



PROJECT EXPERIENCE AND PAST PERFORMANCE

PROJECT EXPERIENCE OVERVIEW



AECOM

Project Experience Overview

Constructing a Better Tomorrow...

C.A.C. brings over 30 years of experience in delivering complex infrastructure projects in New York City, with a strong record of performance on NYCDDC work totaling over \$1.25B. **AECOM**, our lead designer, has over 100 years of experience providing engineering and design services, including more than 90 years in the New York metro area. Together, our Design-Build (DB) team combines deep local knowledge, a proven track record, and multidisciplinary expertise to deliver high-quality, efficient solutions for infrastructure challenges.

Our team also includes:

- **Vortex Companies**, with over 15 years of experience in trenchless rehabilitation and lining systems nationwide.
- **Avila Consulting**, a certified WBE with over 10 years of experience in schedule management for infrastructure and utility projects across NYC.
- **Ivy Engineering**, a certified WBE with over 20 years of experience in QA/QC.

Design-Build and Alternative Delivery Experience

Recent C.A.C.-AECOM DB and alternative delivery projects include the \$242M MTA C&D ADA Upgrades Package 2, \$146M MTA C&D ADA Upgrades Package 4, and \$100.6M SUNY Old Westbury Alternate Care Site projects. Additionally, AECOM has provided final design on more than 100 DB projects totaling over \$50B, including the NYCDOT DB St. George Ferry Terminal Ramp Reconstruction, PANYNJ P3 LaGuardia Airport Redevelopment Program, and the NYCDDC DB Brooklyn Borough-Based Jail Program projects.

Design and Construction Innovation

From advanced digital tools to construction techniques tailored to New York City's dense urban fabric, our team continuously seeks to add value through creativity and efficiency. AECOM integrates cutting-edge tools such as:

- **AECOM Project Information Centre (APIC)**: A centralized system that tracks resource allocation, pricing, workflow, and scheduling, improving transparency and decision-making.
- **Virtual Public Consultation Tools**: Platforms that allow real-time public input and stakeholder engagement.
- **Model-linked Construction Schedulers**: Tools that integrate 3D models with construction sequencing for optimized planning.

C.A.C. brings innovation in field execution. On the NYCDEP Green Infrastructure Sewer Upgrades in Queens, C.A.C. developed and implemented a custom dewatering and trench shoring system that minimized excavation footprint and traffic disruptions in a highly congested area. This approach enabled simultaneous utility work in multiple intersections — cutting project duration by 20% and significantly reducing community impact.

Our partners contribute meaningful innovations as well:

- Vortex Companies specializes in trenchless technologies,

which reduce excavation and surface disruption during lining installation.

- Avila Consulting integrates schedule risk analysis into early planning using P6 and Monte Carlo simulations.
- Ivy Engineering uses predictive QA trend analysis to detect non-conformance risk areas before issues arise.

QA/QC Approach

We will implement a robust QA/QC program led by Ivy Engineering, supported by C.A.C.'s internal protocols and overseen by the Project Executive. Ivy brings proven QA leadership from NYCDEP, NYCDDC, and SCA projects, including the Queens Green Infrastructure Program, where their oversight ensured compliance with environmental specs, site safety, and inspection standards.

C.A.C. consistently surpasses quality benchmarks on NYCDDC projects, including the Starlight Park Greenway Project, where we delivered defect-free work in a heavily trafficked public space. Our QA/QC process includes project-specific quality plans, interdisciplinary constructability reviews, early identification of design conflicts, and regular field audits to maintain compliance with NYCDDC standards. This collaborative culture of continuous improvement ensures performance is maintained across all project phases.

Schedule Approach

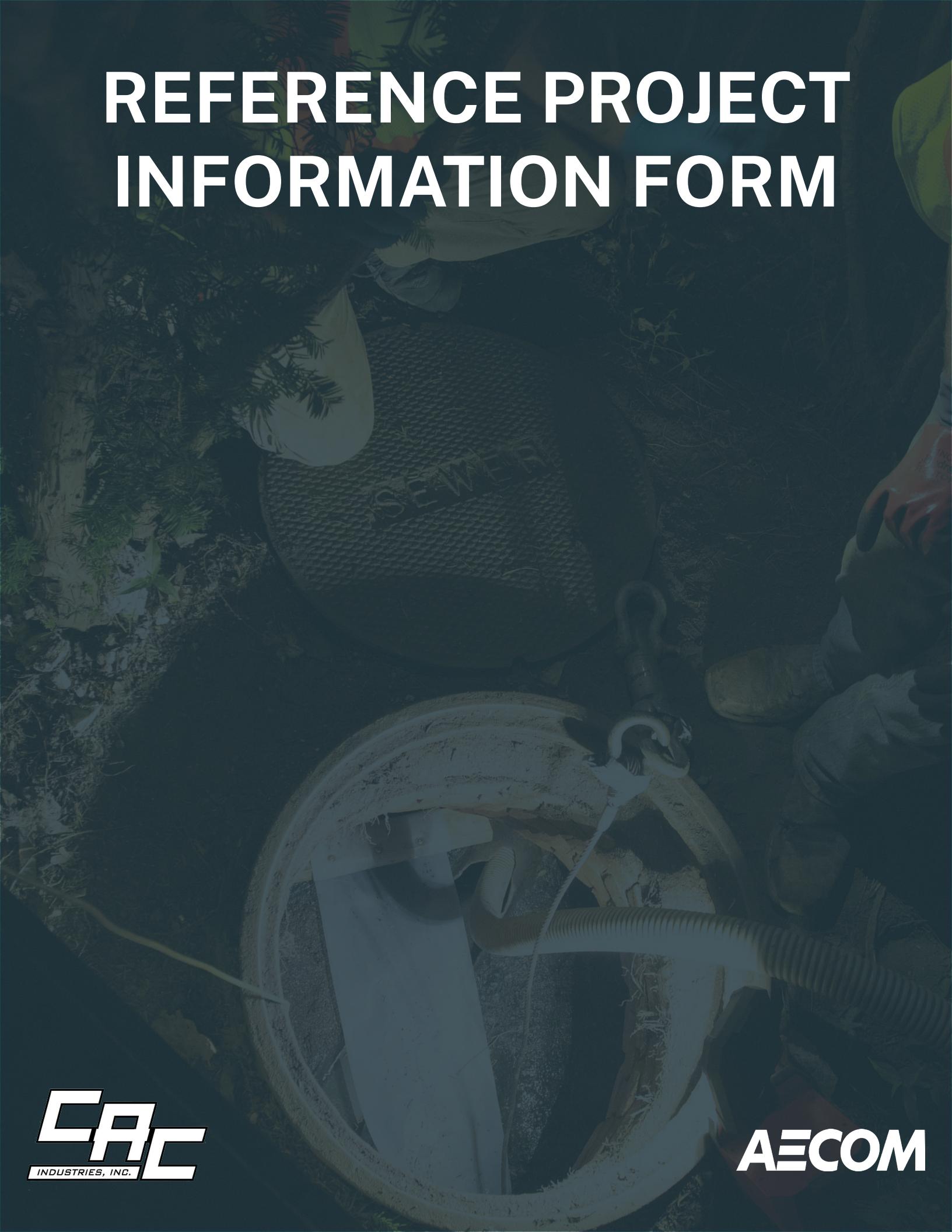
C.A.C. and AECOM bring extensive experience managing complex construction schedules for public infrastructure projects across New York City. On the Battery Park City Resiliency Project and Starlight Park Phase II, C.A.C. met critical milestones while coordinating with utilities and minimizing public disruptions. AECOM has led schedule-driven design efforts on major projects such as the Javits Center Expansion and Hunts Point Interchange, where phased construction and early coordination with contractors ensured on-time delivery. For this project, WBE firm Avila Consulting will lead schedule development using Primavera P6 and bring proven success managing timelines for NYCDDC sewer and utility work. Together, our team aligns design progression with construction sequencing, prioritizes early procurement, and develops recovery strategies when risks emerge — ensuring schedule certainty and responsive project delivery.

Stakeholder/Community Engagement Approach

Our team brings a proven track record of multi-agency and community coordination. On the East Side Coastal Resiliency Project, C.A.C. facilitated coordination among NYC Parks, DOT, and utility stakeholders while providing public notice campaigns to minimize disruption in a high-density residential area. Additionally, Vortex has successfully engaged NYCDEP and MTA-NYCT on previous deep infrastructure rehabilitation projects requiring street closures and utility work, while Ivy and Avila bring hands-on experience managing public and agency relations on projects requiring sensitive coordination. For this project, we will maintain a stakeholder log, issue construction advisories, and host pre-construction meetings with DEP, DOT, MTA-NYCT, and utilities to ensure seamless coordination.



REFERENCE PROJECT INFORMATION FORM



REFERENCE PROJECT INFORMATION FORM

List each Reference Project in the table below, in accordance with B.

	Project Name and Location	Firm and Role	Project Size and Type	Construction Value	Substantial Completion Date	Owner Reference (name, title, organization, phone, and email)
1	207th Street Yard Sewer Line Relocation "B" Division (IND) New York, NY	C.A.C. Industries (Design-Builder)	2,600LF of microtunneling, 11 pits for deep manholes, 2 new sewer regulators	\$100,540,000	February 2024	Amen Mukhlis, PE, Project Manager MTA C&D 603-205-2265 amen.mukhlis@mtacd.org
2	Relocation of 90-inch Interceptor Sewer Queens, NY	C.A.C. Industries (Design-Builder)	375LF of 90-inch diameter interceptor sewer, 40ft below grade	\$20,157,400	September 2023	Anthony Antoniou Senior Project Manager VRH 551-404-8302 a.antoniou@vrhcorp.com
3	Construction of Combined Sewers and Appurtenances in Penelope Ave., Etc. Middle Village, NY	C.A.C. Industries (Design-Builder)	Installation of 8" and 12" DIP Water Mains, reinforced concrete vaults & pre-cast manholes, sewers	\$24,938,000	May 2020	Donald Granger Assistant Commissioner NYCDDC 917-939-7854 grangerd@ddc.nyc.gov
4	Randall's Island Water Main South Bronx to Randall/s Island, NYC, NY	AECOM (Design Lead)	N/A, watermain project	\$26,600,000	Design: 2023 Construction: 2024	Jorge Tua, Assistant Commissioner, NYCDDC 718.391.2101 tua.j@ddc.nyc.gov
5	South Essex Sewerage District Wastewater Facilities Management Plan Salem, MA	AECOM (Design Lead)	27.2 MGD, with a peak capacity of 100 MGD	\$17,000,000	Ongoing	David Michelsen, Executive Director, South Essex Sewerage District 978.744.4550 Ext. 129 dmichelsen@sesd.com

NYC Dept. of Design and Construction

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DB Request for Qualifications (RFQ)

Ex. E – SOQ Forms



REFERENCE PROJECT DESCRIPTION AND DRAWINGS/IMAGES



207TH STREET YARD SEWER LINE RELOCATION “B” DIVISION (IND)



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207TH STREET YARD SEWER LINE RELOCATION “B” DIVISION (IND)

MANHATTAN, NEW YORK, US

PROJECT VALUE

Initial: \$95,400,000
Final: \$100,540,000

PROJECT TYPE

Sewer Reconstruction, Deep Manhole Installation

SUBSTANTIAL COMPLETION DATE

February 27, 2024

OVERALL PROJECT DURATION

45 months

PROJECT DELIVERY METHOD

Design-bid-build

PROJECT SIZE

2,600LF of microtunneling

KEY PERSONNEL

- Ertugrul Dogan as Sr. Project Manager
- Mateusz Perzan as Superintendent
- William Svilar as Chief Engineer

PROJECT TEAM

C.A.C. as Prime Contractor

PROJECT DESCRIPTION

The 207th Street Shop is one of two heavy overhaul facilities serving the New York City Subway system. This project involved the construction of a DEP interceptor sewer outside NYCT's 207th Street Yard, replacing the existing sewer system within the yard. The project involves the construction of deep sewer manholes and regulators, microtunneling for sewer pipe installation beneath an elevated subway line, relocation of public and private utilities to accommodate new infrastructure, integration of new drainage and sewer systems with existing transit facilities, and coordination with transit agencies to ensure safe, uninterrupted service.

This project presented a unique set of challenges that involve specialized expertise and strategic problem-solving. The aging transit infrastructure required customized solutions to ensure structural integrity. Limited space above and below ground within the tight urban footprint of an active subway yard demanded innovative construction methods. Navigating an operating yard and overhaul shop involved careful coordination around live maintenance and transit operations. Limited availability of in-house MTA forces and maintainers required proactive coordination. Track outages need meticulous planning to prevent disruptions to train services.

Additionally, limited overhead space and the close proximity to adjacent buildings posed further constraints while performing the work. enclosures to safeguard nearby structures. Our collaborative approach allowed us to address these challenges while at the same time prioritizing safety, quality, and schedule adherence. We apply advanced technology, including drones, LiDAR, ground penetrating radar (GPR), and AI-driven tools. Re-sequencing construction phases and deploying additional resources allowed us to accelerate the progress of the work. Our team worked closely with MTA C&D, Design-Build partners, and subcontractors to rapidly resolve unforeseen field issues.

SCHEDULE AND BUDGET

Pandemic-related delays and evolving regulations affected workforce availability and scheduling. Changing and unforeseen field conditions need real-time adaptability and swift decision-making. Conducting



thorough investigations on off-hours and during weekend construction reduces disruptions to transit yard operations. Creating look-ahead schedules to secure MTA resources and pre-plan track outages, ensuring seamless execution.

QUALITY OF DESIGN

Throughout the project, quality management remained a top priority, with a full-time Quality Manager overseeing all quality-related activities on-site. This ensured that quality standards are upheld consistently throughout the construction lifecycle. In addition to the Quality Manager, select members of the project team served as designated “Quality Staff,” receiving specialized training to step into quality roles during night shifts, weekend work, or whenever the Quality Manager is unavailable. A systematic approach drove quality management, beginning with the development and approval of a comprehensive Quality Management Plan before project commencement.

This plan established all necessary procedures, standards, and protocols, ensuring that quality benchmarks are met at every stage. Once approved, the plan was strictly implemented, reinforcing the integrity and success of the project. The project presented several constructability challenges, including coordinating complex design elements, integrating new infrastructure with aging transit systems, and working within confined urban environments. The team proactively addressed these challenges by conducting thorough constructability reviews, collaborating with engineers and field teams to identify potential obstacles early, and adjusting design elements to optimize efficiency. Advanced technology, such as BIM modeling and real-time field assessments, is utilized to refine design execution, while continuous communication between stakeholders ensured swift resolution of unforeseen conditions. This proactive and strategic approach maintained the highest quality standards while delivering a seamless and efficient construction process.



INPUT OF KEY STAKEHOLDERS

C.A.C. coordinated with key stakeholders—DSNY, NYCDOT, NYCDEP, NYCT Overhaul Shop Personnel, and the local community—to ensure smooth project execution and minimal disruption. The team aligned construction with DSNY snowplow operations, secured NYCDOT permits for complex MPT setups, and worked with NYCDEP to finalize sewer system integrations. They maintained constant communication with NYCT Overhaul Shop staff to align schedules, ensure security, and avoid operational conflicts. C.A.C. also collaborated with the NYCT Community Liaison for building access and addressed local concerns, especially from restaurants affected by pandemic-era outdoor seating. Field supervisors supported vulnerable businesses like car washes and food trucks by providing regular updates and relocation assistance, helping them stay operational during construction.

INNOVATIVE PROCESSES

We applied advanced technology, including drones, LiDAR, ground penetrating radar (GPR), and AI-driven tools to investigate challenges we faced and develop solutions to tackle and resolve unforeseen conditions.

COMMITMENT TO DESIGN AND CONSTRUCTION EXCELLENCE

To ensure seamless execution, C.A.C. collaborated closely with our project partners, including MTA C&D, CCM, and DOR, coordinating efforts to align our project goals. Client satisfaction was at the forefront of our priorities. C.A.C. actively engaged with our client, listening to their concerns and addressing them promptly. This open line of communication helped build trust and strengthened our relationship, allowing us to better understand MTA's needs and expectations. As a result of our dedication to excellence, our client, MTA, has begun recommending C.A.C. for additional projects, giving us more work that others fail to do within their system. MTA has presented our project as a role model to others, highlighting C.A.C.'s commitment to quality and client-centric solutions. MTA also invited C.A.C. and DOR to present the “207th Street Yard Sewer Relocation” project at New York Build Expo 2025 alongside them. This recognition not only validates our hard work but also motivates us to continue striving for excellence in all our endeavors.



RELOCATION OF 90-INCH INTERCEPTOR SEWER

A large, corrugated 90-inch diameter sewer pipe is being lowered into a trench. The pipe is labeled "SEWER" in capital letters. The scene is set outdoors with trees and foliage visible in the background.

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RELOCATION OF 90-INCH INTERCEPTOR SEWER

QUEENS, NEW YORK, US

PROJECT VALUE

Initial: \$14,747,400
Final: \$20,157,404

PROJECT TYPE

Sewer Reconstruction, Deep Manhole Installation

SUBSTANTIAL COMPLETION DATE

August 15, 2023

OVERALL PROJECT DURATION

19 months

PROJECT DELIVERY METHOD

Design-Bid-Build

PROJECT SIZE

375LF and 65FT Deep

KEY PERSONNEL

- William Svilar as Project Manager
- Glenn Biesiadecki as Compliance Officer

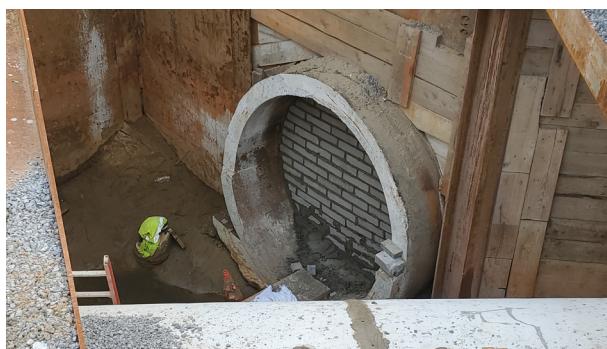
PROJECT TEAM

C.A.C. as Prime Contractor

PROJECT DESCRIPTION

This project involved the relocation of approximately 375 linear feet of an existing 90-inch interceptor sewer and the construction of four heavily reinforced concrete sewer chambers. The relocation was necessary to accommodate the development of a new airport cargo building, as requested by NYCDEP. The existing sewer, originally constructed in the 1940s, lay 30 feet below finished grade and operated at approximately 85% capacity on average, presenting significant logistical and engineering challenges. To facilitate the relocation, an 85 MGD bypass system — one of the largest ever installed in New York City — was implemented to maintain uninterrupted sewer flow. This system incorporated eight 20-inch pumps, with an additional four pumps on standby to ensure operational redundancy. A comprehensive dewatering strategy was also executed, utilizing 12 deep dewatering wells (65 ft depth) and four shallow dewatering wells (30 ft depth), coupled with a 2,000 GPM temporary water treatment system to treat groundwater before discharge into the active sewer system.

Given the aging infrastructure of the existing 90-inch sewer, a vibration monitoring system was installed along a 400-foot section of the pipeline to prevent structural compromise during construction. Additionally, weekly settlement readings were conducted to track horizontal and vertical movement, ensuring the safety and stability of the existing system throughout the project. Challenges and solutions that were faced were limited work area, the confined project footprint within a highly active airport environment demanded precise logistical coordination and sequencing of work. High-capacity sewer flow, the team engineered and implemented a high-capacity bypass system, maintaining uninterrupted sewer operations while ensuring compliance with NYCDEP regulations. Aging infrastructure risks, with advanced monitoring technologies and proactive inspections were deployed to mitigate risks associated with construction adjacent to decades-old infrastructure. C.A.C. served as the Prime Contractor, delivering the project through a Design-Bid-Build (Low Bid) approach. This experience in managing large-scale, complex utility relocations in urban environments translates into direct value for DDC. The team's proven ability to execute intricate bypass operations, integrate



modern monitoring solutions, and uphold strict quality and safety standards ensures seamless delivery of deep infrastructure projects within constrained urban environments. This experience reinforces C.A.C.'s capability to tackle complex sewer infrastructure projects and positions the firm as a reliable partner for deep utility and heavy civil construction efforts across New York City.

SCHEDULE AND BUDGET

The original project schedule spanned January to December 2022, but NYCDEP concerns over the required 85 MGD bypass system caused a one-year delay. C.A.C. Industries proposed an alternative approach, allowing installation of the 90-inch sewer between PMH-02 and PMH-03 without the bypass by using vibration monitoring during CFA pile work, excavation, SOE installation, and pipe placement — reducing the delay by about six months. Additional concerns extended the timeline by two months, as the bypass system was needed during PMH-01 and PMH-04 construction and tie-ins. C.A.C. further saved time by using precast manhole risers instead of cast-in-place sections. The team installed flow monitoring meters and brought in extra bypass pumps and fluming pipes to manage potential surges. Budget challenges also arose due to a markup cap on change orders; over 70 changes increased the subcontract value from \$14.7 million to over \$21 million. To reduce costs, C.A.C. used a more economical steel frame and plate SOE system by cutting the site 10 feet below grade instead of installing costly sheet piling, maintaining safety while achieving substantial savings.

QUALITY OF DESIGN

C.A.C. Industries managed the quality and constructability of the project by implementing innovative solutions to overcome complex site challenges. One of the most significant obstacles was the extended duration required for the 85 MGD bypass system to remain operational while constructing PMH-01 & PMH-04 and completing the tie-ins to the existing 90-inch sewer. C.A.C. proposed using precast manhole risers instead of traditional cast-in-place sections for both chambers. This approach was led to a substantial reduction in construction time by several weeks.

INPUT OF KEY STAKEHOLDERS

C.A.C.'s leadership team, including Project Executives, Construction Managers, and Quality and Safety Personnel, worked in close collaboration with NYCDEP, NYCDOT, and other key stakeholders to navigate regulatory requirements and maintain efficient project execution. The team managed scope and program requirements by proactively identifying potential risks, optimizing sequencing strategies, and maintaining transparent communication with all stakeholders. To streamline construction and minimize bypass operation time, C.A.C. proposed using precast manhole risers to VRH, Langan, the Port Authority, and NYCDEP and was

deemed acceptable, leading to a substantial reduction in construction time by several weeks.

INNOVATIVE PROCESSES

One key innovation involved the installation of a flow monitoring system that continuously tracked the flow in the existing 90-inch sewer upstream, operating 24/7. This real-time data allowed the team to proactively monitor and manage sewer flow, ensuring that potential surges were identified early, and enabling the team to adjust operations as needed for safe and efficient progress. C.A.C. used cutting-edge construction techniques to optimize excavation and support systems. Instead of relying on the costly and time-consuming steel sheet piling system typically used for deep excavations, the team cut down the site by 10 feet from existing grade. This allowed for the use of a more efficient steel frame and plate SOE, reducing the depth of excavation to just 20 feet. This change resulted in both cost savings and a faster construction timeline, ultimately contributing to the overall success of the project.

COMMITMENT TO DESIGN AND CONSTRUCTION EXCELLENCE

Due to concerns from NYCDEP with respect to the contract required size of the bypass system (85 MGD), C.A.C. was delayed for over 1 year with the installation of the 85 MGD bypass system. However, in efforts to help mitigate a portion of the delay, C.A.C. presented an alternative approach to install the proposed 90 inch sewer between PMH-02 & PMH-03 without the bypass system in place by having a vibration monitoring system in place during the CFA pile installation, Excavation & SOE installation, and 90 inch sewer pipe installation. By constructing the 90 inch sewer between PMH-02 & PMH-03, the delays with the bypass approval were reduced by approximately 6 months.

NYCDEP also had concerns about the long duration for which the 85 MGD bypass system had to be running (Approximately 2 months) while PMH-01 & PMH-04 were constructed and the tie-ins to the existing 90 inch sewer were made. C.A.C. proposed using precast manhole risers for PMH-01 & PMH-04 to eliminate cast in place sections of both chambers which reduced the duration of the bypass system by several weeks. In addition, the entire project team (VRH, C.A.C., Langan) collectively decided to install flow monitoring meters in the existing 90 inch sewer at several locations upstream from the work site to constantly monitor the flow in the sewer and any possible surges in the sewer flow. Additional bypass pumps were also brought to the site as well as temporary fluming pipes in case of a possible surge in the sewer flow.



CONSTRUCTION OF COMBINED SEWERS AND APPURTENANCES IN PENELOPE AVE, RANDALLS ISLAND, AND SOUTH EAST SEWAGE DISTRICT



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CONSTRUCTION OF COMBINED SEWERS AND APPURTENANCES IN PENELOPE AVE, RANDALLS ISLAND, AND SOUTH EAST SEWAGE DISTRICT

MIDDLE VILLAGE, NEW YORK, US

PROJECT VALUE

Initial: \$22,131,637.56
Final: \$24,938,145.35

PROJECT TYPE

Sewer

SUBSTANTIAL COMPLETION DATE

June 2, 2018

OVERALL PROJECT DURATION

Approx. 48 months

PROJECT DELIVERY METHOD

Design-Bid-Build

PROJECT SIZE

8" and 12" DIP Watermain

KEY PERSONNEL

- William Svilar as Chief Engineer

PROJECT TEAM

C.A.C. as Prime Contractor

PROJECT DESCRIPTION

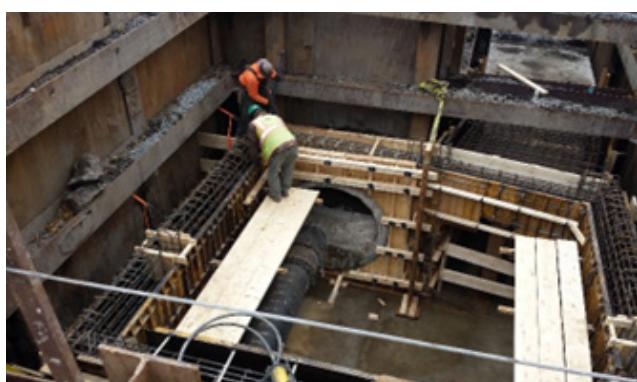
This project was designed to address longstanding combined sewer capacity issues in Middle Village, Queens, mitigating frequent flooding caused by intense rain events. The project involved extensive sewer upgrades, replacing undersized infrastructure with significantly larger pipes and box culverts. Capacity was increased with improvements including the installation of a new box culvert, a 60-inch sewer, and a parallel box sewer on 74th Street. The project also required large pile-supported reinforced concrete vaults to channel flow and enhance system capacity, terminating at a newly constructed transition chamber. A future downstream project was planned to further equalize sewer capacities.

One of the key challenges encountered during construction was the discovery of contaminated soil exceeding commercial soil cleanup objectives (SCOs) during excavation on 74th Street. The area had been landfilled for development in the 1910s with soil mixed with incinerated garbage. To address this, the team promptly coordinated with regulatory agencies and implemented specialized soil remediation measures to safely continue work without compromising project progress. Through proactive problem-solving and collaboration, the project team successfully navigated these challenges, delivering a critical infrastructure upgrade that improved drainage capacity and resilience for the community.

SCHEDULE AND BUDGET

The project was awarded on August 27, 2014, with construction beginning on April 4, 2016. The original scheduled final completion date was June 2, 2018. However, substantial completion was ultimately achieved on May 27, 2020, with final completion on December 8, 2020 – resulting in a 29-month delay.

The primary cause of this delay was the discovery of non-hazardous contaminated soil during excavation of the combined sewer trench on 74th Street. Since the disposal and handling of this material were not included in the original contract, work had to be temporarily halted while change orders were prepared, negotiated, and funded. Despite this challenge, the team worked diligently to keep the project moving forward by coordinating with regulatory agencies,





implementing an efficient remediation plan, and adjusting the construction sequence where possible to mitigate further delays.

Throughout the project, budget adjustments were necessary due to unforeseen site conditions. A total of change orders and item overruns, were primarily due to contaminated soil disposal costs. The final budget impact was minimized by a reduction in pile quantities achieved through the implementation of DriveCast piles, which provided a more efficient foundation solution. This optimization resulted in significant savings, offsetting approximately \$6 million of additional costs. By leveraging strategic planning, value engineering, and proactive issue resolution, the project team successfully managed both time and cost impacts, delivering a critical infrastructure upgrade that enhances sewer capacity and flood resilience for the Middle Village community.



INPUT OF KEY STAKEHOLDERS

C.A.C. developed cross-section details and a detour plan to execute the work in safe manner and efficient manner, walked it thru the community board for approval and received FDNY, NYPD and Sanitation's approval as well.

INNOVATIVE PROCESSES

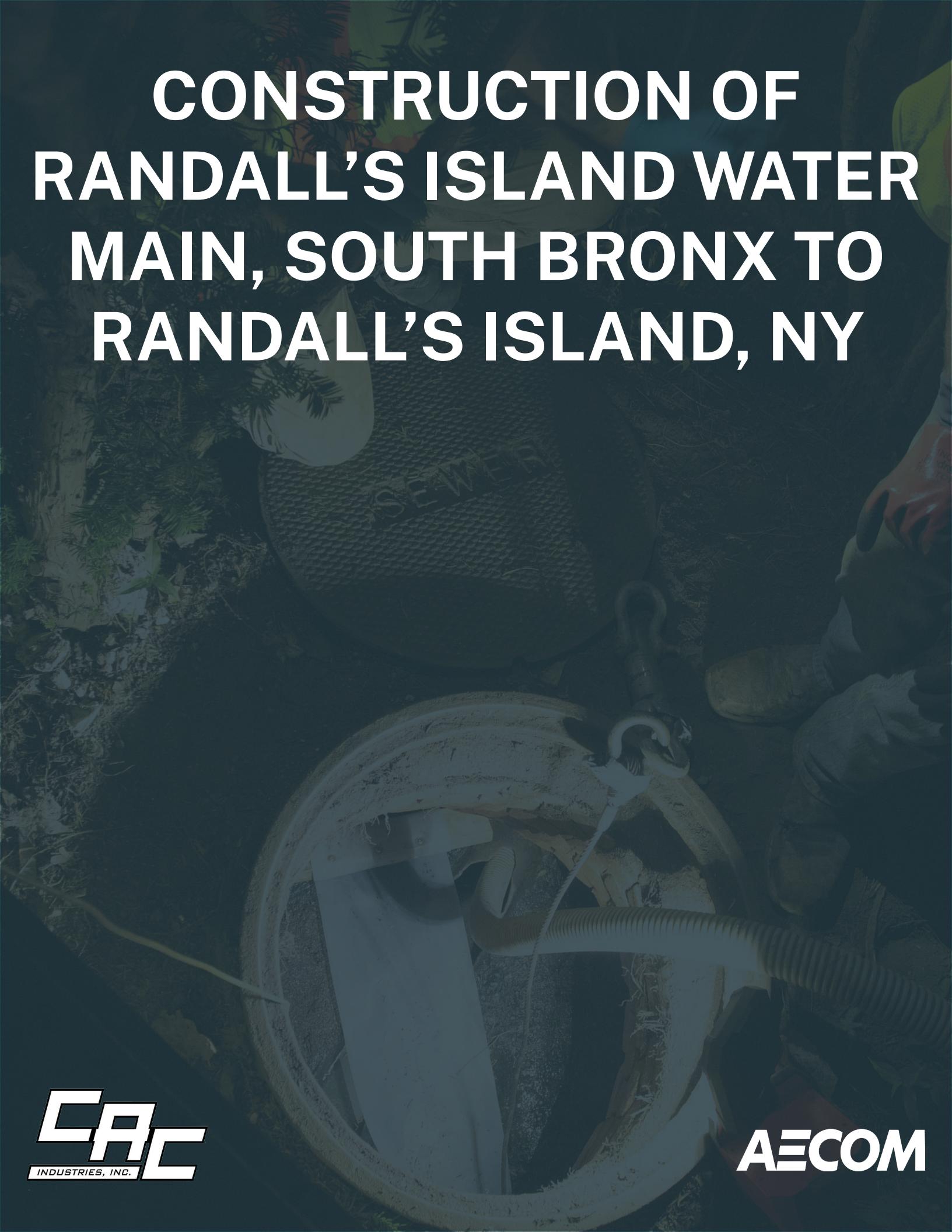
To address concerns about potential contamination, DDC hired a specialized company to perform geo-probes on the site, resulting in a detailed corridor report that confirmed the levels of contamination. C.A.C. Industries then took proactive steps to mitigate any environmental risks, including clearing out the temporary storage of all excavated material on a time & materials basis during weekends when school was not in session. This approach helped minimize any disruptions and allowed the team to work quickly and efficiently. To further ensure the safety and comfort of the surrounding community, C.A.C. provided tire wash stations, implemented dust control measures, and conducted air monitoring in strict adherence to the expedited material handling plan. These efforts were designed to address community concerns and maintain a clean, safe construction environment.

COMMITMENT TO DESIGN AND CONSTRUCTION EXCELLENCE

Our biggest contribution to the contract was MPT, handling the discovered contaminated soil, and raising a sewer allowing for the contract to be built in two phases – a section with sewers requiring no pile support and a section requiring pile supported sewers. The change eliminated a potential stagnant pool of water forming in the sewer during construction and allowed sewer work to commence.



CONSTRUCTION OF RANDALL'S ISLAND WATER MAIN, SOUTH BRONX TO RANDALL'S ISLAND, NY

A large, white, corrugated pipe is being lowered into a deep, circular excavation. The pipe appears to be a section of a water main. A worker in a hard hat and safety vest is visible at the bottom of the hole, assisting with the installation. The background is dark, suggesting an underground or enclosed construction site.

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RANDALL'S ISLAND WATER MAIN, SOUTH BRONX TO RANDALL'S ISLAND

NEW YORK CITY, NEW YORK, US

PROJECT OVERVIEW

AECOM Legacy URS was tasked with extending a 20" Sub-Aqueous Water Main from the Port Morris section of the South Bronx to support the water distribution network on Randall's Island. Various trenchless methods were analyzed based on the site constraints and target asset commissioning timeline, and it was found that micro tunneling was the optimal option for delivering this asset. During design, NYCDDC requested that AECOM also extend a 12" high pressure gas main, which AECOM was able to quickly turnaround and deliver in addition with the 20" water main design.

In addition to the high pressure gas main extension, NYCDDC requested that AECOM develop a radial gas main feeder network on Randall's Island, the limits of which cover approximately the same limits as the HWDRCW02 project. AECOM rapidly developed the gas main feeder network design, along with the required maintenance and protection of traffic plans for Randall's Island. In order to deliver an appropriately sized network, service tap locations, and coordinate project delivery, AECOM worked closely with the key stakeholders on Randall's Island, which includes:

- New York City Department of Parks & Recreation
- Randall's and Ward's Island Parks
- New York City Department of Environmental Protection
- Wards Island Wastewater Treatment Plant
- New York State Office of Mental Health
- Manhattan Psychiatric Center
- SPORTIME
- John McEnroe Tennis Academy
- New York Fire Department
- New York Fire Department Training Division
- New York City Department of Homeless Services
- Charles Gay Assessment Center, Schwarz Assessment Facility for the Homeless, and Clarke Thomas Next Step Employment Center, et al.
- The New York Police Department
- NYPD Harbor Unit Marina

AECOM has developed a relationship and understanding of these key stakeholders on Randall's Island to help deliver this project, and will continue to work with NYC DDC and these stakeholders to successfully fulfill the construction phase of this project. Randall's Island is a unique location to operate in and AECOM has the experience and expertise to successfully deliver a comprehensive and optimal roadway reconstruction project from conceptual design to construction asset acceptance.

BENEFITS REALIZED BY CLIENT

- Readily available guidance and support throughout the project
- Avoidance and mitigation of construction impacts
- Development of understanding and buy-in of stakeholders
- Coordination of experts to implement a relatively new technology
- Proactive investigation and analysis for planning efforts
- Insight and background in implementing a successful construction and implementation program



ADDITIONAL HIGHLIGHTS

- Topographic Survey
- Subsurface Exploration Program
- Water Main Preliminary and Final Design
- Tree Inventory, Impact Mitigation, and Planting Program
- Construction Staging and Maintenance and Protection of Traffic
- Quantity and Cost Estimating
- Preparation of Specifications
- Review and Analysis of Bids
- Electronic Archiving and Indexing

SCHEDULE AND BUDGET

The project faced challenges related to budget and schedule due to its complexity and the need for coordination among various stakeholders. AECOM's review of RFI's and dispositions related to design submittals was key to maintaining project schedules and ensuring timely processing of submittals. AECOM's admin oversight helped mitigate potential delays and kept the project within its \$620,000 budget. The project was awarded in 2012 and construction was completed on-schedule in 2014.

QUALITY OF DESIGN

One of the primary challenges was ensuring compliance with the specifications for trench excavation, which required careful planning and coordination. This included the installation of sheeting for trenches deeper than five feet to support soil pressure and additional loads from nearby structures. The project also required a test pit program to confirm the location of buried utilities and city facilities, which had to comply with trench excavation standards. The team utilized proper backfilling techniques to ensure a suitable sub-base for restoration while maintaining access for local residents and public transportation.

INPUT OF KEY STAKEHOLDERS

Regular communication and coordination were established between the team and key stakeholders in order to ensure that the adherence to specifications, while applying engineering judgment to address field conditions. This approach helped maintain trust and transparency with stakeholders and ensured that their concerns were addressed.

INNOVATIVE PROCESSES

The team utilized a Construction Community Liaison (CCL) to maintain open communication with the community. This included distributing newsletters with project updates and contact information. Notices about water shutdowns were delivered 72 and 24 hours in advance to minimize inconvenience. Additionally, the project team actively identified and resolved issues related to subsurface facility interference through the use of Geographic Information Systems (GIS). This ensured smooth progress and adherence to project timelines.

COMMITMENT TO DESIGN AND CONSTRUCTION EXCELLENCE

Our commitment to excellence was demonstrated by compliance with high standards, our integration of sustainability practices, extensive engagement with key stakeholders and the local community, as well as the deployment of innovation across the project.

SOUTH ESSEX SEWERAGE DISTRICT WASTEWATER MAINTENANCE FACILITY



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SOUTH ESSEX SEWERAGE DISTRICT WASTEWATER MAINTENANCE FACILITY

SALEM, MASSACHUSETTS, US

PROJECT OVERVIEW

The South Essex Sewerage District (SESD) owns and operates a regional secondary wastewater treatment facility located in Salem, Massachusetts which services the five adjacent communities of Peabody, Salem, Beverly, Danvers and Marblehead. The combined service population is approximately 175,000 people. The plant utilizes pure oxygen in its secondary treatment process and has an average daily design flow of approximately 27.2 MGD with a peak capacity of 100 MGD.

AECOM has a long history working with the South Essex Sewerage District dating back to the 1940s. In the 1970s, AECOM provided design and construction engineering services for the Primary Wastewater Treatment Plant. Through the 1980s and 1990s AECOM was also involved with the design and construction of numerous pumping stations for the District many of which were complex, multi-discipline projects that were bid under MGL Chapter 149. More recently, AECOM has assisted the District with numerous design and construction phase projects including numerous concrete repair and equipment replacement projects as well as a new combined heat and power system.

Much of the District's vertical infrastructure, including their wastewater pumping stations and their wastewater treatment plant were last upgraded in the late 1990s, with much of the equipment at these facilities nearing the end of its useful life and in need of modernization and/or replacement. AECOM is currently developing a comprehensive Wastewater Facilities Management Plan that will serve as a roadmap for the District over the next 20 years as part of a large scale capital improvement program focused around replacement of aging equipment,

optimization of hydraulic and solids handling processes and improvements to energy management and resiliency.

The approach to developing this plan first included an initial evaluation of existing conditions at the wastewater pumping and treatment facilities, as well as an evaluation of historical operating parameters. Establishing a baseline of historical performance is necessary to identify potential trends or concerns for the pump stations to convey the wastewater to the treatment facility and to meet the current permit limits. AECOM also assisted the District, with input from their member communities in evaluating potential increases in flows and loads over the next 20 years, and then evaluated the ability of their infrastructure to convey, treat and dispose of anticipated future conditions. This evaluation included factors such as current and projected population growth, domestic and commercial/industrial wastewater flows, infiltration, and inflow peaking factors, and peak flow rates will be considered in this evaluation.

Upon completion of the initial evaluations and identification of needs, AECOM completed evaluations to optimize and update areas that require improvement, including the replacement of aging equipment, improving solids handling and disposal processes and updating the secondary treatment process to better address challenges at elevated flows. In addition to the improved treatment goals, consideration is also being given to resiliency improvements at the District's facilities due to their coastal locations, being a good neighbor within their member community and developing a fiscally responsible improvement plan

that meets the needs of the facility and the District's continued goal of being an environmental steward to protect the livelihood of the coastal communities they serve and the waters that they rely on a daily basis. AECOM's approach to developing the overall capital improvement plan combines the findings from the existing conditions and alternatives analysis to develop a recommended plan based on the condition of assets, replacement of equipment, timelines for replacements, implementation of new and/or modified unit processes, maintenance considerations, implementation costs, and other drivers. This approach is a deliberate and collaborative process with the District which will result in a responsible implementation plan for the forthcoming program of capital projects that will meet the needs of both the District and its member communities.

Major project considerations include improvements to residuals handling and disposal practices, scum removal and management and improving hydraulic restrictions in the secondary portion of the plant experienced during high flows. Short-term biosolids handling and disposal planning efforts are focused on improvements to operation and performance while long-term planning efforts are concentrated on beneficial use, energy neutrality and ultimate disposal.

PROJECT MANAGEMENT

AECOM managed the scope of the South Essex Sewerage District (SESD) project by adopting a comprehensive and phased approach to address both immediate needs and long-term goals. Our scope management strategy included the following key elements:

1. Historical Expertise and Long-Term Relationship: AECOM leveraged its decades-long relationship with SESD, dating back to the 1940s, to ensure a deep understanding of the district's infrastructure and operational challenges.

2. Comprehensive Wastewater Facilities Management Plan: We developed a 20-year Wastewater Facilities Management Plan that served as a roadmap for scope definition and prioritization.

The project presented several challenges which included:

1. Aging Infrastructure
2. Hydraulic and Solids Handling Restrictions
3. Energy Management and Resiliency
4. Fiscal Constraints
5. Environmental Sustainability

AECOM addressed these challenges through a phased approach, integrating findings from condition assessments and alternatives analysis, and developing a comprehensive Wastewater Facilities Management Plan.

SCHEDULE AND BUDGET

AECOM faced a few budget related challenges on this project. Those included:

1. Balancing Immediate Needs with Long-Term Goals

- Balancing these priorities within the available budget required a comprehensive approach to scope management and cost estimation.

2. Cost of Energy Management Enhancement

- this involved upfront costs that needed to be justified by long-term savings and efficiency gains

Coordination of energy management enhancements proved to be a schedule related challenge and was mitigated through communication and project management with all stakeholders.

The project started in 2022 and is scheduled to be completed on-time and within the \$850,000 budget allotted.

QUALITY OF DESIGN

This project is still in the planning phase. No design or construction projects have advanced.

INPUT OF KEY STAKEHOLDERS

AECOM will engage SESD stakeholders through regular meetings, workshops, and progress updates. This will ensure that all stakeholders are informed on project developments and have opportunities to provide input throughout the process. Stakeholder input is instrumental in shaping the project's long-term goals, including energy neutrality, beneficial use of biosolids, and environmental sustainability. AECOM will work closely with stakeholders to ensure these objectives were integrated into the project plan.

INNOVATIVE PROCESSES

AECOM's innovative processes on this project incorporate alternatives to modernize and optimize solids handling, updating secondary treatment processes for high flows, and addressing hydraulic restrictions.

COMMITMENT TO DESIGN AND CONSTRUCTION EXCELLENCE

AECOM is demonstrating a commitment to design and construction excellence through a multi-disciplinary engineering approach that included civil, mechanical, structural, electrical and instrumentation engineers.



REFERENCE PROJECT OWNER EVALUATIONS



AECOM

207TH STREET YARD SEWER LINE RELOCATION “B” DIVISION (IND)



AECOM



October 1, 2024

**Re: C-34869 207 St Train Yard Flood Resiliency & DEP Sewer Relocation.
C.A.C. Industries
54-08 Vernon Blvd. | LIC, NY 11101**

This letter is written in support of C.A.C. Industries, Inc. Pursuit of contracting opportunities and Pursuit of work in the heavy civil construction projects sphere.

As a representative of the New York State Metropolitan Transportation Authority in the capacity of a Senior Director for construction and Engineering and a Project Executive, I have had the privilege of collaborating with C.A.C. Industries on the C-34869 207th Street Yard Flood Resiliency and Sewer Relocation Project which was awarded December 2019 for a total duration of 59 months and a total construction value of \$100,170,000.

Throughout the life of the project, CAC industries illustrated professionalism, collaborative approach to work with our agency, technical and field execution experience, and control over subcontractors, vendors and consultants. CAC committed both labor, financial and experience resources to the project and proved to be an ideal partner to the MTA in the execution of reference project.

On this project, C.A.C. successfully completed the following scopes of work:

- Long-term MPT along local streets and bus routes for the duration of the work.
- Installation of seismic, vibration, noise and dust Monitoring Instrumentation.
- Relocation of existing utilities (Gas, Electrical, Communication, and Sewer) to facilitate micro-tunneling shaft/pit installations.
- Installation of Support of Excavation via Jet Grouting, Piling and Slurry walls.
- Micro-tunneling for the installation of sewer pipes.
- Installation of sewer pipes inside the micro-tunneling casing.
- Deep excavations for installing deep manholes and NYC DEP compliant regulators.
- Formwork and concrete work for regulators and deep manhole bases.
- Installation of Deep Manholes.
- Jacking of branch interceptor pipes.

MTA Construction and Development is an agency of the Metropolitan Transportation Authority, State of New York



- Installation of Pump Stations and Pneumatic Ejector Pump Vaults.
- Installation of various sizes of pumps.
- Installation of various sizes of pipes, valves and appurtenances.
- Installation of Mezzanine inside the MTA's Overhaul Shop.
- Track and Signal work inside MTA's train yard.
- Lining of sewer pipe and manhole modifications.
- Electrical, controls, communication and pluming installations.
- Final restoration of street and sidewalks, including asphalt paving, concrete work, and new steel and concrete faced curb installation.

Each of these tasks was carried out with high standards, compliance, consistently meeting or surpassing set expectations. C.A.C. has demonstrated an ability to navigate the complexities of MTA's infrastructure delivering a quality project in safe, timely and efficient manner.

I am confident that C.A.C. will continue to excel in future projects as they have been an invaluable partner to MTA C&D.

Should you require any further information, please do not hesitate to contact me.

Sincerely,

Amen Mukhlis

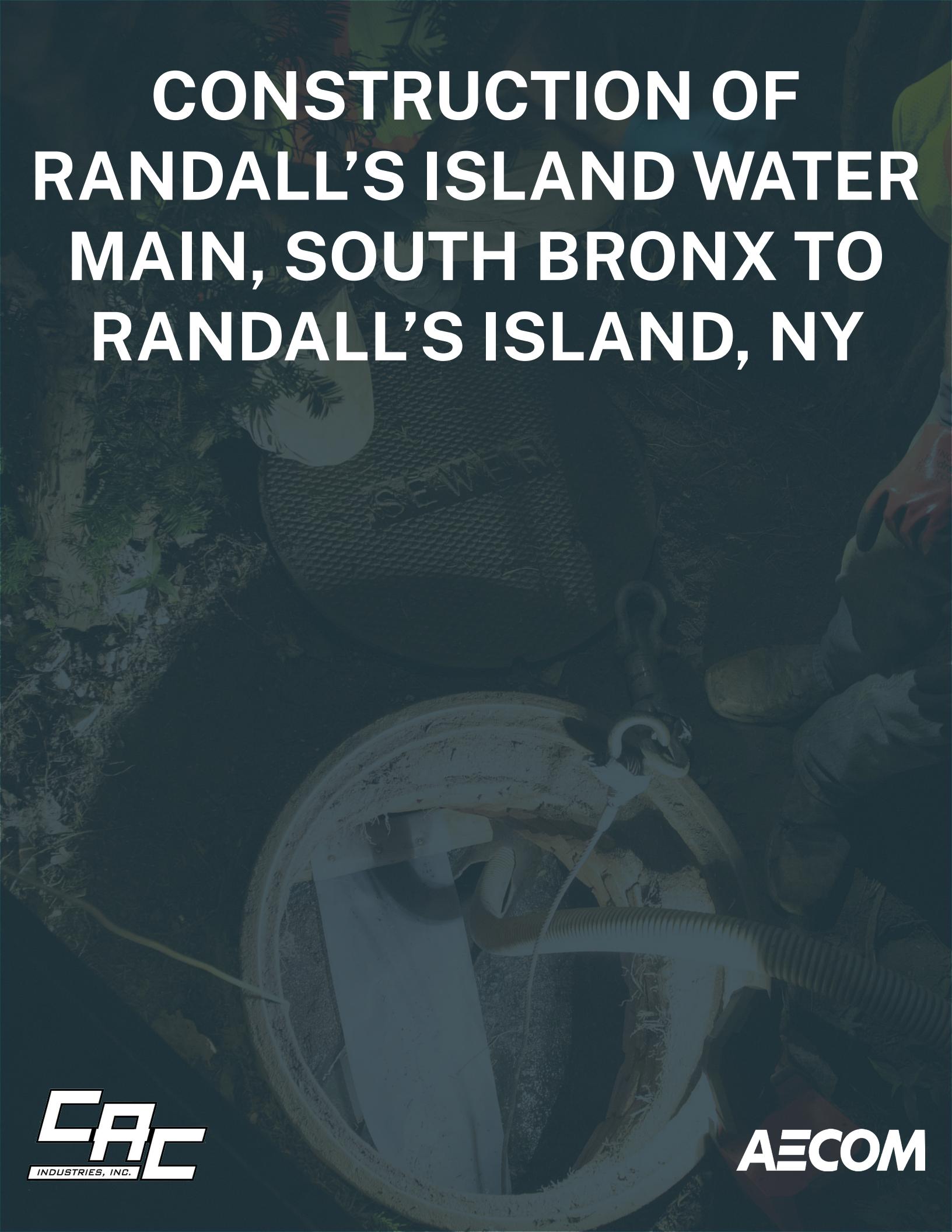
Amen Mukhlis, P.E.

Sr. Director/ Project Executive Officer

Flood Recovery & Resiliency & Mega Projects

Infrastructure – MTA Construction and Development

CONSTRUCTION OF RANDALL'S ISLAND WATER MAIN, SOUTH BRONX TO RANDALL'S ISLAND, NY

A large, white, corrugated pipe is being lowered into a deep, circular excavation. The pipe appears to be a section of a water main. A worker in a hard hat and safety vest is visible at the bottom of the hole, assisting with the installation. The background is dark, suggesting an underground or enclosed construction site.

CAC
INDUSTRIES, INC.

AECOM

Label : URS 20111421559 (Multiple Projects) FY2020 Evaluation Period Begin Date : 08/01/2019

Description :

Evaluation Period End Date : 12/31/2019

Status : Closed

Evaluated Period : 2019

Overall Score : 84.00

Excellent >80-100

Good >60-80

Excellent Satisfactory >40-60

Poor >20-40

Unsatisfactory 0-20

Category / Subcategory	Score
Timeliness of Performance	80
Fiscal Administration and Accountability	100
Performance and Overall Quality	80

EVALUATIONS▼

Label	Status	Score
URS 20111421559 (Multiple Projects) FY2020	Approved	84
1 Result(s)		



3

KEY PERSONNEL AND TEAM ORGANIZATION

TEAM INTRODUCTION AND ORGANIZATIONAL CHART

Team Introduction

A Team Built to Deliver Sewer Work in NYC

C.A.C. brings nearly 30 years of experience delivering complex heavy civil infrastructure projects across New York City's five boroughs. With a workforce of over 450 professionals—spanning engineering, field labor, construction management, and in-house support services—C.A.C. consistently delivers projects on time and under budget. An ESOP company, C.A.C. remains committed to long-term performance and employee-driven excellence.

To lead the design effort, C.A.C. has partnered with AECOM, a global infrastructure leader with a long-standing relationship with NYCDDC since 1996. AECOM brings over 600 program and construction management professionals in the NYC metro area, backed by 2,000+ regional specialists across engineering, planning, environmental, and project controls. This team has delivered some of NYC's most challenging underground utility, sewer, and street reconstruction projects and is intimately familiar with NYCDDC's policies and expectations.

Organizational Structure

The C.A.C.–AECOM team's structure is built to streamline communication, decision-making, and the flow of information between stakeholders. The strength of our team lies not only in individual qualifications but in how we're structured to operate as a unified, responsive Design-Build partner from the start. At the top of our reporting structure is Ozzie Calderon, DBIA, LEED GA who will serve as the Design-Build Project Executive and primary point of contact with NYCDDC. Ozzie brings deep experience managing NYCDDC projects and excels at maintaining alignment between agency expectations and Design-Build execution. Supporting him is Alto Dogan, DBIA, our Design-Build Project Manager, who will lead day-to-day integration of design and construction services. Alto ensures that field realities continuously inform design decisions and that issues are resolved proactively before they impact schedule or cost.

Sunil Rajani, PE, a veteran with 37 years of infrastructure design experience, will lead the design team. Sunil is supported by Chanel Lubin, PE, who leads the civil design effort, drawing on 25 years of experience in drainage, water main, and grading design across NYC. Senior technical oversight will come from Paul Aviza, PE, DBIA, whose nearly 50 years of experience in site engineering and permitting—much of it on NYCDDC projects—ensures constructible, cost-effective solutions.

On the construction side, Anthony Monaco, Assoc. DBIA, will oversee all on-site activities, supported by Mat Perzan, Assoc. DBIA, who brings extensive experience in NYCDDC field operations and utility coordination. Together, they will ensure construction aligns with design intent and maintains momentum in the field. Lucyna Pelc-Maj will develop and manage the Primavera P6 schedule, tracking progress across phases and supporting proactive resource allocation.

To maintain the highest standards in quality and safety, Samira Ayati, PE, DBIA, CCM, will lead QA/QC and report directly to the Executive Committee. Bill Flaherty, CHST will serve as Safety Manager, also reporting to the Executive

Committee, to ensure consistent adherence to health and safety protocols across all project phases.

For third-party and public coordination, Glenn Biesiadecki, PE, WEDG, ENV SP, will lead external stakeholder engagement. With over 40 years of experience on NYCDDC and NYCDEP projects, Glenn understands how to navigate agency expectations, community concerns, and utility coordination to keep projects moving without disruption. Amul Rama, as Design-Build Coordinator, will act as a direct link between design and construction teams, keeping workflows aligned and communication transparent.

The Executive Committee brings together unmatched leadership. Michael A. Capasso, President of C.A.C. Industries, has led the delivery of over \$1.5 billion in public infrastructure work across NYC, including more than 100 projects for NYCDDC. His personal involvement in complex emergency sewer restorations, large-diameter water main installations, and high-risk utility coordination—such as the Grand Street water and sewer upgrade and the Union Turnpike collapse response—gives him a uniquely practical understanding of the risks and constraints of building in NYC's subsurface. Alongside Michael is Wahid Albert, PE, former Chief Engineer of NYSDOT, whose 39-year public-sector career included leadership of major state programs such as NY Works and the Accelerated Bridge Program.

Beyond the RFQ

As we transition beyond the RFQ, our team is positioned to scale with purpose. AECOM will augment its core design group by drawing from in-house experts in hydraulic modeling, trenchless technologies, and advanced geotechnical analysis—areas critical to the complexity of deep manhole rehabilitation in constrained urban environments. Similarly, C.A.C. will finalize selections from a vetted pool of subcontractors who have successfully executed past NYCDDC deep sewer work, including microtunneling, dewatering, and SOE installation. With leadership already in place and communication protocols established, this next phase will focus on refining constructability, risk allocation, and community coordination strategies—turning our proposal into a project-ready solution.

Our team is purpose-built for the complexities of deep sewer work in New York City. C.A.C. has completed over 50 NYCDDC projects in the last decade alone, including the \$90M Grand Street Water Main and Sewer Upgrade and the Emergency Sewer Collapse Response on Union Turnpike—both delivered under live traffic and tight timelines. AECOM has designed and managed over 100 NYC infrastructure projects since 1996, including the East Side Coastal Resiliency project and the Third Water Tunnel integration.



