

**RESOLUTION DIRECTING WORK TO DEWBERRY FOR THE PARK AVENUE
SIPHON ACCESS CHAMBER PROJECT**

MOTIONED BY: Gardiner
SECONDED BY: Friedrich

WHEREAS, the North Hudson Sewerage Authority (hereinafter "Authority") is a public body, duly formed under the Sewerage Authorities law, constituting Chapter 138 of the Laws of New Jersey of 1946, as amended (Chapter 14A of Title 40 of the New Jersey Statutes Annotated) and possesses the powers set forth therein; and

WHEREAS, Dewberry has been selected under resolution 21-105 to provide engineering services for various capital projects required throughout its service area that must be performed in order to maximize the performance of its waste water treatment facility, the capacity of its combined sewer system and/or to comply with its New Jersey Pollution Discharge Elimination System (NJPDES) permit; and

WHEREAS, Dewberry has submitted a proposal (Exhibit "A") to provide Engineering Services During Construction for the Park Avenue Siphon Access Chamber Project; and

WHEREAS, the Facilities Review Board has considered this request and proposal and recommends the approval of the full Board.

NOW THEREFORE, BE IT RESOLVED that the Authority, as recommended by the Facilities Review Board, directs Dewberry to provide professional engineering services during construction for the Park Avenue Siphon Access Chamber Project not to exceed \$143,445.37.

DATED: MARCH 17, 2022

RECORD OF COMMISSIONERS' VOTE

	YES	NO	ABSTAIN
Commissioner Kappock	x		
Commissioner Marotta	x		
Commissioner Gardiner	x		
Commissioner Friedrich	x		
Commissioner Guzman	x		
Commissioner Velazquez	x		
Commissioner Barrera	x		
Commissioner Zucconi	x		
Commissioner Assadourian	x		

**THIS IS TO CERTIFY THAT THIS RESOLUTION WAS DULY ADOPTED BY THE
NORTH HUDSON BOARD OF COMMISSIONERS ON MARCH 17, 2022.**



SECRETARY

REQUEST FOR PROPOSAL

PARK AVENUE SIPHON ACCESS CHAMBER ENGINEERING SERVICES DURING CONSTRUCTION

.....
MARCH 15, 2022



ORIGINAL

SUBMITTED BY

Dewberry Engineers Inc.
200 Broadacres Drive, Suite 410
Bloomfield, NJ 07003-3177
973.338.9100

SUBMITTED TO

North Hudson Sewerage Authority
1600 Adams Street
Hoboken, NJ 07030
201.963.6043

.....

This proposal includes information that shall not be disclosed outside of the North Hudson Sewerage Authority and shall not be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this proposal. If, however, a contract is awarded to this offeror as a result of, or in connection with, the submission of this information, North Hudson Sewerage Authority shall have the right to duplicate, use, or disclose the information to the extent provided in the resulting contract. This restriction does not limit North Hudson Sewerage Authority's right to use information contained in this information if it is obtained from another source without restriction. The information subject to this restriction is contained on all pages that follow.



Dewberry Engineers Inc. | 973.338.9100
200 Broadacres Drive, Suite 410 | 973.338.5860 fax
Bloomfield, NJ 07003-3177 | www.dewberry.com

March 15, 2022

North Hudson Sewerage Authority
600 Adams St.
Hoboken, NJ 07030

RE: Request for Proposal for Park Avenue Siphon Access Chamber Engineering Services During Construction

Dear Sir or Madam,

North Hudson Sewer Authority (NHSA) seeks a firm to provide bid phase services, construction phase services, inspection, authority's agent during construction, and construction administration to construct a Precast Access Chamber on the Park Avenue Siphon along Park Avenue in Weehawken, New Jersey. Dewberry Engineers Inc. understands the importance of this project and is committed to completing this work successfully on-time and within budget.

The project will be managed by our local Bloomfield office which consists of skilled engineers and technical personnel who have experience completing similar projects. Our **Project Manager, Todd Yanoff, PE (NY), CCM**, will serve as primary point of contact to facilitate quality and responsive service to NHSA. He has more than 23 years of construction management experience on numerous projects. Our **Technical Advisor, Rahul Parab, PE, (NY) D.WRE, CFM**, will support Todd and his team. Rahul brings valuable lessons learned and oversight expertise gained from more than 20 years of planning, engineering design and construction experience on flood resiliency projects. He led and managed full life cycle of multi-disciplinary projects – from policy to planning to design and construction. Our **Resident Engineer, Patrick Ronan, PE, ENV SP**, has extensive experience in various aspects of water and wastewater facilities. He has served in lead roles on pump stations and force mains, flow monitoring, odor control systems, fuel oil tanks, chemical containment, stormwater, green infrastructure, infrastructure, and emergency management projects.

We welcome your detailed review of our qualifications and are excited to build a relationship with NHSA.

Sincerely,
Dewberry Engineers Inc.

A handwritten signature in blue ink that reads "Todd Yanoff".

Todd Yanoff, PE (NY), CCM
Project Manager

SECTION 1 - PROJECT UNDERSTANDING/ SCOPE OF WORK

SECTION 1 - PROJECT UNDERSTANDING/SCOPE OF WORK

Dewberry Engineers Inc. (Dewberry) understands North Hudson Sewerage Authority's (NHTA) commitment to provide quality sewerage services to the Hoboken and Weehawken area and the necessity of draining stormwater in a manner that provides storm resiliency and avoids capital damage. It will be our mission to provide the City of Weehawken a quality CSO system as a critical component of the City's overall effort to improve flooding resiliency.

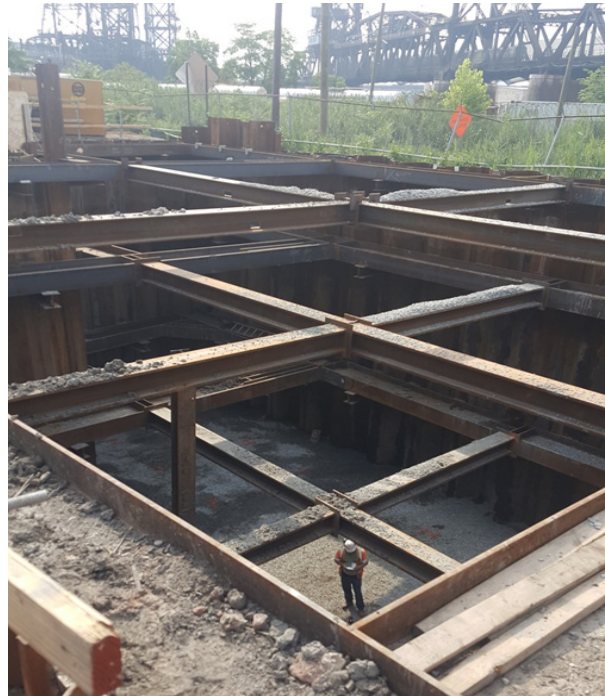
As requested in the RFP for the Park Avenue Siphon Access Chamber Engineering Services During Construction, Dewberry is uniquely qualified to provide the construction engineering services while also having a wide ranging yet RFP task specific background to confirm that the project is completed to the satisfaction of the owner.

Through our experience with prior NHTA work, Dewberry recognizes that the existing 19th Century CSO system requires strategic upgrade to improve stormwater handling, increase maintainability and provide the control needed to operate a storm resilient city.

As part of these upgrades, Dewberry recognizes that this existing critical Inverted Siphon Chamber needs to be upgraded to provide better control to the city to clean and maintain the siphon piping in preparation for avoiding flooding events. The location of this Siphon is critical as well, being the main drain for Weehawken's sewer system to cross the railway and deliver the flow to NHTA's Treatment Plant in North Hoboken.

Dewberry also recognizes that the location of this upgrade construction project is critical due to its proximity to the Port Authority facilities at the mouth of the Lincoln Tunnel. In managing this construction, minimizing impacts to traffic will be critical.

Dewberry is prepared to deliver the construction engineering services required to upgrade this siphon chamber with added control valves in an extremely tough traffic thoroughfare while minimizing construction delays,



observing contractor's QC compliance, maximizing safety and maintaining both critical sewer and traffic flows.

The Dewberry team successfully delivered other projects involving mechanical, conveyance and large transportation coordination in highly urban areas such as Kearny, NJ. Our background involves design of Inverted Siphons in New York City and construction engineering services for large pump stations such as Wittpenn Bridge Route 7 Pump Station in Kearny, NJ.

Dewberry is an expert at managing construction issues such as deep excavations in poor soils, dewatering, and the construction of large chambers near critical transportation infrastructure.

We are confident that bringing that experience to bear on this project will deliver the services needed to meet the challenges of quick installation of the siphon chamber and valve work in an extremely tough traffic corridor while minimizing impacts.

Siphon, Valve and Chamber System

Dewberry recognizes that careful attention must be focused on working with the contractor to identify long lead items related to siphon chamber work early in the process to meet the tight schedule. The contractor will be encouraged to submit valve submittals early in the process as close to award as possible and Dewberry will prioritize those reviews for quick turnaround.

Associated with this effort the work for the contractor to perform the test pits to confirm piping elevations will be expedited at the front of the schedule. This data will be necessary to submit pre-cast chamber drawing for review and manufacture. Securing any permits for the test pit work will also be given priority at the front of the project. Through task 3, Dewberry will support the contractor in filing for necessary permits.

Permitting

Through our work in various municipalities and cities in NJ, as well as our projects for Port Authority, Dewberry has ample experience to determine if permitting is necessary and to support filing for those permits. This process will be examined early on in the contract, through tasks 3 and 4, once again to minimize delays.

Although the proposed work appears to be located outside of the Port Authority of New York and New Jersey (PANYNJ) property, the traffic control plan may impact access of PANYNJ roadways (specifically the Lincoln Tunnel). In accordance with the PANYNJ Tenant

Construction and Alteration Process Manual dated February 2021, "The Tenant Alteration Application process is to be followed for construction and alteration work that involves code issues or impacts any life safety systems, fire protection system, ventilation, egress changes, facility structural integrity, or hazardous materials," an example of which is "Roadway access, driveway, or traffic control modifications." Our scope of work includes coordinating with PANYNJ and, if required, assisting the contractor through the application process using the traffic control plans prepared by the Engineer. Dewberry's extensive experience with the Tenant Construction and Alteration Process (TCPA) [formerly Tenant Alteration Application Permit (TAA)], will be valuable in expediting approval from PANYNJ.

REI Services

Dewberry proposes two of its most experienced personnel in the positions of Resident Engineer and Inspector. Patrick Ronan has 29 years' experience in planning, design and construction of sewer collection systems and sewerage treatment facilities throughout the states but mostly in urban NYC. Patrick was a resident engineer for NYCDDC for seven years and has worked on various other NYCDEP facilities performing CM and design services during construction (DSDC) for an additional nine years. Most recently as part of NYCDEP's city-wide drainage contract, Patrick developed a procedure for the design of inverted siphons in NYC and implemented that procedure into NYCDEP's standard planning manuals being updated for Infoworks modeling. He also performed DSDC services for the construction of the 50 MGD Wittpenn Pump Station in Kearny, NJ.

Lead Inspector Kenneth Lund-Pearson has 33 years' experience in Resident Engineering and Inspection throughout the state of NJ in cities such as Hackensack, Teterboro, and Rahway performing inspection services for clients such as SUEZ Water, New Jersey American Water and various municipalities.

Our REI staff is adept at managing tight construction schedules and remaining flexible so that projects can be covered to keep the budgets of our clients tight.

Staff will observe contractor's compliance for site safety for workers and others in high traffic environments.



Daily reports will be submitted and kept on record with photologs and detailed dimensional sketches. Street closures will be coordinated with the City of Weehawken and any other authorities having jurisdiction.

Dewberry staff will verify contractor's compliance for compaction testing and review documentation provided for compliance to prevent future settlement in a critical traffic area.

Additionally, coordination with the General Contractor and the City's Licensed Site Remediation Professional (LSRP) to properly sample, characterize, and delineate contaminated soils and groundwater on the project site will need to take place to properly administer the methods and procedures for removal and disposal of contaminated soils, as well as treatment and disposal of extracted groundwater.

Field orders and work directives will be coordinated and maintained within the project records. Coordination with the public and the Authority will be performed where necessary through the documentation delineated in the RFP.

Project punch lists and as-built tasks will be started early in the project schedule to complete the work in a short time period and to close the project out quickly.

Traffic Control

Dewberry understands the sensitive location of this project and we will work with the contractor to minimize the overall impacts to the busy thoroughfares.

The contractor will be required to maintain a detailed traffic control plan through the submittal process. Dewberry will review this plan and hold the contractor to its provisions.

Before the traffic detours are implemented, Dewberry will verify permitting and authority coordination. We will also verify delivery of equipment schedule to avoid any unnecessary delays while traffic control and/or detours are in place.

The contractor's work will be per the traffic control plans until completion.

Dewberry understands that throughout construction work activities communication with the City of Weehawken, the Port Authority if necessary and the NHSA operations units will be essential for coordination in the high traffic volume location.

Construction Administration

Due to the tight schedule, early in the project Dewberry will provide construction administration which can start even before REI services. Health and safety plans can be received from the contractor and reviewed for early approval and coordination with utility companies.

Since the contract has provision for the designer to review most submittals, Dewberry expects the level of effort to be low. However, we provided personnel with skill sets focused on the types of submittals that are required for a contract like this. Dewberry recognizes that careful attention must be paid to working with the contractor to identify long lead items related to the force main and high-level storm sewer system. Equipment and material submittals will be reviewed and approved on a timely basis and will focus on the duration needed by the suppliers/vendors to provide the approved materials and equipment.

Preparation of operations and maintenance manuals will begin well before completion with the submission and approval of the valve submittals. This will allow City staff the option to view the equipment on final inspection, start-up assured and to be briefed on the operation of the equipment immediately.

Proposed Team

The Dewberry Team is an ideal partner to successfully deliver this project. Our team offers senior staff with extensive CM delivery credentials as well as design experience in the constructed components of this project. The personnel proposed for the project were selected based on their level of experience, skillsets focusing on similar work, and in-depth knowledge of the area with the accompanying specific challenges at hand. As requested, comprehensive resumes for project personnel are provided in section 4.

APPENDIX A - SCOPE OF WORK

The responsibilities referenced in this request for proposal will be by the Services During Construction Engineer (Engineer). The Engineer will provide the following scope of service for the project.

Construction Phase Services

The engineer will perform services during construction as described below:

Task 1 - Contract Execution and Pre-Construction Meeting

- Prepare and distribute the necessary paperwork required for execution of the Contract between the Contractor and the Authority.
- Provide three paper copies of the Contract for execution.
- Schedule and conduct a pre-construction conference with the Authority, Contractor, and key stakeholders.
- Prepare minutes of the pre-construction conference and distribute same.
- Prepare and issue a Notice to Proceed to the Contractor.

Task 2 – Resident Engineering/Inspection

The engineer will provide a full time resident engineer and inspector to perform the services described below:

- Observe the on-site construction work when the Contractor's field activities are in progress to verify that the work is being completed in accordance with the contract documents. This includes, but is not limited to, the removal of excavated materials, installation of support of excavation systems, construction dewatering and groundwater treatment and disposal operations, concrete placement, precast structure placement, conveyance pipe installation, and valve installation. (Based on 17 full construction days for RE and 40 full construction days for inspector)
- Coordinate with the Contractor and City of Weehawken regarding street closures and maintenance of traffic control and pedestrian flow.
- Maintain project records, diaries, daily inspection

reports/photographs and documents.

- Conduct inspections of the work and develop punch lists.
- Witness and record the results of functional and performance tests.
- Respond to public complaints, including contacting complainants, determining solutions; prepare letters, etc., in accordance with the Authority's policies, which requires timely action by the engineer.

Task 3 - Authority's Agent During Construction

The Engineer will perform the following:

- Aid the NHTSA's General Contractor to obtain construction permits from the City of Weehawken.
- Act as the Authority's Agent with regard to the Contractor's compliance with the contract documents.

Task 4 - Construction Administration

The Engineer will provide administration of the Contract and represent the Authority in observing the Contractor's compliance with the contract documents. The Engineer will perform the following:

- Review the Contractor's health and safety plan.
- Coordinate with the various utility companies.
- Meet with the Contractor's representatives and the Authority to assist in implementing the construction progress. The Engineer will act as initial interpreter of the requirements of the contract documents and judge the acceptability of the work and make decisions on claims of the Authority and Contractor relating to the acceptability of the work or the interpretation of the requirements of the contract documents pertaining to the execution and progress of the work.
- Conduct every other week progress meetings with the Contractor to review and record the progress of the work, and to resolve any issues with the project. Conduct additional meetings as necessary to resolve conflicts or specific problems. A Project Manager for the Engineer will chair meetings and submit minutes

of meetings to attendees.

- Review, certify and process the Contractor's payment requests on a monthly basis. Prepare a payment application cover letter, engineer's summary payment certificate, Authority payment voucher and submit with recommendations and supporting documentation to the Authority for processing.
- Submit a monthly progress report prepared in accordance with the Authority's format outlining pertinent activities during the month including, but not limited to, work performed, milestones, problems, pending change orders and claims, and time delays. The monthly progress report will contain a financial summary of the Construction contract as well as a financial summary of the Engineer's contract with the Authority. Submit the monthly progress report to the Authority one week prior to the Board meeting.
- Be present at the Authority's facility service committee meetings on an as needed basis to discuss issues with the project, present construction change orders and answer questions from the Authority on the project.
- Provide construction management supervision and control of the resident inspection team to confirm quality control and assist with problems.
- Provide technical interpretations of the contract documents and evaluate requested deviations from the approved design or specifications per the division of work responsibilities for the engineer and design engineer.
- Maintain project records, diaries and documents.
- Respond to Contractor Requests for Information (RFIs) and provide written responses to the Contractor.
- Provide technical review of shop drawings, diagrams, illustrations, catalog data, schedules and samples, the results of tests and inspections, and other data which the Contractor is required to submit. Submitted material will be reviewed for general conformance with the design concept of the project and general compliance with the information given in the contract documents. Such review is not intended

as an approval of the submittals if they deviate from the contract documents or contain errors, omissions, and inconsistencies, nor is it intended to relieve the contractor of his full responsibility for contract performance, nor is the review intended to confirm or guarantee lack of inconsistencies, errors, and/or omissions between the submittals and the contract requirements.

- Shop drawing and RFI work will be performed with the assistance of the Design Engineer utilizing the allowance item detailed in Section 3 below.
- The design engineer will review shop drawings for technical specifications division 2, 3, and 4.
- Prepare and administer necessary field orders.
- Prepare and administer necessary work change directives.
- Assist in negotiating, with the Contractor, the scope and cost of a reasonable and customary number of change orders. Prepare such change orders as may be required and submit them to the Authority for approval. Following approval by the Authority and the Contractor, administer same with the Contractor. Submit change orders to the NJDEP Municipal Finance and Construction Element for their review and approval.
- Administer allowance items in the Contract.
- Meet with representatives of the Authority and appropriate regulatory agencies when requested and necessary for consultation or conferences in regard to construction of the project.
- Recommend the acceptability of the work and issue a certificate of substantial completion along with a punch-list upon the Contractor achieving the project milestones.
- Prepare routine letters, memoranda, reports, change orders and miscellaneous paperwork as directed by the Authority for signature by the Authority.
- Respond to public complaints, including contacting complainants, determining solutions, prepare letters, etc., in accordance with the Authority's policies and procedures, which requires timely action by the Engineer.

- Make a final review of the construction to determine if the work was completed in conformance with the intent of the contract documents. Facilitate a final inspection of the work by the Contractor, Authority, NJDEP and other appropriate regulatory agencies so they may make the final observation of the construction.
- Review Record Drawings provided by the Contractor of changes to the work.
- Prepare a final set of record drawings in electronic format.
- Provide appropriate technical assistance during start-up, functional testing, and performance testing. Verify operation of individual valves, common equipment and individual systems and subsystems.
- Facilitate training of the Authority's Operations Firm by the equipment manufacturer's representatives. Provide training to the Authority's Operations Firm on the operation of the entire facility as a system.
- Prepare a project-specific operations and maintenance manual to include an overall process operational description, ancillary system operational descriptions, and individual maintenance needs.
- Assist in negotiating final payment for construction and submit a final letter report upon which final settlement and termination of the Construction Contract can be based. Document proceedings of final settlement negotiations and record basis for final payment.
- Prior to recommending release of final payment, verify that the Contractor has furnished administrative items required by the contract documents, and verify there are no outstanding liens, or claims.
- Prepare and submit required close-out documentation required for each permit that has been, or will be, necessary for the project. These include, but are not limited to, local construction permits.
- The Engineer will provide the Authority with a complete electronic file in PDF format of each document that they prepared on behalf of the Authority that is included in this RFP.

SECTION 2 - COST ESTIMATE FOR ENGINEERING SERVICES

SECTION 2 - COST ESTIMATE FOR ENGINEERING SERVICES

PHASE	TASK DESCRIPTION	PROPOSED HOURS	PROPOSED COST
CONSTRUCTION PHASE SERVICES			
Task 1	Contract Execution and Pre-Construction Meeting	52	\$7,237.22
Task 2	Resident Engineering/Inspection	442	\$61,626.06
Task 3	Authority's Agent During Construction	88	\$11,477.52
Task 4	Construction Administration	218	\$31,604.57
	Other Direct Costs	N/A	\$1,500.00
DESIGN ENGINEER PROFESSIONAL SERVICES			
	Design Engineer Services		\$30,000.00
TOTAL PROPOSED COST			\$143,445.37

Note 1 -Mott MacDonald Engineering Services includes submittal reviews for the specification sections noted in Section 2, Task 4. Services also include responding to RFIs for these same divisions.

SECTION 3 - DETAILED PROJECT SCHEDULE

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Sub Tasks		Duration Notice to Proceed +																													
		Work	Cumulative Calendar	30 Days						60 Days						90 Days						120 Days						150 Days			
Days	Days	Start	End																												
Task 1 Contract Execution and Pre-Construction Meeting	Contract Execution Support	10	14	6/1/2022	6/15/2022	[Gantt bar from 6/1/2022 to 6/15/2022]																									
	Pre-Construction Conference with Minutes	5	21	6/15/2022	6/22/2022	[Gantt bar from 6/15/2022 to 6/22/2022]																									
	Notice to Proceed	1	22	6/22/2022	6/23/2022	[Gantt bar from 6/22/2022 to 6/23/2022]																									
Task 2 Resident Engineering & Inspection	Resident Engineering	60	106	6/23/2022	9/15/2022	[Gantt bar from 6/23/2022 to 9/15/2022]																									
	Inspection Services	60	106	6/23/2022	9/15/2022	[Gantt bar from 6/23/2022 to 9/15/2022]																									
Task 3 Authority Agent	Construction Permit Support	10	36	6/23/2022	7/7/2022	[Gantt bar from 6/23/2022 to 7/7/2022]																									
	Authority's Agent	10	36	6/23/2022	7/7/2022	[Gantt bar from 6/23/2022 to 7/7/2022]																									
Task 4 Construction Administration	Health & Safety Plan Review	10	50	7/7/2022	7/21/2022	[Gantt bar from 7/7/2022 to 7/21/2022]																									
	Utility Coordination	10	50	7/7/2022	7/21/2022	[Gantt bar from 7/7/2022 to 7/21/2022]																									
	Construction Progress Meetings	60	106	6/23/2022	9/15/2022	[Gantt bar from 6/23/2022 to 9/15/2022]																									
	Contractor's Invoicing Review	60	120	7/7/2022	9/29/2022	[Gantt bar from 7/7/2022 to 9/29/2022]																									
	Monthly Progress Reports	75	127	6/23/2022	10/6/2022	[Gantt bar from 6/23/2022 to 10/6/2022]																									
	Authority Facility Service Committee Meetings	60	106	6/23/2022	9/15/2022	[Gantt bar from 6/23/2022 to 9/15/2022]																									
	Construction Management Records, Documentation, Field Orders	60	106	6/23/2022	9/15/2022	[Gantt bar from 6/23/2022 to 9/15/2022]																									
	Submittals, RFI's and Technical Interpretations	30	64	6/23/2022	8/4/2022	[Gantt bar from 6/23/2022 to 8/4/2022]																									
	Start Up & Testing	10	105	8/31/2022	9/14/2022	[Gantt bar from 8/31/2022 to 9/14/2022]																									
	Final Inspection, Punchlist, Acceptance and Certifications	10	114	9/9/2022	9/23/2022	[Gantt bar from 9/9/2022 to 9/23/2022]																									
	Operations & Maintenance Manual	15	85	8/4/2022	8/25/2022	[Gantt bar from 8/4/2022 to 8/25/2022]																									
	Authority's Operations Staff Training	10	123	9/18/2022	10/2/2022	[Gantt bar from 9/18/2022 to 10/2/2022]																									
	Project Close-Out Documentation Submission	10	132	9/27/2022	10/11/2022	[Gantt bar from 9/27/2022 to 10/11/2022]																									

SECTION 4 -PERSONNEL ASSIGNED TO THE PROJECT

SECTION 4 - PERSONNEL ASSIGNED TO THE PROJECT

We carefully selected key members who are highly skilled, knowledgeable and possess the training, education, expertise and judgment to provide quality professional service for this project. Resumes for these individuals, as well as a project team organization chart, are provided as part of this Exhibit.

Key Members Brief Relevant Experience



TODD YANOFF, CCM - PROJECT MANAGER

Todd Yanoff has more than 20 years of diverse construction, engineering and surveying experience. His construction management experience includes pump stations, water/wastewater facility upgrades, dams, tunnels, aqueducts, and CSOs. He served as the Construction Manager for the highly successful NYCDEP Gilboa Dam project and brings valuable lessons learned and management oversight expertise.



PATRICK RONAN, PE - RESIDENT ENGINEER

Patrick Ronan's 30 years of water/wastewater experience includes rehabilitation of pumping stations, collections facilities, force mains and wastewater treatment facilities. He serves in lead roles in wastewater construction management on various projects. He has both construction management and design experience, with a focus on rehabilitating pump stations.



RAHUL PARAB, PE, D.WRE, CFM - TECHNICAL ADVISOR

Rahul Parab has more than 20 years of planning, engineering design and construction experience on flood resiliency projects. He led and managed multi-disciplinary flood resiliency projects – from policy and planning to design and construction. His portfolio includes several multibillion dollar coastal flood resiliency projects in the US. He served as a lead peer reviewer and project manager on coastal resiliency projects designed by USACE-New York District.



KENNETH LUND-PEARSON, ASCE III - INSPECTOR

Kenneth Lund-Pearson has more than 50 years of extensive and diverse experience in various construction and engineering disciplines. He served as resident engineer on various projects that include storm and sanitary sewers, pumping stations, rehabilitation of roadways, streetscape projects, utilities, with MPT on state highways, including coordination with counties and local municipalities.



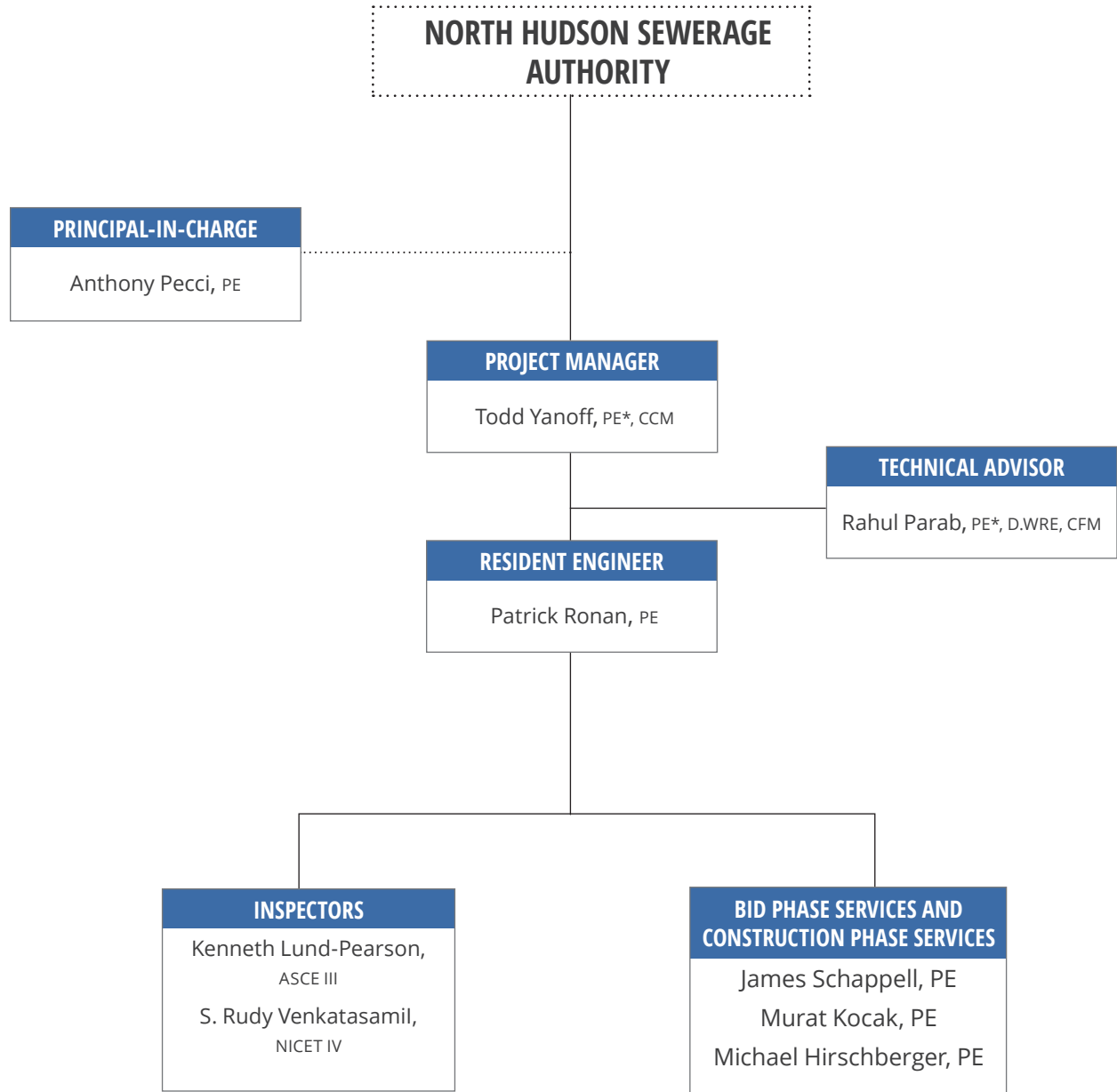
JAMES SCHAPPELL, PE - BID PHASE SERVICES AND CONSTRUCTION PHASE SERVICES

James Schappell has experience working for both public and private clients in many different facets of the industry including potable water treatment, distribution and transmission, as well as wastewater treatment, conveyance and collection. He served on projects in phases from planning to design, and through construction and gained additional industry experience by successfully managing the operation of a municipal water and wastewater system.



MURAT KOCAK, PE - BID PHASE SERVICES AND CONSTRUCTION PHASE SERVICES

Murat Kocak has more than 13 years of experience. He is a water/wastewater engineer with comprehensive achievements in project management, engineering design, construction management, and inspection services in the water resources sector. He has experience with pump and booster station design, water treatment, permitting, water distribution, and process and instrumentation. Murat coordinated with various municipal, state, and federal regulatory agencies in preparing permit applications.



* New York State PE



Todd Yanoff, PE*, CCM
PROJECT MANAGER

Todd has diverse experience including CSOs and other water/wastewater facilities including pump stations, infrastructure work on tunnels, dams, aqueducts. Todd is especially adept at organizational and operational assessments and managerial and strategic planning for the effective delivery of projects and major construction initiatives. He served as the construction manager for the highly successful NYCDEP Gilboa Dam project and brings valuable lessons learned and management oversight.

- **EDUCATION**
 BS • New Jersey Institute of Technology • Engineering Technology • 2006
 BS • New Jersey Institute of Technology • Civil Engineering • 2000
- **REGISTRATIONS**
 Professional Engineer • NY
 Certified Construction Manager
 OSHA 30-Hour Construction Safety and Health Training Course
 * New York City PE
- **YEARS OF EXPERIENCE**
 Dewberry • 12
 Prior • 11
- **AFFILIATIONS**
 Association of State Dam Safety Officials (ASDSO)
 New York Water Environment Association (NYWEA)
 American Council of Engineering Companies (ACEC)
 * New York State PE

Citywide 3A, NYCDEP, Various Locations, NY, Project Executive

Managed the construction of capital improvements at various DEP facilities; services were completed at several WWTPs. Assignments were through task orders from various DEP bureaus including the Bureau of Wastewater Treatment, Bureau of Water and Sewer Operations and Bureau of Water Supply. Provided technical assistance to the Bureau of Engineering Design and Construction including furnishing experienced staff for project management, resident engineering, inspection and project operations. Todd also managed full-time, on-site personnel for each assignment to coordinate and supervise contractors, scheduling, constructability review, construction inspection, quality assurance, site safety, and environmental compliance, among others. In addition, he monitored equipment, material, shop drawings, preliminary and final field tests, and determined the acceptability of field tests in conformance with the construction contracts.

Reconstruction of Gilboa Dam, North End of the Schoharie Reservoir in the Northern Catskill Mountains, NYCDEP, Gilboa, NY, Project Manager/ Construction Manager

This \$400-million dam and reservoir are important elements in providing reliable water supply to New York City. The cyclopean concrete dam was reconstructed with a movable gate system and refaced and strengthened with more than 120,000 cubic yards of concrete and post tensioned multi-long strand anchors. Project CAT- 212C Low Level Outlet involved the construction of a nine-foot-diameter micro-tunnel and required coordination between several agencies.

Bay Park Sewage Treatment Plant - Effluent Pumping Facility Improvements, Nassau County Department of Public Works, Project Manager

Construction management and inspection services for this project that includes demolition and replacement of the existing effluent water pumps system with new dry pit submersible pumps, piping and associated appurtenances, demolition and replacement of the existing dewatering system, sump pump system, chlorine sampling system, fire alarm system, HVAC system, control panels, overhead bridge crane, construction of a new electrical mezzanine and electrical substation above the 500-year flood plain on augured cast piles and installation of submersible equipment and pumps, replacing existing outfall tide gates as well as the installation of new Instrumentation and Controls such as Programmable Logic Controller (PLC) modules for Effluent Pumping System.

Todd Yanoff, PE,*C
CM
PROJECT MANAGER

Glen Cove Wastewater Treatment Plant Primary & Secondary Settling Tank Improvements, Wantagh, NY, Project Manager

Construction management and inspection services for improvements to the existing primary settling tanks and final settling tanks. The project includes replacement and upgrades to the tank internals, drive mechanisms, controls, instrumentation, valves, etc.

CAT-DEL Aqueduct Interconnection Construction Management, NYCDEP, New Paltz, NY, Project Manager

Managed this \$22-million project to interconnect flow from the open channel Catskill Aqueduct with the pressurized Delaware Aqueduct. Major project elements included installation of a reinforced concrete flow/pressure control structure; distribution header; chambers for transferring flow between the Delaware and Catskill Aqueducts; and buried 72- and 48-inch-diameter piping. The installations required controls and instrumentation for mechanical process, electrical and HVAC work.

Construction Management Services for Gilboa Dam Reconstruction, Schoharie County, NY, NYCDEP, Resident Engineer

Work for this \$400-million project included site preparation, general reconstruction, intake improvements completed simultaneously with general reconstruction. Performed administrative services that included safety, quality control, cost, progress and CPM scheduling. Supervised inspection staff, subconsultant personnel and testing laboratories. Negotiated item overruns and contract plan deficiencies/changes with the contractor prior to forwarding the change order. Coordinated work with the general contractors and maintained daily contact with the client and other agencies to keep them informed and to maintain open, effective lines of communication. In charge of permit tracking database which consisted of permits with NYSDOT, NYSDEC, USACE Historical Society, and the Town of Gilboa. Supervised the preparation of project records and accounting of contract monies. Reviewed and approved documents including Stormwater Pollution Prevention Plan (SWPPP) reports, inspection reports, change of plans and as-builts. Rectified quantity discrepancies and oversaw the preparation of contractor payment estimates. Aided in future Gilboa Dam project plan review and overall constructability review for these projects.

Term Agreement for Construction Inspection Services (D214163), NYSTA, New York Division, NY, Contract Manager

Responsible for providing construction inspection support services for horizontal and vertical construction contracts and other types of contracts under a three-year term agreement. Provided experienced staff under this contract that fell outside of NYSTA's capital program to supplement NYSTA's staff as needed. Key issues of this contract included responsiveness, safety, and maintenance and protection of traffic. Identified appropriate personnel and responded immediately for emergency assignments.



Patrick Ronan, PE
RESIDENT ENGINEER

Patrick Ronan has more than 29 years of diverse water/wastewater experience. His areas of expertise include extensive construction management on new pump station facilities and collections facilities, retrofitting existing treatment systems and extensive resiliency and emergency work. Specific concentrations include lead roles on pump stations and force mains, flow monitoring, odor control systems, fuel oil tanks, chemical containment, stormwater, green infrastructure, infrastructure, and emergency management.

- **EDUCATION**
 BS • Manhattan College
 • Civil Environmental Engineering • 1993
- **REGISTRATIONS**
 Professional Engineer •
 NJ, NY, DE
 Envision Sustainability Professional
- **YEARS OF EXPERIENCE**
 Dewberry • 4
 Prior • 25
- **AFFILIATIONS**
 New York Water Environment Association (NYWEA)
 Water Environment Association (WEA)

Route 7 Wittpenn Pump Station, NJDOT, Jersey City/Kearny, NJ, Design Services During Construction Manager

Construction management services for the new storm water pump station and extended detention treatment basin were included as part of the Route 7 Wittpenn Bridge Construction Contract. The pump station capacity is equivalent 50 MGD; pump station was designed to pump a 15-year design storm and resiliently designed to have facilities above 100-year flood levels. The contract included design and construction management services for the installation of the three main axial flow storm water pump systems rated at 135 HP motors each including necessary electric and control systems. The system also included two submersible jockey pumps rated at 2,250 gpm, automatic screening, gas detection and generator power. Responsibilities included field inspection, shop drawing reviews, RFI/RFC responses, evaluation of design changes and change orders, and participation in regular progress meetings. Construction value was \$6-million.

High Level Main Sewage Pump Improvements Contract 21 at 26th Ward WWTP, NYCDEP, Brooklyn, NY, Senior Civil Engineer

WWTP capacity is 85 MGD. Contract 21 included the replacement of the three high level main sewage pump systems rated at 34 MGD, each including wound rotor motors and secondary resistor controllers. Responsibilities included management of multi-disciplined design services during construction, managing shop drawing reviews, RFI/RFC responses, and change orders, and participating in regular progress meetings for this \$14-million project.

Preliminary Treatment Reliability Improvements Contract 20 at 26th Ward WWTP, NYCDEP, Brooklyn, NY, Senior Civil Engineer

WWTP capacity is 85 MGD. Contract 20 included the addition of a new preliminary settling tank, replacement of primary sludge pump system, replacement of primary blowers, sodium hydroxide system and a new flow division structure, and a new Motor Control Center (MCC) building. Responsibilities included management of multidiscipline design services during construction, including managing shop drawing reviews, RFI/RFC responses and change orders, and participating in regular progress meetings for this \$134-million project.

Amboy Road Project, NYCDDC, Staten Island, NY, Resident Engineer

This \$7.2-million project provided new storm sewer, sanitary sewer and water main for an entire neighborhood that was subject to heavy flooding over a drainage area of five square miles, and 8 ft by 4.5 ft box culverts were installed in some areas on piles. As big

Patrick Ronan,
PE
RESIDENT ENGINEER

as 18" sanitary sewers and replacement/relocation of 20 inch distribution water mains. The project involved redesigning the profiles of Amboy Road and widening the heavily traveled roadway for a complete reconstruction. The new storm sewer system installed was connected into the Staten Island Blue Belt System.

Heberton Avenue Project, NYCDDC, Staten Island, NY, Resident Engineer

The project provided new 42" storm sewer, sanitary sewer, sludge force main and water main for an entire neighborhood which was a very old neighborhood. An unknown existing high pressure sludge force main from the Oakwood Beach treatment plant to the Port Richmond treatment plant was found in direct conflict with the storm and sanitary sewers in the design plans. The project involved redesigning the storm sewer, sanitary sewer and the sludge piping alignments while coordinating with treatment operations to keep the sludge piping active when needed. The contract also included a complete restoration of impacted roadways.

Arthur Kill Road Barry Street, NYCDEP, Staten Island, NY, Assistant Resident Engineer

The project constructed a large mainline sewer to provide new sanitary sewer service. The 24" sanitary sewer installed was microtunneled under NY 440 a major NYS Highway, the West Shore Expressway to provide sewer system access to the Arthur Kill Road Interceptor. The project was completed utilizing a micro-tunneling boring machine. Carrier pipe used HOBAS fiberglass pipe which was a first in NYC and that time.

Citywide Stormwater Engineering and Analysis Planning (CSEAP), NYCDEP, Citywide, NY, Project Engineer

This project is a new initiative to accelerate stormwater mitigation engineering and to prepare a comprehensive Stormwater Master Plan for four of NYCDEP's 14 Wastewater Treatment Plants (WWTPs) that have a large component of separate storm sewers throughout the tributary boundary area. The four WWTPs are Oakwood Beach, Port Richmond, Hunts Point, and Tallman Island within which the Municipal Separate Storm Sewer System (MS4) were studied in detail to develop a forward-looking master stormwater management plan for future design and construction.

Development & Testing of Climate Resiliency Guidelines, NYCDDC, Citywide, NY, Project Engineer

Testing and improvement of the Climate Resiliency Design Guidelines. The City developed the Guidelines in April of 2017 to integrate forward-looking climate change data into the design process for its \$13-billion capital project program- the largest capital program in the nation. Dewberry tested the Guidelines on 10 pilot projects in NYC to evaluate the real world implications of applying them to design and construction. For NYC, "resilient design is intended to become an integral part of the project planning process" and Dewberry's understanding of resilient design and our 60-year track record performing design and construction in New York City enabled us to make a valuable contribution to this pioneering effort.



Rahul Parab, PE*, D.WRE, CFM

TECHNICAL ADVISOR

Rahul Parab has more than 20 years of planning, engineering design and construction experience on flood resiliency projects. He led and managed full life cycle of multi-disciplinary flood resiliency projects – from policy and planning to design and construction - for a range of clients including NYC, NYS, FEMA, USACE and others. His project portfolio includes several multi-billion dollar coastal flood resiliency projects in the US. He is a recognized leader with exceptional integration skills who led his projects to receive ACEC New York and national awards. He served as a lead peer reviewer and project manager on coastal resiliency projects designed by USACE-New York District.

- **EDUCATION**
MS • University of Toledo
• Civil Engineering • 2003
BS • Mumbai University •
Engineering • 2001
- **REGISTRATIONS**
PE • NY, TX
Certified Floodplain
Manager
Diplomate, Water
Resources Engineer
* New York State PE
- **YEARS OF EXPERIENCE**
Dewberry • 8
Prior • 12
- **AFFILIATIONS**
New York Water
Environment Association
New York State Floodplain
and Stormwater
Managers Association
Society of American
Military Engineers
American Academy
of Water Resources
Engineers
American Society of Civil
Engineers
North Carolina Association
of Floodplain Managers
Association of State
Floodplain Managers

Rebuild-By-Design Climate Resiliency Study and Environmental Impact Statement, NJ TRANSIT, Hoboken, NJ, Chief Engineer and Deputy Project Manager

Responsible for feasibility assessment and preliminary design of the coastal flood risk reduction system and stormwater management system that would reduce flood risks from coastal storm surge and rainfall events in the City of Hoboken and parts of Weehawken and Jersey City. Responsibilities included oversight of the development of integrated coastal and stormwater models, integration of urban design and landscape architectural elements into engineering design of coastal flood risk reduction system consisting of flood walls, berms and gates closure structures, and multidisciplinary team coordination covering all aspects of engineering, architecture, urban design, landscape architecture and environmental disciplines.

Red Hook Integrated Flood Protection System Feasibility Study, NYCEDC, Brooklyn, NY, Project Manager

Responsible for project management of nine subconsultants that were part of the team and provided technical guidance to the project delivery team for conducting a feasibility study that involved developing a comprehensive flood management system to reduce flood risks from coastal storm surge in Red Hook. The final chosen integrated flood protection systems are located in two areas within Red Hook – Beard Street and Atlantic Basin – and are designed to protect Red Hook from a 10-year coastal storm surge and one foot of Sea Level Rise. Led the participation for the Dewberry team in community engagement and inter-agency stakeholder engagement to confirm that feedback was incorporated into the final project solution. Pioneered the development of an innovative coastal flood protection solution that eliminates the need for a deployable system. Verified that the project met FEMA’s HMGP application criteria as well as the City’s design criteria to build various components of the flood protection system.

Benefit-Cost Analysis for FEMA’s Pre-Disaster Mitigation Grant Funding for City of Hoboken’s Northwest Resiliency Park, Hoboken, NJ. Project Manager

Responsible for performing a Benefit-Cost Analysis (BCA) for the City of Hoboken’s funding application for a new \$90-million Northwest Resiliency Park comprising stormwater detention features to manage up to one million gallons of rainfall runoff. Led the analysis to estimate project benefits through use of Infoworks ICM hydrologic and

Rahul Parab, PE*,
D.WRE, CFM

TECHNICAL ADVISOR

hydraulic model, performed BCA using FEMA's BCA software, and provided a memo with the analysis to demonstrate the cost-effectiveness of the proposed project.

Preliminary Design Services for Design and Testing of New York City's Climate Resiliency Design Guidelines, NYCDDC, Citywide, NY, Project Manager

Responsible for leading a multidisciplinary team of architects, engineers, landscape architects and economists to provide design review services for the development and testing of preliminary Climate Resiliency Design Guidelines for New York City capital projects across the five boroughs. Work also included development of updated climate guidelines, BCA, analyzing effects of climate change stressors on design of variety of infrastructure typology (24 pilot sites consisting of roadways, complex critical facilities, buildings, piers) and developing conceptual solutions to make infrastructure resilient and sustainable in anticipation of future climate change.

Oakwood Beach Flood Resiliency Study, New York State Office of General Services, Staten Island, NY, Deputy Project Manager

Responsible for day to day project management activities, internal coordination with a multidisciplinary team of coastal, water resources, civil, geotechnical and environmental engineers; managing sub-consultants; stakeholder coordination; providing weekly report updates and developing monthly progress reports; client presentations and other activities. Technical Leader responsible for design of integrated flood protection system consisting of rock revetment, floodwalls, tide gates and others to mitigate the coastal and rainfall flooding within the Oakwood Beach area. Tasks included development of hydrologic and hydraulic models, analysis of flood protection system for climate change, developing cost estimates, and report writing.

Design of Integrated Coastal Flood Protection for Long Beach WWTP, City of Long Beach, NY, Coastal Engineer

Responsible for evaluating appropriate design flood elevation with criteria from Code of Federal Register (CFR44 65.10). Performed coastal wave overtopping calculations using Eurotop model; accounted for sea-level rise and developed a summary report and detailed plans and specifications for the installation of approximately 2,300-LF of bulkhead along the immediate bayfront on the northern waterfront, and approximately 4,400-LF of a deployable flood barrier and/or permanent flood wall along the southern side of the City of Long Beach to protect critical maintenance, water, wastewater and power facilities from storm related flooding similar to what occurred during Superstorm Sandy.

Flood Insurance Study and RISK MAP Studies in FEMA Region IV and VI, Federal Emergency Management Agency, Project Manager and Technical Lead

Performed 15+ Flood Insurance and RISKMAP studies within FEMA Regions IV and VI. Each project involved managing staff engineers and GIS analysts, managing budget and schedule, engineering analysis, QA/QC, report preparation and extensive coordination with USACE.



Kenneth Lund-Pearson, ASCE III

INSPECTOR

Kenneth Lund-Pearson has extensive and diverse experience in various construction and engineering disciplines of construction and engineering implementing state and county funding. He served as resident engineer on various projects that include storm and sanitary sewers, pumping stations, rehabilitation of roadways, streetscape projects, utilities, with MPT on state highways, including coordination with counties and local municipalities.

• **EDUCATION**

Certificate • Rutgers University • Municipal Engineering Construction Inspection I

Certificate • Rutgers University • Municipal Engineering Construction Inspection II

• **REGISTRATIONS**

NJSAT Asphalt Paving Construction Technologist

ACI Concrete Field Testing Technician – Grade 1

Rutgers Traffic Control Coordinator

OSHA 10-hour Construction Safety

OSHA Confined Space Entry

• **YEARS OF EXPERIENCE**

Dewberry • 18

Prior • 33

Distribution System Improvement Charge Assistance, New Jersey American Water (NJAW), Various Locations, NJ, Resident Engineer

Provided full-time construction inspection and miscellaneous support services to supplement the NJAW construction inspection staff on an as-needed basis. Services included construction inspection relating to various water system improvements performed in accordance with the Board of Public Utilities (BPU) Distribution System Improvement Charge (DSIC) Program. Also assisted with water sampling and testing, and performing hydrant flow tests.

Knoll Pumping Station, Township of Parsippany-Troy Hills, Parsippany-Troy Hills, NJ, Construction Inspector

Engineering services as a result of the NJDEP issuing a 2005 Administrative Consent Order requiring the Township to find more water by June 1, 2006. Analyzed available options and assisted the Township in developing an innovative long-term solution – to construct a pumping station to tie into the Jersey City reservoir and enable the Township to “bank” water for withdrawal during peak periods. The Knoll Pumping Station includes three 1,045-GPM vertical turbine pumps, variable frequency drives, an emergency generator, two 12-inch wet taps on two 72-inch steel mains, and a SCADA system.

Vincent Place Stormwater Pumping Station, Borough of Teterboro, Teterboro, NJ, Construction Inspector

The 175 cfs Vincent Place stormwater pumping station building included concrete masonry and brick exterior walls, windows and architectural louvers to fit the surrounding residential area, a wooden asphaltic shingled pitched roof, and a separate interior room to house the generator and electrical equipment. Work included design of 84-inch storm drains, detailed layout of the pump station facility, including 6-72inch screw pumps, coordination of electrical, structural, and architectural work, and the demolition of two existing pump stations. This project received a 2006 Honor Award from the New Jersey Chapter of the American Consulting Engineers

Grand View on Hudson, SUEZ North America, Hudson County, NY, Construction Inspector

Responsible for services pertaining to the cleaning and lining of approximately 8,000-LF of circa 1900 12-inch cast iron water main. The lining process was completed using a Warren Environmental two-part thixotropic epoxy which was installed with a centrifugally spun applicator. The project required phased bypass piping to provide temporary water service to over 100 residents during the lining installation process. Dewberry coordinated

Kenneth Lund-Pearson, ASCE III
INSPECTOR

the sampling and disinfection to receive approval from the local department of health to verify conformance with applicable regulations. The project also included coordinated shutdowns and relocation of several sections of the 12-inch water main to accommodate a future County roadway reconstruction project and associated storm infrastructure.

Improvements to Pocahontas Lake Dam, Morristown, NJ, Construction Inspector

Responsible for inspecting the installation of a state-of-the-art anchoring system, as well installation of strengthening of earthen abutments, erosion protection for abutments and crib type training walls for a post-tensioned soil anchor system for stabilization of a concrete spillway structure, and other dam safety related improvements to the Pocahontas Dam, a high hazard dam. The contract also involved design for strengthening of earthen abutments, erosion protection for abutments and crib type training walls along the Whippany River downstream. Dewberry was responsible for preparing designs and construction documents, including geotechnical (soil borings and stability calculations), structural and civil engineering, as well as dam safety, wetlands, and soil erosion permit applications.

Township of Parsippany-Troy Hills, NJ, Construction Inspector

Engineering services for projects involving roadway improvements and water system improvements, including pumping stations, storage tanks, and the distribution system.

Borough of Bloomingdale, NJ, Construction Inspector

Inspected various roadway improvement projects and the downtown streetscape improvements, Oakwood Lake playground and nature walk, Sloan Park playground and site work, miscellaneous water/sewer system improvements, and inspection and oversight of new connections to the municipal water and sewer systems by private property owners.

Cedar Crest Village, Erickson Retirement Communities, Pequannock Township, NJ, Construction Inspector

Engineering services to determine the best method for supplying water and disposing of sewage for Cedar Crest Village, a continuing care retirement community consisting of approximately 1,500 residential units, 200 assisted living units and 300 skilled nursing units. Evaluated water supply sources; designed a water booster station consisting of twin 500 GPM horizontal end suction pumps with variable frequency drives, an emergency generator and SCADA system; a 0.5 million gallon ground level water storage tank with an internal circulation system (consisting of 8,000 feet of 8-inch to 16-inch ductile iron mains, including a 250-foot-long jack and bore trenchless crossing). Evaluated both a gravity sewer and a force main. Designed a sanitary sewage pumping station and an HDPE force main of approximately two miles.



S. Rudy Venkatasami, NICET IV
INSPECTOR

Rudy Venkatasami has more than 26 years of experience on bridge and highway construction projects. His experience as an Office Engineer and Inspector includes extensive work on complex, multi-million dollar infrastructure improvement projects, coordination with railroads, including new and rehabilitated bridge and highway construction projects. He is responsible for maintaining the document control system per MURK, assisting the resident engineer in processing estimates and change orders in the CapEx system, handling lane closing requests, material certification logs, plant and field inspection requests and preparation of as-built drawings.

- **EDUCATION**
 ASS • Berkeley College •
 Business Management
- **REGISTRATIONS**
 NICET, Level IV, Highway
 Construction
 Asphalt Paving
 Construction Technologist
 OSHA, Construction
 Safety, 10 Hour
 OSHA, Fall Protection
 ACI Concrete Field Testing
 Technician, Grade I
- **YEARS OF EXPERIENCE**
 Dewberry • 14
 Prior • 26
- **AFFILIATIONS**
 Society of Asphalt
 Technologists of New
 Jersey (NJSAT)

SE-809 Resident Engineering Inspection Services for the Installation of Storm and Sanitary Sewers along the Whitestone Expressway Service Road, New York City Department of Design and Construction, Queens, NY, Office Engineer

This project in an urbanized area mixed with commercial and residential dwellings. Extensive Community Outreach program, coordination with OCMC and NYSDOT regarding traffic detours and Whitestone Expressway Ramp closures for NYCCDC for the installation of storm and sanitary sewers along the north-bound Whitestone Expressway Service Road, between 25th Avenue and the Flushing River in Queens, NY. Contract work includes installation of deep CFA piles, micropiles, soil sampling for contamination, set up treatment plants and dewatering, precast box sewers, installation of siphon chambers, various size storm, sanitary and combined sewers, street lighting, concrete and steel curb, sidewalk and restoration of road base and paving. Services include inspection, supervision, management, coordination and administration of the project.

New 151st Street Pedestrian Bridge over Henry Hudson Parkway and Amtrak D031266, New York State Department of Transportation, New York, NY, Construction Inspector

Senior Inspector for construction of the \$25-million new pedestrian bridge (260-ft long, 20-ft wide) over AMTRAK and Henry Hudson Parkway with two pedestrian access ramps between 151st and 153rd Streets in Manhattan, NYC. Construction includes reinforced concrete abutments up to 45 ft. long, 25 ft. wide and 6 ft. deep on concrete spread footings and cast-in-place concrete piles; installing steel arches with vertical cables up to 36 foot high; installing steel floor beams; installing bridge bearings; constructing a super structure of steel boxbeam girder, steel cap beams and 8-inch thick reinforced concrete deck; and 10 foot high reinforced concrete retaining walls with stone facing. Associated work includes rock excavation for the construction of the bridge and ramp foundations, a new street lighting system along the east and west ramps of the bridge, pedestrian and vehicular MPT and coordination with Amtrak .

Gateway Center at the Bronx Terminal Market, BTM Development Partners, LLC, Bronx, NY, Inspector

Construction inspection services for the \$400-million new development consisting of 998,000-SF of retail and parking facilities for 3,178 cars. Included off-site roadway and traffic improvements consisting of new pavement, curbs, sidewalks, six new traffic signals,

S. Rudy Venkatasami,
 NICET IV
 INSPECTOR

street lighting, pavement markings and signs; and widening an off-ramp from the Major Deegan Expressway to accommodate an additional travel lane to accommodate increased traffic volumes.

Manhattan West - West 31st Street Viaduct over Amtrak, New York City Department of Transportation, New York, NY, Office Engineer/Inspector

Construction inspection services for the replacement of this steel bridge, concrete deck and roadway of the existing W31st Street that extends west of 9th Ave and spans approximately 200ft. which is the property of the NYC Department of Transportation. The bridge travels adjacent to Brookfield Property (future SE Tower) which lies to the north. Below the bridge are tracks operated by Amtrak leading to and from New York's Pennsylvania Station. Since the tracks are continuously operated, a temporary protection shield needs to be erected prior to the start of construction and removed after all work had been completed. The installation and removal of the shield are being coordinated with allowable track outages for each railroad. In addition to a new structure and roadway, a temporary relocation and support in place of roadway utilities, new drainage, new expansion joints, sidewalks, curbs, and the structure will be framed to allow the Con Ed vaults for the Brookfield Property SE Tower to be installed within the 31st Bridge northern sidewalk.

Riverside South Infrastructure - Parcel K Construction, Extell Development Company, New York, NY, Office Engineer

Responsible for reviewing daily inspectors' reports, entering quantities in payment books, preparing contractor's payments, review of shop drawings, change orders, material certifications, Contractor's payroll, as-builts and maintaining all books per MURK. Resident engineering inspection services for a 300-foot section of the Miller Highway Tunnel concrete shell, relieving platforms, storm, sanitary sewer and water main. Also involved newly built street, H-piles, cold weather concrete pours, and installation of distribution water main.

Replacement of the Watchung Avenue Bridges over the Garden State Parkway, NJTA, Bloomfield, NJ, Office Engineer

Responsible for maintaining the document control system; assisting in processing estimates and change orders; handling lane closing, material plant and field inspection requests; and as-built drawings for the construction inspection services for the \$11-million replacement of two existing bridges carrying Watchung Avenue over the Garden State Parkway. The replacement bridge consists of a two-span continuous steel girder bridge, with a cast-in-place concrete deck, supported on a reinforced concrete substructure. This project also involves widening and realigning the existing northbound and southbound ramps at Watchung Avenue and the replacement of four existing traffic signals along Watchung Avenue.



James Schappell, PE

BID PHASE SERVICES AND CONSTRUCTION PHASE SERVICES

James Schappell is a water/wastewater engineer who has experience working for both public and private clients in many different facets of the industry including potable water treatment, distribution and transmission, as well as wastewater treatment, conveyance and collection. He served on projects in phases from planning to design, and through construction and gained additional industry experience by successfully managing the operation of a municipal water and wastewater system. In addition, James has a background in land surveying where he has experience in producing boundary, topographic, and as-built surveys, and experience performing construction stakeouts.

- **EDUCATION**
BS • Civil Engineering • Rutgers University • 2015
- **REGISTRATIONS**
PE • NJ, NY
OSHA 10-Hour Construction Safety and Health • 2021
- **YEARS OF EXPERIENCE**
Dewberry • 3
Prior • 3
- **AFFILIATIONS**
American Water Works Association
New Jersey Water Association

New York Master Service Agreement, Suez Water, Various Locations, NY and NJ, Project Manager

Responsible for coordinating surveys, producing detailed plans, specifications, engineering reports and cost estimates, obtaining permits, and providing construction inspection for water main replacement projects.

Linden Street Lead Service Line Replacement (LSLR) Engineering Inspection Services, SUEZ Water New Jersey, Teaneck, NJ, Project Manager

Replacement/upgrade of approximately 2,500-LF of 4-inch water main with new 8" ductile iron water main, transferring/renewal of approximately 84 services, replacing four hydrants, and tie-over/cut and caps at six intersections. Services included coordinating dig and determining efforts for the existing services; assisting SUEZ in notifying customers of the LSLR program; coordinating with the contractors for customers opting in to the program; and full-time construction inspection of project, including preparation of daily inspection reports, assisting with compliance with SUEZ's LSLR program, documenting new assets, materials tracking, collection of field data, and reviewing potential change orders and monthly payment applications.

Water Main Rehabilitation with Spray Epoxy Liner, Suez Water, Grand View-on-Hudson, NY, Project Manager

Construction administration and inspection services for the cleaning and lining of approximately 8,000-LF of circa 1900 12-inch cast iron water main. The lining process was completed using a Warren Environmental two-part thixotropic epoxy which was installed with a centrifugally spun applicator. The project required phased bypass piping to provide temporary water service to over 100 residents during the lining installation process. Dewberry coordinated the sampling and disinfection to receive approval from the local department of health to verify conformance with applicable regulations. The project also included coordinated shutdowns and relocation of several sections of the 12-inch water main to accommodate a future County roadway reconstruction project and associated storm infrastructure.

Water Main Rehabilitation for Bridge Crossing over NYS Thruway with Primus Liner, Suez Water, Orange County, NY, Project Manager

Design and construction services to rehabilitate approximately 500-LF of a 12-inch water

James Schappell,

PE

**BID PHASE SERVICES
AND CONSTRUCTION
PHASE SERVICES**

main located under a NYS Thruway overpass. The project was necessitated due to leaks that developed along the water main and required the pipe to be taken out of service. The rehabilitation was accomplished using a composite polyethylene/Kevlar liner which was pulled through the existing water main on the Thruway overpass. The cleaning and lining was completed in less than one week and was successful in restoring the water main to service.

30-inch Water Transmission Main Route Study, New Jersey American Water, Somerville, NJ, Project Engineer

Prepared a report which evaluated route alternatives for an approximately 3,000-LF, 30-inch ductile iron pipe water transmission main through downtown Somerville. The report analyzed four potential routes based on a number of criteria including construction feasibility, utility conflicts, traffic impacts, public inconvenience, restoration requirements, geotechnical constraints, environmental constraints, and overall project costs.

PATCO Industrial Wastewater System Sulfide Mitigation, Delaware River Port Authority (DRPA), Lindenwold, NJ, Project Engineer

Collected system information and analyzed system processes and chemical treatment equipment to produce a report with recommendations for controlling sulfide production within the Port Authority Transit Corporation's industrial wastewater system. The evaluation was successful at mitigating sulfide exceedances by optimizing operational procedures.

Port Elizabeth – Phase II Water System Stage I Study, PANYNJ, Elizabeth, NJ, Project Engineer

Study to determine condition of the water distribution system and the cost to rehabilitate it. The scope of work includes evaluating the adequacy of the fire suppression system including the fire pump station and the need for fire-water storage tanks, and a proposed water distribution system to support future layout of the Elizabeth Port Authority Marine Terminal.

John F. Kennedy International Airport (JFK) – High Pressure Water Valves Rehabilitation and Replacement, PANY&NJ, Queens, NY, Project Engineer

Produced contract drawings, engineering estimates and specifications for the Stage III design of the replacement of 20-inch and 30-inch water valves at JFKIA. He also assisted in the design of custom welded steel couplings which were capable of providing a restrained connection from the riveted steel water main to the proposed replacement gate valve. Following the acceptance of the project by PANYNJ and the award of the contract, provided shop drawing review of contractor submittals.

Cedar Crest Sanitary Sewer Pump Station Upgrades, Cedar Crest Retirement Community, Pompton Plains, NJ, Project Engineer

Produced design and bidding documents for the replacement and upgrade of Cedar Crest's sewer pumping station which services approximately 2,000 residents and approximately 1,000 employees. Design utilized variable frequency drives which were effective in improving system performance while reducing power consumption. Following the bidding award, provided construction phase services to determine that the work being performed was in compliance with the contract documents.



Murat Kocak, PE

BID PHASE SERVICES AND CONSTRUCTION PHASE SERVICES

Murat Kocak is a water/wastewater engineer with comprehensive achievements in project management, engineering design, construction management, and inspection services in the water resources sector. He has experience with pump and booster station design, water treatment, permitting, water distribution, and process and instrumentation. Murat coordinated with various municipal, state, and federal regulatory agencies in preparing permit applications. In addition, he developed life-cycle cost estimates for conceptual designs in determining cost benefit analyses. Murat served as a project manager and design engineer for various multidisciplinary projects using his engineering knowledge in structural, mechanical, hydrology and hydraulics, chemical treatment systems, process and instrumentation, and distribution systems for both small tasks and high-profile, large capital projects.

• **EDUCATION**

ME • Mechanical Engineering • Stevens Institute of Technology • 2008

BE • Mechanical Engineering • Stevens Institute of Technology • 2007

• **REGISTRATIONS**

PE • NJ, NY

• **YEARS OF EXPERIENCE**

Dewberry • 1

Prior • 13

• **AFFILIATIONS**

American Water Works Association, New Jersey Section (NJAWWA)

American Society of Civil Engineers (ASCE)

Master Service Agreement, SUEZ Water New York, Various Locations, NY and NJ, Project Manager/Project Engineer

Responsible for coordinating surveys, producing detailed plans, specifications, engineering reports and cost estimates, obtaining permits, and providing construction inspection for water main replacement projects. Projects vary in complexity and many required the use of unique and non-standard design approaches to meet challenges encountered. Examples include:

- SUEZ Water New Jersey, CSX Train Crossing, Dumont, NJ, Project Manager
- SUEZ Water New Jersey, Hirschfeld Brook Bridge Water Main Crossing, New Milford, NJ, Project Manager
- SUEZ Water New Jersey, Central Avenue PANYNJ Bridge Crossing, Fort Lee, NJ, Project Manager
- SUEZ Water New York, Replacement of Asbestos Cement Pipe Water Mains, Various Locations, NY, Project Manager.

25 MGD Vertical Turbine Pump Addition, SUEZ, Haworth, NJ, Project Engineer/Assistant Project Manager

This project consist of the addition of a 25MGD finished water vertical turbine pump to an existing finished water pump station. Unique complexity included retrofitting the existing pump foundation, which was originally intended for horizontal split case centrifugal pumps, to accommodate a vertical turbine pump.

Somerville Transit-Oriented Development (TOD), Somerset Development, Somerville, NJ, Project Engineer

Dewberry's services include survey, environmental services, geotechnical engineering, site planning and site/civil engineering, permitting, and municipal board representation. The TOD is being developed in phases and will include 371 apartments, 156 townhomes, two parking garages, 4,000-SF of retail space, a 4,000-SF community meeting space, and outdoor spaces. The first parking deck will accommodate 526 vehicles and replace the existing commuter parking lot adjacent to the train station. The phased complex includes

Murat Kocak, PE
BID PHASE SERVICES
AND CONSTRUCTION
PHASE SERVICES

new roadways to connect with the Borough's roadway network and to State Highway Route 206.

Phased Upgrades to a Critical Booster Station, SUEZ, Haworth, NJ, Project Engineer/Assistant Project Manager

This project employed phased upgrades to a booster station without interrupting the facility's operation. The design required the phased replacement of interior and exterior large diameter piping, replacement of four existing horizontal centrifugal split case pumps with six new horizontal centrifugal split case pumps. Due to the booster station being fed by two different pressure zones, the pumps were sized and selected according to the influent pressure zone from which it would be fed. The aged electrical system and incorporating variable frequency drives (VFDs) for each new pump was upgraded. To allow flexibility, a pressure reducing valve vault was designed and implemented to allow the higher-pressure zone to supplement the lower pressure zone if required.

Conversion of Anhydrous Ammonia System to Ammonium Sulfate, SUEZ, Haworth, NJ, Project Engineer/Assistant Project Manager

This project converted an anhydrous ammonia system to ammonium sulfate. Efforts included chemical analysis to confirm required dosage, design and selection of chemical feed pumps, feed system, diffusers and appurtenances, analysis and design of chemical storage, and the preparation of project plans, specifications, reports, and permits. Inspected and closed the project out on completion.

Upgrade of a Powder Activated Carbon System, SUEZ, Haworth, NJ, Project Engineer

Responsible for the design, permitting, and field engineering efforts for this new storage and feed system, which is a replacement of an existing powder activated carbon system.

Upgrades to a Sodium Hypochlorite Chemical Feed System, SUEZ, Haworth, NJ, Project Engineer

Responsible for analyzing and designing the replacement and relocation of a sodium hypochlorite chemical feed system. Efforts included chemical analysis to confirm required dosage, design and selection of chemical feed pumps, feed system, diffusers and appurtenances, and the preparation of project plans, specifications, reports, and permits.

Rehabilitation of Elevated Water Storage Tank, SUEZ, Englewood Cliffs, NJ, Project Engineer

Responsible for the design and incorporation of an auxiliary pumping system and two separate booster stations to allow for the isolation and removal from service of an elevated water storage tank to accommodate structural repairs and rehabilitation.

Water Treatment Plant Upgrade, SUEZ, Haworth, NJ, Field Engineer

Provided engineering and project management services for a \$100-million upgrade to a 200-MGD water treatment plant. This project involved the addition of a dissolved air flotation facility, a residuals handling facility, and ozone system upgrade.



Michael Hirschberger, EIT

BID PHASE SERVICES AND CONSTRUCTION PHASE SERVICES

Michael Hirschberger has experience with civil and environmental engineering projects serving local, county, state, and quasi-state government clients. His projects involve water main evaluation and design; booster and fire pump station design; sanitary sewer system design; and wastewater treatment plant design. He also has experience in construction inspection of wastewater treatment plant rehabilitation projects and water transmission line installation projects.

• **EDUCATION**

ME • The Cooper Union for the Advancement of Science and Art • Civil Engineering • 2016

BE • The Cooper Union for the Advancement of Science and Art • Civil Engineering • 2015

• **REGISTRATIONS**

Engineer-in-Training • NY

• **YEARS OF EXPERIENCE**

Dewberry • 2

Prior • 3

Master Service Agreement, Suez Water New York, Various Locations, NY and NJ, Staff Engineer

Responsible for coordinating surveys, producing detailed plans, specifications, engineering reports and cost estimates, obtaining permits, and providing construction inspection for water main replacement projects. Also provides engineering services including performing alternatives analyses and chlorine contact time calculations.

World Trade Center (WTC) River Water Pump Station Upgrades Sluice Gate Replacement, Stage I, PANYNJ, New York, Staff Engineer

Supporting civil, structural, mechanical, and electrical engineering for conceptual design, alternative evaluation, and development of a construction cost estimate for this project that involves the replacement of the sluice gates that control the water flow as part of the WTC central chiller plant's cooling operations.

John F. Kennedy International Airport (JFK) – Rehabilitation/ Replacement of Water Distribution Systems, Stage I, PANY&NJ, Queens, NY, Civil Engineer

This project involves the preparation of a Stage I Design Development Report to rehabilitate and/or replace the existing low, intermediate, and high pressure water distribution systems at JFK. The deliverable will include conceptual design schemes with construction method alternatives, construction schedules, staging/phasing plans, and cost estimates for each design scheme. JFK's existing low and intermediate pressure water systems supply domestic water and fire demands within the airport, including the cargo facilities. The high pressure water system supplies fire protection for large hangars and the Bulk and Satellite Fuel Farms.

Port Elizabeth – Phase II Water System Stage I Study, PANY&NJ, Elizabeth, NJ, Civil Engineer

This project involves a study to establish an overall condition of the existing water distribution system and the cost to rehabilitate it. The scope of work includes developing a computer model of the system, evaluating the adequacy of the fire suppression system including the fire pump building and the need for fire-water storage tanks, and proposing a water distribution system to support future layout of the Elizabeth Port Authority Marine Terminal.

**Michael
Hirschberger, EIT**

**BID PHASE SERVICES
AND CONSTRUCTION
PHASE SERVICES**

**GOSR Village of Suffern, Dormitory Authority State of New York (DASNY),
Rockland County, NY, Engineer**

Conducted an assessment of where floodwaters enter the water and wastewater treatment plants and opportunities to harden the facilities including relocating vulnerable equipment, electrical modifications, and various flood proofing strategies to prevent or minimize water infiltration. This project was administered through the Governor's Office of Storm Recovery.

**Installation of a 16-Inch Water Transmission Line, Westchester Joint
Water Works, Town of Harrison and Village of Mamaroneck, NY, Engineer**

Responsible for the construction inspection of the installation of a new 10,000-LF 16-inch water transmission line. Duties included taking photographs of construction progress, writing daily reports, drawing sketches, and verifying overall conformance to contract documents.

**Upgrades to Primary Settling Tanks, Grass Island Wastewater Treatment
Plant, Town of Greenwich, CT, Engineer**

Responsible for primary settling tank upgrades at the Grass Island Wastewater Treatment Plant. The scope of work included replacing in-kind the components and equipment of the primary settling tanks and primary sludge pumps at the plant, which needed replacement due to age. Deliverables included a set of construction drawings, specifications, and a construction cost estimate.

**Upgrades to Final Clarifiers, Grass Island Wastewater Treatment Plant,
Town of Greenwich, CT, Engineer**

Responsible for the construction inspection of final clarifiers at the Grass Island Wastewater Treatment Plant. The scope of work included replacing in-kind the components and equipment of the three final clarifiers at the plant, which needed replacement due to age.

**Structural Analyses for Proposed Cellular Antennas on Elevated Water
Tanks, Suffolk County Water Authority, Suffolk County, NY, Engineer**

Installation of cellular antennas on various elevated water tanks throughout Suffolk County. The scope of work included conducting structural analyses and engineering reviews of proposed designs of upgrades to the existing configuration of the cellular antennas of various telecommunications companies installed on the tanks.

**Forge River Watershed Sewer Project, Suffolk County Department of
Public Works, Mastic and Shirley, Town of Brookhaven, NY, Engineer**

Responsible for the planning and design of a new sewer district, with sewers, pump stations, and a wastewater treatment plant. Replacing existing septic systems, the sewer district is expected to greatly reduce the amount of nitrogen being emitted into the nearby Forge River, which feeds into the Great South Bay. The district will connect approximately 1,800 residential properties and 150 businesses.

SECTION 5 - RELEVANT EXPERIENCE OF FIRM

SECTION 5 - RELEVANT EXPERIENCE OF THE FIRM

REIS for the Installation of Storm and Sanitary Sewers along the Whitestone Expressway Service Road, SE-809 QUEENS, NY

This project installed 7,000-LF of new Flat Top Reinforced Concrete (FTRC) sewers including 9-feet by 9-feet 6-inches, sanitary sewer, Continuous Flight Augur (CFA) piles substituted by drill displacement piles, installation of outfall with tidal flow gate, various sizes of distribution water main, ADA-compliant pedestrian curb ramps and sidewalk, roadway restoration, street lighting, utility relocations, traffic signal work, tree planting and landscaping. Dewberry's REIS tasks included:

- Roadway reconstruction
- Installation of catch basins and removal of old seepage basins
- Construction of new concrete bus pad
- Replacement of fire hydrants and asphalt pavement
- Community outreach and agency coordination
- Maintenance and protection of traffic
- Asphalt pavement



- **COST** \$67.5-million
- **COMPLETION** 2018
- **CLIENT CONTACT**
New York City
Department of Design
and Construction
Lambert Monah, PE
718.391.2469



REIS for Replacement of Trunk and Distribution Water Mains & Combined Sewer Rehabilitation in Bainbridge Avenue, HED569

BRONX, NY

Dewberry is providing resident engineering inspection services to NYCDDC for the replacement of old cast iron trunk and distribution water mains, and combined sewer rehabilitation in Bainbridge and Jerome Avenues in the Bronx to provide high quality water services to residents and businesses.

This project is a complex undertaking through the area of Community Boards No. 7 and No. 12, which requires extensive coordination with many parties. Primary construction includes installation of 48-inch and 72-inch steel water mains. The project is divided into three phases due to changes in roadway geometry, varying land use, mixed dwellings, and to optimize project staging while minimizing impact to the public during construction. Phase 1 requires the installation of a 72-inch steel water main in Bainbridge Avenue. Phase 2 and 3 roadway work on Jerome Avenue from Holly Lane to East 233rd Street requires a 48-inch water main.



- **COST** \$39.4-million
- **COMPLETION** 2022
- **CLIENT CONTACT**
New York City Department of
Design and Construction
Lambert Monah, PE
718.391.2469



Reconstruction of Route 1 & 9, Section 28 HUDSON AND BERGEN COUNTIES, NEW JERSEY

Dewberry provided resident engineering and construction inspection services for the Federally-funded \$91-million reconstruction of Route 1 & 9 Section 28 from MP 58.0 to MP 63.0 in North Bergen Township, Hudson County, New Jersey and in the boroughs of Fairview, Ridgefield, and Palisades Park in Bergen County, New Jersey; Federal Project Number NH-0033(259).

Work included roadway construction, widening and realignment, roadway excavation, rock excavation and blasting, milling and resurfacing, Superpave Hot Mix Asphalt (HMA) courses, removal and replacement of concrete pavement, partial depth concrete pavement repairs, sawcut and sealing joints in concrete pavement, cleaning and sealing cracks in concrete surface course. It also involved storm drainage and sanitary sewer systems, pipe and inlet cleaning, extensive gas main and water main installation, concrete curb, 18 traffic signals with ADA compliant pedestrian curb ramps, sidewalk and driveways. Extensive utility relocations, excavation and off-site disposal of regulated waste material, temporary lighting, temporary traffic signal systems, new signalized intersections at 22 locations with left and right turn lanes at local road intersections with Route 1 & 9 were parts of this project. It also included landscaping, signing, temporary and permanent traffic striping and markings, extensive traffic control, nighttime operations and staging sequence. Intelligent Transportation System work included installation of 38-inch round junction boxes and RNM Multiduct Conduit.

The project involved multi-stage construction while maintaining two-way traffic and safe pedestrian access through the work zone that included residential housing and commercial businesses. This five-mile stretch of roadway is heavily traveled and extensive coordination with local police and fire departments, Township and Borough officials and utilities was required to maintain effective communications during construction to keep agencies informed of the staging changes, including community outreach.



- **COST** \$91-Million
- **COMPLETION** 2016
- **CLIENT CONTACT**
NJDOT
Region North
Construction
Eric Neu
973.601.6658



Hudson River Rebuild by Design HOBOKEN, WEEKHAWKEN, & JERSEY CITY, NEW JERSEY

Dewberry performed a feasibility study, preliminary engineering, and an Environmental Impact Statement (EIS) to design a coastal flood risk reduction system along with stormwater management strategies to reduce flood risks for the City of Hoboken and parts of Weehawken and Jersey City.

An multidiscipline team consisted of engineers, architects, landscape architects, economists, community engagement and others who worked on this two-year long project to evaluate existing site constraints, flood risks, and then developed the optimal coastal flood risk reduction strategy along with stormwater management strategies. Numerous concepts narrowed down to several alternatives where further design factors such as coastal flood and rainfall modelling, utility impacts, subsurface soil conditions, right-of way impacts, traffic/pedestrian flow, construction cost, and benefit cost analysis were evaluated against a no-build alternative, ultimately leading to a recommended alternative that was presented to the community.

An integrated coastal and stormwater model was developed using DHI's MIKE Flood model to evaluate the effectiveness of the proposed coastal flood protection system and interior drainage solutions. The interior drainage solutions comprised green and grey infrastructure that could manage rainfall runoff flow volumes for up to a 25-year 24-hour duration event during high tide events. The coastal flood protection system consisted of floodwalls, berms and over 20 deployable closure structures that were designed to blend into the dense urban fabric of the city. Use of various types of modular landscape and architectural treatments that blended in front of the floodwall but could be removed to inspect floodwalls as part of O&M were developed as part of the project.

The \$230-million project was designed to meet FEMA's coastal levee accreditation standards. and included in-depth analysis to estimate the appropriate Design Flood Elevation (DFE), meet various minimum factors of safety for engineering design and interior drainage analysis that provided the rainfall-induced 1% annual chance FEMA floodplain that would replace the existing coastal floodplain.

- **COST** \$230-Million
- **COMPLETION** 2017
- **CLIENT CONTACT**
Dennis Reinknecht
New Jersey Department
of Environmental
Protection
609.292.1976
dennis.reinknecht@
dep.nj.gov



Rendering of recommended design alternatives presented to the community. The team of structural and geotechnical engineers, architects and landscape architects worked closely to develop a coastal flood risk reduction system that blended into the dense urban fabric of the study area.

Hudson River Rebuild by Design (Cont.)

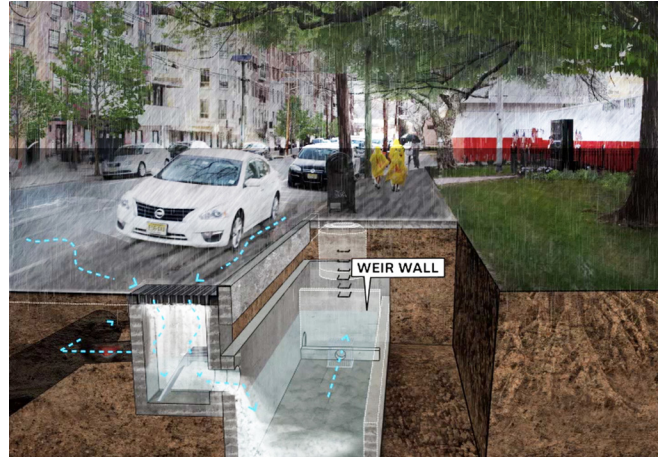
HOBOKEN, WEEKHAWKEN, & JERSEY CITY, NEW JERSEY

Challenge

Presence of high groundwater (with 10 feet from ground surface) prohibited use of direct infiltration interventions

Solution

Customized detention type solutions were developed at ROW and parcel based scale to capture rainfall runoff from parcels and roadways, store runoff during the peak of rainfall, and treat and discharge it to the receiving waterbody or WWTP.



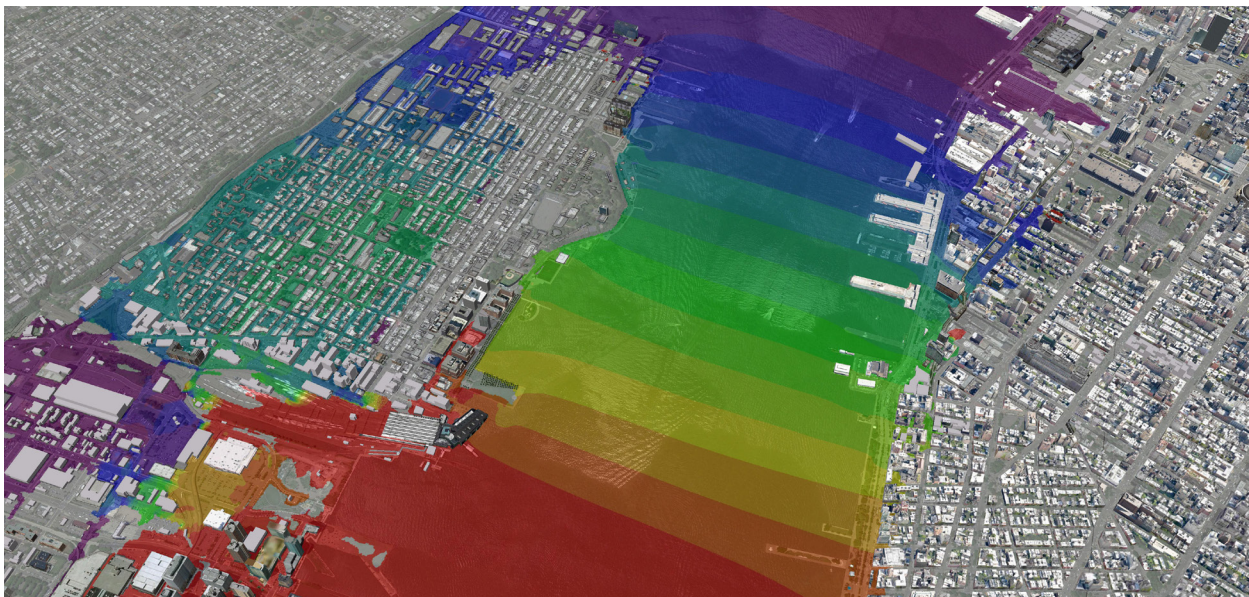
Change to Stormwater Management

Challenge

Implementation of green infrastructure practices which would prohibit the use of parks during construction phase. There are only a handful of parks within the study area and construction in one of these parks would have reduced the availability of park space for the community and residents.

Solution

Green infrastructure retrofits were developed for existing parks with an approach for a phased construction which would have limited the construction zone and allowed for partial park openings during construction. However, due to community concerns and feedback, the proposed green infrastructure retrofit for parks was not continued to avoid community backlash and keep the overall project moving forward on schedule.



Dewberry developed a detailed coastal model to simulate water levels from Hurricane Sandy in Hoboken, NJ

Northwest Resiliency Park and Drainage Improvements – Benefit Cost Analysis Study, City of Hoboken

HOBOKEN, NEW JERSEY

Dewberry performed a benefit-cost analysis (BCA) for the Hoboken Northwest Resiliency Park and associated neighborhood drainage improvements for submittal to the Federal Emergency Management Agency (FEMA). The BCA submittal was intended to be included as part of our project application under the FEMA's FY2018 Pre-Disaster Mitigation (PDM) grant program, which includes a new Resilient Infrastructure Competitive Funding project type with a federal cost share capped at \$10-million for community level capital projects that will reduce damage and losses from future disasters.

Dewberry reviewed existing datasets provided by the City of Hoboken and coordinated with North Hudson Sewerage Authority (NHSA) on the park and drainage design including the proposed pump station and outfall.

The team reviewed the results provided by NHSA from their Infoworks ICM model that simulated various storm scenarios within the H6/H7 sewershed area.

Dewberry estimated the amount of flood damage that would occur if nothing was to be done (the “no-action alternative” (NAA) or “baseline”) and the amount of flood damage that would occur after the construction of the project. The difference between the two provided the avoided damages and for the purposes of this analysis are the benefits that are generated by the project.

- **COST** \$17,000 (FEE)
- **COMPLETION** 2018
- **CLIENT CONTACT**
Jennifer Gonzalez
Director of Environmental Services and Chief Sustainability Officer
City of Hoboken
201.420.2000 x 4000
jgonzalez@hobokennj.gov

“DEWBERRY CAME THROUGH FOR HOBOKEN WHEN IT MATTERED MOST. RAHUL AND HIS TEAM PROVIDED AN EXCEPTIONAL WORK PRODUCT AND THEY DID SO UNDER INTENSE DEADLINES DURING THE HOLIDAY SEASON IN DECEMBER. WE WOULD NOT BE IN A POSITION TO ACCEPT THE LARGEST GRANT IN HOBOKEN’S HISTORY WITHOUT THEIR ATTENTION TO DETAIL, THOROUGHNESS AND PROFESSIONALISM.”

CALEB STRATTON, AICP, CFM
Chief Resiliency Officer, City of Hoboken



Concept Design of Northwest Resiliency Park - Courtesy of City of Hoboken

Northwest Resiliency Park and Drainage Improvements – Benefit Cost Analysis Study (Cont.)

HOBOKEN, NEW JERSEY

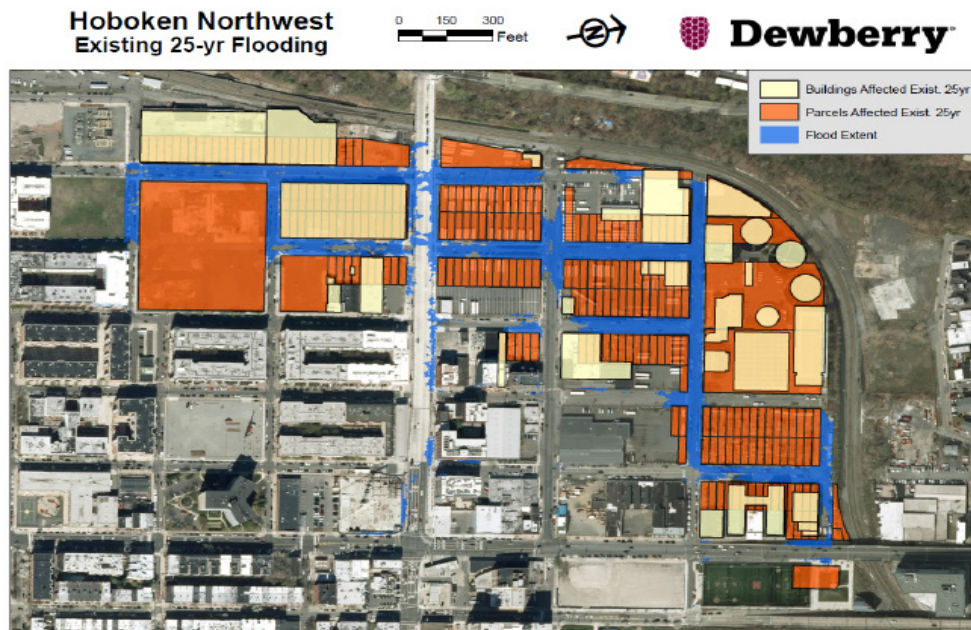
Dewberry estimated the physical damages that would occur under each storm frequency both under the No Action Alternative (NAA) and after project construction. For each flooded building we estimated three types of damage:

- Structure damage includes damage to the structure of the building. It is measured as a percent of the building’s replacement value.
- Contents damage includes damage to everything within the house/structure that is not permanently installed, such as rugs, furniture and appliances. It is measured as a percent of the building’s replacement value.
- Loss of function are the costs associated with not being able to use the structure. For non-residential structures, it is based on the number of days that the structure cannot provide service.



Site Photo from 2015

Using the project costs and benefits, we used damage-frequency assessment (DFA) module in the latest version of FEMA’s BCA analysis software (Version 5.3.0) to process the benefit and cost data to arrive at a benefit-cost ratio (BCR). The City of Hoboken prepared estimates of the cost of the Hoboken Resiliency Park and associated drainage project. The cost estimate included both the “hard” construction costs and the “soft” costs including project design, environmental assessment/permitting, construction management, and project management. For the BCA, the cost also included the annual operation and maintenance (O&M) costs necessary to maintain the effectiveness of the project throughout its useful life. The annual O&M costs were assumed to equal 0.1% of the total construction costs and the useful life of the project was assumed to be 50 years based on FEMA guidance.



NAA Flooding Map for 25-year



www.dewberry.com