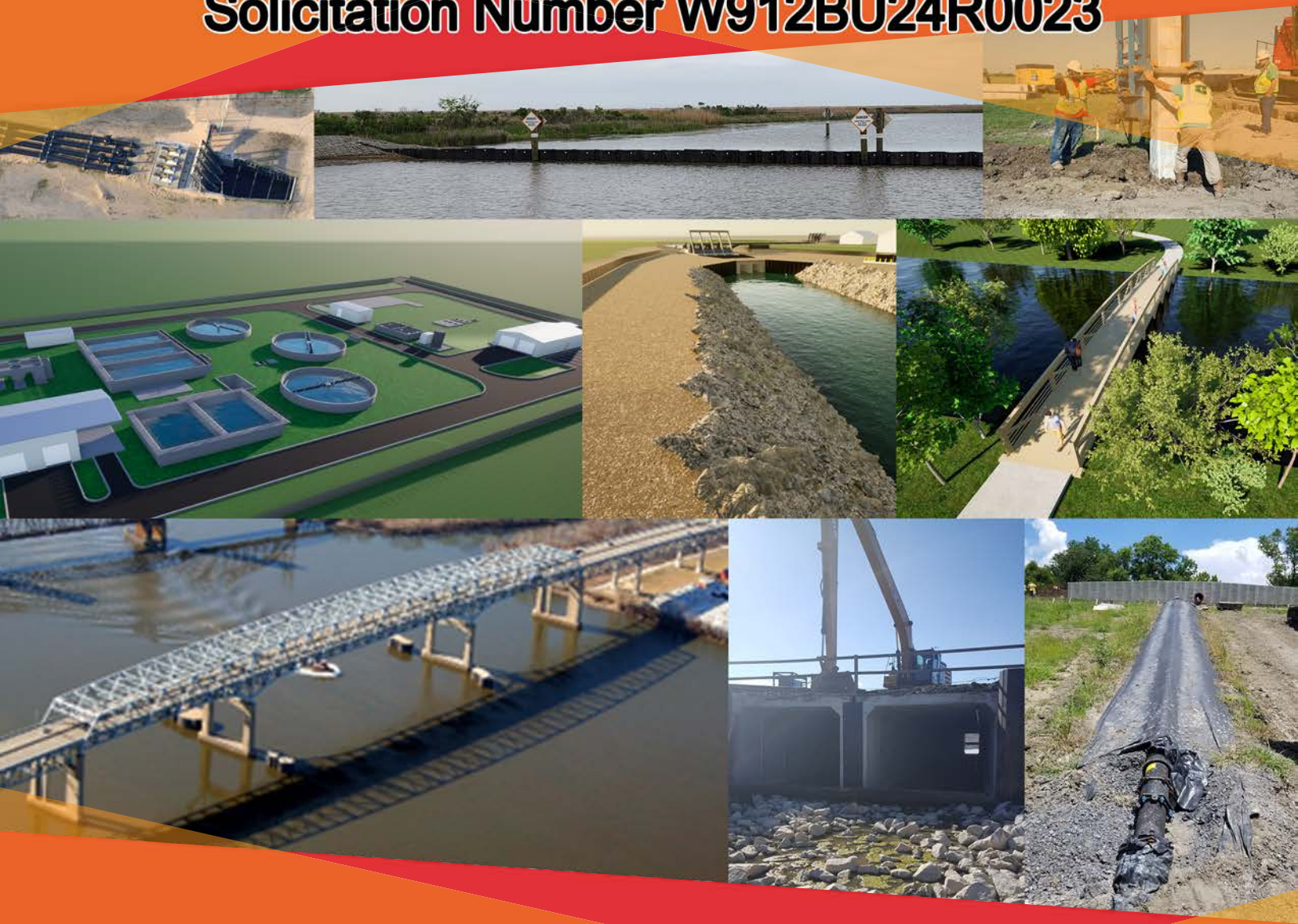
INDEFINITE DELIVERY INDEFINITE QUANTITY CONTRACT FOR ARCHITECTURAL & GENERAL ENGINEERING SERVICES FOR PHILADELPHIA DISTRICT CIVIL WORKS PROGRAM MISSIONS

Solicitation Number W912BU24R0023



URBANTECH-MSMM JOINT VENTURE LLC

URBANTECH MSMM ENGINEERING, LLC

And Associated Team

August 13, 2024

August 13, 2024

U.S. Army Corps of Engineers
Philadelphia District

Subject: Indefinite Delivery Indefinite Quantity Contract for Architectural and General Engineering Services for Philadelphia District Civil Works Program Missions
SOLICITATION NUMBER: W912BU24R0023

Dear Selection Committee,

It is UrbanTech-MSMM Joint Venture LLC's pleasure to respond to the subject Solicitation. Accordingly, enclosed herewith please find a completed Standard Form 330 Parts I and II for your consideration.

The talents and capabilities required to execute the anticipated assignments under the USACE, Philadelphia District (NAP) subject solicitation have been merged through the thoughtful assembly of UrbanTech-MSMM Joint Venture LLC. This Joint Venture is made up of two small businesses, MSMM Engineering LLC (MSMM) and UrbanTech Consulting Engineering PC (UrbanTech), whose combination of specializations perfectly suit the requests in this solicitation. MSMM, a full-service engineering firm, brings the benefit of extensive USACE civil works experience, including long-held experience with USACE's Environmental Infrastructure program. UrbanTech, an award-winning structural engineering firm, offers a thorough knowledge of USACE processes and the Philadelphia locality, as well as a long history of structural work for large bridge projects in the NAP District.

We have assembled a cadre of experts who have a history of delivering exceptional Civil Works services to USACE. For many of our key team members, this includes services within the NAP District. Our team, made up of 4 members – MSMM, UrbanTech, AECOM, and Marine Solutions Inc. (MSI) – stands ready to provide the anticipated services under this solicitation, including but not limited to civil engineering design of horizontal construction features, structural engineering design of horizontal and vertical construction features, inspection services, hydrology and hydraulics, and geotechnical engineering.

We know that our team will successfully deliver for NAP for the following reasons:

- **Customer Care:** Our team places a great emphasis on commitment and delivery through effective coordination with the client (NAP).
- **Proven small businesses:** MSMM and Urban Tech are both small businesses with proven track records of performing and delivering excellently rated projects of similar size and scope to those mentioned in the solicitation.
- **Experience of Team MSMM:** Between our team members, we've delivered hundreds of USACE task orders that fall under the requested specializations. For many of our key partnering members, this includes task orders that were completed within the NAP AOR.
- **Deep Resources:** Though our JV members are both small businesses, we have the advantage of a large backing force provided by AECOM. With nearly 50,000 employees worldwide, and nearly 500 located in Philadelphia, they grant us the ability to surge capacity if necessitated by NAP. NAP is receiving a team that has deep resources and subject matter experts in every discipline requested.
- **Local presence:** Our team members have provided numerous design and inspection services for large structural projects across the NAP. With many of our partners' offices located within the

NAP locality, UrbanTech-MSMM Joint Venture LLC offers a number of key team members with a thorough understanding of the region.

In conclusion, UrbanTech-MSMM Joint Venture LLC has a proven track record of performing every service requested in this solicitation, as well as a deep understanding of NAP's needs. We are firmly committed to providing the necessary resources to meet all safety, quality, cost, and schedule requirements, ensuring that this contract is consistently delivered with the highest level of consideration and expertise. The bottom line is that the breadth and depth of our experience, ability, and capability provide NAP with a team that stands ready to meet the mission.

Additionally, we acknowledge all 3 amendments released for this solicitation.

Please feel free to contact us at 917-952-5678 if you require any additional information.

Sincerely,

Wei Wang, P.E.
Co-Chairman
UrbanTech-MSMM Joint Venture LLC

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SF330, PART I, SECTIONS A-I

ARCHITECT-ENGINEER QUALIFICATIONS
PART I – CONTRACT-SPECIFIC QUALIFICATIONS

A. CONTRACT INFORMATION

1. TITLE AND LOCATION (CITY AND STATE)

Indefinite Delivery Indefinite Quantity Contract for Architectural & General Engineering Services for Philadelphia District Civil Works Program Missions (Philadelphia, PA)

2. PUBLIC NOTICE DATE	3. SOLICITATION OR PROJECT NUMBER
June 17, 2024	**W912BU-24-R-0023**

B. ARCHITECT-ENGINEER POINT OF CONTACT

4. NAME AND TITLE **Wei Wang, Ph.D., P.E.; Co-Chairman**

5. NAME OF FIRM **UrbanTech-MSMM Joint Venture, LLC; EIN 99-3914689; UEI: ZW1RL9N8GG46**

6. TELEPHONE NUMBER	7. FAX NUMBER	8. E-MAIL ADDRESS
(856) 777-8878	**(646) 308-9228**	**wwang@urbantechusa.com**

C. PROPOSED TEAM
(Complete this section for the prime contractor and all key subcontractors)

	(Check) Prime	J-V	Sub	9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
a.	√			URBANTECH-MSMM JOINT VENTURE LLC [ ] CHECK IF BRANCH OFFICE UEI: ZW1RL9N8GG46	1236 Brace Road Suite D Cherry Hill, NJ 08034	***Prime*** ***Roles of JV Members Below***
b.		√		URBANTECH CONSULTING ENGINEERING, P.C. [ ] CHECK IF BRANCH OFFICE UEI: ZLEWZBAHHDS4	11 Broadway, 19th Floor New York, NY 10003	***Joint Venture Member*** **Small Business** Bridge and Building Structural Engineering, Investigations, Modeling, Data Collection, Engineering During Construction, P&S, Project Management, CAD MicroStation, BIM
c.		√		URBANTECH CONSULTING ENGINEERING, P.C. [X] CHECK IF BRANCH OFFICE UEI: ZLEWZBAHHDS4	1236 Brace Road Suite D Cherry Hill, NJ 08053	***Joint Venture Member*** **Small Business** Bridge and Building Structural Engineering, Investigations, Modeling, Data Collection, Engineering During Construction, P&S, Project Management, CAD MicroStation, BIM
d.		√		MSMM ENGINEERING, LLC [ ] CHECK IF BRANCH OFFICE UEI: NYLUL4Q5GYF6	4640 S. Carrollton Ave. Suite 220 New Orleans, LA 70119	***Joint Venture Member*** **Small Disadvantaged Business** Full-Service Engineering, Water/Wastewater Design, Investigations, Modeling, Data Collection, Civil, Structural, Environmental Engineering, Planning Studies, Construction Management, Hydraulics and Hydrology, Cost Estimating, Architecture, Engineering During Construction, Project Management, CAD MicroStation, BIM

C. PROPOSED TEAM (Complete this section for the prime contractor and all key subcontractors)						
	(Check)			9. FIRM NAME	10. ADDRESS	11. ROLE IN THIS CONTRACT
	Prime	J-V	Sub			
e.			√	AECOM [X] CHECK IF BRANCH OFFICE UEI: EPUXNLX5EYC4	1635 Market Street, Suite 1000 Philadelphia, PA 19103	**Large Business** Full-Service Engineering, Geotechnical Services, Architecture, Engineering During Construction, Project Management, CAD MicroStation, BIM, Surveying
f.			√	AECOM [X] CHECK IF BRANCH OFFICE UEI: EPUXNLX5EYC4	625 West Ridge Pike, Suite E-100 Conshohocken, PA 19428	**Large Business** Full-Service Engineering, Geotechnical Services, Architecture, Engineering During Construction, Project Management, CAD MicroStation, BIM, Surveying
g.			√	AECOM [X] CHECK IF BRANCH OFFICE UEI: EPUXNLX5EYC4	1255 Broad Street, Suite 201 Clifton, NJ 07013	**Large Business** Full-Service Engineering, Geotechnical Services, Architecture, Engineering During Construction, Project Management, CAD MicroStation, BIM, Surveying
h.			√	AECOM [X] CHECK IF BRANCH OFFICE UEI: EPUXNLX5EYC4	12420 Milestone Center Dr., Suite 150 Germantown, MD 20876	**Large Business** Full-Service Engineering, Geotechnical Services, Architecture, Engineering During Construction, Project Management, CAD MicroStation, BIM, Surveying
i.			√	MARINE SOLUTIONS [X] CHECK IF BRANCH OFFICE UEI: N19BUBDKMCT4	550 Broad St., Suite 1408 Newark, NJ 07102	**Small Business** Civil Engineering, Commercial Diving specializing in Underwater and Topside Inspection, Imaging, Design, Repair, and Construction of Waterfront and Bridge Infrastructure

U.S. Army Corps of Engineers

D. ORGANIZATIONAL CHART OF PROPOSED TEAM

PROGRAM MANAGER
M. Wingate, PE (MSMM)

QUALITY OFFICER
C. Mills, PE (MSMM)

SAFETY OFFICER
H. Fix, PE (AECOM)

PROJECT MANAGER
***W. Wang, Ph.D., PE (UT)**
***M. Mardia, PE (MSMM)**
***J. Dromsky-Reed, PE (AECOM)**
S. Seiler, PE, PMP (MSMM)
M. Harden, PE (MSMM)
R. Roessler, EIT, PMP (MSMM)
K. Heenan, PE (AECOM)
A. Noami, PE (AECOM)
B. Lelong, PE (AECOM)
W. Hollenbach, PE (AECOM)
M. McIntyre, PE (AECOM)
M. Jiang, PE, DBIA (AECOM)

CIVIL ENGINEER
***Ji. Wilson, PE, LEED®AP (MSMM)**
***S. Chehardy, PE (MSMM)**
***W. Soper, PE (AECOM)**
Je. Wilson, PE (MSMM)
P. Olivier, PE (AECOM)
C. Loyless PE (AECOM)
R. Koenig, PE (AECOM)
A. Zimmerman, PE (AECOM)
K. Dill, PE (AECOM)

STRUCTURAL ENGINEER
***J. Basto, PE (UT)**
***A. Goossen, PE (UT)**
***R. Kalvakaalva, PE, CVS (MSMM)**
F. Fang, PE (UT)
T. Huang, PE (UT)
B. Yokum, PE (MSMM)
A. Tareh, MS, SE (MSMM)
A. Buenano, PE (AECOM)
K. Durbin, PE (AECOM)
R. Walker, PE (AECOM)
M. DiLullo, PE (AECOM)

ARCHITECT
***S. Finegan, AIA (MSMM)**
J. Fahling, AIA, LEED AP (AECOM)
J. Aly, RA, LEED AP BD+C (AECOM)

COST ESTIMATOR
***D. Daigle, CVS, CPE (MSMM)**

GEOTECHNICAL ENGINEER
***J. Volk, PE (AECOM)**
***R. Pinciotti, PE (AECOM)**
T. Cooling, PE (AECOM)
E. Wenz, PE (AECOM)
A. Sharma, PE (AECOM)
D. Sawitzki, PE (AECOM)
A. Crincoli, PE (AECOM)
J. Tooker, PE (AECOM)

ASNT LEVEL II CP189 NDT TECHNICIAN / SPRAT LEVEL I
***A. Potter, SE, PE, CWI (MSI)**

SPRAT LEVEL III CERTIFIED ROPE ACCESS TECHNICIAN
***J. Mathers, PE (AECOM)**

NBIS QUALIFIED BRIDGE INSPECTORS
***J. Gaylord, PE (MSI)**
***M. Doremus, EIT (MSI)**
K. Morrow, PE (MSI)
R. Keenan, EIT (MSI)

HYDRAULIC ENGINEER
C. Soileau, PE (MSMM)
C. Levitz, PE (AECOM)
C. Fischer, PE (AECOM)
E. Levitz, PE (AECOM)
J. Blass, PE (AECOM)
B. Gandhi, PE (AECOM)

MECHANICAL ENGINEER
B. Meyer, PE (AECOM)
P. Moulton, PE (AECOM)

ELECTRICAL ENGINEER
M. Ollinger, PE (AECOM)
J. Hangen, PE (AECOM)

ENVIRONMENTAL ENGINEER
M. Tittlebaum, Ph.D., PE (MSMM)
L. Walker, PE (MSMM)
M. Patorno, PE (AECOM)
A. Patel, PE (AECOM)

MICROSTATION CAD TECHNICIAN
E. Curson (MSMM)
B. Le (MSMM)
E. Piedramartel (AECOM)
D. Haggart (AECOM)
O. Moawad (AECOM)

BUILDING/BRIDGE INFORMATION MODELER (BIM/BrIM)
M. Battista, PE (UT)
A. Strand (UT)

LAND SURVEYOR
M. Lawson, PLS (AECOM)
J. Forsberg (AECOM)
N. Cataldo (AECOM)

SURVEY TEAM
M. Lawson, PLS (AECOM)
A. Young, PLS (AECOM)

TEAM MEMBERS

URBANTECH-MSMM JOINT VENTURE LLC
UrbanTech Engineering, LLC (UT)
MSMM Engineering, LLC (MSMM)

AECOM, Inc. (AECOM)
Marine Solutions, Inc. (MSI)

KEY

*** Resume Included for Role in Section E**

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE a. TOTAL	b. WITH CURRENT FIRM
Wei Wang, Ph.D., P.E.	**Project Manager**	**30**	**24**

15. FIRM NAME AND LOCATION *(City And State)*

UrbanTech Consulting Engineers, PC – New York, NY

16. EDUCATION *(DEGREE AND SPECIALIZATION)*

BS, Civil Engineering, Tongji University, Shanghai, China, 1984
Ph.D, Civil Engineering Structures, New Jersey Institute of Technology, New Jersey, 1995

17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*

PE NY 078720 PE NJ 24GE05089300
PE DE 10844 PE PA PE081556
PE DC PE907740 PE CT 0036179
PE MD 59253 PE VA 0402064306

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Dr. Wei Wang is the president and founder of UrbanTech. He is an experienced structural engineer specializing in designing and rehabilitating steel and concrete bridges, including long spans over water. He is proficient in addressing steel fatigue and fracture, and performing 2D and 3D non-linear analyses. Wei's expertise includes seismic design and integrates design of structures for anti-terrorism measures. Additionally, he has substantial experience in building design and rehabilitation. He is a member of the Industry Advisory Board of the Civil Engineering Department at NJIT.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*: **IDC 206- Green Brook Flood Risk Management Project, Sommerset and Middlesex Counties, NJ**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: **2019** — CONSTRUCTION *(if applicable)*: **2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☒ Check if project performed with current firm

Scope: Principal/Project Leader for the design of a two-span culvert under the NJ Transit tracks to provide additional capacity to the Bound Brook in this flood zone. The culvert was moved in position during a NJ Transit line weekend shut down. Tasks included generating project alternatives for selecting the type of structure for the project needs, coordinating with hydraulics, geotechnical, and permitting teams, coordinating with USACE adjacent projects, coordinating with NJ Transit, developing the final selected alternative which consisted of a two-span concrete bridge, analyzing constructability, and developing final bridge-culvert and concrete retaining wall final drawings with SPMTs. **Cost:** $15M **Fee:** $600K **Role:** Project Manager

b

(1) TITLE AND LOCATION *(City and State)*: **Project TN-53, Rehabilitation and Seismic Retrofit of the Approach Viaducts and Rehabilitation of the Approach Viaducts and Rehabilitation of the Lower Garage at the Throgs Neck Bridge, Bronx and Queens Boroughs, NY**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: **2019** — CONSTRUCTION *(if applicable)*: **2023**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☒ Check if project performed with current firm

Scope: Project Manager. Dr. Wang led his team of engineers for the rehabilitation design of the Queens and Bronx approach piers, involving concrete and steel repairs and seismic retrofitting. Tasks included inspection of 36 concrete pier bents, managed a team for concrete repairs (patching, rebar repair, crack repair, and full jacketing), conducted 2D and 3D jacket analysis, performed seismic analysis using LARSA-4D, and provided construction support services, including shop drawing and construction method reviews. **Cost:** $150M **Fee:** $1.2M **Role:** Project Manager

c

(1) TITLE AND LOCATION *(City and State)*: **Project VN-84AX, Reconstruction and Rehabilitation of the Upper Level Approach Decks at the Verrazano-Narrows Bridge, Staten Island and Queens, NY**

(2) YEAR COMPLETED — PROFESSIONAL SERVICES: **2019** — CONSTRUCTION *(if applicable)*: **2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE — ☒ Check if project performed with current firm

Scope: Project Manager. Dr. Wang led a team of engineers for the design and construction support services during the construction of the re-decking and repairs of the Brooklyn and Staten Island upper-level approach viaducts. Design tasks included the design of overhead structures for the automated toll collection system, and seismic analysis of the I-278 main eastbound viaducts. Also led the team for the construction support services which included detailed review of the means of demolition and bearing replacement with complex staging and jacking operations. **Cost: $200M Fee:** $1.2M **Role:** Project Manager

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Manish Mardia, PE	**Project Manager**	**30**	**13**

15. FIRM NAME AND LOCATION *(City And State)*

MSMM Engineering, LLC – New Orleans, LA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BS, Civil Engineering, University of Jodhpur, 1990 MS, Civil Engineering, Louisiana State University,1994	Professional Engineer (1999): LA (28482), MS (18522)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Mardia is the President, Founder, and 100% Owner of MSMM Engineering, LLC, as well as a professional engineer with 30 years of experience designing and managing civil works projects for USACE. Mr. Mardia has successfully executed over 80 task orders related to flood risk reduction and drainage projects. His design expertise spans earthen levee and floodwall evaluation, inspection and design, drainage pump station evaluation and design, and preparation of engineering reports related to environmental infrastructure projects, drainage evaluation projects, and the evaluation of existing facilities and infrastructure. He currently manages multiple IDIQ Civil Works task orders and MATOC contracts for MSMM at several USACE Districts across the South and Southwest United States.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Ascension Parish Environmental Infrastructure Wastewater Treatment Plant Design, Hillaryville, LA	**2022**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: As part of the New Orleans District Environmental Infrastructure Program, MSMM developed a design-bid-build package (plans and specs) for the creation of a 1.8 million gallon per day wastewater treatment plant. Services consisted of civil/structural/mechanical/electrical engineering, cost estimating using MCACES, and a full USACE review process. Mr. Mardia oversaw the project's delivery and provided QA/QC during the internal and USACE review processes.
Cost: $21.5M **Fee:** $1.4M **Role:** Project Manager

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
East Baton Rouge Parish Wastewater Treatment Collection System 5 MG Ground Storage Tank and Pump Station, Baton Rouge, LA	**ONGOING**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: As part of the New Orleans District Environmental Infrastructure Program, MSMM provided the engineering design of two piles supported above-ground 5 million gallons (MG) prestressed concrete storage tanks, a 14,000 gpm sewer pump station, and a CMU control building. The existing pump station will be connected to the new pump station with a 42” diameter pipe and overflow chamber with automatic slide gates to control when flows will be diverted. Mr. Mardia oversees the execution of the project and provides QA/QC during the internal and USACE review process.
Cost: TBD **Fee:** $1.6M **Role:** Project Manager

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
East Baton Rouge Parish North Landfill Leachate Pond Abandonment, Pump Station, and Force Main, Baton Rouge, LA	**2021**	**2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: As part of the New Orleans District Environmental Infrastructure Program, this project was developed to eliminate the lagoon treatment and discharge to a local stream. MSMM provided 100% bid-ready plans and specifications in USACE format. Additional services included Mr. Mardia oversaw the execution of the project and provided QA/QC during the internal and USACE review process.
Cost: $2.7M **Fee:** $455K **Role:** Project Manager

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
John Dromsky-Reed, PE	**Project Manager**	**38**	**25**

15. FIRM NAME AND LOCATION *(City And State)*

AECOM Technical Services, Inc. – Clifton, NJ

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
MS, Environmental Engineering, 1999; BS, Marine Science, 1986	Professional Engineer: NJ (#24GE04512400), NY (#086945) Certified Floodplain Manager

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Manages flood risk management projects for the USACE NY District. Technical expertise is in hydrology and hydraulics, and has led projects from conception through construction, including planning, detailed design, permitting, bid support, levee accreditation / FEMA LOMRs, project design and cost updates for the Cost Review Board, and post construction inspection and rehabilitation. Risk-based Experience: 5+ years. Organizations: ASCE. Training: HEC-RAS (various)

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
USACE New York, Green Brook FRM Task Orders, Somserset & Middlesex NJ	**2021**	**2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Supervised the hydraulic models used for the design of the levee crest/superiority for various project segments. This included a split flow analysis for the Raritan River to re-calibrate the models to incorporate Tropical Storm Floyd data to define the Bound Brook area levee crest and reliability. Served as the AECOM task manager for the design and cost updates for the cost review board. This included H&H modeling for the entire basin, revised layouts, updated cost estimates in M-CACES II (MII), cost and schedule risk analysis and a Section 902 CAP analysis. **Cost:** Est. $1.4B **Fee:** $3.4M **Role:** Project Manager

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
NJDEP, Rebuild-By-Design Hudson (RBDH), Hoboken, NJ	**2019**	**ONGOING EST. 2027**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Engineering lead for the stormwater management and interior drainage modeling, and design aspects of the $230 million RBDH project. Oversaw the stormwater modeling and design of the $10M Sewer Separation Modification outside the line of protection (LOP), the interior stormwater drainage associated with the LOP, and the interior flood mapping of the FEMA Special Flood Hazard Area with the project in place for the eventual Letter of Map Revision. **Cost:** $230M **Fee:** $10M **Role:** Project Manager

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
USACE New York District, Passaic River Tidal Protection Area Flood Control Project | Newark, NJ	**2023**	**2024**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Managed the engineering aspects of the project's Reevaluation Study and development of plans and specifications. Responsible for updating the floodwall and 65 closure gate designs for the 20-mile line of protection, the interior drainage analysis, cost estimate and technical reports. Instrumental in identifying and analyzing an alternative plan: the locally preferred, smaller 'Flanking Plan,' supported by the local Sponsor, NJDEP. Project Manager for the final design. **Cost:** $2.6M **Fee:** $2.6M **Role:** Project Manager

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Jim Wilson, PE, LEED AP	**Civil Engineer**	**36**	**10**

15. FIRM NAME AND LOCATION *(City And State)*

MSMM Engineering, LLC – New Orleans, LA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BS, Civil Engineering, Michigan Technological University, 1988	Professional Engineer/Civil (1993): TX (128376), LA (35456), MI (38800), FL (85114) LEED Accredited Professional 2008

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Wilson is a Senior civil/drainage/levee engineer with 36 years of civil design experience. He is the designer of record for all civil works designs that MSMM has completed in Texas. Mr. Wilson is fully versed in the USACE civil works and water resources design process and is intimately familiar with the application of UFC 3-201-01 and following USACE CAD/BIM standards. He also provides construction phase services, including engineering design support during construction.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Hillaryville Levee Redesign, Pump Station, and Forcemain, Hillaryville, LA	**2016**	**2017**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: As part of the New Orleans District Environmental Infrastructure Program, MSMM completed full engineering design services for this Ascension Parish project. Work involved the design and construction of a sewerage project that consisted of a 562 gpm sewerage pump station and 4,068 feet of discharge pipe that travels underneath two (2) state highways and over the Mississippi River Levee before discharging into the Mississippi River. Mr. Wilson was the engineer of record for the project.
Cost: $2M, **Fee:** $283k, **Role:** Engineer of Record, Civil Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
277K Levee Raise and Slope Flattening, and Delta Pump Station, Dallas, TX	**2021**	**2024**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Raised the top of the levees (22 miles) to meet a 277k cfs water surface elevation and designed new levee access roads; Levee Side Slope Flattening: The existing East and West levees had side slopes varying from approximately 2:8H:1V to 4H:1V. The side slopes will be flattened to 4H:1V along the entire length of the levees. Delta Pump Station: New pumps (2), new electrical building, a new transformer, concrete curb and gutter, truck access, new retaining walls, new security fencing, and gates. Mr. Wilson prepared the plans and specifications for the levee raise, side slop flattening, and new levee access roads.
Cost: $41M **Fee:** $1.3M **Role:** Civil Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
New Orleans International Airport Drainage Pump Station, Kenner, LA	**2017**	**2018**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: MSMM provided full design services for a 600 cfs stormwater drainage pump station and for all landside drainage as part of constructing the new airport terminal at the New Orleans International Airport. MSMM delivered a multi-disciplinary effort spanning civil, structural, electrical, mechanical, and environmental design, hydraulic modeling (HEC-HMS and HEC-RAS), architectural services, and MCACES cost estimating. Mr. Wilson was the designer of record for the project. He provided all the civil site work design and provided engineering support during advertisement, engineering support during construction and provided periodic inspection reports of the construction progress.
Cost: $25M **Fee:** $2.7M **Role:** Engineer of Record, Civil Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Scott Chehardy, PE	**Civil Engineer**	**29**	**8**

15. FIRM NAME AND LOCATION *(City And State)*

MSMM Engineering, LLC – New Orleans, LA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BS, Civil Engineering, Southwestern Louisiana University, 1994	Professional Engineer/Civil (1999): LA 28532, IN 11700829

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Chehardy has nearly 30 years of Civil design experience in the Federal realm. He has a deep understanding of the USACE Civil Works design process, inclusive of the Section 219 Environmental Infrastructure program for which he has managed and executed multiple large-scale task orders. Mr. Chehardy is proficient with navigating USACE reviews utilizing DrChecks, has a long history of executing projects that require ATR/DQC and BCOES reviews, and is extremely proficient in developing USACE specifications utilizing SpecsIntact. Mr. Chehardy's recent experience includes finalizing the design-build RFP package for the 277k Levee and Delta Pump Station and leading the delivery of Plans and Specs for the Ascension and Baton Rouge Parish EI projects.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Ascension Parish Environmental Infrastructure Wastewater Treatment Plant Design, Hillaryville, LA	**2022**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: As part of the New Orleans District Environmental Infrastructure Program, MSMM developed a design-bid-build package (plans and specs) for the creation of a 1.8 million gallon per day wastewater treatment plant. Services consisted of civil/structural/mechanical/electrical engineering, cost estimating using MCACES, and a full USACE review process. Mr. Chehardy is the lead civil engineer for the delivery of the design-bid-build package. He managed a multi-disciplinary team that provided full plans and specifications using CAD MicroStation and Specsintact, as well as a detailed MII cost estimate for USACE.
Cost: $21.5M **Fee:** $1.4M **Role:** Civil Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Cow Bayou Drainage Pump Station Complex Design, Orange, TX	**2021**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Development of a 35% design package (plans, specs, and DDR) for a new 8,190 cfs drainage pump station complex consisting of multiple flood risk management reduction measures such as a pump station, safe house, floodwalls, and sector gate. Main responsibilities consisted of civil, structural, and architectural analyses. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Chehardy managed the Civil, Structural, and Architectural aspects of the project, while USACE led the Electrical and Mechanical aspects. He developed the civil/site work design, developed the utility documentation, prepared the detailed plans and specifications, and coordinated the development of the DDR.
Cost: TBD **Fee:** $1.3M **Role:** Civil Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Harahan Drainage Pump to the River, Jefferson Parish, LA	**2018**	**2018**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Project elements included a 700 ft. suction canal, a 1,200 cfs pumping station, three 9,000 ft. long 84-inch diameter discharge pipes to the Mississippi River levee, levee crossing design, reinforced concrete, and discharge basin in the Mississippi River. MSMM, as a sub to CDM Smith, MSMM principal Mr. Chehardy, was the lead designer for 3 design packages of the overall project, leading the design and implementation of the discharge piping, levee crossing, MS River shift, and the discharge basin. He developed the design documentation report covering these project features and provided engineering support during advertisement and engineering during construction.
Cost: $150M **Fee:** $1.8M **Role:** Civil Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
William Soper, PE	**Civil Engineer**	**31**	**14**

15. FIRM NAME AND LOCATION *(City And State)*

AECOM Technical Services, Inc. – Clifton, NJ

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BASc, Civil Engineering, University of British Columbia, 1993	Professional Engineer/1999: NJ

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Soper has over 25 years of experience in Civil, hydrologic, hydraulic and site development engineering: He has managed, designed and coordinated institutional, commercial, residential and industrial land development projects specializing in hydraulics, hydrology, stormwater management and floodplain analysis. He has conducted hydrologic and hydraulic modeling using HEC-HMS and HEC-RAS (1-D Steady and Unsteady State, and 2-D) software for dams and dam break analysis, flood risk management projects, and for bridges in Pennsylvania, New York, New Jersey, Massachusetts and Ohio.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
West of Hudson (WOH) Dam Break Analyses for New York City Environmental Protection (NYDEP) Agency, Delaware Watershed	**2012**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: For the West of Hudson (WOH) Reservoirs, Cannonsville, Pepacton, and Neversink Reservoirs, on the Delaware River watershed – a 6700 square-mile drainage area, and Rondout Reservoir on the Huson River Watershed, lead the Hydrologic and Hydraulic Analysis. The dam breach analyses included the development of HEC-RAS unsteady model to determine the limits of inundation under the "sunny day" condition and the Probable Maximum Flood (PMF) event for over 250 miles of the Delaware, Neversink and Rondout Rivers. The model includes lateral watershed contributions including several tributary confluences used to model backwater impacts. A total of 76 bridges were modeled. From these models, a collection of GIS based inundation maps for the PMF flood event with and without a breach, as well as the "Sunny Day" breach conditions, were created for the Emergency Action Plan (EAC). **Role:** Lead Civil-Hydrologic/Hydraulic Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
DEL-432 Engineering Assessment for East of Hudson (EOH) & West of Hudson (WOH) High Hazard Dams for New York City Environmental Protection (NYDEP) Agency, Dams East & West Side of Hudson River	**ONGOING AS OF JULY 2024**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

For the Delaware Watershed (WHO dams), updated the previously developed model to create a HEC-RAS 2-D model of the watershed from the Neversink Reservoir downstream to Philadelphia. Then used the 2-D model to analyze the "sunny day" condition and the Probable Maximum Flood (PMF) dam breach and created inundation mapping. For the EOH dams performed Quality Control reviews of the 2-D dam breach evaluations. **Fee:** $8,974,310 **Role:** Lead Civil-Hydrologic/Hydraulic Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Rebuild by Design (RBD)– Meadowlands for NJDEP, Bergen County, NJ	**2017**	**ONGOING AS OF 7/2024**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Constructed unsteady 1D and 2D model of existing conditions and proposed Paterson Plank Road tide gate and pump station. Unsteady RAS model incorporates several 2D areas, several pump stations, storage areas and 1D Berry's Creek stream reach to the Hackensack River with various tidal event waveforms. Provided hydrologic and hydraulic analysis and Quality Control review support **Cost:** $416M **Fee:** $80M **Role:** Civil-Hydrologic/Hydraulic Engineer.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Jose Basto, PE	**Structural Engineer**	**28**	**8**

15. FIRM NAME AND LOCATION *(City And State)*

UrbanTech Engineering, LLC – Cherry Hill, NJ

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BS, Civil Engineering, Universidad de Los Andes (Bogotá, Colombia), 1994 MS, Civil Engineering, West Virginia University, 2002	Professional Engineer/Structures NJ (24GE04571600)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Basto is a Senior structural engineer with 20+ years of structural engineering experience. Mr. Basto specializes in the design, inspection, and structural evaluation of transportation-related structures, including highway bridges, noise barriers, and culverts. He is also responsible for preparing plans and calculations, computing bridge ratings, writing reports, and performing construction support services for bridge owners for the construction of bridges and transportation related structures. Mr. Basto has an NHI-130092 LRFR certification for bridge load rating in accordance with AASHTO MBE.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
IDC 206- Green Brook Flood Risk Management Project, Sommerset and Middlesex Counties, NJ	**2019**	**2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Design of a 2-span culvert under NJ Transit (NJT) rail lines for flood mitigation to increase the capacity of an existing adjacent culvert built in 1903. Specific role consisted of studying alternatives for the water passage under the rail lines and final design of the preferred alternative. Mr. Basto led a team of engineers for the final design of a 2-span 51’ wide x 83’ long x 12’ tall concrete bridge culvert. The bridge was constructed in an area adjacent to the final location and rolled into final position with SPMT transporters. The structural analysis for the design included 2- and 3-dimensional analysis for gravity dead and live loads, and seismic loads. The design also included four adjacent concrete wingwalls that tied into the concrete culvert. Responsible too for the construction support services which included review of the shop drawings and means and methods of construction including the heavy lift movement with SPMTs. **Cost:** $15M **Fee:** $600K **Role:** Lead Structural Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Project TN-53, Rehabilitation and Seismic Retrofit of the Approach Viaducts and Rehabilitation of the Approach Viaducts and Rehabilitation of the Lower Garage at the Throgs Neck Bridge, Bronx and Queens Boroughs, NY	**2019**	**2023**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Design of the rehabilitation of the Queens and Bronx approach piers including concrete and steel repairs, and seismic retrofit. Specific role consisted of the detailed inspection of 36 existing concrete pier bents ranging from 30’ to 90’ tall. Also, led a team of engineers for the design of the concrete repairs for the piers which included concrete patching, rebar repair, crack repair, and full concrete jacketing at 5 piers. The analysis for design of the jackets included 2- and 3-dimensional analysis. Also performed seismic analysis of the piers using LARSA-4D for the prime consultant to determine the seismic demands for seismic retrofit. Also provided construction support services to the owner including shop drawing review and means and methods of construction review.
Cost: $150M **Fee:** $1.2M **Role:** Lead Structural Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Adam Goossen, PE	**Structural Engineer**	**18**	**17**

15. FIRM NAME AND LOCATION *(City And State)*

UrbanTech Consulting Engineers, PC – New York, NY

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BS, Civil Engineering, University of Nebraska-Lincoln, Lincoln, NE, 2007	Professional Engineer/Structures NY (090521)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Goossen has structural design experience related to analysis and rehabilitation of several bridges in the New York City area. He has been involved in numerous projects requiring detailed finite element analysis. He also has experience managing projects from initial brainstorming and planning, though completion of design drawings and calculations, to final construction in the field. He is familiar with design codes and specifications related to bridges and buildings

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
MTA East Side Access CS-08, Queens, NY	**2015**	**2023**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Mr. Goossen was the structural project manager and lead structural engineer for this design-build project. An existing 250’ x 40’ concrete vault was modified to support prebuilt building units which house traction power equipment. The building units arrived on site in 8’ to 14’ wide x 40’ long sections and were placed with a large hydraulic crane. UrbanTech was responsible for the structural analysis of the existing concrete structure and for the design and detailing of a supplemental curb wall extension and the steel framed structure to support the building units. UrbanTech worked closely with EJ Electric who acted as the general contractor for the project.
Fee: $60K **Role:** Lead Structural Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Project TN-53, Rehabilitation and Seismic Retrofit of the Approach Viaducts and Rehabilitation of the Approach Viaducts and Rehabilitation of the Lower Garage at the Throgs Neck Bridge, Bronx and Queens Boroughs, NY	**2019**	**2023**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Design of the rehabilitation of the Queens and Bronx approach piers, encompassing concrete and steel repairs, and seismic retrofitting. Specific responsibilities included the detailed inspection of 36 existing concrete pier bents, ranging from 30’ to 90’ in height. Additionally, provided quality assurance/quality control for the firm’s design deliverables, which included concrete patching, rebar repair, crack repair, and full concrete jacketing at five piers.
Cost: $150M **Fee:** $1.2M **Role:** Lead Bridge Inspector / Lead QA/QC structural reviewer.

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Wurts Street Rehabilitation, Kingston, NJ	**2019**	**2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Mr. Goossen led a team of engineers that performed a staged construction analysis of the historic 1904 1,057’ span suspension Wurts Street Bridge in Kingston, NY. The team converted the LUSAS finite element model to SAP2000 to assess stresses during concrete deck removal and replacement. This detailed, non-linear analysis included evaluating construction vehicle loads and replacing gusset plates. Collaborating with the contractor and EOR, the team devised an efficient, safe construction sequence, reducing required time and ensuring economical procedures. **Cost:**
Role: Lead Structural Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Ramesh Kalvakaalva, PE, CVS	**Structural Engineer**	**30**	**13**

15. FIRM NAME AND LOCATION *(City And State)*

MSMM Engineering, LLC – New Orleans, LA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
PhD Candidate, Civil Engineering, Louisiana State University (1999) MS, Civil Engineering; Louisiana State University (1995) BS, Civil Engineering; NIT, Trichy, India (1991)	Professional Engineer/Civil (1997): LA (28219), MS (14876) FL (67030), AL (27347), GA (26993), TN (106893), NC (031348), SC (24777), AZ (43451, MI (2843452), SAVE® Certified CVS (Worldwide) (2010) CVS License (201110500)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Kalvakaalva is a structural engineer with over 25 years of experience providing structural design solutions to USACE and other federal agencies. He was instrumental in the data evaluation, planning, analysis, and design of several HSDRRS projects following Hurricane Katrina, inclusive of flood protection measures such as pump stations, levees, floodwalls, drainage inlets, and coastal erosion features. More recently, Mr. Kalvakaalva has provided structural engineering solutions for box culverts, design-build levee raise projects, and bridges and elevated structures. Mr. Kalvakaalva is also a Save International Registered CVS and has led more than 20 USACE value engineering studies in the last five years.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
East Baton Rouge Parish Rehabilitation of Multiple Sanitary Sewer Overflow (SSO) Pump Stations, Baton Rouge, LA	**2024**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: As part of the New Orleans District Environmental Infrastructure Program, MSMM was tasked to upgrade multiple sewer pump stations. MSMM was responsible for mechanical, site civil, electrical, and structural engineering design to provide 100% bid-ready plans and specifications. Mr. Kalvakaalva was the lead structural engineer and was responsible for designing reinforced concrete structures for all pump stations, base slabs, and slabs on grade. **Cost:** TBD, **Fee:** $433k, **Role:** Structural Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
New Orleans International Airport (MSY) Drainage Pump Station, Kenner, LA	**2017**	**2017**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: MSMM completed the design and EDC services for a 600 cfs stormwater drainage pump station and for all landside drainage as part of constructing a new airport terminal. The project involved working under an extremely compressed schedule while successfully delivering a truly multi-disciplinary effort spanning civil, structural, electrical, mechanical, and environmental engineering, hydraulic modeling, architectural services, cost estimating, environmental permitting, drafting, and agency coordination. Mr. Kalvakaalva was the lead structural engineer and was responsible for designing reinforced concrete pump station structure, pile-supported pipe supports, headwalls, sheet pile discharge structures, and slabs on grade. **Cost:** $45M, **Fee:** $3.2M, **Role:** Structural Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Lapalco Bridge over Harvey Canal Design Project, Harvey, LA	**ONGOING**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: This bridge design project involved the reconfiguration of an existing four-lane bridge into a bridge containing three eastbound lanes with a new independent three-lane westbound bridge. MSMM provided schematic design, preliminary design, final design, and load ratings. Mr. Kalvakaalva is the lead structural engineer and was responsible for completing the load rating on the existing bridge and for designing the structural components for the bridge expansion. He's developing detailed calculations for these components.
Cost: TBD **Fee:** $1.11M, **Role:** Structural Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Steve Finegan, AIA	**Architect**	**34**	**5**

15. FIRM NAME AND LOCATION *(City And State)*

MSMM Engineering, LLC – New Orleans, LA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
MS, Architecture, Tulane University, 1984 BS, Architecture, Tulane University, 1980	Architect (1987): TX (25434), LA (3898), TN (106064), MS (2873), AL (5101)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Finegan is a licensed architect with extensive recent Federal experience (USACE and the Air Force) providing architectural design services for new construction government office buildings, stand-alone facilities, drainage pump station safe houses and pump buildings, sewer treatment plants, and military facilities, including labs, barracks, and munitions facilities. Additionally, Mr. Finegan has extensive experience providing construction phase services, including leading construction progress meetings, responding to contractor RFI's, reviewing and approving pay requests, and providing design during construction.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
East Baton Rouge Parish Wastewater Treatment Collection System 5 MG Ground Storage Tank and Pump Station, Baton Rouge, LA	**ONGOING**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: As part of the New Orleans District Environmental Infrastructure Program, MSMM provided the engineering design of two piles supported above-ground 5 million gallons (MG) prestressed concrete storage tanks, a 14,000 gpm sewer pump station, and a CMU control building. The existing pump station will be connected to the new pump station with a 42" diameter pipe and overflow chamber with automatic slide gates to control when flows will be diverted. Mr. Finegan is designing the 3,200 square foot stand-alone administration building (new construction) and all internal features (offices, lab, kitchen, bathrooms, warehouse, etc.) He is also helping develop the project specifications using Specs Intact.
Cost: TBD **Fee:** $1.6M **Role:** Architect

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Cow Bayou Drainage Pump Station Complex Design – Orange County, TX	**2021**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Our team developed a 35% design package (plans, specs, and DDR) for a new 8,190 cfs drainage pump station and complex consisting of a pump station building, safe house, floodwalls, and sector gate. Main responsibilities consisted of site layout, architectural, civil, structural, and cost engineering. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Finegan provided the architectural design for the drainage pump station safe house. His design included all facilities required for the safe house, inclusive of restrooms, dormitory housing, and dining hall facilities. To develop the drawings, he followed USACE CADBIM policies and standards.
Cost: TBD **Fee:** $1.3M **Role:** Lead Architect

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Replacement of Granger Lake Office Building, Granger TX	**2019**	**2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Development of a design-bid-build package (plans and specs) for the creation of a new Lake office management building and demolition of the existing facilities. Design services included civil, structural, electrical, and mechanical engineering, as well as architectural and landscape architectural design. Mr. Finegan was the lead architectural designer for the project. He worked with USACE, and the Lake Management staff to develop a government office facility that met their needs and complied with the budget constraints. Mr. Finnegan developed the detailed design drawings in compliance with all UFC's and EM's and developed the project specifications in Specs Intact. He provided a detailed architectural design for the facility, inclusive of architectural treatments.
Cost: $3.2M **Fee:** $358K **Role:** Architect of Record and Architectural Team Leader

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Don Daigle, CVS, CPE	**Cost Estimator**	**45**	**6**

15. FIRM NAME AND LOCATION *(City And State)*

MSMM Engineering, LLC – New Orleans, LA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
AAS, Mechanical Engineering, 1984 AAS, Electro-Mechanical Engineering, 1982	Certified Value Specialist (CVS): #201203044 Certified Professional Estimator (CPE) #1.4-0009821-1214

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Daigle has a wide range of experience providing value engineering, cost estimating and cost management, life cycle cost analysis, scheduling, quality control techniques, and design construction cost reconciliation for USACE Civil Works projects. He is a Certified Value Specialist and proficient in estimating using MCACES and PACES software. Mr. Daigle has provided MII cost estimating for multiple USACE districts including all recent Civil Works design task orders completed by MSMM. He also has experience providing detailed cost estimating for the Air Force on several projects.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Ascension Parish Environmental Infrastructure Wastewater Treatment Plant Design, Hillaryville, LA	**2022**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Development of a design-bid-build package (plans and specs) for the creation of a 1.8 million gallon per day wastewater treatment plant as part of the Federal Section 219 Environmental Infrastructure program. Services consisted of civil/structural/mechanical/electrical engineering, cost estimating using MCACES, and a full USACE review process. Mr. Daigle provided the detailed cost estimating for the project. He was tasked with producing cost estimates in MCACES (MII) for each of the design submittals. He was also tasked with responding to DrChecks comments related to the estimate and participated in design review meetings. Additionally, he was responsible for identifying features to reduce project costs and identifying bid options.
Cost: $21.5M **Fee:** $880k **Role:** Cost Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Cow Bayou Drainage Pump Station Complex Design – Orange, TX	**2020**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Our team developed a 35% design package (plans, specs, and DDR) for a new 8,190 cfs drainage pump station and complex consisting of a pump station building, safe house, floodwalls, and sector gate. Main responsibilities consisted of site layout, architectural, civil, structural, and cost engineering. The task order was to provide a 35% level of design with anticipation of changing the project to a Design-Build RFP. Mr. Daigle performed very preliminary MCACES cost estimating for the project. He worked extensively within the workbooks and through contractor contacts, to gain an understanding of regional pricing for major design features of the project and relayed quotes and information to the design team as they prepared design submittals. The design team also coordinated project features with him as they developed the design.
Cost: $325M **Fee:** $1.3M **Role:** Cost Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Design-Build RFP Development: 277K Levee Raise and Delta Pump Station – Dallas, TX	**2021**	**TBD**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Development of two design-build RFP packages for flood risk reduction measures along the Dallas Floodway, consisting of the 277K levee raise and Delta Pump Station replacement. Other services consisted of cost estimating, value engineering, design, drafting and planning for demolition of existing facilities, and Civil/Structural/Mechanical/Electrical/ Architectural engineering analyses and design. Mr. Daigle led the development of two stand-alone cost estimates (design-build packages bid separately). He developed detailed MCACES cost estimates to a 35% level for both the levee raise and pump station replacement projects.
Cost: $35M **Fee:** $1.4M **Role:** Cost Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
John Volk, PE	**Geotechnical Engineer**	**38**	**38**

15. FIRM NAME AND LOCATION *(City And State)*

AECOM Technical Services, Inc. - Philadelphia, PA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
MS, Geotechnical Engineering 1984 BS, Civil Engineering 1983	Professional Engineer: PA (040770E), NJ (24GE03690400), DE (9090); NY (081707); MD (44356); (LA (38377); TX (145833)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

John is a renowned geotechnical engineer specializing in waterfront projects, including flood retarding structures, flood risk management, coastal ecosystem restoration, and navigation. He excels in leading geotechnical investigations, feasibility studies, and overseeing construction, with a focus on designing cost-effective solutions for complex foundation conditions using tools like SLOPE/W, LPILE, and SEEP/W. His expertise covers levees, deep pile foundations, floodwalls, closure gates, and sector gates. John has developed foundation improvement designs for soft soils along coastlines and marsh areas, focusing on civil works and water resources projects ranging from $400M to over $1B. He has led geotechnical investigations, designs, and EDC services for 20 miles of levees/floodwalls with closure gates, 2 coastal ecosystem restoration projects, and 2 pump stations. His experience with USACE includes following their EM standards for various geotechnical analyses and designs.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Green Brook Flood Risk Management Project, Middlesex, Somerset, and Union Counties, New Jersey & New York	**2021**	**2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Reviewed field construction data related to earthworks and compaction of materials from the borrow area. The fill material was designed to for stability and seepage measures of the levee structure.
Cost: $610M **Fee:** $15M **Role:** Geotechnical Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Interstate-95 (I-95) Girard Avenue Interchange	**ONGOING**	**2032**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: **P**roject involves eliminating the lane-drops at the Girard Avenue Interchange by widening I-95 to four continuous lanes in each direction. Oversaw the foundation recommendations for bridge replacements and retaining walls. The subsurface exploration program for the overall project includes approximately 500 test borings, cone penetrometer testing (CPTu), geophysical methods, pile corrosion studies, and a test pile program. Early construction work (Section GR0) was performed in an area underlain by soft soils, has included pre-consolidation, jet grouting, wick drains, lightweight fills, and an instrumentation program for monitoring settlement, pore pressures, and ground movements. The GR4 contract involved installation of over 2000 micropiles that reduced vibration and noise adjacent to residential areas. **Cost:** $1,200M **Fee:** $200M **Role:** Geotechnical Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
USACE Galveston District, Freeport Levee Coastal Storm Risk Management Improvements Design FPV03, Freeport and Vicinity, TX	**2023**	**2027**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Oversaw the geotechnical design to upgrade levee, floodwall, closure gates, and in-water sluice gates and completion of the 65% Geotechnical Design Report. Added value by completing the slope stability and seepage analyses early to help the civil design team complete the excavation quantities, allowing early coordination for SWG & stakeholders contributing to Very Good CPARS in Quality.
Cost: $206M **Fee:** $4.6M **Role:** Geotechnical Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Robert Pinciotti, PE	**Geotechnical Engineer**	**39**	**33**

15. FIRM NAME AND LOCATION *(City And State)*

AECOM Technical Services, Inc. - Germantown, MD

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
MS, Civil and Geotechnical Engineering 1988 BS, Civil and Geotechnical Engineering 1979	Professional Engineer: PA (#PE033916E), MD (#21984), VA (#0402031182), KY (#30604), GA (#42836)

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Principal geotechnical engineer and project manager with nearly four decades of dam and geotechnical engineering on the design and construction of new dams, modifications to existing dams, and safety assessments as they relate to risk for dams, levees, and related infrastructure. Prior to AECOM, employed by the USACE Philadelphia District where he conducted Periodic Inspection reports for five District dams. Responsibilities include development and execution of geotechnical exploration programs in both soil and rock on land, soft dredge disposal areas, rivers, and sea; geotechnical analysis; risk assessment including multiple PFMA teams, long-term dredge disposal planning and design of disposal area dikes. Risk Experience: 5 years Organizations: ASDSO. Training: Antiterrorism Officer Level I/II Certification, OSHA 40-Hr HAZWOPER; ASFE Intro to Professional Practice; Engineer as Expert Witness; RMC Risk Tools and Calculations for Risk Assessments

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Town of Martin Phase 2 Flood Protection, Martin, KY	**2020**	**2022**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Completed a value engineering study of the draft preliminary plan that was completed by USACE for Phase 2. Provided geotechnical exploration of the site and borrow area, to develop recommendations for cut/fill slopes, consolidation characteristics, fill selection, handling and placement, consolidation wick drains and instrumentation to monitor fill performance, retaining wall soldier beam rock socket depth, and rock anchors.
Cost: $3.2M **Fee:** $27.4M **Role:** Geotechnical Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
USACE Middle East, Mosul Dam Grouting and Outlet Works Support, Mosul, Iraq	**2019**	**2019**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Supported the USACE risk analysis and dam safety modification study teams conducting risk analysis, evaluating uncertainty, and evaluating risk reduction approaches. Performed technical reviews on study and design documents and contribute to assessment documents. Provided geotechnical services and concluded with other engineers on recommendations for maintenance, rehabilitation, and/or replacement.
Cost: $102M **Fee:** $590M **Role:** Geotechnical Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Confidential Client, Final Remedial Design, Eastern, MD	**2019**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Final remedial design for an 80-ft high slab & buttress (Ambursen Dam) dam. Managed preparation of the breach inundation mapping for use in the updated EAP. The dam includes twenty non-overflow concrete bay sections and a spillway consisting of thirteen 15-ft high, 18-ft wide radial arm (Tainter) gates. Design plans and specifications include strengthening the Tainter gates, replacement of the Tainter gate sidewall plates and sill plate along with ancillary items, removal of the deteriorated shotcrete surface on the downstream spillway parapet walls, followed by replacement with a new cast-in-place, 6-inch-thick reinforced concrete surface, replacement of the existing six slide gates in the intake tower, and concrete repairs to the existing structure. **Cost:** $458K **Role:** Geotechnical Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Anderson K. Potter, SE, PE, CWI	**ASNT Level II CP189 NDT Technician / SPRAT Level I**	**11**	**11**

15. FIRM NAME AND LOCATION *(City And State)*

Marine Solutions, Inc. - Newark, NJ

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
M.S., Structural Engineering, University of Texas at Austin, 2017 B.S., Civil Engineering, North Carolina State University, 2012	Professional Engineer: AL, AZ, CA, ID, KY, MD, MT, NM, NV, UT, WA SPRAT Level I Rope Access Non-destructive Testing ASNT Certified Level II

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Potter, PE, SE, CWI is a highly experienced marine and structural engineer with 11 years of expertise in the design, construction, inspection, and analysis of marine structures, bridges, and industrial facilities. Mr. Potter's diverse skill set encompasses underwater inspections, structural assessments, and design of marine infrastructure such as piers, wharves, and berthing facilities. As a certified PADI Open Water Diver and AWS Certified Welding Inspector, he brings a unique perspective to underwater inspections and marine engineering projects. His extensive project experience spans routine bridge inspections, underwater structural assessments, repair design for marine terminals, and complex structural analyses for demolition and construction projects. Mr. Potter is proficient in multiple engineering software tools, including AutoCAD, Mathcad, MicroStation, STAAD PRO, DeepEx, SAP2000, LPILE, and AASHTO Bridge Rating (BrR) software, enabling him to deliver precise and efficient engineering solutions. His comprehensive understanding of marine structures, combined with his software expertise and diving capabilities, makes him an invaluable asset for complex marine engineering projects.

Training: PADI Open Water Diver Cert., 2020; Safety Inspection of In-Service Bridges, NHI 130056, 2018; Bridge Inspection Refresher, NHI 130053, 2021; Fracture Critical Inspection Techniques for Steel Bridges, NHI 130078, 2018; Inspection and Maintenance of Ancillary Highway Structures, NHI 130087, 2019; Stream Stability and Scour at Highway Bridges for Bridge Inspectors, NHI 135047, 2019; AWS Certified Welding Inspector (#18101481), 2017; Non-destructive Testing ASNT Certified Level II – Ultrasonic, Remote Pilot Certificate, 4094543, FAA, 2018; Society of Professional Rope Access Technician (SPRAT), Level I, 2019; OSHA 30-Hour Construction Safety Outreach Training, 2022; First Aid, CPR, Oxygen Admin., Bloodborne Pathogens, current

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Bridge Inspection and Assessment, Naval Facilities Engineering Systems Command, FY24 East Coast, US	**ONGOING**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Engineer responsible for developing the scope of work, managing project safety and quality control, and serving as the primary client contact for marine-related aspects of the bridge inspection project, including signing reports for underwater inspections, coordinating access, and ensuring compliance. The project entailed the routine National Bridge Inspection and Unified Facilities Criteria inspection of 21 highway and pedestrian bridges across various military bases, including Joint Expeditionary Base Little Creek, VA (6 structures), Naval Air Station / Naval Station Norfolk, VA (11 structures), Naval Air Station Patuxent River, MD (2 structures), Naval Support Activity Mechanicsburg, PA (1 structure), and Portsmouth Naval Shipyard, NH (1 structure). The scope included inspections that required Maintenance of Traffic for 2 structures and a detailed load rating and scour evaluation for 1 structure, ensuring the safety and integrity of critical infrastructure in compliance with stringent standards.

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Bridge Inspections, U.S. Army Corps of Engineers - Vicksburg District, United States Army Garrison, Fort Campbell, KY	**2023**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Project Engineer responsible for engineering evaluations, analyses, and development of project submittals. The project consisted of performing the routine above water inspections of 16 bridges. Four of the bridges also required underwater inspections.

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Jason Mathers, PE	**SPRAT Level III Rope Access Technician**	**20**	**20**

15. FIRM NAME AND LOCATION *(City And State)*

AECOM Technical Services, Inc. - Conshohocken, PA

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BS, Civil Engineering 2007	Professional Engineer: PA, DE, PR, NJ, FL, LA, MT SPRAT Level III Rope Access Technician Bridge Inspection Refresher Training

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Jason is a structural engineer with experience in the inspection, load rating, analysis, and repair of bridge structures. He has performed bridge related services for over 2,100 structures in 23 states/territories for 33 owners. Jason's complex structural inspection experience includes segmental and cast-in-place cable-stayed, cantilevered truss, tie arches, and suspension. He has provided bridge inspections with responsibilities of scheduling and tracking multiple teams with specialized access equipment, communicating with subcontractors and on-site contractors, developing maintenance needs and critical repairs, and generating detailed technical reports with photographs. Jason has completed load ratings and designed repairs for steel, timber, and both prestressed and mild reinforced concrete bridge types. He has used ASD, LFD, and LRFD methodologies and is proficient in AASTHO BrR , Midas Civil, STAAD, LARS, and PennDOT analysis programs.

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Biennial Inspection of the Betsy Ross Bridge Pennsauken, NJ & Philadelphia, PA	**2020**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Team Leader for the inspection of 1620' long continuous steel truss crossing of the Delaware River. Responsibilities included hands on inspection of the fracture critical members and fatigue sensitive details. **Cost:** $0.845M **Fee:** $0.044M **Role:** Structural Engineer

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Delaware River Port Authority (DRPA), Biennial Inspection Commodore Barry, Chester, PA	**2022**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Team Leader and rope access worker for the inspection of 1644' long cantilevered truss crossing of the Delaware River. Responsibilities included hands on inspection of the fracture critical members and fatigue sensitive details. **Cost:** $1.050M **Fee:** $0.056M **Role:** Structural Engineer

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
US Army Corps of Engineers - Bridge Evaluation, Secure Facility in Middle East	**2017**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Structural engineer responsible for analysis of a damaged prestressed concrete bridge. Developed independent model with AASHTOware BrR to verify primary 3D finite element model. Determined adequacy of bridge to carry military live loads. **Cost:** N/A **Role:** Structural Engineer

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Joseph F. Gaylord, PE	**NBIS Qualified Bridge Inspector**	**14**	**14**

15. FIRM NAME AND LOCATION *(City And State)*

Marine Solutions, Inc. - Newark, NJ

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
MS, Civil Engineering/Structures, Stevens Institute of Technology, 2015 BS, Civil Engineering Technology, SUNY Institute of Technology, 2009 Commercial Diver, Divers Academy International, 2009	Professional Engineer: NY, NJ

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Gaylord specializes in the investigation and structural evaluation of bridges and other marine infrastructure. He has substantial experience performing underwater diving inspections and fathometer surveys on a wide array of marine structures, including bridges spanning waterways and waterfront facilities such as piers, wharves, bulkheads, and relieving platforms. He has logged over 1,500 hours underwater on assignments involving inspection of the submerged components of piers and waterfront structures. He has assisted in the performance of over 60 fathometer surveys associated with bridge scour assessments and is proficient in preparing reports and drawings utilizing AutoCAD, and in preparing fathometer survey contour drawings based on hydrographic positioning techniques.
Training: Underwater Bridge Inspection, NHI, 2023; Safety Inspection of In-Service Bridges, NHI, 2011; Bridge Inspection Refresher Course, NHI, 2018; Methods of Bridge Inspection, NYSDOT, 2013; BDIS Training, NYSDOT Surface-Supplied Air Diving Supervisor, ADCI, 2018; 30-Hour Safety Training, OSHA, 2019; Fit to Dive Physical; First Aid, CPR, Oxygen Admin., Bloodborne Pathogens

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Greenwood Lake Turnpike Bridge Inspection, Grant Engineering & Construction Group, LLC, Ringwood, NJ	**2023**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Supervisor responsible for assisting with planning and execution of the project, on-site safety, staff supervision, and coordination with the client. The project consisted of performing an underwater design level inspection of a 2-span bridge carrying CR 511 over Monksville Reservoir.

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Underwater Inspection, St. George Ferry Terminal Piers 1 & 2 and Wharves 1, 2 & 3, New York City Dept of Transportation (NYCDOT), Staten Island, NY	**2023**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Engineer Diver responsible for performing underwater inspections, assisting with field operations, recording field notes, and report preparation. The project consisted of performing an inspection of Staten Island Ferry maintenance piers and wharves, along with conducting a concrete core testing program and timber coring resistograph testing program.

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Underwater Bridge Inspection & Surveys (Downstate), New York State Department of Transportation (NYSDOT), Various Locations, New York	**2020**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Supervisor responsible for assisting with planning and execution of the project, on-site safety, staff supervision, and coordination with the client. Project consisted of performing underwater bridge inspections and single-beam fathometer surveys of waterways beneath NYSDOT bridges (9 bridges, 51 SSUs in Downstate Regions 10, 11).

E. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT
(COMPLETE ONE SECTION E FOR EACH KEY PERSON.)

12. NAME	13. ROLE IN THIS CONTRACT	14. YEARS EXPERIENCE	
		a. TOTAL	b. WITH CURRENT FIRM
Michael W. Doremus, EIT	**NBIS Qualified Bridge Inspector**	**7**	**7**

15. FIRM NAME AND LOCATION *(City And State)*

Marine Solutions, Inc. - Newark, NJ

16. EDUCATION *(DEGREE AND SPECIALIZATION)*	17. CURRENT PROFESSIONAL REGISTRATION *(STATE AND DISCIPLINE)*
BS, Civil Engineering Technology, Rochester Institute of Technology, 2017 Dive Certificate, Minnesota Diver Training Center, 2019	Engineer-in-Training: PA

18. OTHER PROFESSIONAL QUALIFICATIONS *(Publications, Organizations, Training, Awards, Etc.)*

Mr. Doremus is an engineer-in-training and ADCI-certified dive supervisor with a focus on the inspection, assessment, and rehabilitation of marine structures including bridges, piers, wharves, bulkheads, culverts, locks and dams, and mooring cells. He has performed structural inspections of waterfront structures and has assisted in the design and planning of waterfront facility rehabilitation.

Training: Safety Inspection of In-Service Bridges, NHI, 2018; Underwater Bridge Inspection, NHI, 2021; Surface Supplied Air Diving Supervisor, ADCI, 2021; 30-Hour Safety Training, OSHA, 2023; Fit to Dive; First Aid, CPR, Oxygen Administration, Bloodborne Pathogens

19. RELEVANT PROJECTS

a

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Greenwood Lake Turnpike Bridge Inspection, Grant Engineering & Construction Group, LLC, Ringwood, NJ	**2023**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Project Engineer Diver responsible for performing underwater inspections, assisting with field operations, recording field notes, and report preparation. The project consisted of performing an underwater design level inspection of a 2-span bridge carrying CR 511 over Monksville Reservoir.

b

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Underwater Inspection, Bridge 93.78 over Saco River, CSX Transportation Inc., Biddeford, ME	**2022**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Engineer Diver responsible for performing underwater inspections, assisting with field operations, recording field notes, and report preparation. The project consisted of the underwater inspection of a railroad bridge.

c

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Underwater Inspection, Cross Bay Bridge and Marine Parkway Bridge, Triborough Bridge and Tunnel Authority (TBTA), Brooklyn, NY	**2022**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Engineer Diver responsible for performing underwater inspections, assisting with field operations, recording field notes, and report preparation. The project consisted of performing quality assurance underwater inspections of the fender system rehabilitation for two bridges.

d

(1) TITLE AND LOCATION *(City and State)*	(2) YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(if applicable)*
Biennial Bridge Inspections, Staten Island Ferry Transfer Bridges, New York City Dept of Transportation (NYCDOT), New York, NY	**2022**	**N/A**

(3) DESCRIPTION *(Brief scope, size, cost, etc.)* AND SPECIFIC ROLE ☒ Check if project performed with current firm

Scope: Engineer Diver responsible for performing underwater inspections, assisting with field operations, recording field notes, and report preparation. Project consisted of performing underwater inspections of eight city ferry landing substructures and preparing reports in accordance with NYSDOT bridge inspection requirements.

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	1

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Town of Martin Phase 2 Flood Protection, *Martin, KY* Contract Number: W91237-15-D-0002, TO W9123719F0205 [100% Design], W9123719F0133 [VE study], W9123720F0073 [EDC] CPARS: W9123719F0205 [100% Design] Very Good for Management/Quality/Cost/Schedule, W9123719F0133 [VE study] Exceptional for Management/Quality/Cost/Schedule, W9123720F0073 [EDC] Very Good for Management/Quality/Cost/Schedule	2020	2023

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
USACE Huntington District	Mr. Bill Miller	304-399-5087

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Design Fee: $3.2M, **Construction Cost:** $27.4M
% Design Complete: 100%, **% Engineering During Construction:** 100%

This flood damage reduction project was authorized under Section 202 of the Energy and Water Development Appropriations Act of 1981. The town of Martin has flooded repeatedly when Beaver Creek and its tributaries overflow. When supplemental funding for the Phase 2 portion of the project was received by the Huntington District, AECOM was awarded a series of task orders to complete a value engineering study of the draft preliminary plan that was completed by USACE for Phase 2, followed by a Task Order to prepare the full project plans and specifications for bid, and finally to provide engineering services during construction throughout the 4-year construction period.

AECOM developed layout concept plans for relocation of the Post Office. Furthermore, AECOM prepared a digital model of the town and developed a conceptual design layout of buildings and infrastructure, to allow a 3D visual "fly-through" for the County Judge Executive and other development agencies.

The project required a full geotechnical exploration of the site and borrow area, to develop recommendations for cut/fill slopes, consolidation characteristics, fill selection, handling and placement, consolidation wick drains and instrumentation to monitor fill performance, retaining wall soldier beam rock socket depth, and rock anchors.

PROJECT RELEVANCIES

- ✓ Task Order Services Completed for USACE
- ✓ Completed within last 7 years
- ✓ Value Engineering Studies
- ✓ Cost Estimating Using MCACES-MII
- ✓ Utilized SpecsIntact

EXEMPLIFIES EXPERIENCE IN:

- ✓ Hydrology/Hydraulics
- ✓ Civil, Structural & Geotechnical Engineering
- ✓ State and Local Permitting
- ✓ GIS/Survey/Mapping
- ✓ Technical Reviews

The recommended design included engineered slope stability measures, to allow steep fill slopes, two sections of soldier beam and lagging retaining walls to accommodate the relocated KY 1428 road, and a wick drain system to allow placement of large quantities of fill materials over soft lacustrine soils and accelerate consolidation and settlement. This effort included moving 340,000 cubic yards of rock and soil material from a local stockpile left from Phase I and placing it over the existing town of Martin (an approximately 10-acre site) up to the floodway line, to raise the town 3 feet above the 100-year flood elevation—an average of 16 feet.

AECOM has provided integration of multi-discipline environmental, hydraulics, and permitting design elements. The civil design plans and specifications required a base plus three option periods for construction, to align with USACE's real estate acquisition plan and included:

- Temporary relocation of a state road and re-establishment of the road at the higher elevation
- New retaining walls to support fill placement at each end of the roadway re-alignment

- Construction sequencing and maintenance of traffic to allow residents access and maintain utility services
- Reclamation of the Mayo Hollow borrow area, including local habitat restoration, stabilization of the creek channel through the area, and creation of a new wetland at the lower end of the hollow
- Delineation and surveying of wetlands in all disturbed areas and a topographic survey where missing
- Re-design of all town water resources, including the stormwater, water supply, and wastewater collection systems plus one new wastewater pump station
- Coordination with the Kentucky Transportation Cabinet, utility providers, and environmental and water permitting agencies as well as town and county officials as related to development plans and required permits
- Completion of Engineering Considerations and Instructions to Field Personnel and Stormwater Pollution Protection Plan documents for all work
- Completion of a full quantity take-off for all aspects of the design and bid forms

AECOM performed HEC-RAS modeling of Beaver Creek to establish the FEMA floodway limits. Structures located in the approximately 10-acre region between the floodway line and Beaver Creek are to be demolished and the area is to be reclaimed for greenspace and floodplain. This modeling was used to support a CLOMR document for submission by the Town to FEMA for documenting the limits of the floodway.

Value Engineering Services
AECOM completed a value engineering study of the preliminary USACE design. The study was completed per USACE planning requirements and provided subject matter experts for the civil, geotechnical, construction and certified value specialist, resulting in eight accepted quantitative VE proposals amounting to $1.6M in potential cost savings.

Engineering Services during Construction
Construction was phased to minimize impacts on the low-income housing facility, relocated to the Phase 1 site though a separate design-build contract. Construction and/or adjustment of certain utilities was necessary to accommodate the project and provide future services at the Phase 2 redevelopment site. AECOM prepared the final grading preparation and reclamation of the Mayo Hollow borrow site, including local habitat restoration, stabilization of the creek channel through the area, and creation of a new wetland.

AECOM developed the construction schedule to meet both real estate acquisition and construction sequencing, and then we submitted the 100% Design Documentation Report for the project. During the bidding process, AECOM has supported USACE with responses to contractor questions, requested amendments, and done bid review in advance of contractor mobilization. The construction contract was awarded at approximately 13% below the Independent Government Estimate for the project. EDC services will include as-built drawings and updates of the DDR. We are maintaining permits and performing site visits as the engineer of record to confirm the contractor is correctly interpreting our plans.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**AECOM**	Germantown, MD	Prime: Project Management, Civil Roadway Design, Site Design, Grading, Utility Coordination, Stormwater Management, Soil Erosion Sedimentation Control; State and Local Permitting; Geotechnical Analysis and Reporting; Surface Water Hydrology & Hydraulics Modeling

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	2

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Ascension Parish Environmental Infrastructure Wastewater Treatment Plant Design *Hillaryville, LA*	2022	TBD

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
USACE New Orleans District	Christopher L. Dunn, Ph.D., P.E. / T. (Jerry) Shih, Ph.D., P.E. / George Krausser, P.E.	504-862-1799 / 504-862-2423 / 504-862-1712

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Design Fee: $1.4M, **MCACES Cost Estimate:** $21.5M,
% of Design Complete: 90%* **% of CA Complete:** NA
*Plan was submitted to USACE for review. However, local sponsor privatized WW operation and therefore the project was stopped.

As part of the New Orleans District Environmental Infrastructure Program, our team worked with the Ascension Parish Government to design a new Wastewater Treatment Plant within the area. Our engineers are to provide 100% bid ready plans and specifications (in USACE format) for a new 1.8 million gallon per day (average daily flow) WWTP to increase treatment capacity and facilitate regionalization of the Parish. The Wastewater Treatment Plant would be adjacent to the recent MSMM designed and constructed effluent sewer pump station and forcemain (separate task order). The WWTP is one step of a larger regionalization plan that MSMM developed. This regionalization plan aimed to bring all wastewater in the area to a single advanced treatment facility and discharge the treated effluent into the Mississippi River instead of local ditches.

This area of Ascension Parish utilized a fragmented system of treatment options with subpar results that varied by subdivision. It included septic tanks, package treatment plants, and an oxidation pond, all discharged into local ditches and streams. The regionalization plan was formed to increase the quality of life and rectify the environmental situation by eliminating discharge into local water sources.

The design focused on a new treatment plant on an eight (8) acre parcel of land owned by Ascension Parish. The design consisted of a dual set of treatment processes for redundancy. It included an influent pump station, headworks with screens and grit removal, extended aeration basin, circular clarifier, chlorine contact chamber, aerobic digesters, belt filter sludge press with new building, maintenance/administration building, and emergency generator as well as site fencing, drainage, and internal asphalt roadways. The facility was designed with future expansion in mind so that an aeration basin and clarifier can be constructed to easily upgrade the treatment plant to 2.7 mgd as additional capacity is needed.

MSMM is providing full design services including project management, letter report and PPA preparation, feasibility report, field topographic surveying, geotechnical investigation, structural, mechanical, electrical, instrumentation, process, civil engineering, H&H modeling, environmental support, coordination, and permitting support.

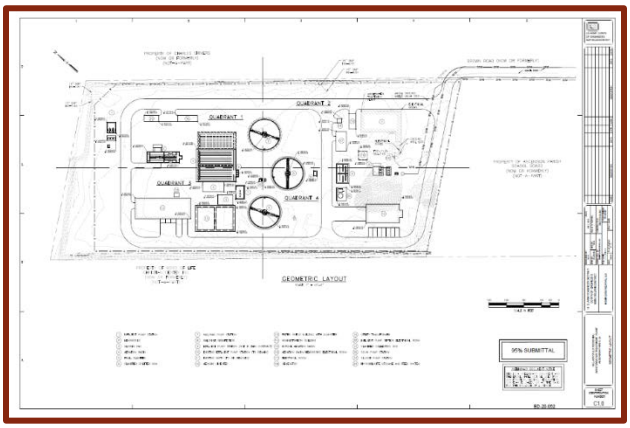
PROJECT RELEVANCIES:

- ✓ Section 219 Environmental Infrastructure Program
- ✓ Design of Wastewater Treatment Plant, Purification, Pump Station, Sewage Collection, and Conveyance System
- ✓ Potential Expansion Plan Analysis
- ✓ Sludge Conditioning, Dewatering and Disposal
- ✓ MCACES Cost Estimating
- ✓ Design Utilizing CAD/BIM Policies
- ✓ Geotechnical Investigations
- ✓ Pile Design
- ✓ Right of Way (ROW) Determination

DEMONSTRATES EXPERIENCE IN:

- ✓ Civil Engineering
- ✓ Structural Engineering
- ✓ Electrical Engineering
- ✓ Mechanical Engineering
- ✓ Hydraulic Engineering
- ✓ Instrumentation
- ✓ Architectural Design
- ✓ Geotechnical Engineering
- ✓ Project Management
- ✓ Surveying
- ✓ Hydrology

Civil engineering design included sizing the influent and effluent pump station, headworks design, and site layout, including site drainage, access roads, and process piping. Structural engineering design included reinforced concrete structures for all process units, pump stations, and slabs on grade. The structural design also consisted of the CMU electrical/control buildings and pile design for all structures and buildings.

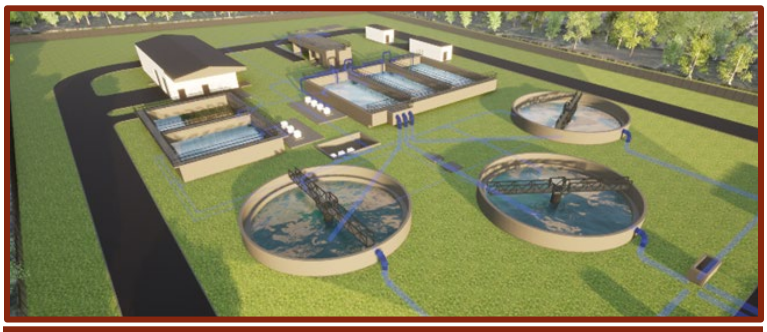


MSMM's Site Plan for Ascension Wastewater Treatment Plant

The geotechnical investigation included drilling three deep undisturbed sample-type soil test borings, ten shallow auger borings to determine subsoil conditions and stratification, and eleven CPTs to augment the soil test borings. Soil mechanics laboratory tests performed on samples obtained were used to evaluate the physical properties of the various substrata. Based on the available soil boring and laboratory tests, engineering analyses were made to determine recommendations regarding site preparation, excavations and dewatering, lateral earth pressures, estimates of allowable soil bearing values, uplift, pile capacity curves, estimates of settlement and general foundation construction procedures, and recommendations for flexible and rigid pavements.

Discharge of the WWTP effluent is now routed to the Mississippi River through an effluent pump station and forcemain. In addition to the design documents, our team was responsible for project permitting through USACE, LADEQ, LADHH, LADOTD, and CPRA of Louisiana. Our work also included MCACES cost estimating, presentations at public meetings, and surveying.

3D Rendering of Proposed Wastewater Treatment Plant



3D Rendering of Final Clarifiers, Aeration Basins, RAS/WAS Pump Station, Blower Pads, Filter Press Building, Electrical Rooms, and Headworks

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**MSMM Engineering, LLC**	New Orleans, LA	Sub (90% of work performed) – Design, Civil, Architectural, Electrical, Mechanical & Structural, Design, Plans and Specs, Cost Engineering, Public Information, Preparation of Letter Report, PPA

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	3

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
River Road Aquatic Ecosystem Restoration CAP Section 206 *San Antonio, TX*	ONGOING	TBD

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
USACE San Antonio River Authority	Maria Valadez-Lopez	817-886-1881

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Design Fee: $1.2M, **Construction Cost:** TBD

MSMM, as part of MSMM Huitt-Zollars, JV, was recently hired by the United States Army Corps of Engineers (USACE) Fort Worth District (SWF) to perform 100% of the Design-Bid-Build services required by the San Antonio River Authority as part of their Continuing Authorities Program (CAP). The project involves the design of pool/riffle/run features; restoration of the riparian habitat in Davis Park; removal of low water crossings (LWC) 1, 2, and 3; and the demolition of Avenue A to be replaced by an Americans with Disabilities Act (ADA) pedestrian and small vehicular path lined with native soil and mature vegetation. The design will also include recreational elements such as pedestrian bridges, asphalt paths, access gates, bird-watching platforms, signage, and trash receptacles.

MSMM's responsibilities include a 100% Design-Bid-Build (DBB) RFP, Geotechnical Investigation, Topographic Survey, Hydrology and Hydraulics Analysis, Value Engineering Study, Cost Estimate/Current Working Estimate, Construction Schedule, and a Storm Water Pollution Prevention Plan (SWPPP).

Recreational Elements:

- Design of a 2,450 linear foot by 8-foot ADA-compliant asphalt path located along the original path of Avenue A. New native soil and vegetation are to be located along the new asphalt path of Avenue A.
- Design of 2 recreational fishing piers with complementary plantings along the perimeter of the San Antonio River.
- The design of signs and supports necessary for installation should include information on restoration, recreation, wayfinding, and general rules and regulations.
- Design of trash receptacles. Trash receptacles are to be clustered in specific areas along the new asphalt path. Fishing piers will be installed in public access areas of the project site.
- Defining and locating all staging and laydown areas identified with the help of USACE within the disturbed areas of the SOW.

PROJECT RELEVANCIES:

- ✓ Section 219 Environmental Infrastructure Program
- ✓ Stream Restoration
- ✓ Stormwater Management
- ✓ Soil Erosion and Sediment Control
- ✓ Site Design
- ✓ Grading
- ✓ H&H
- ✓ Surface Water Analysis

DEMONSTRATES EXPERIENCE IN:

- ✓ Civil Design
- ✓ Structural Design
- ✓ Landscape Architecture
- ✓ Geotechnical Investigation
- ✓ Topographic Survey
- ✓ H&H Analysis
- ✓ Value Engineering
- ✓ Cost Estimating
- ✓ Construction Management
- ✓ Habitat Restoration
- ✓ Recreational Design
- ✓ Site Exploration
- ✓ USACE Coordination

Funding for additional betterments to be included upon congressional approval:

- Widening of trail from eight feet to ten feet.
- Change the trail surface from asphalt to acid-washed finished concrete with decorative design inlays.
- Providing a twenty-foot by twenty-foot concrete pedestrian trailhead located off Mulberry Ave with low-impact lighting.
- Providing a parking lot with four to five permeable parking spaces delineated with a concrete border.
- Connecting the new trail to the Brackenridge Golf Course access road, installing steel bollards at the trail's entryway, and providing low-impact safety lighting.

- Providing an improved pedestrian crossing on East Mulberry Ave including, but not limited to, painted road crossing, signage, and flashing lights.
- Providing a solar-operated 911 call box.
- Providing an American with Disability Act (ADA) compliant water fountain with dog watering station.
- Providing two dog mitt stations.
- Providing two metal recycling receptacles.
- Providing two shade structures and benches.
- Providing an additional ten feet wide by 4000 LF acid-washed finish concrete trail with decorative design inlays through Brackenridge Golf Course.
- Providing a pre-cast ADA-compliant pedestrian bridge rated for a 7-ton load capacity.
- Providing fifty wooden bollards with steel cable to mark property boundaries in Brackenridge Golf Course.
- Providing twelve metal way-finding markers.
- Providing twelve additional trail signage.
- Providing a five-by-five-foot pedestal for art installation.
- Providing two biofiltration drainage features to purify rainwater from debris and lower the water temperature.

MSMM's responsibilities also include coordination with the USACE Fort Worth District Project Design Team, San Antonio River Authority, Golf Course, Public, installation personnel, and local utility providers.

Existing Conditions During MSMM's Site Visit

3D Models of Pedestrian Bridge and Bird Watching Platform Developed by MSMM

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**MSMM Huitt-Zollars, JV, LLC** (MSMM Engineering, LLC 100% of work performed)	New Orleans, LA	Prime: 100% Design Bid Build; Stream Restoration; Landscape Analysis; Value Engineering Study, Cost Estimate, Civil & Structural Design, H&H

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*			20. EXAMPLE PROJECT KEY NUMBER
			4
21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED		
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*	
IDC 206- Green Brook Flood Risk Management Project: *Sommerset and Middlesex Counties, NJ* Contract Number: W912DS-12-D-0003 Task Order Number: Multiple Task Orders, Primary Designs TO:0004 & 0009	2019	2022	

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
US Army Corps of Engineers- NY	Elena Manno, Technical Manager Elena.Manno@usace.army.mil	917-790-8371

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Base Contract Started: May 2012
TO-0004 Segment R2 Extention/Segment T Raising: Started June 2013, **Design Complete:** January 2014, **Construction Complete:** June 2015
TO-0009 Segment C1 By-Pass Bridge & Channel, and South Ave **Drainage:** Started April 2017, **Design Complete:** Sept. 2019, **Construction Complete:** June 2022, **Design Fee:** $2.1M (JV), **Total Contract:** $11.9M (JV), **Construction Cost:** $11M., **% of Design Complete:** 100%, **% of CA Complete:** 100%

PROJECT RELEVANCIES

- ✓ Task Order Services Completed for USACE
- ✓ Design-Bid- Build RFP Development
- ✓ Completed within last 7 years
- ✓ Value Engineering Studies
- ✓ Cost Estimating Using MCACES-MII
- ✓ Utilized SpecsIntact

EXEMPLIFIES EXPERIENCE IN:

- ✓ Hydrology/Hydraulics
- ✓ Civil, Structural & Geotechnical Engineering
- ✓ State and Local Permitting
- ✓ GIS/Survey/Mapping
- ✓ Technical Reviews

UrbanTech, as Partner to the SUR Joint Venture, was the Structural lead for JV with AECOM as a principal Subconsultant. The Joint Venture performed on a total of 10 Task Orders involving the ongoing design and construction of the Green Brook FRM.

Under Task Order 0004 which included raising the existing Segment T levee topped by Hurricane Irene and the design of a stop log closure gate and levee and floodwall extension for Segment R2, UrbanTech provided the JV oversight and structural design for a new deep gate chamber for the sluice gate and flap gate constructed over an existing drainage culvert, stabilization of an existing retaining wall incorporated into the line of protection and designed retaining walls to support the increased height of the levee raising around the work pad for the Segment T pump station. AECOM using previously collected soil data performed the geotechnical analysis including stability, slope stability, seepage and settlement computations and prepared the soils report for attachment to the DDR. They also provided civil site design for the project including the siting of the closure gate and design of a new access road to provide access to the top of the LOP as well as down to outlet of the pump station for maintenance. They also performed the structural design of the closure gate and prepared the design plans and SpecsIntact specifications for increasing the height of the levee, including side slope stability using High strength TRM. The project also used directional drilling under the rail line tracks to provide electric service to the new slide gate constructed to prevent back flow during times of high tailwater from the Raritan River. AECOM also prepared the Soil Erosion Sedimentation Control plans and assisted the District in obtaining the State permits stormwater management and flood hazard area permits. They also prepared the MCACES-MII construction cost estimate for the project. The team participated in the Value Engineering Study.

Under Task Order 0009, for Segment C1**,** UrbanTech designed a roll-in, double span bridge (22'-6" Wide/ Span X 10'H) to provide highwater by-pass through an existing New Jersey Transit dual track main line embankment. The plans from the General Reevalaution Report called for several large diameter culverts to be jacked through the rail road embankment, but concerns raised by the rail road regarding clearance above the culverts made the roll-in construction the preferred option. As the tracks are a main commuter line NJT insisted the work had to be complete over a weekend

between Friday night and back in service by 7 am Monday morning. UrbanTech was able to convince NJT they had accomplished similar projects in the past and NJT approved the plans. Using the adjacent property to be used for the continuation of the levee and storm water pump station being designed by the Philadelphia District, the Urbantech bridge was preconstructed using cast-in-place techniques and then transported approximately 150 feet into its final position under the NJT tracks using SPMTs over a weekend, and the embankment was turned back over to NJ Transit by 7 pm Sunday night to allow them to reinstall the ballast and rails.

New Roll-in Bridge Being Placed Through NJT Main Line Tracks Over a Weekend

Monday Morning Commuter Train Passes Over the New Bridge

This work was closely coordinated with the Philadelphia District that was responsible for the design of the adjacent levee and pump station and ultimately, both projects were bid as one project. In addition to the bridge an existing 42” cross culvert located through the rail road embankment east of this crossing threatened the effectiveness of the interior drainage pond and pump station by allowing stream floodwaters to flow in behind the line of protection. AECOM designed a plug for the existing culvert through the railroad embankment using flowable concrete, and rerouted the local drainage that previously drained through the embankment into the local drainage system. The new terminal manhole just prior to connecting to the local system included a flap gate to prevent river back flow coming up the local system and entering the new drainage system. The team participated in the Value Engineering Study.

In addition to theses two design projects, the team provided on-going construction support services for Segment B1, that consisted of a Raised Bridge and new approach roads, along with 1900 feet of floodwall, 900 feet of levee and a 100 cfs pump station designed by AECOM under a separate contract. They also provided permitting services for Segment B2 levee and floodwall section designed by the New York District and obtained boring and performed sampling for radioactive contamination as part of a superfund site that was to be used for the Segment B3 floodwall.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**UrbanTech Consulting Engineers, PC**	New York, NY & Cherry Hill, NJ	JV Partner; Structural Lead for the JV, Bridge Design; Concrete Wall Design; Engineering During Construction Support.
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
b	**AECOM**	Clifton NJ	Subconsultant; Project Management, Civil Roadway Design, Site Design, Grading, Utility Coordination, Stormwater Management, Soil Erosion Sedimentation Control; State and Local Permitting; Geotechnical Analysis and Reporting; Surface Water Hydrology & Hydraulics Modeling

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	5

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Project TN-53, Rehabilitation and Seismic Retrofit of the Approach Viaducts and Rehabilitation of the Approach Viaducts and Rehabilitation of the Lower Garage at the Throgs Neck Bridge *Bronx and Queens Boroughs, NY* Contract Number: TN-53	2019	2023

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
MTA (TBTA)	Pornchai Jiratatprasot, Associate Principal pjiratatprasot@thorntontomasetti.com|	212-367 2843

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Design Fee: $2.1M, Construction Cost: $150M. % of Design Complete: 100%, % of CA Complete: 100%

PROJECT RELEVANCIES / EXEMPLIFIES EXPERIENCE IN:

- ✓ Structural Engineering
- ✓ Completed within last 7 years
- ✓ Bridge Design
- ✓ Concrete Design
- ✓ Bridge Design
- ✓ Structural Analysis (2 and 3 Dimensional)
- ✓ Fitness for Services Analysis
- ✓ Seismic Analysis

UrbanTech, as a subconsultant to Thorton Tomasetti performed structural engineering services for this project. The project entails the rehabilitation of the approach spans of the Throgs Neck Bridge from Pier 11 Pier 20 on the Queens side and from Pier 33 to Pier 58 on the Bronx side. The contract included rehabilitation of the substructure which consists of 2 column concrete bents, rehabilitation of the steel superstructure and the steel orthotropic deck, and bearing replacement of the rocker bearings with isolation bearings. UrbanTech was responsible for the detailed hands-on inspection of all the piers in the contract. Out of the 36 piers in the project, 5 are located on ground and the other 31 are located on water. The inspection of the piers on water was made from a manlift mounted on a barge. A crew of 2 inspection engineers from Urbantech performed the detail sounding of the columns and cap beams and identified hollow sounding, spalled, and cracked locations for all the piers. This intensive inspection program allowed an accuracy estimation of the severity of the defects at the various locations as well as a precise estimation of the repair quantities.

The 5 piers on ground, which are in the SUNY Maritime campus, were found to be the most severely deteriorated. These piers had already been subject to extensive concrete patching repairs through previous years only to have deterioration arising again after a few years after the patch repairs were performed. In light of this, Urbantech proposed to the TBTA to install a 6 inch concrete jacket all around the columns and cap beam in this 5 piers to provide a real long term solution. The TBTA was receptive of the recommendation and the jackes were designed. The jacketing work consisted of first removing all deteriorated concrete around the piers, removing a minimum of 2 inches of existing concrete at all locations, and pouring a concrete jacket with a resulting thickness of 8 inches with a mat of epoxy coated rebar and anchored steel hooks into the existing concrete to properly connect the existing sand the new concrete. The design included a 3D analysis of the temporary forces during construction due to the temporary reduction of the cross section of the columns and beams. The analysis helped determining the staging sequence of construction of the concrete jackets.
For the piers over water Urbantech designed several typical repairs depending upon the type and severity of the defects. Designed repairs included hollow concrete, shallow spalls, deep spalls, deteriorated rebar, crack repair, and underwater spall repairs. Unfortunately, due to budget issues, the TBTA removed the pier over water repairs from the contract but it is now being included in the upcoming TN-9H project.

Urbantech also worked with the prime consultant collaborating with the seismic analysis of the approach structures to determine the improvements in seismic behavior with isolation bearings as compared to rocker bearings. Urbantech took the seismic demand loads generated by the prime consultant in SAP and input them in a LARSA-4D finite element model to determine the force effects in the columns and cap beams. Urbantech also used the LARSA-4D output to perform SPCOLUMN analysis and determine the adequacy of the columns.

Urbantech also performed construction support services for the owner during the construction phase. The tasks included shop drawing review of all the jacketing related means and methods including the construction scheme and sequence which included 3d analysis by the contractor's engineer. Urbantech also review the contractor's proposed jacking sytem for all the bearing replacements at the 36 piers.

Pier bents before jacketing repair

Queens Approach Sans

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**UrbanTech Consulting Engineers, PC**	Cherry Hill, NJ & New York, NY	Subconsultant Engineer of Record for Structural Substructure Rehabilitation

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	6

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Biennial Inspection of the Betsy Ross Bridge *Pennsauken, NJ & Philadelphia, PA* Contract Number: N/A	2021	N/A

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
Delaware River Port Authority	Brigitte Kordzian	856-968.2068

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Design Fee: $845K **% Complete:** 100%

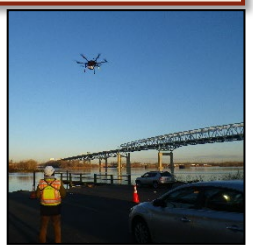
AECOM performed the 2020 routine and in-depth inspection of the Betsy Ross Bridge, which carries Route 90 over the Delaware River between Philadelphia, PA and Pennsauken, NJ. The inspection included a close visual "hands-on" inspection of all fracture critical and fatigue sensitive details. The substructure units received a routine visual inspection with suspect areas highlighted for further evaluation. In addition, the channel and piers received an underwater inspection including a high frequency side scan sonar and hydrographic survey.

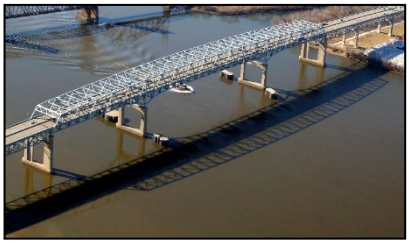
PROJECT RELEVANCIES

- ✓ Task Order Services
- ✓ Completed within last 7 years

EXEMPLIFIES EXPERIENCE IN:

- ✓ Hydrology/Hydraulics
- ✓ Civil, Structural & Geotechnical Engineering
- ✓ State and Local Permitting
- ✓ GIS/Survey/Mapping
- ✓ Technical Reviews





In addition, the inspection included routine inspection of the PA and NJ approach structures, high-mast lights, sign structures, signal gantries, dolphins, and the toll facility structure. Inspection access routinely utilized under bridge inspection vehicles, bucket trucks, aerial boom lifts and ladders. The inspection effort also included the use of an unmanned aerial vehicle (UAV) drone to complement our traditional hands-on inspection and to demonstrate ways this technology can be utilized by the Authority for future biennial inspections. The inspection fieldwork required extensive coordination with on-going maintenance and contractor activities. All inspection work was performed with minimal disruption to vehicular and truck traffic on the corridor, as well as to the flow of marine, railroad and highway traffic under the structure. The project also included a load rating analysis of the River Road approach structure and an EV load rating analysis of the US130 overpass as well as numerous off-cycle inspection tasks to monitor key components of the bridge. The discovery of fatigue cracks in numerous light poles required an expedited reporting of the critical findings and adjusting the work within the project schedule without impacting the overall project schedule or budget.

AECOM also hosted monthly Quality Assurance meetings during the active months of the inspection and reporting tasks for the purpose of keeping the Authority updated with the progress of the project and any issues. The results of the inspection have been presented in a structural inspection report noting all typical deficiencies, the general condition of the bridge and any significant changes or new deficiencies and findings. Bridge data was updated for NJDOT and PennDOT reporting for the bridge condition and the inventory elements. An executive briefing was also prepared and delivered to DRPA.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**AECOM**	Philadelphia, PA	Prime: Project Management, Bridge Inspection
b	**Marine Solutions, Inc.**	Newark, NJ	Sub: Underwater Bridge Inspection

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	7

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
MTA East Side Access CS-08: *3856 43rd Street, Long Island City, Queens, NY*	2015	2023

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
MTA C&D, Contractor: GCCOM	Rafael Perez, Jr. rperez@gccom.us	718-461-6000 – Ext.404

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Base Contract Started: 2015
Engineering Services Complete: Sept. 2018, Construction Complete: 2023
Design Fee: $59,102.61 % of Design Complete: 100%, % of CA Complete: 100%

UrbanTech was retained by the General Contractor, GCCOM, to provide structural engineering solutions for the construction of a critical substation for East Side Access, a major rail expansion project in New York City. The original design called for a pair of deep girders spanning the length of the existing 250-foot concrete substructure. These girders were intended to support a series of pre-fabricated modular substation structures measuring 46' x 10' each.

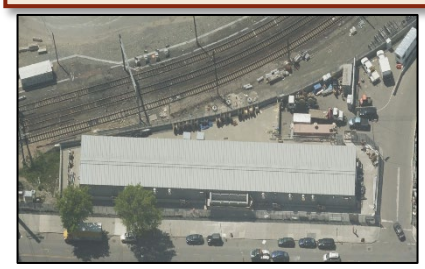
Photo taken during construction showing concrete substructure, steel frame, and prefabricated modular substation structures being placed via crane.

Recognizing an opportunity for optimization, GCCOM retained UrbanTech to provide structural value engineering services. Through a comprehensive analysis, the team developed a more efficient framing support system for the modular structures. This included performing a Finite Element Analysis (FEM) to evaluate the existing vault's capacity for the redesigned loads imposed by the prefabricated units. UrbanTech designed a new steel support system that effectively addressed the structural requirements while minimizing material usage. This innovative approach resulted in a significant reduction in steel weight, leading to both cost savings and faster installation times for the project.

UrbanTech's structural engineering services included Finite Element Analysis (FEM) to evaluate the vault's capacity for the additional loads, design of a steel support system for the units, concrete retrofitting and anchor details around the perimeter of the concrete structure, and close coordination to ensure seamless integration with existing mechanical and electrical (M/E) components, all adhering to LIRR standards.

PROJECT RELEVANCIES / EXEMPLIFIES EXPERIENCE IN:

- ✓ Structural Engineering
- ✓ Completed within last 7 years
- ✓ Design-Build Project
- ✓ Building Design for Infrastructure Support Services
- ✓ Concrete Design
- ✓ Structural Analysis (2 and 3 Dimensional)
- ✓ Fitness for Services Analysis
- ✓ Seismic Analysis



Aerial Birds Eye View of the East Side Access Substation in Long Island City

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**UrbanTech Consulting Engineers, PC**	New York, NY	Contractor's Structural Engineer

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	8

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
DEL-432 Engineering Assessment for EOH & WOH High Hazard Dams: *NYCDEP High Hazard Dams - East and West of Hudson Watersheds, NY*	ONGOING	N/A

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
New York City Department of Environmental Protection (DEP)	James H. Fitzsimmons, P.E. | Deputy Chief Dam Safety jfitzsimmons@dep.nyc.gov	845-657-5092

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Contract Started: July 2021
Dam Safety Study Complete: Ongoing as of July 2024 Construction **Complete:** Not Applicable
Total Contract Fee: $8,974,310, **% of Study Complete:** 50%,

NYCDEP owns and operates the New York City water supply reservoirs located in New York State. These reservoirs are generally located in the Catskill/Delaware Watersheds knowns as the West of Hudson (WOH) system, and the Croton/Kensico Watersheds knowns as the East of Hudson (EOH) system. The systems are interconnected through a series of aqueducts, tunnels and natural waterways.

In order to comply with NYSDEC dam safety program requirements AECOM is supporting development of Engineering Assessment and Emergency Action Plan updates for 20 large dams including many masonry/concrete gravity and embankment dams in in all three watersheds. **AECOM, as the prime contractor**, is performing an in-depth review of the previous construction documents and reports; conducting a detailed dam safety field inspection following FERC guidance, including directing the comprehensive detailed underwater dive inspections of the dams/spillways and outlet works being conducted by subcontractor **Marine Solutions Inc. (MSI);** evaluating the hazard classification; updating the dam stability analyses; developing Potential Failure Mode Analysis (PFMA) and conducting workshops with NYCDEP engineers for each of the dams. AECOM team has also developed the site specific Probable Maximum Precipitation (PMP) for the Croton Watershed including the most recent storms in the watershed and latest available GIS and weather data. For all the watersheds the HMR 51/52 based PMP were also updated for development of the hydrologic analyses using HEC-HMS to evaluate spillway capacities, dam breach analysis and drawdown times. Detailed hydraulic models using HEC-RAS 2D were created for the Neversink River and the Delaware River extending the model downstream to Philadelphia. (under a previous contract AECOM also developed an un-steady state HECRAS model of the 250 river miles of the Delaware Basin that also includes the Cannonsville and Pepacton Reservoirs). HEC-RAS 2D modeling was also completed on Roundout Creek (Downstream to Hudson River Confluence). The Hydrologic and Hydraulic models were used to evaluate downstream inundation limits for normal, PMF dam break, and sunny day dam break events. The project deliverables includes a Supporting Technical Information Document (STID), Dam Safety Inspection Reports, Dive Inspection Reports(Including Video Recordings), Engineering Assessment

PROJECT RELEVANCIES

- ✓ 2-D HEC-RAS Surface Water Hydrology and Hydraulics in Delaware Watershed
- ✓ Dam Breach Analysis
- ✓ Bridge over Dam Inspected
- ✓ Inspection Services for Major Concrete and Masonry Structures

EXEMPLIFIES EXPERIENCE IN:

- ✓ Hydrology/Hydraulics Modeling
- ✓ Dam Break Analyses
- ✓ Dam Break Inundation Mapping
- ✓ Civil, Structural & Geotechnical Investigations, and Engineering Analysis
- ✓ Stability Analyses
- ✓ Embankment Stability Analyses
- ✓ Technical Reports
- ✓ Site Specific Probable Maximum Precipitation (SSPMP) development & analysis
- ✓ Dive Inspections

Reports including updated stability evaluations, Potential Failure Mode Analysis Reports and Emergency Action Plan Reports. Furthermore, AECOM is assisting NYCDEP on developing their Project Management Information Systems (PMIS) for the dams for compliance with state and federal requirements and identification of immediate attention at specific dam sites for maintenance needs.

Neversink Reservoir

Boyds Corners Dam

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
a	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
	AECOM	Clifton NJ	Prime Contractor, Project Management, Surface Water Hydrologic and Hydraulic Modeling, Field Inspection, Report Preparation
b	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
	AECOM	Conshohocken, PA	Geotechnical Analysis and Reporting; Structural Analysis; Field Inspections
c	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
	Marine Solutions, Inc.	Newark, NJ	Subconsultant; Closure Gate Design, Steel-Aluminum Stop Logs and Concrete Structure Design

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	9

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
State of New Jersey Rebuild By Design; *Hudson River and Meadowlands, Hudson and Bergen Counties NJ*	ONGOING	2027 (est)

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
NJ DEP Bureau of Climate Resilience Design and Engineering	Dennis Reinknecht, CPM dennis.reinknecht@dep.nj.gov	609-984-0556

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

Contract Started: RBD Meadowlands: October/2015, RBD Hudson Design August/2017.
RBD Meadowlands: Design Complete: Ongoing Est. Complete 2024, Construction Complete: Ongoing Est. Complete 2027**;**
RBD Hudson: Design Complete: August/2023, Construction Complete: Ongoing Est. Complete 2027
Design Fee: $80M **Construction Cost:** $416M.
% of Design Complete: 99%, **% of CA Complete:** 20%

PROJECT RELEVANCIES

- ✓ Task Order Services Completed for USACE
- ✓ Design-Bid- Build RFP Development
- ✓ Completed within last 7 years
- ✓ Value Engineering Studies
- ✓ Cost Estimating Using MCACES-MII
- ✓ Utilized SpecsIntact

Project Background:
In the aftermath of Superstorm Sandy, HUD awarded the State of New Jersey $380 million in Community Development Block Grants – Disaster Recovery (CDBG-DR) grant for the RBD Projects to provide flood relief and improved resilience to the municipalities of Carlstadt, Little Ferry, South Hackensack, Moonachie and Teterboro in Bergan County, NJ and Hoboken, Weehawken, and Jersey City in Hudson County, NJ.

EXEMPLIFIES EXPEREINCE IN:

- ✓ Hydrology/Hydraulics
- ✓ Civil, Structural & Geotechnical Engineering.
- ✓ Traffic Network Analysis
- ✓ Sewer Design
- ✓ State and Local Permitting
- ✓ GIS/Survey/Mapping
- ✓ Technical Reviews

Scope of Services:
AECOM, has completed the Feasibility Study, EIS, design, bid documents and permit submittals for multiple construction contracts. Construction of a sanitary/stormwater sewer separation contract in Hoboken has been completed. Construction and design services during construction are currently ongoing for a 50 cfs pump station and 2,900 ft force main in Little Ferry, and 9,000 ft floodwalls, 28 closure gates, and numerous utility relocations in Hoboken and Weehawken. Plans and specifications have been completed for a 500 cfs pump station and 4,500 ft of channel widening and stream restoration, and three major culvert replacements in Moonachie. AECOM provided a full suite of services to support the final designs including coastal, fluvial, and sewer system hydraulic modeling; data collection including geotechnical and environmental borings; land, topographic, boundary and utility location surveys; civil, geotechnical, structural, mechanical and electrical design; wetland delineations; habitat assessments/ mapping and permitting services with multiple local, state, and federal regulatory agencies; and design services during construction.

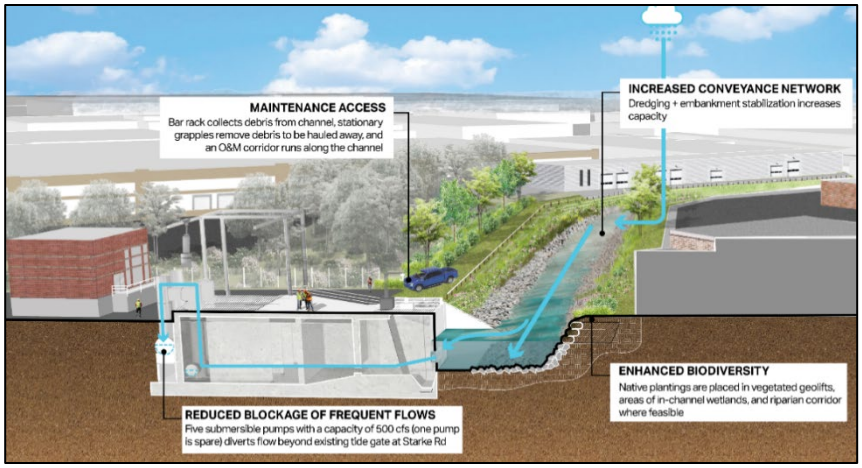
Feasibility Phase:
AECOM completed the feasibility study for the Meadowlands portion of the project using an iterative analysis to balance social, economic, environmental and community benefits while realizing flood risk mitigation and increased resilience for the communities. Given the complexity of combined flood risks from both stormwater runoff and tidal surge, the approach was multidisciplinary, requiring a fully integrated team of engineers, urban planners, landscape architects, ecologists, environmental scientists, and economists. AECOM developed and evaluated a full range of alternatives to reduce flood risk from tidal and fluvial events, and to enhance social and environmental resilience. These included traditional flood risk reduction measure such as levees, floodwalls, closure gates, pump stations and channels. The preferred alternative put forward was the combined flood solution (Alternative 3) that was broken up into a "build" plan focused on fluvial flood risk reduction, and "future" coastal flood resilience plan. This approach balanced fiscal capacity with priority needs.

Design Phase:

Field Data Collection. The project team completed numerous site investigations including: detailed topographic and utility surveys; wetland delineations, habitat assessments/ mapping; and a comprehensive subsurface investigation.
Hoboken/ Weehawken: AECOM has provided a wide range of design and permitting services to support the award of multiple construction contracts. The development and design of the floodwall and gate system in the Hoboken/ Weehawken area was extremely complex due the density of development, concentration of utilities and lack of data on some of the old sewers and water lines, and the intense public usage. The dense development required a total of 28 different closure floodgates including rolling floodgates, swinging flood gates, and stoplog barriers. Floodwall designs required bridging across major utilities and transportation infrastructure.
Adjacent to the construction there is a complex inter-modal transportation system including a major passenger rail hub, a bus terminal, the PATH subway to NYC and a ferry terminal providing direct access to NYC. This required detailed staging and detour planning including the development of a transportation network model. The design has also incorporated urban landscape architectural elements affixed or adjacent to the floodwall, such as seating, planters, lighting, educational signs, etc.

H&H Analyses. Coastal hydrodynamics were evaluated using ADCIRC and Mike21 models, while fluvial analyses were performed using HEC-HMS hydrologic models and 1D and 2D HEC-RAS models. SewerGEMS was used for the design of simple gravity sewers, and Infoworks models were used to capture local storm drainage interactions with the pump station and channel designs. Flood Hazard permit analyses were based on unsteady state HEC-RAS models and a 2D HEC-RAS model was used to evaluate shear stress and channel stability downstream of the 500cfs pump station outlet. The designs also included stormwater treatment facilities in accordance with the State of NJ stormwater regulations.

Pump Station Design: The 500 cfs pump station at East Riser Ditch (ERD) and the 50 cfs pump station at Losen Slote are critical features of the project. The larger station pumps flow through a 96-inch discharge pipe installed below Starke Road from the ERD into an energy dissipation structure and then into Berry's Creek downstream of the Starke Road tide gates. Due to known sediment contamination in Berry's Creek control of exit velocities are a critical design feature of this PS. The pump stations utilize submersible axial flow tube mounted pumps, eliminating the need for suction piping and valves. The stations include Inlet Weir Gates to modulate and automatically activate the pumping stations. Based on a physical model of the ERD pump station the intake wet wells include vortex control measures including impact baffle columns and a curtain wall upstream of the pumps, plus a cone below the pump intake bell.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**AECOM**	Clifton NJ	Project Management, Civil Roadway Design, Site Design, Grading, Utility Coordination, Stormwater Management; State and Local Permitting; Geotechnical Analysis and Reporting; Surface Water Hydrology & Hydraulics Modeling, SewerGEMS modeling, Design Services During Construction.

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT *(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete one Section F for each project.)*	20. EXAMPLE PROJECT KEY NUMBER
	10

21. TITLE AND LOCATION *(City and State)*	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES	CONSTRUCTION *(If applicable)*
Interstate-95 (I-95) Girard Avenue Interchange; *Philadelphia, PA*	ONGOING	2032

23. PROJECT OWNER'S INFORMATION		
a. PROJECT OWNER	b. POINT OF CONTACT NAME	c. POINT OF CONTACT TELEPHONE NUMBER
PENNDOT	Elaine Elbich, P.E	610-285-6846

24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size, and cost)*

EXEMPLIFIES EXPERIENCE IN:

- ✓ Hydrology/Hydraulics
- ✓ Civil, Structural & Geotechnical Engineering.
- ✓ Traffic Network Analysis
- ✓ Sewer Design
- ✓ State and Local Permitting
- ✓ GIS/Survey/Mapping
- ✓ Technical Reviews

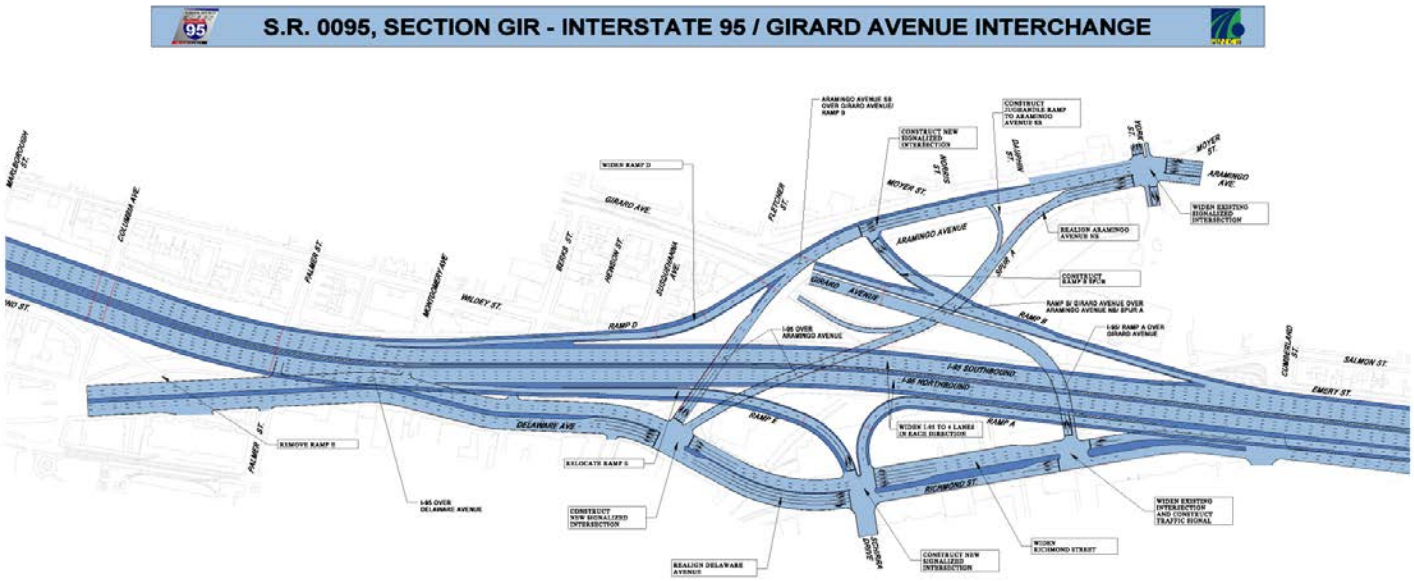
Project Background: AECOM is responsible for the preliminary and final design for the widening, rehabilitation and reconstruction of three miles of I-95 including the complete reconstruction of the Girard Avenue Interchange. This section of interstate is the most heavily traveled section in the Commonwealth carrying 173,000 vehicles per day (vpd) with traffic projected to reach 220,000 vpd in the design year 2030. Interstate 95 carries traffic through the City of Philadelphia, including several historic districts, neighborhoods and commercial districts all immediately adjacent to the mainline.

Engineering Services – This project involves eliminating the lane-drops at the Girard Avenue Interchange by widening I-95 to four continuous lanes in each direction. An additional auxiliary lane will be added in each direction to connect the ramp terminals of the adjacent interchanges at Vine Street to the south and Allegheny Avenue to the north. AECOM conducted a Point of Access Study to determine the reconfigured interchange that would best improve access, operation and safety. The interchange design also includes direct access from I-95 southbound to Delaware Avenue, which is a developing waterfront arterial route. Additional access is also provided to/from I-95 northbound. The project will eliminate the "bottleneck" at the on-ramp from the Vine Street Expressway (I-676) eastbound to I-95 northbound by widening the access point from one lane to two lanes.

Specifically during Final Design, the AECOM Team will prepare final roadway construction plans and structure plans for numerous retaining walls and 32 bridges, including a 1.3-mile long viaduct crossing a portion of Conrail's Port Richmond Yard. In addition, right-of-way plans; railroad relocation plans; highway lighting plans; signing and sign lighting plans; pavement marking plans; traffic signal plans with interconnection; traffic control plans; and noise wall plans will be prepared.

Based on the estimated cost and the preliminary construction phasing and sequencing analysis, AECOM recommended to the Department that this improvement be advanced to construction as 5 separate contracts. AECOM was asked to develop an advanced construction section to build a temporary ramp and roadway that would help alleviate traffic impacts created by proposed waterfront casino and residential developments. The first permanent section (Section GR1) involved reconstruction and relocation of numerous surface streets to make way for the expansion of I-95 and the interchange. Also part of Section GR1 is the relocation of numerous utilities including a twin 12-foot combined sanitary/storm sewer and intercept chamber. Railroad relocation plans are also being prepared for SEPTA's Route 15 trolley line and over 3 miles of Conrail track and 4 new Conrail bridges. The remaining construction sections include an early mainline contract to construct a crossover on I-95 (Section GR2) and 3 remaining construction contracts (Section GR3 thru GR5) to complete the improvements on I-95 and the Girard Avenue Interchange.

Environmental and Coordination Services – AECOM is responsible for evaluating the cultural resources within this project and for overseeing the environmental clearance for this project. As part of a Programmatic Agreement, AECOM has developed a plan to perform staged Phase IB/II archaeological investigations throughout the project corridor, which



has a high potential for historic and pre-contact resources. AECOM is also responsible for documenting historic architectural resources impacted by construction through photographic recordation. Given the magnitude of this project and its impact regionally and locally during construction, AECOM is working closely with the Department to communicate project updates to the public via newsletters and a project website. AECOM is also involved in an intensive Public Involvement campaign so that details of the project's improvements and construction impacts are communicated upfront to public officials and numerous neighborhood and business associations. This effort also provides AECOM and the Department and opportunity to understand the community's concerns and incorporate suggestions into the design.

Geotechnical Engineering Services - AECOM and its subconsultants are preparing roadway geotechnical recommendations and foundation recommendations for roughly 32 bridge replacements, 32 new retaining walls and 9 soundwalls. Several of the bridges and retaining walls are associated with new roadway being constructed within Conrail's Port Richmond Yard and are therefore designed for railroad loading and involve complex substructure staging. The subsurface exploration program for the overall project includes approximately 500 test borings, cone penetrometer testing (CPTu), geophysical methods, pile corrosion studies, and a test pile program to evaluate driveability into thick residual saprolite material. Early construction work (Section GR0) was performed in an area underlain by soft soils, has included pre-consolidation, jet grouting, wick drains, lightweight fills, and an instrumentation program for monitoring settlement, pore pressures, and ground movements. The GR4 contract involved installation of over 2000 micropiles that reduced vibration and noise adjacent to residential areas.

Intelligent Transportation Services (ITS) – AECOM is responsible for the preliminary, final design, and construction services for the deployment of an Intelligent Transportation System (ITS) network which includes Closed Circuit Television (CCTV) cameras surveillance, Dynamic Message Signs (DMS), Vehicle Detectors (VD), Electronic Toll Collection Tag Readers (TR), and traffic signal interconnection along I-95 and the roadways located in the vicinity of the project area. The project is located in the City of Philadelphia and extends from the Girard Point Bridge to the Betsy Ross Bridge. The ITS deployment will aid PennDOT District 6-0 and the City of Philadelphia to monitor traffic conditions in real time and to respond to incidents accordingly. Traffic signal interconnection to the City of Philadelphia Traffic Sign and Signal Shop is proposed to provide the City of Philadelphia and PennDOT District 6-0 with the ability to modify traffic signal timings that reflect the current traffic conditions.

25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT			
	(1) FIRM NAME	(2) FIRM LOCATION *(City and State)*	(3) ROLE
a	**AECOM**	Conshohocken, PA	Prime: Multidisciplinary Engineering Services

G. KEY PERSONNEL PARTICIPATION IN EXAMPLE PROJECTS

26. NAMES OF KEY PERSONNEL (From Section E, Block 12)	27. ROLE IN THIS CONTRACT (From Section E, Block 13)	28. EXAMPLE PROJECTS LISTED IN SECTION F (Fill in "Example Projects Key" section below before completing table. Place "X" under project key number for participation in same or similar role.)									
		1	2	3	4	5	6	7	8	9	10
Wei Wang, Ph.D., P.E. (*UrbanTech Consulting Engineers, PC*) New York, NY	Project Manager				X	X		X			
Manish Mardia, PE (*MSMM Engineering, LLC*) New Orleans, LA	Project Manager		X	X							
John Dromsky-Reed, PE (*AECOM Technical Services, Inc.*) Clifton, NJ	Project Manager				X						
Jim Wilson, PE, LEED®AP (*MSMM Engineering, LLC*) New Orleans, LA	Civil Engineer			X							
Scott Chehardy, PE (*MSMM Engineering, LLC*) New Orleans, LA	Civil Engineer		X								
William Soper, PE (*AECOM Technical Services, Inc.*) Clifton, NJ	Civil Engineer				X				X	X	
Jose Basto, PE (*UrbanTech Engineering, LLC*) Cherry Hill, NJ	Structural Engineer				X	X					
Adam Goossen, PE (*UrbanTech Consulting Engineers, PC*) New York, NY	Structural Engineer					X		X			
Ramesh Kalvakaalva, PE, CVS (*MSMM Engineering, LLC*) New Orleans, LA	Structural Engineer		X	X							
Steve Finegan, AIA (*MSMM Engineering, LLC*) New Orleans, LA	Architect		X								
Don Daigle, CVS, CPE (*MSMM Engineering, LLC*) New Orleans, LA	Cost Estimator		X	X							
John Volk, PE (*AECOM Technical Services, Inc.*) Philadelphia, PA	Geotechnical Engineer										
Robert Pinciotti, PE (*AECOM Technical Services, Inc.*) Germantown, MD	Geotechnical Engineer								X		
Anderson K. Potter, SE, PE, CWI (*Marine Solutions, Inc.*) Newark, NJ	ASNT Level II CP189 NDT Technician / SPRAT Level I										
Jason Mathers, PE (*AECOM Technical Services, Inc.*) Conshohocken, PA	SPRAT Level III Rope Access Technician										
Joseph F. Gaylord, PE (*Marine Solutions, Inc.*) Newark, NJ	NBIS Qualified Bridge Inspector										
Michael W. Doremus, EIT (*Marine Solutions, Inc.*) Newark, NJ	NBIS Qualified Bridge Inspector										

29. EXAMPLE PROJECTS KEY

NO	TITLE OF EXAMPLE PROJECT (FROM SECTION F)	NO	TITLE OF EXAMPLE PROJECT (FROM SECTION F)
1.	**Town of Martin Phase 2 Flood Protection, Martin, KY** AECOM	6.	**Biennial Inspection of the Betsy Ross Bridge Pennsauken, NJ & Philadelphia, PA** AECOM MARINE SOLUTIONS
2.	**Ascension Parish Environmental Infrastructure Wastewater Treatment Plant Design, Hillaryville, LA** MSMM ENGINEERING, LLC	7.	**MTA East Side Access CS-08: 3856 43rd Street, Long Island City, Queens, NY** URBANTECH CONSULTING ENGINEERING, P.C.
3.	**River Road Aquatic Ecosystem Restoration CAP Section 206, San Antonio, TX** MSMM ENGINEERING, LLC	8.	**DEL-432 Engineering Assessment for EOH & WOH High Hazard Dams: NYCDEP High Hazard Dams - East and West of Hudson Watersheds, NY** AECOM MARINE SOLUTIONS
4.	**IDC 206- Green Brook Flood Risk Management Project, Sommerset and Middlesex Counties, NJ** URBANTECH CONSULTING ENGINEERING, P.C. AECOM	9.	**State of New Jersey Rebuild By Design; Hudson River and Meadowlands, Hudson and Bergen Counties NJ** AECOM
5.	**Project TN-53, Rehabilitation and Seismic Retrofit of the Approach Viaducts and Rehabilitation of the Approach Viaducts and Rehabilitation of the Lower Garage at the Throgs Neck Bridge, Bronx and Queens Boroughs, NY** URBANTECH CONSULTING ENGINEERING, P.C.	10.	**Interstate-95 (I-95) Girard Avenue Interchange; Philadelphia, PA** AECOM

INTRODUCTION

Urban Tech, PC (Urban Tech) an SB, DBE/MBE firm accomplished in Bridge and Building Engineering Design and Inspection with a 25 year presence within the USACE North Atlantic Division (NAD) boundaries, has created a joint venture, ***Urban Tech-MSMM JV LLC*** with ***MSMM,*** an SB, DBE/MBE, that has a strong reputation with the USACE to deliver Public Infrastructure, Flood Protection, Water/Wastewater, Coastal and Ecosystem Restoration, H&H Modeling and GIS Mapping projects. The two prime partners have brought together their qualifications and expertise covering all the technical project and service requirements of the solicitation as well as an intimate knowledge of the AOR and USACE processes and systems, and assembled a Team (herein called the JV Team) in response to *Solicitation No. W912BU-24-R-0023 - IDIQ Contract for Architectural & General Engineering Services for USACE Philadelphia District (NAP) Civil Works Program Missions.*

TEAM STRENGTHS

- ✓ Team partners have worked together closely on numerous projects and contracts. No learning curve here.
- ✓ Long and successful history supporting the USACE Civil Works and DOT Transportation programs across the USA
- ✓ Capacity to execute multiple, multi-disciplinary efforts simultaneously as required by NAP.
- ✓ Knowledge of USACE Civil Works and DOT protocols
- ✓ Best nationwide resources with NAP/NAD experience can be committed to this contract.

To provide the NAP and NAD the highest qualified resources and experience, we have brought together team partners who are unmatched in delivering the requirements outlined in the solicitation, especially within the NAP boundaries. The JV Team is made up of a balanced mix of well-known large and small business firms that are currently delivering on contracts successfully for the USACE nationwide, including the bridge center of excellence in state and local government agencies nationwide, and include:

- ***AECOM***, a world-renowned Engineering and Construction firm who has been partnering with federal, state and local governments on massive infrastructure projects for over a century, and brings current experience with NAP and NAD;
- ***Marine Solutions Inc (MSI)***, a woman-owned civil engineering and commercial diving firm specializing in underwater and topside inspection, imaging, design, repair, and construction of waterfront and bridge infrastructure;

Together, the JV Team can address NAP's most complex civil works challenges, from bridges, buildings, roads and waterfront structures, to rivers, lakes, reservoirs, critical flood structures, ecosystem restoration, dams, coastal infrastructure and navigation.

URBAN TECH, PC (URBAN TECH)

Urban Tech was established in 1999 and is a Small Disadvantaged Business with an offices in Cherry Hill, NJ and New York City, NY. UrbanTech has developed a highly regarded reputation in bridge and building engineering design and inspection services. Dr. Wei Wang P.E., Ph.D., is the president, owner, and founder of UrbanTech and brings the JV Team 30+ years of combined experience in building and bridge structural engineering, including over 20 years providing plans for construction, rehabilitation, and demolition of steel and concrete structures including structures over water and structures in flood risk areas. On the Green Brook FRM Project, Segment C1, UrbanTech as a partner in the Prime JV team, completed the final design of a two-span (21 ft. each) concrete culvert-bridge under NJ Transit rail tracks which was installed May 2021. The project includes complicated staging and heavy coordination with NJ Transit and "roll-in" construction features that accelerated bridge construction of the culvert-bridge over one weekend shutdown of the NJ Transit tracks. They also provided structural engineering services on the Segment R extension for a new deep drainage structure and stabilization of the NJT pedestrian tunnel retaining wall, and a small retaining wall.

MSMM Engineering, LLC

MSMM Engineering, LLC, (MSMM) is a Louisiana-based multi-disciplinary engineering firm specializing in investigation, analysis, design, site planning, disaster recovery, construction management and inspection for flood risk

management, drainage, water/wastewater, navigation, environmental restoration, and civil works projects on the Federal and non-Federal market. MSMM provides these services for multiple clients, including Cities, Parishes/Counties, State Agencies, Planning Commissions, Levee Boards, Airports, and the US Army Corps of Engineers (USACE) and have worked with AECOM on USACE projects in the past. Our staff were intimately involved in the evaluation, inspection, and post-disaster design response to Hurricane Katrina in New Orleans and have accumulated an extensive design portfolio of civil works projects with USACE. MSMM has a rich history of design experience in large-scale civil works projects involving such specializations as water and wastewater, ecosystem restoration, storm damage risk management, roadways, and utility systems. For these projects, they have averaged ~6.5M of work annually over the last five years. Since their foundation in 2011, they have completed 100+ environmental, planning, value engineering, EDC, feasibility reports, civil works, and military engineering design task orders for multiple USACE Districts, consistently receiving Excellent and Very Good CPARs ratings for their work for MVN, SWF, SWG, SWT, and LRL Districts. MSMM's USACE design experience consists mainly of civil works projects within MVD such as drainage pump stations, levees and floodwalls, sewer systems, roads, streets, trails, drainage structures, canals, bridges, culverts, and bulkheads. Utility conflict resolution and environmental permitting are typical tasks we complete during the design process. As a full-service engineering company, MSMM employs civil, structural, hydraulic, and environmental engineers, architects, CADD technicians, GIS technicians, and project management staff.

AECOM (AECOM)

AECOM brings diverse experience in planning, design, permitting, and construction needed to ably support the JV Team and provide NAP with the full spectrum of technical services necessary to execute every requirement in this solicitation. With over 48,000 employees, AECOM brings professionals that are experts in riverine hydrologic and hydraulic analysis and have developed standard checking procedures for review of HEC-RAS & HEC-HMS modeling and interior drainage analysis and design. Their architects and landscape architects are attuned to the contextual relationships of designs with surrounding community, and through the design process, can work with NAP to develop solutions that minimize aesthetic impacts and, thus, objections from neighboring property owners, while maintaining functionality and meeting local code requirements. AECOM staff bring expertise in designing solutions such as flood-proofing options and stormwater pumping stations that blend with the character of the neighborhood, reducing local objection and resulting in a workable solution. Their Cost Estimators, Specifications Writers and CADD Technicians are well versed in the use of the latest computer software including MII v 4.4.2 (MCACES replacement), SPECSINTACT, and MicroStation CADD including InRoads and its replacement OpenRoads as well as AutoCad and Civil 3D. AECOM technical writers have prepared all phases of USACE decision documents including GRRs and know and understand USACE reporting requirements.

MARINE SOLUTIONS INC (MSI)

Marine Solutions is a woman-owned civil engineering and commercial diving firm specializing in underwater and topside inspection, imaging, design, repair, and construction of waterfront and bridge infrastructure. They blend the strengths of commercial diving and marine construction experience with engineering expertise to solve problems quickly and efficiently. They are a growing company with the capacity, the expertise, and the resources to be a dependable, responsive, innovative partner to their clients. Their offices are strategically located near heavily traveled inland rivers and coastal waterways including but not limited to , Maryland, New York, New Jersey, and Virginia .

SELECTION CRITERIA

(A) SPECIALIZED EXPERIENCE & TECHNICAL COMPETENCE

Section F projects and Section E resumes demonstrate our great depth of expertise and breadth of coverage in the performance of all the five groups of requirements to include: Civil Engineering; Structural Engineering; Inspections; H&H Modeling; and Geotechnical Engineering as outlined in the solicitation. The below subsections offer additional insight into each of the specific services within the five groupings.

A.1 experience in Civil Engineering design of new horizontal construction features

A.1.1 Roadways

All members of the JV Team are adept at road design following UFC 3-250-01, TM 5-822-5 and other applicable State DOT and local standards. Our extensive presence within NAP boundaries have also given us an intimate understanding of geotechnical and drainage considerations. We understand the requirements to include: permits, intersection upgrades, lighting, signage, pavement evaluation, utility design and relocation, drainage and stormwater facilities, and traffic engineering. Section F, Project # ?? Route 95 through Philadelphia clearly represents our team's roadway experience and is further supported below.

(MSMM) Oak Street Reconstruction, City of New Orleans, LA MSMM Engineering was the designer of record on a cutting-edge roadway design for Oak Street, a 5,200 linear feet street within the City of New Orleans. The project was designed and constructed within a completely built out neighborhood with a mix of businesses (restaurants, shops, bookstores, jewelry, apparel, etc.) as well as residences. Oak Street is designated a National Main Street roadway and all design procedures had to comply with the regulations associated with that designation. Project design features included 5100 feet of sewer main, 3100 feet of water main, 520 feet of drainage RCP, 1800 feet of drainage PVC, 5700 square yards of asphaltic concrete roadway, 4000 square yards of concrete sidewalk, 600 square yards of porous pavement, pavement striping, handicap ramps, 1400 brick pavers and 30 bike racks and benches.

(MSMM) Gentilly Terrace North Group B (RR052) Neighborhood Roadway Design, City of New Orleans, LA MSMM providing complete reconstruction roadway design for eight (8) streets of this Gentilly Terrace project, and approximately six (6) streets of patch, mill, overlay design.

(MSMM) Lower 9th Ward South Group E (RR115) Full Reconstruction Design Project, City of New Orleans, LA MSMM performed 100% of the design services, construction management, and resident inspection for this roadway reconstruction project. The project consists of 20 blocks of full roadway reconstruction and patch mill overlay with the addition of curbs. MSMM prepared and provided final construction plans, specifications, drawings, bid documents and construction cost estimates conforming with the City's plan-in hand comments. These plans were stamped by Mr. Jim Wilson, who will act as MSMM's Quality Manager on this project.

(MSMM) Manhattan Boulevard Widening, Jefferson Parish, LA MSMM assisted in the preparation of detailed construction plans, specifications, and contract documents for this roadway widening project. To date, they have prepared detailed drawings and project specifications for the 65% submittal and will provide many services during the 2025 construction phase, included but not limited to coordination, contract assistance, and preparation of drawings to supplement construction drawings.

A1.2 Utility Systems

Utility relocations to include: major water and sewer trunk lines, high pressure gas and petroleum lines, major fiber optic and communication lines, major drainage features, railway lines, power transmission lines, and electrical facilities, play a large role in many of our projects. Whether they are a green site or when our projects such as levees or roads when rehabilitated or rerouted will impact existing utilities we make sure communication becomes key to the process. During the survey process we make "one-call" survey all areas, ensure anything not flagged is picked up either through communication with utility companies, check available historic plans and notify all parties of the impact as applicable. After the impact is determined we prepare the preliminary plans with all parties and determine who is responsible for the changes. Relationship with the key utility companies and local agencies impacted is key. Our team members have the experience working with numerous local, state and private entities across NAP which we will take the support of to ensure seamless communication. Communication protocol is followed all through construction to make sure no one is impacted adversely. Section F, Projects #s ?? demonstrate projects that involved utility coordination and relocation with a diverse array of

utility stakeholders, including gas, water, electric, communication including fiber optic and privately owned cable.

(MSMM) Ascension Assumption Water Connection, USACE New Orleans District, LA As part of the USACE Environmental Infrastructure program, MSMM provided design services inclusive of hydraulic modeling, extensive permitting, right-of-way including railroad permissions, pipeline relocations, and design of 10,340 linear feet of 12" watermain to extend from the existing line in Assumption Parish to an existing water tower in Ascension Parish.

(MSMM) PUA & ACUD #1 Drinking Water Infrastructure Improvements, Water Meter Replacement USACE New Orleans District, LA MSMM provided 100% bid ready plans and specifications for removal and replacement of approximately 3,500 water meters of various sizes and installation of four fixed location data collection devices to be mounted on water towers and utility poles located in the project area. MSMM also performed field work, obtained X-Y coordinates for all meter locations, MCACES cost estimating, coordination with Ascension Parish, preparation of Letter Report for PPA, and Engineering during Construction.

(AECOM) USACE Detroit District, St. Marys Falls Center Dike and Cable Relocation Master Plan Sault Ste. Marie, MI . This Master Plan Report (MPR) provides design information for the selected alternative for the completion of proposed upgrades and improved access to the Center Dike at the St. Marys Falls Canal. The Center Dike improvements considered during the development of this report include relocation of all utilities beneath the steel footbridge crossing the Unit 10 Tailrace Canal. Each of the proposed alternatives provides differing benefits to the USACE Soo Area Office (SAO) at various levels of capital and maintenance cost expenditures. The largest costs are related to tunnels, bridges/structures and electrical/communication cable relocation.

(AECOM) Westminster/Lincolnshire Drainage Pump Station, LA. AECOM designed a 1,200-cfs pumping station, floodwalls, roadways, utility relocations, levees, retaining walls, all mechanical and electrical systems, and bulkheads for Jefferson Parish (designed to USACE criteria with review by USACE).

I-80-San Pablo Dam Road Interchange Improvement Project, City of San Pablo, CA, and Contra Costa Transportation Authority. The project includes freeway widening, bridge replacement, retaining walls and sound wall construction, right of way engineering and acquisition, environmental permitting, drainage modifications, local street improvements, street lighting, signals, irrigation, landscaping, utility relocation, stage construction. AECOM designed and developed the final PS&E package with three phasing options.

A.1.3 Water Supply, Storage, Treatment and Distribution Systems

The JV Team has several of the world-renowned experts in sanitary and water supply engineering. Whether it is to improve a water main or water treatment facility, or a design-build or design-bid-build effort, our experts are available to support NAP with a reliable system designed to current standards. We are also adept at water conservation and reuse and water management in theaters of operation for our troops to have a reliable source of water. Where the USACE has partnerships with Cities to provide water and support the sanitary system under the Environmental Infrastructure Assistance Program we have supported both entities in designing appropriate systems. We have supported the USACE in their reservoir design, storage and water supply efforts around the country having designed and rehabilitated numerous dams and retaining systems. AECOM was part of the design team for the Merrill Creek Reservoir in New Jersey, a pumped storage system for augmentation of low flows on the Delaware River to prevent saltwater intrusion to reach the City of Philadelphia water intakes; and the Manasquan Reservoir a Water supply storage facility and natural habitat preserve in Monmouth County, New Jersey. These represent two of the last large water supply storage facilities to be constructed in New Jersey.

The Team is at the forefront of advancing science and public policy for solving water-related issues. In addition to our long history of service to municipalities, industries, and state and federal agencies, we are collaborating with the U.S. EPA, the Water Environment Federation (WEF), the Water Research Foundation (WRF), the National Association of Clean Water Agencies (NACWA), and other organizations to develop effective solutions. Specifically, the Team has:

- Helped numerous municipalities develop cost-effective plans to comply with state and federal requirements associated with combined sewer overflows (CSOs) and municipal stormwater discharges.
- Developed hydrologic and hydraulic models to assess capacity and peak wet weather flow issues.
- Conducted watershed and river water quality assessment and modeling to evaluate the water quality benefits of control alternatives.
- Developed or reviewed total maximum daily loads (TMDLs) and use attainability analyses (UAAs).
- Developed NPDES permit conditions that are protective of the environment but not overly stringent.
- Helped pioneer the use of adaptive watershed management and water quality standards revisions to meet Clean Water Act goals with less cost.

(MSMM) Farmsite Road Canal Crossing Culvert Replacement, St. Bernard Parish Government, LA MSMM developed a hydraulic analysis of the location including analysis of existing canal flows, existing culvert configuration flows, and optimum flow allowances to account for a large watershed event.

(MSMM) Drainage Master Plan, City of Kenner, LA MSMM's principals created the GIS system for the entire City of Kenner subsurface drainage infrastructure that included 304 miles of pipes and culverts, 14,511 individual pipe/culvert segments, and 13,000 drain inlets and catch basins, as well as managing the database for quick retrieval.

(MSMM) Woodlake Estates/Senton Park Subdivision Drainage Improvements, Jefferson Parish, LA MSMM provided design and construction administration to fix drainage difficulties in the area. The work included construction of a 120 cfs pump station, intake piping, outfall over the west return floodwall, roadway restoration as needed, relocations of any utilities that interfered with construction, permitting, and all other incidentals.

(MSMM) New Orleans International Airport Taxiway G, New Orleans Aviation Board, LA MSMM provided several drainage improvements/modifications as part of the design and construction of the Taxiway Extension. Design services involved 30/60/90/final plan and specification submittals for multiple parts of the project, including double 12'x10' RCB box culverts and on-site (airside) gravity drainage improvements.

(AECOM) Water Distribution Model / Tank Design Support, LaGrange-Highland Sanitation District (LHSD), LaGrange, IL. AECOM prepared a water distribution model of the District's system (500,000 GPD average daily demand) to assist in the design of a new 500,000-gallon elevated water storage tank. The model was prepared using WaterGEMS V8i and included all of the waterlines in the LHSD system.

(AECOM) Port Angeles Water Treatment Plant (PAWTP), Elwha River Restoration & Water Quality Mitigation, Port Angeles, WA. AECOM designed the new 11 MGD Port Angeles Water Treatment Plant—initiated by the removal of the Elwha and Glines Canyon Dams and the impact on the water supply and treatment system for the City. After the dams are removed, sediment trapped behind them will be released, causing the water in the Elwha River to fail water quality requirements. The challenge was to provide a treatment process that could operate during and after the dam removals without interrupting the water supply to the City. AECOM designed a new domestic surface water treatment plant comprising ballasted sedimentation, dual media filtration, disinfection facilities, new treated water clear well, and a high service pump station.

(AECOM) Electrical Support to Elwha Water Treatment Plant, WA. AECOM provided electrical, instrumentation, and SCADA designs for the plant. The design included relocation of 12.47kV overhead power lines for Clallam County PUD, including reconnection of existing services. The design also included new 12.47kV overhead and underground power line extensions for the City of Port Angeles. Electrical services to the new facilities included new pad-mounted transformers and underground services. The plant was designed with 100% backup power from diesel engine generator sets and automatic transfer switches. Power is distributed around the plant at 480 and 208 Volts in concrete-encased duct banks.

A.1.4 Wastewater Treatment Systems, including Treatment Plants and Sewers

This solicitation aligns exceptionally well with our team members' experience with Wastewater Treatment Systems. JV Partner MSMM's expertise in wastewater is exemplified by their leadership in USACE's Section

219 Environmental Infrastructure Program. They have an outstanding record of Environmental Infrastructure work that is unmatched by any other firm in the region and have partnered with USACE on 24 task orders in support of the Environmental Infrastructure Program between 2013 and 2023. As a team that heavily focuses on water resources, they have worked extensively on projects involving water supply, water quality, waste disposal, erosion control protection, water and wastewater distribution, stormwater management, environmental and ecosystem habitat restoration, storm damage risk reduction, surface water protection, comprehensive watershed evaluations, water infrastructure, and multi-purpose water resources projects.

(MSMM) Hillaryville Pump Station and Effluent Discharge Forcemain, USACE New Orleans District, LA MSMM completed full engineering design services for this USACE Environmental Infrastructure project, including plans and specifications, a DDR, ROW drawings, and Engineering during Construction. They also prepared GIS mapping of the Parish's existing and proposed sanitary sewer system and prepared an Environmental Information Document (EID) for a long-term wastewater infrastructure plan.

(MSMM) City of Kenner Wastewater Treatment Plant, City of Kenner, LA MSMM completed engineering design and construction management services for consolidating the City of Kenner's wastewater treatment plants. The project involved decommissioning WWTP's No. 1 and 2, rerouting raw waste flows from WWTP Nos. 1 and 2 to WWTP No. 3 and ensuring that the modifications effectively treated all wastewater flow generated within the city. MSMM provided preliminary design, design, permitting, construction management, and quality assurance (QA).

(MSMM) Causeway Boulevard and Scott Street Sewer Lift Station Improvements, Jefferson Parish Department of Sewerage, LA MSMM conducted full engineering design for this sewer lift station rehabilitation project. This included replacing the pumps, replacing the control panel, replacing discharge piping and valves, designing a method to elevate the access hatch into the wetwell and valve pit, repaving the area surrounding the lift station to assist with drainage, adding an emergency pump out (EPO) manhole, and adding odor control.

(MSMM) East Baton Rouge Parish Rehabilitation of Multiple Sanitary Sewer Overflow (SSO) Pump Stations, USACE New Orleans District, LA MSMM performed several projects to upgrade multiple sewer pump stations. The Group 1 pump stations included the upgrade of two duplex and two triplex sewer pump stations with design flows ranging from 600 to 1,800 gpm. Group 2 pump stations covered 10 sites and involved removing the existing system and rerouting flows via the design of a gravity sewer system. MSMM replaced eight additional duplex pump stations (flows from 13 gmp to 300 gpm) and upgraded one duplex and two triplex sewer pump stations with flows of 100, 1,400 and 1,800 gpm.

(MSMM) East Baton Rouge Parish Sewer Lagoon Sites Rehabilitation USACE New Orleans District, LA MSMM, as part of the USACE Environmental Infrastructure program, developed plans to rehabilitate two existing sites that utilized sewer treatment lagoons.

(MSMM) East Baton Rouge Parish Rehabilitation for Non-SSO Program Sewer Pump Stations, USACE New Orleans District, LA MSMM developed bid ready plans and specifications for 15 Non-SSO sewer pump stations as part of the USACE Environmental Infrastructure program. They determined that seven of the stations needed to be replaced, five needed pump only replacement, two could go through a rehabilitation process, and one would need to be decommissioned and have flow rerouted.

(MSMM) Data Collection of Existing Sanitary Sewer System for the Chitimacha Tribe, USACE New Orleans District, LA MSMM led a planning initiative that involved completing an assessment of the current infrastructure on-site, cataloguing the existing information, and developing CAD and GIS data sets for the Chitimacha Tribe to use in future infrastructure planning.

(MSMM) City of Walker Sewer Improvements, USACE New Orleans District, LA MSMM designed approximately 2,450 feet of 8-inch gravity sewer, 8 sewer manholes, and service connections along both sides of LA Highway 447.

(AECOM) Wastewater Asset Inventories, Condition Assessments, Shaw AFB and Holloman AFB. AECOM developed an inventory of wastewater system assets: sanitary sewer manholes, sewer lines, pretreatment devices, sewage lift stations, wastewater treatment plants, flow meters, outfalls, and septic systems.

(AECOM) Infiltration and Inflow Study Updates, Air Combat Command Bases**.** AECOM supported HQ ACC with updates of Infiltration and Inflow (I/I) Studies for six ACC installations. A total of 1,740 manholes were physically inspected, 580,000-linear feet of sewer lines were smoke tested and 29,000-linear feet of sewer lines were inspected using CCTV as part of this task order. Our recommendations decreased the amount of I/I and lessened the chances of compliance violations due to surcharging sewers or from excessive flows to the wastewater treatment plant.

(AECOM) Wastewater Treatment Plant Design and Construction Administration for the Moorefield/Hardy County, West Virginia Regional Wastewater Collection, Treatment, and Sludge Management, Moorefield, WV. This Triad project consists of the upgrade to the existing wastewater treatment system in Moorefield to meet the Chesapeake Bay discharge goals. Services provided included surveying and mapping to generate an existing conditions site map of the pipe routes and pumping station sites, geotechnical engineering, and generation of design drawings and construction bid packages for the collection system. Services for the WWTP include value engineering for the WWTP design, and construction administration services during the construction process.

A.1.5 Site Design and Grading

Our team has worked together on numerous efforts related to land development, surveying, environmental and geospatial information to deliver effective and cost-effective designs. Our work includes everything to get a project off the ground to include the following: predevelopment site investigation, geotechnical engineering, site survey, site feasibility evaluation, planning and adapting a facility design on to a site. We bring together all elements of design to include utilities, erosion and sediment control, landscape design, site grading analyses, storm water management, and other on-site engineering concerns while working with the customer on design and coordination, management of regulatory permits and approvals, developments of estimates, preparation of construction documents, and providing any construction support necessary.

(AECOM) US Army Medical Research Acquisition Headquarters, Ft. Detrick, MD, Baltimore District The site design includes demolition of four existing buildings and the new construction of USAMRAA aging facilities, combining multiple onsite facilities into one to meet current and future mission needs. The design includes all new utilities (domestic water, sanitary sewer, natural gas, power and fiber), a new USAMRAA delivery area and a rebuilt parking lot to provide 200 spaces. The parking lot provides ADA accessible spaces and an accessible path to the new facility. Additional work includes earthwork, grading, and stormwater management improvements using low impact development methods. Other site improvements included roadway, parking, and sidewalks consisting of both concrete and asphalt pavement.

(AECOM) LPV 111 Project, USACE, New Orleans District, LA**.** Performed all civil design for soil mixed-reinforced earthen levees, modeled with InRoads 3-D to allow for quantity take-offs.

(AECOM) Echo Dam Corrective Action Alternatives Study, Reclamation, Coalville, UT. Performed a Corrective Action Study, including site layout, characterization, seismic analysis, issue evaluation study, alternatives evaluation, design support, construction support, and consultant review for this dam safety modification project.

(AECOM) Ashton Dam, PacifiCorp Energy, Rexburg, ID. AECOM conducted investigations, risk studies, design analyses, including hydraulic analyses of the proposed diversion tunnel and overtopping spillway structure using a 3D computational fluid dynamics (CFD) model; completed the design; and performed construction oversight during rehabilitation of a zoned earth and rockfill dam experiencing internal erosion. The team performed comprehensive civil site layout services and the rehabilitation included a drill-and-blast diversion tunnel and reconstruction of the zoned earth embankment using a 3-zoned filter meeting modern filter criteria and an upstream low permeability core. The design also included rock stabilization within the tunnel and along the rock abutment walls.

(AECOM) Green Brook Flood Risk Management Project, Segment B1, Middlesex, NJ. AECOM prepared the site and grading plans for 1900 ft of floodwall; 900 ft of levees; a 100 cfs pump station and interior drainage flood storage area; and a raised bridge and approach roads.

A.1.6 Stormwater Management

JV Partner MSMM has created a niche in designing and implementing stormwater management systems while team member AECOM is an industry leader when it comes to their knowledge of local and national regulations and environmental concerns, understanding water movement in the watershed, designing treatment systems to protect aquatic habitat and drinking water sources, and improving storm resiliency by reducing flood risks. Our JV Team is expert at all aspects of stormwater management to include flood prevention, water quality improvement, erosion protection, and environmental preservation. Our projects have included levees, floodwalls, green infrastructure, pump stations, detention basins, bio-retention systems, bio-swales, rain gardens, stormwater ponds, underground storage systems, and erosion control measures.

JV Team members have designed pump stations utilizing EM 1110-2-3104/5 and other applicable guidance for numerous USACE Districts to include: MVN, SWG, SWF, NAP, and others through their decades of experience designing systems that include: horizontal pumps, vertically driven pumps, backup power generation, and mechanical bar screen systems. We do this in concert with any sedimentation pond design, channel geometry modification, floodwall installation, existing levee reconfiguration, outlet structures, hydraulic modeling and design, easement, stormwater collection and discharge, tidal effects, freeboard, uncertainty, efficiency, effectiveness, CLOMR, stabilization and erosion measures, project access, and project interaction with existing infrastructure. We consider previous studies such as: hydrologic, hydraulic, geotechnical, environmental and survey as design reference documents. Existing land use, general site features, utilities, bridge structure crossings, and trails are also important considerations.

(MSMM) Silver Jackets Program Jefferson Parish Green Infrastructure and Watershed Master Plan Development, USACE New Orleans District, LA MSMM developed a Watershed Master Plan to reduce increased flooding from future conditions and identify segments of green infrastructure elements in the Fat City portion of the Parish. MSMM's team was responsible for reviewing previous hydrologic and hydraulic (H&H) models, performing new modeling to validate designed rainfall runoff retention rates, deriving watershed behavior, assessing the impacts of multiple rainfall/storm events in specific areas, and developing a subset of non-structural mitigation actions that were promoted within regions 6 and 8 of the Louisiana Watershed Initiative.

(MSMM) East Baton Rouge Parish Sewer Lagoon Sites Rehabilitation, USACE New Orleans District, LA. MSMM designed this project as part of the New Orleans District Environmental Infrastructure Program. Our team developed plans to rehabilitate two existing sites that utilized sewer treatment lagoons. Our work on the first site, Treakle Drive, involved upgrading the site to mitigate erosion from stormwater runoff, rebuilding the lagoon levees, covering the final lagoon, and repaving the entrance asphalt roadway. The second sewer treatment lagoon at Pony Dr. was replaced with an onsite sewer pump station to redirect wastewater to the municipal wastewater treatment plant. The design for the Pony Drive site addresses the closure and abandonment of six surface treatment ponds, including methods to drain the ponds and remove and dispose of the existing sewage sludge.

(MSMM) Dupre & Gayoso Water and Sewer, City of New Orleans, LA MSMM designed the existing water and sewer infrastructure replacement for this street improvement project, as well as upgrading the stormwater management system to manage the runoff generated from a 10-year storm.

(MSMM) New Orleans International Airport (MSY) Drainage Pump Station MSMM completed full engineering design on the highly anticipated $45 million drainage mitigation for New Orleans International Airport (MSY). This work involved full investigation, analysis, and design for a new 600 cfs stormwater drainage pump station (four 150 cfs pumps, each 44" w/ 800 HP Driver) and for all landside drainage as part of constructing a new airport terminal.

(MSMM) Dallas Floodway Extension Recreation Design, USACE Ft. Worth District, Dallas, TX MSMM was tasked by the United States Army Corps of Engineers (USACE) to design various recreational, roadway, and bridge features for a public recreational park in South Dallas. The design team planned and designed a number of trail and bridge elements in an effort to provide recreational access to a chain of wetlands designed to provide unimpeded overflow for floodwater along the west side of the Trinity River. MSMM's design responsibilities involved public safety features, including culverts for stormwater equalization.

(MSMM) Coventry Court Drainage Improvements, Jefferson Parish, LA MSMM was responsible for designing drainage improvements to convey stormwater to a new drainage pump station. They were responsible for upsizing the subsurface drainage from Rex Drive to Hennessy Court and rerouting the drainage to a new drainage pump station. Improvements included 48" RCPA, 54" RCP, 54" RCPA, 72" RCP, Drainage Manhole Tees, three Outlet Control Structures, water line offsets, and miscellaneous pavement improvements.

(AECOM) US Army Medical Research Acquisition Headquarters, Ft. Detrick, MD, Baltimore District AECOM (URS) provided SWM design and evaluated existing conditions and identified deficiencies to determine the most efficient best management practice for the new development. USAMRAA is designed to meet both MDE (Maryland Department of Environment) SWM requirements and EPA EISA (Energy Independence and Security Act) 438 Stormwater Management for Federal Facilities. The design includes three bioretention facilities for both stormwater quality and quantity control. Due to the location, karst topography, soil conditions and constraints, the design includes impermeable liners and provides for 100-year flood protection. URS developed SWM and E&S permit plan set for MDE review and approval including NOI NPDES Permit.

(AECOM) Upper Dublin Detension Dams, Fort Washington, PA AECOM designed two 15 foot high dry detention dams constructed in Upper Dublin Township PA to reduce stormwater flooding in the Ft. Washington Industrial Park. Located on Rapp Run and Pine Run, the project was funded using a Pennsylvania H2O grant. The earthen dams use a unique labyrinth weir to pass larger events and low flow orifices to pass normal flow and provide fish passage. AECOM performed the geotechnical, structural and Hydraulic and Hydrolgoic engineering for the project as well as the permitting.

(AECOM) The Port Authority of New York and New Jersey - Path Substation 2- Stormwater and Flood Hazard Area Permitting Support, Jersey City NJ**:** AECOM provided stormwater and permitting compliance solutions for the Path Substation 2 Building Project using infiltration and detention and a hydraulic tailwater analysis to prove that the system would not surcharge the existing storm sewer.

(AECOM) New Jersey Parkway Authority - Permit support for widening of Forked River Service Area Ramps, Forked River, NJ AECOM prepared the stormwater management design, report, and permitting of an infiltration basin with forebay under the NJ Pinelands Jurisdiction.

(AECOM) Pump Station, Orleans and London Avenue Canals Interim Closure Structures, USACE New Orleans District, LA**.** AECOM designed pump platforms, engine platforms and the building structure, and mechanical and electrical systems for a 3,000-cfs pump station on the London Avenue Canal and a 2500 cfs pump station at the Orleans Avenue Canal which are part of the primary stormwater drainage system.

(AECOM) Dwyer Road Pump Station, USACE New Orleans District, LA. AECOM replaced an existing 250-cfs vertical station with a state-of-the-art 1,050-cfs facility. Key components included three, 350-cfs vertical pumps with 1,150-horsepower electrical motors, backup generator, and an approximately 5,000-square-foot building.

(AECOM) Southeast LA Drainage Project, Jefferson Parish Pump Station #3, USACE New Orleans District, Elmwood, LA. AECOM designed a pumping capacity increase to one of Jefferson Parish's largest pumping stations, with the addition of two, 3,000- horsepower diesel driven 1,200-cfs (132-inches) horizontal pumps for a total 2,400-cfs increase.

(AECOM) Westminster/Lincolnshire Drainage Pump Station, LA. AECOM designed a 1,200-cfs pumping station, floodwalls, roadways, utility relocations, levees, retaining walls, all mechanical and electrical systems, and bulkheads for Jefferson Parish (designed to USACE criteria with review by USACE).

A.1.7 Soil Erosion and Sediment Control

A majority of stream and river impairments are due to nonpoint source (NPS) pollution, which has continuously been a concern and challenge to monitor and regulate. Our JV Team has performed hundreds of projects over the past seven years that have looked at erosion and sediment control considering frequent and intense rain events, strong storms, high river levels, and stream velocities that can increase erosion and result in increased suspended sediment (turbidity) in receiving water bodies as well as affect normal distribution of sediment along river, lake and stream beds. We have also looked at climate impacts that can challenge efforts to maintain water quality through effective erosion and sediment control management efforts.

A.1.8 Stream Restoration

Our team has extensive experience with ecological stream restoration and natural remediation. This experience includes working with USACE on international guidance for "Engineering with Nature" concepts; employing nature-based solutions (NbS) for stream restoration, urban waterfront redevelopment, reservoir management, flood mitigation, control of stormwater and associated sediment and contaminants, and coastal resiliency; and evaluating and designing natural remediation for contaminated sites.

The JV Team's approach to streambank protection and channel improvement follows an integrated method. Effective, creative solutions to streambank erosion require a clear understanding of why the erosion is occurring. Integrating this information with local habitat considerations, full mitigation requirements, hydraulic forces acting upon the stream, levels and types of risk, project objectives, and design criteria is the most effective way of selecting appropriate, habitat-friendly streambank-protection treatments. We bring multiple disciplines together to assess key factors and how to use the results from the assessments to select appropriate streambank-protection solutions. The present-day bioengineering approaches are therefore not cookie cutter approaches. We conduct watershed and stream assessments, hydraulic and sediment analyses, geologic and geomorphologic inspections, and biological assessments in the design process. The root cause of streambank erosion is identified. Is the erosion a result of stream flows impinging upon a bank, stream bed incision, vegetation loss on the banks, or other influences? Depending on the nature of the problem bioengineering solutions could be standalone solutions or a component of larger solutions requiring grade control features, toe stabilization or redirecting techniques.

(MSMM) Westside Creeks Restoration Project, USACE Fort Worth District, TX MSMM provided project management and design services for Martinez Creek in an effort to restore the Riverine Ecosystem that was severely degraded due to construction and continued maintenance. They provided services inclusive of signed and sealed plans for civil and structural designs, CAD work, design of utility alterations, coordination of civil and structural design for Martinez Creek connection to Alazan Creek, Value Engineering, and construction support.

(MSMM) Southern University Ravine and Riverbank Instability Technical Assessment, USACE New Orleans District, LA MSMM led a Planning Assistance to States (PAS) project to develop a framework of alternatives to address a campus issue of erosion and bank loss, as well as an on-going loss of the terrace along the historic oak trees along Scott's Bluff. They developed a HEC-RAS model, repaired the drainage outfall pipe, extended the terrace towards the river, and added an embankment that provided recreational utility as well as levee protection.

(MSMM) Mirabeau Garden Stormwater Management and Flood Mitigation, City of New Orleans, LA MSMM provided design services and H&H for this project, which involved intake of water from the Mirabeau trunk line into the project site via a forebay, followed by pumps, vegetated filtration ponds, freshwater swimming pool, woodlands, washes and bioswales, recreational, educational and sports amenities, and eventual discharge into the Mirabeau trunk line.

(MSMM) Golden Triangle Marsh Creation, USACE New Orleans District, LA MSMM identified this key project when providing water resources planning for the MRGO Ecosystem Restoration Plan. The restoration goal of the project was to restore and nourish approximately 4,000 acres of marsh. Design features consisted of perimeter dikes, vinyl sheet closure pile structures, and internal weirs.

(AECOM) Boardman River Dams Disposition and Riverine Ecosystem Restoration; Grand Traverse City, MI; USACE Detroit District. AECOM supported USACE Detroit in the removal/modification of multiple dams on Michigan's Boardman River, including ecological restoration efforts reconnecting a 161-mile stretch of this iconic river. The project was initiated when a local utility surrendered its FERC hydropower licenses for these aging dams, and an AECOM-facilitated process determined the future of the dams and restoration of the river's ecosystem. The second phase entailed wetland, fish, and wildlife mitigation evaluations; flood damage/risk reduction; shoreline/streambank erosion protection; wetland delineation and environmental/ecosystem habitat restoration River restoration design, using natural design techniques, was completed for the formerly impounded areas. The goal of the restoration design was to return the river to its pre-dam channel form and function.

A.2 STRUCTURAL ENGINEERING DESIGN OF NEW HORIZONTAL AND VERTICAL CONSTRUCTION FEATURES INCLUDING STEEL, CONCRETE, MASONRY AND MASS TIMBER

JV partner UrbanTech is a structural engineering firm with extensive experience in providing structural engineering and construction engineering services. UrbanTech has expertise in the structural design of bridges and buildings, including new structure design, structural rehabilitation design, constructability, field engineering services, structural studies, and BIM/BrIM services, while completing award-winning projects. UrbanTech utilizes state-of-the-art analysis tools when performing structural design and studies. Engineers are trained in Finite Element Analysis software such as LARSA 4-D, SAP 2000, and AutoCAD's ROBOT analysis program. Seismic studies of the toll plaza portion of the RFK Bridge in Manhattan and the piers at the Throgs Neck Bridge were recently completed by their office. They regularly complete in-house studies of building framing systems during the preliminary design phase to select the most efficient construction materials. Their 3D drafting capacity is also utilized to study the geometric advantages and/or constraints of structural solutions.

The JV Team apart from JV partner Urban Tech has AECOM, a world renowned buildings, road and bridge design firm noted for planning, designing, developing and managing numerous buildings and thousands of miles of roads and bridges both simple and complex to a number of clients including federal, state, local and international agencies. They are world leaders in Building Design, Road and Bridge planning, Modeling, Design, Alternate delivery, Construction supervision, Bridge inspection, maintenance and management.

A.2.1 Vertical Construction

A.2.1.1 Vertical Facility Design

Our JV Team has designed some of the most advanced new vertical facilities for local, state and federal government to include pump station housing, offices, vehicle maintenance facilities, wash bays, park facilities, and administrative facilities. We have also designed large, complex projects including the planning and design of new and renovated military family housing, dormitories, warehouses, barracks, administration buildings, hangars, medical facilities, childcare centers, vehicle maintenance facilities, operational facilities, support facilities, and a variety of other structures including major infrastructure-related projects.

We have extensive experience with the unique tools, systems, and standards needed to successfully execute these projects. We understand that the space in which students learn greatly affect their success. We take utmost care in crafting school buildings that work for everyone. From pre-referendum planning to detailed design and construction we focus on making education more meaningful. We focus not only on classrooms but the on gymnasium, cafeteria and theater as well to make it functional to a child's development.

We have also designed small renovations as part of SRM requirements. Our Team knows how to find better, faster and more cost-effective solutions to meet facility needs. Our Team has the project management and technical resources necessary to support multiple, concurrent task orders that might be issued under this contract.

UrbanTech engineers have experience in designing new building structures, including infrastructure support facilities, low-rise and high-rise buildings, federal buildings, and mixed-use buildings. They also specialize in designing preser-

vation and modernization methods for historical buildings. Depending on the needs of their clients, UrbanTech has developed a very versatile approach to building design. Below are some example design projects.

(UrbanTech) Moynihan Station Phase 2, Newy York, NY, (Amtrack). UrbanTech provided a variety of structural engineering services for Amtrak's Moynihan Station Phase 2 project in New York during the demolition and construction of the new train hall in the renovated Farley Building. UrbanTech was retained for its ability to deliver precise engineering that enabled the successful adaptive reuse of the structure—all during railroad operation. UrbanTech's tasks included selective demolition and temporary shoring plans for the existing historic post office building over the Amtrak train shed, including global stability analysis of the building during demolition and retrofit. Additionally, UrbanTech designed, analyzed, and detailed superstructure jacking and load transfer sequences for the new structural framing within the train hall.

(UrbanTech) CA Plaza Development at 36-18 Main Street in Flushing, NY, As SEOR, UrbanTech was responsible for the design of the substructure and superstructure for this 600,000 square foot development located in Flushing, NY. The design of the structure called for the construction of a 2-story deep parking structure and a 4-story podium with an 8-story hotel tower and a 12-story office tower constructed at each end of the podium. UrbanTech performed full structural engineering services through the conceptual, design development, and construction administration phases. As part of the construction work, UrbanTech also prepared the rebar shop drawings for the entire structure.

(UrbanTech) 90-75 Sutphin Boulevard, Queens, NY. The structure was initially a 7-story building with approximately 95,000 square feet of floor area. With the proposed additional tower, the floor area increases to 170,000 square feet. For this project, the new structural steel tower and transfer systems were designed, and existing footings and framing were retrofitted for the additional loading.

(UrbanTech) 303 W.42nd Street, 671 8TH Avenue, and 300 West 43rd Street, New York, NY Structural renovation of four existing adjacent buildings for repurposing into commercial usage. The project includes the design of a new elevator/stair core, the retrofit of the existing elevator core, the retrofit of existing exterior stairs into new code-compliant egress stairs, and the retrofit of existing ground floor structures for new commercial tenants.

A.2.1.2. Seismic Design and Analysis

UrbanTech is proficient in conducting seismic analysis of structures using response spectrum analysis in accordance with ASCE7 provisions and AASHTO specifications. Our engineers excel in creating finite element models for lateral force-resisting systems, enabling us to effectively analyze and design both new structures and retrofit existing ones. We consistently perform spectrum analyses on all building design projects where UrbanTech serves as the Structural Engineer of Record. For bridge projects requiring seismic analysis, we utilize advanced finite element analysis software to perform both spectrum and time history analyses, ensuring comprehensive and accurate assessments.

A.2.1.3 - Anti-Terrorism/Force Protection (AT/FP)

UrbanTech principals possess expertise in anti-terrorism and force protection engineering. While specific project details are confidential, our team has experience in designing structures/standoff structures to withstand vehicular loads, blasting loads, and design to prevent progressive collapse. We are providing peer review services on a high profile project in NYC to check the structural design with requirements to prevent progressive failure in a hypothetical terrorist attack. These projects have equipped UrbanTech with a comprehensive understanding of government regulations in the construction and design of structures with anti-terrorism requirements.

A.2.1.4 Building Design of Infrastructure Support Facilities

UrbanTech has a proven track record in designing support facilities for transportation agencies. Our projects include new support facilities for the MTA LIRR Main Line Expansion, new substations for MTA East Side Access, substation upgrades for NJ PATH, and storm hardening improvements / structural retrofits for the Linden Cogeneration Power Facility in New Jersey.

A.2.1.5 Blast Resistant Design

UrbanTech principals have expertise in blast resistance analysis and design. While specific project details are confidential, our team is familiar with blasting loads, standoff requirements, and nonlinear time history analysis of structures.

A.2.2 Horizontal Construction

Our JV Team designs complex interchange systems, optimizes traffic programs, and rehabilitates and replaces bridges/structures on the country's interstate highway system and local roadway network. Team member AECOM is also expert at the design and rehabilitation of dams and hydraulic steel structures such as lock gates, tainter gates, tainter valves, bulkheads and stoplogs, vertical lift gates, components of hydroelectric and pumping plants, and miscellaneous structures such as lock wall accessories, local flood protection gates, and outlet works gates. These are key components of any dam system. The JV Team includes members that are renowned in the design and rehabilitation of dams and levees. They have designed and inspected thousands of hydraulic steel structures following Engineer Manuals (EM) 1110-2-6054, EM 1110-2-2610, Engineer Technical Letter ETL 1110-2-584 30, and Engineer Regulation ER 1110-2-8157. The team is expert at 2D and 3D analyses of HSS considering fatigue and fracture concepts.

JV member UrbanTech is a renowned structural engineering firm who is thoroughly established in horizontal construction features including steel, concrete, masonry and mass timber. Their particular strengths relative to horizontal construction in this solicitation are as follows:

<u>Constructability Expertise</u>: A large portion of UrbanTech's business comes from working for major construction companies as a sub-consultant. Over the years, UrbanTech has served world-class contractors, including Kiewit Infrastructure, Dragados, Skanska Koch, and Skanska USA Civil Northeast, to name a few. Amongst the various design deliverables that UrbanTech has provided for its contractor clients, their office has been responsible for structural steel repairs, rehabilitations, retrofitting and modifications, staged construction, alternative structural design scheming, work platform design, containment design, design of new facility buildings, bridges, and rail structures, CAD and BIM services, and in-field construction support services. A majority of their firm's infrastructure bridge work involves performing tasks while maintaining active roadways. UrbanTech has worked on major infrastructure projects, including Ben Franklin Bridge, LaGuardia Airport, the George Washington Bridge, both phases of the Kosciuszko Bridge Replacement, and the LIRR 3rd Track Extension, to name a few. Additionally, their firm has experience performing work on cantilevered truss bridges, including the Queensboro Bridge, the former Goethals Bridge, and the Reedy Point Bridge. UrbanTech has a history of providing safe, innovative, and cost-effective construction solutions at some of the most challenging sites. This long-term business relationship with the contractor industry has given them a unique view, understanding, and approach to construction methodologies and project constructability. Because of this unique expertise, their engineering services are inherently focused on providing solutions that minimize risks for the owner while providing controlled flexibility to the contractors, allowing them to use their best capabilities for the final benefit of a project.

<u>Field Engineering Services</u>: By extensively working with contractors, UrbanTech constantly provides a wide range of field engineering services for construction projects. These services may include long-term planned structural inspections as well as emergency structural field surveys. UrbanTech is well accustomed to quickly mobilizing its engineers to the field to investigate problems, providing quick solutions to resolve emergencies, and following up with permanent solutions as required by clients. UrbanTech regularly provides field engineering support prior to and during sensitive operations such as heavy lifting, erection, and jacking activities.

<u>BIM / BrIM</u>: UrbanTech has an expansive and growing portfolio for Building Information Modeling (BIM) and Bridge Information Modeling (BrIM), including Revit software. Innovative uses of the technology were implemented at PANYNJ's LaGuardia Airport Terminal Replacement and the Kosciuszko Bridge Replacement. At the airport, 3D pick planning facilitated the installation of a utility bridge, spanning over the terminal entrance, using a super-lift crane. Critical points during the pick were identified to meet clearance limits and minimize installation time. At the Kosciuszko Bridge Replacement, the main span jacking scheme (designed by UrbanTech) and existing bridge components were modeled by their BrIM team to facilitate design and fabrication.

A.2.2.1 Bridge Design:

UrbanTech has robust bridge design experience that showcases our expertise in various aspects of bridge engineering. One of our notable projects in the Philadelphia area includes the redesign of two railroad bridges along the Keystone Line in Middletown, PA, executed in partnership with Kiewit. For this best-value contract, UrbanTech proposed an innovative construction procedure utilizing Self-Propelled Modular Transporters (SPMT) to move the two pre-assembled steel railroad bridges to their foundations during a weekend shutdown. The bridge foundation system was comprehensively redesigned by UrbanTech and was critical to fully leverage this accelerated bridge construction method.

Additionally, UrbanTech has designed several short-term steel bridges with multiple spans for projects in the metropolitan New York area, following AASHTO LRFD and Standard Specifications.

A.2.2.2 Bridge Load Rating in accordance with AASHTO MBE

Our expertise also extends to bridge load rating, as demonstrated in our work on the Marine Parkway Bridge, a through truss lift bridge. This project involved creating a finite element analysis (FEA) model of the entire bridge, conducting load rating analysis as per AASHTO standards for truss members and gusset plates. Urbantech also performed the load rating of the strengthening truss at the George Washington bridge in accordance with LRFR MBE. Two staff engineers at UrbanTech have taken the 4-day NHI-130092 course "Load and Resistance Factor Rating of Highway Bridges" within the past 3 years.

A.2.2.3 Cable Stayed Bridge Analysis and Design

Our subconsultant, AECOM, brings extensive experience in cable-stayed bridge analysis to the team. While UrbanTech has not directly analyzed cable-stayed bridges, we possess substantial expertise with cable-supported structures. For instance, on the Wurts Street Bridge project, our engineers used SAP 2000 and CIS Bridge for nonlinear analysis to evaluate construction loads and staged construction impacts on this historic cable-suspended bridge. Our global finite element analysis model accurately predicted the bridge's behavior, allowing us to develop a construction procedure that managed stress levels within the existing stiffening truss, ensuring consistent bridge geometry throughout the construction process. Additionally, our work on the Goethals Bridge project, a cable-stayed bridge with concrete pylons, further demonstrates our capabilities. We designed temporary tie struts for the construction of the pylons and performed geometric control analysis of the pylon structure during construction, enhancing our understanding of structural engineering and cable-stayed bridge construction.

A.2.2.4 Steel Fatigue and Fracture

UrbanTech’s founder and President, Dr. Wei Wang, has in-depth knowledge and experience in the field of fracture mechanics and metal fatigue. His research was published in the prestigious Journal of Engineering Mechanics, and he was invited to give a keynote speech at an international conference on this topic. His theoretical model on metal fatigue, sometimes referred to as the Wang Model, has been cited in numerous research projects, including the Finnish state-owned research institute VTT publication 775, "Structural Lifetime, Reliability, and Risk Analysis Approaches for Power Plant Components and Systems." UrbanTech’s engineers are currently working on the design of an orthotropic deck component for the George Washington Bridge, where the fatigue and fracture properties of the component are of significant importance.

A.2.2.5 Structural analysis (two dimensional and three dimensional)

UrbanTech's team is proficient in advanced structural analysis, employing state-of-the-art software such as SAP 2000, CIS Bridges, ETABS, LARSA, Ansys, RAM Structures, RAM Steel, PCA Columns, and SP Slab. Our expertise encompasses two and three-dimensional analyses of high-rise buildings, curved plate girder bridges, cable-suspended bridges, foundation systems, and seismic analysis of bridges and buildings. These analyses are conducted using both linear elastic and nonlinear elastic methodologies, underscoring UrbanTech’s capacity to handle complex structural engineering challenges.

(UrbanTech) Green Brook Flood Risk Management Project, US Army Corps of Engineers NY, Sommerset and Middlesex Counties, NJ. UrbanTech provided structural design services for a two-span concrete bridge (culvert) under

the NJ Transit rail lines. This project was very challenging as NJ Transit would not allow long-term shutdown of the tracks during construction. Our team provided a solution in which the reinforced concrete bridge was cast in place in an area adjacent to the final location and moved into position during one weekend with the use of SPMTs. The job was very successful and the impact on rail travelers was mitigated to just one weekend. The project included concrete design and analysis for the gravity loads, including railroad Cooper E80 loads and seismic loads. For the analysis, UrbanTech created a 3D model using LARSA-4D. UrbanTech also prepared the structural specifications, including the heavy lift and transportation using SPMTs.

(UrbanTech) Marine Parkway Bridge Load Rating (MTA/TBTA), NY and George Washington Bridge Load Rating (Port Authority of NY and NJ), NY Load Rating. UrbanTech performed bridge load ratings in accordance with AASHTO MBE. On these two jobs, UrbanTech worked as a subconsultant to HNTB. UrbanTech performed the load analysis using CSI Bridge software and performed load rating of the main span gusset plates at the Marine Parkway Bridge and of the strengthening truss at the George Washington Bridge. The load ratings were done in accordance with the AASHTO Manual of Bridge Evaluation. Two staff engineers at UrbanTech have taken the 4-day NHI-130092 course "Load and Resistance Factor Rating of Highway Bridges" within the past 3 years.

(UrbanTech) Wurts Street Bridge Rehabilitation, Kingston, (NYSDOT). UrbanTech performed a staged construction analysis of the bridge. The Wurts Street Bridge is a historic bridge built in 1904 and is listed on the National Register of Historic Places. The bridge is a suspension bridge with a total length of 1,057’-6”. The bridge spans the Rondout Creek and provides an important transportation link between Kingston and the neighboring communities. To investigate the bridge stresses during the concrete deck removal and replacement, UrbanTech converted the engineer of record's LUSAS finite element model of the bridge to SAP2000. This allowed for a detailed, non-linear construction staging analysis to be performed. The FEM was also used to analyze numerous construction vehicle loading scenarios and the procedure to replace the stiffening truss gusset plates. Working closely with the contractor and the EOR, UrbanTech developed a construction sequence that reduced the required construction time from what was originally proposed. UrbanTech's knowledge of current construction practices combined with their technical expertise ensured the proposed procedures were both economical and safe.

(UrbanTech) Goethals Bridge Replacement, Staten Island, NY – Elizabeth, NJ, (Port Authority of NY/NJ). For this cable-stayed bridge project, UrbanTech engineered the temporary support tower and staircase for the access platform for the construction of the stayed cable towers. Each lift had access designed. Access tower for access during construction, and formwork and upper tension tie platform up to the falsework platform.

(UrbanTech) Bayonne Bridge Navigational Clearance Project, New York, NY – Bayonne, NJ (Port Authority of NY/NJ). This project raised the existing bridge deck to increase navigation channel clearance for the new Panama Class container ships. UrbanTech was retained by the General Contractor to design a load transfer truss system to unload the existing suspenders for the safe replacement of existing suspenders and the installation of new floor beams at higher elevation while keeping the existing roadway open to traffic. UrbanTech performed a global FE analysis to analyze the interaction between the existing bridge arch structure and the temporary transfer trusses during construction. The analysis performed by UrbanTech identified the load transfer path during construction. UrbanTech also specified a load testing and monitoring program to test the transfer trusses and the bridge suspenders to ensure safe operation and structural stability during construction.

(UrbanTech) VN-84B Rehabilitation and New Construction of Brooklyn Verrazano – Narrows Bridge (VBN) Ramps, Staten Island, NJ – Brooklyn, NY (MTA/TBTA). UrbanTech worked as a subconsultant to HNTB for the Belt Parkway VN-84B, which will construct new ramps for the connection between the Verrazano Bridge and the Belt Parkway in Brooklyn, NY. For this job, UrbanTech used a 3D FEM time history model to perform a seismic analysis using SAP2000 to evaluate the need for strengthening the substructure of the mainline viaduct on I-278. UrbanTech used several iterations and techniques to accurately evaluate the need for reinforcing the pier struts, which initially seemed to be overstressed under seismic loads. To capture the post-yielding behavior at the ends of struts under seismic load, elastic-plastic hinges at strut beams were introduced. The purpose was to capture the seismic behavior of the bridge assuming that the strut beam yields at the ends, followed by force redistribution between the strut, column, and foundation. This approach using post-yielding behavior demonstrated that the resulting stresses were within acceptable limits and avoided the need for strengthening the structure. The firm owns licenses for LARSA-3D, SAP2000, ETABS, and CSI BRIDGE, all of which have 3D, non-linear, and seismic analysis capabilities.

(Urbantech) Immediate Permanent Pier Shoring Design for Pier N19, Pier 4 & N20, Pier 4, Newark Liberty Airport (Port Authority of NY/NJ). Working as a structural sub-consultant for Dewberry’s agreement #415-16-110 Expert

Professional Structural Engineering Services, this project required a very quick turnaround for engineering a permanent design solution to replace the existing prestressed concrete cap beams at the two pier bents mentioned above. After an initial field survey, UrbanTech provided two conceptual alternatives for temporary shoring of the cap beams to the Authority within just one week. After a meeting with Authority officials, a preferred alternative was selected and a final design, including plans, specifications, and cost estimate, was delivered within one month. The design consisted of installing steel beams parallel to the prestressed concrete deteriorated caps. The steel beams were installed on steel collars supporting steel cap seats. The collar was attached to new steel angle columns bolted into the existing concrete columns. After review of the submittal and evaluations, the Authority decided to make the design a permanent replacement of the cap beam and elastomeric bearings. The modified complete design was delivered within 3 weeks.

(Urbantech) Design-Build Hunts Point Interstate Access Improvement Project Contract 1, Bronx, NY (NYSDOT). Working as the contractor's engineer, UrbanTech performed various structural design tasks. Most notably, the design of the project element called "the Island," a retained earth structure, which reduced railroad impact and risk to Amtrak and CSX. The Island saved time on the schedule and removed risky temporary work elements from adjacent to the project right of way. It also benefited NYSDOT as it reduced the permanent structural thermal loads on bridge joints, integral piers, and substructure components. Other tasks included performing FEM staged construction and stability analysis for curved steel bridge girders during erection for new flyover bridges.

(Urbantech) Central Terminal Building Replacement Project, Queens, NY ((Port Authority of NY/NJ). UrbanTech was the on-call engineer for this project for multiple years. UrbanTech was responsible for the demolition engineering and erection engineering for the primary structures of the new airport roadways, bridges, and building facilities. The tasks included the design of phased demolition and construction during active airport operation, engineering for cranes for demolition and erection of facilities, and bridge jacking design at crucial bearing points.

(AECOM) Rebuild By Design RBD Hudson River, Hoboken, Jersey City, and Weehawken, NJ : 11,400 LF floodwall
***(AECOM) NJ American Water Bridgewater, NJ* :** Raising 1450 LF Levee & 3800 LF floodwall
***(AECOM) South Shore Staten Island, Ft Wadsworth to Oakwood Beach, NY* :** 3000 LF Levee & 2220 LF Floodwall
***(AECOM) LPV111 Levee Enlargement, New Orleans, LA* :** 5 miles of levees & 1500 LF of new T-floodwall
(AECOM) Lock Haven Unit 2, PA : "T" floodwall and two railroad swing gate closure structures ; one roadway stop log closure structure ;
***(AECOM) Levee Recovery Project (Katrina) Orleans Parish, LA* :** Design repairs for numerous I-wall failures ; several closure gate monolith repairs' and
Task Force Guardian Levee Repairs, LA : 17 sets of plans and specifications for 65 damaged areas ; repair of 3,000 LF of breached I-walls.

(AECOM) Folsom Dam Bridge Design, USACE Sacramento District, CA. AECOM was the prime consultant for this fast-track project to provide civil and bridge design, geotechnical investigations, environmental coordination, and construction support for a new arterial road and bridge situated in very rugged terrain immediately downstream from the Folsom Dam and over the American River. The new 970-foot long, three-span, cast-in-place segmental concrete box girder bridge was designed to AASHTO LRFD Bridge Design Specifications including California Amendments and special seismic considerations. AECOM used the USACE hydraulic model output to design rock slope scour protection and to analyze the long-term stability of a contractor-constructed retaining wall. AECOM also assisted USACE with construction management of the project and provided quality control inspectors for the bridge segmental construction process. Winner of the TRANNY Award for Project of the Year from the California Transportation Foundation.

(AECOM) Powers Boulevard (SH 21) over Kettle Creek, CDOT, CO. AECOM designed two rural bridges over Kettle Creek. The bridges are three spans and almost 500 feet long due to a deep, wide canyon which had tight environmental constraints related to the Preble's Meadow Jumping Mouse. The piers/bents are 85 feet tall and the MSE walls in front of the abutments are 40 feet tall. The superstructure is structural hybrid steel plate girders to maximize the span length and to minimize the weight, thereby requiring smaller cranes in this restricted riparian area. The project included context-sensitive design to maintain the area's natural look and to protect the environmentally sensitive area spanned by the bridge.

(AECOM) CR 1 Bridge over Hay Creek, Teller County, CO. AECOM developed design plans for emergency replacement of a rural three-span bridge that had been closed due to a failing deck. The fast-track design was developed in less than two weeks; the bridge was replaced using ABC techniques in less than 48 hours from demolition to opening to traffic.

(AECOM) County Route 669 Bridge over I-81, Frederick County, VA. Triad was retained to design shoring to facilitate construction of this replacement bridge in two halves, with a new bridge deck elevation higher than the existing bridge. The limited depth to bedrock suggested that soldier piles with lagging would be required, but this could be quite costly. The principal responsible for implementing Triad's QC plan, including data review and evaluation of other alternatives, determined that driven sheeting with temporary bracing could be safely used for the initial phase of construction. The second phase of construction used the same sheeting with a whaler/tieback arrangement held in place with a continuously reinforced concrete dead man. The total cost savings to the project was estimated at approximately $50,000, and the construction schedule was maintained.

(AECOM) 13th Street Bridge Replacement, Vandenberg AFB, Air Force Space Command (AFSPC), CA. AECOM addressed the multiple project requirements while keeping stakeholders satisfied. The 30th Civil Engineer Squadron Bridge Engineer and Natural Resources requested the overall bridge length be around 800 feet for their respective hydraulic and ecosystem concerns. AECOM performed a hydraulic analysis that determined the minimum overall bridge length to be 700 feet, which is 200 feet more than the current bridge length of 500 feet. However, the proposed overall bridge length provides for 100 linear feet of savings in bridge foundation and superstructure costs. AECOM's solution also addressed the Caltrans hydraulic requirements and will benefit the ecosystem as the current choke point will be improved.

A.3 INSPECTION SERVICES

AECOM provided a team of experienced bridge inspectors with a Registered Professional Engineer as the Team Leader. Nine bridges were inspected including 4 timber trestle railroad bridges. All engineering services for the inspections and scour evaluations were in accordance with ER 1110-2-111, the Code of Federal regulations, Title 23, Part 650, Subpart C, and "National Bridge Inspection Standards (NBIS)." All work was also in accordance with requirements of the Department of the Army, Federal Highway Administration, American Association of State Highway Officials and American Railway Engineering Association including AR 420-1, "Army Facilities Management." NBI Data Sheets were updated. Bridge inspections included updating structural inventory and appraisal data (SI&A in metric units) on forms provided by ERDC for submission to the Federal Highway Administration.

For a majority of their projects, UrbanTech performs field evaluations and inspections to determine existing structure conditions. Additionally, UrbanTech has performed detailed inspection for rehabilitation projects. One example is the TN-53 project on the Throgs Neck Bridge for the rehabilitation of the approach viaducts. UrbanTech performed as a subconsultant to Thornton Tomasetti for this MTA/TBTA job. The detailed inspection includes 5 concrete piers on ground and 31 concrete piers above water. A hands-on inspection of the Bronx and Queens approach piers 12-20 was performed. The UrbanTech inspection crew operated a man-lift to access the pier surfaces. The man-lift was set on a barge for inspection of piers above water. In addition to visual inspection, all concrete pier faces were hammer sounded to identify hollow areas. The inspection procedure consisted of locating, marking, and recording deterioration found at various locations on the concrete piers. The inspection team marked hollow areas directly on the pier with a green paint to aid future inspectors and contractors in the location and determination of worsening conditions. Field dimensions, locations, and observations of deteriorated areas were recorded on inspection logs. Defects found included hollow sounding concrete, spalled concrete areas, exposed rebar at spalls, concrete cracks, and water damage at the water level. UrbanTech designed the repair of all these defects.

A.3.1 Bridge Inspection

(AECOM) Bridge Inspection within NAP boundaries: Indefinite Delivery Contract for A-E to Support Civil Works; Delaware and Maryland; USACE Philadelphia District. AECOM completed an IDIQ for the Philadelphia District for bridge services centered around the biennial inspection of the 5-long span, complex bridges spanning the Chesapeake and Delaware (C&D) Canal in Delaware and Maryland. The bridge types include 2 steel cantilever through truss structures, 2 steel tied arch structures and a segmental post tensioned concrete bridge with a cable stay supported main span.

The biennial bridge inspections were completed in compliance with the CFR Title 23 Part 650, AR 420-1 & ER 1110-2-111 and included underwater bridge inspection. Each of the inspections was an in-depth, fracture critical inspection that required hands-on access to inspect all elements of the bridges. Various types of access

methods and equipment were used, including under-bridge inspection vehicles, aerial boom lifts, and rope access. Examples include:

- Reedy Point and Summit Bridges over the Chesapeake and Delaware Canal, DE. Bridge lengths were 8,432 and 2,058 feet, respectively, and included steel cantilever through truss sections 700 feet and 600 feet long, respectively. Approach sections included deck trusses, deck girders, and multibeam spans.
- US Route 1 over the Chesapeake and Delaware Canal, DE. This inspection consisted of interior (trapezoidal box girders and delta frame system) and exterior (cables, fracture, and fatigue critical members) for the 27-span, precast, post-tensioned, segmental concrete structure with a 750-foot-long cable say main span.
- Glen Canyon Bridge Inspection, AZ, Arizona Department of Transportation. AECOM inspected the bridge that spans the Colorado River canyon at Glen Canyon Dam.

AECOM) In-Depth Inspection of Greater New Orleans Bridge #1; Louisiana DOT. AECOM performed inspection of the Greater New Orleans (GNO) Bridge #1 which carries US 90 Business Westbound over the Mississippi River. The inspection of the 3,019 ft. long three-span, continuous, cantilever, riveted through truss structure included a close visual "hands-on" inspection of all fracture critical and fatigue sensitive details. The substructure units received a routine visual inspection with suspect areas highlighted for further evaluation. In addition, we performed an assessment of the paint coating system by a certified NACE Level 3 Bridge Coating Inspector. The coatings inspection included a physical inspection of the extent of corrosion, identification of the corrosion type, field adhesion tests and coating thickness measurements. Samples were also collected for laboratory testing to determine the level of lead contained in the coating system. Ultrasonic testing was performed on the upper and lower hanger pins at Panel Points CU9/SL0 and CU9'/SL0'. All inspection work was performed with minimal disruption to vehicular and truck traffic as well as to the flow of marine and highway traffic under the structure. Inspection access included multiple rope access climbing teams, under bridge inspection vehicles and aerial boom lifts.

A.3.2 Non-destructive Testing of Structures by Ultrasonic

AECOM has extensive experience in non-destructive evaluation for steel bridges. Our team leaders have extensive experience using dye-penetrant and ultrasonic D-meters, including use on fracture critical members and fatigue prone details. AECOM has performed ultrasonic testing of pins and electro-slag welds on numerous bridges.
John Pariseau is AECOM's Non-Destructive Evaluation specialist. Mr. Pariseau is a subject matter expert for welding and metallurgy with ASNT Level III certifications in Ultrasonics, Radiography, Liquid Penetrant, Magnetic Particle, and Visual. While working at the USACE, he served as lead instructor for the Welding Quality Verification USACE Prospect course. He will support our bridge and HSS inspections with NDE testing as needed throughout the course of the contract.

A.3.3 NBIS Underwater Bridge Inspection

Should have the above headings and text to address each.
Through numerous contracts with USACE Vicksburg District, USACE Philadelphia District, Departments of Transportation, Federal Highways Administration and other agencies we have conducted numerous bridge surveys and assessments, and input data into the National Bridge Institute Standards (NBIS) database. Projects required capturing all information required to be compliance with the current NBIS requirements, UFC 3-310-08 Non-Expeditionary Bridge Inspection, Maintenance and Repair, and ETL 07-5, Bridge Inspections. Deliverables included: • Final Data Collection Report • Bridge inspection reports including field notes, photos, load ratings, damage identified, and Structural Inventory and Appraisal (S.I. &A.) forms • Fracture Critical Member Identification Plan • Scour Critical Bridge Identification Plan • Bridge Damage Report • Bridge Load Rating Report that that presented recommended load rating for the structure.

AECOM has performed numerous multi-year contracts for bridge, dam and waterfront structure inspection services, over multiple cycles, for various types of bridges, such as major truss, cable stay, post-tension box girder, movable bascule, and steel girder, a wide variety of dams and waterfront facilities. Numerous teams of inspectors are deployed to perform work using industrial rope access techniques combined with mechanical equipment. The teams will provide: NBIS

bridge inspections, Underwater inspections, Instrumentation and testing of bridge components, Hydrographic channel bottom and overhead clearance surveys, Inspection of mechanical and electrical equipment, Ultrasonic testing of bridge pins, and Emergency bridge inspection services.

(AECOM) Periodic Bridge, Waterfront Facilities, Dam Inspections, and Reports; Ft. Eustis, VA, USACE Vicksburg District. For bridge inspections, AECOM (legacy URS) performed 9 military bridge inspections, 2 with underwater inspections at Ft. Eustis, VA. Bridges comprised 4 railroad bridges, 2 pedestrian bridges, and 3 vehicular bridges. Inspection of waterfront facilities included banklines, concrete bulkheads, concrete piers, timber piers, floating piers, walkways, quaywall, and mooring dolphins. The work included an inspection schedule, performing field inspections, preparation of letter reports, and draft and final inspection reports.

(AECOM) Biennial Inspection of Betsy Ross Bridge; Delaware River Port Authority. AECOM performed the 2020 routine and in-depth inspection of the Betsy Ross Bridge, which carries Route 90 over the Delaware River between Philadelphia, PA and Pennsauken, NJ. The inspection included a close visual "hands-on" inspection of all fracture critical and fatigue sensitive details. The substructure units received a routine visual inspection with suspect areas highlighted for further evaluation. In addition, the channel and piers received an underwater inspection including a high-frequency side scan sonar and hydrographic survey. The inspection included routine inspection of the PA and NJ approach structures, high-mast lights, sign structures, signal gantries, dolphins, and the toll facility structure. Inspection access is routinely utilized under bridge inspection vehicles, bucket trucks, aerial boom lifts, and ladders. The inspection effort also included the use of an UAV drone to complement our traditional hands-on inspection and to demonstrate ways this technology can be utilized by the Authority for future biennial inspections. The inspection fieldwork required extensive coordination with ongoing maintenance and contractor activities. All inspection work was performed with minimal disruption to vehicular and truck traffic on the corridor, as well as to the flow of marine, railroad and highway traffic under the structure. The results of the inspection have been presented in a structural inspection report noting all typical deficiencies, the general condition of the bridge, and any significant changes or new deficiencies and findings.

A.4 HYDROLOGIC AND HYDRAULIC STUDIES AND MODELING

Our team has hydrologic and hydraulic studies (H&H) engineering expertise throughout and outside the NAD boundaries. Our H&H staff have completed assignments including the following:

- Numerous bridge scour evaluations
- More than 500 complete watershed studies using HEC-1 or HEC-HMS
- Thousands of miles of river hydraulics and stream hydraulics using HEC-2, HEC-RAS, HEC-RAS Unsteady State, HEC-RAS 2-D and SWMM.
- Over 5,000 flood damage reduction/flood risk management studies
- Over 1,500 coastal studies
- Hundreds of dam and levee design and analysis
- Hundreds of dam investigations using DAMBRK
- Numerous sediment studies applying HEC-6/6T
- Channel modifications using traditional and bioengineering techniques
- Flumes for both subcritical and supercritical flow
- Local protection works integrating the use of levees, floodwalls, and closure structures
- Associated interior drainage facilities
- Large regional detention structures

Some of our more recent civil works, modeling, flood control and environmental work have included lacustrine, fluvial, estuarine, coastal and urban models.

A.4.1 Surface Water Analysis and Modeling

For the SSSI project, AECOM performed detailed H&H analysis in support of proposed freshwater and tidal wetland mitigation design. They developed detailed hydrologic models using HEC-HMS for overland flows,

(MSMM) Louisiana Watershed Initiative Modeling Contract, Louisiana Department of Transportation and Development Louisiana launched the Louisiana Watershed Initiative in 2018 with an initial focus on improving hydraulic and hydrologic (H&H) watershed models to more effectively reduce flood risk through improved decision making. Our team members supported LADOTD in this effort to develop and improve flood modeling and support evaluation and alternative analysis of nature-based solutions. This was a five-year, $18M contract involving the development of calibrated 1-D/2-D HEC-RAS models for consequence and risk assessment. It also included analyzing over 9,500 sq. mi in HEC-HMS for hydrology, 975 miles of 1D HEC-RAS and approximately 1,500 miles of 2D stream centerline in HEC-RAS for multiple recurrence intervals (2-yr, 5-yr, 10-yr, 25-yr, 50-yr, 100-yr, 100+-yr, 500-yr, and 1000-yr events).

(MSMM) Dallas Floodway Extension Recreation Design, USACE Ft. Worth District, TX MSMM provided full engineering services for various recreational, roadway, and bridge features in this South Dallas public park. MSMM utilized HEC-RAS to perform H&H modeling of the Trinity River to help aid in the bridge design process. The hydraulic models were analyzed under existing and proposed conditions through the project area. One model was developed for analysis of the 2, 5, 10, 25, 50, and 100-year storm events and a second model was developed for analysis of the 500-year and Standard Project Flood (SPF) events. The generated water surface elevations (WSELs) from the models were reviewed to identify any potential changes or impacts to the flooding conditions through the project area as a result of the proposed construction of the Trinity River Pedestrian Bridge

(MSMM) Silver Jackets Support; Water Resource Master Plan and Watershed Analysis, USACE MSMM developed a Watershed Master Plan for Jefferson Parish as part of USACE's Silver Jackets program. The Silver Jackets program allowed for the dual opportunities of assisting parish leadership in developing strategies to prepare a safer drainage system and assisting parish residents in lowering their flood insurance rates. Our team members were responsible for reviewing previous hydrologic and hydraulic models, performing new modeling to validate designed rainfall runoff retention rates, deriving watershed behavior, assessing the impacts of multiple rainfall/storm events in specific areas, and developing a subset of non-structural mitigation actions that were promoted within specific regions of the Louisiana Watershed Initiative. The hydrograph modeling approach was based on EPA SWMM models which were developed from HEC HMS models and HEC RAS models.

(MSMM) New Orleans International Airport (MSY) Drainage Pump Station – New Orleans Aviation Board, LA MSMM was responsible for all civil/structural site work design, inclusive of earthwork and site layout; engineering during construction (EDC) inclusive of coordination with the construction contractor; hydrologic and hydraulic modeling (UNET, SWMM); and developing all plans and specs.

(MSMM) Drainage Master Plan, City of Kenner, LA MSMM's principals conducted H&H analyses and modeling of closed conduit flow utilizing US EPA's SWMM software. Over a period of nine years, MSMM's pricinpals conducted reports and modeling for more than 10,000 nodes, an area of more than 8,000 acres, and a total length of more than 200 miles of closed conduits.

(MSMM) Rivertown Drainage Improvements, Jefferson Parish Government, LA MSMM worked with Jefferson Parish and the City of Kenner, LA to complete Hydrologic and Hydraulic modeling, and conceptual design for a successful Flood Mitigation Assistance grant application through FEMA and the Governor's Office of Homeland Security and Emergency Protection (GOHSEP). MSMM conducted HEC-RAS and HEC-HMS modeling to evaluate several alternatives for improving the drainage in the area. Through the modeling effort, the final grant application package consisted of a project alternative that called for jacking and boring under the railroad tracks to insert three (3)-24" drainage pipes at Duncan Street and two (2)-24" drainage pipes at Williams Boulevard.

(AECOM) Risk Map; Nationwide; FEMA. AECOM and FEMA Region IV have worked collaboratively with the USACE Nashville District to incorporate hydrologic and hydraulic modeling from the USACE Nashville District into FEMA Flood Insurance Study updates. AECOM has incorporated over 1,000 miles of USACE Nashville District HEC-RAS models in Tennessee and has made the models FEMA compliant. On the hydrology side, AECOM fixed any discrepancies in discharge. On the Hydraulic modeling side, AECOM looked for and corrected drawdowns, profile crossing, overbank Manning's n values assigned for channel, and floodway surcharges over one or negative.

(AECOM) Floodplain Mapping Delaware, Susquehanna and Mohawk Basins, New York State, FEMA Region II AECOM, under the Hazard Mitigation Technical Assistance Contract, updated the hydrology using the latest gage data

and transfer methods, directed the field survey of hydraulic cross-sections and developed the geo-referenced hydraulic models and performed the hydraulic analysis for 538 river miles using HECRAS. The study on the Delaware Basin included the Main Stem and West Branch From Port Jervis to the Cannonsville Reservoir and the Neversink River.

(AECOM) Hydraulic Analysis for the Green Brook Flood Risk Management Project, NJ for USAENY. AECOM performed the basin wide hydraulic update for 35 river miles of the Green Brook watershed. The analysis used HECRAS 1-D Unsteady State model integrated with a HECRAS 2-D model for a major naturally occurring diversion through the streets of Scotch Plains and Plainfield NJ.

A4.2 Groundwater Analysis and Modeling;

(AECOM) South Shore of Staten Island CSRM Project, USACE NY. For the SSSI project, AECOM performed detailed H&H analysis in support of proposed freshwater and tidal wetland mitigation design. They developed detailed hydrologic models using HEC-HMS for overland flows, Modflow for groundwater flows, and developed a comprehensive water budget model, using model results, well monitoring data and methods outlined in NJDEP guidelines, which were applied to three different wetland sites. AECOM collected groundwater data using a number of hand installed monitoring wells and weekly groundwater readings taken over a six-month period. This data was used in the mudflow models.

(AECOM) Groundwater Treatment System Design Former Reese Air Force Base, Texas, Air Force Civil Engineer Center (AFCEC) AECOM developed numerical flow and transport models for groundwater and PFAS at and around the former Reese Air Force base to assist in the identification of sources of PFAS to the Ogallala aquifer and potential migration pathways. The models incorporate a high resolution lithostratigraphic CSM model developed by the AECOM PRISM® team applying environmental sequence stratigraphy (ESS). PFAS and groundwater data collected at and around the base since 1970 were also used to create a numerical flow and transport models. Modeling results facilitated designs for groundwater extraction, treatment (GWETS), and re-injection systems.

A4.3 Coastal Analysis and Modeling

AECOM is a recognized leader in numerical modeling for coastal, riverine, and urban drainage projects for USACE, FEMA, and other federal agencies, as well as non-federal organizations. Specific to coastal hydraulics, AECOM provides services in coastal and beach processes, sedimentation and erosion studies, shore protection and beach nourishment, coastal structure design, dune and wetland restoration, wave forecasting and statistics, circulation and water quality analysis, design concepts evaluation, and water quality and coastal zone management.

We have applied 2D and 3D models on structured (CMS, Delft3D) and unstructured meshes (ADCRIC, ADH) in estuaries, coastal zones, rivers, and lakes in support of design and evaluation of hydraulic structures, ecosystem restoration design and floodplain evaluations.

(AECOM) Rebuild by Design Hudson River Project, Hoboken, and the Meadowlands Project, Hackensack Meadowlands, New Jersey, NJ Department of Environmental Protection. AECOM as Engineer of Record is responsible for coastal, interior drainage, and stormwater modeling; as well as the topographic & bathymetric surveys for both RBD projects. AECOM developed a high-resolution MIKE21 model (0.7 million elements) and, in conjunction with a regional ADCIRC model, established storm surges and evaluated project effects on water levels and adjacent areas. The MIKE21 model domain included the Hudson River extending upriver of the Hoboken project area, Hackensack River (to the Oradell Dam) and Passaic River (to the Dundee Dam) and extended south to Bergen Point, New Jersey. For the Hudson River Project, the interior drainage analysis was performed using HECHMS, and to separate an existing combined sewer system Bentely Sewer Gems was used to design the new storm sewers. For the Meadowlands Project HECRAS and InfoWorks software were used to evaluate the existing storm water drainage system to identify localized deficiencies and to size corrective actions.

(AECOM) FEMA Region II Coastal Modeling NJ As part of the FEMA Region 2 Flood Insurance Study update after Hurricane Sandy, AECOM led a Joint Venture team to develop updated storm surge and offshore wave modeling. The study region covered Cape May, NJ to New York City, NY. The results included updated statistics to determine a range of frequencies for the stillwater levels in this region. The offshore wave modeling data and stillwater information are currently being used to develop overland wave models and the updated Flood Insurance Rate Maps.

(AECOM) FEMA Region II Coastal Modeling NJ/PA As part of the FEMA Region 3 Flood Insurance Study, AECOM participated in a Joint Venture team to develop overland wave modeling, erosion, and runup analysis for county-level

studies for the Chesapeake and Delaware Bays continuing up through Philadelphia. AECOM developed Flood Insurance Rate Map updates or participated in the review for all of the recently updated FIRMs in this region.

A.5 GEOTECHNICAL

The JV Team is a world leader in geotechnical engineering with extensive experience on USACE projects, specifically related to NAD boundaries. Our team members have provided detailed geotechnical investigations, analyses and designs for building foundations, hydraulic structures, bridges, roadways, marine structures, levees, dams, locks, pump stations, navigation and industrial facilities. Most of these projects have included detailed planning, performing field investigations and exploratory drilling and sampling (split barrel, rock core, SPT, Denison, California Barrel, Shelby Tube), in-situ soil and rock testing (Pressuremeter, CPT, Dilatometer, Seismic), laboratory testing, surveys (Borehole, geophysical and remote camera), installation of geotechnical instrumentation (inclinometers, piezometers, observations wells, etc), topographic and bathymetric surveys. Our experience with shallow and deep foundations, levees, dams, waterfront structures, bridges, roadways, retaining structures with expertise in all kinds of analyses is extensive.

The JV Team has extensive experience in geotechnical services, bringing years of experience in virtually every combination of rock, soil and water conditions to successfully offer technically-sound solutions to complex project challenges. AECOM routinely plans and executes geotechnical investigations to determine subsurface conditions and identify the geotechnical issues associated with complicated projects. Registered professionals supervise all work, including drilling, field testing, laboratory testing and analysis. In addition, the JV Team of engineers and geologists has extensive experience performing these services throughout the geographic boundaries of NAP and NAD, in particular. On a previous USACE geotechnical contract for NAP (2007 to 2012), AECOM advanced more than 5,000 feet of soil borings and rock cores. AECOM completed each investigation in accordance with USACE Engineer Manual (EM) 1110-1-1804 Geotechnical Investigations and logged every soil and rock boring on USACE ENG FORM 1836 and 1836-A.

As part of the GRR for the Green Brook FRM Project, AECOM legacy firms directed efforts to obtain 67 new geotechnical test borings including their location by field survey. Boring depths ranged from 11 to 55 feet and averaged 25 feet. Forty-one (41) of the borings were converted to ground water observation points. Falling head tests were conducted at nine of the piezometer locations. Packer tests were conducted in two borings in bedrock, one at each detention control structure site. The field testing results were included in geotechnical calculations. Test pits were conducted along a segment of the proposed levee that passes through a historical landfill area. The laboratory testing program consisted of identification and physical property testing. Identification testing included grain size with hydrometer (ASTM D422), moisture content (ASTM D2216), Atterberg Limits (ASTM D4318), unit weight, and specific gravity (ASTM D854). Physical testing included triaxial (ASTM D4767) and unconfined (ASTM D2166) compressive tests on undisturbed soil, and compressive tests (ASTM D2938) on rock core samples. AECOM prepared a geotechnical report summarizing the findings.
More recently for segment B1, AECOM obtained 13 borings, and for Segments C6 & 7 and D HDR is directing the collection of another 27 borings and subcontractor e4sciences is conducting the electromagnetic measurements (GPR and magnetometer) for utility clearance and safety drilling operations on pre-selected borings.

(b) PROFESSIONAL QUALIFICATIONS

We have assembled an outstanding team of professionals to complete the required work in a manner reflective of our extensive knowledge of USACE missions. The resumes included in Section E describe our professional qualifications in detail and illustrate our capacity to provide the level and volume of staffing required by USACE for this contract. Additional supporting team members required team members required to provide full A-E services support under this contract will be called upon as the project demands and complexities dictate. The Organizational Chart included in Section D lists the staff of the team that meets the requirements of this selection criteria. Resumes for each of these key staff members are found in Section E.

Here is an idea as to why we are an exceptional team:

- **We have the education and training** – All of our key team members have performed outstanding work for USACE, and have advanced degrees in the required disciplines.
- **We are registered in our fields** – All key professional members are registered Engineers, Architects, Scientists or Surveyors. Many have registrations in the states that are within the NAD boundaries.
- **We bring the technical competence** – Each professional on our organization chart in Section D was selected because of their proven technical and management competence on similar size and scope of services projects and working on previous contracts, and are deemed experts in the industry.
- **Our key personnel have longevity with their respective firms** – Our key personnel have an average of 15 years with their firms and a long experience with USACE
- **Personnel from partner firms on the JV Team have worked with each other for over 15 years**

Please see our extensive professional qualifications – including education, training, certifications, registrations, overall experience, relevant experience, and longevity with the firm – as demonstrated in the information found in Section D, Section E, and Section G.

Program Manager
Mark R. Wingate, P.E., serves as the Executive Vice President at MSMM Engineering, LLC. Mr. Wingate brings over three decades of USACE civil works experience to MSMM, comprising an impressive history in executive-level management experience for delivering flood risk management, hurricane and storm damage risk reduction, navigation and environmental and coastal restoration/sustainability projects. He served for nearly 31-years with USACE, New Orleans District, which culminated with serving as the Lead Civilian (Deputy District Engineer for Programs and Project Management (DPM)) for nearly 9-years at the New Orleans District. Along the way he also served in an acting capacity as the MS Valley Division Regional Business Director (SES position), Deputy Advisor on Infrastructure to the Executive Office of the President (EOP), and Chief of the Projects and Restoration Branch in the New Orleans District. Mr. Wingate received the inaugural R. King Milling Distinguished Coastal Service Award from the State of LA in December 2023.

Project Manager
Dr. Wei Wang is the founder and president of UrbanTech Consulting Engineering, P.C. He obtained his Bachelor's Degree in Civil Engineering from Tongji University in 1984 and his Doctoral Degree in Civil Engineering from New Jersey Institute of Technology in 1995. During his academic years, Dr. Wang was involved in research work related to plasticity of reinforced concrete structures and non-linear fracture mechanics.

His professional engineering career started in 1994, where he worked as a structural engineer for several consulting firms in New York City. In 1999, Dr. Wang founded UrbanTech Consulting Engineering, P.C. His practice focuses on structural engineering and heavy construction engineering. As principal-in-charge and project manager, Dr. Wang has completed numerous projects including; Replacement of Third Avenue Bridge, Reconstruction of the 145th Street Bridge, Reconstruction of the Willis Avenue Bridge, Replacement of Two Bridges in Middletown, PA for Amtrak, Rehabilitation of the Queens Approach of the Bronx-Whitestone Bridge and Seismic and Wind Investigation for the RFK Bridge. Presently, Dr. Wang is involved with the Replacement of existing suspenders of the Bayonne Bridge, Replacement of the Goethals Bridge, Rehabilitation of the Brooklyn Bridge, Demolition of the Kosciuszko Bridge, LaGuardia Terminal B Replacement, and Hunts Point Interstate access Improvement. In addition to his bridge experience, Dr. Wei Wang was involved in several building projects including; Design of the Federal Courthouse in Brooklyn, Design of the Trump World Tower in Manhattan, Design of the GE Training Center auditorium in Crotonville, NY, Design of the Ingersoll Rand headquarters and Lord Abbott headquarters in New Jersey, Temporary Shoring and Jacking of Verizon Telecommunication Building after 9/11, Design of Podium and Construction Support Services for MGM CityCenter in Las Vegas.

JV Team member AECOM top notch professionals have provided worldwide bridge inspections (including underwater inspections) in compliance with the CFR Title 23 Part 650, AR 420-1, and ER 1110-2-111. We have completed waterfront facilities inspections in compliance with UFC 4-150-07: O&M – Maintenance of Waterfront Facilities, June 2001; UFC 4-150-08: O&M – Inspection of Mooring Hardware, April 2001; and UFC 4-150-06: O&M – Military Harbors and Coastal Facilities. AECOM personnel have experience in bridge analysis including load rating requirements per AASHTO's Manual for Bridge Evaluation, scour analysis (level I and level II), and determination of Military Load Classification using foreign country design vehicles.

AECOM was ranked #1 in Transportation including Bridges and #3 for Waterfront (Ports and Marine) Facilities by Engineering-News Record (ENR) because of these expert professionals. They are also ranked #1 for Water. We offer both a national and worldwide wealth of bridge and building design and inspection experience and expertise and have completed the inspection and bridge preservation designs on some of the most iconic structures in the US and around the world.

(C) PAST PERFORMANCE

All members of the JV Team have proven track records in providing high quality technical services, delivered on time and within budget. Our firms have successfully managed hundreds of contracts for USACE and other Federal agencies. These agencies know us to be outstanding contractors, as indicated by our CPARs performance ratings, design awards, and small business awards.

In 25 years, UrbanTech has participated in many public infrastructure projects, including the replacement of the 3rd Avenue Bridge over the Harlem River, which was awarded "Best Bridge Project" by New York Construction in 2005. Following the success of the 3rd Avenue Bridge Replacement, UrbanTech worked on the 145th Street Bridge and Willis Avenue Bridge Replacement projects. UrbanTech provided engineering services for critical float-in and float-out operations for both projects, where full sections of the bridges were removed and replaced using barges. The Willis Avenue Bridge project won the Construction Achievement Award in 2012 from the American Society of Civil Engineers (ASCE) Metropolitan Section. In addition, UrbanTech was responsible for the staged replacement of the Brooklyn approach spans and the removal of the main span of the existing Kosciuszko Bridge for Phase 1 of the replacement project. In 2017, Kosciuszko Bridge Phase 1 was selected as an ENR New York Best Project Winner. Most recently, the Initiative for a Competitive Inner City (ICIC) and Fortune Magazine selected UrbanTech as one of the 100 fastest-growing inner-city companies for five years. The redevelopment of LaGuardia Terminal B, in which UrbanTech provided construction engineering services for the contractor, received the 2022 "Recognition of Special Achievement Award" from the National Academy of Construction (NAC). This job recognizes the creativity, innovation, and vision behind the construction of a world-class airport terminal. Another highly recognized project in which UrbanTech performed construction engineering services is the Hunts Point Interstate Access Project Contract 1. The project received three distinctions in 2023 from the Design-Build Institute of America (DBIA), including the "National Award of Merit in Transportation," "Best in VDC (Virtual Design in Construction)," and the "National Award of Excellence for Transportation." UrbanTech provided engineering solutions that made the construction simpler and more efficient.

MSMM has prided themselves on providing quality professional services with the utmost responsiveness since 2011. This has garnered many accolades and "repeat calls" for service from clients as evidenced by the testimonials found in Section C.2. They have an enviable performance history, especially in terms of the engineering solutions and deliverables they have provided under previous and ongoing USACE contracts. MSMM is one of the most trusted small business Architect-Engineering (AE) firms currently working with USACE in the Southwest Region, which is displayed by their continued status as an exceptionally rated Prime across districts, as well as the sheer volume of task orders they have completed over the past 10 years. MSMM's recent USACE experience includes planning, design, project management, and construction oversight of various USACE projects. These projects span a number of civil works disciplines, especially focusing on drainage infrastructure assessment and design, roadway and bridge design, storm risk management evaluation and design (inclusive of levees and pump stations), and sewer and wastewater infrastructure. They have been USACE's primary partner throughout the implementation of the Section 219 Environmental Infrastructure program in the South. With over 150 years of design experience between them, MSMM's engineers are seasoned, trusted professionals who are known across the States for providing consistently reliable services. This reliability is a direct result of years of demonstrated ability to deliver safely, within budget, on time, and with the highest level of quality. These traits are apparent in the federal and local client Letters of Recommendation and in customer feedback provided in MSMM's CPARS ratings.

Over the past seven fiscal years (2016-2023), AECOM has received more than **3,000** CPARS reports for our Federal work. Of those, U.S. Army comprises **45%**, with Exceptional ratings accounting for **23%**, Very Good **46%** and Satisfactory **29%.** We are proud of our past performance for the NAP and NAD on many of your largest civil works projects and look forward to the opportunity to continue to providing services to you in the future and offer the following accolades to our past services.

C.1 Cost Control

Cost control during design is a process of identifying the full scope of the project and establishing cost targets before design start to enable control throughout design. We understand how projects are negotiated and contracted, and how

to keep a firm control on risks and changes, resulting in our projects being completed on time and under budget over the past ten years. Scope elements are verified with the customer. Cost targets are identified using a system-level work breakdown structure and estimated using parametric cost estimating systems. Our designers communicate constantly with cost engineers, estimators, and schedulers on all design decisions and changes.

Our Team is committed to being good stewards of NAP's resources – your time, money, and reputation. We understand that being able to provide cost-effective study and design services is critical to helping the NAP meet their objectives for successful projects. Our cost control program includes continuous improvement and upgrade of systems. We understand budgets, and we develop them using current techniques, including value engineering and rigid quality control. We maintain set clear expectations at the beginning of the project, timely communication of the cost/schedule impacts of changes during the project, and the early identification of potential cost increases and alternatives to remain within the cost ceilings. We use highly qualified personnel on all assignments with realistic cost estimating expertise and make management of subcontractors a part of everyday accounting. Members of the JV Team have a reputation for projects completing within 3% of the budget, typically for an average of 3.6%.

C.2 Quality of Work

Our JV Team members have successfully managed hundreds of multi-site, multi-task contracts for the USACE worldwide in the past two decades. We have worked virtually for every District of the USACE in some capacity. The quality of our work is defined by how well our work met our clients' expectations. To ensure this, the Team brings a demonstrated quality management and program/project management approach to the contract and various activities. The JV Team has a Design Quality Management Plan for the entire team that details Project Planning, Internal Review, and Client Satisfaction. Each step is reviewed by the Project Managers and documented in the project files. Timely reviews by appropriate experts and audit of quality process is also part of the Design Quality Management Plan. Our team will employ the tenants of the CIVIL WORKS REVIEW POLICY in accordance with Engineer Regulation (ER) 1165-2-217 dated May 2021, as well as providing a comprehensive review strategy (DQC, ATR, IEPR, SAR, etc, in coordination with NAP as needed) for our deliverables, decisions, and implementation throughout the life of the project. The QMP, which will be led and consistently enforced by our team's Quality Manager, starts with defining everyone's roles in quality and responsibilities with detailed procedures. This along with an effective management approach, cost controls, commitment of our professional staff and ability to meet schedule and budget result in our work receiving Very Good and Exceptional CPARS ratings across the board.

From: Rightler, Kimberly CIV USARMY CENAN (USA)
Sent: Thursday, August 29, 2019
Subject: Green Brook Segment C1 Permit

"*Tom, Sherri and Taralyn,*
You three did an absolutely phenomenal job with what turned out to be an extremely challenging permit application and you should be recognized for that. Thank you for your professionalism, expertise and overall effort on this."

From: Willians, Jasmine S CIV USARMY CEMVN (USA)
Sent: Thursday, June 6, 2024
Subject: Environmental Infrastructure Program

"I have worked with MSMM for the last 8 years on several Environmental Infrastructure projects and the services provided were exceptional. Even with the complexity of some projects, MSMM successfully produced high quality products with heavy focus on maintaining schedule and budget. They maintain a high level of professionalism and ensure their customers are pleased with the services provided. I look forward to working with them on future endeavors."

From: Weppler, Peter M CIV USARMY CENAN (US)
Sent: Thursday, August 29, 2019

Subject: RE: Green Brook Segment C1 Permit

"*Concur with Kim's message.*
Kudos for the hard work and the thinking needed to get this accomplished."
Peter Weppler
Chief, Environmental Analysis Branch
U.S. Army Corps of Engineers - Planning

C.3 Compliance with Performance Schedule

Consistently meeting project schedules is a key factor to successfully deliver projects to our clients. Our team members have a history of meeting and exceeding performance schedules and deadlines for USACE and other federal projects. We have the capacity to reallocate our staff, as necessary, to meet tight deadlines. Our contract management team will use project scheduling software such as Primavera, MS Project, etc. to help manage project schedules. Our Team is experienced with completing task orders with compressed delivery schedules. Our Team's history of successful schedule compliance is a direct result of our attention to project planning and our depth of staff resources.

C.4 Stakeholder and Client Satisfaction

The JV Team takes pride in successfully delivering quality A-E services to the Federal Government. There are many metrics of quality work, but one of the most important to the members of the JV Team is our volume of repeat business. More than 80% of our work is repeat business from our existing federal customers. Our clients tell us they keep coming back due to the depth of seasoned and specialized expertise we provide, the significance of our project and program accomplishments, and our continual emphasis on exceeding customer expectations. We pursue long-term relationships with our clients, not just individual projects. An indicator of our success is the longevity of our firms. Since JV Team's inception we have been working to serve our Federal client's needs and repeatedly exceeding their expectations. Our CPARs/PPQs exemplify our ability to surpass expectations, and where ratings aren't enough to show satisfaction, we have presented a few quotes above.

(D) CAPACITY TO ACCOMPLISH THE WORK

Our JV Team augmented by AECOM's 48,000 personnel creates a large redundancy of key professionals in all required disciplines ensuring adequate capacity will exist to execute multiple task orders in different locations simultaneously. The Team has ample capabilities to surge additional resources when needed to ensure redundancy in multiple locations or meet any accelerated schedule requirements. Within the NAP boundaries our team has over 8,000 personnel available, of which given 80% average staff utilization there will be approximately over 1,600 personnel available at any given time to work on projects.

The Team offers NAP a highly capable and flexible team with the strength and resources to execute multiple task orders in multiple locations simultaneously. As shown below, the Team has the resources, capacity, and capabilities to fully execute multiple task orders under this contract. We have team capacity in all the required disciplines well in excess of the minimum requirements specified in the solicitation.

(E) KNOWLEDGE OF LOCATION:

The team has multiple key partners with offices located in the NAP, along with project experience throughout the District. AECOM, MSI, and UrbanTech all hold offices within the PA, NY, NJ, or MD regions, and can be quickly dispatched to the AOR if required by NAP. UrbanTech has accepted awards for their bridge design within the NAD, giving them exceptional familiarity with the region's requirements and challenges.

AECOM, with offices in __, PA, Conshocken, PA, Germantown, MD, and Clifton, NJ, has performed hundreds of projects within the NAP AOR. They have completed extensive H&H work on the NYDEP Delaware Basin Reservoir Dams and on the Delaware River Basin Comprehensive NY, NJ, PA, MD, DE, as well as the NJ Interim Feasibility Study for NAP. As a result, their staff is very familiar with the District's AOR, its geology, labor practices, and local/state regulatory environment.

(F) DOD CONTRACT VOLUME

Below is a table of DOD contract awards for JV members within the last 12 months.

Project Name	Agency	Task Order	Amount	Date
Project Management Support to USACE, MVN for the Mississippi River and Tributaries, BBA-18, Mississippi River Ship Channel, Sediment Diversions	USACE New Orleans	**W912P824F0046**	$ 2,269,188.20	Jan-24
Project Management and Quality Assurance Support for the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA)	USACE New Orleans	**W912P824F0040**	$ 411,746.65	Jan-24
River Road Aquatic Ecosystem Restoration- San Antonio	USACE Fort Worth	**W9126G24F0052**	$ 1,243,936.69	Jan-24
Project Management Support for the U.S. Army Corps of Engineers (USACE), New Orleans District (CEMVN) Ascension and Livingston Parish Environmental Infrastructure.	USACE New Orleans	**W912P823F0113**	$ 750,702.66	Aug-23

I. AUTHORIZED REPRESENTATIVE *The foregoing is a statement of facts.*	
31. SIGNATURE	**32. DATE** 8/8/2024
33. NAME AND TITLE Wei Wang, PhD, PE, Co-Chairman	

SF330, PART II

ARCHITECT-ENGINEER QUALIFICATIONS	1. SOLICITATION NUMBER (*If any*) W912BU24R0023

PART II – GENERAL QUALIFICATIONS
(If a firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM (*Or Branch Office*) NAME UrbanTech-MSMM Joint Venture LLC		3. YEAR ESTABLISHED 2024	4. UNIQUE ENTITY IDENTIFIER ZW1RL9N8GG46
2b. STREET 1236 Brace Road, Suite D		5. OWNERSHIP a. TYPE Joint Venture, LLC	
2c. CITY Cherry Hill	2d. STATE NJ	2e. ZIP CODE 08034	b. SMALL BUSINESS STATUS SB
6a. POINT OF CONTACT NAME AND TITLE Wei Wang, P.E., Co-Chairman			7. NAME OF FIRM (*If block 2a is a branch office*)
6b. TELEPHONE NUMBER (856) 777-8878	6c. EMAIL ADDRESS wwang@urbantechusa.com		

8a. FORMER NAME(S) (*If any*)	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number (*see below*)
	NOTE: The Joint Venture does not have employees, it is a legal entity. Locations listed for JV personnel in section E resumes are the individuals respective firm's office location.					
	Total					

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (*Insert revenue index number shown at right*)	
a. Federal Work	0
b. Non-Federal Work	0
c. Total Work	0

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE	b. DATE
	August 13, 2024

c. NAME AND TITLE
Wei Wang, P.E., Co-Chairman

ARCHITECT-ENGINEER QUALIFICATIONS

SOLICITATION NUMBER (*If any*) W912BU24R0023

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM (*Or Branch Office*) NAME UrbanTech Consulting Engineering PC	3. YEAR ESTABLISHED 2005
	4. UNIQUE ENTITY IDENTIFIER 20-3271675
2b. STREET 11 Broadway, Suite 1900	5. OWNERSHIP
2c. CITY New York	2d. STATE NY
2e. ZIP CODE 10004	a. TYPE Civil Engineering
6a. POINT OF CONTACT NAME AND TITLE Wei Wang, President	b. SMALL BUSINESS STATUS SBE
6b. TELEPHONE NUMBER 212-627-3366	6c. EMAIL ADDRESS wwang@urbantechusa.com
	7. NAME OF FIRM (*If block 2a is a branch office*)

8a. FORMER NAME(S) (*If any*)	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number (*see below*)
57	structural engineer	11		S09	2019 – 2023	6
Total		11				

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (*Insert revenue index number shown at right*)	
a. Federal Work	
b. Non-Federal Work	6
c. Total Work	6

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE

The foregoing is a statement of facts.

a. SIGNATURE	b. DATE
W L Wang	07/24/2024
c. NAME AND TITLE Wei Wang, President	

ARCHITECT-ENGINEER QUALIFICATIONS

SOLICITATION NUMBER (*If any*) W912PL24R0023

PART II – GENERAL QUALIFICATIONS

(If firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM (*Or Branch Office*) NAME UrbanTech Engineering LLC	3. YEAR ESTABLISHED 2014
	4. UNIQUE ENTITY IDENTIFIER 46-4675508
2b. STREET 1236 Brace Road, Unit D	5. OWNERSHIP
2c. CITY Cherry Hill	a. TYPE Civil Engineering
2d. STATE NJ	
2e. ZIP CODE 08034	b. SMALL BUSINESS STATUS SBE
6a. POINT OF CONTACT NAME AND TITLE Wei Wang, President	7. NAME OF FIRM (*If block 2a is a branch office*) UrbanTech Consulting Engineering PC
6b. TELEPHONE NUMBER 212-627-3366	
6c. EMAIL ADDRESS wwang@urbantechusa.com	

8a. FORMER NAME(S) (*If any*)	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
57	structural engineer	4	
	Total	4	

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number (*see below*)
S09	2019 - 2023	3

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	
b. Non-Federal Work	3
c. Total Work	3

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE W Wang	b. DATE 07/24/2024
c. NAME AND TITLE Wei Wang, President	

ARCHITECT-ENGINEER QUALIFICATIONS	1. SOLICITATION NUMBER (*If any*) W912BU-24-R-0023

PART II – GENERAL QUALIFICATIONS
(If a firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM (*Or Branch Office*) NAME MSMM Engineering, LLC		3. YEAR ESTABLISHED 2011	4. UNIQUE ENTITY IDENTIFIER NYLUL4Q5GYF6
2b. STREET 4640 South Carrollton Avenue, Suite 220		5. OWNERSHIP	
2c. CITY New Orleans	2d. STATE LA	2e. ZIP CODE 70119	a. TYPE Limited Liability Corporation
6a. POINT OF CONTACT NAME AND TITLE Manish Mardia, P.E., President/Owner			b. SMALL BUSINESS STATUS SDB
6b. TELEPHONE NUMBER 504-559-1897	6c. EMAIL ADDRESS mmardia@msmmeng.com		7. NAME OF FIRM (*If block 2a is a branch office*)

8. FORMER NAME(S) (*If any*)	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE				10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS		
a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH	a. Profile Code	b. Experience	c. Revenue Index Number (*see below*)
02	Administrative	4	3	C07	Coastal Engineering	2
05	Architect	1	1	C13	Computer Facilities;Computer Service	2
08	CADD Technician	5	2	C15	Construction Management	4
12	Civil Engineer	5	3	D01	Dams (Concrete; Arch)	1
15	Inspector	3	3	D02	Dams; Dikes; Levees	5
18	Cost Engineer /Estimator	1	1	E03	Electrical Studies and Design	1
21	Electrical Engineer	1	1	L06	Lighting (Exteriors; Streets; Memorials Athletic Fields)	1
23	Environmental Engineer	1	1	P06	Planning (Site, Installation, and Project)	6
32	Hydraulic Engineer	2	1	R11	Rivers; Canals: Waterways; Flood Control	5
39	Landscape Architect	1	1	S09	Structural Design; Special Structures	5
48	Project Manager	7	6	S13	Storm Water Handling & Facilities	5
57	Structural Engineer	2	2	W02	Water Resources; Hydrology Ground Water	3
				W03	Water Supply; Treatment and Distribution	3
	Total	33	25			

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS (*Insert revenue index number shown at right*)	
a. Federal Work	7
b. Non-Federal Work	5
c. Total Work	7

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE	b. DATE
	July 30, 2024

c. NAME AND TITLE
Manish Mardia, P.E., President/Owner

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*
W912BU-24-R-0023

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME	3. YR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER
AECOM Technical Services, Inc.	1970	003184462 (ATS HQ DUNS) EPUXNLX5EYC4 (Unique Entity Number)

2b. STREET		
1635 Market Street, Suite 1000		
2c. CITY	**2d. STATE**	**2e. ZIP CODE**
Philadelphia	PA	19103

6a. POINT OF CONTACT NAME AND TITLE	
Christopher Wright, PE, Associate Vice President Project Management	
6b. TELEPHONE NUMBER	**6c. E-MAIL ADDRESS**
215.735.0832	christopher.wright@aecom.com

5. OWNERSHIP

a. TYPE: Corporation

b. SMALL BUSINESS STATUS: Large

7. NAME OF FIRM *(If block 2a is a branch office)*: AECOM Technical Services, Inc.

8a. FORMER FIRM NAME(S) *(If any)*	8b YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
No firm name changes during the last six years		

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM GLOBAL #s	c. No. of Employees (2) BRANCH OFFICE #s
02	Administrative	1,310	1
06	Architect	1,420	9
08	CADD Technician	2,236	7
12	Civil Engineer	7,256	53
13	Communications Engineer	13	1
15	Construction Inspector	977	3
16	Construction Manager	991	1
18	Cost Engineer/Estimator	947	1
21	Electrical Engineer	1,864	13
23	Environmental Engineer	1,124	1
30	Geologist	975	2
38	Land Surveyor	162	1
39	Landscape Architect	545	1
42	Mechanical Engineer	1,626	3
47	Planner: Urban/Regional	783	12
48	Project Manager [subset of other disciplines]	[7,539]	[33]
57	Structural Engineer	2,206	43
58	Technician/Analyst	2,457	8
60	Transportation Engineer	1,203	17
62	Water Resources Engineer	523	6
	Other technical staff	20,986	34
	Total	**49,604**	**217**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A05/A06	Airports; Terminals and Hangars; Lighting; Fueling	10
C15	Construction Management	10
C18	Cost Estimating; Cost Eng. & Analysis	6
D01/D02	Dams (Earth; Rock); Dikes; Levees	10
D04	Design-Build – Preparation of RFPs	8
E02	Educational Facilities; Classrooms	10
E07	Energy Conservation; New Energy Sources	9
E09	Env. Impact Studies, Assessments or Statements	10
E12	Environmental Remediation	10
G01	Garages; Vehicle Maint. Facilities; Parking Decks	6
G04	GIS: Development, Analysis, & Data Conversion	8
H01	Harbors; Jetties; Piers; Ship Terminal Facilities	7
H07	Highways; Streets; Airfield Paving; Parking Lots	10
H09	Hospital; Medical Facilities	9
M05	Military Design Standards	7
O01	Office Buildings; Industrial Parks	9
P05/P06	Planning (Community, etc.; Site, Installation & Project)	10
P12	Power Generator; Transmission	10
R06	Rehabilitation (Buildings; Structures; Facilities)	8
S04	Sewage Collection, Treatment and Disposal	10
S05	Soils & Geologic Studies; Foundations	7
S09	Structural Design; Special Structures	7
S10	Surveying; Platting; Mapping; Flood Plain Studies	7
S13	Storm Water Handling & Facilities	7
T03	Traffic &Transportation Engineering	10
W02/W03	Water Resources; Water Supply Treatment/Distribution	10

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	10
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 01 August 2024

c. NAME AND TITLE
Mark Handley, PE, Senior Vice President, National Governments

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*
W912BU-24-R-0023

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME	3. YR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER
AECOM Technical Services, Inc.	1970	003184462 (ATS HQ DUNS) EPUXNLX5EYC4 (Unique Entity Number)

2b. STREET		
625 West Ridge Pike, Suite E-100		
2c. CITY	**2d. STATE**	**2e. ZIP CODE**
Conshohocken	PA	19428
6a. POINT OF CONTACT NAME AND TITLE		
Barry Baker, Associate Vice President Business Line Leadership		
6b. TELEPHONE NUMBER	**6c. E-MAIL ADDRESS**	
610.832.3500	barry.baker@aecom.com	

5. OWNERSHIP

a. TYPE: Corporation

b. SMALL BUSINESS STATUS: Large

7. NAME OF FIRM *(If block 2a is a branch office)*: AECOM Technical Services, Inc.

8a. FORMER FIRM NAME(S) *(If any)*	8b YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
No firm name changes during the last six years		

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM GLOBAL #s	c. No. of Employees (2) BRANCH OFFICE #s
05	Archaeologist	293	4
06	Architect	1,420	1
08	CADD Technician	2,236	10
10	Chemical Engineer	187	2
12	Civil Engineer	7,256	56
15	Construction Inspector	977	2
19	Ecologist	358	9
21	Electrical Engineer	1,864	3
23	Environmental Engineer	1,124	11
24	Environmental Scientist	1,898	25
27	Foundation/Geotechnical Engineer	757	13
29	GIS Specialist	489	7
30	Geologist	975	23
42	Mechanical Engineer	1,626	2
47	Planner: Urban/Regional	783	1
48	Project Manager [subset of other disciplines]	[7,539]	[76]
57	Structural Engineer	2,206	41
58	Technician/Analyst	2,457	8
60	Transportation Engineer	1,203	13
62	Water Resources Engineer	523	6
	Other technical staff	20,972	40
	Total	**49,604**	**277**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A05/A06	Airports; Terminals and Hangars; Lighting; Fueling	10
C15	Construction Management	10
C18	Cost Estimating; Cost Eng. & Analysis	6
D01/D02	Dams (Earth; Rock); Dikes; Levees	10
D04	Design-Build – Preparation of RFPs	8
E02	Educational Facilities; Classrooms	10
E07	Energy Conservation; New Energy Sources	9
E09	Env. Impact Studies, Assessments or Statements	10
E12	Environmental Remediation	10
G01	Garages; Vehicle Maint. Facilities; Parking Decks	6
G04	GIS: Development, Analysis, & Data Conversion	8
H01	Harbors; Jetties; Piers; Ship Terminal Facilities	7
H07	Highways; Streets; Airfield Paving; Parking Lots	10
H09	Hospital; Medical Facilities	9
M05	Military Design Standards	7
O01	Office Buildings; Industrial Parks	9
P05/P06	Planning (Community, etc.; Site, Installation & Project)	10
P12	Power Generator; Transmission	10
R06	Rehabilitation (Buildings; Structures; Facilities)	8
S04	Sewage Collection, Treatment and Disposal	10
S05	Soils & Geologic Studies; Foundations	7
S09	Structural Design; Special Structures	7
S10	Surveying; Platting; Mapping; Flood Plain Studies	7
S13	Storm Water Handling & Facilities	7
T03	Traffic &Transportation Engineering	10
W02/W03	Water Resources; Water Supply Treatment/Distribution	10

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	10
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 01 August 2024

c. NAME AND TITLE
Mark Handley, PE, Senior Vice President, National Governments

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*
W912BU-24-R-0023

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME	3. YR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER
AECOM Technical Services, Inc.	1970	003184462 (ATS HQ DUNS) EPUXNLX5EYC4 (Unique Entity Number)

2b. STREET		
1255 Broad Street, Suite 201		
2c. CITY	**2d. STATE**	**2e. ZIP CODE**
Clifton	NJ	07013-3398

6a. POINT OF CONTACT NAME AND TITLE	
George Leahy, PE, Vice President Business Line Leadership	
6b. TELEPHONE NUMBER	**6c. E-MAIL ADDRESS**
973.883.8500	george.leahy@aecom.com

5. OWNERSHIP

a. TYPE: Corporation

b. SMALL BUSINESS STATUS: Large

7. NAME OF FIRM *(If block 2a is a branch office)*
AECOM Technical Services, Inc.

8a. FORMER FIRM NAME(S) *(If any)*	8b YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
No firm name changes during the last six years		

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM GLOBAL #s	c. No. of Employees (2) BRANCH OFFICE #s
06	Architect	1,310	13
07	Biologist	225	2
08	CADD Technician	2,236	8
10	Chemical Engineer	187	3
12	Civil Engineer	7,256	19
19	Ecologist	358	5
21	Electrical Engineer	1,864	9
23	Environmental Engineer	1,124	7
24	Environmental Scientist	1,898	7
25	Fire Protection Engineer	92	3
27	Foundation/Geotechnical Engineer	757	6
29	GIS Specialist	489	1
30	Geologist	975	12
42	Mechanical Engineer	1,626	9
47	Planner: Urban/Regional	783	3
48	Project Manager [subset of other disciplines]	[7,539]	[35]
57	Structural Engineer	2,206	12
58	Technician/Analyst	2,457	2
60	Transportation Engineer	1,203	1
62	Water Resources Engineer	523	6
	Other technical staff	22,035	29
	Total	**49,604**	**157**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A05/A06	Airports; Terminals and Hangars; Lighting; Fueling	10
C15	Construction Management	10
C18	Cost Estimating; Cost Eng. & Analysis	6
D01/D02	Dams (Earth; Rock); Dikes; Levees	10
D04	Design-Build – Preparation of RFPs	8
E02	Educational Facilities; Classrooms	10
E07	Energy Conservation; New Energy Sources	9
E09	Env. Impact Studies, Assessments or Statements	10
E12	Environmental Remediation	10
G01	Garages; Vehicle Maint. Facilities; Parking Decks	6
G04	GIS: Development, Analysis, & Data Conversion	8
H01	Harbors; Jetties; Piers; Ship Terminal Facilities	7
H07	Highways; Streets; Airfield Paving; Parking Lots	10
H09	Hospital; Medical Facilities	9
M05	Military Design Standards	7
O01	Office Buildings; Industrial Parks	9
P05/P06	Planning (Community, etc.; Site, Installation & Project)	10
P12	Power Generator; Transmission	10
R06	Rehabilitation (Buildings; Structures; Facilities)	8
S04	Sewage Collection, Treatment and Disposal	10
S05	Soils & Geologic Studies; Foundations	7
S09	Structural Design; Special Structures	7
S10	Surveying; Platting; Mapping; Flood Plain Studies	7
S13	Storm Water Handling & Facilities	7
T03	Traffic &Transportation Engineering	10
W02/W03	Water Resources; Water Supply Treatment/Distribution	10

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	10
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 01 August 2024

c. NAME AND TITLE
Mark Handley, PE, Senior Vice President, National Governments

ARCHITECT – ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER *(If any)*
W912BU-24-R-0023

PART II - GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work.)

2a. FIRM (OR BRANCH OFFICE) NAME	3. YR ESTABLISHED	4. UNIQUE ENTITY IDENTIFIER
AECOM Technical Services, Inc.	1970	003184462 (ATS HQ DUNS) EPUXNLX5EYC4 (Unique Entity Number)

2b. STREET		
12420 Milestone Center Drive, Suite 150		
2c. CITY	**2d. STATE**	**2e. ZIP CODE**
Germantown	MD	20876

6a. POINT OF CONTACT NAME AND TITLE	
John Bowers, PE, Vice President Program Management	
6b. TELEPHONE NUMBER	**6c. E-MAIL ADDRESS**
301.820.3000	john.bowers@aecom.com

5. OWNERSHIP

a. TYPE: Corporation

b. SMALL BUSINESS STATUS: Large

7. NAME OF FIRM *(If block 2a is a branch office)*: AECOM Technical Services, Inc.

8a. FORMER FIRM NAME(S) *(If any)*	8b YR. ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER
No firm name changes during the last six years		

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM GLOBAL #s	c. No. of Employees (2) BRANCH OFFICE #s
05	Archaeologist	293	7
07	Biologist	225	2
08	CADD Technician	2,236	1
10	Chemical Engineer	187	1
11	Chemist	99	1
12	Civil Engineer	7,256	30
14	Computer Programmer	100	8
17	Corrosion Engineer	4	1
21	Electrical Engineer	1,864	1
23	Environmental Engineer	1,124	8
24	Environmental Scientist	1,898	25
27	Foundation/Geotechnical Engineer	757	14
29	GIS Specialist	489	15
30	Geologist	975	25
32	Hydraulic Engineer	33	1
47	Planner: Urban/Regional	783	12
48	Project Manager [subset of other disciplines]	[7,539]	[72]
57	Structural Engineer	2,206	2
58	Technician/Analyst	2,457	7
62	Water Resources Engineer	523	31
	Other technical staff	26,095	65
	Total	**49,604**	**257**

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
A05/A06	Airports; Terminals and Hangars; Lighting; Fueling	10
C15	Construction Management	10
C18	Cost Estimating; Cost Eng. & Analysis	6
D01/D02	Dams (Earth; Rock); Dikes; Levees	10
D04	Design-Build – Preparation of RFPs	8
E02	Educational Facilities; Classrooms	10
E07	Energy Conservation; New Energy Sources	9
E09	Env. Impact Studies, Assessments or Statements	10
E12	Environmental Remediation	10
G01	Garages; Vehicle Maint. Facilities; Parking Decks	6
G04	GIS: Development, Analysis, & Data Conversion	8
H01	Harbors; Jetties; Piers; Ship Terminal Facilities	7
H07	Highways; Streets; Airfield Paving; Parking Lots	10
H09	Hospital; Medical Facilities	9
M05	Military Design Standards	7
O01	Office Buildings; Industrial Parks	9
P05/P06	Planning (Community, etc.; Site, Installation & Project)	10
P12	Power Generator; Transmission	10
R06	Rehabilitation (Buildings; Structures; Facilities)	8
S04	Sewage Collection, Treatment and Disposal	10
S05	Soils & Geologic Studies; Foundations	7
S09	Structural Design; Special Structures	7
S10	Surveying; Platting; Mapping; Flood Plain Studies	7
S13	Storm Water Handling & Facilities	7
T03	Traffic &Transportation Engineering	10
W02/W03	Water Resources; Water Supply Treatment/Distribution	10

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	10
b. Non-Federal Work	10
c. Total Work	10

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE

b. DATE: 01 August 2024

c. NAME AND TITLE
Mark Handley, PE, Senior Vice President, National Governments

ARCHITECT-ENGINEER QUALIFICATIONS

1. SOLICITATION NUMBER (*If any*)
W912BU24R0023

PART II – GENERAL QUALIFICATIONS

(If a firm has branch offices, complete for each specific branch office seeking work)

2a. FIRM (*Or Branch Office*) NAME Marine Solutions Inc.	3. YEAR ESTABLISHED 2006
	4. UNIQUE ENTITY IDENTIFIER N19BUBDKMCT4
2b. STREET 550 Broad St., Suite 1408	5. OWNERSHIP
2c. CITY Newark	2d. STATE NJ
2e. ZIP CODE 07102	a. TYPE WBE
6a. POINT OF CONTACT NAME AND TITLE Jeremy Pope, Vice President	b. SMALL BUSINESS STATUS X
6b. TELEPHONE NUMBER 908-319-9498	6c. EMAIL ADDRESS Jpope@msimarinesolutions.com
	7. NAME OF FIRM *(If block 2a is a branch office)*

8a. FORMER NAME(S) *(If any)*	8b. YEAR ESTABLISHED	8c. UNIQUE ENTITY IDENTIFIER

9. EMPLOYEES BY DISCIPLINE

a. Function Code	b. Discipline	c. No. of Employees (1) FIRM	c. No. of Employees (2) BRANCH
08	CADD Technician	4	0
12	Civil Engineer	1	0
48	Project Manager	6	0
50	Risk Assessor	2	0
57	Structural Engineer	37	10
58	Technician/Analyst	43	1
	Total	106	12

10. PROFILE OF FIRM'S EXPERIENCE AND ANNUAL AVERAGE REVENUE FOR LAST 5 YEARS

a. Profile Code	b. Experience	c. Revenue Index Number *(see below)*
B02	Bridges	1
D01	Dams (Concrete, Arch)	1
D02	Dams (Earth, Rock) Dikes, Levees	1
H01	Harbors, Jetties, Piers, Ship Terminal	3
H13	Hydrographic Surveying	1
R03	Railroad and Rapid Transit	1
R04	Recreational Facilities (Parks, Marinas, etc.)	1
R11	Rivers, Canals, Waterways, Floor Control	1
U03	Utilities (Gas & Stream)	1
W03	Water Supply, Treatment and Distribution	1

11. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS
(Insert revenue index number shown at right)

a. Federal Work	0
b. Non-Federal Work	4
c. Total Work	4

PROFESSIONAL SERVICES REVENUE INDEX NUMBER

1. Less than $100,000
2. $100,000 to less than $250,000
3. $250,000 to less than $500,000
4. $500,000 to less than $1 million
5. $1 million to less than $2 million
6. $2 million to less than $5 million
7. $5 million to less than $10 million
8. $10 million to less than $25 million
9. $25 million to less than $50 million
10. $50 million or greater

12. AUTHORIZED REPRESENTATIVE
The foregoing is a statement of facts.

a. SIGNATURE	b. DATE
	July 24, 2024

c. NAME AND TITLE
Jeremy Pope, Vice President

Appendices

- Certifications
- CPARS/PPQ's
- JV Agreement
- Letters of Commitment

THE UNIVERSITY OF THE STATE OF NEW YORK
EDUCATION DEPARTMENT

THIS IS TO CERTIFY THAT HAVING MET THE REQUIREMENTS OF SECTION 7210 OF THE EDUCATION LAW AND IN ACCORDANCE THEREWITH THIS CERTIFICATE OF AUTHORIZATION IS GRANTED WHICH ENTITLES

URBANTECH CONSULTING ENGINEERING PC
11 BROADWAY
SUITE 410
NEW YORK, NY 10004-0000

TO PROVIDE PROFESSIONAL ENGINEERING SERVICES IN THE STATE OF NEW YORK FOR THE PERIOD 04/01/2023 TO 03/31/2026.

BETTY ROSA
COMMISSIONER OF EDUCATION

CERTIFICATE NUMBER
0020287

THIS DOCUMENT IS PRINTED ON WATERMARKED PAPER, WITH A MULTI-COLORED BACKGROUND AND MULTIPLE SECURITY FEATURES. PLEASE VERIFY AUTHENTICITY.

State Of New Jersey
New Jersey Office of the Attorney General
Division of Consumer Affairs

THIS IS TO CERTIFY THAT THE

Board of Prof. Engineers & Land Surveyors

HAS LICENSED

URBANTECH ENGINEERING, LLC
WEI WANG
1236 Brace Road
Unit D
Cherry Hill NJ 08034

FOR PRACTICE IN NEW JERSEY AS A(N): Certificate of Authorization

Engineering

08/12/2022 TO 08/31/2024
VALID

24GA28235600
LICENSE/REGISTRATION/CERTIFICATION #

Signature of Licensee/Registrant/Certificate Holder

CariAis
ACTING DIRECTOR

The Louisiana State Board of Registration for Professional Engineers and Land Surveyors

Hereby Certifies that

Manish Mardia

has qualified before this Board in accordance with law and his name has been inscribed upon the list of registered Professional Engineers. He is thereby entitled to practice in the State of Louisiana the profession of

Environmental Engineering

contingent upon payment of the annual license fee provided by law.

Baton Rouge, La. July 13, 1999

Chairman

Secretary

Registration No. 28482

Louisiana Professional Engineering and Land Surveying Board

Hereby Certifies that

MSMM Engineering, Inc.

has complied with the regulation of this Board and is authorized to provide or to offer to provide engineering services in the State of Louisiana contingent upon payment of the annual renewal fee.

Baton Rouge, Louisiana · 08/15/2011

Ali Mustapha
Chairman

Secretary

License Number 4896

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CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

Architect-Engineer

Name/Address of Contractor:

Vendor Name: URS GROUP, INC.

Division Name:

Street: 8181 E TUFTS AVE STE A-1100

City: DENVER

State: CO Zip: 802372579

Country: USA

CAGE Code:

Unique Entity ID: P4M1U7WAPLW7

Product/Service Code: C219 Principal NAICS Code: 541330

Evaluation Type: Interim

Contract Percent Complete:

Period of Performance Being Assessed: 04/18/2022 - 04/17/2023

Contract Number: W9123715D0002 W9123719F0205 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: US ARMY ENGINEER DISTRICT HUNTINGTO **Contracting Officer:** KRISTIN BLAKE **Phone Number:** 304-399-5693

Location of Work:

Date Signed: 04/19/2019 **Period of Performance Start Date:** 04/19/2019

Est. Ultimate Completion Date/Last Date to Order: 09/30/2023 **Estimated/Actual Completion Date:**

Funding Office ID: 966501

Base and All Options Value : $2,153,164 **Action Obligation:** $2,153,164

Complexity: Medium **Termination Type:** None

Extent Competed: Full and Open Competition **Type of Contract:** Firm Fixed Price

Key Subcontractors and Effort Performed:

Unique Entity ID:

Effort:

Unique Entity ID:

Effort:

Unique Entity ID:

Effort:

Project Number:

Project Title:

Town of Martin Phase 2 Design

Contract Effort Description:

A 100% Design Documentation Report was prepared by the A/E and is based on a 50% DDR that was furnished to the A/E by the Government. The A/E modified the 50% DDR designs as required based on new data or requirements, the Value Engineering (VE) study, and according to sound engineering practice and.

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The A/E prepared plans and technical specifications for the project features based on the 100% DDR.
This current phase (Phase 2 Redevelopment Site) of the flood risk management at the Town of Martin consists of the following:
Placement of fill from the aforementioned Mayo Hollow site to a specified elevation (removed from flood risk) in the area situated between KY-1428 and base of the mountain forming the valley wall of Beaver Creek at the Town of Martin.
Adjustment/rearrangement/alteration of existing KY-1428 and the existing Ice Plant Hollow Road to accommodate and serve the Phase II site and the residents of Ice Plant Hollow and to maintain traffic through the area.
Phasing construction to minimize impacts to the Low Income Housing Facility, which will be relocated to the Phase 1 site though a separate design-build contract.
Construction and/or adjustment of certain utilities necessary to accommodate the project and provide for future services at the Phase 2 Redevelopment Site.
Final grading and reclamation of the Mayo Hollow borrow site.
Additional tasks associated with this effort shall be required to facilitate the regulatory agency review process, National Environmental Policy Act (NEPA) documentation, and to assist in preparedness for construction. AE is working on design modifications related to this effort.

Small Business Subcontracting:

Does this contract include a subcontracting plan? Yes

Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): 03/31/2022

Evaluation Areas	Past Rating	Rating
Quality:	Very Good	Satisfactory
Schedule:	Very Good	Very Good
Cost Control:	Very Good	N/A
Management:	Very Good	Very Good
Small Business Subcontracting:	Very Good	Very Good
Regulatory Compliance:	Very Good	Very Good
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: The contractor provided satisfactory quality products for modification 0009. Some rework was needed however the contractor responded promptly to correct.

SCHEDULE: The contractor's schedule for modification 0009 met our expedited timeline.

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COST CONTROL: Not required for Fixed Price type contracts/orders

MANAGEMENT: The contractor's management of modification 0009 exceeded our expectations. The contractor has been on top of scope and schedule.

SMALL BUSINESS SUBCONTRACTING: No change since last reporting period.

They have not used subcontractors for the referenced task order to date. Overall, they are exceeding the Small Business Goal.

REGULATORY COMPLIANCE: Contractor meets contract, codes, and regulation requirements.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: KRISTINA GOFF

Title: Civil Engineer

Organization: USACE

Phone Number: 304-399-5831 Email Address: kristina.l.goff@usace.army.mil

Date: 08/29/2023

Contractor Comments:

ADDITIONAL/OTHER: AECOM would like to thank the USACE Huntington District for the opportunity to participate in this project. We appreciate the positive feedback on our performance and look forward to a continued working relationship.

CONCURRENCE: I concur with this evaluation.

Name and Title of Contractor Representative:

Name: David Sawitzki, PE

Title: Project Manager

Phone Number: 502-643-5759 Email Address: david.sawitzki@aecom.com

Date: 09/12/2023

Review by Reviewing Official:

Review by Reviewing Official not required.

Name and Title of Reviewing Official:

Name:

Title:

Organization:

Phone Number: Email Address:

Date:

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CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

Architect-Engineer

Name/Address of Contractor:

Vendor Name: URS GROUP, INC.

Division Name:

Street: 8181 E TUFTS AVE STE A-1100

City: DENVER

State: CO Zip: 802372579

Country: USA

CAGE Code:

Unique Entity ID (SAM): P4M1U7WAPLW7

Product/Service Code: C219 Principal NAICS Code: 541330

Evaluation Type: Interim

Contract Percent Complete:

Period of Performance Being Assessed: 01/23/2022 - 01/22/2023

Contract Number: W9123715D0002 W9123720F0073 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: US ARMY ENGINEER DISTRICT HUNTINGTO **Contracting Officer:** KRISTIN BLAKE **Phone Number:** 304-399-5693

Location of Work:

Date Signed: 01/24/2020 **Period of Performance Start Date:** 01/24/2020

Est. Ultimate Completion Date/Last Date to Order: 12/31/2023 **Estimated/Actual Completion Date:**

Funding Office ID: 966501

Base and All Options Value : $1,226,897 **Action Obligation:** $1,226,897

Complexity: Medium **Termination Type:** None

Extent Competed: Full and Open Competition **Type of Contract:** Firm Fixed Price

Key Subcontractors and Effort Performed:

Unique Entity ID (SAM):

Effort:

Unique Entity ID (SAM):

Effort:

Unique Entity ID (SAM):

Effort:

Project Number:

Project Title:

Town of Martin Phase II Redevelopment Site Engineering During Construction

Contract Effort Description:

The subject work for this project is for the A-E to provide engineering during construction services for the duration of the Phase II construction contract. This includes monitoring/reapplying for permits, attending the pre-bid meeting, answering bidder questions, preparing any amendment packages, attending the pre-construction conference, reviewing the contractor schedules, attending

partnering meetings, responding to requests for information and submittals, performing construction site visits, keeping an updated set of as-builts, reviewing contractor as-builts, providing final CAD record drawings, reviewing and preparing a final O&M manual and updating the final DDR.

Small Business Subcontracting:

Does this contract include a subcontracting plan? Yes

Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): 09/30/2022

Evaluation Areas	Past Rating	Rating
Quality:	Very Good	Very Good
Schedule:	Very Good	Very Good
Cost Control:	Very Good	Very Good
Management:	Very Good	Very Good
Small Business Subcontracting:	Satisfactory	Satisfactory
Regulatory Compliance:	Very Good	Very Good
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: The contractor provides quality guidance to design concerns during the construction contract.

SCHEDULE: The Contractor performed well responding to Request for Information (RFIs) and Submittals. The contractor conducts monthly site visits as scheduled.

COST CONTROL: No task order cost growth to report.

MANAGEMENT: The Contractor's Project Manager does a very good job managing the scope of the engineering during construction contract. They are familiar with the project design and requirements of the scope.

SMALL BUSINESS SUBCONTRACTING: No subcontracting dollars have been expended on this Task Order. They are self-performing and no subcontracting opportunities have been presented so far.

REGULATORY COMPLIANCE: Contractor ensures construction components are meeting state codes and industry standards. Contractor tracks the project permits and ensures they are up to date.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

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Name and Title of Assessing Official:

Name: KRISTINA GOFF

Title: Civil Engineer

Organization: USACE

Phone Number: 304-399-5831 Email Address: kristina.l.goff@usace.army.mil

Date: 03/29/2023

Contractor Comments:

ADDITIONAL/OTHER: AECOM would like to thank the USACE Huntington District for the opportunity to participate in this project. We are pleased to support this multi-year construction project with diligent attention to construction issues and questions when they arise. Consistently responding to RFIs and submittal reviews well before the required due dates and providing a SharePoint site for USACE to review site aerial progress videos, progress reports, and site photos are just some of the added value provided by our team to the process of documenting the contractor's activities on a monthly basis. We enjoy working with the USACE project construction team and look forward to the completion of this project for the residents of Martin, KY.

CONCURRENCE: I concur with this evaluation.

Name and Title of Contractor Representative:

Name: David Sawitzki, PE

Title: Project Manager

Phone Number: 502.643.5759 Email Address: david.sawitzki@aecom.com

Date: 03/29/2023

Review by Reviewing Official:

Review by Reviewing Official not required.

Name and Title of Reviewing Official:

Name: CHRISTOPHER QUARANTA

Title: Chief, A-E Design Management Section

Organization: ECD-A

Phone Number: 304-399-5111 Email Address: christopher.m.quaranta@usace.army.mil

Date: 04/01/2023

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CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

Architect-Engineer

Name/Address of Contractor:

Company Name: URS GROUP, INC.
Division Name:
Street Address: 8181 E TUFTS AVE STE A-1100
City: DENVER
State/Province: CO Zip Code: 802372579
Country: USA
CAGE Code:
DUNS Number: 052819013
PSC: C219 NAICS Code: 541330

Evaluation Type: Final
Contract Percent Complete:
Period of Performance Being Assessed: 02/27/2019 - 05/31/2019
Contract Number: W9123715D0002 W9123719F0133 **Business Sector & Sub-Sector:** Architect-Engineer
Contracting Office: US ARMY ENGINEER DISTRICT HUNTINGTO **Contracting Officer:** BRANDON LEWIS **Phone Number:** 304-399-5664
Location of Work:
Huntington District Office for workshop 4-7 MAR 2019, but otherwise at contractor's office.
Award Date: 02/27/2019 **Effective Date:** 02/27/2019
Completion Date: 05/31/2019 **Estimated/Actual Completion Date:** 05/30/2019
Total Dollar Value: $92,412 **Current Contract Dollar Value:** $92,412
Complexity: Medium **Termination Type:** None
Competition Type: Full and Open Competition **Contract Type:** Firm Fixed Price
Key Subcontractors and Effort Performed:
DUNS:
Effort:
DUNS:
Effort:
DUNS:
Effort:
Project Number:
Project Title:
Town of Martin, KY
Contract Effort Description:
VE Study
Small Business Subcontracting:
Does this contract include a subcontracting plan? No
Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A

Evaluation Areas	Past Rating	Rating
Quality:	N/A	Exceptional
Schedule:	N/A	Exceptional
Cost Control:	N/A	Exceptional
Management:	N/A	Exceptional
Small Business Subcontracting:	N/A	N/A
Regulatory Compliance:	N/A	N/A
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

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Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: The VE workshop itself and resulting deliverables (VE study report and fact sheet) were completed with no issues at the highest level by completing the highest standard of QC and QA.

SCHEDULE: All activities were completed according to schedule based on receipt of government-furnished materials. Execution of the task order resulted in maintenance of overall project schedule as well.

COST CONTROL: There were no issues with cost; the task order was executed within the scope, schedule, and budget of the task order.

MANAGEMENT: Management of the task order was exceptional. The task order manager was involved in all aspects of the execution of the work, from beginning to end. He was also very responsive in managing potential risks to schedule and payment.

ADDITIONAL/OTHER: This was an exceptional effort by the contractor for this project and task order. The project manager, technical team, and VE team leader completed this effort with the highest level of professionalism and expertise. I would highly recommend use of this contractor and specifically this team for another VE study for USACE and Huntington District.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: KRISTINA GOFF

Title: Civil Engineer

Organization: USACE

Phone Number: 304-399-5831 Email Address: kristina.l.goff@usace.army.mil

Date: 09/10/2019

Contractor Comments:

ADDITIONAL/OTHER: URS (now an AECOM company) would like to thank the USACE Huntington District for the opportunity to participate in this project. We appreciate the exceptional ratings and positive feedback on our performance. This Task Order called for us to provide specific discipline experts for a Value Engineering Study that was predominantly Civil/Geotechnical in nature. We are pleased the Huntington District found the team of AECOM experts were "high quality," as that is our goal in supporting the District's mission. We look forward to continuing our working relationship.

CONCURRENCE: I concur with this evaluation.

Name and Title of Contractor Representative:

Name: David Sawitzki

Title: Task Order Manager

Phone Number: 502-643-5759 Email Address: david.sawitzki@aecom.com

Date: 09/10/2019

Review by Reviewing Official:

Concur

Name and Title of Reviewing Official:

Name: WREN WILSON

Title: Assistant Chief Engineering and Cons

Organization: Huntington District

Phone Number: 304-399-5282 Email Address: wren.wilson@usace.army.mil

Date: 09/11/2019

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CONTRACTOR PERFORMANCE ASSESSMENT REPORT (CPAR)

Architect-Engineer

Name/Address of Contractor:

Vendor Name: MSMM ENGINEERING, LLC

Division Name:

Street: 4640 S CARROLLTON AVE SUITE 210-12

City: NEW ORLEANS

State: LA Zip: 701196051

Country: USA

CAGE Code:

Unique Entity ID: NYLUL4Q5GYF6

Product/Service Code: C214 Principal NAICS Code: 541330

Evaluation Type: Final

Contract Percent Complete: 100

Period of Performance Being Assessed: 08/10/2021 - 08/09/2022

Contract Number: W912P819D0011 W912P821F0146 **Business Sector & Sub-Sector:** Architect-Engineer

Contracting Office: W07V ENDIST N ORLEANS **Contracting Officer:** GARNER **Phone Number:** 504-862-1515

Location of Work:

Date Signed: 08/10/2021 **Period of Performance Start Date:** 08/10/2021

Est. Ultimate Completion Date/Last Date to Order: 08/09/2022 **Estimated/Actual Completion Date:** 08/09/2022

Funding Office ID: 966501

Base and All Options Value : $515,868 **Action Obligation:** $515,868

Complexity: Medium **Termination Type:** None

Extent Competed: Full and Open Competition after Exclusion of Sources **Type of Contract:** Firm Fixed Price

Key Subcontractors and Effort Performed:

Unique Entity ID:

Effort:

Unique Entity ID:

Effort:

Unique Entity ID:

Effort:

Project Number:

Project Title:

Ascension Parish EI

Contract Effort Description:

Provide assistance to Ascension Parish infrastructure program.

Small Business Subcontracting:

Does this contract include a subcontracting plan? No

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Date of last Individual Subcontracting Report (ISR) / Summary Subcontracting Report (SSR): N/A

Evaluation Areas	Past Rating	Rating
Quality:	N/A	Exceptional
Schedule:	N/A	Very Good
Cost Control:	N/A	Very Good
Management:	N/A	N/A
Small Business Subcontracting:	N/A	N/A
Regulatory Compliance:	N/A	N/A
Other Areas:		
(1) :		N/A
(2) :		N/A
(3) :		N/A

Variance (Contract to Date):

Current Cost Variance (%): Variance at Completion (%):

Current Schedule Variance (%):

Assessing Official Comments:

QUALITY: The quality this contractor exhibits is always top notch.

SCHEDULE: The schedule was always maintained on this Task order. This was not an easy task.

COST CONTROL: Cost remained right on budget,

ADDITIONAL/OTHER: I would not hesitate to recommend this contractor to others.

RECOMMENDATION:

Given what I know today about the contractor's ability to perform in accordance with this contract or order's most significant requirements, I would recommend them for similar requirements in the future.

Name and Title of Assessing Official:

Name: Veronica F. Garner-Flint

Title:

Organization: USACE New Orleans District

Phone Number: Email Address:

Date: 03/06/2023

Contractor Comments:

ADDITIONAL/OTHER: The evaluation was delivered/received by the contractor on 03/06/2023. The contractor neither signed nor offered comment in response to this evaluation.

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Name and Title of Contractor Representative:

Name:

Title:

Phone Number: Email Address:

Date: 05/08/2023

Review by Reviewing Official:

Review by Reviewing Official not required.

Name and Title of Reviewing Official:

Name:

Title:

Organization:

Phone Number: Email Address:

Date:

FOR OFFICIAL USE ONLY

INSTRUCTIONS FOR IMPLEMENTATION OF NAVFAC/USACE PAST PERFORMANCE QUESIONNAIRE (PPQ) FORM

1. Background: In many source selections and MATOC task order evaluations, the RFP encourages the Offeror to have their clients provide a completed PPQ directly to the contract specialist. In addition, throughout USACE, various formats of PPQs are being utilized. Industry expressed concern regarding the process by which PPQs are submitted, that completing multiple PPQs for the same type projects over time places a significant burden on their clients, and seeking a standard process and format to be implemented across USACE and NAVFAC.

2. Discussion: Based on input from industry, NAVFAC and USACE will still allow Offerors to submit PPQs with their proposal but will not require them to be sent directly from the client to the contracting office. In addition, NAVFAC and USACE will utilize a standard PPQ format for all requirements, when required as part of an evaluation. The standard PPQ form and process will allow Offerors to obtain clients' completed PPQ at the completion of a contract or task order, and the Offeror may retain PPQs in its files for submission on future procurements. In cases where the validity of the completed PPQ is questioned, the contract specialist/contracting officer may contact the reference for verification or additional information. The standard PPQ for NAVFAC and USACE is Form PPQ-0 (9/30/11). NAVFAC/USACE does not intend to create and maintain a database of PPQs submitted by Offerors. Therefore, it will be the Offerors responsibility to insure the submission of the relevant PPQs in its files for each solicitation. Alternatively, the Offeror may obtain an updated/new PPQ from its client(s) for submission. This new process does not preclude the Government from utilizing previously submitted PPQ information in the past performance evaluation as a source of information. Also, as the completion of Contractor Performance Assessment Reports (CPARS) is required, Contracting Officers should search CPARS to determine if a relevant and recent evaluation is on file when one is not provided by the offeror. Recognizing CPARS evaluations are just one tool for assessing past performance, these evaluations are expected to be considered by the Contracting Officer. Discrepancies between CPARS evaluations and information provided in PPQs will be resolved by the Contracting Officer during the source selection evaluation process.

In completing the PPQ form, representatives that have direct knowledge of the Offerors past performance are encouraged to complete the PPQ (i.e., Administrative Contracting Officers, Contracting Officer Representatives, Project Engineers, etc., who had direct oversight/involvement with the project).

ACTIONS: Effective immediately, for all procurements that are using PPQs in the evaluation process:

1. Form PPQ-0 shall be utilized for all evaluations that require a PPQ. Offerors shall submit the PPQ with their proposal submission to the Contracting Office designated proposal submission location. The contract specialist or Contracting Officer shall not require the PPQ to be sent directly from the client. Solicitations that have previously been issued do not need to be amended to include this requirement.

2. RFPs utilizing PPQs shall incorporate language from the "Sample Solicitation Submittal Requirement" (below) stating, at a minimum, the following: "Completed Past Performance Questionnaires should be submitted with your proposal as required by RFP Section XXXXX. Offerors shall not incorporate by reference into their proposal PPQs previously submitted for other RFPs. This does not preclude the Government from utilizing previously submitted PPQ information in the past performance evaluation. While the Government may elect to consider data from other sources, the burden of providing detailed, current, accurate and complete past performance information rests with the Offeror. "

3. When Past Performance Questionnaires are being permitted/sought, the following sample language will be tailored to the specific acquisition and included in the solicitation:

Sample Solicitation Submittal Requirement:

"The Past Performance Questionnaire (PPQ) included in the solicitation is provided for the offeror or its team members to submit to the client for each project the offeror includes in its proposal for Factor ____ (insert the applicable factor number, usually as "Factor 4" and insert the factor title, usually "Past Performance for the Prime Contractor"). Ensure correct phone numbers and email addresses are provided for the client point of contact. Completed Past Performance Questionnaires should be submitted with your proposal. If the offeror is unable to obtain a completed PPQ from a client for a project(s) before proposal closing date, the offeror should complete and submit with the proposal the first page of the PPQ (Attachment ___), which will provide contract and client information for the respective project(s). Offerors should follow-up with clients/references to ensure timely submittal of questionnaires. If the client requests, questionnaires may be submitted directly to the Government's point of contact, _____ via email at _____ prior to proposal closing date. Offerors shall not incorporate by reference into their proposal PPQs previously submitted for other RFPs. However, this does not preclude the Government from utilizing previously submitted PPQ information in the past performance evaluation.

Also include performance recognition documents received within the last ____ (insert the number of years) such as awards, award fee determinations, customer letters of commendation, and any other forms of performance recognition.

In addition to the above, the Government may review any other sources of information for evaluating past performance. Other sources may include, but are not limited to, past performance information retrieved through the Past Performance Information Retrieval System (PPIRS), including Contractor Performance Assessment Reporting System (CPARS), using all CAGE/DUNS numbers of team members (partnership, joint venture, teaming arrangement, or parent company/subsidiary/affiliate) identified in the offeror's proposal, inquiries of owner representative(s), Federal Awardee Performance and Integrity Information System (FAPIIS), Electronic Subcontract Reporting System (eSRS), and any other known sources not provided by the offeror.

While the Government may elect to consider data from other sources, the burden of providing detailed, current, accurate and complete past performance information rests with the Offeror."

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

1. Contractor Information

Firm Name: CAGE Code:
Address: DUNs Number:
Phone Number:
Email Address:
Point of Contact: Contact Phone Number:

2. Work Performed as: ☐ Prime Contractor ☑ Sub Contractor ☐ Joint Venture ☐ Other (Explain)

Percent of project work performed: 15%

If subcontractor, who was the prime (Name/Phone #): Thornton Tomasetti, Inc. Tel. 212-367-2843

3. Contract Information

Contract Number: PSC-15-2977

Delivery/Task Order Number (if applicable):

Contract Type: ☐ Firm Fixed Price ☑ Cost Reimbursement ☐ Other (Please specify):

Contract Title: Rehabilitation and Seismic Retrofit of the Approach Viaducts at the Throgs Neck Bridge

Contract Location: Throgs Neck Bridge

Award Date (mm/dd/yy): 07/29/16

Contract Completion Date (mm/dd/yy): 12/31/23

Actual Completion Date (mm/dd/yy):

Explain Differences:

Original Contract Price (Award Amount): $5,386,148.56

Final Contract Price (*to include all modifications, if applicable*): $9,658,831.74

Explain Differences: Added Construction Support Services Fee

4. Project Description:

Complexity of Work ☐ High ☑ Med ☐ Routine

How is this project relevant to project of submission? (*Please provide details such as similar equipment, requirements, conditions, etc.*)

Strucutral engineering, bridge design, concrete design, structural analysis, seismic analysis

CLIENT INFORMATION (Client to complete Blocks 5-8)

5. Client Information

Name: Pornchai Jiratatprasot

Title: Project Manager

Phone Number: 212-367-2843

Email Address: pjiratatprasot@thorntontomasetti.com

6. Describe the client's role in the project:

Project manager in charge of overall design and construction support services of the project.

7. Date Questionnaire was completed (mm/dd/yy): 07/24/24

8. Client's Signature: Porchai Jiratatprasot

NOTE: NAVFAC/USACE requests that the client completes this questionnaire and submits directly back to the offeror. The offeror will submit the completed questionnaire to USACE with their proposal, and may duplicate this questionnaire for future submission on USACE solicitations. Clients are highly encouraged to submit questionnaires directly to the offeror. However, questionnaires may be submitted directly to USACE. Please contact the offeror for USACE POC information. The Government reserves the right to verify any and all information on this form.

NAVFAC / USACE Past Performance Questionnaire (PPQ)

Form PPQ -0 (9/30/11)

ADJECTIVE RATINGS AND DEFINITIONS TO BE USED TO BEST REFLECT YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE

RATING	DEFINITION	NOTE
(E) Exceptional	Performance meets contractual requirements and exceeds many to the Government/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with few minor problems for which corrective actions taken by the contractor was highly effective.	An Exceptional rating is appropriate when the Contractor successfully performed multiple significant events that were of benefit to the Government/Owner. A singular benefit, however, could be of such magnitude that it alone constitutes an Exceptional rating. Also, there should have been NO significant weaknesses identified.
(VG) Very Good	Performance meets contractual requirements and exceeds some to the Government's/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with some minor problems for which corrective actions taken by the contractor were effective.	A Very Good rating is appropriate when the Contractor successfully performed a significant event that was a benefit to the Government/Owner. There should have been no significant weaknesses identified.
(S) Satisfactory	Performance meets minimum contractual requirements. The contractual performance of the element or sub-element contains some minor problems for which corrective actions taken by the contractor appear or were satisfactory.	A Satisfactory rating is appropriate when there were only minor problems, or major problems that the contractor recovered from without impact to the contract. There should have been NO significant weaknesses identified. Per DOD policy, a fundamental principle of assigning ratings is that contractors will not be assessed a rating lower than Satisfactory solely for not performing beyond the requirements of the contract.
(M) Marginal	Performance does not meet some contractual requirements. The contractual performance of the element or sub-element being assessed reflects a serious problem for which the contractor has not yet identified corrective actions. The contractor's proposed actions appear only marginally effective or were not fully implemented.	A Marginal is appropriate when a significant event occurred that the contractor had trouble overcoming which impacted the Government/Owner.
(U) Unsatisfactory	Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance of the element or sub-element contains serious problem(s) for which the contractor's corrective actions appear or were ineffective.	An Unsatisfactory rating is appropriate when multiple significant events occurred that the contractor had trouble overcoming and which impacted the Government/Owner. A singular problem, however, could be of such serious magnitude that it alone constitutes an unsatisfactory rating.
(N) Not Applicable	No information or did not apply to your contract	Ra Rating will be neither positive nor negative.

TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE.

1. QUALITY:						
a) Quality of technical data/report preparation efforts	E	(VG)	S	M	U	N
b) Ability to meet quality standards specified for technical performance	E	(VG)	S	M	U	N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	E	(VG)	S	M	U	N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	E	(VG)	S	M	U	N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:						
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. *(If liquidated damages were assessed or the schedule was not met, please address below)*	(E)	VG	S	M	U	N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	(E)	VG	S	M	U	N
3. CUSTOMER SATISFACTION:						
a) To what extent were the end users satisfied with the project?	E	(VG)	S	M	U	N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	(E)	VG	S	M	U	N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	(E)	VG	S	M	U	N
d) Overall customer satisfaction	E	(VG)	S	M	U	N
4. MANAGEMENT/ PERSONNEL/LABOR						
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	E	VG	S	M	U	(N)
b) Ability to hire, apply, and retain a qualified workforce to this effort	E	(VG)	S	M	U	N
c) Government Property Control	E	VG	S	M	U	(N)
d) Knowledge/expertise demonstrated by contractor personnel	E	(VG)	S	M	U	N
e) Utilization of Small Business concerns	E	VG	S	M	U	(N)
f) Ability to simultaneously manage multiple projects with multiple disciplines	E	VG	S	M	U	(N)
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	E	(VG)	S	M	U	N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	E	VG	S	M	U	(N)
5. COST/FINANCIAL MANAGEMENT						
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	E	(VG)	S	M	U	N

b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	E (VG) S M U N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	E (VG) S M U N
d) Is the Contractor's accounting system adequate for management and tracking of costs? *If no, please explain in Remarks section.*	(Yes) No
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? *Indicate if show cause or cure notices were issued, or any default action in comment section below.*	Yes (No)
f) Have there been any indications that the contractor has had any financial problems? *If yes, please explain below.*	Yes (No)
6. SAFETY/SECURITY	
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	E (VG) S M U N
b) Contractor complied with all security requirements for the project and personnel security requirements.	(E) VG S M U N
7. GENERAL	
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	E (VG) S M U N
b) Compliance with contractual terms/provisions *(explain if specific issues)*	E (VG) S M U N
c) Would you hire or work with this firm again? *(If no, please explain below)*	(Yes) No
d) In summary, provide an overall rating for the work performed by this contractor.	E (VG) S M U N

Please provide responses to the questions above (*if applicable*) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk *(please attach additional pages if necessary)*:

INSTRUCTIONS FOR IMPLEMENTATION OF NAVFAC/USACE PAST PERFORMANCE QUESIONNAIRE (PPQ) FORM

1. Background: In many source selections and MATOC task order evaluations, the RFP encourages the Offeror to have their clients provide a completed PPQ directly to the contract specialist. In addition, throughout USACE, various formats of PPQs are being utilized. Industry expressed concern regarding the process by which PPQs are submitted, that completing multiple PPQs for the same type projects over time places a significant burden on their clients, and seeking a standard process and format to be implemented across USACE and NAVFAC.

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ACTIONS: Effective immediately, for all procurements that are using PPQs in the evaluation process:

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Also include performance recognition documents received within the last ____ (insert the number of years) such as awards, award fee determinations, customer letters of commendation, and any other forms of performance recognition.

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While the Government may elect to consider data from other sources, the burden of providing detailed, current, accurate and complete past performance information rests with the Offeror."

NAVFAC/USACE PAST PERFORMANCE QUESTIONNAIRE (Form PPQ-0)

CONTRACT INFORMATION (Contractor to complete Blocks 1-4)

1. Contractor Information

Firm Name: UrbanTech Consulting Engineering, PC
CAGE Code:
Address: 11 Broadway, Suite 1900, New York, NY 10004
DUNs Number:
Phone Number: 212-627-3366
Email Address: wwang@urbantechusa.com
Point of Contact: Wei Wang
Contact Phone Number: 212-627-3366

2. Work Performed as: ☐ Prime Contractor ☒ Sub Contractor ☐ Joint Venture ☐ Other (Explain)

Percent of project work performed:

If subcontractor, who was the prime (Name/Phone #): EJ Electric / 718-786-9400

3. Contract Information

Contract Number: CS084

Delivery/Task Order Number (if applicable):

Contract Type: ☐ Firm Fixed Price ☒ Cost Reimbursement ☐ Other (Please specify):

Contract Title: LONG ISLAND RAILROAD - EAST SIDE ACCESS

Contract Location: LONG ISLAND CITY, QUEENS, NY

Award Date (mm/dd/yy): 10/01/2015

Contract Completion Date (mm/dd/yy): 8/31/2023

Actual Completion Date (mm/dd/yy): 8/31/2023

Explain Differences:

Original Contract Price (Award Amount): $59,102

Final Contract Price (*to include all modifications, if applicable*): $59,102

Explain Differences:

4. Project Description:

Complexity of Work ☒ High ☐ Med ☐ Routine

How is this project relevant to project of submission? (*Please provide details such as similar equipment, requirements, conditions, etc.*) Structural engineering, design-build project, building design for infrastructure support services, concrete design, structural analysis, fitness for services analysis, seismic analysis, retro-fit of an existing structure for future infrastructure use

CLIENT INFORMATION (Client to complete Blocks 5-8)

5. Client Information

Name: Mark Steffen

Title: Vice President

Phone Number: (917) 653-5983

Email Address: msteffen@ej1899.com

6. Describe the client's role in the project:

General Contractor's Project Executive

7. Date Questionnaire was completed (mm/dd/yy): 08/07/2024

8. Client's Signature:

NOTE: NAVFAC/USACE requests that the client completes this questionnaire and submits directly back to the offeror. The offeror will submit the completed questionnaire to USACE with their proposal, and may duplicate this questionnaire for future submission on USACE solicitations. Clients are highly encouraged to submit questionnaires directly to the offeror. However, questionnaires may be submitted directly to USACE. Please contact the offeror for USACE POC information. The Government reserves the right to verify any and all information on this form.

NAVFAC / USACE Past Performance Questionnaire (PPQ)

Form PPQ -0 (9/30/11)

ADJECTIVE RATINGS AND DEFINITIONS TO BE USED TO BEST REFLECT YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE

RATING	DEFINITION	NOTE
(E) Exceptional	Performance meets contractual requirements and exceeds many to the Government/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with few minor problems for which corrective actions taken by the contractor was highly effective.	An Exceptional rating is appropriate when the Contractor successfully performed multiple significant events that were of benefit to the Government/Owner. A singular benefit, however, could be of such magnitude that it alone constitutes an Exceptional rating. Also, there should have been NO significant weaknesses identified.
(VG) Very Good	Performance meets contractual requirements and exceeds some to the Government's/Owner's benefit. The contractual performance of the element or sub-element being assessed was accomplished with some minor problems for which corrective actions taken by the contractor were effective.	A Very Good rating is appropriate when the Contractor successfully performed a significant event that was a benefit to the Government/Owner. There should have been no significant weaknesses identified.
(S) Satisfactory	Performance meets minimum contractual requirements. The contractual performance of the element or sub-element contains some minor problems for which corrective actions taken by the contractor appear or were satisfactory.	A Satisfactory rating is appropriate when there were only minor problems, or major problems that the contractor recovered from without impact to the contract. There should have been NO significant weaknesses identified. Per DOD policy, a fundamental principle of assigning ratings is that contractors will not be assessed a rating lower than Satisfactory solely for not performing beyond the requirements of the contract.
(M) Marginal	Performance does not meet some contractual requirements. The contractual performance of the element or sub-element being assessed reflects a serious problem for which the contractor has not yet identified corrective actions. The contractor's proposed actions appear only marginally effective or were not fully implemented.	A Marginal is appropriate when a significant event occurred that the contractor had trouble overcoming which impacted the Government/Owner.
(U) Unsatisfactory	Performance does not meet most contractual requirements and recovery is not likely in a timely manner. The contractual performance of the element or sub-element contains serious problem(s) for which the contractor's corrective actions appear or were ineffective.	An Unsatisfactory rating is appropriate when multiple significant events occurred that the contractor had trouble overcoming and which impacted the Government/Owner. A singular problem, however, could be of such serious magnitude that it alone constitutes an unsatisfactory rating.
(N) Not Applicable	No information or did not apply to your contract	Ra Rating will be neither positive nor negative.

NAVFAC / USACE Past Performance Questionnaire (PPQ)

Form PPQ -0 (9/30/11)

TO BE COMPLETED BY CLIENT

PLEASE CIRCLE THE ADJECTIVE RATING WHICH BEST REFLECTS YOUR EVALUATION OF THE CONTRACTOR'S PERFORMANCE.

1. QUALITY:						
a) Quality of technical data/report preparation efforts	E	VG	S	M	U	N
b) Ability to meet quality standards specified for technical performance	E	VG	S	M	U	N
c) Timeliness/effectiveness of contract problem resolution without extensive customer guidance	E	VG	S	M	U	N
d) Adequacy/effectiveness of quality control program and adherence to contract quality assurance requirements (without adverse effect on performance)	E	VG	S	M	U	N
2. SCHEDULE/TIMELINESS OF PERFORMANCE:						
a) Compliance with contract delivery/completion schedules including any significant intermediate milestones. *(If liquidated damages were assessed or the schedule was not met, please address below)*	E	VG	S	M	U	N
b) Rate the contractor's use of available resources to accomplish tasks identified in the contract	E	VG	S	M	U	N
3. CUSTOMER SATISFACTION:						
a) To what extent were the end users satisfied with the project?	E	VG	S	M	U	N
b) Contractor was reasonable and cooperative in dealing with your staff (including the ability to successfully resolve disagreements/disputes; responsiveness to administrative reports, businesslike and communication)	E	VG	S	M	U	N
c) To what extent was the contractor cooperative, businesslike, and concerned with the interests of the customer?	E	VG	S	M	U	N
d) Overall customer satisfaction	E	VG	S	M	U	N
4. MANAGEMENT/ PERSONNEL/LABOR						
a) Effectiveness of on-site management, including management of subcontractors, suppliers, materials, and/or labor force?	E	VG	S	M	U	N
b) Ability to hire, apply, and retain a qualified workforce to this effort	E	VG	S	M	U	N
c) Government Property Control	E	VG	S	M	U	N
d) Knowledge/expertise demonstrated by contractor personnel	E	VG	S	M	U	N
e) Utilization of Small Business concerns	E	VG	S	M	U	N
f) Ability to simultaneously manage multiple projects with multiple disciplines	E	VG	S	M	U	N
g) Ability to assimilate and incorporate changes in requirements and/or priority, including planning, execution and response to Government changes	E	VG	S	M	U	N
h) Effectiveness of overall management (including ability to effectively lead, manage and control the program)	E	VG	S	M	U	N
5. COST/FINANCIAL MANAGEMENT						
a) Ability to meet the terms and conditions within the contractually agreed price(s)?	E	VG	S	M	U	N

NAVFAC / USACE Past Performance Questionnaire (PPQ)

Form PPQ -0 (9/30/11)

b) Contractor proposed innovative alternative methods/processes that reduced cost, improved maintainability or other factors that benefited the client	E VG S M U N
c) If this is/was a Government cost type contract, please rate the Contractor's timeliness and accuracy in submitting monthly invoices with appropriate back-up documentation, monthly status reports/budget variance reports, compliance with established budgets and avoidance of significant and/or unexplained variances (under runs or overruns)	E VG S M U N
d) Is the Contractor's accounting system adequate for management and tracking of costs? *If no, please explain in Remarks section.*	Yes No
e) If this is/was a Government contract, has/was this contract been partially or completely terminated for default or convenience or are there any pending terminations? *Indicate if show cause or cure notices were issued, or any default action in comment section below.*	Yes No
f) Have there been any indications that the contractor has had any financial problems? *If yes, please explain below.*	Yes No
6. SAFETY/SECURITY	
a) To what extent was the contractor able to maintain an environment of safety, adhere to its approved safety plan, and respond to safety issues? (Includes: following the users rules, regulations, and requirements regarding housekeeping, safety, correction of noted deficiencies, etc.)	E VG S M U N
b) Contractor complied with all security requirements for the project and personnel security requirements.	E VG S M U N
7. GENERAL	
a) Ability to successfully respond to emergency and/or surge situations (including notifying COR, PM or Contracting Officer in a timely manner regarding urgent contractual issues).	E VG S M U N
b) Compliance with contractual terms/provisions *(explain if specific issues)*	E VG S M U N
c) Would you hire or work with this firm again? *(If no, please explain below)*	Yes No
d) In summary, provide an overall rating for the work performed by this contractor.	E VG S M U N

Please provide responses to the questions above (*if applicable*) and/or additional remarks. Furthermore, please provide a brief narrative addressing specific strengths, weaknesses, deficiencies, or other comments which may assist our office in evaluating performance risk *(please attach additional pages if necessary)*:

Narrative addressing UrbanTech specific strengths

On the Long Island Railroad (LIRR) East Side Access Traction Power Package (CS-084) UrbanTech was presented the challenge of analyzing an in-place concrete foundation/vault, a structural design not compatible with the prefabricated building it was designed to support, and a proposed prefabricated building design, and presenting an integrated solution that satisfied LIRR Specification and BCNYS Requirements. UrbanTech provided a detailed structural design and vault modification design package that satisfied specification and code requirements and accommodated a relatively inflexible bus duct system, on time and within budget.

UrbanTech was responsive and innovative in accommodating structural modifications during construction that were required to properly coordinate with the work of other disciplines. Throughout the project UrbanTech showed itself to be a highly competent and cooperative design partner, instrumental in solving third party structural and civil design issues that posed a threat to the entire East Side Access Program schedule.

JOINT VENTURE AGREEMENT

This Joint Venture Agreement ("Agreement") is made as of July 5, 2024 ("Effective Date") between UrbanTech Consulting Engineering, PC ("URBANTECH"), and MSMM Engineering, LLC ("MSMM"). The parties may be referred to in this Agreement individually as a Party and collectively as the Parties.

ARTICLE 1 BACKGROUND AND PURPOSE

1.1 The Parties shall operate under the name "URBANTECH-MSMM Joint Venture" ("Joint Venture"). The principal office shall be at 1236 Brace Road, Unit D, Cherry Hill, NJ 08034.

1.2 The Parties hereby form the Joint Venture for the specific purpose of preparing and submitting a proposal ("Proposal") for **INDEFINITE DELIVERY INDEFINITE QUANTITY CONTRACT FOR ARCHITECTURAL AND GENERAL ENGINEERING SERVICES FOR PHILADELPHIA DISTRICT CIVIL WORKS PROGRAM MISSIONS Solicitation Number: W912BU-24-R-0023** and, if awarded the Project, for the additional purpose of performing the Services pursuant to a contract ("Prime Contract") to be entered into with Owner.

1.3 This Agreement defines and governs the rights and obligations of the Parties as between each other in regard to the Project.

1.4 The Joint Venture shall not engage in any business other than that described in this Agreement. All transactions involving the Joint Venture shall be conducted for the benefit of the Joint Venture.

1.5 Unless otherwise required by the Owner or mutually agreed in writing by the Parties, all transactions and business with respect to the Project shall be conducted through and in the name of the Joint Venture. This Agreement shall not limit either Party from engaging in business independent of the Project.

ARTICLE 2 RELATIONSHIP BETWEEN PARTIES

2.1 This Agreement shall be construed as creating a joint venture and not any partnership, agency, employment relationship or fiduciary relationship of any nature between the Parties.

2.2 Except to the extent expressly provided under this Agreement, neither Party shall have the authority or right, nor shall either Party hold itself out as having the authority or right, to borrow money or incur obligations of any kind whatsoever, express or implied, on behalf of or in the name of the Joint Venture or the other Party without the express prior written consent of the other Party.

2.3 Neither Party shall have the authority or right, nor shall either Party hold itself out as having the authority or right to accept service of any legal process addressed to or intended for the other Party.

ARTICLE 3 JOINT VENTURE GOVERNANCE

3.1 The Joint Venture shall be managed by a management committee ("Management Committee") composed of one principal representative ("Principal Representative") from each Party as follows:

MSMM:	Manish Mardia
URBANTECH	Wei Wang

The Parties designate the following individuals as alternate representatives ("Alternate Representative") to act on behalf of their respective Principal Representative in the event the Principal Representative for that Party is unable to participate in Management Committee meetings or other actions required by this Agreement:

MSMM:	Mark Wingate
URBANTECH	Jose Basto

3.2 The Joint Venture will be governed by the decisions of the Management Committee. The Management Committee is vested with the ultimate authority regarding all business matters of the Joint Venture, including those matters affecting the relationship between the Joint Venture and Owner and between the Joint Venture and third parties. Each person on the Management Committee shall be entitled to one vote and all decisions of the Management Committee shall be made unanimously, in accordance with the terms of this Agreement and shall be binding upon the Joint Venture and each Party.

3.3 The Chairperson of the Management Committee shall be Wei Wang of URBANTECH. The Chairperson shall act as spokesperson for the Joint Venture in communicating with Owner and as otherwise reasonably appropriate, will have power of attorney authority to sign legal documents on behalf of the Joint Venture and have such other duties as may be delegated by the Management Committee. In the event that the appointed Chairperson becomes unable to serve as Chairperson, the Party with whom the Chairperson is employed will nominate a new Chairperson from that Party who will be subject to approval of the Management Committee. This process will continue until a chairperson is selected.

3.4 The Management Committee shall meet no less often than monthly and as frequently as determined necessary by the Management Committee to discuss: general business matters; Project performance; Owner satisfaction; the authority and duties to be delegated to the Chairperson, Project Manager, Deputy Project Managers (if any); the resolution of any claims by or against the Joint Venture; and all other matters requiring Management Committee consent or approval. In such meetings the Management Committee shall furthermore review and manage the bank account(s) of the Joint Venture for all business purposes, including to ensure that there is adequate funding to make payments when due and to otherwise operate the Joint Venture. The Chairperson may call emergency meetings upon at least forty-eight (48) hours' advance telephone notice. The Chairperson shall call an emergency meeting of the Management Committee at the written request of either Party. Regular or emergency meetings of the Management Committee may be held by phone or in person. The Management Committee may act by unanimous written consent without meeting. If appropriate in the opinion of the Chairperson or upon request by any Party, the Chairperson shall cause minutes to be taken of all meetings and promptly distribute such minutes to the Management Committee and other appropriate persons employed by the respective Parties.

3.5 In addition to any other actions prohibited by this Agreement, the following actions may not be undertaken except by prior written consent of the Management Committee: (a) change orders.

and amendments to the Prime Contract, and (b) procuring insurance in the name of the Joint Venture.

3.6 Where the Prime Contract has not yet been executed as of the Effective Date of this Agreement, the Parties that there may be a need to modify the terms of this Agreement based on the terms contained in the Prime Contract subsequently executed, including any Services required to be performed pursuant to the Prime Contract. This Agreement can be modified by mutual agreement of the Parties.

ARTICLE 4 STAFFING

4.1 The Parties shall furnish from their respective organizations, all of the personnel, skill, experience and knowledge which is required for the efficient and expeditious management of the Joint Venture and, except with respect to those Services subcontracted to subconsultants, all of the personnel, skill, experience and knowledge which is required for the efficient and expeditious performance of the Prime Contract. Other personnel may be assigned to the Project at the request of the Management Committee as required for the performance of the Joint Venture's obligations under the Prime Contract. Personnel of each Party assigned to the Project shall remain employees of their respective employers and are not employees of the Joint Venture.

4.2 If personnel of either Party should become unacceptable to Owner under the terms of the Prime Contract or objectionable in the reasonable opinion of the other Party, the Management Committee shall convene in an attempt to reconcile the situation. If reconciliation is not possible, the employing Party shall cause the subject person's removal from the Project, provided that where a Party (as opposed to Owner) is seeking removal, such Party's objection to the subject person is reasonable.

4.3 The Program Manager will be: Mark Wingate or Wei Wang.

In the event that the appointed Project Manager becomes unable to serve as Project Manager for any reason, MSMM shall nominate a new Project Manager from MSMM, subject to Management Committee approval. That process will continue until a Project Manager is selected. In addition to other duties which may be delegated by the Management Committee and subject to the decisions of the Management Committee, the Project Manager shall be (a) responsible for the direction, coordination, operation and management of the Services to be performed under the Prime Contract, (b) with respect to performance of the Services, the primary contact with Owner on behalf of the Joint Venture and any others performing Services related to the Project, and (c) responsible for reporting to the Management Committee matters related to the status of the Project and the Services performed under the Prime Contract.

ARTICLE 5 ALLOCATION OF SERVICES AND REVENUE

5.1 The percentage interest ("Percentage Interest") of each Party shall be as follows:

MSMM: 50%
URBANTECH: 50%

5.2 Notwithstanding any provision in this Agreement to the contrary, the Management Committee shall use all reasonable efforts to allocate the Services to be performed under the Prime Contract and any modifications to the Prime Contract between the Parties in accordance with their respective

Percentage Interest as such Percentage Interest is calculated after Services are allocated to all subconsultants.

5.3 Subject to any adjustments set forth in Article 12 (Compensation and Operating Costs), it is the intent of the Parties that the ultimate allocation of Services will result in each Party's right to receive revenue, including fees, in proportion to their respective Percentage Interest (as such Percentage Interest is calculated in accordance with Section 5.2); however, the revenue, including fees, due to each Party will be based on the Services actually rendered by each Party and not on the Percentage Interest of each Party designated in this Agreement and therefore neither Party has any rights of any kind against the other, such as the right to claim money damages or the right to adjust the allocation of Services, where the revenue, including fees, ultimately received is not precisely in proportion to its respective Percentage Interest.

5.4 The Parties anticipate that select staff will be required to perform certain administrative functions on behalf of the Joint Venture ("Administrative Staff"). The Management Committee will allocate Administrative Staff that are billable to the Project in accordance with Section 5.2. Unless the Management Committee agrees otherwise, each Party shall bear the cost of the Administrative Staff not billable to the Project in accordance with the respective Percentage Interest of each Party. The Management Committee shall approve Administrative Staff prior to them performing administrative functions on the Project. Administrative functions do not include the responsibilities allocated under this Agreement to the Finance Manager, addressed under Article 14 (Accounting).

ARTICLE 6 PRE-AWARD PHASE

6.1 Except as specified below in Section 6.1.1, during the pre-award phase of the Project, on behalf of the Joint Venture, MSMM will lead the preparation and submission of the statement of qualifications ("Statement of Qualifications") and Proposal for the Project and lead the preparation and delivery of any presentations and interviews, should one be necessary.

6.1.1 URBANTECH will provide to MSMM all information, documentation, materials and support specific to URBANTECH that is necessary to allow MSMM to perform the functions stated in Section 6.1.

6.2 All pre-award costs and expenses incurred by the Parties, including costs incurred in preparing and submitting the Statement of Qualifications and Proposal and preparing and delivering any presentations and interviews, shall be paid by the Party incurring such costs and expenses; however, where specific costs or expenses are pre-approved in writing by the Management Committee or their designees, then such costs and expenses will be shared between the Parties in accordance with their Percentage Interest as stated in Section 5.1.

6.3 The Parties will establish a schedule which they agree to follow in preparing the Proposal. The Parties agree to provide the information and support necessary to comply with the schedule and Owner's pre-award requirements as stated in the request for qualifications and request for proposal.

ARTICLE 7 PRIME CONTRACT

7.1 In the event that the Joint Venture is awarded the Project, MSMM will negotiate the Prime Contract with Owner. Each Party is entitled to have a representative present at all negotiation discussions with Owner. No Party shall be authorized to make contractual commitments with Owner without the prior approval of the other Party. Provided that the Parties mutually desire to execute the Prime Contract, and unless otherwise required by Owner, each Party shall separately sign the Prime Contract and any modifications to the Prime Contract.

ARTICLE 8 CAPITAL CONTRIBUTIONS AND OPERATING COSTS

8.1 At their discretion, the Parties may mutually agree to make an initial contribution to the Joint Venture, which shall be in proportion to their respective Percentage Interest. Any initial or subsequent contributions (collectively "Working Capital") will be deposited in the Joint Venture Bank Account described in Article 14 (Accounting). Working Capital contributions will be respectively credited to each Party.

8.2 From time to time during the performance of the Prime Contract, Joint Venture revenues and Working Capital may be insufficient to cover the Joint Venture cash flow and operating cost requirements. Subject to any reimbursement provided by Article 10 (Liability and Indemnification) or elsewhere in this Agreement, the Parties shall cover any deficiencies in the required cash flow and operating costs by contributing Working Capital to the Joint Venture in proportion to their respective Percentage Interest within such time so as to allow for the uninterrupted operation of the Joint Venture.

8.3 If a Party fails to contribute Working Capital as required by this Article 8 (Capital Contributions), such failure will constitute default hereunder unless alternative terms have been offered and accepted. If a Party fails or refuses to contribute its share of such Working Capital, the other Party may, as its option, pay the share of the defaulting Party. Prior to any revenue distribution to the Parties, that Party will be reimbursed, plus 18% per annum interest or as otherwise required by law, whichever is greater: (A) directly from the defaulting Party; (B) from payments due to the defaulting Party; (C) directly from the Joint Venture; or (D) any combination of A, B or C. Until reimbursement is made, the defaulting Party will be prohibited from participation on the Management Committee.

8.4 Joint Venture operating costs and expenses shall be paid as directed by the Management Committee. Operating expenses may include accounting and legal fees, bank charges, Joint Venture taxes and all other expenses and obligations incurred or suffered by the Joint Venture. Subconsultant invoices are not included in operating expenses, as that cost is paid by either the Joint Venture (to the extent that subconsultants are contracted directly to the Joint Venture) or by the respective Parties (to the extent that subconsultants are contracted directly to each such Party). As operating costs are incurred by the Joint Venture, a receivable is charged for the amount due from each Party. Operating costs will be deducted, at the percentage interest defined in Article 5.1, from distributions made under Article 12 (Compensation) prior to distributions being made.

ARTICLE 9 SERVICES

9.1 Through the Joint Venture, the Parties agree to provide the Services set forth in the Prime Contract, including any task orders and modifications to the Prime Contract. The Parties will perform the Services subject to the requirements of Article 5 (Allocation of Services and Revenue), which specify the manner in which the Management Committee will allocate the percentage of Services to be performed. The Services expected to be provided by the Parties are generally described in Exhibit A (General Description of Services); however, the Parties expressly acknowledge that the Services described in Exhibit A may change as the Parties learn more about the Project and as the Project matures.

9.2 Upon approval by Owner, if required, a Party may subcontract the performance of its Services to subconsultants, and in such event, that Party and no other Party shall be liable for the acts and omissions of that subconsultant. The Joint Venture is prohibited from contracting directly with any

subconsultants unless otherwise determined in writing by the Management Committee. All subconsultants shall perform Services by means of a written subcontract.

If the Parties are entitled to a "mark-up" or management fee from Owner on the services performed by subconsultants, then such mark-up or management fee shall be earned by each Party based on the portion of Services respectively subcontracted.

ARTICLE 10 LIABILITY AND INDEMNIFICATION

10.1 The obligations of the Parties to Owner shall be joint and several.

10.2 A Party allocated Services under this Agreement shall be solely responsible for the performance of those Services and for all liabilities that may arise in connection with those Services to the extent caused by that Party and any subconsultants contracted under that Party. Liability shall not be limited in any way by the Percentage Interest of any Party.

10.3 Notwithstanding any other provision in this Agreement to the contrary, to the fullest extent permitted by law, as between each other, each Party shall indemnify and hold harmless the Joint Venture and the other Party and their subconsultants from and against any and all liability, claims, demands, suits, judgments and awards for damages of any kind to the extent arising out of or relating to any negligent acts, errors or omissions of the indemnifying Party, its subconsultants or anyone under contract with the indemnifying Party in performing or failing to perform the Services. The obligation to indemnify shall not be limited in any way by the Percentage Interest of the indemnifying Party.

10.4 Notwithstanding any other provision in this Agreement to the contrary, except with respect to damages which are claimed by Owner or third parties against any or all of the Parties, the Parties hereby waive the right to seek consequential damages against one another that may arise out of or relate in any manner to this Agreement or any obligations under this Agreement.

10.5 Wherever in this Article 10 (Liability and Indemnification), reference is made to a Party, it is understood that such reference shall also include that Party's respective officers, directors, employees, successors, subsidiaries and affiliates.

ARTICLE 11 INSURANCE

11.1 Unless otherwise required by Owner, it is the intent of the Parties that no insurance will be purchased or maintained by or in the name of the Joint Venture. To the extent that Owner requires the Parties to purchase and maintain insurance in the name of the Joint Venture the Parties will pay for the insurance in accordance with their Percentage Interest unless the Parties agree otherwise in writing or unless the cost of the insurance can be expensed to the Project.

Where the insurance is required to be purchased in the name of the Joint Venture or to the extent that the Prime Contract provides insurance under an owner controlled insurance program, commonly known as an "OCIP," the Parties agree to pay for any deductibles in accordance with their division of liability set forth in Article 10 (Liability and Indemnification).

11.2 The Parties agree that the insurance requirements set forth in the Prime Contract take precedence over any requirements set forth in this Agreement, such requirements are incorporated herein, the Parties will separately comply with the requirements and that the insurance requirements set forth in this Agreement contain only the minimum insurance requirements for the Parties.

The Parties shall maintain the following insurance during the term of this Agreement with an insurer having an A.M. Best rating of no less than A- and authorized to do business in the state in which the Services are being provided:

(a) Commercial General Liability Insurance on a coverage form equal to ISO CG 00 01, on an occurrence basis, with a limit of not less than $1,000,000 per occurrence and $2,000,000 general aggregate, including a per-project endorsement.
(b) Business Automobile Liability Insurance to include coverage for all hired, owned and non-owned vehicles, with a combined single limit of not less than $1,000,000.
(c) Workers' Compensation Insurance, in accordance with the laws of the state in which the Services are being performed, and Employers' Liability Insurance with limits according to such statutory requirements, or $500,000 for each accident, whichever is greater.
(d) Professional Liability Insurance in the minimum amount of $1,000,000 per claim and annual aggregate.

11.3 The above policies shall not contain any exclusion for liability arising out of the Parties participation in a joint venture. Each Party shall include the other Party, and its parent companies, affiliated and subsidiary entities, directors, officers and employees, as additional insureds on its commercial general liability and business automobile liability policies, such insurance shall be primary and any insurance maintained by the Parties shall be excess and not contribute with it.

11.4 Each Party shall furnish to the other certificates of insurance evidencing compliance with the insurance requirements of this Agreement and the Prime Contract. All policies shall be endorsed to state that such insurance shall not be canceled or non-renewed without at least thirty (30) days written notice to the other Party.

11.5 The Parties waive all rights against each other for damages covered by property insurance.

11.6 Subconsultants shall be required to maintain insurance of the types and with the minimum limits set forth in this Article 11 (Insurance) unless otherwise determined by the Management Committee or as required by the Prime Contract, whichever requirements are greater. Subconsultants shall include each Party and the Joint Venture as additional insureds on their commercial general liability and business automobile liability policies and such insurance shall be primary and any insurance maintained by the Parties shall be excess and not contribute with it.

11.7 The Parties agree to waive all claims of any kind against each other, their respective directors, officers, employees, subconsultants and agents (and shall cause their insurance carriers providing insurance pursuant to this Agreement to do the same in each insurance policy) to the extent that any damages arising out of or relating to such claims are covered by any insurance proceeds under the insurance required to be provided through this Agreement. Where subconsultants are subcontracted directly to the Parties, then the Parties shall cause a similar provision to be set forth in such subconsultant contracts.

ARTICLE 12 COMPENSATION

12.1 Subsequent to the execution of this Agreement, Exhibit B (Compensation) may be prepared at the discretion of the Management Committee, the intent of which is to set forth any details not otherwise stated in this Agreement by which the Parties are to be compensated for their Services. Exhibit B may include, without limitation, billing rates or direct labor rates, overhead rates, profit,

escalation rates, expenses and any other compensation and reimbursement terms. The terms of Exhibit B shall comply and be consistent with the terms of the Prime Contract and shall be revised to include additional detail as appropriate to the extent that the Joint Venture agrees to perform additional services by modifications to the Prime Contract.

12.2 Each Party shall invoice the Joint Venture for its Services. Within a reasonable period of time prior to commencing performance of the Services, the Management Committee will develop a written schedule ("Invoice Schedule"), to be incorporated herein and to be attached as Exhibit C (Invoice Schedule), specifying the required time periods in which the Parties must submit their invoices to the Joint Venture for processing. The Invoice Schedule shall allow the Finance Manager, identified in Article 14 (Accounting), enough time to process the invoices and prepare and submit the invoices to Owner in accordance with that Party's own internal accounting system and Owner's requirements under the Prime Contract. The Parties will update the Invoice Schedule based on any changes to the internal accounting system of the Party processing the invoices or in the requirements of Owner. The Finance Manager will manage the invoicing process, which will include collecting, validating, processing and organizing invoices submitted by the Parties and subconsultants and preparing and submitting invoices to Owner. The Finance Manager will perform such functions regardless of which Parties performed the Services and the quantity of Services performed. Invoices submitted to the Joint Venture shall be accompanied by such supporting information and data as the Prime Contract may require.

All invoices for Services performed by each Party and any subconsultants will be submitted by the Joint Venture to Owner only if such invoices are in compliance with the terms of the Prime Contract.

12.3 Where the Prime Contract deems overhead rates provisional and requires that they be adjusted to reflect actual overhead rates, the Parties agree that any provisional overhead rates submitted to Owner are subject to adjustment to actual audited overhead as required or allowed by the Prime Contract and shall be adjusted in a timely manner. Each Party invoicing at the provisional rates shall individually incur any associated adjustments.

12.4 Compensation received by the Joint Venture from the Prime Contract shall be applied in the following order: (1) to the payment of liabilities and debts of the Joint Venture, including any subconsultants of the Joint Venture if contracted directly to the Joint Venture; (2) to the extent not billable to Owner, to the Parties for Administrative Staff, Finance Manager and any other administrative costs incurred by the Parties; and (3) to the Parties in accordance with their invoices submitted, subject to any limitations under this Agreement.

Compensation shall be payable to the Parties by the Joint Venture and to any subconsultants only upon receipt of payment from Owner.

In the event any invoiced costs submitted by a Party to the Joint Venture and subsequently to Owner are disallowed due to non-compliance with the Prime Contract, including any FAR requirements (to the extent that FAR is applicable under the Prime Contract), then any amounts paid or due to be paid thereon by the Joint Venture to the submitting Party shall be subject to appropriate adjustment to reflect such disallowance.

12.5 Distributions to the Parties shall be subject to withdrawal by check or electronic funds transfer only. In the interest of greater fiscal control, such withdrawals from the Joint Venture Bank Account will be generated only upon submission of written approval by an employee of each Party who is authorized by their employer to approve distributions. Such approval may be provided by email. The Finance Manager will process all withdrawals and will refrain from doing so until written approval is obtain from each Party.

ARTICLE 13 PROPERTY

13.1 The Parties acknowledge that in pursuing the Project and performing the Services they may be required to utilize documents, records, drawings, specifications, reports, studies, notes, diagrams, sketches, models, charts, calculations, methodologies, know-how, processes, techniques, tools, software, computer code, data files, standards, manuals, photographs, videos, correspondence, and other information, documentation, materials and items, and all intellectual property associated therewith that the respective Parties: (A) developed or purchased prior to execution of this Agreement; (B) may develop contemporaneously in pursuing the Project and performing the Services yet is not required to be developed in executing the Services; or (C) may develop in executing the Services (collectively, "Private Work Product"). Except to the extent prohibited by any applicable requests for qualifications, requests for proposals or the Prime Contract, each Party shall retain their respective ownership and intellectual property rights in all Private Work Product, including all copyrights, trademarks and patents. Each Party is entitled to make and retain copies of the Private Work Product developed under Section 13.2(C) if provided to Owner for the sole purpose of pursuing the Project and performing the Services.

13.2 The Parties anticipate entering into an office sharing agreement ("Office Sharing Agreement") for the purposes of describing the obligations between the Parties with respect to any lease of office space and co-location obligations for the Project.

Unless otherwise stated in the Office Sharing Agreement, any property required for the performance of the Prime Contract and made available by a Party for the Joint Venture's use shall remain the property of such contributing Party. Such property shall be returned to the contributing Party upon completion of the Prime Contract, or sooner if no longer required by the Joint Venture.

ARTICLE 14 ACCOUNTING

14.1 MSMM will appoint the finance manager ("Finance Manager"). In the event that the appointed Finance Manager becomes unable to serve as Finance Manager, Manish Mardia shall appoint a new Finance Manager from MSMM

14.2 The Parties will endeavor to make the Finance Manager position billable to the Project; however, the functions performed by the Finance Manager shall not be included as part of the Percentage Interest of Services allocated to the Party supplying the Finance Manager under Section 5.2. In the event that the Finance Manager position cannot be made billable to the Project, then the Parties shall bear the cost of the Finance Manager in accordance with their Percentage Interest.

14.3 The Finance Manager will be responsible for performing the tasks described below:

(A) The Finance Manager will be responsible for maintaining the accounts for the Joint Venture. The books of account of the Joint Venture shall be maintained in the principal office of the Joint Venture utilizing the Finance Manager's financial system. The books of account shall be maintained on a cash and accrual basis in accordance with generally accepted accounting principles, consistently applied and will show all items of income and expense. The fiscal year of the Joint Venture shall end on the last Friday of each year.

If any Party desires an audit of the books of account such audit shall be performed by a firm of independent certified public accountants selected by the Management Committee. The audit cost

will be borne by the Parties in proportion to their respective Percentage Interest. Each such audit shall be performed in a manner which will permit the accountants to express their unqualified opinion with respect to the financial statements of the Joint Venture if the existing facts warrant such an unqualified opinion.

(B) The Finance Manager will cause to be prepared the federal, state, local and any other income tax return for the Joint Venture and will file such income tax returns. The Parties are obligated to provide the Finance Manager with the documentation necessary to enable the Finance Manager to fulfill this responsibility. Where the Joint Venture owes any taxes, these taxes shall be shared between the Parties in accordance with their Percentage Interest as stated in Section 5.1. The Parties are individually responsible for filing their own federal, state, local and any other income tax returns which include receipts from the Joint Venture.

(C) As described further in Article 12 (Compensation), the Finance Manager will be responsible for managing the invoicing process, submitting invoices to Owner and for making distributions of compensation to the Parties.

(D) The Finance Manager will liquidate the Joint Venture bank account upon termination of the Agreement such that any money in the account will be returned to the Parties in proportion to the percentage contributed.

14.4 All books and information concerning the Joint Venture available to the Finance Manager shall be made available to all Parties and any of their designated agents at reasonable hours for examination and audit and copies of such books and information shall be provided upon request. Reasonable payment for copies may be requested at the discretion of the Finance Manager if deemed necessary.

14.5 The Joint Venture shall establish and use as a depository for money such bank or banks as the Management Committee shall determine. All funds received by the Joint Venture from any source, including, without limitation, all Prime Contract revenues, shall be deposited in an account or accounts in the name of the Joint Venture ("Joint Venture Bank Account").

14.6 Neither the Joint Venture nor any Party hereto shall borrow money in the name of or for the Joint Venture, or pledge the credit of the Joint Venture, or sign any note or other instrument for the payment of Joint Venture funds provided, however, checks drawn on the Joint Venture bank accounts in the normal course of business will be permissible if approved as described in this Agreement.

ARTICLE 15 TAXES

15.1 Each Party shall have full and sole responsibility for the payment of any taxes, duties, fees or assessments of any nature whatsoever levied in connection with its Services and any subcontracts entered into on its behalf including, but not limited to, any personal income taxes levied or imposed on any of its employees or personnel or any of its subcontractor's employees or personnel.

ARTICLE 16 DISPUTES

16.1 In the event of a dispute between the Parties arising out of or related to this Agreement, the aggrieved Party shall notify the other Party of the dispute in writing within a reasonable time after such dispute arises. If the Parties cannot thereafter resolve the dispute within seven (7) days after

the initial notification, each Party shall nominate a senior officer of its management to meet to resolve the dispute by direct negotiation.

16.2 If the Parties are unable to resolve the dispute through direct negotiations within twenty-one (21) days after the initial notification, then all disputes shall be submitted to mediation pursuant to the Construction Mediation Rules of the American Arbitration Association in effect as of the Effective Date of this Agreement. The Parties agree to conduct a mediation session as soon as reasonably practicable and in no event later than thirty (30) days following selection of a mediator. Regardless of which Party initiates the mediation, the Parties will share all mediation fees, including mediator fees, equally. The Parties agree that submission of the dispute to mediation pursuant to this provision shall be a condition precedent to the ability to file an arbitration demand.

16.3 Should such negotiation and mediation efforts fail to resolve the dispute, then the Parties agree to pursue resolution of the dispute by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association. This Agreement shall be governed, construed and enforced in accordance with the laws of the Louisiana without regard to its conflict of law rules.

16.4 After exhaustion of the process described under Section 16.1, and notwithstanding any terms to the contrary in this Agreement, in the event that exigent circumstances require that a dispute must be immediately resolved, a decision shall be made by the Chairperson, using due skill, care and diligence, and such decision shall control pending resolution in accordance with Section 16.3 unless resolved earlier by Section 16.2. During the pendency of any dispute, the Parties shall continue diligently to fulfill their respective obligations hereunder.

ARTICLE 17 TERM AND TERMINATION OF AGREEMENT

17.1 The Joint Venture and the terms of this Agreement shall commence as of the Effective Date of this Agreement and shall terminate upon the occurrence of any of the following events:

(A) rejection by Owner of the Proposal or award of the Prime Contract to an entity other than the Joint Venture;

(B) cancellation of the Project by Owner or advisement by Owner that no award will be made;

(C) full performance of the Prime Contract by the Parties and after adjustment of any liabilities between the Parties;

(D) termination of the Prime Contract and after adjustment of any liabilities between the Parties;

(E) written agreement by the Parties to terminate this Agreement;

(F) failure of the Parties to submit a Proposal to Owner after a good faith attempt to do so or failure of the Parties to execute a Prime Contract with Owner, either as a result of a failure to agree on terms to be included in the Prime Contract after a good faith attempt to do so or after a failure to agree on terms with Owner;

(G) a change in control ("Change in Control") of either Party during the term of this Agreement, in which case the other Party will have the option of terminating this

Agreement after providing thirty (30) days written notice to the Party experiencing the Change in Control;

(H) upon notice by any Party to the other Parties prior to executing the Prime Contract if a significant Project matter, such as a request for qualification, request for proposal, Prime Contract, Project financing plan or the procurement plan or process is in good faith deemed unacceptable by the Party providing notice;

(I) either Party files or fails to discharge an involuntary petition in bankruptcy or reorganization, making a general assignment to creditors or becomes insolvent (collectively, the "Bankrupt Party"); or

(J) a material default by a Party under the Agreement or material breach of the Agreement by a Party (collectively, the "Defaulting Party") which is not corrected within ten (10) calendar days after receipt of written notice of such default provided by the other Party.

A Change in Control means a change in the ownership or management structure of a Party by acquisition, merger, consolidation, assignment, operation of law or otherwise, whereby there is a change in the right to control the composition of the board of directors of a Party or direct the management of the business affairs of a Party, regardless of whether such Change in Control results in a conflict of interest.

Where the Agreement is terminated pursuant to Section 17(A) through 17(G), the Parties may individually or with others pursue the Project. Where the Agreement is terminated pursuant to Section 17(H), the Party not initiating termination may pursue the Project individually or with others and the Party initiating termination may is prohibited from pursuing the Project individually or with others. Where the Agreement is terminated pursuant to Section 17(I), the non-Bankrupt Party may pursue the Project individually or with others and the Bankrupt Party is prohibited from pursuing the Project individually or with others. Where the Agreement is terminated pursuant to Section 17(J), the non-Defaulting Party may pursue the Project individually or with others and the Defaulting Party is prohibited from pursuing the Project individually or with others.

ARTICLE 18 NOTICES

18.1 Any notice required under this Agreement shall be provided in writing by mail, email, fax or personal delivery. The proper address, email and fax number for delivery of notice is stated on the signature page of this Agreement. All notices shall be effective upon the date of receipt. Nothing contained in this Article 18 (Notices) shall be construed to restrict the transmission of routine communications between the Parties.

ARTICLE 19 CONFIDENTIALITY

The Parties have executed a separate Confidentiality Agreement pursuant to this Agreement.

ARTICLE 20 PARTY REPRESENTATIONS

20.1 Each Party hereto represents to the other that it has the full power and authority to enter into this Agreement and to perform all the obligations set forth herein and under the Prime Contract or any subcontract thereto with respect to said Party, that this Agreement has been duly authorized by

all necessary corporate action, and that each Party is duly organized, validly existing and in good standing in its State of incorporation, and is or will be qualified to do business, and in good standing, in the State in which the Project is located.

20.2 Each Party represents that it has, or will obtain, and will keep in full force and effect, all necessary permits and licenses necessary for the Party's functions under this Agreement, the Prime Contract, and any subcontract thereto. Neither the entering into nor the performance of any obligation hereunder by either of the Parties shall constitute a violation of any applicable rule, regulation, law, statute, decree or ordinance in effect governing said Party, or any Articles of Incorporation or Bylaws of said Party, nor is it a violation of any agreement, contract or other instrument to which said Party is a Party.

20.3 Each Party further represents and warrants that there are no known pending or threatened actions or proceedings before any court or administrative agency which may materially affect such Party's business assets or condition, or which would materially impair its ability to perform its obligations hereunder and under the Prime Contract or any subcontract thereto.

ARTICLE 21 GENERAL PROVISIONS

21.1 Governing Law: Unless otherwise mutually agreed in writing, this Agreement shall be governed and interpreted in accordance with the laws of the state under which the Prime Contract is governed.

21.2 Execution: This Agreement may be executed in any number of counterparts, each of which shall be deemed an original and together shall constitute a single instrument. Execution by electronic signature is deemed valid.

21.3 Severability: Any provision or part of this Agreement held to be invalid, illegal, void or unenforceable under any Laws or Regulations or otherwise shall be deemed severed from this Agreement and all remaining provisions shall continue to be valid and binding upon the Parties.

21.4 No Waiver: Where a Party intentionally or unintentionally fails to enforce any provision of this Agreement, such failure shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or the remainder of this Agreement. A binding waiver by either Party of any breach of this Agreement shall be in writing and delivered to the other Party. Such a waiver shall not affect the waiving Party's rights with respect to any other breach of this Agreement.

21.5 Titles and Subtitles: Any titles and subtitles of the sections and subsections of this Agreement have no meaning and are strictly for the convenience of reading this Agreement. Such titles and subtitles in no way define or limit the scope or content of the sections, subsections or this Agreement as a whole.

21.6 Complete Agreement: This Agreement, including all exhibits referenced herein, constitute the entire and integrated agreement between the Parties respecting the subject matters of this Agreement and therefore supersede all prior and contemporaneous written or oral understandings, representations and agreements between the Parties. All referenced exhibits are incorporated into this Agreement.

21.7 Modifications: The Parties may agree by written amendment to modify this Agreement. All amendments to this Agreement shall be in writing and signed by the Parties unless otherwise expressly permitted by the terms of this Agreement.

21.8 Third Party Beneficiaries: All rights and duties under this Agreement are for the sole benefit of the Parties. Nothing in this Agreement shall be construed to give any rights or benefits to any person or entity other than the Parties.

21.9 Assignment: The Parties are respectively prohibited from assigning or otherwise transferring any rights, duties or interests in or under this Agreement to any person or entity without the written consent of the other Party, except where assignment or transfer is required by law or where assignment or transfer is required by contract between either Party and a lender on the Project. Unless otherwise expressly agreed to in writing by the Parties, consent does not release or discharge the assignor from any duties under this Agreement.

21.10 Successors: With respect to the terms contained in this Agreement, the Parties are hereby bound to one another, and furthermore, the successors, executors, administrators, permitted assigns and legal representatives of each Party are hereby bound to the other Party and to the successors, executors, administrators, permitted assigns and legal representatives of that other Party. The terms of this Agreement are therefore made binding on the successors, executors, administrators, permitted assigns and legal representatives of each Party.

21.11 Joint Drafting: This Agreement was drafted jointly by the Parties.

21.12 Survival: All provisions of this Agreement which by their nature are intended to continue to apply to the Parties after termination of this Agreement, including but not limited to all representations, waivers, indemnifications and confidentiality provisions, shall survive termination of this Agreement such that they will continue to apply to the Parties after termination.

ARTICLE 22: POST-AWARD DETERMINATION OF SCOPE OF WORK, COMPENSATION RATE, AND INVOICING SCHEDULE

22.1 Detailed Scope of Work: Upon receiving the award, if the Joint Venture ("JV") becomes the successful proposer, the Parties agree to collaboratively determine a detailed scope of work for each Party. This detailed scope of work will be based on the requirements set forth in the awarded contract ("Prime Contract") and each task order. The Management Committee will specify the responsibilities and deliverables of each Party.

22.2 Compensation Rate: The Parties agree that the compensation rate for each Party's services will be determined post-award, in accordance with the terms and conditions of the Prime Contract. The compensation rate will reflect the complexity, duration, and requirements of the services to be performed by each Party if a lump sum price is required for certain task orders. A mutually agreed-upon rate schedule will be developed and documented.

22.3 Invoicing Schedule: An invoicing schedule will be established by the Parties upon receiving the award of each task order. This schedule will outline the timelines and procedures for submitting invoices for services rendered under the Prime Contract. The invoicing schedule will ensure timely and accurate billing and will be designed to meet the Owner's requirements and facilitate efficient financial management of the JV.

22.4 Agreement on Post-Award Terms: The Parties commit to good faith negotiations to finalize the detailed scope of work, compensation rate, and invoicing schedule as promptly as possible following the award. The finalized terms will be documented in an addendum to this Agreement, which will be executed by both Parties.

22.5 Interim Arrangements: Until the detailed scope of work, compensation rate, and invoicing schedule are finalized, the Parties agree to continue performing their respective responsibilities as

outlined in this Agreement and any preliminary project plans, ensuring no disruption to the commencement and progress of the Project.

22.6 Dispute Resolution: Any disputes arising from the determination of the detailed scope of work, compensation rate, or invoicing schedule will be resolved in accordance with the dispute resolution procedures outlined in Article 16 of this Agreement.

22.7 Amendments
This provision and any other terms of this Agreement may be amended only by written agreement signed by both Parties. The Parties agree to execute any necessary amendments promptly to reflect the finalized post-award terms.

By signing below, the Parties agree to all terms contained in this Agreement as of the Effective Date.

MSMM ENGINEERING, LLC

Signature: _____ Date: 7/5/2024
Printed Name: Manish Mardia
Title: President
Office: (504) 559-1897
Address: 4508 Clearview Pkwy, Suite C
Metairie, LA 70006

UrbanTech Consulting Engineering, PC

Signature: _____ Date: 7/5/2024
Printed Name: Wei Wang
Title: President
Office: (212) 627-3366
Address: 11 Broadway, Suite 1900
New York, NY 10004

List of Exhibits

Exhibit A	General Description of Services (To Be Amended Upon Post Award)
Exhibit B	Compensation (To Be Amended Upon Post Award)
Exhibit C	Invoice Schedule (To Be Amended Upon Post Award)

LETTER OF COMMITMENT
to USE SUBCONTRACTOR/TEAMING PARTNER

TO: Contracting Officer, Philadelphia District, United States Army Corps of Engineers

SUBJECT: **Letter of Commitment for Proposed: W912BU-24-R-0023_** Indefinite Delivery Indefinite **Quantity Contract for Architectural & General Engineering Services for Philadelphia District Civil Works** Program Missions (Philadelphia, PA)

Dear Sir or Madam:

UrbanTech-MSMM Joint Venture, LLC and AECOM Technical Services, Inc. hereby make the unequivocal commitment that, in the event that the company receives an award of the Contract for W912BU24R0023 Philadelphia District Civil Works within the boundaries of the Philadelphia District, AECOM Technical Services, Inc. will perform the following work required by the Contract.

- Assist UrbanTech-MSMM Joint Venture, LLC with Full Service Engineering, Architecture, Engineering During Construction, Project Management, CAD MicroStation, BIM, and Surveying services

Sincerely,

Wei Wang, Ph.D., P.E.
Co-Chairman
UrbanTech-MSMM Joint Venture, LLC
Date: _August 7, 2024_____

David G. Sawitzki, PE
Vice President
AECOM Technical Services, Inc.
Date: _August 7, 2024_____

LETTER OF COMMITMENT
to USE SUBCONTRACTOR/TEAMING PARTNER

TO: Contracting Officer, Philadelphia District, United States Army Corps of Engineers

SUBJECT: **Letter of Commitment for Proposed: W912BU-24-R-0023_ Indefinite Delivery Indefinite Quantity Contract for Architectural & General Engineering Services for Philadelphia District Civil Works Program Missions (Philadelphia, PA)**

Dear Sir or Madam:

UrbanTech-MSMM Joint Venture, LLC and **Marine Solutions, Inc.** hereby make the unequivocal commitment that, in the event that the company receives an award of the Contract for **W912BU24R0023 Philadelphia District Civil Works** within the boundaries of the Philadelphia District, **Marine Solutions, Inc.** will perform the following work required by the Contract.

- Assist UrbanTech-MSMM Joint Venture, LLC with civil engineering, bridge engineering, bridge inspection, non-destructive testing and related services

Sincerely,

Wei Wang, Ph.D., P.E.
Co-Chairman
UrbanTech-MSMM Joint Venture, LLC
Date: _August 7, 2024_____

Jeremy Pope
Vice President
Marine Solutions, Inc.
Date: _August 7, 2024_____