work required.

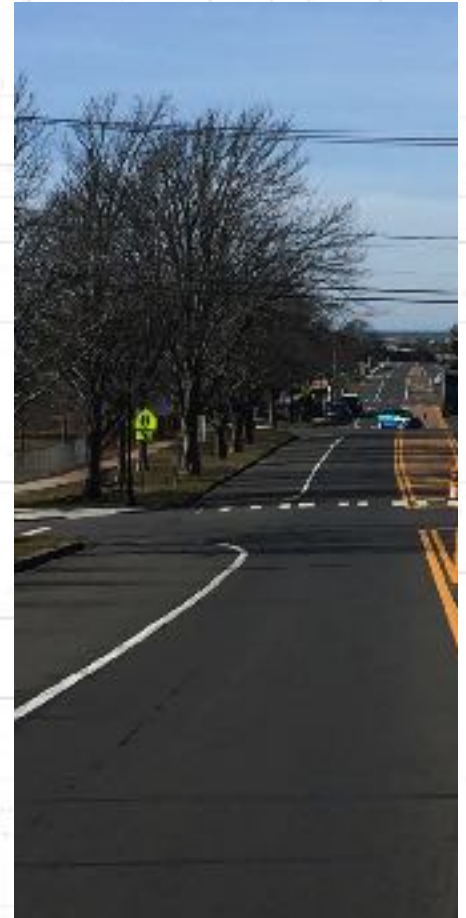
### ► SEQRA Meetings and Hearings

To ensure the EAF preparation is appropriately coordinated with the Town, H2M proposes to attend three meetings with the Town and also attend two public meetings (or hearings) focused on SEQRA. We would plan the meetings and hearings to occur strategically throughout the SEQRA process to facilitate efficient coordination.

The first SEQRA meeting with the Town will present the scope of analysis for agreement with the Town, the second would present the assessments contained within the EAF and Supplemental studies and the third would provide for a review of the draft declaration of significance. Similarly, we propose to streamline public interaction by attending two public hearings to present SEQRA; the first public hearing would present the assessments contained in the EAF, providing a forum for public comment on the assessment results and the second would present the determination of significance conclusions.

With prior authorization, we would provide any of the following additional services:

- A. Prepare one or more build outs, such as an "As of Right" per existing zoning, or one that reflects a possible or enacted change in zoning. Estimate potential wastewater flows associated with the build-out(s). Prepare an analysis of environmental impacts associated with this build-out
- B. Prepare a DEIS targeted to the Montauk Business District
- C. Prepare permit applications
- D. Attend meetings in excess of those noted above
- E. Evaluate sewerage of the Ditch Plains Beach area
- F. Evaluate the cost effectiveness of constructing a sewage treatment facility capable of treating the effluent to re-use standards at the Montauk Downs Golf Course
- G. Conduct Phase IA or Phase IB archaeological, if required



**“H2M would submit the EAF and Supplement for Town review and respond to Town comments revising the documentation to address comments received.”**



- H. A coordinated review SEQRA review
- I. Ecological evaluations including habitat assessment, endangered and threatened species identification and wetland delineations
- J. Renderings of STP
- K. Phase I Environmental Site Assessment (ESA) and Phase II environmental testing
- L. Should significant impacts or additional areas of study not identified above be identified and further SEQRA review required, H2M would provide a proposal for the additional work required



# Downtown Montauk Sewer System - Figure 1

## Project Flowchart

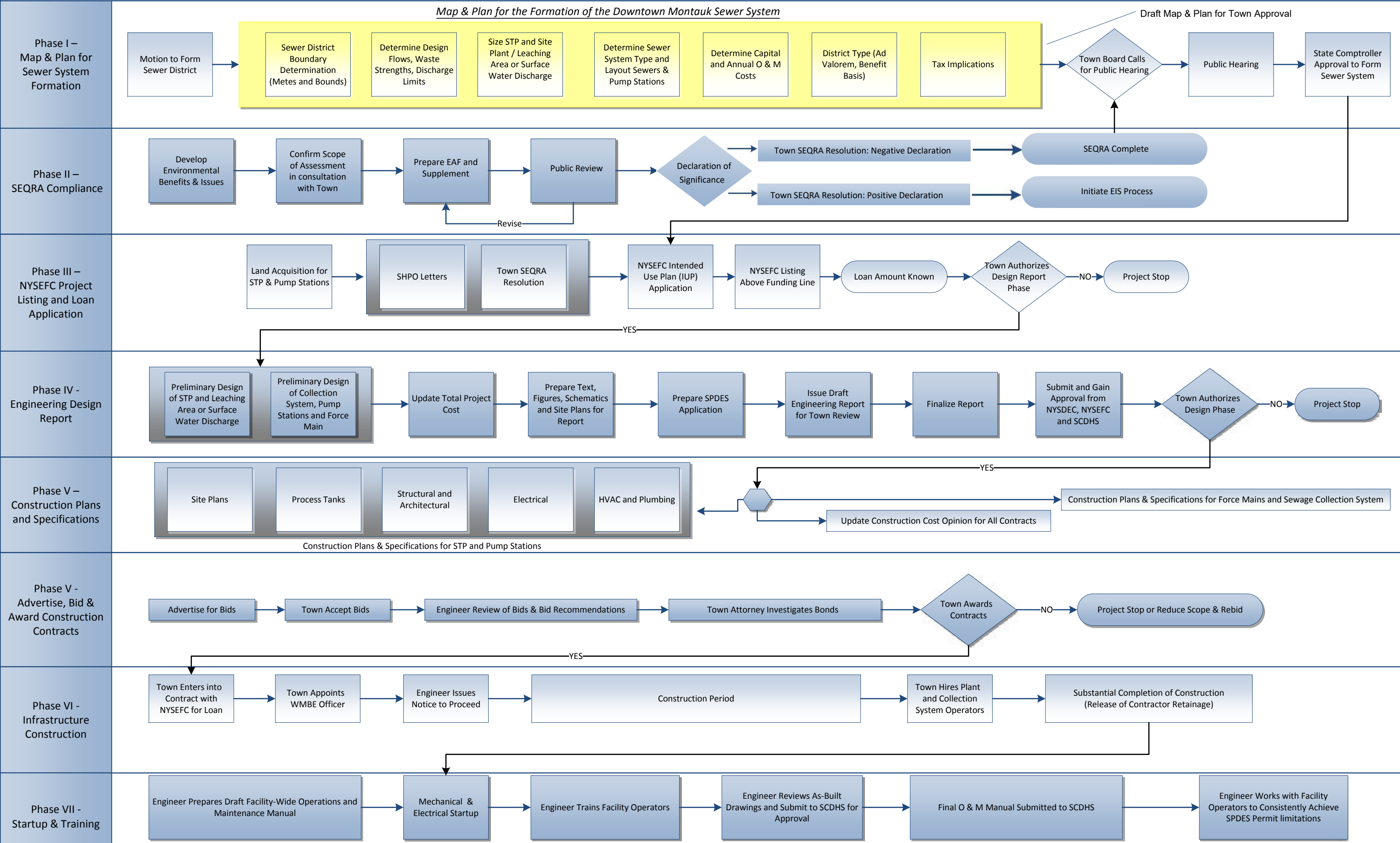
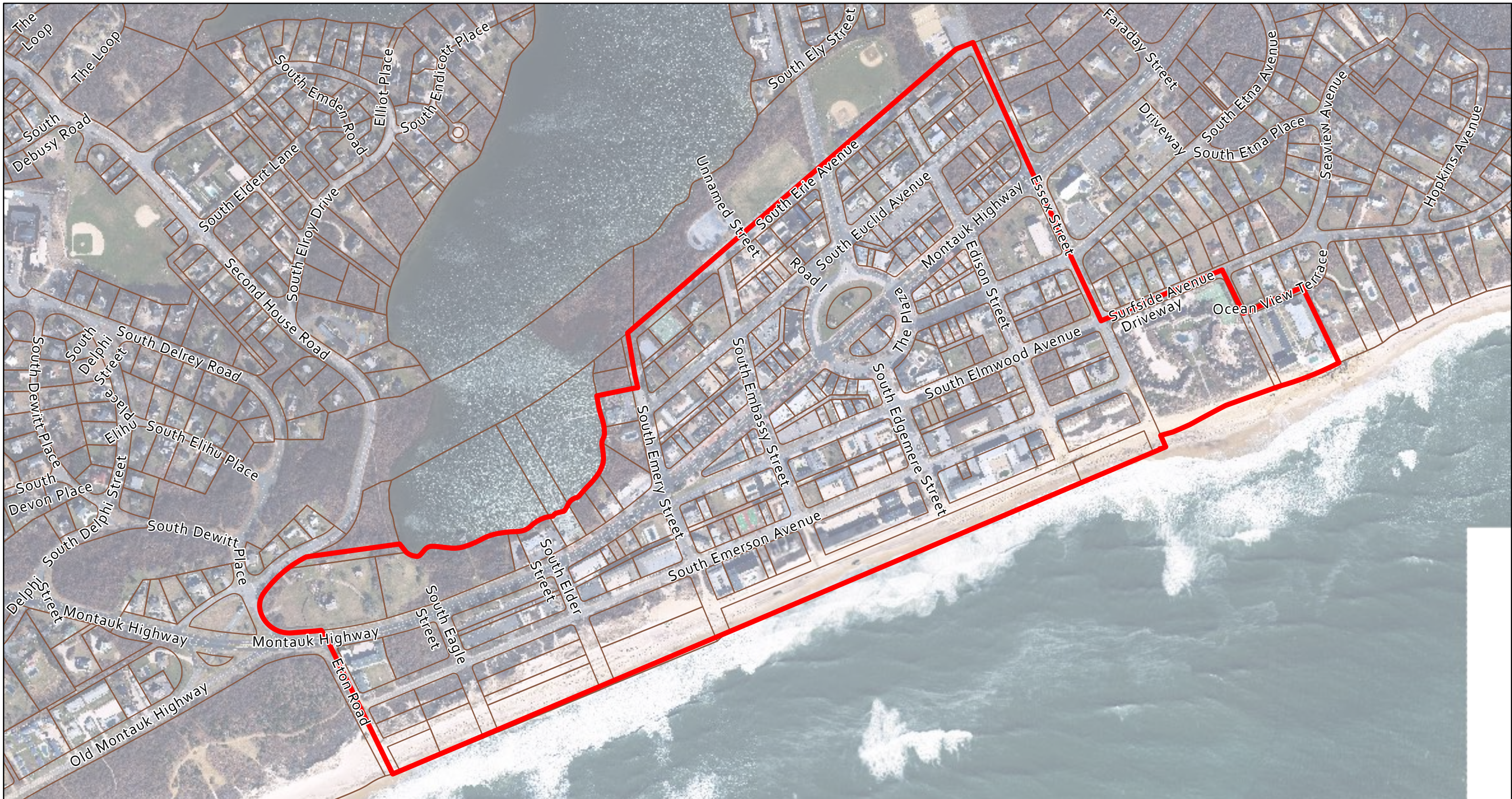


Figure 2 – Preliminary Service Area



Document Path: J:\PROPS\2020\200109 (T:East Hampton-Engineering Services-Map & Plan-Wastewater Collection System) Water-NY02 Working Files\CMK\New Business Dist Map.aprx

**legend**

- Parcels
- Business District

Orthophotography source:  
NYS Statewide Digital Orthoimagery Program

Parcel data copyright: Suffolk County GIS

**RFP EH2020-101**


**Consulting Engineering Services  
for the Map & Plan of a Wastewater Collection System  
for Downtown Montauk**

N

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DATE:  
September 2020

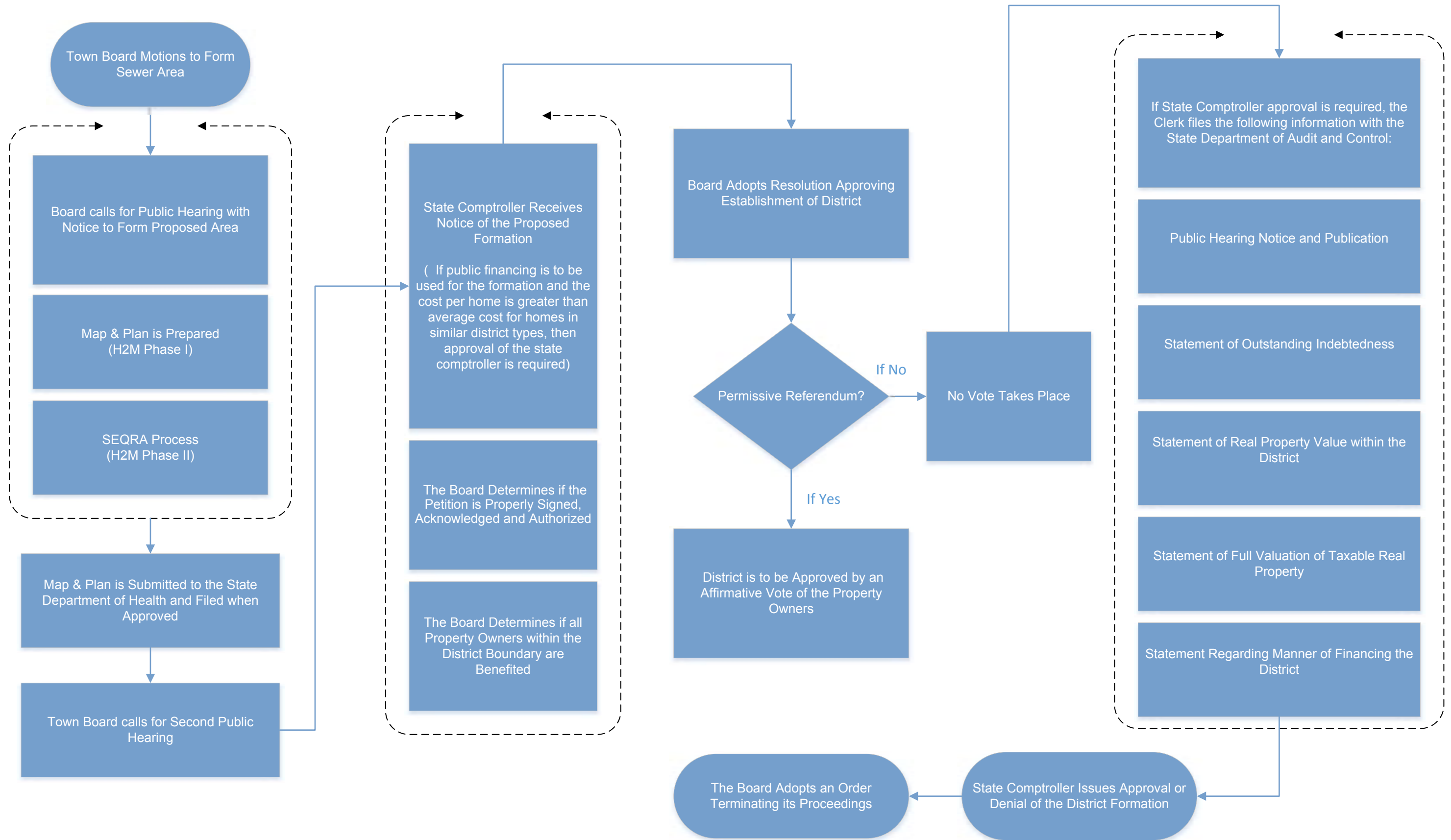
**Town of East Hampton**




**architects  
+  
engineers**

Melville, NY  
Parsippany, NJ Purchase, NY Suffern, NY  
New York, NY Latham, NY Howell, NJ

Figure 3 - Sewer Area Formation Flowchart





## Sewer District Formation Planning

H2M has extensive experience preparing Map and Plan documents for the formation of new sewer systems in Suffolk County. Most recently, H2M completed sewer capacity analyses and Map and Plan reports for Suffolk County Department of Public Works (SCDPW) to identify sewer systems to service unsewered areas in Bellport, Sayville, Ronkonkoma Hub, and Mastic/Shirley. In addition to preparing these reports, H2M was also retained by the incorporated villages of Westhampton Beach, Southampton, Bellport, and Mastic Beach to prepare Map and Plans specifically tailored to provide sanitary infrastructure in unsewered areas of need within each Village. H2M's responsibilities during the preparation of each report included finalizing the service area boundaries, calculating sanitary wastewater flow projections, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, associated scheduling components, cost escalation and financing alternatives and public outreach/education. In addition to the Map and Plan preparation, H2M was also retained by each village to prepare an Environmental Assessment Form (EAF) to initiate the State Environmental Quality Review Act (SEQRA) compliance process.

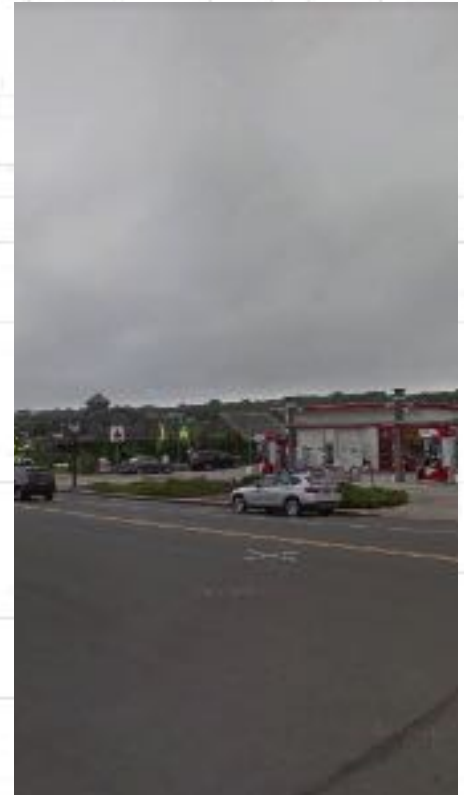
H2M has also prepared numerous Map and Plan reports to facilitate out-of-district connections to existing sanitary facilities. These reports included evaluations of existing infrastructure; identifying necessary infrastructure improvements, consisting of sewer improvements, pump station upgrades and treatment facility expansion, to accommodate the additional sanitary flow from the connecting areas as well as determine cost opinions associated with the connections. Specifically, H2M prepared Map and Plan reports to connect to existing facilities within the Village of Patchogue Sewer District, Town of Riverhead Sewer District, Town of Huntington Sewer District, Calverton Sewer District, Oyster Bay Sewer District, and various connections to existing Suffolk County sewer districts.

### ► Suffolk County Sewer Capacity Study

H2M was one member of a multi-faceted consultant team where the main objective was to provide the client (SCDPW) with a comprehensive sanitary wastewater infrastructure feasibility study, evaluating different sewage collection systems, treatment technologies, and possible locations for the plant, and capital costs for seven unsewered areas under the Suffolk County Sewer Capacity Study. Implementation of sanitary wastewater infrastructure to these communities was identified as critical to bringing numerous economic, environmental and social benefits to each area. Sewering each of these areas is anticipated to reduce nitrogen loadings to groundwater, volatile organic compounds (VOCs), and pharmaceuticals and personal care product (PPCPs) from continuing to degrade present environmental conditions.

#### Bellport Area

The Bellport study area included two geographically distinct areas; the downtown area of Bellport Village and properties surrounding the LIRR Bellport Station. The first portion of the study area consisted of 57 individual lots covering approximately 21 acres. The second portion of the study area consisted of 74 individual lots covering approximately 35 acres. To estimate the generation of sanitary flow, the analysis was divided in two. The first analysis evaluated the Bellport Village where the projected average daily flow is approximately 60,000 gallons per day (gpd). The second analysis, for the North Bellport part, the projected generation of sanitary flow was estimated to be 100,000 gpd.



**“H2M has also prepared numerous Map and Plan reports to facilitate out-of-district connections to existing sanitary facilities.”**



For the collection and conveyance system, a combination of gravity sewers and low-pressure sewers were recommended for the study area. The collection systems would meet at a proposed pumping station which then convey wastewater to the Village of Patchogue Advanced Wastewater Treatment Facility (AWTF). The decision of pumping wastewater to the Village of Patchogue (AWTF) was made after evaluating different vacant publicly owned parcels and failing to identify an appropriate location. The additional flow to the Village of Patchogue AWTF required upgrades in the process, and these required upgrades were also evaluated in the study.

The total anticipated project cost was estimated to be approximately \$38,204,000. This cost opinion included the construction, engineering, and soft costs. The report was finalized and accepted by Suffolk County in the second quarter of 2014.

**Sayville Area**

The Sayville study area included an approximately one-mile reach along Montauk Highway and Rail Road Avenue, and was bounded by the LIRR to the north, Hiddink Street to the east, and Sunset Drive to the west. It included 167 individual tax lots totaling 71 acres.

The area of study had no plans to redevelop, therefore wastewater flow projections were based upon 2010 Suffolk County Water Authority (SCWA) and estimated to be 130,000 gallons per day (gpd). To collect and convey this volume of wastewater, a low-pressure system was proposed. This system was conveyed to a suggested pumping station that later would convey wastewater to the Village of Patchogue Advanced Wastewater Treatment Facility. The treatment facility would require to increase capacity. H2M proposed additional infrastructure that should be implemented at the plant.

The total anticipated project cost was estimated to be approximately \$35,301,000. This cost opinion included the construction, engineering and soft costs. The report was finalized and accepted by Suffolk County in the second quarter of 2014.

**Ronkonkoma Hub Area**

The Ronkonkoma Hub study area was defined by Union Avenue to the north, Village Plaza Drive to the east, the LIRR to the south, and County Route 29 to the west. It included 54 individual tax lots covering approximately 58 acres.

The collection and conveyance system selected for this area was based on different aspects and characteristics of the study area. It was determined that gravity sewers were the most appropriate option to convey the 500,000 gallons per day (gpd) that would be generated in the area. The Map and Plan identified the collection system would drain to a submerged pumping station and later to the wastewater treatment facility. The wastewater treatment technology selected for this area was the most cost-effective option considering effluent limits and space requirements. A Modified Ludzack-Ettinger (MLE) process using the STM-Aerotator for secondary treatment and membrane-bioreactors to allow solids separation and filtration to sidestep final clarifiers.

The anticipated project costs were estimated to be approximately \$6,895,000 for the collection and conveyance system, and \$23,640,000 for the wastewater treatment facility. These costs included construction, engineering, and soft costs.



**“Most recently, H2M completed sewer capacity analyses and Map and Plan reports for Suffolk County Department of Public Works (SCDPW) to identify sewer systems to service unsewered areas in Bellport, Sayville, Ronkonkoma Hub, and Mastic/Shirley.”**

The draft Map and Plan report was finalized in July 2012. This document was subsequently revised during the detailed Engineering Design phase of the project by SCDPW to replace the treatment facility with a pump station and force main connection to Suffolk County Sewer District No. 3 – Southwest where all sanitary wastewater would be treated at the Bergen Point Wastewater Treatment Plant. This project is currently in construction phase.

**Mastic/Shirley Area**

The purpose of this project was to provide Suffolk County with a comprehensive feasibility study that identified the environmental, economic, and/or social factors associated with sewerage the Mastic/Shirley area and a Map and Plan that could be used to move forward with the formation of the sewer district.

The final Mastic/Shirley study area boundary encompassed approximately 11,000 parcels across 3,300 acres. The average daily sanitary flow projection for this area was calculated to be 3.2 million gallons per day (MGD) based on maximum build-out of existing zoning and current Suffolk County Department of Health Services sanitary flow design criteria. The preliminary collection and conveyance system layout included 24 pump stations, 15 miles of force main and 111 miles of a combination of gravity and low pressure sewers. The treatment facility was based on using the Membrane Biological Reactor (MBR) process. The location of the treatment facility was identified to be on vacant lands at the southerly end of the Town of Brookhaven Calabro Airport. Provisions for odor control and compliance with FAA regulations for wildlife attractants and height restrictions were identified as key components to be considered during the detailed engineering design phase of the project, should it move forward.

The total anticipated project cost opinion was estimated to be approximately \$700,000,000. This cost opinion included construction, engineering, administration, and inspection services. The report was finalized and accepted by Suffolk County in the second quarter of 2014. This document was used by the County to procure federal funding assistance to move forward. The County issued an RFP to retain the services of a design consultant to prepare detailed engineering design documents to construction sanitary collection, conveyance, and treatment facilities to service the initial phases of the project identified in the Map and Plan.

**Southampton Area**

The Southampton study area was bounded by Jaeger Lane to the north, Main Street and North Sea Road to the east, and Jobs Lane and Culver Street to the south, and Windmill Lane to the west. The 62-acre study area included 151 individual lots located within the Village’s business district.

The average daily flow that was projected for the community was estimated to be 145,052 gallons per day (gpd). The recommended collection system, based upon topography, relative depth to groundwater, and because the study area was established, was a low-pressure collection system. In accordance with Suffolk County Department of Health and Services (SCDHS) requirements, It was determined that the wastewater treatment plant should be located on a 6.4 acre site that was owned by the Village of Southampton Police. Since nitrogen loading was a major concern to the community because of its negative impact on water bodies, several technologies were evaluated to address this issue. A Membrane Biological Reactor (MBR) was selected to give solution to this problem not only because it allowed efficient removal, but also because it required less area which is an important consideration at this site.



**“H2M prepared Map and Plan reports to connect to existing facilities within the Village of Patchogue Sewer District, Town of Riverhead Sewer District, Town of Huntington Sewer District, Calverton Sewer District, Oyster Bay Sewer District, and various connections to existing Suffolk County sewer districts.”**

The total anticipated project cost was estimated to be approximately \$28,803,000. This cost opinion included the construction, engineering and soft costs. The report was finalized and accepted by the County in the third quarter of 2014.

► **Inc. Village of Bellport**

The Incorporated Village of Bellport determined that they would need a sanitary sewer system specifically tailored to improve public health and environmental quality in residential areas prone to tidal flooding and shallow groundwater, in addition to realizing their vision for a revitalized “Main Street” along South Country Road. The Village Board retained H2M to prepare a Map and Plan for a sewer system. H2M’s responsibilities included finalizing the service area boundary, calculating sanitary wastewater flow projections, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, associated scheduling components, cost escalation, and financing alternatives. In addition to the Map and Plan, H2M also prepared an Environmental Assessment Form (EAF) to initiate the State Environmental Quality Review Act (SEQRA) compliance process.

The service area boundary encompassed approximately 235 parcels across 367 acres. The average daily sanitary flow projection for this area was calculated to be 0.08 million gallons per day (mgd) based on maximum build-out of existing zoning and current Suffolk County Department of Health Services sanitary flow design criteria. The recommended preliminary collection and conveyance system was based on making an out-of-district connection to the Village of Patchogue Sewer District which had capacity available at the treatment plant. The proposed infrastructure required to connect the two municipalities included one pump station, 2.8 miles of force main, three miles of low pressure sewers and the replacement of 800 linear feet of existing gravity sewer within the Village of Patchogue. The Village completed negotiations with the Village of Patchogue in parallel to moving forward with the final formation of the sewer system and subsequent detailed engineering design.

The total anticipated project cost opinion was approximately \$17,300,000. This cost opinion included construction, engineering, administration and inspection services. The report was finalized in the second quarter of 2014.

► **Inc. Village of Mastic Beach**

The Incorporated Village of Mastic Beach determined that they would need a sanitary sewer system to realize their vision for a revitalized “Main Street” along Neighborhood Road. To progress this project, the Village Board retained the services of H2M to prepare a Map and Plan for the formation of a sewer system. H2M’s responsibilities included finalizing the service area boundary, calculating sanitary wastewater flow projections, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, associated scheduling components, cost escalation, and financing alternatives. In addition to the Map and Plan, H2M also prepared an Environmental Assessment Form (EAF) to initiate the State Environmental Quality Review Act (SEQRA) compliance process. The purpose of this project was to provide the Village of Mastic Beach with a Map and Plan document and associated SEQRA documentation that could be used to move forward with the formation of a sewer district.



**“Most recently, H2M completed sewer capacity analyses and Map and Plan reports for Suffolk County Department of Public Works (SCDPW) to identify sewer systems to service unsewered areas in Bellport, Sayville, Ronkonkoma Hub, and Mastic/Shirley.”**

The service area boundary encompassed approximately 367 parcels across 125 acres. The average daily sanitary flow projection for this area was calculated to be 0.15 million gallons per day (mgd) based on maximum build-out of existing zoning and Suffolk County Department of Health Services sanitary flow design criteria. The preliminary collection and conveyance system layout included one pump station, 0.5 miles of force main, 1.4 miles of gravity sewers, and 2.4 miles of low pressure sewers. The treatment facility was based on using the Membrane Biological Reactor (MBR) process. The location of the treatment facility was identified to be on vacant lands at the southerly end of the former Shirley Links Golf Course property, which was transferred to the Town of Brookhaven. The Village must complete negotiations with the Town to use this site for their treatment facility before they can move forward with the final formation of the sewer system.

The total anticipated project cost opinion was approximately \$24,600,000. This cost opinion included construction, engineering, administration and inspection services. The report was finalized in the second quarter of 2014.

► **Inc. Village of Southampton**

The Incorporated Village of Southampton determined that they would need a sanitary sewer system to reduce the total nutrient load into Lake Agawam thereby improving the quality of the Lake and to support “smart” growth of the Village Business District, which was re-zoned in 2012. The Village Board retained H2M to prepare a Map and Plan for a sewer system. H2M’s responsibilities included finalizing the service area boundary, calculating sanitary wastewater flow projections, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, associated scheduling components, cost escalation, and financing alternatives. In addition to the Map and Plan, H2M was also retained to prepare an Environmental Assessment Form (EAF) to initiate the State Environmental Quality Review Act. The Map and Plan was completed by H2M in November 2015. H2M was hired by the Village in June 2020 to prepare a Map and Plan for the downtown business district to include a collection system, pump station, and the treatment option of utilizing the STP at Southampton Hospital for Phase 1 development and to evaluate other potential sewer plant sites in the Village for Phases 2 and 3 development options.

► **Inc. Village of Westhampton Beach**

The Incorporated Village of Westhampton Beach determined that to protect the adjacent Moniebogue and Quantuck bays and spur the revitalization of the downtown business district they would need a sanitary sewer system designed and constructed. H2M was hired and prepared a Map and Plan for the installation of sanitary sewers and pump station to transport the estimated 60,000 gpd flow to the SCDPW sewage treatment facility at the Gabreski Airport. Design plans were prepared and were publicly bid. Construction of the collection system, pump station, and force main is expected to commence by the end of 2020. H2M was hired to oversee the construction at the proposed facilities.



**“H2M’s responsibilities during the preparation of each report included finalizing the service area boundaries, calculating sanitary wastewater flow projections, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, associated scheduling components, cost escalation and financing alternatives and public outreach/ education.”**

## Sanitary Infrastructure Design

### ► Wyandanch Rising

The Town of Babylon was committed to the development of a viable downtown and business district in the hamlet of Wyandanch. A significant obstacle to redevelopment was the lack of a central sewer collection system for the disposal of wastewater. The Wyandanch Commercial and Industrial Corridor planning area was located in Groundwater Management Zones I and VII. Suffolk County Sanitary Code Article 6 limits the discharge of wastewater through conventional on-site sanitary systems in these zones to 600 gallons per day per acre. On-site sanitary systems contributed to the degradation of groundwater quality of Long Island's sole source groundwater supply. It was a direct benefit of the community residents, Town, and County that this study was conducted.

H2M conducted a study for the Town to evaluate if a cost-effective, environmentally accepted alternative existed to sewerage the Wyandanch Commercial/Industrial corridor to aid its revitalization and improve environmental conditions. Regulatory and permit requirements associated with installation of a wastewater collection and conveyance systems were identified. Potential financing sources were also discussed. Based on SCDHS guidelines, H2M determined that the study area had an average daily design wastewater flow of 380,000 gpd. Three wastewater collection and conveyance systems alternatives to SCSD No. 3-Southwest were evaluated. The construction cost opinion including the SCSD connection charge for the recommended alternative was \$24.72 million. To eliminate the current practice of transporting leachate from the Town Solid Waste Management Facilities, sewer connection was also evaluated. The average daily design wastewater flow based on leachate generation data over a 14-year period was determined to be 36,000 gpd. The construction cost opinion for the leachate sewer connection including the current SCDPW connection charge was \$3.48 million. The cost opinion for the leachate conveyance system considered that the gravity sewer associated with the Wyandanch corridor would be installed and that a portion of the corridor sewer system costs downstream of the leachate connection would be allocated on a design flow basis. Preparation of the DEIS was done concurrently with the feasibility study.

To assist in the evaluation, the Suffolk County GIS base map maintained by Suffolk County Real Property Tax Service was obtained. From the base map, different layers were overlaid to present different conditions. The planning area boundary was defined. A groundwater contour layer was used to aid in preparing the cost opinion for the conveyance system. The groundwater contours were used to identify locations where dewatering is considered to be needed. A layer with town, county, and state owned parcels was used to aid in identifying potential locations for the wastewater pump station. A separate layer was created to indicate the preliminary layout of the sewers, manholes and force mains for each of the wastewater conveyance system alternatives considered in this report. Other layers added to the report GIS included bus routes, bicycle routes, Water Authority wells, county and town parks, NYSDEC mapped wetlands, significant buildings and public facilities, preliminary sewer and force main layout, potential strategic sites within the boundaries of the Wyandanch Downtown Revitalization Plan.

Federal and state programs that may be available to fund or finance a portion of the work were described in the report. Implementation steps for a contract connection and those for a district extension were also presented in the report.



**“In addition to the Map and Plan preparation, H2M was also retained by each village to prepare an Environmental Assessment Form (EAF) to initiate the State Environmental Quality Review Act (SEQRA) compliance process.”**

► **Smithtown and Kings Park Business Districts**

H2M was commissioned by the Suffolk County Department of Public Works (SCDPW) to prepare an Engineering Design Report and design for the sewerage systems of the Smithtown and Kings Park business districts. A feasibility study performed by a consultant to SCDPW was used to develop existing and future flow rates for each business district, as well as guidance for layout of the proposed sewers, force mains and pump stations to convey the wastewater to Suffolk County Sewer District No. 6 (SCSD No. 6). Due to the distance between the areas, H2M prepared two separate reports: one for the Smithtown Business District and one for Kings Park Business District.

All wastewater within both business districts was treated by on-site sanitary systems consisting of cesspools, septic tanks and leaching fields. The capacity of these on-site sanitary systems was limited by nitrogen loading and parcel acreage, thereby inhibiting the potential for future development of the area. Providing sewers to both Business Districts would benefit existing businesses and make future construction of apartments, medical offices/practices, and restaurants possible.

The Kings Park Business District consisted of approximately 140 business establishments across a 65-acre area located along New York State Route 25A within the Town of Smithtown. The proposed sewer system would be serviced by 8,200 LF of gravity sewers and a conventional pump station with a 1.4 mile long force main. To service the entire business district, the gravity sewer required jacking underneath the LIRR. The projected average daily design wastewater flow from the Kings Park Business District was approximately 329,000 gallons per day. The proposed pump station and force main conveyed wastewater collected within the service area to SCSD No. 6.

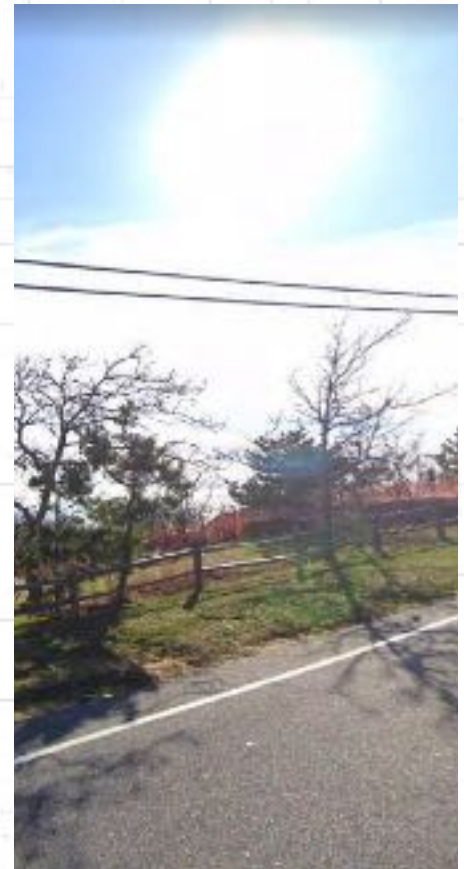
The Smithtown Business District consists of approximately 350 business establishments across a 280-acre area located along New York State Route 25 (NYS Rt. 25) within the Town of Smithtown. A portion of this service area is within the Village of the Branch. Based upon topography of the area, the proposed sewer system will be serviced by 22,500 LF of low pressure sewer and 1,600 LF of gravity sewer, and a conventional pump station with a 3.2-mile-long force main. The projected average daily design wastewater flow from the Smithtown Business District is approximately 538,000 gallons per day. The proposed pump station will be located along the westerly boundary of the business district to minimize the overall length of force main required to convey wastewater from the service area to SCSD No. 6.

The total project cost opinions were \$24.9 million for the Town of Smithtown \$17.4 million for the Town of Kings Park. These costs include construction, engineering, administration and inspection services.

Upon approval of the engineering reports, H2M proceeded with the design phase for both sewerage systems and begin the subsequent planning and design for the filter and effluent pump station upgrades to the SCSD No. 6 Sewage Treatment Plant as commissioned by SCDPW.

► **Inc. Village of Patchogue - 1998**

The Incorporated Village of Patchogue initiated a project to extend the boundaries of the Patchogue Sewer District. The Village retained H2M to provide engineering services associated with the planning, design and construction of the sewers to serve the area.



**“H2M has also prepared numerous Map and Plan reports to facilitate out-of-district connections to existing sanitary facilities.”**

The extension included properties along both sides of West Avenue between Division Street and Laurel Street. H2M prepared the planning report that included the calculation for the average daily design flow and a basis of design for the system. The design flow for the extension was 62,000 gallons per day. The report and plans were submitted to and approved by the Suffolk County Department of Health Services.

Due to the relatively shallow depth to groundwater, a low-pressure sewer system was designed to serve the area. Wastewater from the low pressure sewer was conveyed to a new wastewater pump station and force main to convey the flow from the district extension to the existing wastewater collection system. The project also included the design of conventional gravity sewers in Railroad Street to parallel the force main installation.

The project consisted of the installation of 1,500 feet of force main, 1,280 feet of gravity sewer and 2,400 feet of low-pressure sewer. To minimize the profile of the station, submersible wastewater cutter pumps were utilized within the wet well. The pump station wet well was configured to allow for future expansion.

H2M received approvals from the health department for the installation of the backflow prevention device at the pump station and from the LIRR for the installation of a jacked crossing for the low pressure sewer under the railroad tracks near the pump station. H2M also provided construction observation and construction administration services to the Village during the construction phase.

The total anticipated project cost opinion was approximately \$635,000. This cost opinion included \$555,000 for construction and \$80,000 for engineering services.

► **Inc. Village of Patchogue - 2007**

H2M prepared the Map and Plan-Engineering Report for an out-of-district sewer connection to the Village of Patchogue’s Sewer District collection system.

The proposed Bay Village Condominiums development was a 63-unit condominium project located on South Ocean Avenue approximately 100-feet north of the Great South Bay in the Village of Patchogue. The report was based upon a design for low-pressure sewers, as a gravity system was not possible and a single sanitary pump station with force main was too costly. The design flow was 19,500 gallons per day (gpd) from the development and H2M projected an additional future flow of 21,900 gpd from properties along the route of the connection pipe; for which connection point facilities were provided by the developer during construction. The low-pressure connection main was a 3-inch diameter HDPE pipe increasing to a 4-inch diameter HDPE pipe, 3,350 feet long and at an estimated cost of \$565,000. Total project budget for the developer was \$1,232,500, including design and construction administration fees.

► **Inc. Village of Patchogue - 2009**

The Sandspit Marina is an existing Town of Brookhaven marina located at the mouth of the Patchogue River on the Great South Bay in the Village of Patchogue. The Town planned to expand the ferry terminal facilities. To provide wastewater disposal, an out-of-district sewer connection from the new terminal



**“H2M prepared the Map and Plan-Engineering Report for an out-of-district sewer connection to the Village of Patchogue’s Sewer District collection system.”**

building to the Village Sewer District was required. A new duplex pump station was required to convey the marina's wastewater through this connection.

The report and design documents were based upon a low-pressure sewer system. A gravity system was not feasible due to the shallow depth to groundwater and coastal location. A single sanitary pump station with force main was determined to be not cost-effective. The marina design flow was 11,000 gallons per day (gpd) with an additional future flow of 20,000 gpd from the properties along the route of the low-pressure sewer. Laterals were installed to the property line for each property during construction. The low-pressure main consisted of 2,600 feet of 2- and 3-inch diameter HDPE pipe. H2M prepared a topographic survey of the sewer route. H2M also provided administration and observation services during construction.

- Prepared Map & Plan – Engineering Report for an out-of-district sewer connection to the Village of Patchogue's Sewer District collection system
- Prepared Design Documents – Developed plans and specifications for the out-of-district sewer connection and a commercial duplex pump station
- Construction Administration and Observation – Coordinated bidding process and performed construction administration and inspection services during the installation of the sewer connection

Total project budget for the developer was \$1,261,000, which included design and construction administration fees.

### ► Inc. Village of Patchogue - 2013

H2M prepared bid documents for the replacement of the existing East Main Street pump station in the Inc. Village of Patchogue for the Town of Brookhaven. The East Main Street sanitary pump station had reached its useful life and also needed to increase capacity due to additions to the service area. The East Main Street Wastewater Pump Station provided conveyance for sanitary wastewater collected by in-district gravity sewers and out-of-district low pressure sewers located east of South Ocean Avenue.

The project included the demolition of the existing pump station, installation of a new pump station, gravity sewer improvements, and installation of a low pressure sewer force main extension (900 feet of 6-inch diameter HDPE pipe, 150 feet of 3-inch diameter HDPE pipe and 150 feet of 2-inch diameter HDPE pipe). The average daily design flow (ADF) from the Village of Patchogue was 81,853 gallons per day, and the future ADF expected from the Town of Brookhaven Sewer Improvement Area No. 1 is 179,492 gallons per day. Therefore, the total ADF for the pump station is 261,345 gallons per day.

To relocate the pump station from the shoulder of the road and provide additional capacity, H2M worked with the Village and the Town to obtain a 17 foot x 20 foot area in the northwest corner of the adjacent USPS post office site. To minimize visual impacts, a below grade precast wet well with two submersible pumps was designed. The existing handicap ramp to the post office was rebuilt. The standby generator and electric service were located remotely on a portion of a Village parking lot. The bid documents included the identification of work zone safety measures that the contractor needed to follow to ensure construction activities were isolated from the public.



**“H2M prepared bid documents for the replacement of the existing East Main Street pump station in the Inc. Village of Patchogue for the Town of Brookhaven. ”**



The pump station’s control panel, motor control center (MCC), electrical service and standby emergency power generator are located in a municipal parking lot approximately 200 feet south of the easement area. A public walkway provides access between the parking lot and pump station easement.

Both the pump station and MCC, electrical service and emergency standby power generator areas are enclosed by fencing. The pump station area is surrounded by a 4 foot tall black coated decorative steel fence. The control panel, MCC, electrical service and emergency standby power generator area is surrounded by an 8-foot-tall green powder coated chain link fence with matching green privacy slats. Swing gates are provided at both locations to facilitate access to each area for operation and maintenance purposes.

The total anticipated project cost opinion was approximately \$1,235,000. This cost opinion included construction, engineering, administration and inspection services.

► **Inc. Village of Patchogue - 2015**

H2M prepared a Map and Plan and bid documents for installation of low pressure sewer main, installation of the low pressure grinder pump station and sewer connection, and drainage improvements on River Avenue, Sunset Lane, Price Street and Mapes Avenue for the Inc. Village of Patchogue.

This design for the locating and connection of the 46 low pressure grinder pumps for this project included a house to house field reconnaissance program that was developed with Village personnel to be implemented as the template for the Coastal Resiliency Nitrogen Mitigation Plan for the Patchogue River that utilized Trimble handheld GPS location device along with Newforma Capture App to document as existing field conditions of each home.

The design also included the installation of 680 feet of twin 3-inch diameter pipes, 1535 feet single 3-inch diameter pipe, 570 feet of single 2-inch diameter pipe and 53 connection spurs for potential use by properties along the route of this sewer.

During construction, H2M was retained to provide construction observation, construction administration, review shop drawings, and review contractor payment requests.

Funding for the project was received through a number of sources including two \$500,000 grants provided by the Dormitory Authority of the State of New York, and \$577,500 from an infrastructure program grant provided by Suffolk County; \$300,000 Village of Patchogue Sewer Fund. The remaining \$761,500 was to be bonded by the Village.

► **Heckscher State Park Low Pressure Sewer System Connection to SCSD No. 3**

The New York State Office of Parks, Recreation and Historic Preservation (NYSPRHP) retained H2M to prepare an Engineering Report to evaluate a sewer connection to Suffolk County Sewer District (SCSD) No. 3 for the facilities at Heckscher State Park.



**“H2M prepared a Map and Plan and bid documents for installation of low pressure sewer main, installation of the low pressure grinder pump station and sewer connection, and drainage improvements on River Avenue, Sunset Lane, Price Street and Mapes Avenue for the Inc. Village of Patchogue.”**

Heckscher State Park has long served the region as an important recreation asset. The 1,600 acres of the park offer beach access as well as picnic tables, playgrounds, and playing fields, trails for hiking and biking, fishing, cross-country skiing, various recreation programs, a boat launch, and food concessions during summer daytime hours. The south and east side of the Park front the Great South Bay.

When preparation of the report was authorized, NYSPRHP was in the process of renovating the Field No. 1 comfort station. Associated with the renovation was the proposed replacement of the on-site sanitary system. The high groundwater elevation required a large area for effluent disposal. NYSPRHP wanted an evaluation of the installation of a sewer connection for wastewater disposal instead of constructing a new on-site sanitary system. In addition to this comfort station, NYSDPRHP wanted an evaluation of a sewer connection that would serve all 18 park facilities serviced by an individual on-site sanitary system under the SPDES permit.

The park is within the boundaries of SCSD No. 3. The nearest existing sewers where a connection could be made are located outside the northwesterly corner of the Park. Utilizing Suffolk County Department of Health Services standards, the design wastewater flow was calculated to be 73,915 gallons per day.

Flat topography, shallow depth to groundwater, and distance between wastewater systems in the Park are conditions that are not favorable to a gravity sewer system. Consequently, a low pressure sewer system was recommended for the sewer connection of each building to SCSD No. 3. To minimize restoration, the force main piping was installed using directional drilling. Excluding the Park Office, Police Station and Park Superintendent Residence and the other not for public use buildings, the other park facilities are open seasonally.

Sewering the Park facilities will involve installing approximately 22,700 linear feet of low pressure sewer main and 6,600 linear feet of low pressure sewer laterals. Based on the design flow and pipe layout, H2M prepared a preliminary plan. The sizes of the low pressure sewer mains range from 1.5-inch diameter to 4-inch diameter piping

Items addressed in the report included:

- Average daily design wastewater flow for the facilities in the Park
- Preliminary layout and basis for design for the low pressure sewer system that would serve all existing buildings in the Park currently served by an on-site sanitary system
- Sewer connection application requirements that NYSPRHP would need to follow to make the proposed sewer connection for the Park
- Construction cost opinion for the proposed wastewater conveyance system
- Cost opinion for the abandonment of existing on-site sanitary systems

### ► Gabreski Airport Sewer System

H2M completed the design and construction phase engineering services of a 100,000 gallon per day (gpd) SBR plant with groundwater discharge for the Francis S. Gabreski Airport in Westhampton Beach. This facility serves the redevelopment of the airport and the New York Air National Guard base. The project was jointly undertaken by Suffolk County Department of Public Works



**“H2M completed the design and construction phase engineering services of a 100,000 gallon per day (gpd) SBR plant with groundwater discharge for the Francis S. Gabreski Airport in Westhampton Beach.”**

(Division of Sanitation) and New York Air National Guard. H2M was the planning, design, and construction engineering consultant selected by the County to implement this project and design the new SBR sewage treatment plant, pump station and NYANG/airport sewage collection system. SCDPW staffed the project with county resident engineers that oversaw the entire construction. This \$4 million project was completed under budget. H2M prepared the design documents for the sewage treatment plant, sanitary pump station, 6,900 foot force main and a 7,500 linear foot sanitary collection system according to a project schedule required by the federal government to remain eligible for fiscal year funding. The sewer design was complex due to the extensive degree of underground utilities that had to be avoided to service the NYANG buildings. H2M reviewed shop drawings, attended project meetings, prepared meeting minutes, provided a construction inspector for the sewer system installation, and prepared an O&M manual for the treatment facility.

## Information Management

H2M utilizes a project information management system (Newforma) to facilitate our staff's ability to file and manage information. The primary benefits of Newforma are more efficient document management and retrieval, e-mail management, electronic file transfer and a significantly improved way to manage all of the information associated with the construction contract administration phase of a project. This allows architects and engineers to spend more time on the design and construction issues and less time managing the data associated with logging RFIs, change orders, shop drawings, and transmittals. It also provides for improved communication between the A/E, contractor and owner by enabling all to share files, transfer information and have real time access to all of the latest project information.

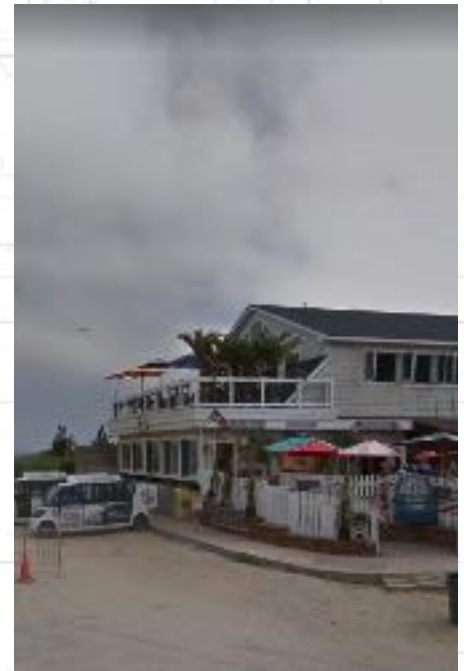
## Quality Program

H2M has long recognized the importance of quality control and is always striving to strengthen and improve the quality of our work. As such, H2M has implemented a formal QA/QC program, which is directed by Joseph B. Lamagese, AIA. Mr. Lamagese has nearly 30 years of experience with many varied A/E assignments.

As the Director of the QA/QC program, Mr. Lamagese meets with each of the company's department managers and their key staff members regularly to discuss company procedures, training needs, coordination, scheduling, construction feedback, and other topics related to improving the quality of our work product. As a result of these meetings, new policies and procedures are developed at the department level and company-wide. Ideas are shared, and procedures that have proved successful for one department may be shared with others.

The concept of the program is to instill quality at the grassroots level and implement procedures that will minimize dependence on "end of project checking" alone. Some key QA/QC procedures that have been in place for many years at H2M are as follows:

- Requirement to prepare a Project Plan for all design projects
- Use of kickoff and progress meetings by the project team throughout the project
- Department manager final review of all projects
- An independent review of all design projects by Mr. Lamagese



**“H2M has long recognized the importance of quality control and is always striving to strengthen and improve the quality of our work.”**

Since this project is for preliminary wastewater planning, the QA/QC will be performed internal to the Wastewater Division at H2M by Mr. Steven C. Hearl, P.E., LEED AP, CCCA. Mr. Hearl has over 35 years of experience specific to the planning, evaluation and design of wastewater treatment facilities and wastewater collection and conveyance system. His extensive experience and knowledge in the field will be utilized to ensure sound planning at this preliminary stage in the Town's project.



# Map, Plan, and Engineer Report



## Client

Village of  
Westhampton  
Westhampton, NY

## Contact

Mayor Maria Z. Moore  
(631) 288-1654

## Construction Cost

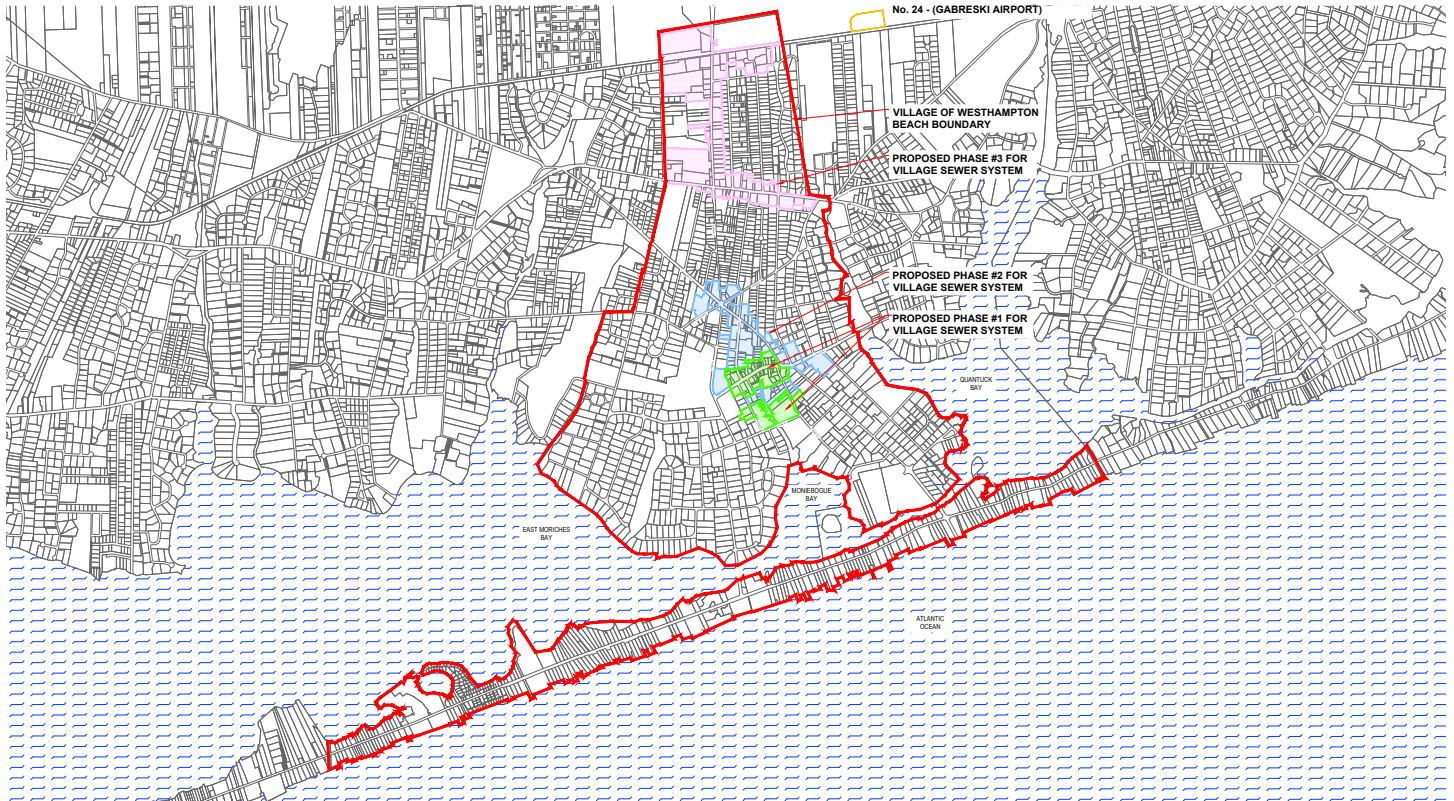
\$9.95 million

## Completion

Ongoing (2016 - present)

SERVICES  
PROVIDED

Mapping and Planning  
NYSEFC Grant Application  
Submittal  
Engineering Planning  
Preliminary Design Services



H2M was tasked with assisting the Village of Westhampton Beach to identify a cost-effective plan to provide sewer service to the Village in accordance with the legal requirements stipulated under New York State Town Municipal Law, and prepared the Map, Plan, and Report documents to formalize the final concept plan, district formation legal requirements and taxing implications.

The Village of Westhampton Beach wanted to develop a plan to provide for the sewer mains and service laterals to commercial properties located along Main Street in an effort to stimulate revitalization while keeping the project affordable to the impacted tax base. H2M was selected for this project based on our experience associated with sewer district planning, formation, and implementation.

The installation of the new sewer infrastructure had to coincide with the ongoing Village roadway improvements. The sewer project was considered a key component for infrastructure improvements for the Village Revitalization.

The upgraded infrastructure will allow the Village to modify zoning allowing for additional restaurant and commercial use. Providing sewers to this area in Westhampton Beach will remove existing properties from discharging their wastewater direct to the ground via conventional on-site wastewater disposal systems, thereby reducing the nutrient, pathogen, and personal care product load to groundwater and nearby surface waters which contributes to water quality restoration.

# Sewering Map and Plan

## Client

Inc. Village of  
Southampton  
Southampton, NY

## Contact

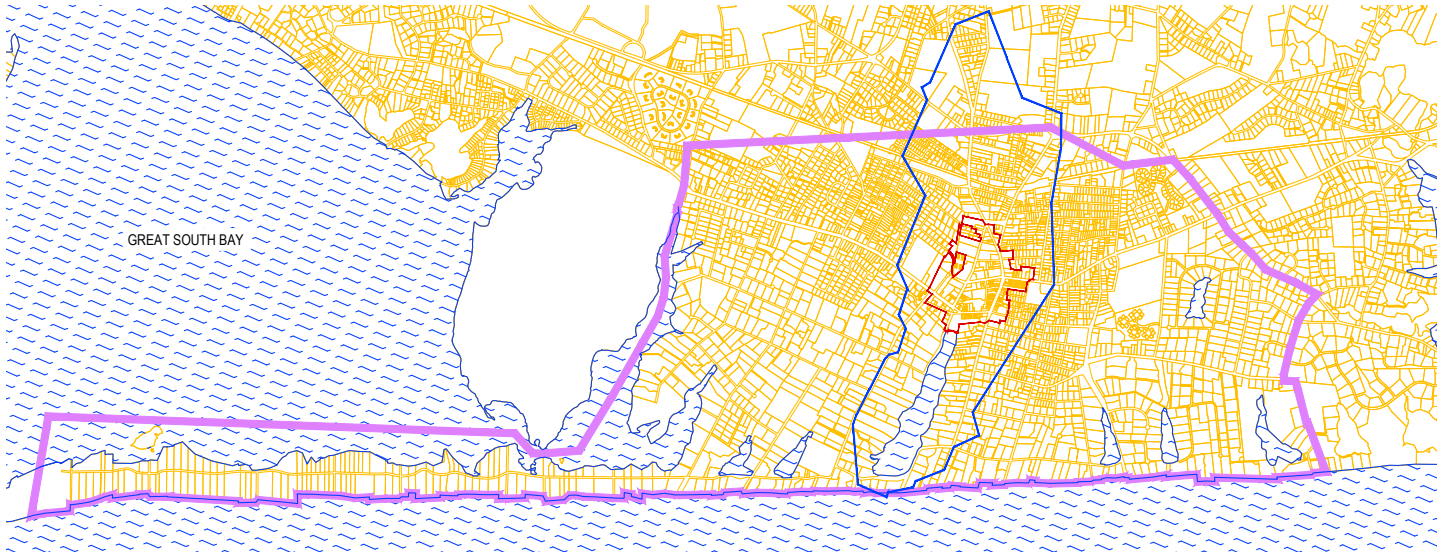
Mark Eply  
Former Mayor  
(631) 283-0247

## Completion

2015

SERVICES  
PROVIDED

Sewering Map and Plan  
Wastewater Design



H2M was selected to evaluate the feasibility of and prepare a Map and Plan for the formation of a new sewer system for the Incorporated Village of Southampton.

H2M was selected to evaluate the feasibility of and prepare a Map and Plan for the formation of a new sewer system for the Incorporated Village of Southampton.

H2M utilized prior experience working for Suffolk County to evaluate several un-sewered areas designated as priority for sewerage to refine the prior findings and tailor a conceptual plan for bringing sewers to the Village, while delivering the legal report required to proceed with the legal formation of the special district.

Public education of the project and community buy-in were issues not uncommon to projects of this type, which were addressed through increased participation by the H2M design team at community work sessions and public hearings to proactively address community questions/comments on the project.

The project was completed but did not advance to the next phases due to differences of opinion in the community and more importantly on the Village Board.

A Map and Plan was created, which has come back into focus with the current Village administration who has again retained H2M to evaluate alternatives that were not previously feasible with the ultimate goal of updating the Map and Plan and advancing the project forward to bring sewers into the area to help improve both environmental conditions associated with the water quality of Lake Agawam, as well as improve the socio-economic viability of the downtown business center located north of Lake Agawam.

# Sanitary Wastewater Infrastructure Planning

## Client

Suffolk County  
Department of  
Public Works  
Yaphank, NY

## Contact

Janice McGovern, P.E.  
Acting Chief Engineer  
(631) 852-4188

## Construction Cost

\$17.4 million - Kings Park  
\$24.9 million - Smithtown

## Completion

2024

SERVICES  
PROVIDED

Stakeholder Meetings  
Public Presentations  
Feasibility Study  
Mapping and Planning



H2M has been commissioned by the Suffolk County Department of Public Works (SCDPW) to prepare an Engineering Design Report and design for the sewerage systems of the Smithtown and Kings Park Business Districts.

A feasibility study performed by a consultant to SCDPW was used to develop existing and future flow rates for each business district as well as guidance for layout of the proposed sewers, force mains and pump stations to convey the wastewater to Suffolk County Sewer District (SCSD) No. 6. Due to the distance between the areas, H2M has prepared two separate reports: one for the Smithtown Business District and one for Kings Park Business District.

Currently, all wastewater within both business districts is treated by onsite sanitary systems consisting of cesspools, septic tanks, and leaching fields. The capacity of these onsite sanitary systems is limited by nitrogen loading and parcel acreage, thereby inhibiting the potential for future development of the area. Providing sewers to both Business Districts can benefit existing businesses and make future construction of apartments, medical offices/practices, and restaurants possible.

The Kings Park Business District consists of approximately 140 business establishments across a 65 acre area located along New York State Route 25A within the Town of Smithtown. The proposed sewer system will be serviced by 8,200 linear feet of gravity sewers and a conventional pump station with a 1.4 mile long force main. In order to service the entire business district the gravity sewer will require jacking underneath the Long Island Railroad (LIRR). The projected average daily design wastewater flow from the Kings Park Business District is approximately 329,000 gallons per day.

The proposed pump station and force main will convey wastewater collected within the service area to SCSD No. 6.

The Smithtown Business District consists of approximately 350 business establishments across a 280 acre area located along New York State Route 25 within the Town of Smithtown. A portion of this service area is within the Village of the Branch. Based upon topography of the area, the proposed sewer system will be serviced by 22,500 linear feet of low pressure sewer most of which has been designed to be directionally drilled and 1,600 linear feet of gravity sewer, and a conventional pump station with a 3.2 mile long 10 inch diameter force main. 100 feet of the force main pipe will be installed in a casing supported under a bridge crossing the Nissequogue River. The projected average daily design wastewater flow from the Smithtown Business District is approximately 538,000 gallons per day. The proposed pump station will be located along the westerly boundary of the business district to minimize the overall length of force main required to convey wastewater from the service area to SCSD No. 6.

Following approval of the engineering reports, H2M has prepared the design for the wastewater collection and conveyance system for both areas.

# Sanitary Wastewater Infrastructure Planning

## Client

Suffolk County  
Department of  
Public Works  
Yaphank, NY

## Contact

Boris Rukovets, P.E.  
Special Projects  
Supervisor  
(631) 852-4184

## Construction Cost

\$28.8 million

## Completion

2016

SERVICES  
PROVIDED

Stakeholder Meetings  
Public Presentations  
Feasibility Study  
Mapping and Planning

The implementation of sewers and sanitary wastewater infrastructure brings social, economic, and environmental benefits to communities. Southampton Village is one of the seven unsewered areas under the Suffolk County Sewer Capacity Study.

Providing sanitary sewers will reduce groundwater contamination, therefore improving Lake Agawam's aquatic life. H2M was one member of a multi-faceted consultant team where the main objective was to provide the client with a comprehensive Feasibility Study evaluating sewage collection system, treatment and location of the plant and capital costs.

The area of study is bounded by Jaeger Lane to the north, Main Street and North Sea Road to the east, Jobs Lane and Culver Street to the south, and Windmill Lane to the west. The 62 acre study area includes 151 individual lots located within the Village's business district.

The average daily flow that was projected for the community was estimated to be 145,052 gallons per day (gpd). The recommended collection system based upon topography, relative depth to groundwater, and because the study area is currently established, is a low-pressure collection system. In accordance with Suffolk County Department of Health and Services (SCDHS) requirements, it was determined that the wastewater treatment plant should be located on a 6.4 acre site that is owned by the Incorporated Village of Southampton Police. Since nitrogen loading is a major concern to the community because of its negative impact on water bodies, several technologies were evaluated to address this issue. A Membrane Biological Reactor (MBR) was selected to give solution to this problem not only because it allowed an efficient removal, but also because it required less area which is an important consideration at this site.

The total anticipated project cost was estimated to be approximately \$28,803,000. This cost opinion includes the Construction, Engineering, and Soft Costs. The report was finalized and accepted by Suffolk County in the third quarter of 2014.







## Client

Suffolk County Dept.  
of Health Services  
Yaphank, NY

## Contact

Craig Knepper, P.E.  
Principal Public Health  
Engineer  
(631) 852-5700

## Completion

2012

SERVICES  
PROVIDED

Evaluation of Treatment  
Technologies  
Laboratory Analysis

H2M prepared a multi-report study for the Suffolk County Department of Health Services (SCDHS) on an investigation of alternate water resource recovery facilities that could possibly replace current systems, or be required for new construction.

The SCDHS undertook the investigation of alternative on-site water resource recovery facilities (OSWRRF) to better manage total nitrogen discharge to groundwater. The intent of the investigation was to evaluate systems that provide a viable, low cost, and environmentally acceptable means to protect public health. The overriding criterion of the study was that the alternative OSWRRF had to consistently achieve an effluent total nitrogen concentration of not greater than 10 mg/L. The investigation covered two different treatment categories. The first category was defined as single-family residential dwellings with flows from 300 to 1,000 gallons per day (GPD); the second category was defined as the other than single-family dwellings comprised of commercial or high-density residential properties, with flows from 1,000 GPD to 30,000 GPD.

The first report presented to the SCDHS consisted of the research performed by H2M. Over 60 websites were studied yielding over 150 downloads of information. Products developed for advanced on-site treatment were technically screened for further evaluation. Standards from national agencies such as the National Sanitation Foundation (NSF), the United States Environmental Protection Agency (EPA), and the states of New York, New Jersey, Massachusetts, Rhode Island and Washington were used as part of the screening process to determine the on-site wastewater alternatives that would be considered by Suffolk County.

Following the research of existing alternative OSWRRF, the list of acceptable technologies capable of reducing total nitrogen to 10 mg/L was significantly reduced. The subsequent report included the evaluation, selection, and sampling of these alternative systems. Two technologies were considered viable for residential use and four technologies were considered viable for commercial use. Two systems for each technology in each flow category were chosen to be field sampled. This phase also allowed for an independent evaluation of the manufacturer's claims of performance. H2M Labs was responsible for the analysis of the influent and effluent grab samples that were collected around the country by a subconsultant. The parameters analyzed included BOD, TSS, TKN, Total Nitrogen, alkalinity, and pH.



Following the sampling of the alternative OSWRRF for each flow category, a thorough assessment of each technology was undertaken. Each technology was evaluated for the ability to meet the design and operations criteria that were established by the SCDHS. A schematic depicting a typical installation in Suffolk County for each technology was provided.

In the next report of the study, H2M developed a cost/benefit analysis for the selected technologies using the established assessment criteria. The selected alternative systems are expected to reduce influent nitrogen concentrations by 87 percent compared to only a 50 percent reduction in a conventional system. The cost opinions presented included estimates for the design, construction, installation, and operation and maintenance for each alternative facility.

The fourth report presented the investigation and evaluation of the conditions and restrictions under which alternative on-site treatment systems are permitted in Massachusetts, Rhode Island, New Jersey, and Maryland. A description of the approval process and regulations set in each of these states was also described in this report.

# Wastewater Pump Station Design

## Client

Town of Babylon  
Department of  
Environmental Control  
Wyandanch, NY

## Contact

Richard Groh  
Chief Environmental  
Analyst  
(631) 422-7640

## Construction Cost

\$3.1 million

## Completion

2014

SERVICES  
PROVIDED

Mechanical Engineering  
Electrical Engineering  
Structural Engineering  
Survey  
Construction Administration  
O&M Manual



The Town of Babylon is committed to the development of a viable downtown and business district in the hamlet of Wyandanch. A significant obstacle to redevelopment is the lack of a central sewer collection system for the disposal of wastewater.

The Wyandanch Commercial and Industrial Corridor planning area is located in Groundwater Management Zones I and VII. Suffolk County Sanitary Code Article 6 limits the discharge of wastewater through conventional on-site sanitary systems in these zones to 600 gallons per day, per acre. On-site sanitary systems contribute to the degradation of groundwater quality of Long Island's sole source groundwater supply. The goal is to determine if a cost effective, environmentally accepted alternative exists to aid its revitalization and to improve environmental conditions.

We prepared bid documents for the construction of a new wastewater pumping station with an average daily design wastewater flow of 380,000 GPD on a 60' x 100' parcel, providing four construction contracts for the pump station. Plans and specifications for the 5,300 foot long, 10 inch diameter force main were incorporated.

The wet well was provided with two chambers. One chamber comprised of two submersible pumps, while the other had one submersible pump and the base elbow and guiderail to allow

installation of an additional future pump. A precast concrete building was utilized to house the standby generator, chemical feed and vapor phase odor control systems, motor control centers and natural gas fired standby generator. Architectural finishes were designed in coordination with the Town to blend with nearby homes. A permeable reinforced concrete grid paver was included to reduce the amount of runoff. The design also included a magnetic flow meter, gantry system for removal of pumps, a valve chamber, surge relief valve and landscaping. The Control Building was located at the front of the site as part of the method of screening.

We also designed 1,465 linear feet of 20 inch diameter sewer at the downstream end of the collection system to connect to Suffolk County Sewer District No. 3. Approximately 1,000 linear feet passed through the Souther State Parkway right-of-way. Consequently, New York State required that the bid documents indicate the installation of 36 inch diameter jacked steel casings for the sewer pipe installation. The design included the location of the proposed jacking and receiving pits to install the five casing segments.

# Sanitary Wastewater Infrastructure Planning

## Client

Village of Bellport  
Bellport, NY

## Contact

Ray Fell  
Mayor  
(631) 286-0327

## Completion

2014

SERVICES  
PROVIDED

Stakeholder Meetings  
Public Presentations  
Mapping & Planning  
SEQRA

H2M was retained by the Village of Bellport Board to prepare a Map and Plan for a sewer system. The Village determined that they would need a sanitary sewer system to improve public health and environmental quality in residential areas prone to tidal flooding and shallow groundwater, in addition to realizing their vision for a revitalized “Main Street” along South Country Road.

H2M’s responsibilities included finalizing the service area boundary, calculating sanitary wastewater flow projections, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, associated scheduling components, cost escalation and financing alternatives. In addition to the Map and Plan, H2M also prepared an Environmental Assessment Form (EAF) to initiate the State Environmental Quality Review Act (SEQRA) compliance process.

The service area boundary encompasses approximately 235 parcels across 367 acres. The average daily sanitary flow projection for this area was calculated to be 0.08 million gallons per day (MGD) based on maximum build-out of existing zoning and current Suffolk County Department of Health Services sanitary flow design criteria. The recommended preliminary collection and conveyance system was based on making an out-of-district connection to the Village of Patchogue Sewer District which currently has capacity available at the treatment plant. The proposed infrastructure required to connect the two municipalities included one pump station, 2.8 miles of force main, 3.0 miles of low pressure sewers and the replacement of 800 linear feet of existing gravity sewer within the Village of Patchogue. The Village must complete negotiations with the Village of Patchogue in parallel to moving forward with the final formation of the sewer system and subsequent detailed engineering design.

The total anticipated project cost opinion is approximately \$17,300,000. This cost opinion included construction, engineering, administration and inspection services. The report was finalized in the second quarter of 2014.



# Wastewater Treatment Facility Upgrade and Expansion

## Client

Village of Patchogue  
Patchogue, NY

## Contact

Joseph Dean  
Superintendent  
(631) 475-4300 ext. 130

## Construction Cost

\$10.01 million

## Completion

2011

SERVICES  
PROVIDED

Engineering Design Report  
Survey

Construction Documents

Bid Phase Services

Administrative Services

Construction Services



We were selected by the Village of Patchogue in 2004 to prepare the engineering feasibility study followed by the Facility Plan in 2005 and design in 2007 to upgrade and expand from the existing 0.5 million gallons per day (MGD) rotating biological contractor (BNC) facility to a facility with new 0.8 MGD biological nutrient removal (BNR) processing and sludge thickening treatment processes.

The design also incorporated future expansion capability to 1.2 MGD. With the new facility improvements, the Village of Patchogue has been able to provide better effluent quality discharge through the new process improvements thereby directly impacting the quality of the Patchogue River and South Shore Estuary Reserve. Additionally, the new facility allows the Village to expand the sewer district and accommodate future development and revitalization of the Patchogue waterfront.

Raw sewage from the existing collection system is introduced into the new system through a new grinder and auger for solids removal followed by an aerated grit removal system. From a pump station using converted existing tanks, raw sewage is sent to new process tanks. Flow is diverted to an anoxic tank for denitrification followed by an aerated process tank for nitrification. The process which aerates and nitrifies the wastewater is the energy efficient Integrated Fixed Film Activated Sludge System or IFAS system using the STM-Aerotator. This novel system provides the oxygen necessary for biological processing through hollow discs attached to rotating wheels within the tanks. Once processed, the wastewater flows by gravity to a splitter box followed by settling through two new clarifiers. Effluent from the clarifiers is sent to and treated through two ultraviolet (UV) disinfection channels which house two banks each of lamps. The UV system replaces chlorine disinfection. The treated

wastewater is then discharged to the Patchogue River. Waste sludge produced by the biological process is discharged to a membrane sludge thickening system. The existing digester and primary tank were converted to transfer and thicken waste sludge from 0.5% to 3% sludge for final disposal.

Funding for the project was received through a number of sources, including \$1.7 million from the CW/CA Bond Act and Environmental Protection Fund Grant provided by the New York State Department of Conservation; \$2.8 million from the Green Grant Reserve; and \$2.8 million through the American Recovery and Reinvestment Act of 2009. The remaining \$3 million was subsidized by a 20 year low interest loan through the New York State Environmental Facilities Corporation.

We helped prepare the necessary applications and supporting documentation (including a full environmental assessment) to procure this funding. During project construction, we were retained to ensure contractors were adhering to the requirements of ARRA and NYSEFC in order for the Village to maintain these funding sources. Responsibilities included: verifying compliance with M/WBE and American Iron and Steel requirements; preparing quarterly progress status reports required by NYSEFC; providing close-out documents and final project certification to NYSEFC.

# Sewage Pump Station and Force Main

## Client

Nassau County  
Department of Public  
Works  
Westbury, NY

## Contact

Ed Visone  
Assistant Superintendent  
of Sanitary Construction  
(516) 571-7359

## Construction Cost

\$7.1 million

## Completion

2011

SERVICES  
PROVIDED

Engineering Report  
Survey  
Design  
Shop Drawing Review  
O&M Manual



The Continental Villas subdivision in Locust Valley, NY was developed in the 1960's during a period of historically low ground water levels.

Immediately after completion of a number of the homes in the development they encountered difficulties with their on-site sanitary sewage systems today. In the 1980's, overflow piping was installed to service many of the failing septic tanks. Septic tank effluent was directed to a common chlorine contact chamber that discharges to Mill River Preserve. This measure was intended as a temporary remedy, and the discharge from the contact chamber did not meet current water quality standards. The Nassau County Department of Public Works (NCDPW) was given the responsibility of making an environmentally beneficial improvement to serve this area with failing on-site sanitary systems.

We planned and designed the pump station and conveyance system to serve all 60 residential parcels within Continental Villas and to allow the future connection of an additional 120 homes located in a residential area immediately to the south of Continental Villas. Wastewater from these areas is conveyed to the Locust Valley Regional Sewage Pump Station located within the Continental Villas subdivision. The pump station is located at the site of the existing disinfection chamber. In lieu of construction of a wastewater treatment plant on a parcel within Continental Villas, wastewater generated within the planning area is conveyed to the City of Glen Cove for treatment and disposal. The environmental benefits of constructing the Locust Valley Sewage Pump Station

include elimination of residential septic system discharge to groundwater near estuarine and marine wetlands and elimination of a chlorinated wastewater point source discharge to Mill Neck Creek, a tributary of the Long Island Sound.

Wastewater is conveyed from the pump station through a force main over three miles in length. To minimize road restoration and impact to vehicular traffic, directional drilling was used to install most of the HDPE force main pipe. The use of HDPE pipe will also reduce operating costs due to friction losses compared to other pipe material.

Two pairs of pumps in series have been provided to convey the wastewater. A precast concrete wet well, a precast concrete dry well and two precast concrete buildings were utilized. Architectural finishes on the buildings were designed in coordination with input by local residents. A vapor phase odor control system was provided for the wet well and ventilation from the wet well was through an activated carbon vessel. An emergency standby power generator and an aboveground doublewalled fuel oil tank were also provided at the facility. In lieu of an asphalt pavement driveway, a permeable reinforced concrete grid paver has been installed. 1,150 feet of 10 inch diameter sewer was installed to provide for future connections.

# Sewer District Expansion

<b>Client</b> Suffolk County Department of Public Works Yaphank, NY	<b>Contact</b> Janice McGovern Acting Chief Engineer - Sanitation (631) 852-4188	<b>Construction Cost</b> 78 million <b>Completion</b> 2017	<b>Engineering Design Report</b> <b>Survey</b> <b>Construction Documents</b> <b>Bid Phase Services</b> <b>Construction Services</b> <b>Start-up Services</b> <b>O&amp;M Manual</b>
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The lack of a sanitary sewer system within more than one half of the Heartland Industrial Park was restricting the ability of businesses to expand, or to fully utilize the property.

Heartland Industrial Park is one of the largest industrial parks in the United States. The park is a regional economic engine. Approximately 55,000 people are employed by the 1,300 diverse businesses within the park. Though, the ability for businesses to expand is restricted by the lack of a sanitary sewer system.

To provide the ability to expand and grow businesses/facilities within the Hauppauge Industrial Park, Suffolk County proposed to facilitate economic development by expanding and combining two existing sewage treatment plant systems in Sewer District No. 18 - Hauppauge Industrial. The Heartland treatment plant had a capacity of 0.25 million gallons per day (mgd); and the Suffolk Business Center, ITT treatment plant had a capacity of 0.20 mgd.

H2M was called upon by the Suffolk County Department of Public Works (SCDPW) to prepare a technical design report and subsequently design services to expand the sewer system for the Hauppauge Industrial Park; and also to design a new treatment facility. As part of the technical design report, H2M analyzed existing flows and wastewater characteristics for the existing service in order to develop the basis of design. A survey was also sent to property owners within the park not currently connected to the sewer in order to gauge potential plans for business expansion.

H2M tasks included the design and construction of approximately 47,500 linear feet of gravity sewer; design and construction of three new sewage pumping stations with approximately 16,000

linear feet of force main piping; abandonment of the Heartland WWTP; construction of a new wastewater pumping station at the Heartland site; and construction of a new expanded water resource recovery facility at the site of the existing ITT (Suffolk Business Center) facility. The pumping station at the Heartland site was designed with vapor phase and chemical feed odor control system. The new treatment system was designed to treat the characteristics particular to industrial wastewater and to insure compliance with all current and anticipated SPDES Permit discharge requirements, while being a good neighbor to nearby business properties. Utility coordination meetings were conducted during design of the sewer system. Based on input from the parks' business association, most sewer installation work will be done at night. A phasing plan was also developed to reduce impacts to vehicular traffic. The plans also include curb to curb paving following installation of the piping.

The new wastewater treatment facilities provide service to approximately 249 additional properties and more than triples the capacity of the existing plant to 1.65 MGD. Upon completion of the sewer system, the service area of the District will increase from 515 acres to 1,289 acres. Installation of the sewers and increasing the capacity of the treatment plant allowed the Town of Smithtown to create a special zoning overlay district status for the Park. The new changes are intended to provide flexibility to allow the Hauppauge Industrial Park to continue to be attractive for high quality business development, making it competitive with other industrial areas in the region and nation.

# Low Pressure Sewer System

## Client

Inc. Village of Patchogue  
Patchogue, NY

## Contact

Joseph Dean  
Superintendent  
(631) 475-4300

## Construction Cost

\$6.4 million

## Completion

2016

SERVICES  
PROVIDED

**Bid Services**  
Collection System  
Hydraulic Modeling  
Construction Observation  
Cost Estimates and Opinions  
Design Engineering

The Inc. Village of Patchogue needed to prepare a map and plan and construction bid documents for installation of drainage improvements in conjunction with the installation of a low pressure sewer system with a grinder pump station at each home along River Avenue (south of Price Street), Sunset Lane, Price Street and Maple Avenue.

Existing drainage systems in the area were limited and not adequate to drain stormwater runoff. Streets were flooding regularly. Groundwater was approximately two feet below grade which limited the function of the on-site sanitary system for the homes. All parcels were within the zero to two year groundwater travel time to the Great South Bay. Over time, what was once an area of summer homes and beach bungalows transitioned to homes with full-time residences. Several studies have documented the impacts of excessive nitrogen from sanitary systems in reducing dissolved oxygen levels to the detriment of aquatic life and in supporting harmful algal blooms. In conjunction with this study to extend the Village sanitary sewer system to serve 46 homes, we investigated the feasibility of making storm drainage-related improvements to help address existing flooding conditions related to the proposed sanitary sewer improvements. The report identified potential drainage improvements that could be implemented while the roadways were disturbed during the construction of the sanitary sewers.

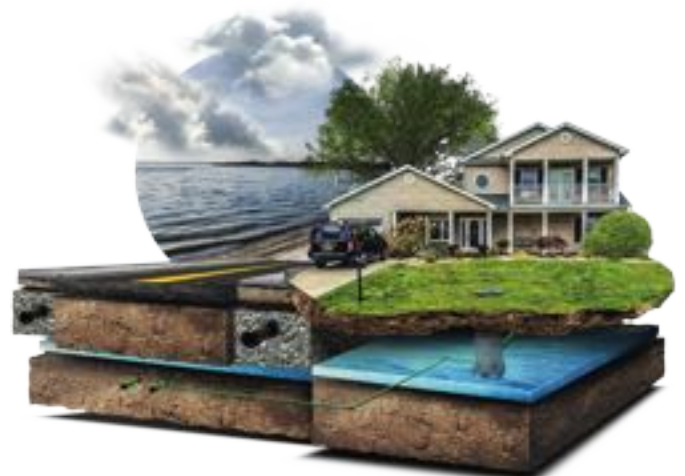
During design, we conducted a utility coordination meeting with representatives of National Grid, the Village DPW and the Suffolk County Water Authority. Our personnel also met with homeowners to review the proposed installation location of the on-site pump station and low pressure sewer connection. Plans were submitted to and approved by the Suffolk County Department of Health Services.

The drainage improvements included the installation of approximately 4,750 linear feet of porous concrete gutter, along with drainage pipe and underground stone storage space along the shoulders of each of the roadways. In addition, a shallow vegetated stormwater management basin was proposed to temporarily store excess runoff during storm events. This system was incorporated to help alleviate flooding during storm events and improve drainage in this flat, low-lying section of Patchogue.

We worked with the Dormitory Authority of the State of New York (DASNY), Suffolk County and the Village of Patchogue in order to receive funding through two DASNY grants, an Infrastructure Program Grant provided by Suffolk County, and the Village of Patchogue Sewer Fund. Remaining funds were bonded by the Village.

We provided a resident engineer during construction. Construction phase services included full time construction inspection, shop drawing review, review of contractor payment requests and periodic meetings. During construction the project scope was expanded to include the abandonment of the existing on site sanitary system at each home.

The implementation of the project was so successful that aspects of the community outreach and design techniques are now being utilized by Suffolk County and the Village for the Suffolk County Patchogue River Watershed Sewer Project.





# Wastewater Treatment Plant Reconstruction



## Client

Suffolk County Department  
of Public Works  
Yaphank, NY

## Contact

Ben Wright, P.E.  
Chief Engineer  
(631) 852-4204

## Construction Cost

\$23.3 million

## Completion

2009

SERVICES  
PROVIDED

Engineering Design Report  
Survey

Construction Documents  
Bid Phase Services  
Construction Services



The old Port Jefferson Water Resource Recovery Facility for Suffolk County Sewer District #1 treated approximately 0.87 million gallons per day (MGD) with rotating biological contactors, secondary clarification, and chlorine disinfection. Based on the findings in the engineering report prepared by H2M, we created a new treatment process consisting of new concrete tanks with sequencing batch reactor (SBR) equipment.

Aerated pre-equalization basins were constructed to reduce hydraulic and wastewater characteristic variability to subsequent treatment processes. New tanks for sludge holding, and pre and post equalization were also constructed. The chlorine disinfection system was replaced by an ultraviolet disinfection system. All existing process tanks were reused in the new treatment scheme. Suffolk County received approximately a \$12 million grant that was administered by the New York State Environmental Facilities Corporation.

The underdeveloped portion of the site was heavily wooded with steep slopes. The new facilities were located to maximize the buffer distance to existing residences and to maintain existing natural landscaping. The contract documents included requirements for sequence of construction, staging, dust control, and erosion control.

The new process system treats a maximum daily flow of 1.15 MGD and discharge a superior quality effluent with less than 4.0 mg/l total nitrogen in accordance with the Long Island Sound Study requirements. The sludge processing was improved to include a gravity belt thickening system and an aerated thickened sludge storage system. The UV system was sized for an average daily flow of 2.75 MGD for each of two channels to allow disinfection of effluent from the SUNY-Stony Brook STP.

A new operations building was also constructed to house the proposed control ancillary process equipment such as: the sludge belt thickener, polymer feed and mixing system, air supply blowers, electrical motor control centers, and control panels. The building was configured to allow installation of a second sludge belt thickener.

# Sewage Treatment Facility Upgrade



## Client

Oyster Bay Sewer District  
Oyster Bay, NY

## Contact

Superintendent  
Chuck Testa  
(516) 922-4922

## Construction Cost

\$9.2 million

## Completion

2007

SERVICES PROVIDED

Design Engineering  
Construction Inspection and Administration  
Preparation of O&M Manual  
Start-up Consultation



H2M completed the upgrade of the Oyster Bay water resource recovery facility improvements, providing design, construction administration, and inspection services to the Oyster Bay Sewer District.

H2M completed the upgrade of the Oyster Bay water resource recovery facility improvements, providing design, construction administration, and inspection services to the Oyster Bay Sewer District.

The project included construction of a new two basin Sequencing Batch Reactor (SBR). To reduce capital costs, the existing primary clarifiers were converted to aerated pre-equalization basins. Fiberglass covers were installed over the pre-equalization basins. Both trickling filters and the rotating biological discs were taken out of service. To reduce hydraulic variations, existing secondary clarifiers were converted to post-equalization basins. A new masonry building was designed to house the belt thickener and

polymer feed equipment, SBR and sludge holding tank blowers, and motor control center. A separate new masonry building was designed for the dechlorination chemical storage and feed facility along with a dechlorination contact tank with rapid mixer.

The new facility construction was phased to maintain the operation of the existing secondary treatment system. Also, land is limited so very detailed requirements were drawn to effectively control site utilization. The site is also adjacent to freshwater wetlands, which severely hampers site use. This project received a grant from the New York State Clean Air/Clean Water Environmental Bond Act totaling \$6.7 million. The New York State Environmental Facilities Corporation administered the grant.

# Advanced Wastewater Treatment Facility Wastewater Reuse for Golf Course Irrigation

H 2  
M

## Client

Town of Riverhead  
Riverhead, NY

## Contact

Michael Reichel  
Superintendent  
(631) 727-3069

## Construction Cost

\$21.9 million

## Completion

2018

SERVICES  
PROVIDED

Design  
Construction Administration  
Construction Operation  
Operation and  
Maintenance Manual



The Riverhead Sewer District was required to upgrade the existing sewage treatment plant in order to achieve a total nitrogen effluent limitation of 3.2 mg/l based on the total maximum daily load (TMDL) conducted for the Peconic Estuary Program. Due to the location of the Suffolk County Indian Island Golf Course, adjacent to the wastewater treatment plant, wastewater effluent will be used seasonally as an alternative water supply source for irrigation of up to 450,000 gallons per day. This is the first wastewater reuse project in New York.

Benefits from this project extend well beyond nitrogen loading within the Peconic Estuary. Water shortages may change the water supply conditions that are currently taken for granted. The golf course currently utilizes on-site wells for irrigation. Continued use of groundwater as the irrigation source of supply is bound to affect the salt water / fresh water boundary. Irrigation with potable water from the local municipal system is already expensive and puts a stress on the existing potable water supply.

We designed the treatment plant upgrade and water reuse systems. The design included the installation of all process equipment including, but not limited to: headworks fine screen, screenings, washings, add air diffusers to the existing Sequencing Batch Reactor (SBR) tank, convert the existing post-equalization tank to Membrane Biological Reactor (MBR) system, aeration blowers, pumps, chemical feed equipment, polymer mixing and feed equipment, controls, piping, backflow preventers, convert the existing trickling filter tanks to treated effluent tanks, a booster pump for the treatment plant effluent re-use system, a booster

pump to supply treatment plant effluent for irrigation use at the adjoining golf course, UV disinfection equipment for WWTP discharge, and a closed vessel UV disinfection system for the golf course re-use systems. The electrical design included a primary electrical service, main secondary feeders, power distribution, and instrumentation control wiring, standby generator for new equipment, and motor control centers. We also prepared the structural, architectural, mechanical, plumbing and HVAC designs.

Since permit levels of treatment must be maintained during construction, certain existing process equipment and units cannot be taken offline until new facilities are placed into permanent, fault free operation. Consequently, we included the specifications a construction sequence. During construction we provided construction administration, resident construction inspection, and start-up services. We also prepared an operation and maintenance manual for the upgraded advanced wastewater treatment system and the water reuse systems.

# Innovative Alternative On-site Wastewater Treatment System

## Client

Springs Union Free  
School District  
East Hampton, NY

## Contact

Kevin A. Walsh, AIA,  
LEED AP  
Project Manager  
(631) 475-0349 x 129

## Construction Cost

\$1.57 million

## Completion

2019

SERVICES  
PROVIDED

Engineering Design  
Construction Services



H2M was retained by BBSA to prepare detailed design documents and engineering during construction services for the approval and installation of an Innovative Alternative Onsite Wastewater Treatment System (I/A OWTS) with supplemental nitrogen reducing biofilters at the Springs Union Free School District.

BBSA was looking to retain a qualified design profession with experience associated with the design and approval of I/A OWTS in Suffolk County. The objectives of this project were to replace the existing conventional onsite sanitary disposal system to allow for the construction of a planned building addition while improving the effluent water quality that is discharged from the school.

Springs UFSD wanted to go above and beyond the minimum requirements to replace their existing on-site sanitary disposal system. This required H2M to identify options for supplemental treatment in addition to the approved I/A OWTS. H2M reached out to the Stony Brook University Center for Clean Water Technology (SBU CCWT) and selected additional Nitrogen Reducing Biofilters (NRB) as the best alternative to meet the school's needs. These systems have shown promise in removing a high percentage of total nitrogen but have not been implemented on a large scale commercially. H2M worked with the CCWT to size and design the NRB to best fit the schools need. This required the development of details for NRB implementation within a leaching galley structure to minimum the area required to treat and dispose of the I/A OWTS effluent.

A major challenge H2M faced with this project was designing and sourcing an NRB system that would fit within the proposed sanitary disposal system without greatly increasing total project costs and minimizing the impact to the site. To accomplish this goal H2M designed an innovative NRB vessel that can be installed within SCDHS standard leaching galley. By combining the NRB and Leaching Galley into one unit the land area required for treatment and disposal is significantly reduced as well as the costs associated with clearing, excavating, and restoring that area.

H2M worked with the Client (BBSA) and the school to identify project goals above and beyond those required by the Suffolk County Department of Health Services (SCDHS). Using these strict limits H2M designed a unique system for the treatment and disposal of the sanitary waste generated by the school.

# Sanitary Sewer Installation

## Client

Town of Smithtown  
Smithtown, NY

## Contact

Mark Riley, P.E.  
Town Engineer  
(631) 360-7550

## Construction Cost

\$3.45 million

## Completion

2020

SERVICES  
PROVIDED

Design Engineering  
Engineering Report  
Construction Observation  
Wastewater Engineering



H2M designed the installation of sanitary sewers to the downtown commercial district on Lake Avenue in St. James for the Town of Smithtown.

The Town of Smithtown is in the process of updating their Master Plan. Lake Avenue in the hamlet of St. James is lined with retail shops, restaurants, and businesses. County Health Department requirements limit on-site wastewater discharge. Site development is limited unless a sewer system is available.

H2M assisted with the planning and design of the one-mile long sewer system. Laterals were designed from the sewer to each property. The site of the proposed wastewater pump station was identified so the design also provided for the installation of a six inch diameter force main. The design of the wastewater infrastructure was coordinated with the design of new water mains. Installation of the underground utilities is to be completed prior to a new streetscape project.

Coordination with the LIRR/MTA and procuring license agreements were necessary as this project included crossing below an existing at grade LIRR crossing. The design included installation of a jacked steel casing to house the carrier pipes without disturbing the railroad tracks. A maintenance and protection of traffic plan was included in the bid documents to reduce the impact of construction to the public.

H2M provided administration and inspection services during construction. Once additional sewers and the pump station are installed to a planned treatment plant, the businesses in the Lake Avenue commercial district will be able to make a sewer connection and abandon the existing conventional on-site sanitary systems. A sewer connection will provide opportunities for redevelopment and revitalization of each property within the hamlet service area as provided in the Master Plan.



# Pump Station Replacement

## Client

Town of Brookhaven  
Farmingville, NY

## Contact

Gregg Kelsey, P.E.  
Asst. Director of Engineering  
(631) 451-6490

## Construction Cost

\$1,235,000

## Completion

2013

SERVICES  
PROVIDED

Engineering Report  
Engineering Design  
Construction Documents  
Bid Services  
Construction Administration  
Construction Observation



The East Main Street sanitary pump station in the Inc. Village of Patchogue within the Town of Brookhaven provides conveyance for sanitary wastewater collected by in-district gravity sewers and out-of-district low pressure sewers located east of South Ocean Avenue.

Due to planned development along the New York State (NYS) Route 58 corridor, the existing pump station did not have sufficient capacity to serve the projected flow. The station also needed improvements in order to meet current design standards.

We prepared a Map and Plan that described the existing pump station, described the proposed improvements and presented a cost opinion of the proposed work.

A new pump station was constructed on a parcel purchased adjacent to the location of the existing pump station. The design flow for the station was 2.88 million gallons per day (mgd). Two construction contracts were prepared for the work at the pump station. An additional construction contract was prepared for installation of the new 16 inch HDPE force main. The design included four new VFD controlled submersible raw sewage cutter type pumps, valves and pump controls; a sewer from the existing pump station to the new pump station wet well; a 100 KW natural gas powered standby generator in a sound attenuating

enclosure; electric and water services; wet well ventilation system; vapor phase and drum scrubber odor control systems for wet well; piping riser on the force main to allow connection of portable pumps; autodialer alarm; demolition of the existing pump station; and plan and Profile for 2,200 feet of 16 inch diameter force main. Shrubs were planted around the perimeter fence to provide screening to the nearby residential homes.

This project qualified for the 2011 LIPA Commercial Efficiency Program for the replacement of the existing 10 inch force main with a new 16 inch force main. The replacement of the force main reduced the motor requirement of the four submersible pumps from 60 HP to 25 HP. The Riverhead Sewer District received a rebate in the amount of \$46,225.

During construction, H2M provided construction observation, construction administration, reviewed shop drawings and reviewed contractor payment requests.

# Wastewater Facility Engineer of Record



## Client

Steven Barbino,  
Brookhaven Memorial  
Hospital  
(631) 654-7732  
Larry Gargano,  
Greenview Properties  
(631) 666-4040

Deborah Gordon,  
Fairfield Properties  
(631) 499-6660  
David Murphy,  
Oak Tree Dairy  
(631) 368-8050

Dominick Tinelli,  
Residence Inn  
(631) 724-4188  
Joseph Marino,  
Newsday, Inc.  
(631) 843-2044

Andy Holland,  
Choice Professional  
Management  
(631) 864-6006  
Natalie Linder  
Camco Services  
(631) 476-2100 x200

Dominick Guerriero,  
Heatherwood Properties  
(631) 234-1600

Ellison Stollenwreck,  
La Quinta Inn and Suites  
(214) 492-6820

Nancy Scoca,  
NAI Long Island  
(631) 270-3023



**Operations Assistance**  
**Facility Evaluations**  
**Regulatory Compliance**  
**Construction Administration**  
**Construction Inspection**  
**Capital Budget Planning**



As the Engineer of Record for several private water resource recovery facilities (WRRF), H2M specializes in assisting property owners with the management of their facilities to ensure regulatory compliance and provide cost effective solutions associated with operating and maintaining these facilities.

Services include assessing and tracking WRRF performance, equipment maintenance, and repair status on a monthly basis or more frequently if required. H2M services also include on-call response to assist clients and their STP operators with any emergency wastewater process, facility or equipment problem and respond to regulatory inquiries on behalf of clients to resolve these issues.

H2M conducts complete WRRF assessments regarding the mechanical and electrical status of all facility equipment, included in a report with recommended equipment repairs and improvements to the process necessary in order to bring facilities into and/or consistently meet effluent compliance and quality. H2M works with property Owners in the planning and design of WRRF modifications and facility upgrades necessary to incorporate the latest wastewater equipment technology.

H2M conducts periodic and annual planning and budgeting meetings with the WRRF Owners in order to assist each Owner with the capital improvements planning and to development assessment budgets for coming years. H2M performs these tasks as Engineer of Record for the following facilities:

- **Brookhaven Memorial Hospital 120,000 GPD Sequencing Batch Reactor (SBR)**
- **Encore Atlantic Shores 40,000 GPD SBR**
- **Greenview Court 15,000 GPD Chromaglass System**
- **Greenview Commons 30,000 GPD SBR**
- **Northport VA Hospital, 300,000 GPD Activated Sludge Extended Aeration**
- **Heatherwood Pine Hills 181,100 GPD Activated Sludge Extended Aeration**
- **Heatherwood Mirror Pond 22,500 GPD SBR**
- **Heatherwood Medford Pond 54,500 GPD BESST Activated Sludge**
- **Heatherwood Hillcrest Village 71,000 GPD BESST Activated Sludge**
- **Heatherwood Spruce Pond 80,000 GPD SBR**
- **Heatherwood Colony Park 90,000 GPD Activated Sludge Extended Aeration**
- **Heatherwood House 30,000 GPD Activated Sludge**
- **Lakes of Setauket 40,000 GPD Rotating Biological Contactor (RBC)**
- **Lake Point 86,100 GPD Activated Sludge Extended Aeration**
- **Newsday, Inc. 45,000 GPD Integrated Fixed Film Aeration System (IFAS)**
- **Residence Inn 15,000 GPD Chromaglass System**
- **Oak Tree Dairy 89,000 GPD SBR**





## Organizational Structure

An important factor that helps H2M deliver well coordinated and well executed projects in a timely manner is that all key personnel required for a project assignment can be found under one roof. Our in-house expertise allows us to establish consistency and continuity on each project we undertake. H2M currently has a staff of over 470 individuals consisting of engineers (wastewater, water supply, civil environmental, mechanical, electrical, plumbing, structural, and chemical), surveyors, architects, landscape architects, construction inspectors, and other related technical support personnel.

The proposed organization of personnel and resources is intended to bring together a team of H2M professionals that can focus on project objectives, as well as respond to unanticipated circumstances or issues that occur on site. A brief description of the key leadership personnel are provided below with an organizational chart, subconsultant information, and resumes to follow.

### 👤 Christopher A. Weiss, P.E. - Principal in Charge

H2M's Principal in Charge will be Christopher A. Weiss, P.E. Mr. Weiss will oversee the entire project. He will administer the prime agreement with the Town and any subcontract agreements. He will execute all contracts associated with the project and will be directly responsible for the technical product. Mr. Weiss will assist the Town in obtaining grants and low interest loans through the New York State Environmental facilities Corp. Mr. Weiss will contribute to the public education program and will work with the Supervisor and Town to develop the entire program. He will have a major role for explaining the program during all public meetings.

### 👤 Nicholas F. Bono, P.E. - Project Manager

Mr. Nicholas F. Bono, P.E., is a Senior Project Engineer with the firm. Mr. Bono was a project engineer for the Suffolk County Sewer Capacity Study, the Sewer Capacity Study for the Flanders area, the Map & Plan for the proposed formation of a sewer district in the Village of Bellport, the Map & Plan for the proposed formation of a sewer district in the Village of Southampton, the Map & Plan for the proposed formation of a sewer district in the Village of Mastic Beach, Map & Plan and design plans development for the formation of a sewer district in the Village of Westhampton Beach, and prepared the design for the out-of-district sewer connections for the Smithtown and Kings Park main street business districts to Suffolk County Sewer District No. 6.

### 👤 Steven C. Hearl, P.E., LEED AP, CCCA - QA / QC

Mr. Steven C. Hearl, P.E., LEED AP is a Vice President and Department Manager – Collection & Conveyance Systems for the firm. Mr. Hearl will be the Quality Assurance/Quality Control Manager to the H2M staff for this project. He has the following experience in the planning, design and construction of wastewater collection systems:

- Village of Patchogue, Patchogue, NY: West Avenue Sewer District Extension Project Engineer. Designed pump station and approximately 1,200 feet of gravity sewer, 1,500 feet of force main and 2,400 feet of low-pressure sewer.
- Village of Patchogue, Patchogue, NY: Bay Village Condominiums Out-of-District Sewer District Extension Project Manager. Managed design

**Mr. Weiss will make certain that the terms of the prime agreement are completed as stated herein this proposal and the Engineering Services Agreement. It is his job to make this project a complete success.**

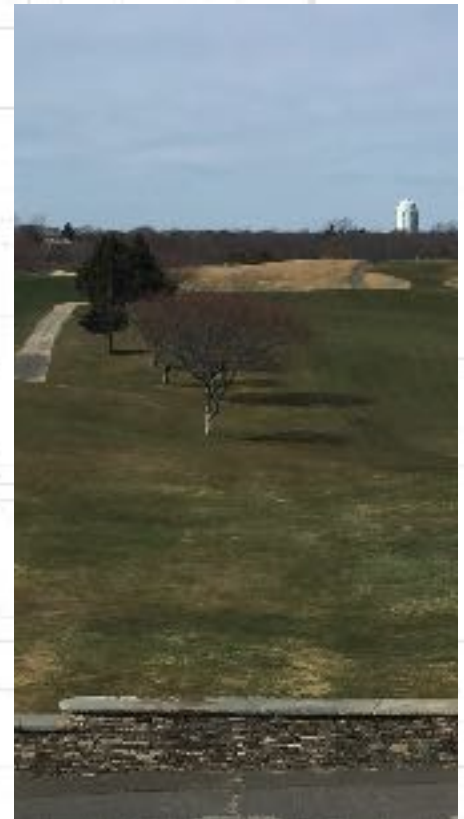
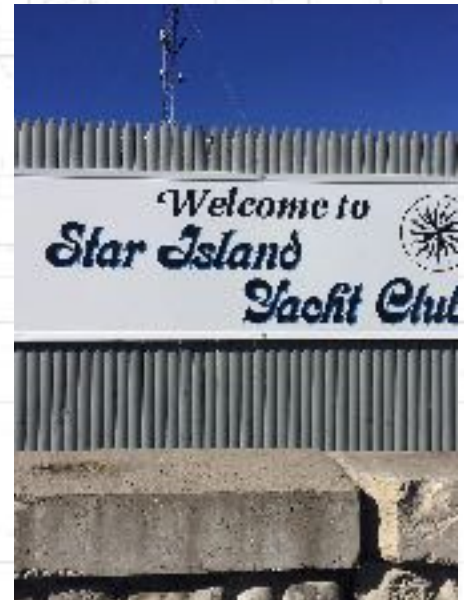


**“The proposed organization of personnel and resources is intended to bring together a team of H2M professionals that can focus on project objectives, as well as respond to unanticipated circumstances or issues that occur on site.”**

## ► Staffing Plan

of 3,400 feet of low-pressure sewer with lateral connections for parcels along route of pipe installation.

- Village of Patchogue, Patchogue, NY: Riverview Condominiums Out-of-District Sewer District Extension Project Manager. Managed design of 2,800 feet of low-pressure sewer with lateral connections for parcels along route of pipe installation.
- Village of Patchogue, Patchogue, NY: Fairfield on the Bay Out-of-District Sewer District Extension Project Manager. Managed design of 2,200 feet of low-pressure sewer with lateral connections for parcels along route of pipe installation.
- New York State Department of Parks, Recreation and Historic Preservation: Project Manager for preparation of an Engineering Report to evaluate a low pressure sewer connection to Suffolk County Sewer District (SCSD) No. 3 for the facilities at Heckscher State Park
- Suffolk County Department of Public Works: Sewer System Design Project Engineer for wastewater collection system at the F.S. Gabreski Airport in Westhampton Beach. Designed wastewater pump station and approximately 7,500 feet of sewer and 6,900 feet of force main.
- Town of Babylon, Babylon, NY: Feasibility Study for Southwest Sewer District Extension to Wyandanch Commercial Corridor and Town Solid Waste Management Facility and design of the Wyandanch Pump Station, Leachate Pump station, and associated force mains.
- Nassau County Department of Public Works, Westbury, NY: Preparation of Technical Design Report and Design for the Improvements to the East Hills Sewage Pump Station.
- Nassau County Department of Public Works, Westbury, NY: Preparation of Technical Design Report and Design for the Hempstead Sewage Pump Station.
- Nassau County Department of Public Works, Westbury, NY: Preparation of Technical Design Report and Design for the Locust Valley Sewage Pump Station.
- Township of West Caldwell, NJ: Improvements to the Kirkpatrick Lane Sewage Pump Station.
- Oyster Bay Sewer District, Oyster Bay, NY: Replacement of pumps at the Landing Road and Steamboat Landing Road Pump Stations.





## Our Subconsultants

As a multi-disciplined professional consulting firm, H2M can provide all the necessary disciplines (ie. wastewater, GIS, civil engineering, environmental planning, groundwater modeling, land surveying) in-house to complete the project. Understanding the need to explore grant funding for a project of this magnitude, H2M recommends considering the use of a professional grant writer, Jennifer Mesiano Higham of Mesiano Consulting, Inc. as an added service to the project team. We have worked with her firm on countless similar projects and can attest to her skill and commitment.. As is the case for all our projects with blended teams, a senior member of H2M will closely supervise and review the work of our subconsultant before final submission. Highlights of our subconsultants' qualifications are provided below.



### Mesiano Consulting

19 W Meadow Road  
Setauket, NY 11733  
(631) 827-5104

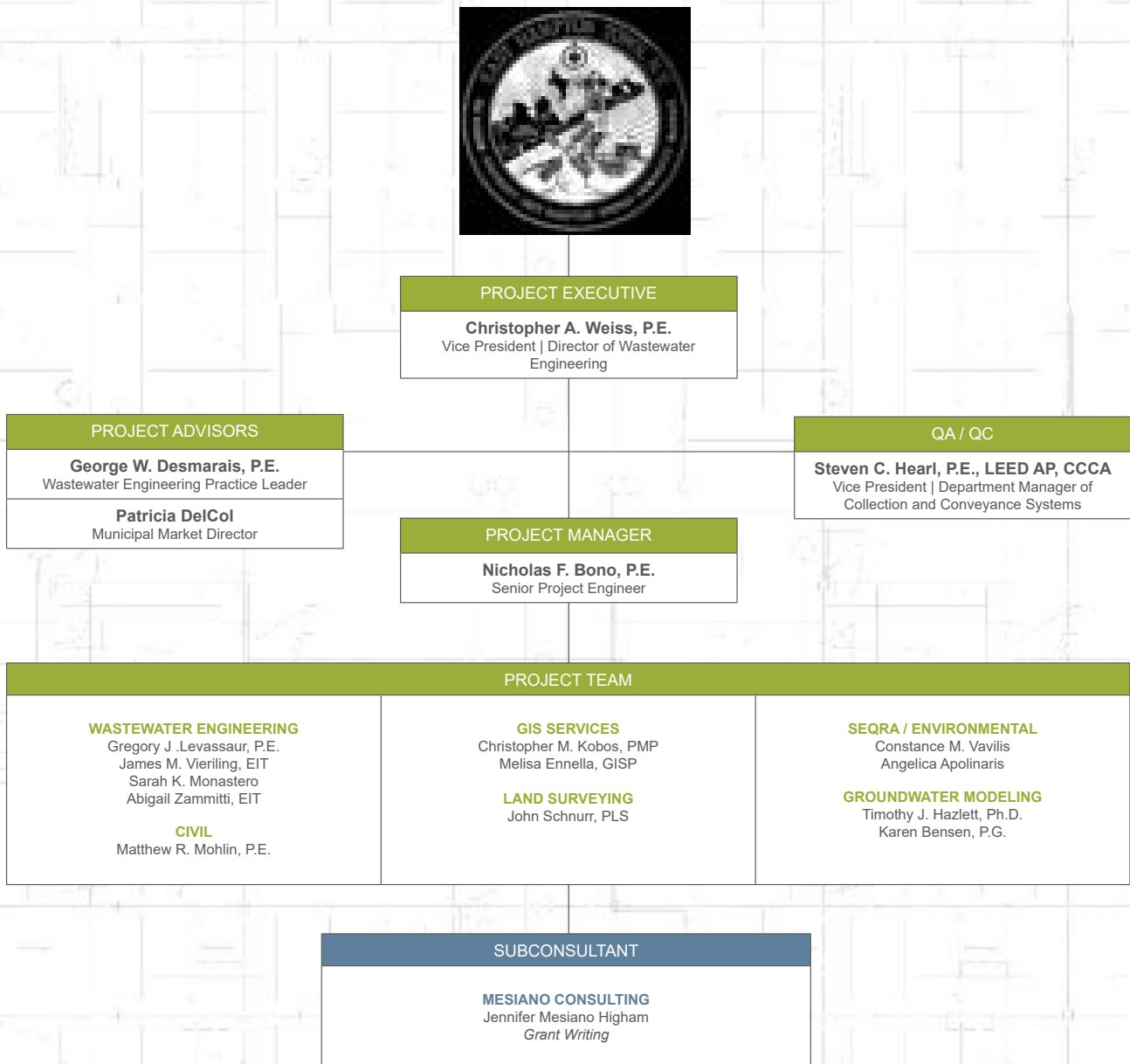
**Ms. Mesiano Higham has been successful in procuring funding for environmental projects in East Hampton, Southampton, Westhampton Beach, Smithtown, Shelter Island, and Suffolk County. She has recently partnered with H2M to successfully procure \$6.78 million in funding in grants/low interest loans for the Westhampton Beach sewer system project from both the Community Preservation Fund and the New York State Environmental Facilities Corporation.**

Mesiano Consulting helps organizations in the public sphere meet community needs by providing leadership and support for grants planning, application, and administration.

As a professional in the grants field for nearly 15 years, Jennifer Mesiano Higham provides services to municipal clients relating to grants research, planning, writing, implementation, technical assistance and reporting. Project types range from water quality, cultural programs, information technology, and workforce development to fire service and law enforcement. Jennifer has written succesful grant applications for numerous municipalities and projects in the area including, the East Hampton green stormwater project; the Montauk Lighthouse restoration project; the Southampton Hospital new satelite medical facility and emergency department in East Hampton; the Town of Smithtown Water Quality Improvement Program; the Hampton Bays Good Ground Park Gateway; the Village of the Branch Long Island Greenbelt Trailhead Improvements; and many more.

### Organizational Chart

The successful completion of a project requires a diverse pool of experienced personnel capable of performing tasks within their area of expertise. H2M's management and project managers are also aware that the success of any project is dependent upon the close cooperation required between the H2M staff and the project personnel of our client. The proposed organization of personnel and resources is intended to bring together a team of professionals that can focus on project objectives as well as respond to unanticipated circumstances or issues, should they arise.



Resumes for the above referenced key personnel are provided following this page.





## Christopher A. Weiss, P.E.

*Vice President*

*Director of Wastewater Engineering*

Mr. Weiss has practiced wastewater engineering for nearly 32 years, with 17 years at H2M. His dedication to protecting the environment is well respected among both his team and peers. Mr. Weiss has progressed throughout his years at H2M through roles as Project Manager, Resident Engineer, Senior Associate, Assistant Vice President, and finally to his current role of Director of Wastewater Engineering. His design creativity and management acumen will continue to keep H2M'S wastewater engineering in the forefront of cutting edge innovative wastewater design with fiscally responsible and sustainable approaches.

### Selected project experience:

#### Experience

H2M  
Bartlett & West Engineers  
Bienstock, Lucchesi & Associates

#### Education

B.S., Civil Engineering, State University  
of New York at Buffalo

#### Licenses/Certifications

Professional Engineer: NY

#### Memberships

Water Environment Association

#### Training

OSHA 10-Hour Construction Safety  
and Health Course

- Town of Riverhead Elton Street Sanitary Pump Station Upgrade: Replacement of an existing sanitary duplex pump station with a new submersible duplex cutter pump station. Determined present day sanitary flows based on water use records and projected maximum future sanitary flows based on the present residential zoning of the pump stations service area. Existing pump station was located in a small wet well adjacent to a minor creek that passed under Elton Street. This location impacted the pump station severely during storm events with heavy inflow events as well as station site scouring. Relocated and designed a duplex submersible cutter pump system with new precast concrete wet well located outside the 100 foot setback from the creek side wetlands boundary. Station design included a new emergency generator in a walk-in enclosure that also housed the stations electrical distribution system and the pump station controls. Prepared all construction specifications and drawings. Coordinated the drafting, electrical, and structural designs. Also, provided Resident Engineer and construction administration services during construction.
- Town of Riverhead Howell Avenue Sanitary Pump Station Upgrade: Replacement of an existing sanitary duplex pump station with a new submersible quadplex cutter pump station. Determined present day sanitary flows based on water use records and projected maximum future sanitary flows based on the present residential zoning of the pump stations service area. Existing pump station was located in a land locked flag lot between the backyard of four private homes. This location required extensive coordination and concern for odor mitigation as well as surrounding aesthetics. Relocated and designed a quadplex submersible cutter pump system with dual precast concrete wet wells to provide for operation and maintenance flexibility without taking the Pump Stations off line or bypass pumping. Station design included a new emergency generator in a walk-in enclosure that also housed the stations electrical distribution system and the pump station controls. Prepared all construction specifications and drawings. Coordinated the drafting, electrical and structural designs. Also, provided Project director oversight of the Resident Engineer and construction administration during construction.
- Village of Patchogue East Main Street Sanitary Pump Station Upgrade: Replacement of an existing sanitary duplex ejector pump station with a new submersible duplex cutter pump station. Determine present day sanitary flows based on water use records and projected maximum future sanitary flows based on the present zoning limitations of the pump stations effective area. Designed a duplex submersible cutter pump system to fit into the existing five foot diameter steel ejector pump station with new bubbler system level controls and temporary bypass pumping system in an upstream manhole to handle sanitary flows during construction. Prepared all construction specification and drawings. Coordinated the drafting, electrical and structural designs. Also, provided Project director oversight of the Resident Engineer and construction administration during construction.
- Project Manager for the Riverhead Wastewater Treatment Plant Expansion and Upgrade. Upgrade and expansion included conversion of existing sequencing batch reactor process to advance membrane biological reactor process within existing tank footprints, advance disinfection system and installation of Suffolk County's first wastewater reclamation for golf course irrigation at the Indian Island Golf Course in Riverhead, NY. Project Manager duties included design oversight, construction administration and inspection services oversight, existing plant operations during the conversion work oversight, and start up and State DEC regulatory permit conformance for the new systems.



## Christopher A. Weiss, P.E.

### Selected project experience, continued:

- Design of improvements to install nitrogen removal facilities at the Huntington Sewer District wastewater treatment plant. The design flow for the treatment plant is 2.6 MGD. The design included: two basin sequencing batch reactors, conversion of primary settling tanks to pre-equalization, post-equalization tanks, aerated waste activated sludge (WAS) holding tanks and a building to house the process blowers, WAS belt thickener, polymer feed equipment and motor control centers. Also responsible for the pre-bid cost estimating for this project.
- Design of sequencing batch reactor, pre-equalization tank and UV disinfection for the Suffolk County Department of Public Works Port Jefferson SCSD No.1 treatment plant. Also responsible for the pre-bid cost estimating for this project.
- Design of a packaged sequencing batch reactor treatment plant at the Continental Villas subdivision for Nassau County Department of Public Works. Design also included a flow equalization/influent pump station, flow metering, sludge storage, electrical facilities building, lab area, toilet facilities, generator and control panels, and UV disinfection. The design flow is 12,000 gpd.
- Prepared Facility Plan Report for the Hauppauge Industrial Wastewater Treatment Plant Reconstruction and Expansion. Supervised the design and construction phases of the project. Also responsible for the pre-bid cost estimating for this project.
- Design, construction and startup of a sewage treatment plant at Eagles Walk Senior Complex in East Quogue, New York. Eagles Walk consists of 67 two-bedroom condominiums with a design flow of 12,000 gallons per day. The sewage treatment plant design included an influent pump station/equalization basin, two Cromaglass reactors, a sludge holding tank, flow meter and a subgrade-leaching field for effluent disposal. A laboratory area was also provided for the plant operator in a maintenance building next to the treatment plant. Based on an evaluation of groundwater elevations, three groundwater monitoring wells were sited. Engineering services included preparation and Suffolk County approval of an engineering design report, construction plans and specifications; construction services, periodic job progress meetings, review of shop drawings and review of contractor payment requests; plant startup; preparation of O&M Manual.
- Engineering services to Memorial Sloan-Kettering Cancer Center in Commack, New York for the construction and startup of a sewage treatment plant. The sewage treatment plant design included an influent pump station/equalization basin, two Cromaglass reactors, subgrade leaching field, flow meter, and sludge holding tank.
- Nitrification/denitrification upgrade for Community Hospital STP using SBR technology. Design flow is 120,000 gpd.
- Design of the Mt. Olive Board of Education Upper Elementary School STP using flow equalization and a 30,000 gpd SBR; design of a sewage pump station and force main for the High School along with interim improvements to the STP including ultraviolet disinfection.
- Paumanack Village STP Expansion and Upgrade Construction: Resident Engineer for construction of a 42,700 gpd tertiary treatment plant in place of an existing 26,000 gpd tertiary treatment plant. The design consisted of conversion of the existing concrete aeration tank to an equalization tank, two new concrete aeration tanks, two new concrete rectangular settling tanks with chain and flight sludge collectors, a new concrete sludge holding tank, a new concrete secondary effluent chamber, a new steel denitrification filter and effluent recharge leaching pool system. Designed a new influent raw sewage submersible duplex cutter pump station and static screen unit atop the existing sludge holding tank.
- Spruce Pond Apartments 80,000 gpd STP using SBRs with flow equalization.
- Phosphorous removal upgrade for the Township of Roxbury Skyview Estates STP using tertiary filtration with ferric chloride addition with a design flow of 0.1 mgd.



## George W. Desmarais, P.E.

### *Practice Leader/Manager*

Mr. Desmarais has 40 years of experience in the fields of wastewater engineering, solid waste management and recycling. He is responsible for a wide variety of wastewater, solid waste and groundwater resources planning, design and remediation projects.

Mr. Desmarais was previously the Municipal Market Director for the firm. In this position, he coordinated all corporate activities to allow the firm to grow and perform while servicing municipal clients.

#### Experience

H2M  
Clough Harbour  
NYSDEC Region 8  
Monroe County Pure Waters

#### Education

Graduate study towards M.B.A., New York Institute of Technology  
B.E., Civil Engineering, Rochester Institute of Technology  
Dale Carnegie Leadership Training for Managers Course

#### Licenses/Certifications

Professional Engineer: NY, NJ, MA, PA  
NICET - Engineering Technician, Civil Engineering Technology

#### Offices Held

NYWEA, State Representative, Long Island Chapter, 2016-2019  
NYWEA, Long Island Chapter, Chairman, 2004  
NYWEA Long Island Chapter, Treasurer, 2002, 2007-2015

#### Honors/Awards

NYWEA Service Award

#### Memberships

National Society of Professional Engineers  
New York State Association for Recycling  
New York Water Environment Association, Inc.  
Water Environment Federation

#### Selected project experience:

- Project Director for the preparation of engineering design report and design plans and technical specification for the STP upgrade/expansion project for the Village of Washingtonville, Orange County, New York. Project responsibilities included grant application preparation, SEQR determinations, NYSDEC/NYSEFC review and approval and public bidding for \$10.5 million construction project.
- Project Director for preparation of infiltration/inflow study for the Town of Stony Point sewer collection system in Rockland County, New York. Responsibilities include managing field crews, interpreting field data and review and approval of study report for submittal to NYSDEC on behalf of the Town.
- Managed design and construction oversight for \$11 million upgrade to nine sanitary sewage pump stations and sewerline rehabilitation projects for Town of Clarkstown, Rockland County, New York.
- Upgrade of sewage treatment facilities at the Village of Great Neck, Nassau County. Included odor control equipment, tertiary sand filter, trickling filter cover dome, chlorination building and feed equipment, pump station upgrades and force main replacement.
- Design plans and specifications modifications to the sewage treatment facilities at Suffolk County Community College-Selden Campus. Included the addition of nitrification/denitrification facilities to meet stringent groundwater discharge requirements.
- Resident Engineer of the Southold Scavenger Wastewater Treatment Plant responsible for construction oversight, operator training, startup, and troubleshooting for the facility.
- Managed the pretreatment program and provided operation consultation for the 8.0 MGD Haverstraw Wastewater Treatment Plant, Rockland County. Managed replacement of pumps, controls and motor control centers at main pump station and relocation of primary trunk interceptor around perimeter of 60-acre landfill.
- Project Director for Rockland County Sewer District No. 1 project to prepare design plans and specifications for public bidding of rehabilitation/replacement of 90 rotating biological contactor units at 28.5 MGD POTW (Publicly Owned Treatment Works).
- Project Manager for three phases of the multi-year program by the Inc. Village of Great Neck to clean and televise the entire wastewater collection system. Each phase included the design for rehabilitation based on the findings of the prior phase.
- Project Manager for various design and construction projects in the Town of Clarkstown, Rockland County to include drainage, flood remediation, commuter parking lot, ambulance corps building, police communications center and landfill remediation.



## Patricia DelCol

### *Municipal Market Director*

Ms. DelCol has over 30 years of experience in municipal management, specifically in the areas of engineering, environmental protection, solid waste/recycling, and overall municipal operations, finance, and management. As Municipal Market Director, Ms. DelCol manages the H2M Municipal Market in both New York and New Jersey in the management of many of our clients and identifying and pursuing new engineering and architectural opportunities.

#### Experience

H2M  
Town of Huntington  
Covanta Babylon, Inc.  
Town of Babylon

#### Education

M.A., Zoology and Cell Biology; Long Island University  
B.S., Biology and Environmental Science; Long Island University

#### Memberships/Awards

Leadership Huntington Foundation, Member, Board of Directors  
Give A Dog A Dream, Member, Board of Directors  
Evan R. Liblit Memorial Scholarship Steering Committee, SUNY Stony Brook, Member  
Walt Whitman High School Hall of Fame Inductee, 2018  
Town of Huntington Woman of the Year, 2017  
Long Island Sanitation Officials Association, Past Vice President

#### Selected project experience:

- Deputy Supervisor, Town of Huntington: Preparation and ongoing oversight of annual \$190 million operating and \$15 million capital budget over a ten year period, project management of all capital program improvements, and of overall day to day operations within the Town. Liaison to all Municipal, County, State, and Federal regulatory agencies.
- NYSERDA NY Prize Community Microgrid Project Liaison: The \$26 million microgrid will employ a mix of technologies that will provide electricity and thermal energy to Town Hall, Huntington Hospital, Huntington Wastewater Treatment Plant, Huntington YMCA, and the Flanagan Senior Center. The microgrid will be powered by a new near zero emission fuel cell, energy storage, solar photovoltaics, and combined heat and power plants that use natural gas and biogas produced by the Town's wastewater treatment plant to produce both electric and thermal energy to the microgrid customers.
- Director of Engineering Services, Town of Huntington: \$16 million expansion of the Dix Hills Ice Rink, negotiated Project Labor Agreement, new construction of adjoining building for new sheet of ice, locker room facilities, retrofit to existing facility including upgrades to dehumidification, HVAC, and refrigeration controls and systems.
- Design oversight and construction management of over \$40 million in state-of-the-art parks and recreation facilities at Manor Field Park, Veterans Park, Breezy Park, Heron Park, Peter Nelson Park including synthetic turf field and field lighting installs, concrete skate park, parking facilities expansion, spray park, play surface and playground installation, comfort stations, landscaping, walking paths, utility coordination and interconnects.
- Management oversight of \$10 million roadway construction including \$6.5 million reconstruction of Walt Whitman Road through ARRA stimulus grant award funding. Roadbed regrading and resurfacing, drainage enhancements, traffic signal install, construction of new frontage at Canon USA, various utility coordinations. Reconstruction of the Mill Dam Causeway in Centerport including the addition of sidewalks, decorative street lighting, and new bulkheading.
- Business Manager, Covanta Babylon: Facility operations, maintenance, contract compliance, vendor negotiations, facility purchases and spare parts inventory, collective bargaining agreement negotiations, scalehouse operations of 750 ton per day Waste to Energy Facility.
- Director, Environmental Control, Town of Huntington: Oversight of nitrogen removal upgrades to the 2.5 million gpd Huntington Sewage Treatment Plant, municipal waste delivery collection operations, marketing of spot waste, recycling programming, household hazardous waste disposal, environmental and bay management programming.
- Procurement, vendor selection, permitting and commercial operation start-up of \$350 million in newly constructed Waste to Energy Facilities in Huntington and Babylon Towns. Negotiation of ash disposal, ferrous recycling, and waste delivery contracts, monitoring of facility operations for service agreement compliance.





## Steven C. Hearl, P.E., LEED AP, CCCA

*Vice President*

*Department Manager – Collection & Conveyance Systems*

Mr. Hearl has over 35 years of engineering experience in the planning, evaluation and design of wastewater treatment facilities and wastewater collection and conveyance systems. His responsibilities include the preparation of plans, specifications, and bid documents, plant operation consultation, design of treatment systems, piping and pumping systems, sewer system evaluation and rehabilitation, feasibility studies, capital and operating cost opinions, permit applications, groundwater quality/discharge monitoring reports, preparation of operation and maintenance manuals, and construction administration including review of contractor submittals and schedules.

### Experience

H2M  
City of San Diego Water Utilities  
Department

### Education

M.S., Civil Engineering, Clarkson  
University  
B.S., Civil and Environmental  
Engineering, Clarkson College

### Licenses/Certifications

Professional Engineer: NY, NJ  
Construction Contract Administrator,  
CSI  
LEED Accredited Professional, USGBC  
OSHA 10 Training

### Offices Held

Water Environment Federation, Long  
Island Chapter, Director  
Construction Specifications Institute,  
Long Island Chapter, Director and  
Secretary  
Leadership Huntington, Director and  
Secretary  
Clarkson Alumni Association, Long  
Island Chapter, President  
Huntington Township Chamber of  
Commerce, Director

### Memberships

American Society of Civil Engineers  
American Water Works Association  
Connecticut Water Pollution  
Abatement Association  
Construction Specifications Institute  
Water Environment Federation  
Chi Epsilon and Tau Beta Pi  
Leadership Huntington

### Selected project experience:

- Project manager for preparation of a feasibility study for a sewer district extension to service the Wyandanch commercial corridor and Town of Babylon solid waste management facility and project manager for the design of the pump stations and force mains that were each approximately 5,000 feet long.
- Project manager for the Nassau County DPW; construction of the Locust Valley pump station and force main; improvements to the East Hills pump station, and improvements to three pump stations in the Glen Cove service area.
- Project manager for the following projects in the Riverhead Sewer District: Replacement of the Cranberry Street pump station; improvements to the Middle Road pump station; replacement of the Riverside Drive pump station; improvements to the Raynor Avenue pump station.
- Lead design engineer for an extension of the Village of Patchogue Sewer District. The design included a new wastewater pump station, gravity sewers and low-pressure sewers.
- Project manager for the improvements to the influent pump station at the Haverstraw Joint Regional Sewage Board sewage treatment plant.
- Project manager for the improvements to the Red Brook Road and Steamboat Road pump station; improvements to the Spring Lane pump station in the Inc. Village of Great Neck.
- Project manager during design & construction for improvements to the: Inc. Village of Great Neck Sewage Treatment Plant and Picadilly Road Pump Station; Pilgrim Psychiatric Center 1.25 MGD wastewater pump station and 4.5 mile force main connection to SCSD No. 3
- Lead design engineer for the 100,000 gallons per day Wastewater Treatment Plant (WTP) for the F.S. Gabreski Airport, Westhampton Beach, New York. The treatment plant design utilized sequencing batch reactor technology to provide nitrogen removal prior to groundwater discharge. Coordinated the design of the new wastewater collection system for the airport which included 7,500 feet of gravity sewer, 6,900 feet of force main and a wastewater pump station.
- Identified locations at the Oyster Bay Sewer District sewage treatment plant where flood doors should be installed and where access doors should be raised to improve resiliency against flooding.
- As part of sanitary sewer evaluation projects, identified locations in the Oyster Bay Sewer District and Huntington Sewer District where water tight manhole covers or manhole inserts should be installed to reduce inflow from flooding during storm events.

## Steven C. Hearl, P.E., LEED AP, CCCA



### Honors/Awards

Distinguished Service Award, LIWEA, 2013

Clarkson University Alumni Association Golden Knight Award 2015

### Selected project experience, continued:

- Project Manager for Evaluation of the interceptor sewer to the Parsippany-Troy Hills Wastewater Treatment Plant.
- Project manager for the Tanger Mall at the Arches pump station and force main connection to Suffolk County Sewer District No. 3
- Project manager for multiple sanitary sewer cleaning and televising programs in the Huntington and Oyster Bay Sewer Districts.
- Project manager for sewer flow capacity evaluations for Huntington and Oyster Bay Sewer Districts and the Borough of Washington.
- Project manager for preparation of facility plan, design and construction of nitrogen removal facilities at the 1.8 MGD Oyster Bay Sewer District WTP.
- Project manager during design and construction of UV disinfection system at the Huntington Sewer District WTP.
- Project manager for preparation of facility plan report to install nitrogen removal facilities at the Huntington Sewer District WTP.
- Project manager for infrastructure issues as part of the consultant team updating the Town of Brookhaven Comprehensive Plan.
- Lead design engineer for the Riverhead Sewer District Phase II Commercial Sewer District Extension. The project included the design of approximately 8,000 feet of gravity sewer, approximately 4,700 feet of force main and a wastewater pump station.
- Resident engineer for the East Hampton Scavenger Waste Treatment Facility.
- Design engineer for the Blower/Thickener/Control Building, thickened sludge holding tank and sludge holding tank odor control system at the Suffolk County DPW Port Jefferson wastewater treatment plant.
- Conducted a capacity analysis of the conveyance route from proposed development located at outer boundary of the Huntington Sewer District to the treatment plant. Identified sewers with insufficient capacity, described alternatives for increasing conveyance capacity, prepared cost opinions of alternatives and managed improvements design.
- Infiltration/inflow study for the Rockland Psychiatric Center sewage collection system, included more than 40,000 linear feet of piping ranging from eight to 18 inches in diameter. Coordinated field work consisting of flow measurements during low flow periods, manhole inspections, smoke testing and the services of a television inspection contractor. Prepared engineering report that summarized existing conditions, identified areas requiring rehabilitation and prepared cost opinion for the recommended improvements; prepared bid documents.
- Project manager for U.S. Postal Service projects: design and construction of truck wash facility at a P&DC facility, prepared engineering report, application and plans for the sewer connection of a P&DC to a municipal sewer district; plans for replacement of existing wastewater pump station serving Jersey City International and bulk mail facility; plumbing designs for new facilities and handicap accessibility bathroom renovations.



#### Experience

H2M  
Environmental Assessments &  
Remediations

#### Education

B.S., Environmental Engineering, State  
University of New York at Buffalo

#### Licenses/Certifications

Professional Engineer: NY  
Project Management Training  
Program, H2M

#### Memberships

Water Environment Federation

## Nicholas F. Bono, P.E.

### *Senior Project Engineer – Wastewater Engineering*

Mr. Bono has 17 years of experience. His responsibilities include engineering design and preparation of bid ready plans and specifications, contract administration/inspection services and project management and sub-consultant coordination on sanitary wastewater projects consisting of gravity sewer collection systems, low pressure sewer collection systems, pumping stations, force mains and sanitary treatment systems. He is also experienced in the preparation of engineering feasibility studies, map and plans and engineering design reports to establish new sewer districts and identify potential out-of-district connections to existing sewer districts to improve environmental, economic and social conditions in un-sewered areas.

#### Selected project experience:

- Senior Project Engineer for the design and construction administration of the primary and secondary settling tank improvement project at the Glen Cove Wastewater Treatment Plant. Responsible for coordinating the preparation of detailed design plans and specifications for the complete replacement of the secondary settling tanks, rehabilitation of the primary settling tank clarifiers, replacement of the primary settling tank clarifier drives and complete replacement of the primary forward flow 24-inch diameter isolation plug valves located in the basement of the Glen Cove Wastewater Treatment Plant headworks building. The design tasks specifically included the preparation of a technical design report, refined project construction cost opinions throughout the duration of the design, a PLA feasibility study, evaluation of existing facility record document information and use of laser scan survey information to prepare accurate design documents. Mr. Bono was also responsible for the review and comment of all technical shop drawing submissions during the construction phase of the project and coordination with the client's construction manager. Mr. Bono provided recurring project updates to the client at monthly progress meetings throughout the duration of design and construction. Construction is currently ongoing.
- Senior Project Engineer for the design of the sludge dewatering facility improvement project at the Glen Cove Wastewater Treatment Plant. Responsible for the coordination of detailed design plans and specifications for the demolition, rehabilitation and process improvements to the existing abandoned DAF building located at the Glen Cove Wastewater Treatment Plant. The design tasks included detailed evaluation of new process equipment and coordination with equipment manufacturer's to include the re-use and reassembly of existing client-owned belt filter press dewatering equipment from the Bay Park Sewage Treatment Plant to the Glen Cove Wastewater Treatment Plant. Additionally, Mr. Bono was responsible for the preparation of a technical design report, refined project construction cost opinions throughout the duration of the design, a PLA feasibility study, evaluation of existing record document information for the abandoned DAF building and existing belt filter press equipment. Mr. Bono will also be responsible for the review and comment of all technical shop drawing submissions during the construction phase of the project and coordination with the client's construction manager. He also provides recurring project updates to the client at monthly progress meetings throughout the duration of the project. Construction is anticipated to begin sometime in 2017.
- Project Engineer for the Suffolk County Sewer Capacity Study. Evaluated all seven areas of interest for sanitary sewer collection, conveyance and treatment systems. Identified nearby existing treatment facilities with close proximity to each area as well as vacant/municipal owned land in the vicinity of each area and determined the most feasible treatment option based on available capacity, complexity and associated costs. Determined the most feasible collection and conveyance system layouts based on the accepted treatment facility location and prepared overall project cost opinions. Projected project phasing plans and schedules and evaluated cost impacts to "typical" property owners to assist in the economic analysis portion of the sewer capacity analysis. Attended public meetings with stakeholders to present the findings of the study, field questions and incorporate the needs of the community stakeholders into the final findings reports.



## Nicholas F. Bono, P.E.

### Selected project experience, continued:

- Project Engineer for the preparation of the Feasibility Study and Map & Plan for the East Main Street out-of-district sewer connection to the Inc. Village of Patchogue Sewer District. Identified this area as an out-of-district connection from one municipality to another, which in turn required the creation of an inter-municipal agreement between the Town of Brookhaven and Village of Patchogue. Projected sanitary flows based on potential future development of the proposed out-of-district connection, and evaluated sanitary collection system alternatives based on local topography and site logistics to determine the most feasible option. Identified necessary improvements to the existing Village infrastructure to accommodate the additional flow from the out-of-district connection. Created sewer layouts, prepared cost estimates for project construction and conducted contract administration and inspection services during all phases of construction.
- Project Engineer for the preparation of the Map & Plan for the formation of a sewer system in the Incorporate Village of Mastic Beach. Mr. Bono's responsibilities included working with the Village to establish the service area boundary, calculating sanitary wastewater flow projections, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, associated scheduling components, cost escalation and financing alternatives. He also assisted in the preparation of the Environmental Assessment Form (EAF) to initiate the State Environmental Quality Review Act (SEQRA) process.
- Project Engineer for the preparation of the Map & Plan to establish a municipal sewer system in the Incorporate Village of Southampton. Mr. Bono's responsibilities included working with the Village to establish the service area boundary, calculating sanitary wastewater flow projections, evaluation of collection system alternatives, planning for preliminary wastewater collection, conveyance and treatment infrastructure, and determining project cost opinions, cost escalation, user charges by property type, associated scheduling components, and financing alternatives.
- Project Design Engineer for the Howell Avenue sanitary pump station located in the Riverhead Sewer District. The design tasks included evaluation and selection of mechanical equipment, pump station facility layout and piping, utility upgrades and pump station site plan. Involved in the preparation of the final project plans and specifications. Conducted a post design energy audit and coordinated with the local electrical utility (LIPA) to submit this project under the 2011 Commercial Efficiency Program resulting in a rebate equal to approximately 5 percent of the total construction cost.
- Project Engineer for the design of two out-of-district sewer connections for the Smithtown and Kings Park main street business districts to Suffolk County Sewer District No. 6 – Kings Park. The design tasks included the evaluation of area topography, identification of the preferred collection and conveyance systems, area-wide sewer layouts, mechanical equipment sizing/selection, utility upgrades, pump station design, preparation of final plans and specifications and sub-consultant coordination. Assisted in the preparation and submission of environmental impact data for SEQRA compliance.

Prior to H2M, Mr. Bono prepared and supervised investigations to delineate the nature and extent of subsurface contaminants, prepared designs for groundwater remediation systems, supervised construction activities during the installation of remediation systems, trained field personnel to properly operate the remediation systems, and prepared project summary reports for residential, commercial and government clients. Additionally, Mr. Bono also operated numerous environmental remediation systems and was responsible for maintenance of equipment, analyzing laboratory data, and making adjustments needed to maintain efficient and effective treatment.



## Gregory J. Levasseur, P.E.

### *Discipline Engineer – Wastewater Engineering*

Mr. Levasseur has 15 years of engineering experience in the planning, engineering design, and contract administration of wastewater treatment plants, gravity sewers, low pressure sewer systems, force mains, and pumping stations. His responsibilities include the preparation of plans, specifications, and bid documents, design of treatment systems, piping and pumping systems, feasibility studies, capital and operating cost opinions, preparation of operation and maintenance manuals, and construction administration including review of contractor submittals and schedules.

### Selected project experience:

- Suffolk County Sewer District (SCSD) No. 18 Collection System Expansion - Project manager responsible for preparing plan and profile drawings for approximately nine miles of gravity sewer ranging from eight to 18 inches in diameter and four miles of force main piping ranging from four to 10 inches in diameter. Prepared design of three wastewater pump stations (PS No. 1 – 0.28 MGD, PS No. 2 – 2.07 MGD, PS No. 3 - 0.85 MGD) including the evaluation and selection of mechanical equipment, pump station facility layout and piping, utility upgrades and pump station site plan.
- Riverhead Sewer District Howell Avenue Pump Station Replacement - Project manager/resident engineer responsible for the design of the 2.88 MGD pump station that includes four new VFD controlled submersible sewage pumps. He was also responsible for construction administration and construction observation of the new 16-inch diameter directional drilled force main, pump station, demolition of the existing pump station and abandonment of the existing force main.
- Heatherwood Golf Course Sewer Connection – Project manager the preparation of the engineering design report for the wastewater connection of the Heatherwood Ponds planned retirement community (PRC). The design flow is 50,000 gallons per day. He managed the preparation of the preliminary layout and basis of design for the pump station and force main in conjunction with the proposed site development plan. As required by the Department of Public Works, he conducted a hydraulic evaluation of the ability of the existing 4,000 feet of 8-inch and 10-inch diameter sewers downstream of the point of the force main connection to convey the additional flow.
- Spring Meadow at Hauppauge - Project manager/resident engineer responsible for the construction administration services and construction observation during the construction phase of the installation of the new 2,500 linear foot four-inch diameter force main and 122,000 gpd pump station and the decommissioning of the existing extended aeration wastewater treatment plant.
- SCDPW Selden Treatment Plant - Resident engineer responsible for the daily inspection duties including all aspects of on-site construction supervision and management for the upgrade of the headworks equipment and sludge dewatering at the 2.36 MGD sequencing batch reactor treatment facility. He prepared partial payments, change orders, and inspection reports, review and approval of shop drawing and contract construction revisions. He also prepared the operation and maintenance manual.
- SCSD No. 18 WWTP Upgrade – Lead Design Engineer responsible for preparing the hydraulic calculations for the mechanical design of the expansion of 250,000 gpd sewage treatment facility to 1.88 MGD advance wastewater treatment facility. The design included: three basin sequencing batch reactors, pre-equalization tanks, post-equalization tanks, aerated waste activated sludge (WAS) holding tanks and an operations building to house the process blowers, gravity belt thickener, polymer feed equipment, lab area, motor control centers, and preparation of the final design construction cost opinion.

#### Experience

H2M

#### Education

B.S., Civil Engineering, University of Hartford

Certificate in Construction Management

#### Licenses/Certifications

Professional Engineer: NY, CT  
Project Management Training Program, H2M

#### Memberships

American Society of Civil Engineers  
Water Environment Federation

#### Awards

Board of Director Service Award,  
NYWEA



## Gregory J. Levasseur, P.E.

### Selected project experience, continued:

- NCDPW, Continental Villas – Lead Design Engineer responsible for the design of a packaged membrane biological reactor treatment plant. The design included a flow equalization/influent pump station, flow metering, sludge storage, a prefabricated concrete building to house electrical facilities, lab area, toilet facilities, generator and control panels, and UV disinfection. The design flow is 15,000 gpd.
- Rockland County Sewer District Flow Analysis: The study includes an inflow and infiltration study of all existing sewers and data monitoring of the 12 existing pump stations located within the district. Also involved in inspections of over 800 manholes throughout the sewer district.
- Riverhead WWTP – Project manager/resident engineer design of the replacement of the belt filter press. The design included renovations of the existing belt filter press room and conversion of the secondary digester to sludge holding tank. He was also involved in the construction administration portion of this project including submittal and shop drawing review; and performed construction inspection, monitored field-testing, and coordinated project meetings to ensure quality control during construction.
- Port Jefferson WWTP Upgrade – Project engineer/assistant resident engineer involved in the construction administration portion of this project including submittal and shop drawing review; and part time resident engineer: performed construction inspection, monitored field-testing, and coordinated project meetings to ensure quality control during construction.



## James M. Vierling, EIT

### *Project Engineer*

Mr. Vierling is responsible for the design and construction administration of various projects associated with wastewater collection, conveyance, and treatment systems. He is involved in the preparation of specifications, plans, bid documents, design reports, cost estimates, and construction administration including the review of contractor submittals, schedules, and payment requests.

### Selected project experience:

#### Experience

H2M

#### Education

B.S., Bioengineering, State University of New York at Binghamton

#### Licenses/Certifications

Engineer-In-Training: NY

#### Memberships

Water Environment Federation

- Village of Patchogue River Avenue Sewer Extension: Staff/field engineer responsible for the individual property inspections and coordination with homeowners for the installation of low pressure sewer system (LPSS) grinder pump station connections from 55 properties to a low pressure sewer line in the street. During this project he acted as the point of contact for the private property owners who were going to be impacted by the project to schedule a site visit or ask questions about the project. The site visits included documenting existing conditions, taking photographs, explaining the construction and connection process to the homeowners, and using a handheld GPS to locate the sewer lateral, septic tanks to be abandoned, the incoming electrical service, home electrical panels, and other utilities or conditions that could affect the installation of the LPSS Grinder Pump Station. After each private property was surveyed he created a connection plan and site visit report based on the existing site conditions for each home.
- Village of Patchogue South Ocean Avenue Pump Station Elimination: Worked as a staff/field engineer for the connection of existing sanitary laterals to a new gravity sewer and elimination of the existing pump station in the road. He was responsible for organizing and receiving shop drawings and submittals from the contractor as well as construction inspection during the installation of 700 feet eight inch diameter gravity sewer, connection of 18 existing sanitary building laterals, and the decommissioning of the pump station that was previously used to convey flow to the downstream manhole. He prepared daily inspection reports cataloging the work completed, quantities used and workers present.
- Heatherwood House at Ronkonkoma STP: Worked as staff/field engineering during the construction of a new 30,000 gpd treatment plant to replace the existing treatment plant on-site. He was responsible for construction administration including shop drawing review and management. He was also responsible for construction inspection including inspection of internal and external building plumbing, equipment installation, concrete work, treatment process piping, and electrical work. He prepared daily inspection reports cataloging the work completed and workers present.
- Village of Ocean Beach Replacement of Primary Settling Tank Equipment: Worked as staff engineer on preparation of the design to replace the sludge collection equipment in the two primary settling tanks at the wastewater treatment plant.



## Sarah Monastero

*Staff Engineer 1*

Ms. Monastero is a recent graduate of Stony Brook University, where she was involved in an accelerated B.E./M.S. Civil Engineering Program and specialized in Environmental Engineering/Water Resources. While at Stony Brook, she acted as a Research assistant to Dr. Xinwei Mao for the Center for Clean Water Technology. She assisted graduate students with their environmental engineering research projects, and researched components of dissolved organic nitrogen to determine effects on algal growth

### Experience

H2M  
Stony Brook University

### Education

B.E.; Civil Engineering; Stony Brook University

### Memberships

New York Water Environment Association  
American Society of Sanitary Engineering  
American Society of Civil Engineering

### Selected project experience:

- Structural Engineering Intern, H2M architects + engineers: Assisted engineers on site visits by taking and recording measurements, performed beam design and stress analysis calculations, utilized Revit and AutoCAD to draft details and plans for projects.
- Research Assistant, Stony Brook University: Research assistant to Dr. Xinwei Mao for the Center for Clean Water Technology. Researched components of dissolved organic nitrogen in order to determine effects on algal growth.
- Engineering Mentor, TechPREP Summer Camp, Stony Brook University: Assisted TechPREP instructors with assigned engineering sessions in the Innovation Lab, planned and led interactive STEM-related activities for participants, and supervised and guided middle school participants.





## Abigail M. Zammiti, E.I.T.

*Staff Engineer 1*

Ms. Zammiti is a Staff Engineer within our Wastewater division. She works closely with municipal, real estate, and water/wastewater clients. Her experience includes assisting with preparation of design calculations, plans, design reports, cost estimates and planning specifications for various wastewater infrastructure projects.

### Selected project experience:

- Heatherwood Communities – Colony Park Wastewater Treatment Plant Process Upgrade; Town of Islip, NY: Staff Engineer responsible for developing a Revit model to create existing and proposed plans for the treatment plant's upgrade. Assisted with design calculations, cost estimates and support department coordination.
- Nassau County Department of Public Works – Five Towns Drainage Improvements: Cedarhurst Stormwater Pump; Nassau County, NY: Staff Engineer responsible for developing a Revit model for plan creation of a new pump station designed to mitigate flooding along Peninsula Boulevard and surrounding areas. Managed project coordination between support departments within and outside of H2M.
- The Shelter Group – Brightview at Port Jefferson 37,000 GPD BESST Wastewater Treatment Plant; Port Jefferson Station, NY: Aided in plan creation for The Shelter Group's new assisted living facility's wastewater treatment plant. Also assisted in project coordination and technical specification preparation.
- Suffolk County Department of Public Works – Patchogue River Watershed Sewer Project; Patchogue, NY: Aided in plan creation of over 500 residential connections to new and existing low pressure sewers.
- Suffolk County Department of Public Works – SCSD No 6 Smithtown Main Street Sewer; Smithtown, NY: Conducted a hydraulic analysis of a low pressure sewer's demand on Smithtown Main Street and is currently evaluating the possible redesign of SCSD No 6 to include flows created from the Smithtown Main Street area.

#### Experience

H2M

#### Education

B.S.; Civil and Environmental Engineering; Villanova University

#### License/Certifications

Engineer in Training: NY

#### Memberships

Water Environment Federation



## Matthew R. Mohlin, P.E.

### *Assistant Vice President, Civil Department Manager*

Mr. Mohlin has more than 30 years of civil engineering experience. His responsibilities include the management of all municipal civil engineering design projects. He also served as a project manager for multiple projects that include the analysis and design of roadways, parking lots, paving; site grading; drainage and sanitary systems, flood control systems, parks and recreational facilities, irrigation systems, bulkheads and docks, and the preparation of designs, site plans, specifications, and reports. He is Project Manager on numerous projects, some of which are listed below.

#### Selected project experience:

- NYCHA: Investigation and design services associated with the remediation of site flooding due to perched groundwater at Stapleton Houses in Staten Island. Improvements included a subsurface collection system that discharged into NYC sewers.
- NYCHA: Design of a new, natural grass baseball field and exercise track at Throggs Neck Houses in the Bronx. New site amenities incorporated into the design include equipment storage shed, bleachers, electronic scoreboard, dugouts, and drinking fountain.
- Battery Park City Authority: Civil Engineer for the development of a conceptual resiliency plan for a portion of Battery Park City. The conceptual design identified viable routes for approximately 1,500 feet of barrier wall along waterfront locations, West Side Highway, and Chambers Street based on topography and existing infrastructure. Additionally, the design included an assessment of numerous barrier technologies that could potentially be utilized along the proposed route.
- NYC DDC: Completion of an infrastructure study for an entire block of homes within Sheepshead Bay, Brooklyn. As part of the installation of sanitary sewers associated with the construction of the sewage treatment plant in Coney Island in the 1970's, several roads were elevated, leaving 40 homes approximately 4 feet below street elevations. Half of these homes have no street frontage and are accessed only via pedestrian walks. All homes are served by privately owned sewers and utilities and the areas is subject to frequent flooding and sewage back-ups. Many of these homes were damaged during Superstorm Sandy and were being raised and reconstructed as part of the New York City Build it Back Program. In connection with the improvements to the individual homes, Mr. Mohlin completed a comprehensive study of the existing privately owned infrastructure serving all 40 properties to recommend improvements to the storm and sanitary sewers and water mains.
- DASNY: Design services related to the reconstruction of approximately 2 miles of roads within the College of Staten Island. The overall project included drainage improvements, traffic calming and re-alignment of several horizontal curves to improve safety.
- Town of Hempstead: The development of a comprehensive drainage analysis for the entire hamlet of Oceanside. This project was identified in the NY Rising Community Reconstruction (NYRCR) Plan dated March 2014 as part of the Governor's Office of Storm Recovery (GOSR). This study is intended to help rebuild a more resilient community in response to the severe damage caused by Hurricane Irene, Tropical Storm Lee, and Superstorm Sandy. This study was commissioned by the Town of Hempstead to evaluate existing drainage infrastructure for known flooding locations and to recommend improvements throughout the study area to improve resiliency following rain events and coastal storms. The scope of work included computer modeling of numerous drainage systems within the overall 3,500 acre watershed with recommendations to improve resiliency following storms and coastal flooding events.
- City of New Rochelle: Design of drainage improvements for a 2,000 acre watershed. The existing system encompasses over 5,900 linear feet of storm drain pipe which range in size from 12 to 66 inches in diameter including a 55 inch x 38 inch box culvert. Significant flooding occurred during heavy rain events. Much of the existing pipe and infrastructure was undersized or structurally deficient. Improvements included replacement of most of the existing infrastructure with larger and hydraulically efficient piping systems.

#### Experience

H2M  
Gibbons, Esposito and Boyce, P.C.

#### Education

B.S., Civil Engineering, Polytechnic University

#### Licenses/Certifications

Professional Engineer: NY

#### Memberships

American Society of Civil Engineers  
American Public Works Association

#### Honors/Awards

American Society of Civil Engineers,  
Student Chapter, Meritorious Service,  
1989



## Matthew R. Mohlin, P.E.

### Selected project experience, continued:

- DASNY: Project Manager and civil engineer for the replacement of a salt storage facility at the Staten Island Developmental Disabilities Service Office. The project included asbestos abatement, new timber salt storage building, and brine collection system.
- Village of Hempstead: Design services for the reconstruction of a 160 stall municipal parking field serving Village Hall, police station and public library. The project included drainage improvements and the installation of a centralized parking meter system.
- Suffolk County Department of Public Works: Civil engineering design associated with the remediation of a 45 acre property in East Patchogue including a 2,500 foot section of Mud Creek that traverses the property. The site had previously operated as a duck farm and has since been abandoned. The County acquired the property and intends to convert the site into a new County park. The design included removal of dilapidated buildings, invasive species and debris, re-alignment of Mud Creek, construction of a new box culvert, parking, hiking trails and interpretive exhibits.
- Town of Clarkstown: Design of an 8 foot x 4 foot box culvert under Lake Nanuet Drive, Nanuet. The box culvert was warranted to alleviate flooding of Lake Nanuet Park. During Hurricane Irene, flooding caused premature closure of the park's swimming pool. Work included preparation of drainage easements on private property and relocation of numerous utilities to accommodate the new culvert.
- Nassau County Department of Public Works: Drainage improvements to alleviate street flooding on Main Street, East Rockaway, NY, including re-alignment of drainage pipes and reconstruction of several drainage structures.
- Suffolk County Department of Public Works: Design of the replacement of two drainage culverts and modifications to the Northeast Branch of the Nissequogue River for the purpose of lowering groundwater elevations in the surrounding areas. Modifications to the river included removal of man-made sediment deposits and upland drainage improvements to prevent future deposition of sediment, and evaluation of improvements to Millers Pond and Hallock Acres subdivision to alleviate flooding and high ground water conditions.
- Wetlands Preserve in West Hills: Design of over one mile of handicap accessible nature trails throughout the 10.6 acre site located at the northeast corner of Jericho Turnpike (NYS 25) and Paumanok Drive adjoining the Walt Whitman High School. Site contains numerous environmental features such as kettle holes, freshwater wetlands, and sloped woodlands. Paths were designed to create the least disruption to natural site features, while providing the best vantage points for viewing unique ecological communities.
- Inc. Village of Bayville: \$2.5 million of drainage improvements for the Valentine Beach area, including eliminate flooding and improve water quality of storm water runoff that was ultimately discharged into surrounding surface waters.
- Inc. Village of Great Neck: Annual roadway improvement program totaling over \$12 million to date. Work included curb and sidewalk improvements, asphalt paving and drainage improvements.
- Synthetic Athletic Field Projects: Tarrytown, Kings Park, Mount Sinai, Hewlett Woodmere, Baldwin, Island Trees, South Huntington and Smithtown School Districts - overseeing the replacement of the existing grass athletic field with new synthetic turf football/soccer field with associated drainage system improvements for the new field.



## Christopher M. Kobos, PMP

*Director of GIS Services*

Mr. Kobos is a GIS professional with over 18 years of experience providing technical guidance and project management of municipal and private sector GIS technology projects. Previously Vice President of GIS Services at a different firm, Mr. Kobos now serves as the Director of GIS Services for H2M. In this new role, he has technical direction over a group of GIS analysts and specialists and is responsible for the continued development and maintenance of technical competencies with industry standard GIS software, cloud platforms, and software required for successful GIS solution delivery. In addition, Mr. Kobos will communicate directly with clients and coordinate with the H2M corporate division and market leader with the goal of integrating GIS practices and techniques into the primary technical functions of the firm. Mr. Kobos' extensive experience servicing private clients and all levels of municipal government, lends itself to a unique perspective on the client business needs and most appropriate procedures for delivering high quality, effective consulting products and services.

### Experience

H2M  
Bowne Management Systems, Inc.  
Colgate University

### Education

B.A. Environmental Geography,  
Colgate University

### Licenses/Certifications

Project Management Professional  
ArcGIS I Authorized Trainer

### Memberships

Long Island GIS  
Project Management Institute

### Selected project experience:

- Project Manager for the Riverhead Water District's GIS integration and mobile access project. H2M evaluated, digitized and linked the District's existing Record Plans and As-Builts to its revised GIS schematic. The GIS distribution system map and associated images were then migrated to the ArcGIS Online cloud to enable mobile access. ArcGIS Online has extended the reach of the District's GIS map to all personnel, both in the office and in the field. The ArcGIS Online map contains all desktop layers, including water mains, valves, fire hydrants & plant sites. Nearly 1,000 scanned records were attached to the GIS data. The attached features allow District personnel to instantly access and view documents and plans in the field, even when disconnected from the District's network. Utilizing Esri's Collector app on mobile devices, District personnel can maintain hydrant flushing, hydrant maintenance and valve maintenance logs in the field. District personnel can populate data and attach pictures in the field, available to office personnel upon synchronization.
- Project Manager for the Stormwater Consortium of Rockland County's WQIP grant-funded MS4 mapping project. Mr. Kobos is responsible for coordinating with the client, Cornell Cooperative Extension, and the SCRC's 23 consortium member communities. Additionally, he manages data assembly, conversion, and consolidation efforts as well as overall project budget, resources allocation, and overall client satisfaction.

### Selected project experience prior to H2M:

- Supervised a GIS technical group including GIS technical specialists, analysts, application developers, database administrators, and field data technicians.
- Managed corporate ESRI Business Partnership and Value Added Reseller (VAR) program participation.
- Managed NYSDEC WQIP grant-funded MS4 Stormwater mapping program project for the Town of North Hempstead and its 21 consortium Villages. Responsibilities included overall project management, municipal outreach and coordination, GIS data analysis, gap analysis and reporting, and resource management for field data collection, and outfall reconnaissance inventory (ORI) activities.
- Managed all aspects of the Town of Oyster Bay's GIS program, including coordination and lead of monthly GIS committee meetings, business needs assessment, budgeting, resource allocation, and overall GIS program quality management, and client satisfaction.

## Christopher M. Kobos, PMP

### Selected project experience:

- Coordinated and managed third-party technology integration projects. Integrated RDBMS technology examples include enQuesta utility billing, NYS Real Property System (RPS) and Govern Real Property.
- Led a GIS data development team working for the NYC Fire Department (FDNY) in the development of revised EMSCAD dispatch zones, known as Atoms. This high-precision data work contributed to a reduction in City-wide emergency response by nearly a full minute





## Melisa Ennella, GISP

### *GIS Specialist*

Ms. Ennella is a Geographic Information System (GIS) Specialist responsible for the development and maintenance of GIS that provides water districts, wastewater facilities and villages with digital maps that provide an accurate and up-to-date representation of the in-field conditions throughout their boundaries. In addition, she is responsible for constructing user-friendly intranet systems that provide water supply and wastewater facilities with an organized database of essential information, manuals and maps at the click of a mouse.

#### Experience

H2M  
Plainview Water District  
Laurel Environmental

#### Education

M.S., Environmental Science, Long Island University at C.W. Post  
B.S., Environmental Science, State University of New York at Binghamton

#### Licenses/Certifications

Certified Geographic Information System Professional, GISCI

#### Memberships

Geographic Information Systems and Mapping Operations (GISMO)  
Long Island Geographic Information Systems  
New York State Geographic Information Systems Association

#### Articles/Papers

Smart Planning Eases Implementation of Useful Computer Technology. Talk of the Towns, March/April 2010.  
Utilizing Geographic Information Systems to Analyze Suffolk County Groundwater Contamination. Long Island University C.W. Post Library, May 2005.

### Selected project experience:

- Hicksville Water District, South Farmingdale Water District, Greenlawn Water District, South Huntington Water District and Riverhead Sewer District – Asset Management. Development of an Internet Explorer-based Asset Management System that allows for easy access to Operation and Maintenance manuals and other relevant records. This is a user-friendly system providing for an expanse of data that can be accessed through the District's network.
- West Hempstead, Greenlawn, Dix Hills, Plainview, South Farmingdale, Bethpage, Saint James, and Manhasset-Lakeville Water Districts – GIS Development: Design, setup and development of water utility GIS. GIS data sets created and maintained include water mains, valve, hydrants, plant sites, well locations, etc. overlaid with land base data such as tax parcels, roads, buildings, etc. The GIS is used by each district for various purposes such as improving their operational capabilities, linking with accounting software, tracking of maintenance information such as main breaks, leaks, complaints, etc.
- Huntington and Oyster Bay Sewer District – GIS Development: Design, setup and development of wastewater utility GIS. GIS data sets created and maintained include sewer pipe, force mains, and manholes. Pipe installation date, pipe material and length are also available which allows for fast and simple record keeping and viewing.
- Greenlawn Water District, Bethpage Water District and South Farmingdale - Mobile GIS Solution: Maintain and update the Districts Arcgis Online map, which allow for access to infrastructure data and supporting documents in the field. The system uses the District's existing GIS data and allows the users to track water system maintenance information, geo-tag photos, review field operations from the office.
- Borough of Washington, New Jersey – Capacity Study. Utilized GIS to provide a capacity in order to assess the wastewater treatment capacity needed to accommodate both existing and future development in the Borough.
- Town of Brookhaven – Comprehensive Plan. Created GIS layers with location of existing infrastructure and assisted in establishing back-ground layers to be utilized in updating the Town's Comprehensive Plan.
- North Patchogue, Ridge, Bay Shore and Hampton Bays Fire Districts –Fire District Mapping: Preparation of GIS-based fire district map, including wall-size maps and book maps. GIS mapping allows for simplified updates in the future and integration with response software.
- Breezy Point Cooperative - GIS Development. Performed GIS digitization of utilities including water, electric, telephone, gas and various other layers.
- Massapequa and Hicksville Water District: Plume Mapping. Mapping of Groundwater Contamination Plumes. Development and preparation of groundwater contaminant plume maps using GIS.



## John Schnurr, P.L.S.

### *Assistant Vice President, Land Surveying Group*

Mr. Schnurr has over 48 years of diversified experience in the survey profession. His experience spans the public and private sectors and includes expertise in site/civil engineering. Mr. Schnurr has an extensive background in both the office (technical and legal) and in the field. He is experienced with GPS, Total Station and conventional survey equipment, related software and AutoCADD applications.

#### Selected project experience:

- NYCHA - Throggs Neck Houses, Dewey Avenue, Bronx, NY: Completed topographic mapping of four acres at the Throggs Neck Houses. The mapping was required for the anticipated construction of a sports complex and included all subsurface utilities, spot elevations with a one foot contour interval, existing apartment buildings, walkways, fences, trees and plantings, existing playgrounds, asphalt parking fields with parking stalls indicated.
- NYCHA - Queensbridge South Apartments, Queens, NY: Completed a boundary survey of 4.8 acres for the NYCHA and New York City Parks Department. The survey was for the preparation of maps and metes and bounds descriptions for the transfer of title of lands between the two NYC agencies. Survey included mapping of property that was last mapped in 1939 and included portions of the elevated Ed Koch Queensboro Bridge Roadway to 41st Avenue. The survey also included the area from 12th Street to 21st Street.
- Directed the topographic and boundary surveying of more than 55 building sites in conjunction with Mayor Bill de Blasio's Housing Recovery Office's (HRO) Build it Back program in Brooklyn, NY. H2M provided the necessary Elevation Certificates, Boundary and Topographic survey information required to work on more than 100 Sandy damaged homes to date. The Build it Back program provides CDBG-DR funding to Sandy impacted homeowners throughout the City for permanent repairs and resiliency measures including home elevations and full reconstructions above the Base Flood Elevation (BFE).
- Expansion and reconstruction of the sewage collection system for the Suffolk County Sewer District No.18 at the Hauppauge Industrial Park.
- Surveying and mapping of over 5800 L.F. of roadways for the upgrading of the sewage collection and pump station upgrades for the Town of Clarkstown, Rockland County, NY.
- Surveying and mapping of over three miles of roadways for Nassau County Department of Public Works, in conjunction with construction of a new pump station and force main located in Locust Valley, N.Y.
- Ongoing topographic surveying and mapping for over 30 acres of environmentally sensitive wetlands, including 11,000 L.F. of the streams at the headwaters of the Nissequogue River. This project is being mapped in concert with the Town of Smithtown, Incorporated Village of the Branch and the Suffolk County Department of Public Works.
- Topographic surveying and mapping of a portion of Stony Brook University, East Campus-Parking Phase 1, which included over 25 acres, 3,000 L.F. of roadways and subsurface utility mapping for the construction of a parking garage, parking fields, recharge basin and modifications to the existing interior roadway configuration.

Prior to H2M, Mr. Schnurr was owner of John Schnurr, PLLC for more than seven years, providing services to land developers, municipalities and the private sector. As such, his work included property development and planning, topographic surveys, boundary surveys and ALTA/ACSM surveys, computations and mapping, preparation of legal descriptions, and construction surveying. Prior to his own business he was a partner in two surveying firms overseeing daily office operations and managing groups as large as six field crews. Some of his projects included:

#### Experience

H2M

John Schnurr, PLLC

Young & Young Surveying & Engineering

Nelson & Pope Engineering & Surveying

#### Education

A.A.S., Civil Engineering Technology,  
Nassau County Community College

#### Licenses/Certifications

Professional Land Surveyor: NY

#### Memberships

New York State Association of  
Professional Land Surveyors

Nassau-Suffolk Civil Engineers, Inc.,  
Past President

National Society of Professional Land  
Surveyors



## John Schnurr, P.L.S.

### Selected project experience, continued:

- Subway tunnel alignment in New York City under the South Street Seaport prior to construction for the South Street Seaport.
- Director of survey and mapping for the development of a proposed major mall at Parr Meadows Racetrack, Town of Brookhaven.
- Director of survey and mapping for numerous subdivisions, both single family and multi-family, as well as commercial projects.



## Constance M. Vavilis

### *Senior Environmental Planner*



#### Experience

H2M  
NYCDEP Bureau of Environmental  
Planning and Analysis  
NYCDEP Bureau of Water and Sewer  
Operations

#### Education

B.A., Environmental Studies, Natural  
Resources Concentration, SUNY  
Binghamton

With more than 17 years of environmental review and planning experience, Ms. Vavilis has extensive expertise in managing both the State Environmental Quality Review Act (SEQRA) and the City Environmental Quality Review (CEQR) environmental review processes. Her primary responsibilities include providing SEQRA procedural guidance, scoping environmental analyses approaches, and preparing environmental assessments including environmental assessment forms (EAFs), supplemental environmental analyses, and environmental impact statements (EIS) for the full range of H2M public and private sector clients. Ms. Vavilis previously served in the NYCDEP Bureau of Water and Sewer Operations as the Division Director of Strategic Planning and Analysis, where she managed a staff of 40 professionals and was responsible for bureau environmental planning, policy analysis, strategic project management, metric reporting, and GIS mapping and at the NYCDEP Bureau of Environmental Planning and Analysis (BEPA) where she managed SEQRA, CEQR, and climate change resiliency programs.

#### Selected project experience:

- Confidential Long Island Utility Company SEQRA and Permitting: Ms. Vavilis is the term contract manager for this on-call environmental services contract. For this assignment, Ms. Vavilis scopes environmental review efforts for a variety of project types and leads the preparation of SEQRA and environmental permitting documentation for a large utility client in connection with their Long Island-wide capital program. Permitting efforts include Coastal Zone Consistency assessments, tidal and freshwater applications.
- Town of Smithtown Comprehensive Plan Environmental Impact Statement (EIS): Ms. Vavilis is serving as the project manager for the Generic EIS for the Town of Smithtown's update of their comprehensive plan. The Generic EIS includes analyses the build out of comprehensive plan policies and related zoning changes across the range of SEQRA disciplines, including for example, land use, zoning, socioeconomics, visual resources, cultural resources, traffic, water supply, wastewater, stormwater drainage and solid waste management.
- NYCDEP In-City Water Supply Resiliency (DEIS): Ms. Vavilis served as the H2M SEQRA team lead for NYCDEP In-City Water Supply Resiliency Draft Environmental Impact Statement (DEIS) for which H2M was a subconsultant. Ms. Vavilis authored the water supply and sanitary sewer infrastructure chapter which examines the potential impacts from operation of the DEP in-city groundwater well systems on water supply and collection systems. Ms. Vavilis developed the analytical framework for the natural resources assessment, and provided guidance to the H2M design team to facilitate communication of scenarios and technical design work relevant SEQRA and CEQR.
- Battery Park City Authority (BPCA) Resiliency Concept Plan Evaluation: Ms. Vavilis served as Project Manager of the team that vetted the preliminary concept plan for BPCA that would protect its northern borders from coastal flooding. The project report put forth the preliminary evaluations of various flooding mitigation strategies, and identified key planning considerations, permits, approvals and appropriate coordination associated with siting such facilities.
- Fire and School District Bond Referendum Environmental Reviews: Ms. Vavilis serves as environmental review lead for SEQRA reviews of large school bond and fire district capital improvement projects. Work includes coordinating with client's attorneys, classifying the projects pursuant to SEQRA criteria, preparation of short and long EAFs and supplemental analyses, participation in site planning to minimize environmental disturbances where possible, identification of environmental permitting requirements, and coordinating reviews among involved agencies where applicable.



## Constance M. Vavilis

### Selected project experience prior to H2M:

- EIS for New York City Tunnel No. 3, Stage 3 Manhattan Leg Shaft 33B Project: Managed preparation of EIS for site selection for a shaft facility for City Tunnel No. 3. The EIS analyzed environmental characteristics and potential project impacts at multiple sites within Manhattan and provided a comparative analysis of the sites to support selection of the preferred site. A robust community outreach program was conducted including several meetings and presentations with community groups, as well as the formal public scoping session and EIS related public hearings.
- EIS for South Richmond Watershed Drainage Plans: Project Manager for the completion of the FEIS for this that contemplated the implementation of the Bluebelt program utilizing natural water courses and wetlands areas in combination with storm sewers to manage stormwater. Received, reviewed, and collated public comments, and drafted and coordinated responses. Facilitated coordination with NYSDEC on freshwater and tidal wetland applications and requirements.
- EIS for No. 7 Extension and Hudson Yards Rezoning and Redevelopment Program: Served as DEP lead environmental review contact working on this transformative city redevelopment project with the NYC Department of City Planning and Metropolitan Transportation Authority. NYCDEP served as the expert agency reviewer and approver for several EIS technical areas including water and sewer infrastructure, water quality impacts, air, noise, and hazardous materials impacts.
- CEQR Environmental Assessment for Multiple NYCDEP projects: Ms. Vavilis served as project manager and executive project manager for varying city projects including pump station upgrades, aqueduct facility rehabilitation, shaft site remediation and rebuilding programs, watershed waterfowl management programs, and storm sewer build out and stormwater outfall construction. Responsibilities included scoping the environmental review process, determining appropriate analytical methods, reviewing and approving reports, and permitting coordination. Ms. Vavilis coordinated CEQR reviews among multiple city agencies and worked with project engineers to ensure that technical review comments were incorporated into project designs.
- Southeast Queens Stormwater Initiative: Ms. Vavilis served as Director of Strategic Planning and Program Manager for a comprehensive program to improve stormwater management in Southeast Queens, NY, utilizing a range of strategies including enhanced inspection and maintenance programs, short sewer extensions, large capital trunk sewer build out and green infrastructure. This included development of an approach to prioritize investments to focus early spending on areas most in need.
- Municipal Separate Storm Sewer Systems (MS4) Permit Coordination: Ms. Vavilis served as Director of Strategic Planning and took part in the negotiation of NYC's first MS4 permit. She served as lead representative for the Bureau of Water and Sewer Operations and initiated development of several programs for the Bureau to facilitate compliance. Ms. Vavilis also lead the GIS mapping task to produce a final map that increased the accuracy of the City's MS4 sewer shed as required by the MS4 permit.
- Flood Mitigation Planning and Coastal Resiliency: As Chief of Staff, Ms. Vavilis participated in various stormwater flooding mitigation analyses and studies to determine solutions in areas with recurring problems. She led the development of NYC's first coordinated flash flood emergency plan, which formalized readiness and mitigation activities. As part of this assignment, drainage areas and catch basins throughout the city that were susceptible to flooding from heavy rains were identified and procedures were put in place to enhance their performance. Ms. Vavilis was the primary author of DEP's Homeowners Guide to Rain Event Preparedness, providing practical tips to homeowners concerned about stormwater flooding in their homes. Ms. Vavilis also participated on NYC's City's Climate Change Adaptation Task Force prior to Hurricane Sandy, and worked on resiliency plans and special studies after the storm.

**Experience**

H2M

**Education**

B.S., Environmental Design, Policy, and Planning; Stony Brook University

## Angelica Apolaris

### *Staff Environmental Planner*

Ms. Apolaris serves as a staff environmental planner responsible for preparing State Environmental Quality Review Act (SEQRA) documents including Environmental Assessment Forms (EAF) and Environmental Impact Statements (EIS). In this capacity, she performs technical research and writing for environmental analyses, and assists in developmental and implementation of project plans at various levels. Ms. Apolaris also has experience and actively works with Geospatial Information Systems (GIS) performing mapping and spatial analyses for various projects. Ms. Apolaris has recently received her Bachelor's Degree in Environmental Design, Policy and Planning from the School of Marine and Atmospheric Sciences at Stony Brook University, in which the curriculum's concentration was to address sustainability in regard to development, management, and use of the built environment.

### Selected project experience:

- Town of Smithtown - Smithtown Comprehensive Plan and Generic EIS; Smithtown, NY: Participated in development of methodology for Draft Generic EIS approach. Work included collection of existing conditions data including land use, demographics, cultural resources, and environmental characteristics.
- Confidential Utility- Wetland Permitting Support: Conduct field work, prepare mapping and report documentation for Freshwater and Tidal Wetland permit compliance reporting to New York State Department of Environmental Conservation (NYSDEC).
- Garden City Park Water District – Bond Project, Garden City Park, NY: Preparation of Full EAF and Negative Declaration for Unlisted Action under SEQRA for the District involving the capital improvements at multiple locations throughout the District required to facilitate emerging contaminant treatment and maintain a state of good repair on key district assets.
- City of New Rochelle – Downtown Sanitary Sewer Improvements: New Rochelle, NY: Preparation of Full EAF and Negative Declaration for Unlisted Action under SEQRA for the City involving upgrades to its existing aging sanitary sewer infrastructure in key areas to support development in its downtown area. The project involved upgrade of approximately 20,670 linear feet of sanitary sewer main and replacement of 120 sanitary sewer manholes.
- New York Institute of Technology (NYIT) Old Westbury Campus –Consistency Assessment: Old Westbury, NY: Conducted assessment to analyze changes to Campus master plan build out as analyzed under a previous study. Identify consistency and compliance strategies to mitigate potential impacts associated with project changes and prepared SEQRA documentation for Lead Agency review.
- Municipal Separate Storm Sewer Systems (MS4) Permit Coordination, Multiple Clients: provide Stormwater Management Program Plan (SWMP) coordination, reporting and preparation the MS4 Annual Report. Work with clients throughout Long Island and Westchester to provide technical assistance throughout the reporting period to implement goals of the SWMP.
- Plainview Water District - Bond Project; Plainview, NY: Preparation of short EAF and Negative Declaration for Unlisted Action under SEQRA for the District involving the installation of wellhead treatment for emerging contaminants in drinking water supplies.
- White Plains School District - Stormwater Management Plan (SWMP): Develop a Stormwater Management Plan for this non-traditional MS4 which will be implemented in accordance with the NYSDEC State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-003. Work includes the research of the geographic areas on concern, identify pollutants of concern and receiving waters, as well as coordinating and communicating with the client.
- Stormwater Pollution Prevention (SWPPP) Inspections: Performs weekly SWPPP inspections for several large projects including monitoring erosion and sediment control practices during construction phases. Projects include the Whole Foods Market construction in Garden City, Brightview Senior Living facility construction in Sayville, Malverne High School Fine Arts Center construction in Malverne and Woodcrest Apartments construction in Oceanside.



## Timothy J. Hazlett, Ph.D.

### *Hydrogeology & Water Resources Modeling Practice Leader*

Dr. Hazlett is an accomplished mining, water, and environmental sector consulting executive with experience in strategic marketing, business development, operations, P&L, business expansion, software sales, client and vendor relations, legal and lawsuits, HR, and contracts. Persuasive and visionary leader with a proven track record in achieving positive business results by developing strategic business alliances, identifying new markets, developing business processes, and bringing creative solutions to solve clients' problems.

#### Experience

H2M  
 HydroGeoLogic  
 DHI Group  
 Ardaman & Associates  
 Hazlett-Kincaid, Inc. (HKI)  
 Environmental Resources  
 Management, Inc. (ERM)

#### Education

Ph.D. Hydrogeology, Johns Hopkins University  
 M.A., Hydrogeology, Johns Hopkins University  
 M.S., Geological Engineering, University of Missouri  
 B.S., Geology, Rensselaer Polytechnic Institute

#### Licenses/Certifications

Hazardous Waste Operations and Emergency Response, OSHA 40 hr  
 OSHA 10 hr Construction Safety & Health

#### Publications & Presentations

Water Resource Management Optimization Utilizing Cloud Computing Systems, NGWA, 2015.  
 Innovative Management Optimization Approaches for Supporting Environmental Restoration, Contaminated Site Management: Sustainable Remediation & Management of Soil, Sediment and Water, 2015

#### Selected project experience prior to H2M:

- 20+-year career focused on numerical methods, specialized software development and sales, and boutique consulting applied to geoscience and engineering consulting problems in the mining, water, and environmental sectors. Specific expertise in finite elements, karst, springs, and thermal/density instabilities.
- Advised HydroGeoLogic, Inc. (HGL) and researched and developed a 5-year strategic business plan to transition the water and environmental modeling business to a modern model of software and service offerings, along with plans for new market penetration, portfolio diversification, partnering, and risk mitigation.
- Created and launched global mine water management services group in Lakewood, CO for DHI's North American subsidiary (~\$6M software and services company with nine offices in the US and Canada). Developed business with multiple mining sector clients in the US, S. Africa, Indonesia, S. America, and the DRC.
- CEMEX Quarry, Inglis, Levy County, FL, 2008. Supervised development of operational dewatering model, including consideration of karst features using MODFLOW.
- Cypress Lake Well Field, Osceola Co., FL, 2008. Preliminary water resource modeling for 34mgd AWS for Orlando.
- East Side Access (ESA) Project, NY, NY, 2001-2005. Modeled using FEFLOW cut-and-cover dewatering operations and fate and transport for multiple plumes in Sunnyside Yard in support of the largest transportation project in NYC history. Also modeled moving face of TBMs for well permitting in support of tunneling.
- Integrated Watershed Management Plan Modeling, Collier County, FL. (2010 – 2012). Integrated groundwater-surface water modeling project (~\$3.3M) that evaluated various water issues within Collier County, FL and surrounding areas.
- Integrated Mine Water Management, Freeport-McMoRan, Democratic Republic of Congo, 2012. Proposed and sold project and multiple phases of work to client. Performed technical oversight of the development of integrated groundwater and surface water process models (MIKE SHE) with respect to dewatering, pond sizing, and stream rerouting. Analyzed existing models and shortcomings.
- Integrated Mine Water Management, Gamagara Mine, South Africa, 2012. Conceptualized and sold an integrated mine water management project at the Gamagara Mine, where major river losses to underground workings were causing huge dewatering costs and flooding.
- Mine Water Management, South Africa, 2012. Developed and sold mine water management services to BHP-Billiton coal mining operations in South Africa. Several large sections of the underground mine required decanting under controlled conditions.



## Timothy J. Hazlett, Ph.D.

### Selected project experience, continued:

- Defense Supply Center Philadelphia (DSCP), PA, 1999-2007. A DoD site with the largest Light Non-Aqueous Phase Liquid (LNAPL) plume in the State of Pennsylvania. The DoD is under Consent Order by the State to clean up the plume and characterize and model the site.
- Hercules Quarry, Stockertown, PA, 2000. Performed a FEFLOW groundwater flow model study of the effects of drawdown to the water table due to pumping at a limestone and cement rock quarrying operation located in a karst area in northeastern PA. The model was optimized using PEST.
- Saltwater Intrusion Modeling, Walton County, FL, 2005. For the North West Florida Water Management District from the upper Floridan Aquifer, 100 year pumping scenarios were evaluated in a region near Ft. Walton Beach. The groundwater flow was simulated in MODFLOW and the density-dependent saltwater problem was modeled using DSTRAM.
- Density Reduction Groundwater Resource (DRGR) Plan, Lee County, FL. (2008 – 2010). Directed integrated gw/sw modeling project where balanced land use scenarios were quantitatively evaluated among mining, urbanization, and natural with respect to optimal outcomes for groundwater supply in the DRGR.
- Pennridge Wellhead Protection, Bucks Co. PA, 2005. For a small community in PA, developed a wellhead and aquifer protection model utilizing HKI's coupled geologic modeling and finite element modeling. The geology of the study area was very complex and included extensive folding, faulting, and fracturing.
- Source Water Protection Modeling, High Springs, FL, 2004. Modeled using FEFLOW a complex karst system feeding multiple springs along the Santa Fe River, including spring water source springs for Coca-Cola.

**Experience**

H2M  
WSP/LBG

**Education**

B.A., Geology; Hartwick College

**Licenses/Certifications**

Professional Geologist: PA

## Karen Benson, P.G.

### *Water Practice Leader*

Ms. Benson is a hydrogeologist with 23 years of diverse experience working with a variety of water systems and assisting clients in navigating and responding to ongoing and ever-changing requirements. She offers significant experience working with New Jersey water purveyors for compliance with the Safe Drinking Water Act (SDWA). In addition, Ms. Benson has extensive experience conducting hydrogeologic investigations of aquifer and well yields for groundwater supply development, primarily in the New Jersey and New York area. Her experience includes designing and implementing well rehabilitation programs; supervision and implementation of water production well design and installation; and planning, testing, and permitting of water allocation permits.

### Selected project experience prior to H2M:

- Park Ridge Water, Hydrogeological Services; Park Ridge, NJ: Served as Project Manager for various hydrogeological services over a 10-year period that included completion and permitting of a replacement well; update of groundwater resource assessment for the service area; evaluation of water department regarding compliance with federal and state SDWA requirements; continuous review of water quality data to assist with operational and maintenance issues as well as to track any changing source quality issues; and assistance with preparation of sampling plans, permit renewals, and correspondence with the New Jersey Department of Environmental Protection (NJDEP) on a variety of issues.
- Ridgewood Water, Hydrogeological Services; Ridgewood, NJ: Project Manager responsible for hydrogeological services for 10+ years. Respassessing well operational and well performance data for a system with over 50 wells. Designed and worked to implement a phased plan of well assessment and rehabilitation, assessment of inactive wells as part of ongoing plan to restore them to service. Reviewed water quality data to ensure compliance with the SDWA and assess changes in source water quality.
- Ho-Ho-Kus Water, Hydrogeological Services; Ho-Ho-Kus, NJ: Project Manager for hydrogeological services. Evaluated Water Department regarding compliance with federal and state SDWA requirements; conducted a continuous review of water quality data to assist with operational and maintenance issues, as well as to track any changing source quality issues, including emerging PFAS contaminants; and assisted with preparation of sampling plans, permit renewals, water conservation plans, and correspondence with the NJDEP on a variety of issues.
- Parsippany-Troy Hills Water, Hydrogeological Services; Parsippany, NJ: Served as Project Manager for a variety of hydrogeological services. Project scopes involved developing well rehabilitation plans, including development of technical bid specifications, contractor selection, and project oversight. Completed a well assessment program, including well testing, rehabilitation, and plans for well replacements.
- East Orange Water, Hydrogeological Services; Essex County, NJ: Served as Project Manager for various hydrogeological services over a 10-year period, starting with a desktop wellfield assessment of 18 wells completed in buried glacial valley deposits and bedrock aquifers. Developed and managed a comprehensive testing, rehabilitation, and well replacement program to allow for maximizing the well capacities while minimizing water quality issues. Developed an interim well operational protocol for maintaining water quality prior to completion of system treatment, and assisted operations in tracking blending of water from active wells to meet drinking water standards.
- Monroe Township Utility Department, Hydrogeological Services; Monroe Township, NJ: Project Manager responsible for hydrogeological services for 10+ years. Responsibilities included coordination and management of the siting, drilling, testing, and permitting of a two supply wells for incorporation into a public community water supply system as part of a water allocation transfer.



## Karen Benson, P.G.

### Selected project experience prior to H2M, continued:

- Confidential Client, Water Supply Development; Moncks Corner, SC: Project Manager that coordinated and managed the siting, drilling, and testing of a deep supply well used to develop an industrial water supply source. Aquifer testing of the supply well was completed and the results used to develop a locale specific numerical model. The results of the modeling were used in conjunction with the analyses of the testing data in support of a groundwater withdrawal permit for use of the supply well.
- Township of New Windsor, Water Supply Development; New Windsor, NY: Coordinated and assisted with the design of a groundwater exploration program to expand the existing public community water supply sources. Availability for potential for developing additional groundwater supplies locations within the Town were limited, so the initial exploration program focused on the use of angle drilling to explore potential deposits underlying the Hudson River. Assisted with the management of the exploration, development, and testing of a five million gallon per day groundwater supply within a local river valley using three supply wells.

## Jennifer Mesiano Higham

jennifer@jmesiano.com

631-827-5104

### FOUNDER AND PRINCIPAL

2002 - present

### MESIANO CONSULTING, INC.

Setauket, NY

- Built small business from one client to a diversified base of public and private firms. Responsible for grant awards totaling in excess of \$75M for municipal, education and non-profit agencies across a wide variety of disciplines. Each project demands intensive research and collaboration with technical experts and executive leadership. Topical areas include:
  - Hazard mitigation
  - Water quality, environmental protection
  - Wastewater treatment
  - Public safety, law enforcement, homeland security
  - Traffic safety, traffic calming, pedestrian infrastructure, community walkability
  - Arts, including the arts as an economic development strategy
  - Economic development and downtown revitalization
  - Records management
  - Local government efficiency/shared services
  - Renewable energy and energy conservation
  - Strategic planning
  - Municipal capital projects
  - Health care education
  - Workforce development
- Conduct highly collaborative grant development process responsive to client capacity needs, with services including research, strategy, decision support, community engagement, writing, project management, and interagency relations.
- Provide project implementation and compliance management on active grant awards
- Major funded collaborations include:
  - \$72,400 Town of East Hampton CPF for Sag Harbor Sewer Master Plan (2020)
  - \$191,000 Town of East Hampton CPF for Town Pond Dredging (2020, pending Town Board Resolution)
  - \$85,000 Suffolk County Downtown Revitalization for East Hampton Village Dominy House restoration (2019)
  - \$66,112 Suffolk County Water Quality to East Hampton Village for Herrick Park I/A system (2020)
  - \$433,807 NYS and Suffolk County funding for Lake Agawam and Old Town Pond water quality projects and planning initiatives (four awards made in 2019 and 2020)
  - \$5,000,000 NYSDEC to Village of Westhampton Beach for sewer (2019)
  - \$1,784,500 to Village of Westhampton Beach for sewer (2020)
  - \$56,520 NYS LWRP to Village of Westhampton Beach for planning (2018)
  - \$113,370 NYS EPF to Town of Shelter Island for Crescent Beach Comfort Station (2018)
  - \$71,925 Suffolk County Water Quality Protection for Shelter Island planning projects (2020)
  - \$76,875 FEMA Hazard Mitigation to Town of Smithtown for roadway elevation (2019)
  - \$168,75 NYS Companion Animal Capital Fund for Town of Smithtown Animal Shelter (2018)



- \$99,000 in two NYS Cybersecurity awards to Town of Smithtown (2017, 2018)
- \$550,000 in two Zombie and Vacant Property awards to Town of Smithtown (2018, 2020)
- \$10,000,000 NYS Department of Health award to Southampton Hospital for East Hampton Freestanding Emergency Department (2016)
- \$1,000,000 Restore NY award to Southampton Town for an economic development project to demolish and reconstruct two vacant properties in Riverside in accordance with the Riverside Revitalization Action Plan (2018)
- \$800,000 Local Government Efficiency Grant to Town of Smithtown for Regional Highway Services Consolidation (2017)
- \$1.3M over two Local Government Efficiency Awards to Town of Smithtown for Regional Fuel Facility Consolidation, Phases I and II (2015 and 2016)
- \$100,000 NY Prize Community Microgrid Feasibility Study awarded to Town of Southampton to support a feasibility assessment for a community microgrid to support critical facilities in the downtown Southampton Business District consisting of town, school, village, hospital and public safety facilities (2015)
- \$129,000 to Town of Smithtown for Regional Records Management initiative. The Town will expand its centralized records management system to enable partnering villages and fire districts to use the system for secure records storage and retrieval. (2017)
- \$168,800 to Smithtown Animal Shelter for facility expansion under the NYS Companion Animal Capital Fund. The award will support humane care for cats and dogs in the shelter, which serves the town and three villages within the town. (2018)
- Zombie and Vacant Properties Prevention Initiative: \$350,000 to Town of Smithtown and \$175,000 to Town of Southampton to implement projects to prevent and mitigate the problem of vacant and abandoned homes. (2017)
- \$46,000 to Village of East Hampton receives for green stormwater project. The Suffolk County Water Quality Protection and Restoration Program will support bioswales, filtration systems and related improvements that will help to address water quality in Hook Pond. (2015)
- \$1,171,519 awarded to Town of Southampton for Good Ground Park. Four competitive grant awards from Suffolk County, Empire State Development and NYS Department of Parks, Recreation and Historic Preservation for design and development Good Ground Park in Hampton Bays. Good Ground Park is a key element in an ongoing downtown revitalization effort and is envisioned as the downtown anchor that will increase economic activity and livability within the central business district. (2014, 2016)
- \$955,208 NYS Water Quality Improvement Program to Suffolk County for Nissequoque River Northeast Branch water quality improvement program (2014)
- \$887,000 for four awards to install solar and wind power systems in the Village of Sag Harbor, Village of East Hampton, Village of Southampton and Amagansett Fire District under the Recovery Act State Energy Program administered by NYS Energy Research and Development Authority (2010)
- \$516,000 award to Stony Brook University under the NYS Department of Health (NYSDOH) Health Workforce Retraining Initiative to expand Physician Assistant program (2010)
- \$437,000 NYS Department of Transportation Local Safe Streets and Traffic Calming award to the Village of Southampton for capital roadway improvements and pedestrian safety (2010)
- \$3,600,000 FEMA Hazard Mitigation Grant Program award to the Town of Riverhead for the Horton Avenue Flood Mitigation project to purchase and demolish eleven flood damaged homes and construct an engineered wetland on the reclaimed land (2012)

- \$672,000 award to Stony Brook University under the NYS Department of Health’s Health Workforce Retraining Initiative to expand Physician Assistant post-professional program (2012)
- \$140,000 Suffolk County Water Quality Protection and Restoration Program award to Village of Southampton to support stormwater management improvements in the Agawam Lake watershed (2012)
- \$500,000 FEMA Staffing and Recruitment award to the Battalion 13 Recruitment and Retention Committee of Westchester County, consisting of six fire districts and ambulance companies, for three–year regional recruitment and retention program (2012)
- \$146,982 NYS Department of State Local Waterfront Revitalization Program award to the Village of Sag Harbor to support stormwater infrastructure retrofit at Havens Beach (2012)
- \$146,000 Suffolk County Water Quality Protection and Restoration Program award to the Village of Sag Harbor to support stormwater infrastructure retrofits at Havens Beach (2012)
- \$477,500 from the NYS Department of Parks, Recreation and Historic Preservation to restore The Studio, a National Landmark built in 1884 in East Hampton by the artist Thomas Moran and his family (2012)
- \$498,374 from the NYS Department of Transportation Safe Routes to School program to the Village of Southampton to support capital improvements to village roadways to improve community walkability for students and the public. This is the Village’s second award under this program, the first having been awarded in 2008. (2013)
- \$85,875 NYS Local Waterfront Revitalization Program award to the Town of Southampton to support the ongoing Riverside Rediscovered economic development initiative. Funds support planning of a pedestrian footbridge over the Peconic River, connecting downtown Riverhead with a reinvigorated Riverside.
- \$128,519 NYS Parks, Recreation and Historic Preservation award to the Town of Southampton to fund the initial planning and design of Good Ground Park in Hampton Bays. This is a downtown revitalization project years in the making. (2013)
- \$456,807 NYS Office of Parks, Recreation and Historic Preservation Sandy Grant for Historic Properties award to the Town of Southampton for the first phase of work require to lift the historic Tupper Boathouse at Conscience Point 2’ above flood elevation, to be renovated in future efforts as an education facility to interpret the area’s maritime history. (2014)
- \$220,000 FEMA Port Security Grant Program award to Town of Southampton for a shallow water capable Chemical, Biological, Radiological, Nuclear, Explosive patrol and response vessel (2014)
- \$249,473 NYS Environmental Protection Fund for Montauk Lighthouse Keeper’s Quarters restoration (2014)
- \$955,208 NYS Water Quality Improvement Program award to Suffolk County in support of the Nissequogue River Streambed Restoration project, to improve water quality and reduce the frequency and severity of shallow groundwater flooding. Multi-jurisdictional collaboration between Suffolk County, Town of Smithtown, Village of the Branch and engineering firm H2M. (2014)
- \$1,300,000 US Department of Education Health Careers Opportunity Program award to Stony Brook University to provide a more diverse applicant pool of underrepresented individuals in grades 7-12 to pursue careers in the allied health professions (2009)
- Other collaborations:
  - \$62,939 FEMA Assistance to Firefighters grant program to Medford Fire District for communications equipment (2010)

- \$169,000 FEMA Assistance to Firefighters grant program to Patchogue Fire District for communications equipment and firefighting gear (2010)
- \$191,425 FEMA Assistance to Firefighters grant program to North Patchogue Fire District for communications equipment (2010)
- \$52,000 FEMA Assistance to Firefighters grant program to East Marion Fire District for Emergency Medical Services equipment (2010)
- \$20,922 NYS Archives Local Government Records Management Improvement Program award to Village of Sag Harbor for records inventory and needs assessment
- \$40,963 NYS Archives Local Government Records Management Improvement Program award to Village of Southampton for records inventory and needs assessment (2010)
- \$144,750 FEMA Assistance to Firefighters grant program to Hagerman Fire District for self contained breathing apparatus (2011)
- \$83,000 FEMA Assistance to Firefighters grant program to Fishers Island Fire District for firefighter training and self contained breathing apparatus (2011)
- \$38,000 FEMA Assistance to Firefighters grant program to Jamesport Fire District for breathing air supply refilling system (2011)
- \$45,000 three-year award of operating support from New York State Council on the Arts to Southampton Cultural Center (2011)
- \$74,914 FEMA Assistance to Firefighters grant program to Patchogue Ambulance Company to support bloodborne ambulance gear and radio equipment (2012)
- \$47,000 FEMA Assistance to Firefighters grant program to Sayville Fire District for a region-wide air fill station (2012)
- \$79,000 Suffolk County Downtown Revitalization award to Village of East Hampton in support of a lighted crosswalk to improve pedestrian circulation in the Village center (2013)
- \$55,066 FEMA Assistance to Firefighters grant program to the Babylon Village Fire Department for portable and mobile radios and related interoperable communications equipment (2013)
- \$8,000 and subsequent annual awards of \$5,000 to the Southampton Cultural Center for Septemberfest, a cultural tourism project celebrating art, culture and heritage in Southampton Village. This shared marketing initiative encompasses partnerships with multiple government, nonprofit and community stakeholders to boost economic activity during the shoulder seasons. (2010-2014)
- \$25,000 FEMA Assistance to Firefighters Grant award to Jamesport Fire District for personal protective gear (2014)
- \$25,000 FEMA Assistance to Firefighters Grant award to Montauk Fire District for CPR assist devices to aid in delivery of chest compressions (2014)
- \$41,811 NYS Archives Local Records Management Improvement Fund to Village of North Haven to digitize property records (2014)
- \$60,000 NYS Archives Local Records Management Improvement Fund to Village of Sag Harbor to digitize property records (2014)
- \$20,000 Suffolk County Downtown Revitalization award to Village of East Hampton in support of restorations of the historic 1804 Pantigo Windmill. (2014)
- \$16,402 Suffolk County Downtown Revitalization award to Village of Southampton in support of pedestrian improvements to the historic arboretum and public part at the Southampton Arts Center (2014)

- Extensive research, writing and intergovernmental coordination to prepare nine applications to the FEMA Hazard Mitigation Grant Program following Superstorm Sandy. Project types include stormwater and coastal flood mitigation, backup power, regional fuel facility, regional emergency communications.
- Consulting services to engineering firms increase grant development capacity for client projects across market sectors.
- Strategic plan development and executive consulting for community arts organizations.

**ASSISTANT DIRECTOR FOR GRANTS MANAGEMENT  
DEPARTMENT OF PLANNING**

2018-PRESENT

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**STONY BROOK UNIVERSITY HOSPITAL**

- Manage institutionally significant awards relating to health systems transformation and special projects, including COVID response
- Work in cooperation with teams across the health system for grant development and compliance
- Member of strategic planning corporate support team charged with planning and implementation of community needs assessments. Projects to date include:
  - East End Community Health Needs Assessment
  - Nominal Group Process project to collect lived experiences among underserved East End communities from Riverside to Montauk and Greenport
  - LGBTQ+ community health needs assessment
- Coordinate institutional participation in 2020 Suffolk County Hazard Mitigation Plan

**GRANTS COORDINATOR, OFFICE OF THE DEAN**

2011-2018

**PROGRAM ASSOCIATE, CENTER FOR COMMUNITY ENGAGEMENT AND LEADERSHIP DEVELOPMENT**

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**STONY BROOK UNIVERSITY SCHOOL OF HEALTH TECHNOLOGY AND MANAGEMENT**

Stony Brook, NY

- Grants Coordinator for School of Health Technology and Management (SHTM) responsible for supporting faculty efforts to secure funding for research and educational initiatives. Liaison with Research Foundation of SUNY Stony Brook for application submittal and contract administration. Proposal drafting, coordination, budget preparation.
- Program Associate with the SHTM Center for Community Engagement and Leadership Development to establish the Center as a hub for community based participatory research and educational outreach to underserved communities. Strategic planning, partner cultivation, grant development and program development.
- Collaborator on funded proposals (selected):
  - 2017 NYS Governor’s Traffic Safety Committee: Prevention of Drowsy Driving Data Collection, Curriculum Development, Pilot Training and Evaluation Project: \$133,000
  - 2017 NYS Governor’s Highway Safety Association, statewide Drowsy Driving Prevention Social Media Campaign. PI: L. Endee, S. Smith, E. Flynn, P. Linden, R. Rozensky: \$15,000
  - 2017 NYS Department of Education, My Brother’s Keeper: Subaward with Brentwood School District for Health Careers Academic Readiness and Excellence extended school day and mentorship program. PI C. Vidal: \$100,000
  - 2016 NYS Department of Health: Health Workforce Retraining Initiative, \$1.3M across four awards to support post-professional Physician Assistant, Medical Molecular Biology, and Clinical Lab Science workforce education programs. PIs G. Viboud, L. Timko-Swaim, J. Guglielmo.
  - 2016 NYS Nonprofit Infrastructure Capital Investment Program, for capital improvements to Stony Brook Child Care Center: \$500,000

- 2013 SUNY High Needs program to establish Physical Therapy and Clinical Laboratory Science programs at Stony Brook Southampton campus, PI R. Johnson: \$723,453
- 2013 NYS Department of Health: Health Workforce Retraining Initiative to expand the Physician Assistant post professional program, PI L. Timko Swaim: \$649,221
- 2014 NYS Department of Health: Health Workforce Retraining Initiative to expand Occupational Therapy program to Stony Brook Southampton campus: \$127,721
- 2014 NYS Higher Education Services Corporation: College Access Challenge Grant to provide students in high needs school districts access to health career information and college preparation, PI C. Vidal: \$50,000
- 2014 State Farm: State Farm Neighbor Citizenship Grant for distracted driving educational program, PI C. Vidal: \$20,143
- 2014 Stony Brook University Presidential Diversity Grant for Health Career Academic Readiness and Excellence program for high needs school districts, PI C. Vidal: \$1,500
- Facilitator on funded proposals (selected):
  - 2016 NYS Department of Health, Projects to Accelerate Research Translation (PART) and Innovative, Developmental or Exploratory Activities (IDEA) in Spinal Cord Injury (Round 1): Effects of Spinal Electromagnetic Stimulation and Locomotor Training on Motor Recovery and Walking in Incomplete SCI. PI S. Sisto: \$1,095,669
  - 2014 National Institutes of Health: NIH Support for Conferences and Scientific Meetings (R13) for Converging Sciences Summit: Community Engagement and Leadership Development, PI P. Block: \$50,000
  - 2014 Craig H. Neilsen Foundation: Health Outcomes after Locomotor Training across the NeuroRecovery Network, PI S. Sisto: \$298,465
- Facilitator/Coordinator on the following pending proposals (selected):
  - National Institutes of Health, Mobilization for Health: National Prevention Partnership Awards Program. Healthy Lifestyles: Distracted Driving Awareness, PI B. Ellison
  - Coca Cola Foundation: Stony Brook-Pronto Academic Readiness Community, PI C. Vidal
  - NYS Department of Health Stem Cell Opportunities for Precollege Educators: Stem Cell Research Experience for Pre-College Teachers, PI. B. Ellison
  - National Science Foundation Career Development Award: Building the Generation Regeneration, Stem Cell Ethics and Education, PI B. Ellison
  - NYS Department of Health, Institutional Support for Spinal Cord Injury Research: Core institutional Support for Spinal Cord Injury Research, PI S. Sisto
  - Aetna Foundation Regional grant program: Fit Families for Suffolk County, PI S. Martino
  - US Institute of Educational Sciences, Transition Outcomes for Secondary Students with Disabilities: Validation of School Activities and Participation Analysis and Community Activities and Participation Analysis, PI R. Johnson

**GRANTS COORDINATOR**

2004 – 2006

**TOWN OF RIVERHEAD**

Riverhead, NY

- Projects included \$100,000 for Geographic Information Systems, \$100,000 for Pre-Disaster Mitigation Planning, \$40,000 for emergency home repairs for seniors, \$150,000 for senior nutritional services, \$200,000 for Community Oriented Policing Services, among others.

- Duties included grant writing, project management, research, budgeting, reporting and intergovernmental coordination.
- Accomplishments included closing two federal audits and troubleshooting multiple grants that were in non-compliance at the time of my hire. Successfully effected the return of over \$90,000 in previously disallowed costs and preventing the loss of approximately \$500,000.

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**GRANT DEVELOPMENT AND PROGRAM COMPLIANCE REPRESENTATIVE; LABOR SPECIALIST** 12/97-11/04  
**SUFFOLK COUNTY DEPARTMENT OF LABOR** Hauppauge, NY

- Secured over \$650,000 in competitive grants for education, training and disability-related services. Assisted in administering programs with annual formula allocations in excess of \$15 million.
- Recommended agency positioning in anticipation of future funding availability. Collaborated with agency partners to develop and implement new programs. Grants compliance oversight.
- Four years' experience as a counselor assisting a diverse population of low-income individuals to obtain education, mental health and employment-related services.

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**EDUCATION**

- 1996 State University of New York at Plattsburgh. BA in Anthropology. Magna Cum Laude.
- 1995 University of Central Lancashire, England. Exchange in Anthropology/Cultural Studies.
- 1995 El Centro Bilingual y Multiculturales, Cuernavaca, Mexico. Culture and Language Immersion.

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**VOLUNTEER ACTIVITIES**

- Southampton Arts Center, Founders Committee (former). Facilitated completion of regional cultural needs assessment and participated in strategic planning to launch a new arts and culture organization to take over the village-owned historic building at 25 Jobs Lane in Southampton Village.
- East End Transportation Council, advisory to the East End Supervisors and Mayors Association (former).
- Invited panelist, Long Island Center for Nonprofit Leadership at Adelphi University Executives' Roundtable event, "What Works and What Doesn't" in grant proposals, 2012.





H2M includes the following references to attest to our quality of work.

#### **Inc. Village of Westhampton Beach**

Maria Z. Moore, Mayor  
Phone: (631) 288-1654  
Email: [MayorMoore@westhamptonbeach.org](mailto:MayorMoore@westhamptonbeach.org)

#### **Inc. Village of Southampton**

Jesse Warren, Mayor  
Phone: (631) 283-0247x222  
Email: [JWarren@southamptonvillage.org](mailto:JWarren@southamptonvillage.org)

#### **Riverhead Sewer District**

Michael Reichel, Superintendent  
Phone: (631) 727-3069  
Email: [Reichel@townofriverheadny.gov](mailto:Reichel@townofriverheadny.gov)

#### **Inc. Village of Patchogue**

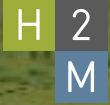
Paul Pontieri, Mayor  
Phone: (631) 475-4300  
Email: [PPontieri@patchoguevillage.org](mailto:PPontieri@patchoguevillage.org)

#### **Suffolk County Department of Public Works (SCDPW)**

Janice McGovern, Chief Engineer  
Phone: (631) 852-4188  
Email: [Janice.McGovern@suffolkcountyny.gov](mailto:Janice.McGovern@suffolkcountyny.gov)







## Project Schedule and Fee Proposal

H2M proposes to perform the scope of work described herein for the lump sum amount of **\$129,500**. Please see the attached table with the breakdown of fees associated with each task included in Tab 2. We propose to complete the draft of the Map and Plan for the Formation of the Downtown Montauk Sewer Area within 6 months from the date of Town Authorization.

H2M has completed several similar plans for the Villages of Patchogue, Bellport, Southampton, Westhampton Beach, and Mastic Beach. The Downtown Montauk Map & Plan is unique because it will contain several added elements, namely:

1. The analysis of the collection system boundaries include areas outside the Downtown Montauk Business District such as Ditch Plains Beach, Town docks and Star Island, and the LIRR train station area.
2. The analysis of the treatment options must include multiple sites such as the landfill/cell tower property, Dock/Star Island area, and Montauk Manor/SCWA property.
3. The potential for reuse of the purified wastewater at Montauk Downs Golf Course has been identified by the Town.
4. The protection of surface waters must be thoroughly investigated and our expertise with groundwater modeling is intended to develop the necessary information that supports grants and low interest loans and comply with the Towns environmental protection concerns.
5. The likely scenario is that the Montauk area sewer service area will be non-contiguous which means that the sewer system analysis is essentially conducted multiple times in that the business area is independent of the Ditch Plains, Town Dock/Star Island area, and the LIRR Train Station area.
6. We expect that several public informational meetings will be necessary requiring us to prepare supporting handouts and PowerPoint presentations. H2M is experienced in these public presentations based on our recent work in the Village of Westhampton Beach and Southampton.

We would be happy to make adjustments to the Scope of Work so that we may meet your budget constraints.



TOWN OF EAST HAMPTON-PURCHASING DEPT. 159 PANTIGO ROAD EAST HAMPTON, NY 11937 PHONE: 631-324-4183 / FAX: 631-324-7895	Page 19 of 28
TITLE: CONSULTING ENGINEERING SERVICES FOR THE MAP & PLAN OF A WASTEWATER COLLECTION SYSTEM FOR DOWNTOWN MONTAUK	RFP NUMBER: RH2020-101

**AFFIDAVIT OF NON-COLLUSION**

I hereby attest that I am the person responsible within my firm for the final decision as to the price(s) and amount of this proposal or, if not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his or her behalf and on behalf of my firm.

I further attest that:

1. The price(s) and amount of this proposal have been arrived at independently, without consultation, communication or agreement for the purpose of restricting competition with any other contractor, proposer or potential proposal.
2. Neither the price(s), nor the amount of this proposal, have been disclosed to any other firm or person who is a proposer or potential proposer on this project, and will not be so disclosed prior to proposal receipt.
3. No attempt has been made or will be made to solicit, cause or induce any firm or person to refrain from proposing on this project, or to submit a proposal higher than the proposal of this firm, or any intentionally high or non-competitive proposal or other form of complementary proposal.
4. The proposal of my firm is made in good faith and not pursuant to any agreement or discussion with, or inducement from any firm or person to submit a complementary proposal.
5. My firm has not offered or entered into a subcontract or agreement regarding the purchase of materials or services from any other firm or person, or offered, promised or paid cash or anything of value to any firm or person, whether in connection with this or any other project, in consideration for an agreement or promise by an firm or person to refrain from proposing or to submit a complementary proposal on this project.
6. My firm has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any firm or person, and has not been promised or paid cash or anything of value by any firm or person, whether in connection with this or any project, in consideration for my firm's submitting a complementary proposal, or agreeing to do so, on this project.
7. I have made a diligent inquiry of all members, officers, employees, and agents of my firm with responsibilities relating to the preparation, approval or submission of my firm's proposal on this project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, act or other conduct inconsistent with any of the statements and representations made in this affidavit.

The person signing this proposal, under the penalties of perjury, affirms the truth thereof.

Steven C. Hearl  
 Signature & Company Position  
 Steven G. Hearl, P.E., LEED AP, UGCA, Vice President  
 Type Name & Company Position  
 H2M architects + engineers  
 Company Name  
 9/22/2020  
 Date Signed  
 11-2235604  
 Federal I.D. Number

SWORN TO BEFORE ME THIS

22 DAY OF September 20 20

Susan L. Jannace  
 NOTARY PUBLIC



24. Has a completion time frame, schedule, expectations been established for submitting draft and final documents deliverable for these Map and Plan services?

Yes. It is found on page 4 of 28 in the RFP.

**ADDENDUM MUST BE ATTACHED TO THE ORIGINAL PROPOSAL SPECIFICATION BOOK, AND RETURNED WITH YOUR PROPOSAL PACKAGE.**

**Addendum #1**

**RFP Name: Consulting Engineering Services for the Map & Plan of a Wastewater Collection System for Downtown Montauk**

**RFP No: EH2020-101**

Please sign below and fax back to 631-324-7895 or email: [jcarroza@ehamptonny.gov](mailto:jcarroza@ehamptonny.gov) by Thursday, July 16, 2020 to confirm receipt of this addendum.



Signature

Steven C. Hearl, P.E., LEED AP, CCCA., Vice President

Print Name/Title

H2M architects + engineers

Company Name

9/22/2020

Date

CERTIFICATE OF LIABILITY INSURANCE

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Greyling Ins. Brokerage/EPIC 3780 Mansell Road, Suite 370 Alpharetta, GA 30022	CONTACT NAME: Nicole Larsen	
	PHONE (A/C, No, Ext): 770-552-4225	FAX (A/C, No): 866-550-4082
	E-MAIL ADDRESS: Nicole.Larsen@greyling.com	
INSURED H2M architects + engineers 538 Broad Hollow Road, 4th Floor East Melville, NY 11747	INSURER(S) AFFORDING COVERAGE	
	INSURER A: Hartford Underwriters Insurance Company	NAIC # 30104
	INSURER B: Hartford Casualty Insurance Company	29424
	INSURER C: Bertley Insurance Company	32603
	INSURER D: Sentinel Insurance Company, Ltd.	11000
	INSURER E: INSURER F:	

COVERAGES CERTIFICATE NUMBER: 20-21 REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

REF LTR	TYPE OF INSURANCE	ADDITIONAL RSR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN. AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PER-ACCIDENT <input type="checkbox"/> LTD OTHER:		20UGAU9233	01/01/2020	01/01/2021	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Per occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADVISORY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMPROP AGG \$2,000,000 \$
D	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIPIED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		20UEGAU7896	01/01/2020	01/01/2021	DEFINIED SINGLE LIMIT (Per accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$10000		20XHGYH2145	01/01/2020	01/01/2021	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 \$
B	WORKERS COMPENSATION AND EMPLOYERS LIABILITY ANY PROFESSIONAL SERVICE EXCLUDED? Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		20WBGAT3285	01/01/2020	01/01/2021	<input checked="" type="checkbox"/> PER PERSON <input type="checkbox"/> OTH ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
C	Professional Liability		AEC903028900	03/15/2019	03/15/2020	Per Claim \$1,000,000 Aggregate \$1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER  Sample Certificate	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE  <i>D.H. Gilling</i>

ACORD

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
3/13/2020

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PRODUCER: Greyling Ins. Brokerage/EPIC, 3780 Mansell Road, Suite 370, Alpharetta, GA 30022. CONTACT NAME: Nicole Larsen, PHONE (A/C No, Ext): 770-552-4225, FAX (A/C, No): 866-550-4082, E-MAIL ADDRESS: Nicole.Larsen@greyling.com. INSURER(S) AFFORDING COVERAGE: INSURER A: Hartford Underwriters Insurance Company (NAIC #: 30104), INSURER B: Hartford Casualty Insurance Company (29424), INSURER C: Markal American Insurance Company (28932), INSURER D: Sentinel Insurance Company, Ltd (11000).

COVERAGES CERTIFICATE NUMBER: 20-21 REVISION NUMBER:

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Table with 7 columns: INSR ITR, TYPE OF INSURANCE, ADDL BUBR INSR WVD, POLICY NUMBER, POLICY EFF (MM/DD/YYYY), POLICY EXP (MM/DD/YYYY), LIMITS. Rows include Commercial General Liability (Policy 20UGAU9233), Automobile Liability (Policy 20UEGAU7896), Umbrella Liability (Policy 2DXHGYH2146), Workers Compensation and Employers' Liability (Policy 2DWBGAT3286), and Professional Liability (Policy MKLM7PL0001888).

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER: For Proposal Purposes Only. CANCELLATION: SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE: [Signature]

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C.  
AND SUBSIDIARIES  
DBA H2M architects + engineers**

**CONSOLIDATED FINANCIAL STATEMENTS  
AND SUPPLEMENTARY INFORMATION**

Year Ended December 27, 2019



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INDEPENDENT AUDITORS' REPORT

To the Board of Directors and Stockholders  
H2M Architects, Engineers, Land Surveying and Landscape  
Architecture, D.P.C. and Subsidiaries  
DBA H2M architects + engineers  
Melville, New York

We have audited the accompanying consolidated financial statements of H2M Architects, Engineers, Land Surveying and Landscape Architecture, D.P.C. and Subsidiaries, DBA H2M architects + engineers (the "Company"), which comprise the consolidated balance sheet as of December 27, 2019, and the related consolidated statements of income and retained earnings and cash flows for the year then ended, and the related notes to the consolidated financial statements.

**Management's Responsibility for the Consolidated Financial Statements**

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

**Auditors' Responsibility**

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

**BEYOND THE NUMBERS...**

ALBRECHT, VIGGIANO, ZURECK & COMPANY, P.C.

245 PARK AVENUE, 39TH FLOOR  
NEW YORK, NY 10167  
T: 212.792.4075

25 SUFFOLK COURT  
HAUPPAUGE, NY 11788-3715  
T: 631.434.9500 F: 631.434.9518

WWW.AVZ.COM  
MEMBER OF THE FIRM OF AVZ INTERNATIONAL

**Auditors' Responsibility** (continued)

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

**Opinion**

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 27, 2019, and the results of its operations and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

**Report on Supplementary Information**

Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The consolidated schedule of operating expenses on page 21 is presented for purposes of additional analysis and is not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the consolidated financial statements as a whole.

*Albert Vignone Jurek & Company P.C.*

Hauppauge, New York  
June 18, 2020

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
**DBA H2M architects + engineers**  
**CONSOLIDATED BALANCE SHEET**  
December 27, 2019

**ASSETS****Current Assets**

Cash and cash equivalents	\$ 2,469,276
Accounts receivable	16,486,566
Contract assets	4,978,963
Notes receivable	301,802
Prepaid expenses	2,253,104
Prepaid taxes	228,860
	<hr/>
Total Current Assets	26,718,571

**Fixed Assets**

3,142,005

**Other Assets**

Notes receivable	824,773
Investment	124,300
Intangible assets	1,276,737
Deposits	94,434
	<hr/>
	<u>\$ 31,980,820</u>

**LIABILITIES AND STOCKHOLDERS' EQUITY****Current Liabilities**

Notes payable	\$ 332,040
Deferred rent	145,655
Accounts payable and accrued expenses	10,735,506
Accrued bonuses	5,635,031
Customer deposits	805,059
Income taxes payable	271
	<hr/>
Total Current Liabilities	17,653,562

**Long-Term Liabilities**

Notes payable	1,020,084
Deferred rent	579,368
Deferred income taxes	1,991,512
	<hr/>
	3,590,964
	<hr/>
	21,244,526

**Commitments and Contingencies****Stockholders' Equity**

Common stock	1,452,956
Paid-in capital	2,609,470
Retained earnings	8,277,334
Treasury stock	(1,603,326)
Noncontrolling interest	(140)
	<hr/>
	10,736,294
	<hr/>
	<u>\$ 31,980,823</u>

See notes to consolidated financial statements.

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
**DBA H2M architects + engineers**  
**CONSOLIDATED STATEMENT OF INCOME AND RETAINED EARNINGS**  
Year Ended December 27, 2019

<b>Gross Revenues</b>	\$ 84,024,651
<b>Direct Expenses</b>	<u>13,494,639</u>
	Net Revenues 70,530,012
<b>Direct Labor</b>	<u>23,539,031</u>
	Gross Profit 46,990,981
<b>Operating Expenses</b>	<u>45,234,625</u>
	Income from Operations <u>1,756,356</u>
<b>Other Income and (Expense)</b>	
Other income	6,153
Interest income	94,998
Other expense	(229,770)
Interest expense	<u>(154,727)</u>
	Total Other Expense <u>(283,346)</u>
	Income before Decrease on Conversion of Stock Appreciation Rights 1,473,010
<b>Decrease in Value of Stock Appreciation Rights on Conversion</b>	<u>1,387,073</u>
	Income before Provision for Income Taxes <u>2,860,083</u>
<b>Provision for Income Taxes</b>	
Current	(71,248)
Deferred	<u>(275,662)</u>
	Total Provision for Income Taxes <u>(346,910)</u>
	Net Income Including the Non-Controlling Interest 2,513,173
<b>Net Income Attributable to the Noncontrolling Interest Entity</b>	<u>869</u>
	Net Income 2,512,304
<b>Retained Earnings at Beginning of Year</b>	<u>5,765,030</u>
	Retained Earnings at End of Year <u>\$ 8,277,334</u>

See notes to consolidated financial statements.

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
**DBA H2M architects + engineers**  
**CONSOLIDATED STATEMENT OF CASH FLOWS**  
Year Ended December 27, 2019

<b>Cash Flows from Operating Activities</b>	
Net income	\$ 2,512,304
Adjustments to reconcile net income to net cash provided by operating activities:	
Bad debts	205,521
Depreciation and amortization	1,178,315
Net income attributable to the noncontrolling interest entity	869
Deferred rent	(148,958)
Deferred income taxes	275,662
Loss on disposal of fixed assets	83,094
Decrease on conversion of stock appreciation rights	(1,387,073)
(Increase) decrease in:	
Accounts receivable	(4,619,834)
Contract assets	307,520
Prepaid expenses	147,216
Prepaid taxes	(58,073)
Deposits	(18,758)
Increase (decrease) in:	
Accounts payable and accrued expenses	1,879,364
Income taxes payable	(27,983)
Accrued bonuses	1,503,226
Customer deposits	16,132
	<u>1,848,544</u>
Net Cash Provided by Operating Activities	<u>1,848,544</u>
<b>Cash Flows from Investing Activities</b>	
Increase in notes receivable	(10,138)
Collections on notes receivable	526,653
Purchase of fixed assets	(1,471,308)
Proceeds from sale of fixed assets	750
	<u>(954,043)</u>
Net Cash Used by Investing Activities	<u>(954,043)</u>
<b>Cash Flows from Financing Activities</b>	
Payments on notes payable	(1,061,237)
Purchase of treasury stock	(421,672)
Proceeds from issuance of treasury stock	970,846
	<u>(512,063)</u>
Net Cash Used by Financing Activities	<u>(512,063)</u>
Net Increase in Cash and Cash Equivalents	382,438
<b>Cash and Cash Equivalents at Beginning of Year</b>	<u>2,086,838</u>
Cash and Cash Equivalents at End of Year	<u>\$ 2,469,276</u>

See notes to consolidated financial statements.

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
**DBA H2M architects + engineers**  
**CONSOLIDATED STATEMENT OF CASH FLOWS**  
Year Ended December 27, 2019

**Supplemental Disclosure of Cash Flow Information**

Cash paid during the year for:

Interest	\$	152,060
Income taxes	\$	157,304

**Schedule of Non-Cash Investing and Financing Activities**

Acquisition of intangible assets:

Purchase of intangible assets	\$	(190,663)
Issuance of treasury stock:		
Less: Decrease in treasury stock		197,703
Plus: Decrease in paid-in capital		(7,040)

Cash Payment for Intangible Assets	\$	<u>-0-</u>
------------------------------------	----	------------

Issuance of treasury stock:

Decrease in treasury stock	\$	1,374,156
Increase in paid-in capital		18,752

1,392,908

Less: Increase in notes receivable		<u>(422,062)</u>
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Cash Proceeds from Issuance of Treasury Stock	\$	<u>970,846</u>
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Purchase of treasury stock:

Purchase of treasury stock	\$	2,084,868
Less: Notes payable		<u>(1,663,196)</u>

Cash Payment for Purchase of Treasury Stock	\$	<u>421,672</u>
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Conversion of stock appreciation rights:

Issuance of common stock for convertible debt	\$	212,523
Notes payable (on initial acquisition of the rights)		<u>(212,523)</u>

Cash Payment for Conversion of Stock Appreciation Rights	\$	<u>-0-</u>
--	----	------------

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
**DBA H2M architects + engineers**  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

**Note 1 - Nature of Business**

H2M Architects, Engineers, Land Surveying and Landscape Architecture, D.P.C. and Subsidiaries, (collectively, the "Company") is a multi-disciplined consulting, architecture, and engineering firm located primarily in the New York metropolitan area. The Company's year ends on the last Friday of December and the period presented consist of 52 weeks for the year ended December 27, 2019.

**Note 2 - Summary of Significant Accounting Policies**

Basis of Consolidation

The consolidated financial statements include the accounts of H2M Architects, Engineers, Land Surveying and Landscape Architecture, D.P.C., its wholly-owned subsidiary, H2M Associates, Inc., and H2M Architects & Engineers, Inc., individually and collectively known as the "Company". H2M Architects & Engineers, Inc. was determined to be a variable interest entity ("VIE"), whereby H2M Architects, Engineers, Land Surveying and Landscape Architecture, D.P.C. is the primary beneficiary (see Note 16). All significant intercompany transactions and balances have been eliminated.

Adoption of New Accounting Standard

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2014-09, "*Revenue from Contracts with Customers (Topic 606)*". The ASU and all subsequently issued clarifying ASUs replaced most existing revenue recognition guidance in U.S. GAAP. The ASU also required expanded disclosures relating to the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The Company adopted the new standard effective December 29, 2018, the first day of the Company's fiscal year using the modified retrospective approach.

As part of the adoption of the ASU, the Company elected the following transition practical expedients: (i) to reflect the aggregate of all contract modifications that occurred prior to the date of initial application when identifying satisfied and unsatisfied performance obligations, determining the transaction price, and allocating the transaction price; and (ii) to apply the standard only to contracts that are not completed at the initial date of application. Because contract modifications are minimal, there is not a significant impact as a result of electing these practical expedients.

The adoption did not result in any change to the beginning retained earnings as of December 29, 2018. The adoption of this standard didn't have a material impact on the 2019 revenue.



**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
DBA H2M architects + engineers  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

**Note 2 - Summary of Significant Accounting Policies (continued)**

Revenue Recognition

The Company derives its revenues primarily from engineering and architectural contract revenue over time, as performance obligations are satisfied, due to the continuous transfer of control to the customer. Certain engineering and architectural contracts are accounted for as a single unit of account (a single performance obligation) and are not segmented between types of services. The Company recognizes revenue using the percentage of completion method. Changes to total estimated contract cost or losses, if any, are recognized in the period in which they are determined as assessed at the contract level.

The Company recognizes revenue for work performed under two major types of contracts: lump-sum and time and materials. Under lump-sum contracts, the Company performs all of the work under the contract for a specified fee. In certain circumstances the lump-sum fee is based on a percentage of the construction cost of the project. Lump-sum contracts are typically subject to price adjustments if the scope of the project changes or unforeseen conditions arise. Under time and materials contracts, the Company negotiates hourly billing rates and charges customers based on the actual time incurred on the project. In addition, clients reimburse the Company for actual out of pocket costs for materials and other direct incidental expenditures incurred in connection with performance under the contract. In some contracts, there is a maximum price established.

For contracts with multiple performance obligations, the Company allocates the transaction price to each performance obligation using an estimate of the standalone selling price of each distinct service in the contract. Revenue recognized on service contracts that have not been billed to clients are classified as a current asset under contract assets on the balance sheet.

The nature of the Company's contracts gives rise to several types of variable consideration, including claims and unpriced change orders. The Company recognizes revenue for variable consideration when it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur. The Company estimates the amount of revenue to be recognized on variable consideration using the expected value or the most likely method, whichever is expected to better predict the amount.

Cash Equivalents

The Company considers all cash investments with an original maturity of three months or less to be cash equivalents. Cash equivalents consist solely of money market funds.

Accounts Receivable

The Company's exposure to credit risk is dependent, to a large extent, on the engineering industry. The Company routinely assesses the financial strength of its customers, and, as a result, believes that its receivable credit risk is limited.

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

**Notes 2 - Summary of Significant Accounting Policies** (continued)

Accounts Receivable (continued)

Accounts receivable, principally trade, are generally due within thirty days and are stated at amounts due from customers net of allowances for doubtful accounts. The Company continuously monitors agings, collections and payments from customers and a provision for estimated credit losses is maintained based on its historical experience and any specific customer collection issues that have been identified.

While such credit losses have historically been within the Company's expectations and the provisions established, the Company cannot guarantee that the same credit loss rates will be experienced in the future. The Company writes off accounts receivable when they become uncollectible.

Fixed Assets

Fixed assets are recorded at cost net of accumulated depreciation and amortization. Depreciation and amortization are computed using the straight-line method over the estimated useful lives which range from four to eight years.

Leasehold improvements are recorded at cost net of accumulated amortization and are amortized over the term of the lease or the estimated life whichever is shorter on a straight-line basis. Expenditures for maintenance and repairs which do not add to the economic life of the asset are expensed as incurred.

Intangible Assets

Intangible assets are comprised of customer lists, which are amortized over 15 years.

Impairment of Long-Lived Assets

The Company reviews the carrying values of long-lived assets for possible impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Any long-lived assets held for disposal are reported at the lower of their carrying amounts or fair value less cost to sell. Management has determined that there have been no impairments of long-lived assets through December 27, 2019.

Income Taxes

The Company accounts for income taxes in accordance with the Financial Accounting Standards Board ("FASB") Accounting Standards Clarification ("ASC") 740, "Income Taxes", which requires the recognition of deferred income taxes for differences between the basis of assets and liabilities for financial statement and income tax purposes. The differences relate principally to timing differences that result from reporting items of income and expense on the cash basis for income tax purposes and on the accrual basis for financial statement purposes and use of different depreciation methods and lives for financial statement and income tax purposes. Deferred taxes are also recognized for tax credits that are available to offset future taxable income.

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
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**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**Note 2 - Summary of Significant Accounting Policies (continued)**

Income Taxes (continued)

The Company has New Jersey net operating loss carry-forwards totaling \$1,053,388 available to offset future state taxable income, which expire through 2038.

The Company accounts for the effect of any uncertain tax positions based on a "more-likely-than-not" threshold to the recognition of the tax positions being sustained based on the technical merits of the position under scrutiny by the applicable taxing authority. If a tax position or positions are deemed to result in uncertainties of those positions, the unrecognized tax benefit is estimated based on a "cumulative probability assessment" that aggregates the estimated tax liability for all uncertain tax positions. Interest and penalties assessed, if any, are accrued as income tax expense.

The Company has tax positions that have been determined to be highly certain, and therefore, no reserve for unrecognized tax liability is deemed necessary. Federal and state income tax returns are generally open for examination for three years.

Advertising

The Company follows the policy of charging the costs of advertising to expense as incurred. Advertising expense for the year ended December 27, 2019 amounted to \$215,121.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Recent Accounting Pronouncements

In February 2016, the FASB issued Update 2016-02, "Leases", which replaced the existing accounting standards for accounting for operating leases. This guidance requires a Company to recognize lease assets and lease liabilities on the balance sheet and disclose key information about leasing arrangements. The update is effective for all nonpublic entities for annual reporting periods beginning after December 15, 2019 and interim periods within annual periods beginning after December 15, 2020 (early adoption is permitted). On July 17, 2019, the FASB unanimously approved delaying the effective date by one year for non-public entities. This update will be effective for the year ended December 27, 2021.

Management is currently assessing the potential impact on the Company's consolidated financial statements.

**H2M ARCHITECTS, ENGINEERS, LAND SURVEYING  
AND LANDSCAPE ARCHITECTURE, D.P.C. AND SUBSIDIARIES**  
**DBA H2M architects + engineers**  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

**Note 2 - Summary of Significant Accounting Policies** (continued)

Recent Accounting Pronouncements (continued)

In October 2018, the FASB issued Update 2018-17, "Consolidation", which amends the existing FASB Accounting Standards Codification ("ASC") related to consolidations, by permitting a private company to elect an alternative not to apply variable interest entity guidance to entities under common control if (1) the reporting entity and common control parent are not public business entities, and (2) the reporting entity does not directly, or indirectly, control the legal entity being evaluated if the general subsections of ASC Topic 810, "Consolidation" were applied. The amendments in the update also provide that indirect interests held through related parties under common control will be considered on a proportional basis when determining whether fees paid to decision makers and service providers are variable interests. The update is effective for all nonpublic entities for annual reporting periods beginning after December 15, 2020 and interim periods within annual periods beginning after December 15, 2021 (early adoption is permitted). Management has assessed this change and they will not adopt this accounting alternative.

Subsequent Events

Management has evaluated subsequent events through the date of the report, which is the date the consolidated financial statements were available to be issued.

**Note 3 - Accounts Receivable**

Accounts receivable consists of the following:

Accounts receivable - Billed	\$ 17,804,686
- Retainage	<u>489,191</u>
	18,293,877
Less: Allowance for doubtful accounts	<u>1,807,311</u>
	<u>\$ 16,486,566</u>

Under certain contracts, amounts billed to customers include retainage, which are due upon completion of the contracts and acceptance by the customer.

**Note 4 - Contract Assets**

Contract assets represent the value of services completed but not yet billed and include unbilled receivables and were previously reflected in accounts receivable. The contract assets were as follows:

Contract assets:	
Beginning of year	\$ 5,286,483
End of year	<u>\$ 4,978,963</u>

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**Note 5 - Notes Receivable**

Short-term notes receivable, which are carried at cost, approximated fair value due to their short-term nature. The fair value of long-term notes receivable is estimated using discounted cash flow analysis, based on interest rates currently available on loans with similar terms to borrowers with similar credit risk. The carrying amount approximated fair value.

Notes receivable consist of the following:

**CURRENT STOCKHOLDERS**

Notes receivable secured by Company stock; monthly principal payments plus interest at prime plus 2.50% per annum; final payments ranging from 2020 through 2024. \$ 920,847

**OTHER**

Notes receivable; non-interest bearing; final payment due July 2021. 5,728

926,575

Less: current portion 301,802

Long-term portion \$ 624,773

Maturities of notes receivable are as follows:

Years Ending December 25, 2020	\$ 301,802
31, 2021	301,381
30, 2022	208,375
29, 2023	108,716
27, 2024	6,301
	<u>\$ 926,575</u>

**Note 6 - Fixed Assets**

Fixed assets at December 27, 2019 consist of the following:

Machinery and equipment	\$ 916,127
Furniture and fixtures	2,521,396
Vehicles	400,188
Leasehold improvements	101,429
Computer equipment	<u>4,649,417</u>
	8,588,557
Less: Accumulated depreciation and amortization	<u>5,446,552</u>
	<u>\$ 3,142,005</u>

Depreciation and amortization expense for the year ended December 27, 2019 was \$1,054,412.

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**Note 7 - Investment in AEIC**

During 2013, the Company purchased 1,818 shares of common stock of Architects and Engineers Insurance Company ("AEIC"), a risk retention group, from H2M Labs, Inc. (a former related party) for the amount of \$148,300. AEIC provides professional liability insurance for participating architectural and engineering firms.

In accordance with the provisions of the AEIC agreement, H2M Labs, Inc. re'inquished its shares in 1997 upon the decision to terminate its insurance coverage with AEIC. Although the stock had been redeemed as of December 26, 1997, payment of the redemption amount may not be made by AEIC until they achieve and maintain \$10,000,000 in capital as required by the Delaware Insurance Department. In 2009, the Board of Directors of AEIC adopted a policy deferring any request for redemption until the capital and surplus exceeds \$15,000,000. As of December 31, 2018, AEIC had total capital and surplus of \$10,452,289.

The investment is carried at its cost of \$148,300 less the recorded allowance of \$24,000, which approximates the redemption amount.

**Note 8 - Fair Value Measurements**

The Company records certain assets and liabilities at fair value using framework provided by accounting principles generally accepted in the United States of America. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Various inputs are used in determining fair value. These inputs are summarized in the three broad levels as follows:

- Level 1: Quoted prices (unadjusted) of identical assets or liabilities in active markets that the entity has the ability to access as of the measurement date.
- Level 2: Significant other observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.
- Level 3: Significant unobservable inputs that reflect a reporting entity's own assumptions about the assumptions that market participants would use in pricing an asset or liability.

The Company's investment in private equities is reported at fair value of \$124,300 as of December 27, 2019, which is measured at Level 3 of the fair value hierarchy. The private equity investment is not actively traded and significant other observable inputs are not available. Thus, the fair value of the private equity investment is equal to the capital invested less the recorded allowance. There were no changes in Level 3 assets measured at fair value for the year ended December 27, 2019.

**Note 9 - Intangible Assets**

In March 2019, the Company acquired customer lists in the amount of \$190,663 in connection with an asset purchase agreement with Wiedersum Associates Architects, PLLC for the purpose of increasing the Company's business. The Company issued 1,100 shares of stock as consideration for the purchase.

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**Note 9 - Intangible Assets (continued)**

Intangible assets at December 27, 2019 consist of the following:

Customer lists	\$ 1,890,327
Less: Accumulated amortization	<u>613,590</u>
	<u>\$ 1,276,737</u>

Amortization expense relating to intangible assets for the year ended December 27, 2019 was \$123,903. Amortization expense is estimated to be \$126,022 per year for the next five years.

**Note 10 - Lines-of-Credit**

The Company had approved lines-of-credit with TD Bank which expired in January 2020. The lines-of-credit consisted of the following: (1) working capital line-of-credit for \$1,500,000; and (2) a capital expenditures line-of-credit for \$500,000. As of December 27, 2019, the Company had no outstanding borrowings under these lines-of-credit. Additionally, the Company had one letter-of-credit required for an office lease that approximated \$93,000 at December 27, 2019.

On January 3, 2020, the Company entered into a \$4 million revolving line-of-credit agreement with Bank of America, which matures on September 30, 2020. Interest on the line-of-credit is payable at LIBOR, as defined, plus 2%. The line-of-credit is secured by the assets of the Company. As a subfacility under the line-of-credit the bank agrees to issue letters-of-credit that in total do not exceed \$2 million. Two letters-of-credit were issued, one dated February 5, 2020 for \$93,225 for an office lease and one dated February 25, 2020 for \$587,218 for performance under a contract.

**Note 11 - Notes Payable**

Notes payable as of December 27, 2019 are summarized as follows:

**EMPLOYEES**

Note payable to former stockholder, monthly payments of \$2,998 plus interest at prime plus 2.50%; final payment due August 2024.	\$ 167,748
Note payable to former stockholder, monthly payments of \$24,675 plus interest at prime plus 2.50%; final payment due December 2023.	<u>1,184,376</u>
	1,352,124
Less: current portion	<u>332,040</u>
Long-term portion	<u>\$ 1,020,084</u>

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**Note 11 - Notes Payable** (continued)

Aggregate maturities of notes payable are as follows:

Years Ending December 25, 2020	\$	332,040
31, 2021		332,040
30, 2022		332,040
29, 2023		332,040
27, 2024		23,964
	\$	1,352,124

The loan with Bank of America contains various financial covenants with which the Company was in compliance.

**Note 12 - Commitments and Contingencies**

Leases

The Company is party to various operating lease agreements for the rental of office space and storage space which expire in various periods through 2031.

In addition, the Company will pay its proportionate share of real estate taxes, utilities, maintenance, etc. in accordance with square foot usage and other factors. Rent expense charged to operations was \$3,149,962 for the year ended December 27, 2019.

The Company is party to various operating leases for office equipment which expire in various periods through 2023. Equipment rental expense charged to operations for the year ended December 27, 2019 amounted to \$122,748.

Future minimum commitments under the aforementioned non-cancelable lease agreements are as follows:

Years Ending December 25, 2020	\$	3,728,068
31, 2021		3,539,741
30, 2022		3,579,586
29, 2023		3,629,554
27, 2024		3,740,630
Thereafter		21,509,042
	\$	39,726,621

Minimum lease payments in this schedule exclude contingent rentals under renewal options, which, as of December 27, 2019, are not reasonably assured of being exercised.



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**Note 12 - Commitments and Contingencies** (continued)

Deferred Rent

Rent expense for office space is reflected on an adjusted straight-line basis over the term of the lease rather than on the basis of the actual lease payments. The accumulated adjusted straight-line rental expense exceeds accumulated actual lease payments by \$725,023 at December 27, 2019 and is recorded as deferred rent on the consolidated balance sheet.

Litigation

The Company is a defendant and plaintiff in various lawsuits. Based upon the advice of outside counsel, the Company believes the ultimate outcomes of these lawsuits should not have a material adverse impact on the Company's consolidated financial position.

Examination by Government Agencies

The Company has contracts which are subject to audit by applicable government agencies. Such audits may result in disallowances of expenses and a request for a return of funds. Based on prior years' experience, the Company's management believes disallowances, if any, will be immaterial.

Cash Concentration

The Company maintains cash in certain financial institutions that may exceed the FDIC insurance limit.

**Note 13 - Income Taxes**

The provision for federal and state income taxes for the year ended December 27, 2019 is as follows:

Current:		
Federal	\$	13,105
State and City		58,143
		<u>71,248</u>
Deferred:		
Federal		57,775
State and City		217,887
		<u>275,662</u>
Total Provision for Income Taxes	\$	<u>346,910</u>

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**Note 13 - Income Taxes** (continued)

The total provision differs from the amount that would be obtained by applying federal statutory rates to income before income taxes because no tax benefit has been provided for nondeductible expenses.

The Company's total deferred tax liabilities and deferred tax assets as of December 27, 2019 consist of the following:

Total deferred tax assets	\$ 442,307
Total deferred tax liabilities	<u>2,433,819</u>
Net Deferred Tax Liabilities	<u>\$ 1,991,512</u>

In assessing the realizability of deferred tax assets, the Company considers whether it is more-likely-than-not that all or some portion will not be realized. The ultimate realization is dependent on generating future taxable income during the periods in which temporary differences become deductible. The Company considers the scheduled reversal of deferred tax liabilities, projected future taxable income, and tax planning strategies in making this assessment. Based on projections of future taxable income, management believes it is more-likely-than-not that the Company will realize the benefits of certain deductible differences in full. Therefore, the Company did not record a valuation allowance at December 27, 2019.

**Note 14 - Stockholders' Equity**

The Company is authorized to issue five thousand (5,000) shares of no-par value Class A preferred stock, two hundred (200) shares of no-par value Class B preferred non-voting stock and two hundred thousand (200,000) shares of no-par value common stock, out of which no Class A or Class B preferred shares are issued and outstanding.

Stockholders' equity is summarized as follows:

Common stock - no par value, 200,000 shares authorized:  
197,760 shares issued, 134,120 shares outstanding

Treasury stock - at cost:  
63,640 common shares

During 2019, the Company purchased 11,600 shares of treasury stock for approximately \$180 per share and issued 8,850 shares of treasury stock for approximately \$180 per share. 8,900 shares were issued on conversion of stock appreciation rights.

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**Note 15 - Employee Benefit Plan**

The Company has a qualified 401(k) wage deferral plan. Under this plan, employees who are age 21 or older and have completed 6 months of service are eligible to defer a portion of their compensation. In 2019, the Company made mandatory safe harbor contributions of 3% of eligible compensation and a discretionary profit sharing contribution of 1.5% of eligible compensation to all persons employed by the Company. In 2019, the Company also made an employer matching contribution of 1.5% to all employees who contributed 6% or more of their eligible compensation and were employed at the end of the year. Additional discretionary employer contributions can be made up to IRS limitations. Contributions to the plan for the year ended December 27, 2019 was \$2,785,559.

**Note 16 - Variable Interest Entity**

FASB ASC subtopic 810-10, "*Consolidation of Variable Interest Entities*", requires certain VIEs to be consolidated by the primary beneficiary of the entity if the equity investors in the entity do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support.

H2M Architects & Engineers, Inc. is in the business of providing architectural and engineering services for clients in the State of New Jersey. These companies are related through common ownership. Based on the criteria for consolidation of VIEs, the Company has determined that H2M Architects & Engineers, Inc. is a VIE of which H2M Architects, Engineers, Land Surveying and Landscape Architecture, D.P.C. is the primary beneficiary and, accordingly, has included H2M Architects & Engineers, Inc. in the consolidated financial statements as of and for the year ended December 27, 2019.

The following is a list of the activities of H2M Architects & Engineers, Inc. as of and for the year ended December 27, 2019:

Total assets	\$ 292,970
Total liabilities	\$ 293,110
Total equity (deficit)	\$ (140)
Total revenues	\$ 948,157
Total Net Income	\$ 869

The accounts of H2M Architects & Engineers, Inc. are consolidated with those of H2M Architects, Engineers, Land Surveying and Landscape Architecture, D.P.C. and are presented as a non-controlling interest in the stockholders' equity section of the consolidated balance sheet as follows for the year ended December 27, 2019:

Non-controlling interest at beginning of year	\$ (1,009)
Net income	<u>869</u>
Non-Controlling Interest at End of Year	<u>\$ (140)</u>

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**Note 17 - Concentrations of Credit Risk**

Financial instruments, which potentially subject the Company to concentration of credit risk, consist principally of cash and cash equivalents and trade accounts receivable.

Concentrations of credit risk with respect to trade receivables are limited due to the diverse group of customers to whom the Company sells. The Company establishes an allowance for possible losses based upon factors such as the credit risk of specific customers, historical trends and other information.

**Note 18 - Stock Appreciation Rights Plan and Agreement**

The Board of Directors of the Company, as of July 1, 1991, established a "Stock Appreciation Rights Plan" for the purpose of granting to certain employees of the Company the opportunity to share in the increase of the value of the Company to the same extent as that of the holder of a share of common stock. Holders of a Stock Appreciation Right ("SAR") shall have none of the rights, privileges or obligations of a stockholder. At the end of each year, the Company adjusts the value of the SARs to fair value based on an annual appraisal of the Company.

On December 27, 2019, the Company converted \$212,524 of convertible debt on the original purchase of 8,900 shares of stock appreciation rights into 8,900 shares of common stock. This is considered a tax-free recapitalization under section 368(a)(1)(E) of the internal revenue code. As a result of the recapitalization, the prior appreciation of the stock appreciation rights was eliminated in the amount of \$1,387,073.

**Note 19 - Shareholders' Agreement**

There is currently in effect a shareholders' agreement dated December 16, 2013 which places certain restrictions on the transfer and issuance of capital stock and provides for certain commitments on the part of the Company and its shareholders. This agreement was amended and restated as of December 31, 2018.

**Note 20 - Subsequent Events**

The Company evaluated its December 27, 2019 financial statements for subsequent events through the date the financial statements were issued. As a result of the spread of the COVID-19 coronavirus, economic uncertainties have arisen which are likely to negatively impact operating results. The financial impact of this matter cannot be estimated at this time.

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**Note 20 - Subsequent Events (continued)**

In April 2020, the Company received loan proceeds under the Paycheck Protection Program ("PPP"). The PPP, established as part of the Coronavirus Aid, Relief and Economic Security Act ("CARES Act"), provides for loans to qualifying businesses for amounts up to 2.5 times the average monthly payroll expenses of the qualifying business. The loans and accrued interest are forgivable over eight weeks, as long as the borrower uses the loan proceeds for eligible purposes, including payroll, benefits, rent and utilities, and maintains its payroll levels. The unforgiven portion of the PPP loan is payable over two years at an interest rate of 1%, with a deferral of payments for the first six months. The Company intends to use the proceeds for purposes consistent with the PPP. While the Company currently believes that its use of the loan proceeds will meet the conditions for forgiveness of the loan, we cannot be assured that the Company will not take actions that could cause the Company to be ineligible for forgiveness of the loan, in whole or in part.

**SUPPLEMENTARY INFORMATION**

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**CONSOLIDATED SCHEDULE OF OPERATING EXPENSES**  
Year Ended December 27, 2019

Salaries and wages	\$ 26,252,169
Payroll taxes and fringe benefits	9,028,370
Occupancy, net of sub-lease income	3,237,669
Professional services	422,627
Computer services	1,247,692
Communications	454,339
Insurance	606,622
Office supplies	322,368
Equipment rental and maintenance	236,333
Client development and proposals	62,136
Professional activities	710,799
Business development	544,471
Advertising	215,121
Recruiting	301,130
Miscellaneous	210,943
Bad debts	205,521
Depreciation and amortization	1,178,315
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Total Operating Expenses	\$ 45,234,625

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