TECHNICAL PROPOSAL FOR

Final Design, Engineering and Other Technical Services Associated with the Newark Penn Station Distributed Generation (DG) Project

Request for Proposal No. 21-059 | March 3, 2022



SUBMITTED TO:

NJTRANSIT The Way To Go.®

SUBMITTED BY:

wsp

SECTION 1 – COVER LETTER



March 3, 2022

Ms. Faith Blair
Managing Contract Specialist, Procurement Department
NJ TRANSIT
One Penn Plaza East Newark, NJ 07105-2246

Re: Final Design, Engineering and Other Technical Services for the Newark Penn Station Distributed Generation (DG) Project
NJ TRANSIT Request for Proposal No. 21-059

Dear Ms. Blair:
An important component to NJ TRANSIT's recovery from storm events is to power critical locations independently from the electric utility grid. Newark Penn Station has been rightly identified as one such critical location. Installing distributed generation will achieve the goal of continued station operations while the surrounding neighborhoods are without power. The station is a critical asset for operations during and after storm events, as it is comprised of five distinct transit services. The station facility accommodates transfers between these modes, as well as significant volumes of origin and destination ridership. It has the largest passenger volumes of any station in the State of New Jersey. In addition, a regional NJ TRANSIT Police Station is located here.

Newark Penn Station is a challenging location for the implementation of the Distributed Generation (DG) project. It is located in an urban area with limited adjacent available space. It is listed on the National Register of Historic Places and is partially located in the Passaic River floodplain. WSP brings the right team of expertise to first identify and assess the possible DG solutions and then to implement the chosen solutions in the context of the substantial facility and location constraints. WSP'S key personnel have designed DG and energy efficiency solutions for a variety of clients, industries and settings. We are familiar with all applicable regulatory agencies, have a thorough knowledge of Newark Penn Station and surrounding neighborhood, and are familiar in advancing capital improvements from planning through construction for NJ TRANSIT and within the City of Newark.

Our technical proposal has been prepared in accordance with the request for proposals dated December 21, 2021 and subsequent Addenda dated January 7, 2022, and February 2, 2022.

The WSP team will be led by **Project Manager, Melissa, Poggi, PE, LEED AP**. A key member of WSP's Energy Team, she is ideally suited for this role due to her extensive background in distributed generation projects across the NY Metro Area. Along with her proven abilities to successfully manage multi-discipline teams, Melissa is well versed in the intricate electrical interconnections associated with projects of this nature, which make her uniquely qualified for this role for NJ TRANSIT. Working with Melissa as **Deputy Project Manager is Paul Sullivan, PE, PMP, PP**. Paul brings to this project a history of extensive involvement with Newark Penn Station and other historic transportation facilities. He has been engaged in transportation facility planning, design, and construction for over 35 years. Leading the Electrical Design and Concept of Operations development of the chosen solution with be **Ambrish Desai,** who remains a critical member of our team after having led the prior 20% Preliminary Design.

These leaders form our core management team that will interact frequently to assure that goals and objectives are met within the substantial site constraints, while staying on pace with schedule and budget. They will be supported by a carefully selected team of experts and subconsultants who will help to deliver the broad scope conceptual design and assessment through the 20% Baseline Design, and then who will efficiently develop the final design, including any station modifications that might be needed.

We built our team by partnering with firms that are best suited for their respective roles. They will engage in meaningful roles to help facilitate successful outcomes through all phases of the project. We are looking forward to bringing our collective expertise, creativity, energy, enthusiasm, and experience to NJ TRANSIT. We have built a team that represents the diversity of New Jersey, with four DBE firms integrated into the team. We are committed to exceeding NJ TRANSIT's DBE participation goal.

These firms are:

- **AmerCom Corporation** - Capital cost estimating and project scheduling, project controls support, constructability reviews, and CADD support
- **Mercer Planning Associates** - Community outreach
- **Richard Grubb Associates** - Archeology
- **Sowinski Sullivan Associates** - Architecture

We are excited to re-engage where we left off with the 20% Preliminary Design and working with your team in reassessing the concept design given recent changes, such as the demolishment of the Boiler House. With our vast history and knowledge gained during this assignment, our core team members being key personnel on this next phase of the project and our commitment and alignment in helping NJ TRANSIT achieve their resiliency and sustainability goals for Newark Penn Station, we welcome the opportunity to complete this vital next stage of the project.

Understanding Project Objectives

The WSP Team intends to deliver for NJ TRANSIT a pragmatic and implementable design for distributed power generation for one of NJ TRANSIT's premier passenger stations. WSP's unique and time-tested design approach will meet and exceed the project goals from planning through implementation. WSP will:



Analyze all potential locations and technologies that may be applicable. Our proposal has been crafted to provide the right subject matter experts who can assess the scope, impacts, costs, and benefits of potential solutions.



Facilitate NJ TRANSIT internal stakeholder and Newark community buy-in. We bring to the project a deep experience in station planning and operations, community outreach and engagement, and a strong familiarity with the City of Newark. The need for this project and the benefits it brings, during emergency events, as well in normal operations, will be expressed in NJ TRANSIT's best light to the community. We will look for opportunities to augment current building systems as we engage with the station's operations and maintenance staff.

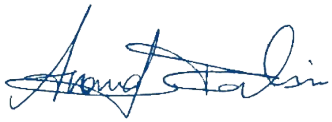


Assess permitting and approval requirements. The construction project will likely need permitting by state level agencies such as NJ SHPO or NJ DEP. WSP's lead designers have been involved with similar NJ TRANSIT and New York metropolitan area historic-registered properties and projects that impact floodplains and floodways, and understand how permitting requirements are to be incorporated into the station, while keeping station functionality intact.

The WSP team is energized by the opportunities ahead for Newark Penn Station and looks forward to continuing to support NJ TRANSIT in reimaging Newark Penn Station. Should you have any questions, please don't hesitate to contact me at 609.512.3614 or **andy.paluri@wsp.com**.

Sincerely,

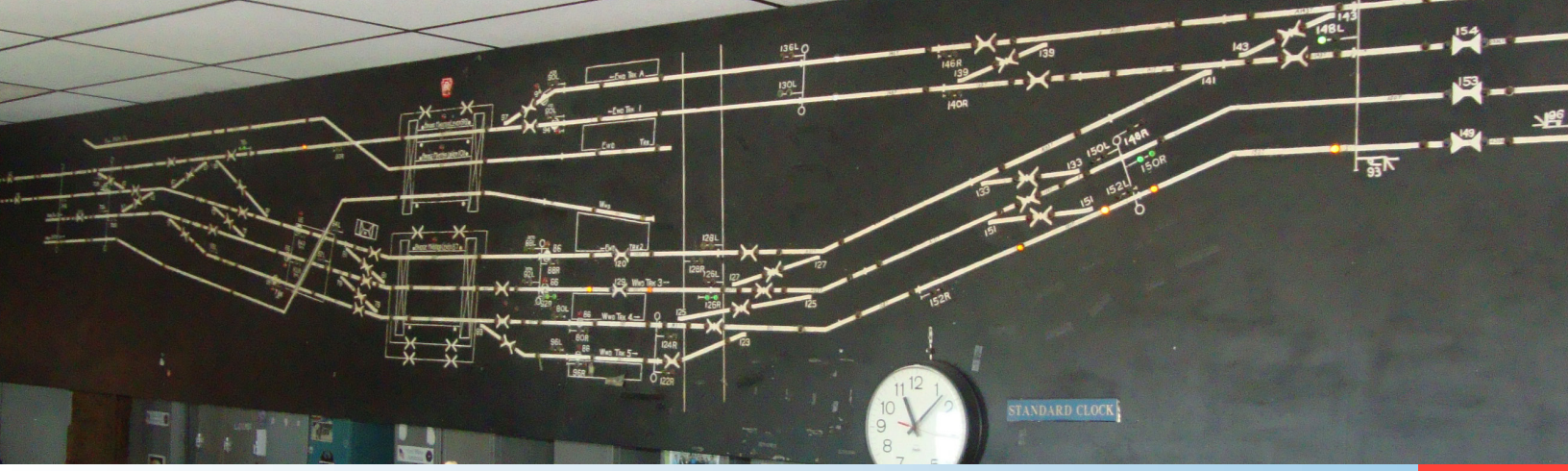
WSP USA Inc.



Andy Paluri, PE, PTOE
District Manager - Mid-Atlantic / Senior Vice President

SECTION 2 – QUALIFICATIONS OF THE WSP TEAM

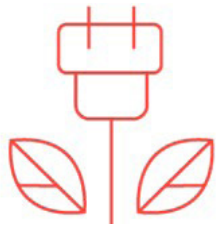




Qualifications of the WSP Team 2

Comprehensive Expertise in Distributed Generation

WSP is a leader in the design, development, and maintenance of power generation systems to serve the needs of diverse operating facilities, using a "clean energy" approach to support the energy transition. We offer expertise in a range of technologies for Distributed Energy Resources (DERs), and we have long supported clients in developing localized generation systems to meet key objectives such as improving the reliability of the power supply and reducing environmental impacts. We will leverage our team's extensive expertise and experience to support NJ TRANSIT in the creation of optimal distributed generation resources that will meet facility-specific requirements, while responding to strategic objectives related to power reliability, efficiency, and clean energy solutions.



Our qualifications and experience in relation to distributed generation technologies encompass design and project development services for combined heat and power (CHP) systems; renewable energy systems, including solar and wind; battery energy storage; complex district energy systems including central plants and distribution networks for large complexes and mission-critical facilities; and emergency power. Our design solutions are targeted to a facility's functionality and critical load requirements. In addition, a number of the projects we have worked on were implemented in response to the threat of climate events that could impact the supply of power from the grid, or could impact the integrity and reliable functioning of power-related equipment.

Our wide-ranging project experience includes engineering services to upgrade a generation plant supplying electric and thermal energy for a residential complex, including storm hardening strategies; a study of the cost and feasibility of adding "black start" capability to power generation plants for a major utility; and the creation of operating procedures for interconnection of a cogeneration plant with the local utility, along with related projects involving on-site generating facilities.

NJ TRANSIT will benefit from a highly qualified and experienced project team that offers:

» **Robust engineering and project management experience on distributed generation projects and familiarity with a range of applicable technologies**

WSP has provided a range of services on distributed generation projects, including feasibility studies, engineering designs, and development of interconnection operating procedures, and has a deep understanding of available technologies including combined heat and power (CHP), renewable energy, and battery storage

» **Extensive experience on NJ TRANSIT projects and deep knowledge of your standards, procedures, and infrastructure**

WSP worked on the 20% design for the Newark Penn Station distributed generation project, along with many other NJ TRANSIT assignments

» **Local presence: team leaders and technical staff are located close to NJ TRANSIT offices and will be fully accessible and responsive throughout the project's duration**

» **A commitment to "clean energy" solutions and environmental, social, and governance (ESG) principles that is aligned with NJ TRANSIT's commitment to clean, cost-effective technology**

WSP PREVIOUSLY WORKED ON THE 20% DESIGN NEWARK PENN STATION DG DRAWINGS, WHICH GIVES US A UNIQUE KNOWLEDGE OF THE POSSIBILITIES AT NPS.

THE 20% DESIGN WILL BE RE-ASSESSED WITH OTHER OPPORTUNITIES AND WITH CONSIDERATION OF CURRENT NPS PRIORITIES.

Our team's extensive project experience and our deep knowledge of NJ TRANSIT's assets and operating procedures are described in more detail below.

WSP has an extensive and successful history of working with NJ TRANSIT and looks forward to continuing this relationship on the Newark Penn Station DG Project. From this project experience with NJ TRANSIT, WSP is fully knowledgeable in NJ TRANSIT's regional infrastructure and operations, as well as procedures and engineering and design standards. The WSP Team is comprised of professionals that are committed to executing the scope of services according to the timeframes established by NJ TRANSIT in the RFP. Key staff identified for this endeavor include planners, engineers and technical staff that have significant experience, providing NJ TRANSIT with the necessary resources to deliver this project.

Melissa Poggi, PE, LEED AP will lead the team as Project Manager. Melissa specializes in medium & low voltage distribution systems, power system analysis, power generation systems, short circuit, coordination and arc flashes studies, battery energy storage systems, and photovoltaic design. Supporting Melissa as the Deputy Project Manager will be **Paul Sullivan, PE, PMP, PP**. Paul is a recognized leader in rail and transit planning and design efforts, and has led numerous successful rail station new construction and rehabilitation projects, including several directly for NJ TRANSIT. Finally, a key member of our design key is **Ambrish Desai**, who was instrumental in the initial 20% Preliminary Design Effort. Ambrish has over 35+ years in power generation and distribution and has been a key member on over half of the highlighted projects identified in the table below.

Select List of WSP's Relevant Past Energy Design Experience

Client	Project Description	Location		Year Complete	Project Type		
					Central Plant	Site Distribution	Distributed Energy
LaGuardia Gateway Partners	LGA CTB Redevelopment & CHRP Design	Queens, NY	$4.0B	Ongoing	X	X	
World Trade Center (WTC)	Central Chiller Plant	New York, NY	$200M	2009	X	X	
Bristol Myers Squibb	Central Utility Complex	Hopewell, NJ	$30M	2002	X		X
Flushing Meadows CP Aquatic Center	Biomass Energy Plant	Flushing, NY	$10M	2014	X		X
Newark Airport	HTHW Emergency Joint Replacement	Newark, NJ	$8M	Ph 1: 2008 Ph 2: 2009		X	
Newark Airport	HTHW Gen Replacement	Newark, NJ	$15.1M	Ph 1: 2013 Ph 2: 2014 Ph 3: 2015	X	X	
Dulles Airport / MWAA	HTHW boiler replacement	Washington, D.C	$10.8M	2015	X		
New York Presbyterian Hospital	Multi-Site Utility System Renewal and Upgrade	New York, NY	$30M	2013	X	X	
SUNY Old Westbury	Satellite Boiler Design	Old Westbury, NY	$4.8M	2009	X	X	
Spring Creek Towers	Engineering and Economic Study of 12 MWE Cogeneration/District Energy Scheme	Brooklyn, NY	Confidential	Ongoing	X		X
Metropolitan Hospital	Boiler Plant Replacement	New York, NY	Confidential	Ongoing	X		X
Millennium Hilton	Tri-Generation Plant	New York, NY	$3.8M	2013	X		X
Hilton New York	CoGen Plant	New York, NY	$6.5M	2012	X		X
York Correctional Institution	Central Plant and Underground Site Distribution System Replacement	Niantic, CT	$45M	Ongoing	X	X	
Bronx Zoo Fuel Cell	Fuel Cell	Bronx, NY	$1.5M	2009			X

Organizational Structure / Number of Personnel Required

WSP will be the prime consultant for this project. We have built a specialized team with additional subconsultants to support the project. More information about the technical roles of each subconsultant is in Section 6.

WSP TEAM SUB-CONSULTANTS

Founded in 1980, AmerCom has successfully completed numerous contract and task order contract projects for NJ TRANSIT, MTA Long Island Rail Road, MTA Metro North Railroad, CONRAIL and Amtrak, as well as site plans and major roadway infrastructure projects for clients including: NJDOT, NJTA, NYSDOT, and the PANYNJ. As a sub-consultant, AmerCom has over 15 years of experience with NJ TRANSIT and is intimately familiar with their policies and procedures. They are uniquely qualified to perform the cost-estimating task through their previous sub-consultant activities for various NJ TRANSIT projects. Under a Task Order Contract for the 2015 NJT Commuter Rail Stations Guidelines & Standards Manual, AmerCom developed guidelines for capital project cost estimates for Chapter 6 of the 2015 Manual revision.

AMERCOM BRINGS ITS EXTENSIVE EXPERIENCE IN CAPITAL COST ESTIMATING FOR TRANSIT AGENCIES AND WITH WSP.

AmerCom prepared the Final Chapter and Cover based on their Technical Memorandum that detailed the costing methodologies and structure for the proposed chapter accounting for appropriate materials, design/construction contingencies, and project escalation. AmerCom is currently tasked under a separate Task Order Contract to prepare an update to Chapter 6 for the 2022 edition of the Manual. AmerCom has generated over 2 billion in cost estimates for NJ TRANSIT projects alone, most recently as a sub-consultant to WSP on the Corridor Study, Future Train Storage & Maintenance Facility Location Study.

ALL FIRMS DBE CERTIFIED

Mercer Planning Associates, LLC (MPA) is a boutique public outreach and land-use planning firm based in Jersey City that provides comprehensive services to public sector clients. Established in 2007, the firm's mission is to facilitate a sustainable future through community planning. Capitalizing on staff's public and non-profit experience navigating regional and state government, the firm adeptly assists its clients in their efforts to coordinate diverse stakeholders and garner inter-governmental coordination for complex planning projects.

MPA staff has managed intensive stakeholder engagement initiatives that involves coordinating multiple advisory committees, stakeholder focus groups, and public workshops. Most recently, these services were provided for NJTPA's Plan 2050, the Jersey City Vision Zero Action Plan, the Passaic County Green Infrastructure Plan, the Sussex County Strategic Growth Plan, Highlands Regional Master Plan Monitoring Program and the TNJ Local Demonstration Project program.

COURTENAY MERCER OF MPA HAS LED COMMUNITY OUTREACH WITH THE CITY OF NEWARK AND SPECIFICALLY WITH COMMUNITY ORGANIZATIONS NEAR NEWARK PENN STATION

Richard Grubb & Associates, Inc. (RGA) is a full-service cultural resource management firm established in 1988. RGA's staff has expertise in the cultural resource process as it applies to transportation improvement projects and has conducted cultural resources surveys in accordance with Section 106 of the National Historic Preservation Act, NEPA, the New Jersey Register of Historic Places Act, and in compliance with Freshwater Wetlands, Waterfront Development, and Coastal Area Facilities Review Act permits and other NJDEP land use regulations. RGA has conducted more than 1,000 transportation and transportation-related projects. Relevant experience includes Phase IA, IB and II archaeological surveys for NJ TRANSIT's County Yard/ Delco Lead Emergency Facility project in New Brunswick and North Brunswick, New Jersey.

RICHARD GRUBB ASSOCIATES HAS PERFORMED SIMILAR ARCHEOLOGICAL SERVICES FOR MANY NJ TRANSIT PROJECTS

Additionally, RGA's experience includes cultural resources surveys for the NJ TRANSIT Transitgrid Traction Power System, including close coordination with NJ TRANSIT, the Federal Transit Administration (FTA), and the NJ Historic Preservation Office to prepare a programmatic agreement between the agencies.

Founded in 1996, Sowinski Sullivan (SSA+E) provides creative architectural and engineering services to a broad spectrum of transportation clients. The firm's focus is Transportation and Infrastructure Architecture and Engineering, with virtually 100% of the firm's project base being transportation facilities. SSA+E has a large body of demonstrable experience in urban and suburban rail facilities and stations including the NJ TRANSIT capacity enhancement study at New York Penn Station. SSA+E has designed improvements at over 300 transit facilities over the past two decades on all types of facilities ranging from above and below grade stations to maintenance shops and welfare facilities to parking garages, control houses, and signal and yard towers. The firm was the architect for a performance review and assessment of stations and shops along the Hudson Bergen Light Rail System; as well as for three inspection contracts for NJ TRANSIT – including commuter rail stations, bus terminals, and maintenance & administrative facilities. SSA+E's planning work at NJ TRANSIT's Newark Penn Station included fitting ADA compliant elevators and escalators within the existing platform and viaduct structures to improve circulation without compromising the historic features of the building. Currently, SSA+E is the architect for NJ TRANSIT's Elizabeth Station, including a station building replacement, extending the platforms in order to accommodate for increased ridership. SSA+E was also the architect for the NJ TRANSIT Microgrid preliminary design, including the Central Power Plant and associated substation and control houses.

SOWINSKI SULLIVAN HAS A LONG HISTORY OF ARCHITECTURAL DESIGN THROUGHOUT NJ TRANSIT'S PASSENGER FACILITIES

AVAILABILITY OF PROFESSIONAL AND TECHNICAL STAFF + ANTICIPATED WORKLOAD FOR THE DURATION OF THIS PROJECT

WSP has committed technical staff who have the availability for this assignment. Technical staff availability, as well as current assignments are listed below.

Key Project Personnel	Firm	Availability	Current Assignments (+ Completion Date)
Melissa Poggi, PE, LEED AP *Project Manager*	WSP	70%	University of Toronto (May 2022) Morris Ridge Solar PV (July 2022)
Paul Sullivan, PE, PP, PMP *Deputy Project Manager / Risk Manager*	WSP	75%	NJ TRANSIT New York Penn Station Central Concourse (March 2022) NJ TRANSIT Hunter Flyover 10% Design Update (July 2022) NJ TRANSIT Raritan Valley Transit Master Plan (August 2023) Maryland MTA Open-end Trackwork Design (May 2026)
Edrea Tan *QA/QC Manager*	WSP	40%	LGA Redevelopment (December 2022) Coler Hospital Generator Installations (January 2023) Bellevue Security Head Relocation (March 2023) Exelon Black Start (March 2023)
Ambrish Desai *Electrical Lead / Concept of Operations*	WSP	70%	University of Toronto Nodal Plant (April 2022) ABQ Terminal Electrical Study (May 2022) ISC Dominion OSW PE Services (October 2022)
Robert Bury, PE *Mechanical Lead*	WSP	80%	York Correctional(March 2022) Exelon Perryman (May 2022) Rochdale Village (October 2022) (estimate)
Claudio Vescio, PE *Structural Lead*	WSP	70%	NJ TRANSIT Central Concourse at NY Penn Station (February 2022) MTA C&D Inspection of Terra Cotta Ceilings at 28 Stations (May 2023) MNR Harmon Shop Replacement Phase V Stage II CPS (July 2024)
Athanasios Georgiadis, PE *Civil / Utilities / Resiliency*	WSP	50%	NJTA 1 to 4 Widening (April 2022) NJTPA Intersection Safety Improvements (December 2023)
Andrew Koch *Mechanical*	WSP	90%	University of Toronto (April 2022) Offshore Wind Projects (April 2022) Exelon Perryman (May 2022)
Christopher Bacchus *Cost Estimator*	AmerCom	55%	MTA Grand Central Terminal Train Shed (May 2022) NJDOT Route 47 over Br. Dennis Creek (June 2022)
Courtenay Mercer *Community Outreach*	Mercer Planning Associates	40%	Downtown New Jersey (Management of small non-profit) (Ongoing) Somerset County Culture & Heritage Long Range Plan (June 2022) NJ TRANSIT On-call Services (December 2023)
Paul J. McEachen *Principal Senior Archaeologist*	Richard Grubb & Associates	50%	Route 1 NB Bridge over Raritan River (April 2022) Route 71 over NJ Transit (May 2022) Route 47 Bridge over Dennis Creek (October 2022)
Brandon M. Coles, RA *Architecture*	Sowinski Sullivan	60%	MTA NYCT Grand Central Station - #7 Flushing Line Circ. (April 2022) MTA MNR GCT Signage (August 2022) NY Penn LIRR Penn Train Renovations (December 2022)

OFFICE LOCATIONS

WSP's Newark office is within walking distance to NJ TRANSIT offices and is accessible to NJ TRANSIT staff. This is a key office for WSP with over 200 technical staff and will be maintained during the project period.

Many of our team members firms are local, with additional offices within the region for capacity, if needed. Project Manager, Melissa Poggi is a full-time employee of WSP and is located in our New York, NY office. Our Deputy Project Manager, Paul Sullivan is located in our Newark, NJ office. Both Melissa and Paul are within close proximity to NJ TRANSIT and are fully accessible to NJ TRANSIT staff.



Firm	Address / Percentage of Work That Will Be Completed from Each Location
WSP	2 Gateway Center, 10th Floor, Newark NJ 07102 (50% - Project Management; 100% - Civil; 20% - SCADA) One Penn Plaza, 2nd Floor, 250 W. 34th Street New York, NY 10119 (50% - Project Management; 100% - Electrical; 100% - Mechanical; 50% - Environmental; 100% - Structural; 80% - SCADA) 2000 Lenox Drive, 3rd Floor, Lawrenceville, NJ 08648 (100% - Geotechnical) 50 Lakefront Blvd., Buffalo, NY 14202 (25% - Environmental) 100 Summer Street, 13th Floor, Boston, MA 02110 (25% - Environmental) 1 East Pratt Street, 3rd Floor, Baltimore, MD 21202 (100% - Safety / Security)
AmerCom (DBE) *Cost Estimating and Constructability*	1259 Route 46 East, Bldg. #2, Parsippany, NJ 07054 (100%)
Mercer Planning Associates (DBE) *Community Outreach*	344 Grove Street, Suite 256, Jersey City, NJ 07302 (100%)
Richard Grubb & Associates (DBE) *Archeology*	1259 Route 46 East, Bldg. #2, Parsippany, NJ 07054 (100%)
Sowinski Sullivan (DBE) *Architecture*	25 Mohawk Ave, Sparta, NJ 07871 (50%) 336 South 16th Street, Philadelphia, PA 19102 (50%)

RELEVANT EXPERIENCE

Beginning on page 2 - 7, WSP has included the 18 project sheets listed below.

Project	Firm(s)
Newark Penn Station Distributed Generation - 20% Preliminary Design	WSP
Bronx Zoo On-Site Generation Electrical Interconnection	WSP
Amalgamated Warbasse Houses Co-Generation Project	WSP
Exelon Generation Black Start Study	WSP
NYC Health + Hospitals Mitigation Program	WSP
Data Center Energy Plan	WSP
Starrett City / Spring Creek Towers	WSP
Amtrak River to River Rail Resiliency	WSP
Newark Penn Station Passenger Circulation Study, Phase 2 and 10% Design	WSP
New York Penn Station Central Concourse	WSP
Corridor Planning, Future Train Storage & Maintenance Facility Location Study TO# 1	AmerCom
Long Range Transportation Plan	Mercer Planning Associates
BALBiD Corridor Analysis	Mercer Planning Associates
Phase IA/IB/II Archaeological Survey and Harbs County Yard/ Delco Lead Emergency Facility Project	Richard Grubb & Associates
NJ TRANSIT Microgrid Project	Sowinski Sullivan
Pullman Building Hoboken Terminal	Sowinski Sullivan
Henderson Substation	Sowinski Sullivan
Wayne Junction Frequency Converter	Sowinski Sullivan



Newark Penn Station Distributed Generation - 20% Preliminary Design | Newark, NJ

Newark Penn Station (NPS) is located at 1 Raymond Plaza West & Market Street in Newark, N.J. It is a four-story building, which includes a ground level concourse, second floor, mezzanine, and basement. The station houses 217,800 square feet of space for waiting rooms, vendor spaces, offices/conferences spaces, rail platforms, bus lanes and maintenance shop. The facility operates 24/7, 365 days a year, and is used by approximately 300,000 to 900,000 passengers a day.

Two (2) Public Service Electric and Gas Company (PSE&G) 1200A services supply power to the primary side of each main facility ATS at 4160V which feeds the NPS main-tie-main Substation #1. Newark Penn Station has six (6) main switchgear assemblies. Three of these switchgear are the major Substations #1, #2, and #3. The other three switchgear assemblies include a 480V/277V power distribution switchgear (SPP), a 208V/120V lighting distribution switchgear (SLP), and a 4160V metal clad bridge equipment power distribution switchgear (DP). The DP 4160V metal clad switchgear provides power to three large Ward Leonard Motor Generator (MG) sets (750 HP, 600 HP, and 450 HP) that operate the Dock Bridge. The MG sets provide a steady DC current to the bridge motors for each of the three bridge spans. Substation #1 parallels with the utility and distributes power to Substation #2, SPP, SLP, and DP. Substation #2 feeds the major equipment room MCCs. Substation #3 feeds equipment at the Raymond Boulevard concourse.

There is an emergency backup diesel generator rated at 2,000 kW capacity. All loads for the facility are supplied by this generator. The facility has a 5-days diesel fuel tank that is built in underneath the generator enclosure.

NJ TRANSIT enlisted AECOM/WSP to provide a feasibility study to add distributed generation to the NPS campus. As part of that team, WSP was responsible to provide electrical and mechanical engineering expertise related to the distributed generation options recommended for Newark Penn Station.

Personnel from this Proposal:

- Ambrish Desai - WSP
- Andrew Koch - WSP

Client

AECOM / NJ TRANSIT

Project Cost

$16M (Estimated Construction Cost)

Duration

2017 - 2019

Our team conducted numerous field visits to understand the existing electrical distribution networks and load profiles of the facility to properly size and interconnect the proposed distributed generation solutions. This effort was carried forward to a 20% Design Level for the purpose of obtaining Build / Build / Operate & Maintain bids from various developers.

Project completed by:



Bronx Zoo On-Site Generation Electrical Interconnection | Bronx, NY

WSP created the utility interconnection operating procedures for the existing Co-Generation Plant with Con Edison for the Bronx Zoo. The operating procedures were designed to enable the Co-Generation Plant to interconnect with the utility with net metering capabilities and the option to island off when utility power is down. The WSP team created additional operating procedures for the independently operating 200kW Fuel Cell at Lion House to connect to the Co-Generation Plant in parallel through the 5kV on-site distribution loop. This addition also required an update to the Con Edison Interconnection Agreement with additional interconnection relay, protection, and control requirements.

Upon the successful completion of these projects, WSP supported the electrical interconnection of an islanded combined heat and power (CHP) plant that was operating in islanded mode only for the Center for Global Conservation (CGC) Building with lower than design efficiency due to the inconsistent load profile of the building. The WSP team designed the conversion of a 520kW Microturbine CHP from island mode only to grid-connect mode to the Bronx Zoo's 5kV loop and to the Con Edison grid.

The WSP team submitted another interconnection application for distributed generation with Con Edison which included the following:

- Utility Interconnection Relay / Protection / Control Requirements
- Operating and Testing Procedures for use of Microturbine in Parallel Operation with existing Zoo Co-Generation, Fuel Cell, and Con Edison systems
- Coordination with Con Edison, for necessary witness testing to allow for parallel and islanded mode operation

Personnel from this Proposal:

- Ambrish Desai - WSP

Client

Wildlife Conservation Society

Project Cost

$3M (Construction Cost)

Duration

2016 - 2018

Project completed by:

WSP



Amalgamated Warbasse Houses Co-Generation Project | New York, NY

Amalgamated Warbasse Houses, Inc. (AWH) is a 2,585 unit cooperative housing development, built in 1964, that is comprised of 5 high-rise buildings and a small shopping center. The complex generates and supplies its own electric and thermal energy from an onsite Power Plant (the Plant). The facility electrical load varies from approximately 1-4MW. The existing Plant was over 50 years old and utilized high pressure steam turbine technology via two 600PSIG 50MBH boilers and two 6MW turbines for redundancy. Over time, the Plant became less reliable and less efficient than available modern technologies. In addition, Super Storm Sandy had shown that certain equipment in the Plant was vulnerable to floods.

Our role as the engineer included initial preliminary design, CMO (Constructability, Maintainability, Operability) review, construction cost estimates updated throughout design, pre-purchase specifications for major equipment, and final design/ construction documents.

The design included updating the Plant by installing new equipment to increase the efficiency and reliability and design the installation with storm hardening provisions. The new equipment includes five (5) 1MW reciprocating natural gas engines with hot water exhaust and jacket water heat recovery heat exchangers, three (3) 25MBH low pressure package boilers, SCR system, electrical switchgear and additional equipment required to integrate into the existing electric and thermal distribution systems. Since the existing system was a steam plant, integrating hot water recovery triggered many design and operating challenges. Many of the operating challenges were discussed and resolved with the plant operators. The existing chillers utilized steam absorption; a hot water absorption chiller was added to the heat recovery loop.

The facility is not connected to the electrical grid, which causes many complications regarding back up power and thermal. The existing plant utilized three (3) diesel generators integrated into the system for electrical back up. Thermal redundancy was provided by the high pressure (600PSIG) boilers and PRV system. The new system was designed to utilize the existing diesel generators and included a new low pressure dual fuel boiler for redundancy.

Most gas engine generators are not conducive to “island mode” operation. Many hours were spent interviewing vendors and narrowing down the engine options available in the market, to find the engines with the best load following characteristics to meet the owner’s requirements.

Personnel from this Proposal:

- Ambrish Desai - WSP
- Robert Bury - WSP
- Gordon Ng - WSP
- Andrew Koch - WSP
- Joseph Lewkowicz - WSP

Client

Amalgamated Warbasse Houses

Project Cost

$900k (Estimated Design Cost)
$25M (Estimated Construction Cost)

Duration

2015 - 2017

Project completed by:

WSP



Exelon Generation Black Start Study | Baltimore, MD

Exelon Generation operates several power generating assets in the Baltimore area. Philadelphia Road Generating Station is an oil-fired peaking plant, built in 1971, consisting of four (4) turbine generator units totaling 61 MW of power generation. Perryman Generating Station is an oil fired peaking plant, built in 1970, originally consisting of four (4) turbine generator units totaling 216 MW of power generation.

Each of the stations dispatch on demand power to the regional transmission organization (RTO), PJM Interconnection. In order to respond to a Request for Proposal from PJM, Exelon enlisted WSP to study the cost and feasibility of adding black start equipment to the existing plants. WSP completed a preliminary design for black start generation assets and switchgear for interconnection to the existing electrical infrastructure at the two sites. WSP provided the equipment requirements, costs, sequence of operation and schedule for the proposed upgrade. In addition to completing the study for the traditional diesel generator solution, WSP also considered whether emerging battery energy storage technology could meet the task.

WSP has been selected by Exelon to continue the detailed design of the project, which is ongoing.

Personnel from this Proposal:

- Melissa Poggi - WSP
- Ambrish Desai - WSP
- Andrew Koch - WSP

Client

Exelon Generation

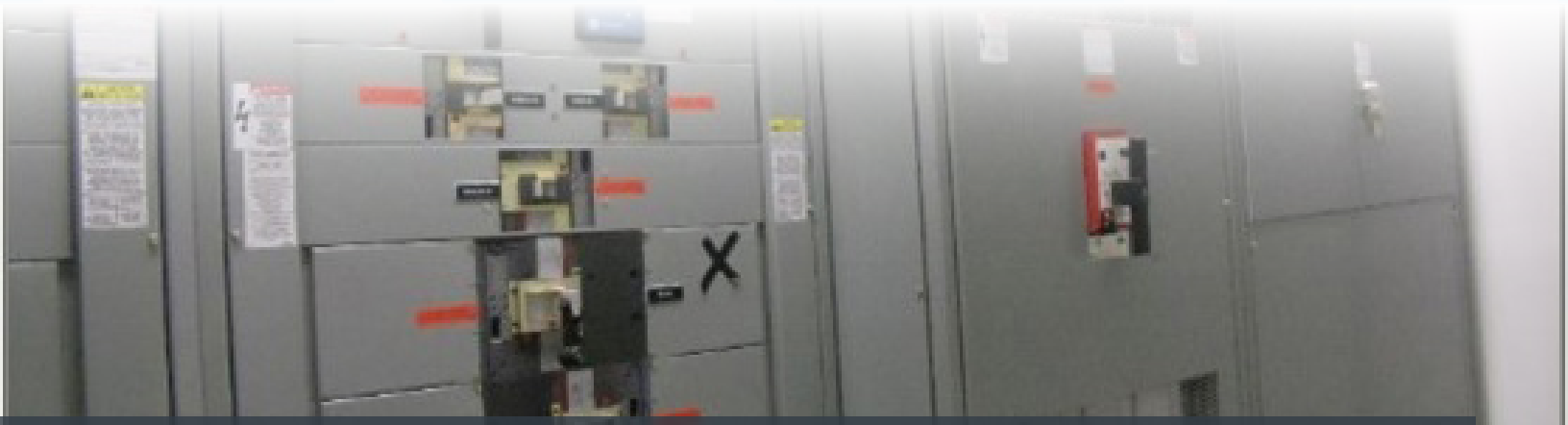
Project Cost

$5M (Estimated Construction Cost)

Duration

2019 - Present

Project completed by:



NYC Health + Hospitals Mitigation Program | Various Locations, New York

WSP was assigned the structural, electrical and mechanical professional engineering and architectural design services to support the installation of new electrical switchgear on the ground floor of the Administration Building, C&D Building and F-Link (New York Power Authority) Service. These three electrical services compose approximately 40% of the electrical power distribution for the entire campus, including services of 208/120V, 480/277V and associated step-up transformers from 480V-4160V substations including the installation of portable generator connection terminal boxes exterior of the building for interconnection with the new utility service. WSP provided the structural calculations required to determine viability of locating electrical equipment on the ground floor originally intended for office use, and designed the additional structural steel framing and supports to withstand the weight of the new equipment. WSP worked around the clock along with the contractors to achieve the aggressive construction schedule for restoration of power.

In addition to the switchgear relocation, WSP provided design and construction support services for short term mitigation projects. These included: the installation of a standby portable fuel oil transfer pump for the existing emergency generators located on the 13th floor of the facility; installation of a standby portable domestic water pump to supply water to the 23rd floor house water tanks; and the installation of a portable generator connection terminal box and interconnection to the existing 13th floor emergency power distribution paralleling switchgear to allow for a portable generator to be installed to supply standby power to the existing emergency power distribution throughout the facility. WSP was responsible for the design, as well as developing the necessary functional testing procedures to ultimately commission and test the portable standby systems for proper operation and functionality.

Personnel from this Proposal:

- Ambrish Desai - WSP
- Andrew Koch - WSP
- Joseph Lewkowicz - WSP

Client

New York City Health and Hospital Corporation

Project Cost

$7M (Contract Value)

Duration

2013 – Present

Finally, WSP recently completed the overall testing and commissioning of all new normal utility services entrance power distribution equipment, as well as portable generator connection terminal boxes that were installed following Super Storm Sandy. Our team is also preparing an overall utility failure analysis procedure manual providing detailed operating instructions for the entire utility normal power, emergency power and fuel oil systems at the hospital that will instruct the facility operators specific instructions to either isolate and/or restore power or fuel oil in the event of a failure anywhere throughout the system.

Project completed by:



Data Center Energy Plant | Beacon Falls, CT

A confidential client is involved with the development of a Data Center located in Beacon Falls, CT. The Data Center is expected to be a 200,000 square foot Tier III facility with utility space on the first floor and the white space on the second floor. The Data Center building is being designed by another Engineering firm. A master plan was provided which included the proposed building loads.

WSP was engaged to develop a conceptual design for an Energy plant to support the Data Center loads. The design concept is to provide an Energy plant with the capacity to provide power with fuel cells and natural gas engine generators for the Data Center. Waste heat will be used with absorption chillers to provide cooling for the Data Center. The development is expected to also include a connection to the utility grid for power at 13.8 kV.

WSP evaluated the Energy plant equipment loads required to support the Data Center electrical and thermal loads. The total site power requirements were established based on the Data Center loads and the proposed Energy plant equipment.

As fuel cell electrical output degrades overtime, the capacity and number of fuel cell equipment lineups were evaluated to meet the requirements of the site at the beginning-of-life and end-of-life. Backup generating equipment was sized and selected to support the site in the event of a utility outage.

Heat recovered from the fuel cells was used with absorption chillers to generate chilled water for cooling the facility. Electric chillers were selected to meet the total chilled water loads plus provide redundancy in the event that either a fuel cell or absorption chiller is offline.

Electrical distribution was designed with redundancy to support both the Data Center as well as critical Energy plant equipment. The electrical and thermal distribution systems were designed to meet the requirements of a Tier III facility.

Personnel from this Proposal:

- Melissa Poggi - WSP
- Ambrish Desai - WSP
- Andrew Koch - WSP

Client

Confidential

Project Cost

$30M (Estimated Construction Cost)

Duration

2019 - 2021

Project completed by:

WSP



Starrett City / Spring Creek Towers | Brooklyn, NY

WSP has been providing owner's engineer services to Starrett City since 2002 for their 12 MW Spring Creek Tower Cogeneration Utility Plant (CUP) that provides electricity and thermal energy to 46 residential buildings, 8 parking garages, a community center and a shopping center over 153 acres since 1974. While implementing the required NOx RACT burner upgrades to four dual fuel 140 MMBtu/hr boilers, field complications were encountered due to the age of the system, triggering the need for a total plant outage. The CUP is the sole supplier of electricity, heating, and cooling to over 15,000 residents, and had never previously been shut down on purpose.

WSP planned and managed a successful, on-time shutdown process that enabled the following upgrades to the plant:

- Replaced existing single isolation valves at major equipment with new double block valves
- Replaced deteriorated sections of piping
- Built new structural platform for access during outage and for future maintenance use
- Abated lead and asbestos on the valves and gaskets
- Provided insulation for all new installations
- Provided new taps for future supplemental winter cooling tower
- Cleaned and repaired the cooling towers
- Added new 5kV, 1200 Amp spare cubicle to electrical switchgear

The WSP Engineering team worked closely with the plant operations team, owner's construction manager and the contractors in planning of the first shutdown of the plant in over 40 years to ensure seamless transition to temporary equipment, completing the required upgrades and reconnecting to the CUP successfully within four weeks.

WSP created a step-by-step detailed outage plan which involved DOB filing and approvals, pre-purchase of the materials with long lead times, temporary equipment set-up (generators and boilers), switch-over to temporary equipment, plant shutdown, asbestos remediation, demolition, installation, testing, commissioning, start-up and de-commissioning of the temporary equipment.

Personnel from this Proposal:

- Ambrish Desai - WSP
- Robert Bury - WSP

Client

Brooksville

Project Cost

$10M (Construction Cost)

Duration

The benefits of the project included:

- Increased reliability, safety and flexibility of the plant.
- Saved the client $1M by avoiding additional temp boilers for heating through diligent and detailed planning. The only temp boiler used during the shutdown was for domestic hot water.
- Added cross connection to the expansion tanks to improve operations of the plant.

Project completed by:

WSP



Amtrak River to River Rail Resiliency | New York, NY

Amtrak and the New York City Metropolitan Transportation Authority (MTA) hired WSP to assess community noise and air quality impacts associated with the installation and future operation of emergency generators for the ventilations system supporting the East River transit tunnels. The project was motivated out of concern that future rises in sea level could potentially adversely affect the life-critical tunnel ventilation system. One of the tunnel ventilation buildings was located in Manhattan at 1st Avenue and East 43rd Street. The other ventilation building was across the East Riven in Long Island on Center Boulevard. Sensitive receptors in close proximity to the ventilation buildings included the NYU Langone Hospital on 1st Avenue.

A noise analysis was performed to assess potential noise impacts in the communities surrounding the two ventilation buildings. The selected approach and noise criteria came from the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Manual. Ambient noise monitoring was performed for a week at both the Manhattan and Long Island sites in order to establish existing noise levels per FTA requirements as shown here.

Amtrak did not know the specific model of generator to be installed, so typical generator noise emission data was used in the Cadna-A noise model to estimate unmitigated generator noise levels affecting nearby receptors. From the model results, WSP was able to develop a performance-based noise control specification for future generator vendors to bid on including noise reduction requirements for both the generators' housings and exhaust stacks.

Personnel from this Proposal:

- Erich Thalheimer - WSP
- Bruce Wattle - WSP

Client

MTA Construction & Development

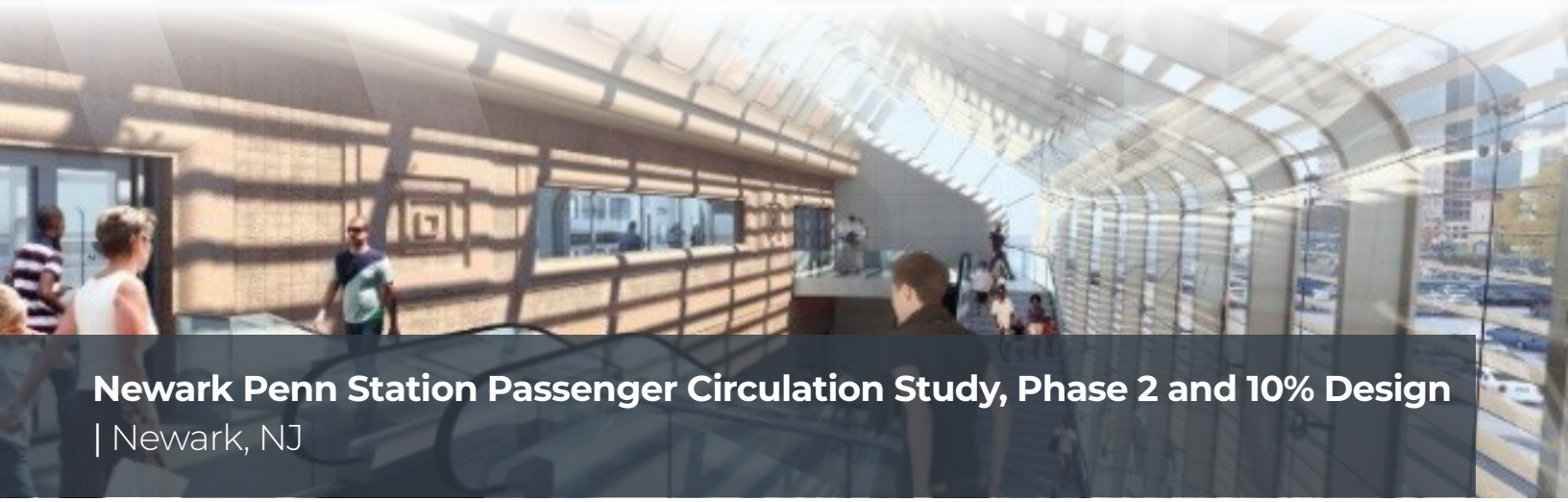
Project Cost

$100,000 (Fee)

Duration

2021 - 2022

Project completed by:



Newark Penn Station Passenger Circulation Study, Phase 2 and 10% Design

| Newark, NJ

WSP performed this study of potential improvements at this historic register-listed station that will address existing shortcomings, as well as proposed increased passenger services. Newark Penn Station (NPS) is NJ's busiest passenger rail station and serves over 300 NJ TRANSIT commuter and 80 Amtrak trains per day, as well as high frequency PATH service, light rail services, private busses, and shuttles, taxis, and private vehicles. As ridership and service frequencies have grown significantly on all these modes, NPS is due for transformational improvements in both transit operations and the quality of passenger use.

The study included developing recommendations to provide additional and higher quality pedestrian routes to and between the station platforms. In addition, the expansion of Track A to meet current standards will be undertaken which will allow this track to be used for scheduled service, rather than only during perturbed operations today. Routine use of Track A is assumed in future Northeast Corridor operating scenarios. The study first identifies and assesses potential improvements from an architectural and visioning perspective, followed by survey and structural, fire and life safety and MEP engineering support, as well as overall station operations assessments leading feasibility verification, conceptual design, and costs.

Personnel from this Proposal:

» Paul Sullivan - WSP

Client

NJ TRANSIT

Project Cost

$460,000 (Assessment, Visioning, and Conceptual Design)

Duration

2015 - 2017

Project completed by:



New York Penn Station Central Concourse | New York, NY

WSP (Parsons Brinckerhoff), along with FXCollaborative, led a Visioning Study and subsequent 10% Design Report exploring ways to reprogram and rejuvenate NJ TRANSIT's operations in New York Pennsylvania Station (2011 - 2015). Seeking to expand the station's central concourse to reach platforms served by NJ TRANSIT, our team investigated ways to increase passenger capacity, improve circulation, and enhance the passenger experience.

The initial Visioning Study was informed by a thorough analysis of the station, and identified three progressively more impactful modifications that could serve as a basis of design for the Central Concourse. Working together with Penn Station's major stakeholders, (NJ TRANSIT, Amtrak, and Long Island Railroad), we created a viable design for the new concourse that improves passenger circulation and introduces a palette of materials that are both clearly legible and stylistically timeless.

Following the success of the Visioning Study and 10% Design Report, the WSP team was selected to continue the design of the Central Concourse through final design and construction administration for NJ TRANSIT, with an anticipated design completion date of 2024.

The preliminary design phase will conclude in March of 2022. The preliminary design is focused on the structural, MEP, fire and life safety and communications systems relocations needed to fit the Central Concourse, as well as opportunities for improvements to these systems for the benefit of the entire New York Penn Station complex. In addition, WSP is leading the approvals process for the construction of a new station headhouse located on 31st Street with several City of New York agencies.

Personnel from this Proposal:

- Paul Sullivan - WSP
- Kevin Lim - WSP
- Claudio Vescio - WSP
- Erich Thalheimer - WSP

Client

NJ TRANSIT

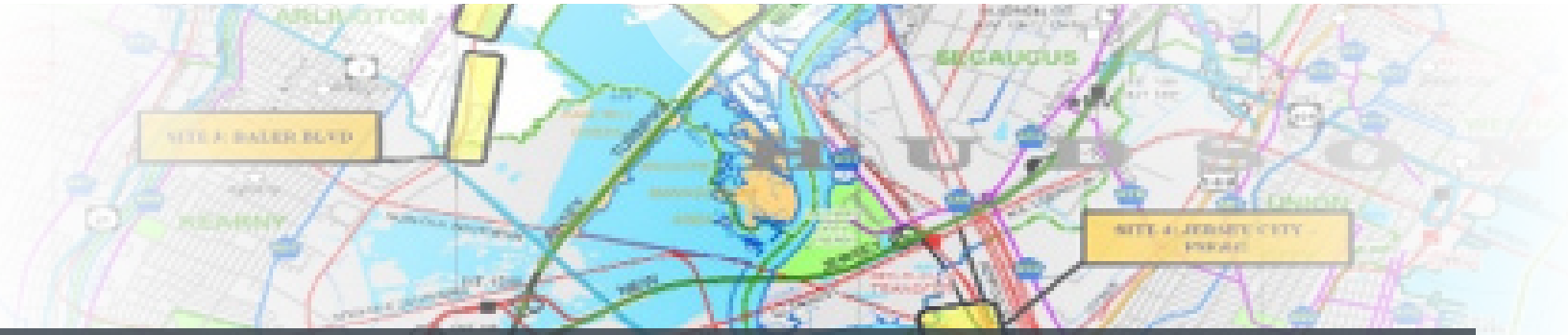
Project Cost

$1,195,000 (Preliminary Design Fee)

Duration

2011 - 2015; 2021 - Ongoing

Project completed by:



Corridor Planning, Future Train Storage & Maintenance Facility Location Study TO# 1 | Newark, NJ

This project consisted of a needs assessment study, property assessment and site evaluation screening for additional train storage and maintenance facilities. Proposed storage yard options and Rail Line improvements were analyzed involving over $2 Billion in improvement costs. Working as a subconsultant to WSP, AmerCom was responsible for surveying, geotechnical engineering and cost estimating services. Survey work included development of various rail corridor base maps with the existing ROW documented through each corridor. This mapping was used for analysis of the various alignment and yards under consideration. Geotechnical work included research to obtain existing geotechnical data for the area which included previous construction in the vicinity, historic borings, soil survey reports and regional geology reports.

Using this data, preliminary subsurface soil profiles were developed to determine the impacts the various soil types would have on the proposed structures. Estimated foundation types for the conceptual designs were determined in order to develop realistic cost estimates that were reflective of site conditions that would be encountered. Utilizing conceptual alternatives for rail alignments and storage yard options developed by the Prime consultant, AmerCom prepared a detailed cost analysis breakdown and summary matrix for all options considered.

Personnel from this Proposal:

» Christopher Bacchus - AmerCom

Client

NJ TRANSIT

Project Cost

$2 Billion + (Construction Cost)

Duration

2019 - 2020

Project completed by:

AmerCom Corp.
Consulting Engineers
Responsive Cost Effective Solutions with Excellence!



Neighborhood Revitalization Study | Newark, NJ

The Port Authority of New York and New Jersey (Port Authority) was exploring the extension of PATH service to the Northeast Corridor Rail Link Station at Newark Liberty International Airport. The Greater Dayton Neighborhood Revitalization Study, conducted in close partnership with the City of Newark and the Newark Housing Authority, explored the potential to transform Greater Dayton from a distressed, largely isolated area into a revitalized, transit-oriented community that is connected to the greater region around it.

To set a baseline for revitalization potential, the Phase I report included a trend analysis of all Newark-WTC station areas looking at shifts in demographics, housing, economic and business indicators, commuter patterns, and land use. Using the same lens of analysis, the study also presented a comprehensive examination of existing conditions within the Greater Dayton neighborhood.

The study included significant stakeholder engagement, including coordination of six advisory committees. Key partners and contributors to the engagement process included local, regional, and state government representatives, community organizations, and business and resident representatives.

The project team worked with the client and stakeholders to create a TOD vision for the neighborhood that emphasized connectivity, accessibility, and addressed equity concerns.

Personnel from this Proposal:

» Courtenay Mercer - Mercer Planning Associates

Client

Port Authority of NY & NJ, in collaboration with the City of Newark

Project Size

$150,000 (Fee)

Duration

2014-2015

Project completed by:

MERCER PLANNING ASSOCIATES



BALBiD Corridor Analysis | Newark, NJ

Bloomfield Avenue / Lower Broadway Business Improvement District (BALBID) manages a corridor running from the Bloomfield/Newark border to Broad Street Station in Downtown Newark. The corridor is zoned nearly exclusively community commercial (C-2). Immediately adjacent to the corridor, the primary zoning is One-Three Family & Townhouse Residential (R-3). The second most common zoning immediately adjacent to the corridor is One Family Residential (R-1). Ground floor tenants on the corridor are a mix of service, retail, and restaurant uses.

The BALBID brought on the project team to report on existing conditions on the corridor, engage community members to obtain opinions and perceptions of corridor strengths and weaknesses, and develop recommendations for corridor improvement in next five years.

The existing conditions analysis conducted in 2019 focused on understanding corridor zoning, identifying vacant and abandoned properties, collecting demographic data, and surveying development opportunities.

The community engagement piece of the project took place in 2019, 2020, and 2021 and involved coordinating and hosting an interactive charette for local business owners and residents; conducting one-on-one interviews with project stakeholders including corridor business owners, property owners, workers, and residents; designing two responsive, targeted surveys via Typeform to understand both resident and business owner perspectives (in English and Spanish); and planning and conducting 3 bi-lingual 'pop-up outreach' events around community transportation hubs on the corridor.

Personnel from this Proposal:

» Courtenay Mercer - Mercer Planning Associates

Client

Bloomfield Avenue / Lower Broadway Business Improvement District

Project Size

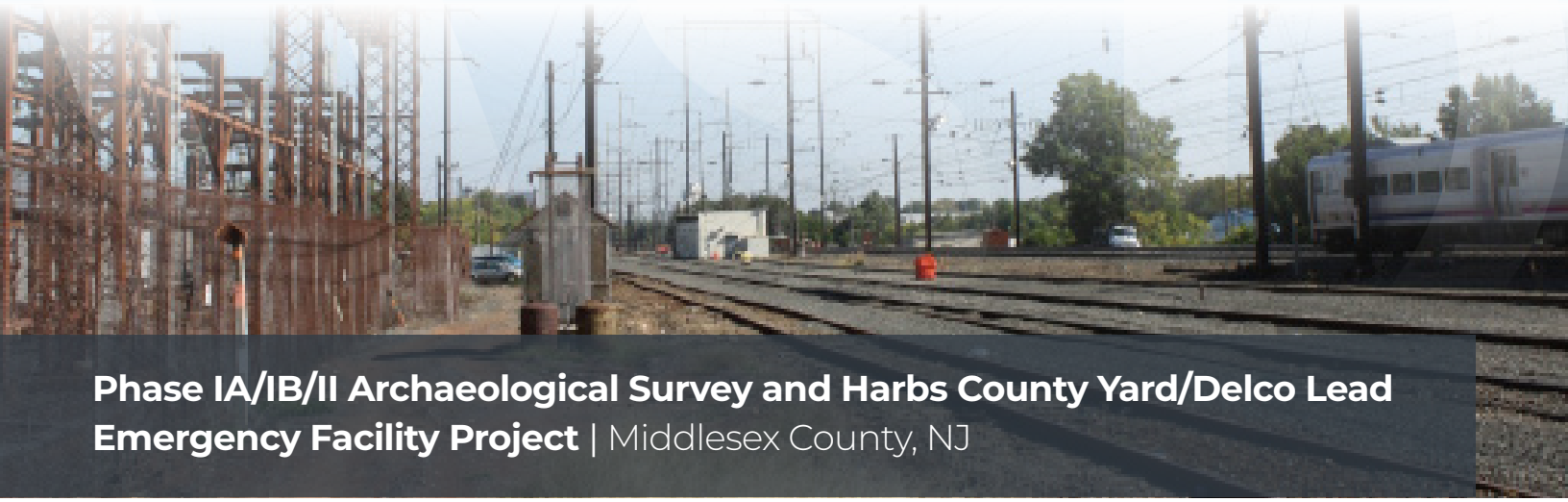
$10,000 (Fee)

Duration

2019 - 2021

Project completed by:

MPA
MERCER PLANNING ASSOCIATES



Phase IA/IB/II Archaeological Survey and Harbs County Yard/Delco Lead Emergency Facility Project | Middlesex County, NJ

Richard Grubb & Associates (RGA) completed Phase IA and IB/II archaeological surveys and Historic Architectural Resources Background Study (HARBS) in the Area of Potential Effects (APE) for the NJ TRANSIT's County Yard/Delco Lead Emergency Train Storage and Service and Inspection Facility Project. All work was completed in compliance with Section 106 of the National Historic Preservation Act.

An initial Phase IA survey determined that the APE had a high sensitivity for prehistoric archaeological resources and for historic archaeological deposits associated with former nineteenth-century railroad-related structures. Phase IB/II archaeological work consisted of a series of shovel test pits and mechanically-excavated trenches. No significant archaeological resources were identified. The Phase IB/II archaeological investigations were performed under the stipulations outlined in a Programmatic Agreement (PA) drafted by RGA on behalf of NJ TRANSIT and the Federal Transit Administration (FTA). The HARBS survey identified two previously documented historic properties inside the APE: the National Register-eligible Pennsylvania Railroad Historic District (PRRHD) and the Camden and Amboy Railroad Branch Line Historic District.

As a result of the survey and in consultation with the NJ Historic Preservation Office, a number of newly identified resources contributing to the PRRHD were identified, including the Mile Run Yard and County Interlocking Tower, which would be adversely affected by the project. Procedures to mitigate the adverse effects on historic properties were outlined in the PA. RGA then completed work on the stipulations of the PA, including HABS/HAER recordation of the yard and yard to surrounding industrial development.

Personnel from this Proposal:

» Paul J. McEachen - Richard Grubb & Associates

Client

NJ TRANSIT

Project Cost

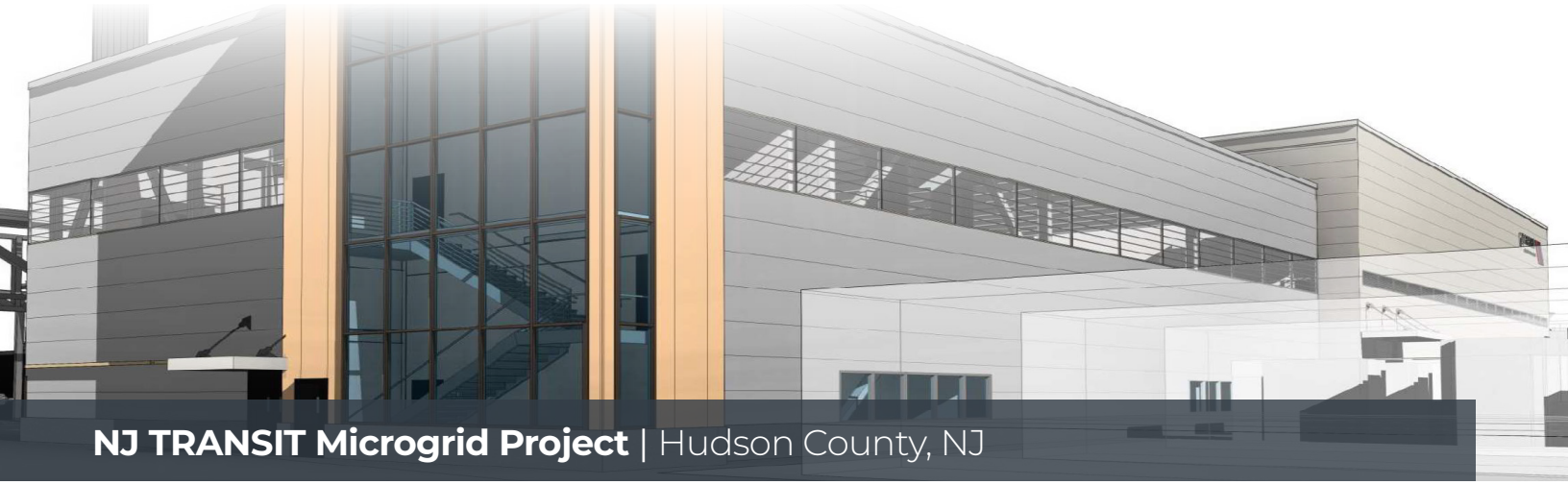
$25 Million (Construction Cost)

Duration

2013 - 2020

Project completed by:

RGA



NJ TRANSIT Microgrid Project | Hudson County, NJ

Sowinski Sullivan was the architect on a team for the Microgrid power generation facility that provides reliable backup power to core segments of NJ Transit's rail infrastructure. The scope included: frequency converters, a new gas fired central power plant with 37,000-sf building and 900-sf substation house, a 138 kv substation with 1,000-sf Control and Signal Power houses, and a 335-sf substation house.

The Central Power Plant building in Kearny, NJ contains both administrative and operations functions. The administrative spaces include the control room, offices, locker rooms, bunk room, conference room, and document storage. The operations spaces include a water lab, maintenance shop, I&C shop, switchgear rooms, and process mechanical spaces. The smaller substations, control houses and signal power buildings are located throughout Hudson County and are prefabricated, prepackaged buildings which primarily house electrical equipment.

Client

NJ TRANSIT

Project Cost

$83 Million (Construction Cost)

Duration

2016 - 2021

Project completed by:

SOWINSKI SULLIVAN
ARCHITECTURE+ENGINEERING



Pullman Building Hoboken Terminal | Hoboken, NJ

The Immigrant Station-Pullman Building is located at the southeastern end of the Hoboken Terminal between the light rail terminal and the main terminal. The building is included in the Hoboken Terminal complex which is listed on the state and national registers of Historic Places. Originally constructed in 1904, the building survived a fire on August 7, 1905 that destroyed the original Hoboken station and ferry slip. The façade and the interior of the building have not weathered the years formidably. An existing condition assessment was conducted by Sowinski Sullivan, which documented the existing state of the building in 2011. Hoboken was severely flooded in 2012 by Superstorm Sandy leaving the first-floor level inundated with water up to 3 feet in height and further damaged by high winds. A site visit was conducted again in 2013 to assess the conditions in comparison with the 2011 report. With no improvements being made to the building since the 2011 report, the building is in a continuous state of degradation which was present on the interior of the building as well as the exterior façade.

The exterior and interior of the building was fully restored to house substation equipment that was damaged during Superstorm Sandy at the Hoboken Terminal. The second floor is divided into four separate spaces, and includes a substation power room, battery room, mechanical space, and NJ TRANSIT office space. The façade is restored to match the existing fabric and utilized salvageable materials that were a template for replication. This job is under construction.

Personnel from this Proposal:

» Brandon Michael Coles - Sowinski Sullivan

Client

NJ TRANSIT

Project Cost

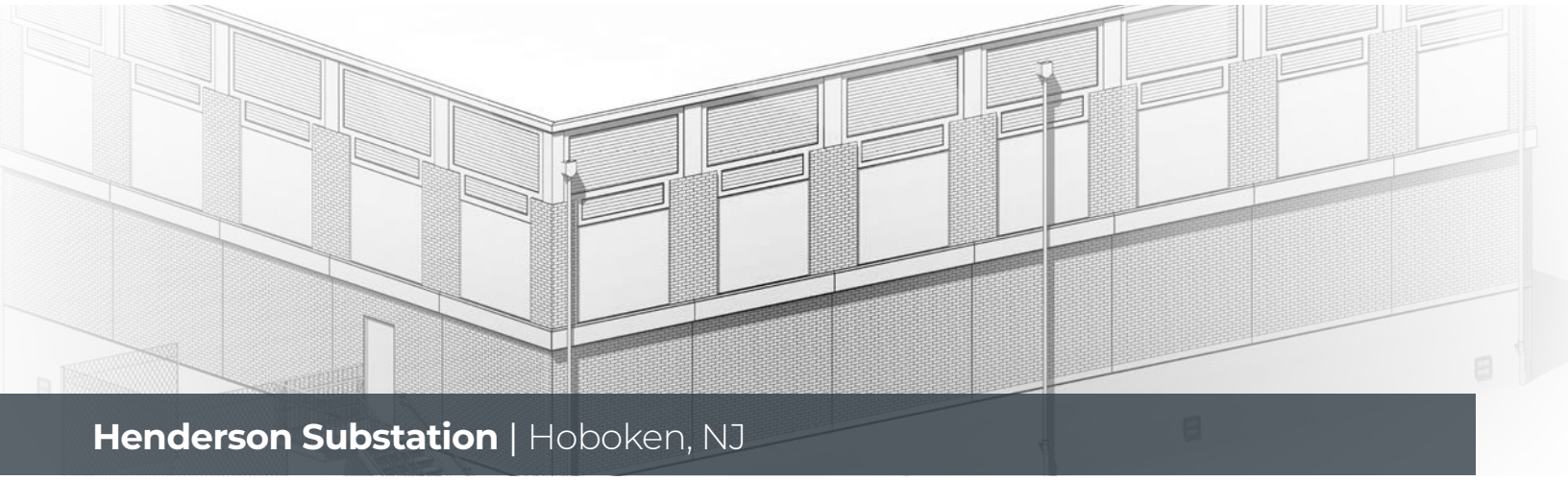
$25 Million (Construction Cost)

Duration

2011 - Ongoing

Project completed by:

SOWINSKI SULLIVAN
ARCHITECTURE+ENGINEERING



Henderson Substation | Hoboken, NJ

Sowinski Sullivan is the architect for the renovations at Henderson Substation. The existing Henderson substation is located at the far west end of the Hoboken Train yard near the intersection of Marin Blvd. and 18th Street below the FEMA-designated flood plain. The intent of the project is to replace the storm-damaged equipment and to elevate the new equipment above the FEMA designated flood plain to prevent damage from future flooding. The location for the medium voltage replacement substation equipment was relocated to the area that was previously occupied by the decommissioned terminal boiler building, just south of the existing substation. The relocated substation is situated to accommodate the track for the future Long Slip project.

The façade of the new substation was constructed using a typical pre-cast form liner with a pattern that can be reused for the entire building facade. The base of the building consists of a cast-in-place foundation with a concrete finish. The upper portion of the façade is textured concrete and thin brick veneer split with a continuous horizontal concrete band and fixed aluminum louvers.

The interior is comprised of six separate spaces: an electrical room, battery room, mechanical room, office, storage room, and toilet. A large overhead coiling door is provided to the west with direct access to the loading dock area to facilitate the movement of substation equipment. A removable panel for replacing substation equipment, provided on the north façade, allows direct access to the electrical room.

Personnel from this Proposal:

» Brandon Michael Coles - Sowinski Sullivan

Client

NJ TRANSIT

Project Cost

$25 Million (Construction Cost)

Duration

2013 - Ongoing

Project completed by:

SOWINSKI SULLIVAN
ARCHITECTURE+ENGINEERING



Wayne Junction Frequency Converter | Philadelphia, PA

Sowinski Sullivan is the architect for work at the Wayne Junction Static Frequency Converter (SFC), which includes renovation of the existing facility as well as the addition of a new SFC bay. The addition consists of a main enclosed space for SFC equipment, and exterior 25Hz and 60Hz transformer areas on either side, similar to the existing facility.

Installation of new SFC equipment in the existing building requires upgrades to the existing spaces to meet vendor and code requirements. All three (3) existing SFC spaces will receive a new full-height CMU wall which splits the existing space and closes off the equipment to create an egress corridor. This will allow for improved access throughout the building while also protecting employees from the high-power equipment. In addition to the main SFC rooms, the interior spaces are comprised of a Workshop, Battery Room, Toilet & Janitor Rooms, Switchgear Room, and a Main Control Room, which will receive repairs and upgrades to finishes as needed.

All door seals will be replaced with smoke tight seals for clean agent fire suppression system. The existing built-up roof and parapet coping will be replaced. The exterior façade was assessed to identify damage recommendations for needed repairs were made.

Client

NJ TRANSIT

Project Cost

$60 Million (Construction Cost)

Duration

2015 - Ongoing

Project completed by:

SOWINSKI SULLIVAN
ARCHITECTURE+ENGINEERING

SECTION 3 – QUALIFICATIONS OF WSP TEAM KEY PERSONNEL





Qualifications of WSP Team Key Personnel 3

WSP Project Manager and Deputy Project Manager

An Ideal Pairing with a Unique Combination of Technical Knowledge and Familiarity with NJ TRANSIT

WSP proposes a Project Manager who has managed a wide-range of distributed generation projects across a many industries and retrofit environments in **Melissa Poggi, PE, LEED AP**. Melissa, a licensed Professional Engineer in New Jersey, specializes in medium and low voltage distribution systems, power system analysis and power generation systems. Additionally, being a LEED Accredited Professional, Melissa can advise and assist NJ TRANSIT in green building and sustainable design practices.

Melissa provides our team the technical and project management leadership necessary to successfully deliver this project for NJ TRANSIT. She has completed numerous distributed generation projects ranging in technology (Gas Reciprocating Engines, Fuel Cells, PV, BESS, etc.) and size and fully understands and appreciates the intricate details associated with the electrical interconnections necessary to operate in island mode for resiliency purposes. She has worked closely with Ambrish Desai on numerous projects, and combined, they will be certain the objectives and goals of the project are accomplished successfully.

Complementing Melissa is **Paul Sullivan, PE, PP, PMP**, our proposed Deputy Project Manager. Paul is familiar with Newark Penn Station through use of the station, as well as having managed prior projects at the station, and several planning and design projects for other NJ TRANSIT station improvements. Currently, he is involved in the New York Penn Station Central Concourse design as the Risk Manager.

Paul brings continuity in working with NJ TRANSIT station design and operations stakeholders, and recognizes other needs at the station. He is well positioned to work with the Newark Penn DG Project, as he recently led the assessment and conceptual design for circulation improvements throughout the station.

Resumes

Resumes of key personnel begin on page 3-5.

Key Personnel Certifications

WSP and our team members are committing the key personnel to be assigned to the Newark Penn Station DG project as described herein. All key personnel listed are presently employed by the designated firms.

I am looking forward to the challenges of efficient energy generation located in areas that are not needed for current station operations. Newark Penn Station is historic, and is close to the Passaic River, so we will carefully consider the permitting for any new facilities. Once the 20% Assessment is completed, we will move smoothly into design and construction documents in full coordination with the Modernization Project and any other nearby projects

Melissa Poggi, PE, LEED AP
WSP Project Manager

What do you see as the most exciting opportunity for the Distributed Generation Project?

Ensuring in our design that the station can function as needed when the power grid is down, so that NJ TRANSIT can keep its customers flowing through the station on onto transit services.

What do you see as the biggest challenge for implementing the Distributed Generation Project?

Managing the competing goals of locational efficiency, providing green solutions, and integrating the design with the Newark Penn Station Modernization Project



QUALIFICATIONS OF WSP TEAM KEY PERSONNEL

KEY STAFF	QUALIFICATIONS	UNIQUE CREDENTIALS TO THE PROJECT
Melissa Poggi, PE, LEED AP Project Manager 	Melissa Poggi is a senior electrical engineer with WSP USA who specializes in medium & low voltage distribution systems, power system analysis, power generation systems, short circuit, coordination and arc flashes studies, battery energy storage systems, and photo voltaic design. A licensed engineer in 5 States (including New Jersey), Melissa is knowledgeable in high voltage design and substation SCADA systems. She provides design coordination and interfacing with the Owner and the Owners Representative.	» Melissa has been involved in the design and commissioning of multiple CHP and generator projects of various sizes up to 15kV systems. » Melissa is a LEED AP and in the process of taking the Certified Energy Manager certification, so she is well versed in green building and energy matters. » Melissa has experience with a variety of different size BESS systems. She is well versed in the differences between how different vendors provide different systems. » Melissa is experienced in utility scale PV systems.
Paul Sullivan, PE, PMP, PP Deputy Project Manager / Risk Manager 	Paul Sullivan is a senior supervising engineer with more than 40 years of planning, design and construction experience and manages multi-disciplined transit and rail projects. A professional engineer and planner, his focus has been on developing and improving transit services and facilities for the intercity and high-speed rail, commuter rail, bus and bus rapid transit, light rail, and subway modes. Paul's experience is wide-ranging, from land use planning and ridership forecasting to site, right of way, track and systems design, and reliability, availability, maintainability, and safety and system integration. He has managed projects ranging from feasibility studies through construction. Prior to joining WSP, he was with an international consulting engineering firm, responsible for managing large-scale transit projects across the US. He previously served as director of passenger facilities planning and engineering project manager for NJ TRANSIT.	» Paul is familiar with the entirety of the station from a recent passenger circulation improvements study and has been a user of the station over the last 40 years. » Paul has managed recent projects for NJ TRANSIT and others that involve electrical upgrades, historic facilities and keep the public functions unimpacted. » Paul understands the MicroGrid goals and objectives, and has worked with NJ TRANSIT on incorporating MicroGrid systems into station designs. » Having worked at NJ TRANSIT and having NJ TRANSIT as a client, Paul understands the evaluation process that NJ TRANSIT is looking for in terms of benefits, costs, impacts and risks.
Edrea Tan Quality Control 	Edrea Tan is a project controls and quality assurance specialist at WSP with work experience in the infrastructure industry on large scale capital construction projects. Edrea supports the projects controls implementation process, updating critical schedule and cost data, maintaining document control systems and preparing project reports.	» Significant experience in the tracking and maintaining of construction drawings, RFI logs, submittals, correspondence, transmittals and the maintaining of document control processes and procedures. » Managing various WSP subcontractors including tracking costs, submittal progress, invoices, and monitoring payments. » Performs quality assurance audits on all outgoing and incoming design files including drawings, correspondences, and submittals.
Ambrish Desai Electrical Lead 	Ambrish Desai is a Senior Engineering Manager and Vice President with WSP and is responsible for a variety of technical roles as well as a project lead and project manager. He has participated in the oversight and design of electrical medium and low voltage facilities and utilities distribution systems, utility normal, emergency and standby power distribution systems, facility lighting design, energy efficiency measures, telecommunications, closed-circuit television, access control and low voltage systems such as fire alarm, public address, clock, and auxiliary systems.	» Worked with NJ TRANSIT on the 20% design for this project and is familiar with the Newark Penn Station infrastructure and the design requirements for this project. » Worked closely with various utilities for power interconnection and parallel operation requirements based on distributed generation and parallel operations with numerous clients. » Vast experience in electrical design for new and retrofit engineering work on various types of facilities, including healthcare, commercial, educational, dormitory and residential buildings, research laboratories, and mission-critical network data and telephone switching facilities.

QUALIFICATIONS OF WSP TEAM KEY PERSONNEL

KEY STAFF	QUALIFICATIONS	UNIQUE CREDENTIALS TO THE PROJECT
Robert Bury, PE Mechanical Lead 	Robert Bury leads a variety of design and engineering efforts within the generation group. He is responsible for mechanical design, analysis, including pipe stress analysis, and project management of power and cogeneration plants, central heating and cooling plants, and utility distribution systems. Robert has managed multimillion-dollar site utility upgrade projects involving high temperature hot water (HTHW), high pressure steam, chilled water, and cogeneration systems.	» Seasoned engineer with over 25 years of specialized experience on central utility systems. » Experienced with diesel FO system design for boiler plants and for generator installations. » Experienced working on projects with public agencies: Port Authority of NY & NJ – Newark Airport (multiple projects), JFK Airport; Connecticut State DAS.
Claudio Vescio, PE Structural Lead 	Claudio Vescio has practiced as a structural engineer for 14 years focusing on projects for transportation agencies (NJ TRANSIT, PANYNJ, NYC Transit Authority, Long Island Rail Road, Metro-North Railroad, New Jersey Turnpike Authority, Amtrak and Washington Metropolitan Area Transportation Authority) and power distribution companies (Con Edison). He has extensive knowledge of the latest building codes and standards, including historical codes and standards for structural steel, reinforced concrete, and light-gage construction, and is well versed in the industry leading structural analysis and design and drawing development software. Areas of expertise include the design of deep and shallow foundations, gravity and lateral structural systems, substation structures, and structural retrofit of historical structures.	» Specialized in the structural design of rail infrastructure. » Extensive experience in the design of ancillary structures for heavy mechanical and electrical systems and photovoltaic systems. » Prior experience working on NJ TRANSIT projects.
Athanasios (Thanasi) Georgiadis, PE Civil/Utilities/Resiliency 	Thanasi Georgiadis is a civil engineer with 9 years of experience in the design of right-of-way, roadways, intersections, drainage and performing utility coordination on projects for state and municipal agencies. These clients have included NJ TRANSIT, NJDOT, PANYNJ, City of Newark, and City of Jersey City. He has worked on projects ranging in complexity from LaGuardia Airport Central Terminal to Montclair State University's Soccer Park. He has worked on a wide variety of projects in the transportation sector involving both roadway and rail facilities. He continues to develop his technical competence in civil engineering and has attained his professional engineer license in New Jersey.	» Has experience with site design and plan development for NJ TRANSIT facilities. » Coordinated with public and private utility owners within the project area to identify and relocate existing facilities. » Worked on many projects within the public ROW that require construction stagging to alleviate operational impacts to commercial operations.
Andrew Koch Mechanical 	Andrew Koch is a Mechanical Engineer with over 6 years' experience. He works specifically on the design of district energy plants, power generation systems, and MEP for industrial and commercial buildings. He has experience utilizing resources in a large corporate team environment and effectively managing time to meet project demands and deadlines.	» Worked with NJ TRANSIT on the 20% design for this project and is familiar with the Newark Penn Station infrastructure and the design requirements for this effort. He has developed working relationships with NJ TRANSIT project managers, engineering staff, and the station managers at Newark Penn Station. » Experience in industrial island mode generation systems and the requirements for black starting large motors and systems. » Experience in microgrid systems and has experience designing multiple different types of generation systems including natural gas generators (Combined heat and power (CHP), standby, and peak shaving), diesel generators (emergency and standby), fuel cell generators (CHP and standard), battery energy storage systems, geothermal heat pump systems, and offshore wind systems.

QUALIFICATIONS OF WSP TEAM KEY PERSONNEL

KEY STAFF	QUALIFICATIONS	UNIQUE CREDENTIALS TO THE PROJECT
Christopher Bacchus Cost Estimating  AmerCom Corp.	Christopher Bacchus has over 22 years of experience in Transportation Infrastructure Designs for various clients throughout the region. He has worked at AmerCom since 2000 on various railroad and transportation infrastructure design projects throughout his career. His experience includes designing temporary and permanent structures including bridges, free standing structures, retaining walls, sound walls, producing contract documents consisting of Plans, Specifications, Cost Estimates and Schedules. Experienced with all DOT and NJ Turnpike designs which require LRFD designs while MTA RR projects utilize AREMA and allow ASD Design.	» Seasoned engineer with over 25 years of specialized experience on central utility systems. » Experienced with diesel FO system design for boiler plants and for generator installations. » Experienced working on projects with public agencies: Port Authority of NY & NJ – Newark Airport (multiple projects), JFK Airport; Connecticut State DAS.
Courtenay Mercer Community Outreach  MPA MERCER PLANNING ASSOCIATES	Courtenay Mercer is a professional planner with 20 years of public, non-profit, and private sector experience, as well as 15 years of leadership in the American Planning Association. Courtenay has managed complex projects throughout NJ and the region. As the former Director of Planning at the NJ Office of Smart Growth and NJ Director of the Regional Plan Association, Courtenay has been at the forefront of policy and planning initiatives of regional significance, including the creation and implementation of the NJ State Development and Redevelopment Plan, the Highlands Regional Master Plan, the Together North Jersey Plan, and RPA's Fourth Regional Plan.	» Land use planner with substantial public sector and non-profit experience that enable her to provide assistance to diverse and complex planning projects, and to work with all types of communities. » Organized inter-agency teams, advisory committees, and focus groups for large-scale, regional projects like the NJTPA's 2050 Regional Plan and the Highlands Regional Master Plan update to more local projects like Newark's Dayton Neighborhood Revitalization Plan and Jersey City's Vision Zero Action Plan. » Experience working with the City of Newark and Invest Newark, as well as community organizations in and around Newark Penn Station.
Paul J. McEachen Archaeology  RGA	Paul J. McEachen, Director of Archaeological Services, provides technical oversight on most archaeological projects undertaken in New Jersey with RGA. Paul has served as a Principal Investigator on all phases of archaeological investigations and specializes in prehistoric archaeology. Paul has prepared and directed cultural resources surveys in accordance with Section 106 of the National Historic Preservation Act, NEPA, and various municipal and state cultural resource regulations. He exceeds the qualifications set forth in the Secretary of Interior's Standards for Archaeologists [36 CFR 61].	» Worked on numerous NJ TRANSIT projects, including providing oversight the Phase IA archaeological survey for the TRANSITGrid Project. » Deep understanding of high-sensitivity for prehistoric archaeological resources and for archaeological deposits associated with historic railroad-related structures. » Strong working relationship with the New Jersey Historic Preservation Office (NJHPO)
Brandon Michael Coles Architecture  SOWINSKI SULLIVAN ARCHITECTURE • ENGINEERING	Brandon Michael Coles is a Vice President of Sowinski Sullivan. Since joining the firm nine years ago, Brandon has worked exclusively on transportation facilities for several transportation agencies throughout New York, New Jersey, and Pennsylvania. Mr. Coles currently oversees multiple large-scale projects and programs for his clients.	» 20 years of experience, and his time with Sowinski Sullivan Architects PC has been spent working exclusively on transit related facilities. » Worked on over 100 different transit facilities for about 15 adjacencies, including stations up and down the Northeast Corridor. » Station related projects have been for CTDOT, PennDOT, Septa, Metro North, Amtrak, and of course NJ TRANSIT – and this includes the various project already preformed on Newark Penn Station and other significant historic stations.



MELISSA POGGI, PE, LEED AP

PROJECT MANAGER

Melissa Poggi is a senior electrical engineer with WSP who specializes in medium & low voltage distribution systems, power system analysis, power generation systems, short circuit, coordination and arc flashes studies, battery energy storage systems, and photo voltaic design. She is knowledgeable in high voltage design and substation SCADA systems. She provides design coordination and interfacing with the Owner and the Owners Representative. Melissa performs design review with Owner and Commissioning group throughout design development; coordination with construction management and/or trade management teams; design coordination and review with sub-contractors; field coordination with construction teams; and change order review and assessment. She has also been involved in construction administration including submittal review, site visits and punch lists and performing commissioning of various size projects.

Company

WSP

Years of Experience

12

Professional Registrations / Memberships

Professional Engineer - NJ, NY, VA, MD, CA

LEED Accredited Professional

Institute of Electrical and Electronics Engineer

Clean Energy Leadership Institute

Association of Energy Engineers

Council on Women in Energy and Environmental Leadership

Training

BS, Electrical Engineering, University of Delaware, Newark, DE

OSHA 10 hr training

Employment History

WSP – *2020-present*

R.G. Vanderweil Engineers – *2015-2020*

Ewing Cole – *2013-2015*

Relevant Experience

Morris Ridge Solar Farm: Design of new 162MW utility scale solar installation in upstate NY. Project involves using 655W panels, ATI tracker system and complying with Article 94c.

University of Toronto: Campus Electrical and Central Plant Upgrade. Decentralizing the main central plant for the campus into smaller plants with individual electrical distribution for each node. Design includes emergency and standby generator back up for up to 20% of each node's load.

Perryman Road: Study for adding (4) 2.5MW Black start diesel generators in parallel to 4 different turbine generators that are typically used for peak shaving for the local utility.

Invenergy Off-Shore Wind: Evaluating connecting 1200MW of Off-Shore Wind Power into various Con Edison Substations throughout New York City.

Southern Company Graphic Packaging Substation: 13.8kV main breakers replacement. The project involved replacing the two main 13.8kV breakers in the substation and the relay located in the control house.

Riverstat Solar Farm: Involves the commissioning of a 345kV to 34.5kV substation for a 200MW solar farm. The main focus of the commissioning efforts was on ensuring the relays and SCADA system was completely functional both at the site and remotely.

BGE Glenarm Substation Transformer Replacement: The project involves replacing the recently failed 24/32/40MVA 115kv-13.8kv transformer. Relay and meter upgrades were included with this project.

Coler Hospital Generator Replacement: The onsite 1MW generator failed and is being replaced with 3MW generator that will cover all the emergency hospital loads for up to 72 hours. The design complies with all FEMA requirements due to the location of the hospital.

Wild Cat Creek Wind Farm: Involves the commissioning of a 345kV to 34.5kV substation for a 180MW wind farm. The main focus of the commissioning efforts was on ensuring the relays and SCADA system was completely functional both at the site and remotely.

Masaiti Grid Study: Involved studying the impact of connecting a 50MW solar farm to two locations on a utility system. One location was at 66kV and the other at 220kV. Load flow was reviewed at various power factors, along with short circuit and rapid voltage change.

Hunterdon Medical Center: Involves the commissioning of a new CHP plant. The project includes a 1.5MW Caterpillar natural gas reciprocating engine generator, the installation of new Medium Voltage Switchgear and upgrade of multiple ATSs.

Multiple Battery Energy Storage System Designs in New York City for High- and Low-Tension Service: Projects vary from 3.6MW to up to 4.9MW.

New Jersey Wind Turbine Manufacturing Facility: The project involves developing the campus wide electrical distribution system to provide power to the various types of buildings as well as coordinating all power requirements with the local utility to provide electrical power to the site.

New York University CHP Plant Expansion Project: Update to existing CHP plant, site microgrid, and thermal distribution project that includes 2.4MW Jenbacher natural gas reciprocating engine generator, Diesel standby generator (2.5 MW CAT), replacement of medium voltage switchgear and various substations to expand the microgrid, and implementing load shedding.

NYU Langone Kimmel Building CHP: That includes one (1) 3.3 MW Jenbacher natural gas reciprocating engine generator with water to water heat recovery and building integration and coordination with site design team

NYU Langone Medical Campus Coordination: Study that involved evaluating relay setting on the Energy Building collector bus and the relay settings for the various new hospital buildings that have been added over the last 7 years since it was built. Evaluated if adequate coordination still existed.

Citibank: Two (2) Jenbacher 3.3 MW natural gas reciprocating engines with heat recovery and balance of plant.

MATEP: Coordination study involved reviewing all six major hospitals and various minor hospitals fed from the MATEP energy center for adequate coordination and possible system wide issues.

Wellesley College Prime Power project: Involved the removal of 4 CHP Jenbachers to be replaced with two 2MW CAT Prime power engines to provide peak shaving ability for the campus. Also included new paralleling switchgear with the ability to accommodate 2 more engines and replacement of the incoming electrical service entrance equipment.

Fallbrook Battery: Storage project with individual outdoor containers for batteries and inverter/ transformer packages and small 34.5kV to 69kV substation to provide 30MW of power back to the grid.

Rooftop Electrical Substation (RES) at LaGuardia: Provided commissioning services for the 27kV to 5kV substation located above the new Concourse G at LaGuardia.

West End Substation Annex at LaGuardia: Provided commissioning services for the new 5kV substation.

Microgrid Maintenance project: Was the project manager in charge of putting together the scope of work and then coordinating with testing company and facility to test all 5kV relays, clean all 5kV breakers in main switchgear along with clean and perform maintenance work on all downstream substations within the microgrid. Maintained schedule to have all work completed within the allowed time line while still keeping majority of the microgrid functional.

Fannie Mae Headquarters: Installed 5MW of standby diesel generator power to back up all client spaces in the building. Design included complex load scheme to prevent powering non-client parts of the building.



PAUL SULLIVAN, PE, PMP, PP

DEPUTY PROJECT MANAGER/RISK MANAGER

Paul Sullivan is a senior supervising engineer in WSP's Major Projects Deliver Group and has more than 40 years project management experience in multi-disciplined planning and design projects for transit and rail clients.

A professional engineer and planner, his experience has been in transportation planning and design for transit systems and facilities. His focus has been on developing and improving transit services and facilities for the intercity and high-speed rail, commuter rail, bus and bus rapid transit, light rail, and subway modes. Paul's project management experience is wide-ranging, from land use planning and ridership forecasting to site, facility right of way, track and systems design, construction support, and safety and system integration. Prior to joining WSP, he was with an international consulting engineering firm, responsible for managing large-scale transit projects across the U.S. He previously served as director of passenger facilities planning and engineering project manager for New Jersey Transit.

Company

WSP

Years of Experience

40

Professional Registrations / Memberships

Professional Engineer: NJ, NY, FL, MA, ME, MN

Professional Planner: NJ

Project Management Institute

AREMA

Training

BS, Civil and Environmental Engineering, New Jersey Institute of Technology

Employment History

WSP: *2013-Present*

SYSTRA Consulting: *2001-2013*

Stantec: *1999-2001*

NJ TRANSIT: *1986-1999*

Stone & Webster: *1981-1986*

Relevant Experience

Design, Engineering, and Construction Assistance for Central Concourse at New York Pennsylvania Station, Phase 1, New York City, New York: Project Risk Manager and WSP Project Manager. WSP is providing overall engineering design management as a subconsultant to the architect prime and is leading all aspects of engineering design. Penn Station Central Concourse includes a new headhouse with stairs, escalators and elevators located mid-block on 31st Street, and new stairs and elevators between the B, A, and platform level on Platforms 1 through 6. Significant structural modifications and building systems modifications are needed as well as new mechanical, electrical, and communications facilities are included. Also includes detailed coordination with Amtrak and the Penn Station Master Plan.

Design-Build Services for Rutgers Tube Rehabilitation, Manhattan and Brooklyn, New York: Design Manager for the overall project and project manager for WSP. WSP is providing design services during construction for the Rutgers Tube Rehabilitation, which was damaged in Superstorm Sandy. WSP provided direct engineering consultation to TC-JT Rutgers Joint Venture, the contractor on this design-build project. The rehabilitation includes both the subway tunnels which carry the F Train, and East Broadway Station.

NJ TRANSIT Newark Penn Station (NPS) Platform Circulation Study, Phase 2, 10% Design, Newark NJ: Project Manager for the study of potential improvements at this historic register-listed station that will address existing shortcomings as well as proposed increased passenger services. As ridership and service frequencies have grown significantly on all of these modes, NPS is due for transformational improvements in both transit operations and the quality of passenger use. The study included developing recommendations to provide additional and higher quality pedestrian routes to and between the station platforms, as well as the widening and lengthening of Track A. The study first identified and assessed potential improvements from an architectural and visioning perspective, and was followed up with survey and structural, fire and life safety and MEP engineering support as well as overall station operations assessments.

270 Park Avenue Under-Grade Design and Support of Construction Services, New York, New York: Project Manager for the WSP's role of railroad engineer on the Under-grade Phase on this project to construct a 1,385-foot-high tower above the Grand Central Terminal trainshed. WSP was brought in during design development to develop the train clearance envelopes and provide guidance on design of the overbuild to obtain Metro-North approvals. This evolved to WSP preparing rail system relocation designs and the structural design for any aspects that involve addressing train-induced loads or are under Federal Railroad Administration jurisdiction.

Route 440 Extension Preliminary Engineering for NJ TRANSIT, Jersey City, New Jersey: Project Manager for the WSP team. WSP is provided NJ TRANSIT with preliminary engineering services for the Route 440 Extension on the Hudson-Bergen Light Rail Transit System (HBLRTS). This project involves extending a two-track light rail system on viaduct, modifications to West Side Avenue Station, which have been fully designed and constructed during a service outage, and the new Bayfront Station terminal. Bayfront Station will provide convenient transit access for existing and future residents of the western waterfront area. The project coordinated with the proposed HBLRTS MicroGrid to supply emergency power during storm events.

Moynihan Station, Manhattan, New York: Project Manager for the design of modified railroad systems at New York Penn Station to support new platform- and concourse-level pedestrian circulation elements being implemented under the Moynihan Station Phase 1 Project. Systems modified to allow for these items include signals, overhead catenary and traction power, station and train shed lighting and electrical, passenger and facility communications, and plumbing and standpipes.

Newark Broad Street Station Capacity Constraint Relief and American Disabilities Act (ADA) Improvements, Newark, New Jersey: Project Engineer for overall design coordination, and the civil design for the historic restoration and ADA compliance of this major intermodal station, which is on National Historic Register. The design entailed changing the station from two side low-level platforms to one side and one center high-level platform with new stairs and elevators, so that all three tracks will have level platform access. New and reconstructed railroad bridges, catenary structures and retaining walls were included, along with modifications to an interstate highway ramp and local streets.

Director of Passenger Facilities Planning/Principal Engineer, NJ TRANSIT, New Jersey: Director from 1992 to 1999. Paul was responsible for surveying, evaluating, and planning improvements to existing stations and parking facilities on the NJ TRANSIT commuter rail system. Typical improvements included American Disabilities Act (ADA) compliance, station renovations and relocations, new station need and location assessments, and added and shared parking. Paul was involved in ridership forecasting, station access, including shuttle buses, pedestrian and biking, traffic impacts, and working with municipal officials and developers in shared parking arrangements. He was responsible for managing the development of plans and environmental documentation for new rail stations and bus park/rides. In addition, Mr. Sullivan developed and guided the agency's advocacy in land use planning adjacent to transit services, which included educating municipal officials and serving as a liaison to New Jersey Department of Transportation (NJDOT), New Jersey Department of Environmental Protection (NJDEP) and the Office of State Planning.



EDREA TAN

QA/QC MANAGER

Edrea Tan is a project controls and quality assurance specialist at WSP with work experience in the infrastructure industry on large scale capital construction projects. Edrea supports the projects controls implementation process, updating critical schedule and cost data, maintaining document control systems, and preparing project reports.

Company

WSP

Years of Experience

8

Employment History

WSP: *2019-Present*

Stellar Services Inc.: *2013-2019*

Relevant Experience

Exelon Perryman Black Start Design, Perryman, MD & ConEd-NRG BESS, Astoria, NY: Project Manager responsible for:

» Creating and implementing all proper project processes for project team to follow
» Ensuring that deliverables are submitted to the client on time
» Communicating with the client to resolve any potential issues
» Maintaining proper storage of project documentations

PANYNJ, LaGuardia Airport Redevelopment, New York, NY: Edrea held several roles under this project which included:

Project Controls Specialist – Edrea was responsible for:
» Maintaining, managing, and updating project schedules
» Assisting the project controls manager in implementing project specific cost controls processes
» Managing various WSP subcontractors including tracking costs, submittal progress, invoices, and monitoring payments
» Preparing various monthly client reports, including schedule updates and MWBE reports
» Submitting, tracking, and maintaining design correspondence, RFIs, and submittal log
» Performing quality assurance audits on all outgoing and incoming design files including drawings, correspondences, and submittals

Deputy Security Information Manager – Edrea was responsible for:
» Overseeing the establishment and execution of WSP and PANYNJ Information Security Program
» Distributing and maintaining confidential project documentation
» Reviewing personnel's security credentials to ensure validity and necessity to view confidential information

Corporate Site Manager – Edrea was responsible for:
» Overseeing consultant staff located at the WSP corporate headquarters
» Providing corporate support for on-site consultant staff
» Performing annual employee reviews

NYSTA, Tappan-Zee Bridge Replacement, New York, NY: Document Control Specialist responsible for:
» Tracking and maintaining construction drawings, RFI logs, submittals, correspondence, transmittals, etc.
» Maintaining document control processes and procedures
» Managing the development of the project information management system (PMIS) using MS SharePoint
» Ensuring that the project team members were provided training and support to comply with document control procedures
» Providing QA/QC audits of hardcopy and electronic document control files
» Interfacing with IT support for document control issues, including process enhancements to existing document control capabilities, developing recommendation for document control improvements



AMBRISH DESAI

ELECTRICAL LEAD/CONCEPT OF OPERATIONS

Company

WSP

Years of Experience

41

Training

BS, Electrical Engineering, Bombay University, India

Employment History

WSP: *2004–Present*

Diversified Tech: *2000-2004*

EE Linden Associates: *1999-2000*

Norwalk Compress: *1998-1998*

Reunion Engineering Company: *1982-1998*

Ambrish Desai is a Senior Engineering Manager Vice President with WSP responsible for a variety of technical roles as well as a project lead and project manager. He has participated in the oversight and design of electrical medium and low voltage facilities and utilities distribution systems, utility normal, emergency and standby power distribution systems, facility lighting design, energy efficiency measures, telecommunications, closed-circuit television, access control and low voltage systems such as fire alarm, public address, clock, and auxiliary systems. Ambrish has also been involved in drawing and document review for codes and standards compliance, site surveys, and the preparation of cost estimates and project schedules. He developed major scope reports and design documents (drawings and specifications) for a variety of projects.

He has designed medium-size combined heat and power cogeneration and microgrid power generation plants for facilities and real estate owners. Ambrish worked closely with various utilities for power interconnection and parallel operation requirements based on distributed generation and parallel operation with utility power for independent client power generation based on public service commission requirements and codes and standards. He managed the construction services on multi-million-dollar projects and has worked closely with clients to ensure project success. Ambrish has vast experience in electrical design for new and retrofit engineering work on various types of facilities, including healthcare, commercial, educational, dormitory and residential buildings, research laboratories, and mission-critical network data and telephone switching facilities. He has also worked on design/build assignments for the U.S. Military. In the past Ambrish has also independently managed large construction projects for new industrial, chemical and petrochemical plants, refineries, and power and desalination plants overseas.

Relevant Experience

NJ TRANSIT Distributed Generation Project – Newark Penn Station, Newark, NJ: WSP, as a subcontract to AECOM, was tasked with the conceptual design for a distributed generation system at Newark Penn Station that would allow the facility to operate without power from the local utility company, Public Service Electric and Gas Company (PSE&G), for a minimum of 14 days; Ability to lower the Dock Bridge during islanded mode Design a system that is safe, simple, and cost effective for the current facility staff to operate and maintain Design a system that could be monetized to recoup operating costs. Ambrish served as the lead electrical engineer for this project overseeing all design aspects.

LaGuardia Airport Redevelopment, New York, New York: WSP is currently prime consultant on the design joint venture responsible for the redevelopment of LaGuardia Airports Central Terminal Building as part of a public private partnership. Ambrish is the Lead Electrical Engineer for the Central Heating and Refrigeration Plant as well as the Power Distribution throughout the development. Ambrish is overseeing a team of electrical engineers responsible for designing the electrical substation and distribution within the Central Plant. The Central Heating and Refrigeration Plant (CHRP) is a multifunctional and critical utility plant which generates and distributes chilled and hot water to the LGA Terminal B (LGATB) and provides remote monitoring and control of the terminal's heating, ventilation and air-conditioning systems. In addition, Ambrish is coordinating the design effort with the Port Authority for necessary 5kV underground power distribution throughout the site from the utility substations to the various building substations.

Upgrade of Existing Emergency Power Systems at Various Hospitals, New York City Health and Hospitals Corporation (NYC HHC) and Dormitory Authority of the State of New York (DASNY), New York, New York: Based on our initial feasibility report, WSP USA designed all necessary upgrades in order to maintain power to keep the hospitals functioning at all times and provide much-needed emergency care to its patients. As project manager for upgrades to Bellevue, Goldwater, Coler, and Gouverneur hospitals, Ambrish determined and cataloged all critical and emergency loads, and assessed the condition of existing emergency power distribution system components such as automatic transfer switches, generators, voltage regulators, switchboards, panel boards, lighting and receptacle panels, emergency feeder cables, bus duct riser, bus switches, and transformers in order to design the necessary replacement/upgrade of this equipment. In addition, Ambrish was responsible for providing the necessary construction phasing plans to ensure power disruptions were minimized in order to not affect hospital operations.

Engineering and Economic Study of 12 MW (Megawatt) Cogeneration/District Energy Scheme, Spring Creek Towers, Brooklyn, New York: WSP USA managed this study for the owner of a 12 MW cogeneration/district energy scheme at Spring Creek Towers, a residential housing development. This work was follow-on from a study undertaken in 2009 for Wachovia/Wells Fargo, the lending bank. The system included a central cogeneration utility plant (CUP) with four dual fuel boilers, two steam turbine generators, three centrifugal chillers, dual fuel diesel engine generators and distribution systems for electricity and thermal energy to 42 apartment buildings within the complex. This study evaluated strategic steps to upgrade the facility for a minimum of 25 years' life, whether to add a new 5 MW gas turbine generator, and whether to interconnect with the electric utility, in addition to assessing options to replace or upgrade boilers and chillers. Ambrish served as a lead electrical engineer assessing the existing electrical power distribution equipment throughout the complex and reviewing and coordinating with local utility, Con Edison, for the potential connection/interconnection of the cogeneration facility with the utility grid, including necessary utility interconnection substation requirements.

Madagascar House Fuel Cell, Wildlife Conservation Society and the New York Power Authority (NYPA), Bronx, New York: Ambrish was the lead electrical design engineer to provide electrical design document to connect new 200 kW fuel cell power generation to existing building low-voltage (LV) distribution system for proper operation as well as required design and interconnection and parallel operation with Bronx Zoo medium voltage (MV) power distribution, Edison utility electric power, and electrical power required to fuel cell auxiliary devices and control system. In addition, Ambrish was the lead engineer to review fuel cell power plant system controls and obtain approval from Con Edison for power generation, interconnection and parallel operation to utility power as per distributed generation operation procedure requirements standards during commissioning stage of the project. WSP USA was appointed by NYPA to install, connect, and commission a 200 kW fuel cell combined heat and power (CHP) Power Generation Plant. Plant equipment size was 3.05-meter (10-foot) tall, 20-ton fuel cell as part of the Lion House Renovation Project at the Bronx Zoo. The Lion House (renamed the Madagascar House when it was partially reopened in June 2008) was built in 1903 on the Bronx Zoo's Astor Court campus. The 1,800-square-meter (19,000-square-foot) building housed lions until 1985, when it was closed, although its architecture was maintained. In 2003, the Wildlife Conservation Society developed a plan to renovate and expand the building, placing an emphasis on sustainability. Along with the fuel cell, the house features geothermal heating and cooling as well as a recycled water system. Upon reopening, it was given a LEED (Leadership in Energy and Environmental Design) Gold rating from the U.S. Green Building Council—a first for a New York City landmark.

Micro turbine Utility Interconnection at CGC Building at the Bronx Zoo, Wildlife Conservation Society, Bronx, New York: Ambrish was the lead electrical design engineer responsible for providing an interconnection between an existing micro turbine cogeneration plant and the Zoo's existing electrical power distribution system and Con Edison. He was responsible for providing necessary design documents as well as Con Edison Operating Procedures in reference to the cogeneration (co-gen) operation.



ROBERT BURY, PE

MECHANICAL LEAD

Robert Bury leads a variety of design and engineering efforts within the generation group. He is responsible for mechanical design, analysis, including pipe stress analysis, and project management of power and cogeneration plants, central heating and cooling plants, and utility distribution systems. Robert has managed multimillion-dollar site utility upgrade projects involving high temperature hot water (HTHW), high pressure steam, chilled water, and cogeneration systems. In addition, he has extensive experience in pipe stress analysis, heat and mass balance calculations, and central utility plant P&IDs. Robert also provides construction-phase services including shop drawing review, responses to contractor RFIs, and field observations.

Company

WSP

Years of Experience

28

Professional Registrations / Memberships

Professional Engineer, NJ, NY, VT

Training

BS, Mechanical Engineering, New Jersey Institute of Technology, Newark, NJ

Employment History

WSP: *2008-Present*

WM Group Engineers: *2000-2008*

Han-Padron Associates: *1998-2001*

Day & Zimmerman/NPS: *1992-1998*

Relevant Experience

JFK International Airport, Queens, New York: KIAC CHRP Expansion OE Services, Senior Mechanical Engineer. Project includes providing Owner's Engineering services for a major expansion of the existing Central Heating and Refrigeration Plant (CHRP) providing heating and cooling for the airport due to the planned redevelopment of JFK. Provided design basis and planning for the phased expansion and replacement of existing chilled water, condenser water, and medium temperature hot water equipment and systems at the CHRP. Phasing needed to keep the plant operational and serving the existing airport through construction. Close coordination with plant operations staff and the EPC team.

JFK International Airport, Queens, New York: CTA Utility Design for JFK Redevelopment, Senior Mechanical Engineer. Design services for the phased replacement and expansion of the existing underground chilled water and medium temperature hot water site distribution systems to accommodate the redevelopment of JFK Airport. Extensive coordination with site civil/ roadways design team, Terminal developer design teams, and underground site utilities including: domestic water, hydrant water, sanitary/storm, HV and MV electrical, and communications. Design accounts for phased installation and keeping the existing facility in operation throughout construction.

York Correctional Institute, Niantic, Connecticut: Central Plant and Site Distribution System Replacement, Lead Mechanical Engineer. Project includes the design of a phased replacement of hot water boilers and chillers at the Central Plant as well as the replacement of all underground hot water and chilled water site distribution systems from the Central Plant to 22 buildings. Phasing of construction critical to this project as the facility will remain in operation during construction. Input from the Construction Manager informed the design/construction documents since the project is being executed as a CM-at-Risk project.

Brown University, Site-Wide Infrastructure Renewal, Providence, Rhode Island: Site-wide Central Heating Plant & Utility Distribution Systems Upgrade and Chiller Plant Design Project Manager and Lead Mechanical Engineer. Responsible for the design, analysis, construction administration and coordination of a multi-million dollar site-wide underground utility infrastructure upgrade and expansion project. Design includes a phased replacement of existing underground high temperature hot water (HTHW), chilled water, electrical, and communications site distribution systems as well as upgrades to the existing central heat plant. All HTHW piping was designed and analyzed for thermal pipe stress for compliance with B31.1 code. Detailed design of secondary heat exchanger replacements and local steam systems serving groups of buildings. Project includes construction

supervision and administration, RFI review/response and management and coordination of all trades involved (electrical, civil, structural and mechanical). Design of a new 2000 ton electric centrifugal chiller plant at the Central Heat Plant. The project includes integration of the new chiller with the existing plant systems, structural enclosure for chiller plant, structural reinforcement of the existing floor slab and coordination with the structural and electrical engineers.

University of Vermont, Site-Wide Utility Infrastructure Upgrades, Burlington, Vermont: Site-wide Utility Distribution Systems Upgrade and Central Chiller Plant - Project Manager and Lead Engineer. Responsible for the design of a new 3,800 ton turbine driven centrifugal chiller plant at the Central Heat Plant. The project included integration of the new chiller with the existing plant systems, structural enclosure for chiller plant, and structural reinforcement of the existing floor slab. Project included design, procurement, and coordination of all trades involved (electrical, civil, structural, architectural, and mechanical). Design, analysis, construction administration and coordination of a multi-million dollar site wide underground utility infrastructure upgrade and expansion project. This project involves a phased detailed design of the replacement of existing underground high pressure steam (HPS), chilled water, electrical, and communications site distribution systems as well as upgrades to the existing central heat plant. All HPS piping was designed and analyzed for thermal pipe stress for compliance with B31.1 code. Provided comprehensive site utility drawings for all major campus utilities. Lead the effort to develop standards and coordinate various disciplines to create a single comprehensive document. Surveyed the campus and record documents to detail all major mechanical systems including site distribution systems.

Port Authority of NY & NJ, Newark Airport, Newark, New Jersey: High Temperature Hot Water Distribution System Emergency Repair - Lead Mechanical Engineer. Fast-track emergency troubleshooting and redesign of the existing failing high temperature hot water distribution system. Determined cause of failure of existing ball joints, anchors and supports. Responsible for the redesign of expansion ball joints, anchors and pipe supports. Performed thermal pipe stress analysis as part of the redesign to verify system complies with B31.1 piping code. Project included extensive field survey to develop system as-builts. Provide field supervision of contractor installation, realignment, and re-support of new expansion joints and piping.

Port Authority of NY & NJ, Newark Airport, Newark, New Jersey: Central Heat Plant High Temperature Hot Water Generator Replacement - Lead Mechanical Engineer. Replacement of four 50 MMBTU HTHW generators providing HTHW for heating to the airport terminals. New low NOx burners will meet New Jersey emissions requirements firing natural gas or fuel oil. Design is phased over several seasons and includes a temporary HTHW generator system to minimize downtime. Prepared pre-purchase specifications for HTHW generator procurement and provided support for sole-source justification for the HTHW generators.

Yale University, Central Power Plant, New Haven, Connecticut: Central Power Plant Expansion - Mechanical Engineer. Responsible for the design, analysis, and coordination of the central cooling addition. The project consisted of a new 5,600 ton steam turbine driven chiller, a new cooling tower with a capacity of 14,000 gpm, two 8,000 gpm condenser water pumps, and a 9,000 gpm condensing turbine driven chilled water pumps. Performed pipe stress analysis for steam piping to turbine drives to ensure compliance with B31.1 piping code.



CLAUDIO VESCIO, PE

STRUCTURAL LEAD

Claudio Vescio has practiced as a structural engineer for 14 years focusing on projects for transportation agencies (NJ TRANSIT, Port Authority of NY/NJ, New York City Transit Authority, Long Island Rail Road, Metro-North Railroad, New Jersey Turnpike Authority, Amtrak and Washington Metropolitan Area Transportation Authority) and power distribution companies (Con Edison). He has extensive knowledge of the latest building codes and standards, including historical codes and standards for structural steel, reinforced concrete, and light-gage construction, and is well versed in the industry leading structural analysis and design and drawing development software. Areas of expertise include the design of deep and shallow foundations, gravity and lateral structural systems, substation structures, and structural retrofit of historical structures.

Company

WSP

Years of Experience

14

Professional Registrations / Memberships

Professional Engineer, NJ, NY

Training

ME, Civil Engineering, Stevens Institute of Technology, Hoboken, NJ

BE, Civil Engineering, Stevens Institute of Technology, Hoboken, NJ

Employment History

WSP: *2014–Present*

Gannett Fleming: *2007-2014*

Relevant Experience

NJ TRANSIT Central Concourse at New York Penn Station, New York, New York: Engineering Manager responsible for coordinating a multi-discipline team of engineers from various engineering consultancies. Oversees the engineering quality program; aligns engineering assignments to satisfy Architectural approach. Provide feedback to Architect and Project Manager on feasibility of concepts and recommend alternatives to satisfy engineering problems. Project will deliver a preliminary design for a new concourse at New York Penn Station that will provide access to tracks 1 through 12 and greatly improve the customer experience. It will provide direct sunlight in the station, expand capacity at New York Penn Station for NJ Transit customers and significantly improve ADA access from the street down to each platform utilized by NJ Transit.

NJ TRANSIT County Yards Service and Inspection Building, New Brunswick, New Jersey: Structural engineering supervisor for the design of the 100,000 square foot maintenance, inspection, and office building for New Jersey Transit County Yard. Building included design for primary gravity and lateral framing, foundation design, cranes, fall protection system, sanding dispensing system and secondary framing for rooftop equipment. The building features a three-story office building, a 1,200-foot-long train inspection and maintenance facility, and rail management/ operations center for the new County Yard. The building features two pit pedestal tracks designed to AREMA standards, two-ton monorail cranes spanning the length of the inspection facility, and a five-ton top-running bridge crane for industrial operations. The building also features a 200-foot-long segment supported by a bridge structure to span over an existing creek.

Hudson-Bergen Light Rail Transit Extension to Route 440, Jersey City, New Jersey: Lead Structural Engineer in the preliminary design of the new Bayfront Station and structural alterations to the existing West End Avenue Station preliminary designed for new Bayfront Station. West End Avenue is an existing terminal station that is converted to a through running station to accommodate an extension of the Hudson Bergen Light Rail to the proposed Bayfront Station. Work at West End Avenue included replacement of stairs, new ADA ramp, and reconstruction of the track crossing, platform, and station plaza. Work at Bayfront Station included two conceptual designs, a station at grade option and an elevated station supported by the HBLR extension viaduct. The elevated option provided and elevator and stair tower at each end of the platform. Both concepts provided the HBLR standard platform canopy and windscreen.

Hudson-Bergen Light Rail, MOS-3, 8th Street Station, Bayonne, New Jersey: Structural Engineer responsible for the structural design and construction-phase services for a light rail station and platform canopy design-build portion of a rail line extension. The station structure is a three-story, steel-frame building with a footprint area of 4,200 square feet and a maximum height of 63 feet. Responsibilities included coordinating with and reviewing other disciplines and corresponding with the client.

Moynihan Station Phase 2, New York, New York: Lead Structural Engineer for various design task orders at Moynihan Station. Task orders include design of E-yard Fan Rooms 14, 15 and 16 and Switchgear Platform PS-18. Fan Rooms and Switchgear platform were designed to span above active tracks that service New York Penn Station. Fan Rooms and Switchgear Platforms were composite steel frame structures with concrete deck. Fan rooms supported five high-velocity fans that will provide ventilation and smoke purge at track level. Design included rock pocket supports, spread and pile supported foundations, cranes, steel framed partitions to support high pressure ventilation loads and stairs.

Amtrak IDIQ ADA Design Services and State of Good Repair, Nationwide: Engineering Supervisor overseeing the structural engineering services on over twenty (20) stations throughout the continental United States. Design services include structural inspection and repair to station platforms, buildings, canopies and other structures, and the design of new at-grade and elevated platforms, canopies and waiting structures, and station improvements to provide ADA accessibility.

Harmon Phase V, Stage II, Running Repair Support Shop Design-Build, Croton-on-Hudson, New York: Lead Structural Engineer in the design-build of the Running Repair Support Shop Facility (RRSS) at the Metro-North Railroad Croton-Harmon Yard. Directed a team of structural engineers in the design of a 2-story 260,000 square foot railroad maintenance facility. Facility include six repair tracks that service can 20 railcars simultaneously, a blowshed facility, truck, HVAC, and numerous other support shops, training facilities, and offices. Repair tracks included in-ground car hoist lifts for 12 railcars and approximately 800 linear feet of service pits. Facility included over 15 bridge cranes, with capacities up to 35 Tons. The second floor accommodated industrial spaces with heavy manufacturing live loads and office spaces. The second-floor structure was supported by steel framing with clear spans up to 122 feet to accommodate large unobstructed bays on the ground floor. Design of the roof includes a 125kW low-profile modular solar photovoltaic system as part of the distribution generation system that was designed to operate in parallel with the utility.

Harmon Phase V, Stage I Design-Build, Croton-on-Hudson, New York: Lead Structural Engineer on the design-build of the Consist Shop Facility (CSF) and the Electric Multiple Unit (EMU) Annex Building, and partial demolition and structural retrofit of the existing Main Shop for Metro-North Railroad. Directed a team of structural engineers in the design of the three facilities. Developed the structural framing system and foundation concept for all three facilities, as well as building analysis model in Bentley RAM Structural Analysis.. Delegated engineering assignments to staff, developed details, and conducted reviews of engineering calculations and drawings. Oversaw drawing production utilizing Autodesk Revit Software. Produced structural specifications. The CSF is a 1000-foot-long structure that accommodates two 10-car trains, equipped with a recessed inspection pit, rooftop level platforms, overhead bridge cranes and a fall protection system. The foundation design consists of rammed aggregate piers with spread footings or a mat foundation. The facility contains office, high density storage, and welfare facilities on the first and second floor and mezzanine. The EMU is a two-level structure with a Wheel Shop and associated support shops on the first floor, equipped with bridge cranes, jib cranes, and specialty equipment. The 2nd floor, 41 feet above grade, consists of office and welfare areas and additional support shops designed for heavy floor loads, forklift traffic, and bridge and jib cranes. Second floor beam spans were greater than 70 feet due to first floor open space requirements.



ATHANASIOS GEORGIADIS, PE

CIVIL/UTILITIES/RESILIENCY

Athanasios (Thanasi) is a civil engineer with nine years of experience in the design of right-of-way, roadways, intersections, drainage and performing utility coordination on projects for state and municipal agencies. These clients have included NJDOT, PANYNJ, NJ Transit, City of Newark and City of Jersey City. He has worked on projects ranging in complexity from LaGuardia Airport Central Terminal to Montclair State University's Soccer Park.

Thanasi has worked on a wide variety of projects in the transportation sector involving both roadway and rail facilities; he has also experience working on site engineering projects. He continues to develop his technical competence in civil engineering and has attained his professional engineer license in New Jersey.

Company

WSP

Years of Experience

9

Professional Registrations / Memberships

American Society of Civil Engineers; American Society of Highway Engineers

Training

BE, Civil Engineering, Stevens Institute of Technology, 2012

Limited Scope Project Sequencing for ADA Compliance, NJDOT, 2016; Compliance to the ADA Act, Rutgers, 2013; Design of ADA Curb Ramps, Rutgers, 2013

Employment History

WSP: *2013-Present*

Relevant Experience

FY 2018 Local Safety Engineering Assistance Program (NJTPA): This project required providing engineering design assistance to the counties eligible through NJTPA for safety improvements along select roadway corridors. Thanasi's role was the day-to-day management of the West Side Avenue and Sip Avenue projects. These projects included developing alternative intersection schemes to improve pedestrian safety. And comply with the latest complete streets policies. Responsibilities also included the design of ADA compliant pedestrian ramps, bump-out design, bicycle facilities, utility coordination, creation and design of plans and details utilizing Micro Station, Inroads and Auto Turn programs. Projects included:

- West Side Avenue Safety Improvements in Jersey City
- Sip Avenue Safety Improvements in Jersey City

NJ TRANSIT Hudson-Bergen Light Rail Transit System/Route 440 Extension: This project involves providing conceptual design for the extension of the Hudson-Bergen Light Rail from its terminus station at West Side Avenue to a new station west of Route 440. Thanasi's tasks include management of all civil engineering efforts which include the reconfiguring the Claremont and West Side Avenue to improve pedestrian safety, the design of new ADA facilities at the existing West Side Avenue Light Rail Station, the site development for the new station. Responsibilities also include the identification and mitigation of Right-of-Way impacts, the maintenance of existing utilities services and the reconfiguration the existing "kiss and ride" parking lot.

Red Bull USA, Inc., Phase II Improvements to Pittser Field at MSU Soccer Park, Montclair, New Jersey: This project involves providing engineering services for the site development of the Pittser Field Soccer Park at Montclair State University. Thanasi's tasks include the supervision of the design of pedestrian facilities, grading, utility relocations and new utility design required to install a new bleacher system and field house adjacent to the existing soccer field. Responsibilities also include the development of construction drawings, Soil Erosion and Sediment Control drawings for permit submissions to the Hudson Essex Passaic Soil Conservation District and coordination with the client and contractor throughout the construction phase.

NJTPA, FY 2016-2017 Local Safety Engineering Assistance Program: This project required providing engineering design assistance to counties eligible though NJTPA for re-design of multiple intersections. Thanasi's role was the day-to-day management of the Ferry Street and Ironbound Roundabout projects. His tasks included designing intersection configurations/ roundabout schemes with a focus on traffic calming, pedestrian safety, and complete streets policies. Responsibilities also included designing ADA compliant pedestrian ramps, bump-out design, roundabout design, bicycle facilities, utility coordination, drainage design, creation and design of plans and details, utilizing Micro Station, Inroads and Auto Turn Programs. Projects included:

- Ferry Street Safety Improvements in Jersey City
- Roundabout at Chestnut Street, Elm Street, Gotthard Street, Backus Street, Wheeler Point Road and Denbigh Street in Newark (Ironbound)

NJTPA, FY 2015 Engineering Design Assistance Program: This project required providing engineering design assistance to counties eligible though NJTPA for re-design of multiple intersections. Thanasi's tasks included corridor wide design and implication of road diets and complete street elements with a focus on traffic calming and pedestrian safety. Responsibilities also included designing ADA compliant pedestrian ramps, bicycle lanes, bump-out design, green infrastructure, utility coordination, creation and design of preliminary plans, utilizing Micro Station, Inroads and Auto Turn programs. Projects included:

- Montgomery Street Safety Improvements in Jersey City

NJTPA, FY 2014 Engineering Design Assistance Program, Northern New Jersey: This project required providing design assistance to counties eligible though NJTPA for re-design of multiple intersections. Thanasi's tasks included designing intersection configurations with a focus on traffic calming and pedestrian safety. Responsibilities also included designing ADA compliant pedestrian ramps, utility coordination, creation and design of construction plans, and striping plans, utilizing Micro Station, Inroads and Auto Turn programs. Projects included:

- McGinley Square Safety Improvements – Phase II in Jersey City

NJDOT, Route 42 Ardmore Ave. to Camden Line, Pavement, Township of Washington, County of Gloucester: This project involved providing preliminary engineering services for the pavement reconstruction of a 3 mile stretch of Route 42. Thanasi's tasks included the surveying of all existing pedestrian facilities within the project limits for ADA compliance. Responsibilities also included analysis of pedestrian movements along the corridor and identification of missing sidewalk and intersection crosswalks, the design of new ADA compliant pedestrian ramps and driveway aprons, identification of Right-of-Way impacts and the creation and design of preliminary plans, utilizing Micro Station, Inroads and Auto Turn programs.

PANYNJ LaGuardia Airport Central Terminal Building Project: This project involved providing civil engineering services for the design of the roadway network at the new Central Terminal building at LaGuardia Airport. Thanasi's tasks included the design of pedestrian facilities connecting all new roadways and buildings to existing pedestrian generating points. Responsibilities included the design of the new roadway network as per AASHTO design requirements, the design of ADA facilities at various intersections, analysis of pedestrian circulation to/from the airport terminal, utility coordination and the development of engineering drawings using AutoCAD and Auto Turn programs.



ANDREW KOCH

MECHANICAL

Andrew Koch is a Mechanical Engineer with over 6 years' experience. He works specifically on the design of district energy plants, power generation systems, and MEP for industrial and commercial buildings. He has experience utilizing resources in a large corporate team environment and effectively managing time to meet project demands and deadlines.

Company

WSP

Years of Experience

6

Training

BS, Mechanical Engineering, University of South Carolina

Employment History

WSP: *2016-Present*

Relevant Experience

NJ TRANSIT DG Projects: This project involved developing a first-of-its-kind distributed generation (DG) system capable of providing reliable power to NJ TRANSIT's critical facilities. The design included natural gas engines, diesel engines, solid oxide fuel cells, and medium voltage switchgear in a microgrid arrangement to provide power to Newark Penn Station in an islanded mode. The power was designed to have capability to black start Newark Penn Station substations as well as the Dock Tower Bridge in an emergency.

Exelon Perryman Black Start Generators: Design services for the installation of diesel generators for island mode black start of a utility scale turbine generator "peaker" plant. Project includes the full design of connection to the existing fuel oil system, switchgear for interconnection, and the sequence for operation in all modes of operation.

San Diego MTS Bus Electrification Generator: Design services for the installation of a Tier 4 peak shaving natural gas generator with capability to provide standby power in island mode. Project includes the full design of SCR emission reduction equipment and microgrid control system.

Hunterdon Medical Center CHP Project: CHP Generator installation at the Hunterdon Medical Center. Design services for the installation of CHP water and steam/condensate systems for the interconnection of the Generator CHP system to the hospital. Commissioning services for the overall CHP system. Project includes heat recovery steam generator, absorption chiller and tier 4 emission reduction system.

York Correctional Facility Central Plant: Central Plant and Site Distribution System Replacement. Project includes the design of a phased replacement of hot water boilers and chillers at the Central Plant as well as the replacement of over 5 miles of underground hot water and chilled water site distribution systems from the Central Plant to 22 buildings. Phasing of construction is critical to this project, as the correctional facility will remain in operation during construction. Input from the Construction Manager informed the design/construction documents since the project is being executed as a CM-at-Risk project.

JFK Airport Utilities & Central Plant: Design services for the phased replacement and expansion of the existing underground chilled water and medium temperature hot water site distribution systems to accommodate the redevelopment of JFK Airport. Extensive coordination with site civil/roadways design team, Terminal developer design teams, and other underground site utilities including: domestic water, hydrant water, sanitary/storm, HV and MV electrical, natural gas, and communications. Design accounts for phased installation and keeping the existing facility in operation throughout construction. Portion of underground distribution to cross a major expressway serving the airport.

ES to Amalgamated Warbasse: Worked in a team to develop design drawings for a fully islanded natural gas engine driven trigeneration facility, utilizing steam and hot water. Worked on design of equipment including dual fuel low pressure steam boilers, hot water and steam driven absorption chillers, pumps, heat exchangers, HVAC units, deaerators, medium voltage electrical switchgear, and plumbing and fire protection equipment.



CHRISTOPHER BACCHUS

COST ESTIMATING

Mr. Bacchus has over twenty-two years of experience in Transportation Infrastructure Designs for various clients throughout the region. He has worked at AmerCom since 2000 on various railroad and transportation infrastructure design projects throughout his career. His experience includes designing temporary and permanent structures including bridges, free standing structures, retaining walls, sound walls, producing contract documents consisting of Plans, Specifications, Cost Estimates and Schedules. Experienced with all DOT and NJ Turnpike designs which require LRFD designs while MTA RR projects utilize AREMA and allow ASD Design. Select projects he has worked on include:

Company

AmerCom

Years of Experience

22

Training

Load and Integrity Testing of Drilled Foundations

Geo Institute of ASCE – Underground Construction of Foundations in Urban Environments

Implementation of LRFD for Geotechnical Engineering Features – Deep Foundations

LRFD for Geotechnical Engineering Features - Micro Pile Foundations

Effect of Foundation Deformations on Bridge Structures

Rock Mechanics

Grouting in Rock

Pile Driving Hammer Performance

Cellular Cofferdams

Helical Design and Seismic Activity

Employment History

AmerCom: *2000-Present*

Relevant Experience

NJ TRANSIT TOC Corridor Planning, Future Train Storage and Maintenance Facility Location Study: Senior Engineer for conceptual design and cost estimating for eight potential sites for proposed future train storage and maintenance facilities. Utilized existing aerial imagery in NAD 83 coordinates and brought into Microstation so that site analysis and design files can be overlaid on the mapping which included property lines, ownership information from tax map data, Railroad Valuation Mapping, zoning data, site circulation analysis showing design vehicle turning paths (assumed fuel tanker trucks) utilizing AutoTurn software, solar energy generation capability and estimated costs for each conceptual alternative developed. Multiple yard options and rail alignments were analyzed and estimated. Cost estimates detailed proposed rail, maintenance yard, geotechnical ground improvements and proposed structures with cost estimates exceeding $2 Billion.

NJ TRANSIT TOC Rail Operations & Infrastructure Planning, Hudson-Bergen Light Rail Operations & Maintenance Contract Reviews: Senior Engineer for documentation of the existing 16-mile light rail corridor. Work included data collection including all ROW plans, record as-builts and title search documents for the entire corridor. Analysis of the data included reviews of functionality through the network, review and document all ROW conflicts and a review of drainage systems that may affect adjacent properties outside the ROW. Findings were summarized in a comprehensive report that serves as a centralized source of administrative information for the HBLRS for operations, maintenance, and planning purposes. (2017-2018)

NJ TRANSIT TOC Stations, Access, & Site Planning, Commuter Rail Stations Guidelines and Standards Manual: Senior Engineer for development of cost estimating guidelines for use by NJ TRANSIT for planning purposes. Met with NJT's Engineering and Capital Planning staff to field comments for the development of a new "Cost Estimation" chapter. All existing NJT materials were reviewed in-depth and prepared a technical memorandum detailing the costing methodologies and structure for the proposed chapter, cover. The "memo", accounted for appropriate materials, design/construction contingencies, and project cost escalation. Once approved, all revised, approved text, exhibits, and appendices were compiled for inclusion into the draft 2015 Manual with page indexing for convenient PDF browsing. Work included development of algorithms within Excel spreadsheets for cost estimating.

MTA Long Island Rail Road Contract #6240 - LIRR Expansion Project from Floral Park to Hicksville, Nassau County, NY: Senior Engineer for geotechnical engineering services for this $1.8 B design-build project that is adding 10 miles of third track through Nassau County and will eliminate 7 grade crossings with new bridges, a viaduct structure, retaining and sound walls, station platforms and new multi-story parking garages. AmerCom developed the preliminary foundation designs for these structures, assisted in developing the Geotechnical Work Plan, developed and implemented the Geotechnical Sub-surface Investigation Plan, prepared Geotechnical Data Reports, Seismic Assessment Reports and Foundation Design Reports to an aggressive design submittal schedule, addressing QC and other review comments. (2017-2020)

MTA Long Island Rail Road Reconfiguration of Johnson Avenue Yard, Jamaica, Queens, NY: Senior Engineer for geotechnical work on this design-build project in the vicinity of New Track JY3 and Future Track F2 which required approximately 1430' of concrete retaining walls, a 310' long relieving platform and 4 new high mast tower lighting supported on piles. In addition to operating train traffic, the project was also complicated by a large existing overhang from the Jamaica AirTrain Station that required low clearance pile driving.

NJDOT, Route 46 / Route 3 / Valley Road Interchange Improvements: Senior Engineer on this $150M project for a new interchange included 5 bridges, 5 culverts, 18 retaining walls, 7 noise barriers and 17 sign structures. Completed inspection and logs for over 250 borings and 100 pavement cores on this project; coordinated laboratory testing of soil samples; and inspected the installation of drilled shafts for noise walls during construction. Construction still in progress.

NJTA, OPS P3269 GSP Interchange 125: Geotechnical Engineer on this $72M project for construction of a new interchange and ramps at MP 125 on the GSP. Work included design of soil improvements including pre-consolidation programs, controlled modulus columns, construction monitoring, pile designs for four new bridges, drilled shafts for Toll Plaza Gantry structures & 12 sign structures, 8 retaining walls, pavement designs, extensive subsurface investigation program involving 200 borings, pavement design reports and foundation design reports.

NJDOT, Bridge Operator's House Rehabilitation, Route 35 over Cheesequake Creek Lift Bridge: Senior Engineer responsible for preparing cost estimates for the complete rehabilitation of the bridge operator's house including mounting details for new equipment, interior wall upgrades, window replacements, exterior finish replacements and structural analysis of framing for support of lift equipment.

PANYNJ, Greenville Rail Yard Redevelopment: Project consists of the complete $100M reconstruction of the rail yard used for staging of train transport across the Hudson River. Senior Geotechnical Engineer for the site settlement analysis, foundation designs for elevated transformer platforms, pump stations, storage sheds, trailer pads and light towers. Geotechnical designs included piles, micropiles, spread footings and drilled shafts.

NJTA, GSP 30-63 Widening Program Management: Geotechnical Engineer for the implementation and management of a boring program involving over 1,800 hundred borings on the GSP and oversight of the geotechnical designs for 30 miles of mainline roadway widening and bridge replacements through the project limits. Inspected installation of drilled shafts for sign structures and MSE retaining walls.



COURTENAY MERCER, PP, AICP, APA

COMMUNITY OUTREACH

Courtenay Mercer is a professional planner with 20 years of public, non-profit and private sector experience, as well as 15 years of leadership in the American Planning Association.

Mercer has managed complex projects throughout NJ and the region. As the former Director of Planning at the NJ Office of Smart Growth and NJ Director of the Regional Plan Association, Mercer has been at the forefront of policy and planning initiatives of regional significance, including the creation and implementation of the NJ State Development and Redevelopment Plan, the Highlands Regional Master Plan, the Together North Jersey Plan, and RPA's Fourth Regional Plan.

Mercer is a sought after speaker and thought leader in redevelopment, downtown revitalization, bike/ped safety, state and regional planning policy, and equitable community engagement approaches.

Company

Mercer Planning Associates

Years of Experience

20+

Professional Registrations / Memberships

NJ Professional Planner

American Institute of Certified Planners

American Planning Association

Training

Masters of City and Regional Planning, Bloustein School of Planning & Public Policy, Rutgers University, New Brunswick

BA, Political Science, Rutgers University, New Brunswick

Employment History

Mercer Planning Associates: *2008-Present*

Downtown New Jersey: *2017-Present*

Preservation New Jersey: *2017-2020*

Regional Plan Association: *2014-2016*

NJ Office of Smart Growth: *2004-2008*

Relevant Experience

Culture & Heritage Long Range Plan, Somerset County, New Jersey: Managing the developmental of a long range plan to ensure arts, cultural heritage, and history are a driving force in planning and development toward a healthy and economically vibrant Somerset County. Services include an outreach program with targeted outreach to under-represented communities using a mix of virtual and in-person events to engage with a wide variety of voices safely. Using the information gathered from the outreach sessions and research, the Plan will identify assets, opportunities, and areas for improvement and include a series of strategy recommendations and corresponding actions with targets and milestones for implementation.

Long Range Transportation Plan, Northern New Jersey: Coordinated community and stakeholder engagement amid the ongoing COVID-19 public health emergency that severely limited opportunities to meet in-person. Services include facilitating a virtual board retreat, virtual public outreach meetings, a multilingual online survey (with targeted paper survey distribution), a robust social media campaign, an educational symposium series, and coordination with organizations representing vulnerable populations.

Neighborhood Revitalization Study, Newark, New Jersey: Managed the Greater Dayton Revitalization Study to explore the potential to transform Newark's Dayton neighborhood from a distressed, largely isolated area into a revitalized, transit-oriented community that is connected to the greater region around it. The study included baseline land use, environmental, transportation and economic analyses, as well as significant intergovernmental coordination and stakeholder outreach to inform a set of implementable design and policy recommendations for the City of Newark to move forward with in anticipation of the PATH extension to the Northeast Corridor Rail Link Station.

Vision Zero Action Plan, Jersey City, New Jersey: Managed community engagement for Jersey City's Vision Zero Action Plan, including strategic efforts to engage traditionally disadvantaged populations. Services include support to the project task force, event tabling, community open houses, online and intercept surveys, and social media curation; as well as technical advisory for Action Plan strategy development.

Together North Jersey Plan, Northern New Jersey: Managed community engagement and stakeholder coordination for the Together North Jersey (TNJ) local demonstration project program, including social media management, online community engagement, implementation planning assistance, and inter-governmental coordination. Mercer also played an integral role in formulating policy action items for the TNJ Plan related to land use, open space and farmland preservation, stewardship, and transfer of development rights. Mercer is the past-chair of the TNJ Efficient Task Force and current chair of the Competitive Task Force.

Highlands Master Plan Monitoring Program, Northern New Jersey: Managed the Highlands Regional Master Plan Monitoring Program, which addresses the periodic Regional Master Plan (RMP) update required by the Highlands Act. The program included significant stakeholder and public outreach, as well as creating monitoring indicators and milestones, quantitative analysis, and a science and research agenda related to future implementation initiatives. Also provided technical support, data analysis, and outreach for the fiscal impact assessment (FIA), measuring the economic health of the Highlands Region.

Downtown New Jersey, Statewide New Jersey: Consulting Executive Director of statewide non-profit education and advocacy organization dedicated to the revitalization of New Jersey's downtowns. Mercer coordinates large and small-scale educational and networking events with district managers, public officials, re/development professionals, and community volunteers. She also writes topical articles and curates a quarterly newsletter and social media.

Strategic Growth Plan, Sussex County, New Jersey: Managed outreach and stakeholder coordination for an Economic Base Assessment and Strategic Growth Plan for the County of Sussex, including public relations, community engagement, stakeholder identification and coordination, and Steering Committee management.

Green Infrastructure Plan, Passaic County, New Jersey: Managed overall inter-agency and stakeholder coordination, as well as targeted outreach to traditionally disadvantaged populations for the Passaic County Green Infrastructure Plan. Project services also includes background document review and technical assistance.

Recent Articles & Print Resources.

DNJ Newsletter, Contributing Editor, 2018 - Present

NJ Transit Friendly Development Newsletter, Editorial Board Member, 2007, 2014-Present

Transit Friendly Planning: A Guide for NJ Communities, Contributing Editor, 2022

NJ's Restaurants and Downtowns Need Liquor License Reform Now, NJ Spotlight, Nov 6, 2020 *(ghost-writer)*

Reinventing Your Downtown After Economic Upheaval, NJLM Magazine, Summer 2020

It's Time to Invest in New Jersey's Past, NJ Spotlight, Feb 24, 2020

The Complete Guide to Planning in New Jersey - Fourth Edition, Contributor, 2018; *Third Edition*, Editorial Board, Organizing Committee & Contributor, 2010

Our Region's Success is Fragile, NJLM Magazine, February 2015

Recent Presentations & Public Speaking.

Downtown Management Forum Series, Coordinator, 2019-Present

COVID Lessons Learned: From Pilot to Permanent, NJ Bike & Walk Summit, 2021

Downtown Reinvention as a Road to Recovery, NJ Planning & Redevelopment Conference, Jan 2021

Realizing Opportunity Through Transportation, TPA Tuesdays Symposium, Jan 2021

Downtown Recovery After Economic Upheaval, NJLM Conference, 2020

You're Engaged! Getting the Public Involved in Transportation Planning, NJ TransAction Conference, 2020

Adapting to Change, TPA Tuesdays Symposium, Oct 2020

Micromobility in Your Community, Together North Jersey Workshop, 2020

Making TOD Real – Planning & Building Transit-Oriented Development in NJ, TOD in Your Downtown Forum, 2019

Interconnecting Local Cities and Suburbs, Paterson Metropolitan Region Research Center Conference, 2016



PAUL J. MCEACHEN

PRINCIPAL SENIOR ARCHAEOLOGIST (36 CFR 61)

Paul J. McEachen, Director of Archaeological Services, provides technical oversight on most archaeological projects undertaken in New Jersey. Mr. McEachen has served as a Principal Investigator on all phases of archaeological investigations and specializes in prehistoric archaeology. Mr. McEachen has prepared and directed cultural resources surveys in accordance with Section 106 of the National Historic Preservation Act, NEPA, and various municipal and state cultural resource regulations. He exceeds the qualifications set forth in the Secretary of Interior's Standards for Archaeologists [36 CFR 61].

Company

Richard Grubb & Associates, Inc.

Years of Experience

26

Professional Registrations / Memberships

Register of Professional Archaeologists

Training

CRM Essentials: Restoring Your Skills

Section 106 Workshop

Employment History

Richard Grubb & Associates: *1998-Present*

Washburn & Gillis Associates: *1996-1998*

Relevant Experience

County Yard/Delco Lead Emergency Facility Project, City of New Brunswick and North Brunswick Township, Middlesex County, New Jersey: Directed Phase IA, IB and II archaeological surveys in the APE for NJ TRANSIT's County Yard/Delco Lead Emergency Train Storage and Service and Inspection Facility Project. An initial Phase IA survey determined that portions of the APE had a high sensitivity for prehistoric archaeological resources and for archaeological deposits associated with former nineteenth-century railroad-related structures. Phase IB/II archaeological investigations, consisting of a series of shovel test pits, were subsequently undertaken at the location of a proposed retaining wall, and 11 mechanically-excavated trenches were excavated in the locations of proposed catenary pole foundations. No significant archaeological resources were identified. The Phase IB/II archaeological investigations were performed under the stipulations outlined in a Programmatic Agreement that RGA drafted for the project that included in part a protocol for archaeological investigations.

TRANSITGrid Project, Town of Kearny and City of Jersey City, Hudson County, New Jersey: Provided oversight to the Principal Investigator, Senior Archaeologist for the Phase IA archaeological survey for NJ TRANSIT's TRANSITGrid Project. The Phase IA archaeological survey assessed the potential for significant archaeological resources to be affected by the proposed construction of a natural gas-fired electric power generating plant and solar array. The project also included an historic architectural resources background study (HARBS) to assess the potential for the project to affect National Register-eligible historic properties.

Lyndhurst Rail Station, Lyndhurst Township, Bergen County, New Jersey: Directed a Phase IA archaeological survey and effects assessment report in connection with NJ TRANSIT's Accessibility Improvements Project at the Lyndhurst Station. The survey concluded that proposed ground disturbances from the project was limited to existing railroad embankments and that the Area of Potential Effects (APE) for Archaeology had low sensitivity for prehistoric and historic archaeological resources due to prior disturbance. The New Jersey Historic Preservation Office (NJHPO) concurred with the assessment and no further archaeological investigations were required for the project.

Hudson-Bergen Light Rail, Route 440 Extension, City of Jersey City, Hudson County, New Jersey: Provided oversight for a Phase IA archaeological survey and effects assessment report for NJ TRANSIT's extension of the Hudson-Bergen Light Rail Line. The survey determined that portions of the APE had a moderate to high sensitivity for prehistoric archaeological resources. Historic archaeological sensitivity was determined to be high where the APE crossed the National Register-listed Morris Canal Historic District. Presently directing stipulations of a Programmatic Agreement established to help facilitate the cultural resources process during the design and construction of the Preferred Alternative, including a geomorphological survey and design consultation services.

North Jersey Coast Line Raritan River Draw Bridge Replacement Project, Cities of Perth Amboy and South Amboy, Middlesex County, New Jersey: Provided oversight for a Phase IA archaeological survey for NJ TRANSIT's North Jersey Coast Line Raritan River Draw Bridge Replacement Project. The survey concluded that the APE-Archaeology had a low sensitivity for both prehistoric and historic archaeological resources. Determined that the undertaking had the potential to impact two National Register-eligible Vessels located within the submerged portion of the APE-Archaeology.

Morgan Draw Bridge over Cheesequake Creek, Old Bridge Township and City of South Amboy, Middlesex County, New Jersey: Provided oversight to the Principal Investigator, Senior Archaeologist for initial cultural resource surveys performed in connection with NJ TRANSIT's proposed improvements to the Morgan Draw Bridge over Cheesequake Creek. Project tasks included defining the APE for archaeology through consultation with the NJHPO and NJ TRANSIT, background research, a field visit, and an archaeological assessment.

Long Slip Fill Project, Cities of Hoboken and Jersey City, Hudson County, New Jersey: Principal Investigator, Principal Senior Archaeologist for the supplemental Phase IA archaeological survey for the Long Slip Fill project. Initiated in the late 1990s, but not fully implemented, the project was redesigned in direct response to the effects of Superstorm Sandy to help protect the Hoboken Terminal Yard and surrounding city from future flooding. The archaeological survey determined that the undertaking would have no effect on archaeological resources due to the presence of historic fill and twentieth-century disturbances and resulting low archaeological sensitivity within the APE.

Amtrak's Monmouth Substation (Substation No. 36), South Brunswick Township, Middlesex County, New Jersey: Directed a Phase IA archaeological survey in the APE for Amtrak's Monmouth Substation (Substation No.36) in South Brunswick Township, New Jersey. Through background research and a pedestrian survey, it was determined that the APE had a low sensitivity for significant archaeological resources.



BRANDON M. COLES, RA

ARCHITECTURE

Brandon Coles is a Vice President of Sowinski Sullivan. Since joining the firm nine years ago, Mr. Coles has worked exclusively on transportation facilities for several transportation agencies throughout New York, New Jersey, and Pennsylvania. Brandon currently oversees multiple large-scale projects and programs for our clients. He is an expert in design and program management of new facilities as well as complete renovation to existing structures that fulfills our client's goals while keeping a focused eye on the end user.

Company

Sowinski Sullivan Architects, PC

Years of Experience

21

Professional Registrations / Memberships

Registered Architect, NY

Member, Metropolitan Railway Club Of NY

Training

B. Architecture, New Jersey Institute of Technology

Employment History

Sowinski Sullivan Architects, PC: *2013 - Present*

Sydness Architects, PC: *2004-2013*

Looney Ricks Kiss: *2001-2004*

Relevant Experience

NJ TRANSIT Penn Station New York Capacity Improvements, New York, New York: Architect providing architectural design services for a conceptual study to identify and evaluate capacity enhancements for Penn Station New York. The project included advising on facility configuration, leading the architectural development, and evaluating enhancement alternatives. Improvements offered passengers improved connectivity and greater flexibility when arriving and departing Penn Station New York.

NJ TRANSIT Hoboken Station Access Study, Hoboken, New Jersey: Architect for the Hoboken Terminal Access Study task. This study will seek solutions to increase the level of service provided to users of all the transit modes this Terminal serves, using 10% conceptual plans, code analysis, and a report of the Design Team's findings. Alternatives will be evaluated for extending platforms to allow for longer consists, replacing low-level platforms with high-level accessible ones, and providing a mid-platform tunnel to improve transfers to PATH trains.

Amtrak Sunnyside Yard Phase I, Queens, New York: Principal-in-Charge for the Phase I portion of the Sunnyside Yards Project, which included programming, master planning, and conceptual design for the entire Sunnyside Yards facility. Scope of work also included a Highspeed Rail Service and Inspection Facility as well as a general staff welfare building, which serves as the focal point for the facility. Project sustainable design goals followed the International Green Construction Code and the mandated New York State Executive Order 88 "Directing State Agencies and Authorities to Improve the Energy Efficiency of State Buildings."

SEPTA 69th Street Transportation Center Vision Plan, Upper Darby, Pennsylvania: Project Leader for the development of a master plan for the existing 69th Street Terminal, which serves the SEPTA trolley network, the subway and bus modes. Project goals included long-range strategies focused on facility development and sustainability. As proposals for the future, these strategies identify economic and infrastructure development and/or redevelopment within the Transportation Center. This was achieved by renewing/upgrading finishes, lighting, and other amenities in the public spaces throughout the Terminal. Additionally, an accessibility review was done and integrated into the long-term goals.

NJ TRANSIT Elizabeth Station, Elizabeth, New Jersey: Principal-in-Charge on a team for the station improvements and expansion project. The station is fully ADA-accessible and will remain so during construction. The scope of work includes an inbound station building housing a Waiting Room, Ticket Office, NJT Offices and various support spaces, and four separate elevator towers. In addition to the building improvements, the platform will be replaced and lengthened and will include conditioned waiting rooms on both platforms as well as an ADA accessible connection to Chestnut Street. Design was completed in 2019. This project is currently under construction.

PennDOT/Amtrak Harrisburg Transportation Center, Harrisburg, Pennsylvania: Project Leader for the overall assessment, restoration, and improvement of the historic Harrisburg Transportation Center located in the heart of Pennsylvania's capital city, Harrisburg. The project entailed a full building assessment and report to define areas of disrepair, compliance with current standards and code, and inefficiencies of the existing layout. The compiled information was used in the creation of a program to address immediate and long-term facility improvements. Particular examples of improvement included the replacement of the existing station roof, renovation of the upper floors to competitive leased office space, conversion of an outdated multipurpose room into a state-of-the-art business center, as well as other building wide restorations. The long-term improvements will provide the Harrisburg Transportation Center with the means to accommodate increased future ridership and allow the facility to compete in Harrisburg's commercial real estate environment.

NJ TRANSIT Long Slip Project, Hoboken, NJ: Principal in Charge the new station at NJT's Hoboken Yard. The three-new platforms, six-track NJT terminal station is designed with the platforms above design flood elevation to provide passenger service when Hoboken Station is not available due to flooding or other operational circumstances. A concourse connects the three platforms at the east end, adjacent to the west side of a new mechanical maintenance building and leads passengers to or from a pathway to the Hoboken Terminal area. The north and south tracks include pedestal pits for train maintenance when the station is not in use for passenger service.

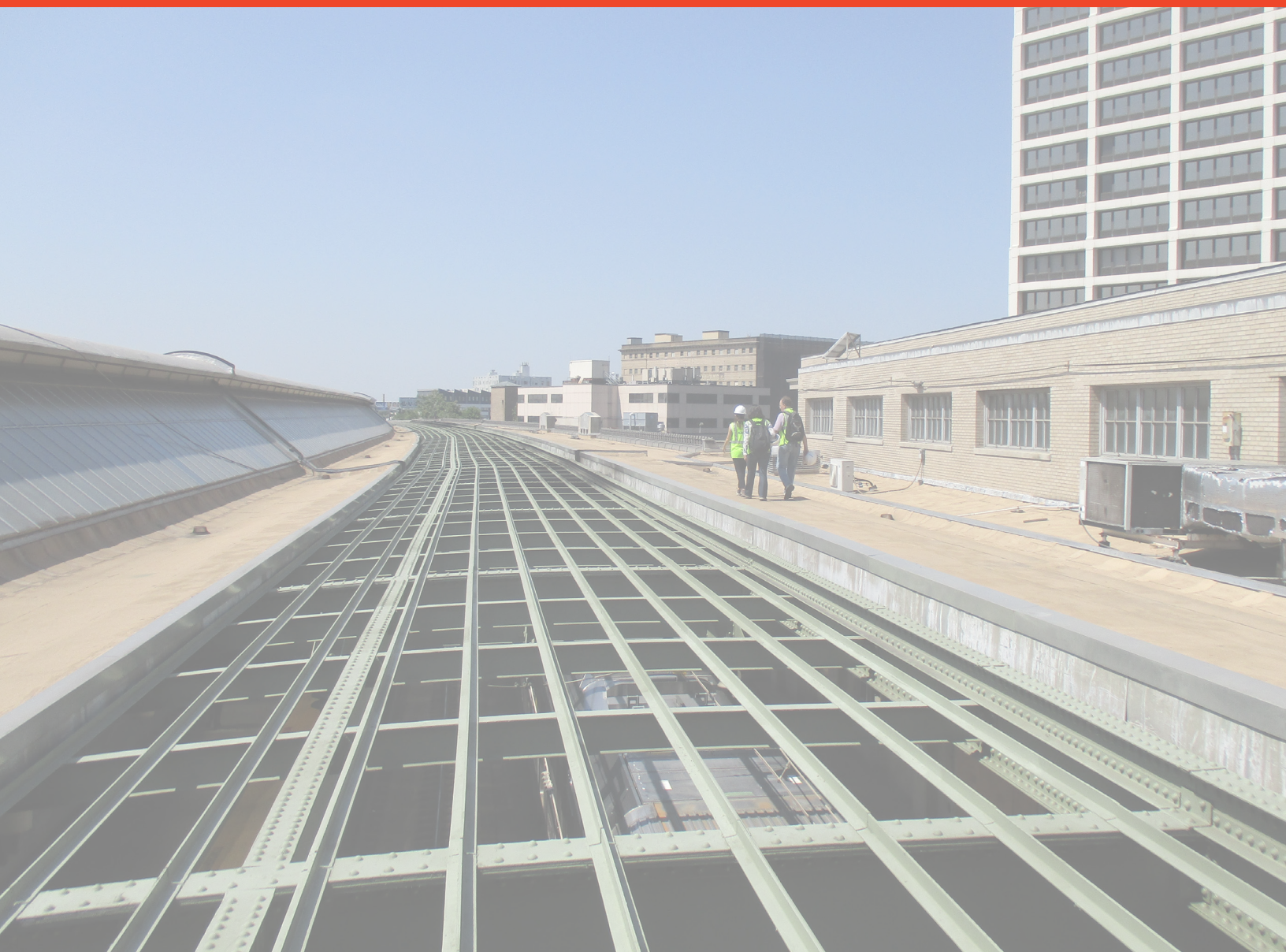
NJ TRANSIT Hudson Bergen Light Rail Transit (HBLRT) Extension, Jersey City, New Jersey: Project Leader on a team designing the replacement of the West Side Avenue Station on the HBLRT as part of the extension of the system. The entire station is being replaced and requires thoughtful consideration of achieving code compliance and location of platforms in an existing context, which has undergone station renovations to accommodate the extensions of the HBLRT tracks westward from their current terminal.

MTA Penn Station Access, Various Locations, New York: Project Leader on the firm's work as the mechanical engineering lead and shared lead architect role for this extension of the Metro-North New Haven Line service through the Bronx and into NY Penn Station. This includes four new commuter rail stations, with one also serving Amtrak intercity service. Development of both design-bid-build and design build packages for various components of work and coordination of multiple operating railroad requirements into the station designs make this a very complicated undertaking.

MTA/Metro-North Railroad Enhanced Station Improvements, New York, New York: Project Leader on a team for enhanced station improvements at five MNR stations, which are being delivered through the Design Build process. The stations include White Plains, where a complete platform and station overhaul is being undertaken; Riverdale and Crestwood stations in the Bronx, where overpass and vertical circulation as well as canopy and platform replacements are planned; Port Chester, Yonkers and 125th Street Stations where less significant, but important upgrades will be made. This project is under construction.

MTA/NYCT Enhanced Station Initiative Program Facilitator, New York, NY: Project Leader working with MTA/NYCT as part of the international team of Arup and Grimshaw to update the look and feel of the entire NYC subway system. The team has been charged with the design and procurement of its Enhanced Station Initiative Program, which is determining the "best method" for updating thirty-three pilot NYCT subway stations across the five boroughs. The overall budget for these 33 stations is $650M.

SECTION 4 – REFERENCES



COMPANY REFERENCES



COMPANY REFERENCES SHEET

WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
Amalgamated Warbasse Houses WSP provided initial preliminary design, CMO (Constructability, Maintainability, Operability) review, construction cost estimates updated throughout design, pre-purchase specifications for major equipment, and final design/construction documents.	2015- 2017	Amalgamated Warbasse Houses Inc.	Thomas Auletti, RAM, NYARM General Property Manager 2800 West 5th Street Brooklyn, NY 11224 [redacted]
Spring Creek Towers Shutdown 5kV WSP has been providing owner's engineer services to Starrett City since 2002 for their 12 MW Spring Creek Tower Cogeneration Utility Plant (CUP) that provides electricity and thermal energy to 46 residential buildings, 8 parking garages, a community center and a shopping center over 153 acres since 1974.	2017 - 2018	Brooksville	Eric F. Magidson [redacted]
Bronx Zoo On-Site Generation Electrical Interconnection WSP created the utility interconnection operating procedures for the existing Co-Generation Plant with Con Edison for the Bronx Zoo. The operating procedures were designed to enable the Co-Generation Plant to interconnect with the utility with net metering capabilities and the option to island off when utility power is down.	2016 - 2018	Bronx Zoo - Wildlife Conservation Society	Mike Henry Cogeneration Plant Manager mhenry@wcs.org [redacted]
New York City Health & Hospitals WSP was assigned the structural, electrical and mechanical professional engineering and architectural design services to support the installation of new electrical switchgear on the ground floor of the Administration Building, C&D Building and F-Link (New York Power Authority) Service.	2013 - Ongoing	Base Tactical Disaster Recovery	John Levy President [redacted]

COMPANY REFERENCES SHEET

AMERCOM CORP.

PROJECT	START/END DATES	CLIENT	REFERENCE
Contract #6240 LIRR Expansion Project from Floral Park to Hicksville, Nassau County, NY As a sub-consultant, AmerCom is one of two firms responsible for the entire geotechnical work on this $1.8B contract that is part of the overall Capital Program totaling $2.6B. This design-build project is adding nearly ten miles of a third set of tracks in Nassau County for the LIRR and will eliminate seven (7) grade crossings with new bridges, add a viaduct structure, retaining and sound walls, station platforms and new multi-story parking garages. AmerCom developed the preliminary foundation designs for these structures, assisted in developing the Geotechnical Work Plan, developed and implemented the Geotechnical Subsurface Investigation Plan, prepared Geotechnical Data Reports, Seismic Assessment Reports and Foundation Design Reports on an aggressive design submittal schedule, addressing QC and other review comments.	2017 - 2023	MTA Long Island Rail Road	Anthony Tufano Project Manager [redacted] atufano@lirr.org
GSP OPS P3243 & P3421 MP 30-63 Widening Program Management, Various Locations along GSP, NJ As a part of the Program Management Team for the widening of the Garden State Parkway from MP 30-63, AmerCom tasks included: oversight and coordination of the specifications on seven (7) construction contracts; the implementation of the program-wide geotechnical program that consisted of over 1,000 borings and performed design reviews of all foundation and pavements designs; developed standards plans for all cantilever and overhead Vierendeel sign structures; and survey oversight of all design and construction survey related work including establishing a survey control network utilized for design and construction through the length of the project. AmerCom's staff also served in an advisory role in the quality control and review of designs completed.	2011 - 2017	NJ Turnpike Authority	Lamis Malak Project Manager [redacted] Lmalak@NJTA.com
Improvements at Garden State Parkway Interchange 125, OPS P3269, Various Locations NJ As a sub-consultant, AmerCom was responsible all survey, ROW, mapping, utility relocations and geotechnical engineering. Survey work including establishment of project controls, roadway cross sections, bridge surveys, survey of wetlands and borings, and preparation of project base maps for the preparation of utility documentation, relocation designs and utility orders for construction of a new $72 million interchange on the Garden State Parkway.	2010 - 2018	NJ Turnpike Authority	Vincent Mignella Project Manager [redacted] Vmignella@NJTA.com

COMPANY REFERENCES SHEET
MERCER PLANNING ASSOCIATES (MPA)

PROJECT	START/END DATES	CLIENT	REFERENCE
Long Range Transportation Plan, Northern NJ MPA coordinated community and stakeholder engagement for NJTPA's Plan 2050: Transportation|People|Opportunity, the long-range plan for Northern NJ's 13-county metropolitan planning organization.	2020 – 2021	North Jersey Transportation Planning Authority	Ted Ritter Manager of External Affairs [redacted] tritter@njtp.org
Cultural & Heritage Long Range Plan, Somerset County, NJ MPA is managing all aspects of the developmental of a long range plan to ensure arts, cultural heritage, and history are a driving force in planning and development toward a healthy and economically vibrant Somerset County.	2021 – Ongoing	County of Somerset, NJ	Kaitlin Bundy Somerset County Cultural & Heritage Commission Manager [redacted] bundy@co.somerset.nj.us
Vision Zero Action Plan, Jersey City, NJ MPA managed community and stakeholder engagement for Jersey City's Vision Zero Action Plan, which serves as a blueprint for reaching their traffic safety goals, and ensuring safe, comfortable transportation on Jersey City streets.	2018 – 2019	City of Jersey City, NJ	Andrew Vischio Director of Traffic & Transportation [redacted] AVischio@jcnj.org
Downtown Economic Development, Statewide NJ MPA manages statewide non-profit dedicated to downtown revitalization. Services include educational content creation and programming, stakeholder coordination around advocacy efforts, and other organizing efforts with downtown managers, public officials, a development professionals to support economic development.	2017 – Ongoing	Downtown New Jersey	Bob Zuckerman President [redacted] b.zuckerman@westfieldtoday.com

COMPANY REFERENCES SHEET
RICHARD GRUBB & ASSOCIATES, INC.

PROJECT	START/END DATES	CLIENT	REFERENCE
Danforth Road Bridge over NJ TRANSIT's Morristown Line at MP 26.79 (Structure No. 1468-171), Boroughs of Madison and Florham Park, Morris County, NJ RGA completed a cultural resources screening for proposed improvements to the Danforth Road Bridge over NJ TRANSIT's Morristown Line at MP 26.79 (Structure No. 1468-171)	01/2020 - 03/2020	HDR, Inc.	Richard Semenick [redacted] richard.semenick@hdrinc.com
Hudson Tunnel Project, Town of Secaucus, Township of North Bergen, City of Union City, Weehawken Township, and City of Hoboken, Hudson County, NJ RGA completed a Phase IA archaeological survey and Historic Architectural Resources Background Study and Effects Assessment report in connection with NJ TRANSIT's proposed Hudson Tunnel Project, Town of Secaucus, North Bergen Township, City of Union City, Weehawken Township, and City of Hoboken, Hudson County, New Jersey.	2016 - 2017	AKRF, Inc.	Julia P. Cowing [redacted] jcowing@akrf.com
County Yard/Delco Lead Emergency Facility Project, City of New Brunswick and North Brunswick Twp, Middlesex County, NJ RGA completed Phase IA, IB and II archaeological surveys and Historic Architectural Resources Background Study report in connection with NJ TRANSIT's County Yard/ Delco Lead Emergency Train Station and Service and Inspection Facility Project.	2013 - 2019	BEM Systems, Inc.	Harold Olarte [redacted] holarte@bemsys.com

COMPANY REFERENCES SHEET
SOWINSKI SULLIVAN ARCHITECTS, PC

PROJECT	START/END DATES	CLIENT	REFERENCE
Metro-North Railroad, Penn Station Access, New York, NY This extension includes four new commuter rail stations between the Bronx and NY Penn Station. Development of both design-bid-build and design build packages for various components of work and coordination of multiple operating railroad requirements in the station design.	2019 - Ongoing	Metro-North Railroad	Brad Knote Project Manager [redacted] BKnote@mnr.org
NJ TRANSIT, Elizabeth Station, Elizabeth, NJ The improvements include constructing a new, larger station building, replacing and extending the existing passenger platforms, doubling the number of elevators to four, and replacing all stairways.	2018 - Ongoing	NJ TRANSIT Planning	Ed Blanco Program Manager – Capital Programs [redacted] eblanco@njtransit.com
NJ TRANSIT, Emergency Operations Center, Maplewood, NJ Programmed, designed, and bid the construction of a 19000 sq ft renovation, including a main operations area, and executive policy group area and operational support area.	2014 - 2017	NJ TRANSIT Planning	Glenn Zuber Project Manager [redacted] gzuber@njtransit.com

KEY PERSONNEL REFERENCES



KEY PERSONNEL REFERENCES SHEET
MELISSA POGGI, PE, LEED AP - PROJECT MANAGER
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
Hunts Point Generator, Bronx, NY Third party support reviewing submittals and design drawings	05/2019 – 11/2020	McKissack	Corey Hamilton [redacted] chamilton@mckissack.com
Wind Turbine Port, Salem, NJ OE for NJEDA assisting and reviewing the design of wind turbine manufacturing facility, 30MVA substation and 69kv transmission line.	Ongoing	NJEDA	Aaron Roller [redacted] ARoller@njeda.com
Black start Generators, Perryman, MD Installing (2) 2750KW generators to black start peaker turbines during a utility outage	07/2020 – Ongoing	Exelon Power	Anthony Del Grosso [redacted] Anthony.delgrosso@exeloncorp.com
Riverstart PV farm, Indiana 200MW utility scale solar farm. Involved in the design of the PV array and the substation commissioning.	Complete	EDPR	Todd Moody [redacted] Todd.moody@EDPR.com
NYU Cogen expansion, New York, NY Update to existing CHP plant, site microgrid, and thermal distribution project that includes 2.4MW Jenbacher natural gas reciprocating engine generator, Diesel standby generator (2.5 MW CAT), replacement of medium voltage switchgear and various substations to expand the microgrid, and implementing load shedding.	03/2017 – Ongoing	NYU	Brian Burke [redacted] brian.burke@nyu.edu

KEY PERSONNEL REFERENCES SHEET
PAUL SULLIVAN, PE, PP, PMP - DEPUTY PROJECT MANAGER / RISK MANAGER
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
Design, Engineering, and Construction Assistance for Central Concourse at New York Pennsylvania Station, Phase 1, New York City, New York Project Risk Manager and WSP Project Manager.	11/2020 – Ongoing	NJ TRANSIT Corp.	Alan Kearns [redacted] akearns@njtransit.com
Rutgers Tube Rehabilitation, Manhattan and Brooklyn, NY Design Manager.	07/2020 – 03/2022	MTA Construction & Development	Jimmy Ho [redacted] Jimmy.ho@mtacd.org
270 Park Avenue Under-grade Design and Support of Construction Services, New York, New York Project Manager for Railroad Engineering Services.	04/2019 – 01/2022	Tishman Speyer, representing JP Morgan Chase	Jack Klein [redacted] jjklein@tishmanspeyer.com

KEY PERSONNEL REFERENCES SHEET
EDREA TAN - QA/QC MANAGER
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
Tappan-Zee Bridge Replacement, Tarrytown, NY $4billion Design-Build project to replace the existing Tappan Zee Bridge (Mario Cuomo Bridge)	07/2013 – 04/2016	HNTB	Kishi John [redacted] kishijohn@gmail.com
Tappan-Zee Bridge Replacement, Tarrytown, NY $4billion Design-Build project to replace the existing Tappan Zee Bridge (Mario Cuomo Bridge)	07/2013 – 04/2016	NYSTA	Craig Teepell [redacted] cteepell@gmail.com
Tappan-Zee Bridge Replacement & LaGuardia Redevelopment Program The Tappan Zee Bridge, officially named the Governor Mario M. Cuomo Bridge, is a twin cable-stayed bridge spanning the Hudson River between Tarrytown and Nyack in the U.S. state of New York. It was built to replace the original Tappan Zee Bridge, which was located just to the south. It was a $4billion design-build project.	07/2013 – 11/2019	Stellar Services	Anna Hu [redacted] ahu@stellarservicces.com

KEY PERSONNEL REFERENCES SHEET
AMBRISH DESAI - ELECTRICAL LEAD / CONCEPT OF OPERATIONS
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
LaGuardia Airport Central Terminal Redevelopment WSP was responsible for the design of the sitewide 5kV distribution network from the existing Con Edison 27kV Substations located on site. WSP is providing all design related services for the installation of approximately 24 new 5kV feeders. These feeders run through a network of underground ductbanks to serve a total of ten central energy double ended substations throughout the new development. The design services included all necessary routing, coordination with existing underground utilities, cable amapacity calculations, cable thermal calculations and short circuit calculations.	2014 - Ongoing	Port Authority State of New York	Daniel Stewart [redacted] dstewart@panynj.gov
LaGuardia Airport Central Terminal Redevelopment WSP was responsible for the design of the Central Heating and Refrigeration Plant that includes a medium temperature hot water system with three 26 MMBH and one 5MMBH boilers, three 3000-ton and one 500-ton electric centrifugal chillers, a water side economizer plate & frame heat exchanger, plume abated cooling towers, and the associated site distribution systems across the airport from the CHRP. In addition (3) new 5kV - 480V Substations were designed for support of the electrical distribution throughout the plant.	2014 - 2020	Skanska Walsh Joint Venture	Charles Hearl [redacted] Charles.Hearl@ skanskawalsh.com
New York City Health & Hospitals WSP was assigned the structural, electrical and mechanical professional engineering and architectural design services to support the installation of new electrical switchgear on the ground floor of the Administration Building, C&D Building and F-Link (New York Power Authority) Service.	2013 - Ongoing	Base Tactical Disaster Recovery	John Levy [redacted] jlevy@basetactical.com

KEY PERSONNEL REFERENCES SHEET
ROBERT BURY, PE - MECHANICAL LEAD
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
York Correctional - Central Plant & Site Distribution System Replacement, Niantic, CT Replace all chilled water and hot water systems in central plant and replace over 5-miles of underground CHW and HW distribution piping serving 22 buildings across the site.	04/2017 – 03/2022	York Correctional Institute	Joel Baranowski [redacted] Joel.Baranowski@ct.gov
Newark Airport - Replacement of CHRP North Electrical Station and Chiller Upgrades, Newark, NJ Replace two 2,000 ton electric chillers, update refrigerant pure system and replace and expand chilled water expansion tank.	09/2017 – 06/2021	Port Authority of NY & NJ	Christopher Dias [redacted] cadias@panynj.gov
Exelon Everett Generating Station - LNG Heating Pipe Replacement, Everett, MA Design the replacement of medium temperature hot water piping to the vents of two liquid natural gas storage tanks.	03/2021 – 03/2022	Exelon Generation	Mourad Manjikian [redacted] Mourad.Manjikian@exeloncorp.com

KEY PERSONNEL REFERENCES SHEET
CLAUDIO VESCIO, PE - STRUCTURAL LEAD
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
NJ TRANSIT Central Concourse at New York Penn Station, New York, NY Preliminary design of a second NJ TRANSIT Concourse at New York Pennsylvania Station	12/2020 – 02/2022	NJ TRANSIT Planning	Alan Kearns [redacted] AKearns@njtransit.com
NJ TRANSIT Hudson-Bergen Light Rail Transit Extension to Route 440, Jersey City, NJ Preliminary design of the proposed Bayfront Stations and modifications to West Side Avenue Station.	2019 – 2020	NJ TRANSIT Planning	Angelo Aprile [redacted] aaprile@njtransit.gov
ADA Upgrade at Gun Hill Road Station Dyre Avenue Line, Bronx, NY Final design of Station Expansion, ADA Upgrades, Platform Reconstruction and State of Good Repair Work.	2016 – 2020	MTA Construction & Development	Jaymin Shah [redacted] Jaymin.Shah@nyct.com
ADA Upgrades at Livonia Avenue Station, Brooklyn, NY Preliminary design of Station Expansion, ADA Upgrades and State of Good Repair Work.	2019 – 2021	MTA Construction & Development	Bhargav Shah [redacted] Bhargav.Shah@nyct.com

KEY PERSONNEL REFERENCES SHEET
THANASI GEORGIADIS, PE - CIVIL / UTILITIES / RESILIENCY
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
HBLR Route 440 Extension, Hudson County, NJ Conceptual design for the extension of the Light Rail system from West Side Avenue to a new station west of Route 440.	11/2018 – 02/2020	NJ TRANSIT	Angelo L. Aprile [redacted] AAprile@njtransit.com
FY 2018 Local Safety Engineering Assistance Program, Jersey City, NJ From concept to construction engineering design assistance to local authorities for corridor wide safety improvements at West Side Avenue and Sip Avenue in Jersey City.	06/2018 – 06/2024	North Jersey Transportation Planning Authority	Christine Mittman [redacted] Cmittman@njtpa.org
Phase II Improvements to Pittser Field at MSU Soccer Park, Montclair, NJ Engineering design assistance to local authorities for corridor wide safety improvements at Ferry Street and a Roundabout installation in Newark.	01/2018 – 04/2018	Red Bull	John T. Amorosa [redacted] John.amorosa@ newyorkredbulls.com
FY 2017 Local Safety Engineering Assistance Program, Newark, NJ From concept to construction engineering design assistance to local authorities for corridor wide safety improvements at Ferry Street and a Roundabout installation in Newark.	06/2018 – 12/2022	North Jersey Transportation Planning Authority	Christine Mittman [redacted] Cmittman@njtpa.org

KEY PERSONNEL REFERENCES SHEET
ANDREW KOCH, MECHANICAL
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
NJ TRANSIT Distributed Generation Project – Newark Penn Station 20% Design 20% Design Report for Newark Penn Station to meet NJ TRANSIT's goal of developing a first-of-its-kind distributed generation (DG) system capable of providing reliable power to NJ TRANSIT's critical facilities.	5/2017 – 3/2019	NJ TRANSIT	Gabino Hernandez [redacted] GHernandez@njtransit. com
Exelon Perryman Black Start Generators Original feasibility study and 100% Design package and commissioning for generator system to "black start" a utility scale turbine generator plant.	03/2019 – Ongoing	Exelon Generation	Anthony Del Grosso [redacted] Anthony.delgrosso@ exeloncorp.net
San Diego MTS Bus Electrification Generator Peak shaving natural gas generator project with microgrid for island mode backup power of bus electrification system.	05/2021 – Ongoing	San Diego Metropolitan Transit System	Michael McEachern [redacted] michael.mceachern@ sdmts.com
Hunterdon Medical Center Trigeneration Generator Natural gas generator project with heat recovery systems to supplement hospital heating and cooling demand.	03/2020 – Ongoing	AZCorp	Robert Rose [redacted] Rrose@a-zcorp.com

KEY PERSONNEL REFERENCES SHEET
CHRISTOPHER BACCHUS - COST ESTIMATOR
AMERCOM

PROJECT	START/END DATES	CLIENT	REFERENCE
NJ TRANSIT Contract No. 16-018D, TOC: Corridor Planning, Future Train Storage & Maintenance Facility Location Study TO# 1, Various Locations Hudson and Bergen Counties, NJ This project consisted of a needs assessment study, property assessment and site evaluation screening for additional train storage and maintenance facilities. Working as a sub-consultant, AmerCom was responsible for survey, geotechnical engineering and cost estimating services. Utilizing conceptual alternatives for rail alignments and storage yard options developed by the Prime consultant, AmerCom prepared a detailed cost analysis breakdown and summary matrix for all options considered.	2016 – 2020	NJ TRANSIT Capital Planning & Programs	Todd Discala NJT Project Manager [redacted] tdiscala@njtransit.com
Route 3, Route 46, Valley Rd &Notch/Rifle Camp Road Interchange - Contracts A and B, City of Clifton, Township of Little Falls and Borough of Woodland Park, Passaic County New Jersey As a sub-consultant, provided geotechnical engineering services for both Construction Contracts A and B this $218M project for a new interchange that included a rehabilitation of 3 bridges, 5 new bridges, 3 culverts, 26 retaining walls, 5 noise barriers and 13 sign structures. Completed inspection and logs for over 250 borings and 100 pavement cores on this project; coordinated laboratory testing of soil samples; and inspected the installation of drilled shafts for noise walls during construction.	2016 – 2024	NJ Department of Transportation	Hardev Dave NJDOT Project Manager [redacted] Hardev.Dave@dot.nj.gov
MTA Long Island Rail Road Contract #6240 - LIRR Expansion Project from Floral Park to Hicksville, Nassau County, NY As a sub-consultant, AmerCom is one of two firms responsible for the entire geotechnical work on this $1.8B contract that is part of the overall Capital Program totaling $2.6B. This design-build project is adding nearly ten miles of a third set of tracks in Nassau County for the LIRR and will eliminate seven (7) grade crossings with new bridges, add a viaduct structure, retaining and sound walls, station platforms and new multi-story parking garages. AmerCom developed the preliminary foundation designs for these structures, assisted in developing the Geotechnical Work Plan, developed and implemented the Geotechnical Subsurface Investigation Plan, prepared Geotechnical Data Reports, Seismic Assessment Reports and Foundation Design Reports on an aggressive design submittal schedule, addressing QC and other review comments.	2017 - 2023	MTA - Long Island Rail Road	Anthony Tufano MTA LIRR Project Manager [redacted] atufano@lirr.org
NJ TRANSIT Contract No. 13-005, Task Order Contract: Stations, Access and Site Planning NJT Commuter Rail Station Guidelines & Standards Manual - Revise and Update: Statewide, NJ Working as a sub-consultant, AmerCom was responsible for developing cost estimation chapter in the 2015 NJ TRANSIT Commuter Rail Stations Guidelines and Standards Manual. Prepared cost estimating guidelines and design of software for use in developing planning costs for future NJ TRANSIT projects. The cost estimation accounts for materials, design/construction contingencies as well as cost escalation.	2014 - 2015	NJ TRANSIT	William Lawson Project Manager [redacted] wlawson@njtransit.com

KEY PERSONNEL REFERENCES SHEET

COURTENAY D. MERCER, PP, AICP, APA - COMMUNITY OUTREACH

MERCER PLANNING ASSOCIATES (MPA)

PROJECT	START/END DATES	CLIENT	REFERENCE
Long Range Transportation Plan, Northern NJ Mercer coordinated community and stakeholder engagement for NJTPA's Plan 2050: Transportation/ People/Opportunity, the long-range plan for Northern NJ's 13-county metropolitan planning organization.	2020 – 2021	North Jersey Transportation Planning Authority	Ted Ritter Manager of External Affairs [redacted] tritter@njtp.org
Cultural & Heritage Long Range Plan, Somerset County, NJ Mercer is managing all aspects of the developmental of a long range plan to ensure arts, cultural heritage, and history are a driving force in planning and development toward a healthy and economically vibrant Somerset County.	2021 – Ongoing	County of Somerset, NJ	Kaitlin Bundy Somerset County Cultural & Heritage Commission Manager [redacted] bundy@co.somerset.nj.us
Vision Zero Action Plan, Jersey City, NJ Mercer managed community and stakeholder engagement for Jersey City's Vision Zero Action Plan, which serves as a blueprint for reaching their traffic safety goals, and ensuring safe, comfortable transportation on Jersey City streets.	2018 – 2019	City of Jersey City, NJ	Andrew Vischio Director of Traffic & Transportation [redacted] AVischio@jcnj.org

KEY PERSONNEL REFERENCES SHEET

PAUL J. MCEACHEN - PRINCIPAL SENIOR ARCHAEOLOGIST

RICHARD GRUBB & ASSOCIATES, INC.

PROJECT	START/END DATES	CLIENT	REFERENCE
TransitGrid Project, Town of Kearny and City of Jersey City, Hudson County, NJ Directed the Phase IA archaeological survey for NJ TRANSIT's TransitGrid Project, Town of Kearny and City of Jersey City, Hudson County, New Jersey.	2015 - 2018	BEM Systems, Inc.	Sandra Kochersperger Project Manager [redacted] skochersperger@bemsys.com
Hudson Tunnel Project, Town of Secaucus, Township of North Bergen, City of Union City, Weehawken Township, and City of Hoboken, Hudson County, NJ Directed a Phase IA archaeological survey and effects assessment report in connection with NJ TRANSIT's Hudson Tunnel Project.	2016 - 2017	AKRF, Inc.	Julia P. Cowing [redacted] jcowing@akrf.com
Bergen County Line MP 6.34, Culvert Replacement Design, Boroughs of Rutherford and East Rutherford, Bergen County NJ Directed a Phase IA archaeological survey and effects assessment report in connection with NJ TRANSIT's proposed replacement of the County Line MP 6.34 Culvert, Boroughs of Rutherford and East Rutherford, Bergen County, New Jersey.	02/2016 - 12/2016	HDR, Inc.	Daniel Blaney [redacted] daniel.blaney@hdrinc.com

KEY PERSONNEL REFERENCES SHEET

BRANDON COLES, RA - ARCHITECTURE

SOWINSKI SULLIVAN ARCHITECTS, PC

PROJECT	START/END DATES	CLIENT	REFERENCE
Metro-North Railroad, Penn Station Access, New York, NY This extension includes four new commuter rail stations between the Bronx and NY Penn Station. Development of both design-bid-build and design build packages for various components of work and coordination of multiple operating railroad requirements in the station design.	2019 – Ongoing	Metro-North Railroad	Brad Knote Project Manager [redacted] BKnote@mnr.org
NJ TRANSIT, Emergency Operations Center, Maplewood, NJ Programmed, designed, and bid the construction of a 19000 sq ft renovation, including a main operations area, and executive policy group area and operational support area.	2014 – 2017	NJ TRANSIT Planning	Glenn Zuber Project Manager [redacted] gzuber@njtransit.com
NJ TRANSIT, Hoboken Station Access Study, Hoboken, NJ This study presented solutions to increase the level of service provided to users of all the transit modes this terminal serves. Alternatives were evaluated for extending platforms to allow for longer consists, replacing low-level platforms with high-level accessible platforms and providing a mid-platform tunnel to improve transfers to PATH trains.	2019 – 2021	NJ TRANSIT Planning	Alan Kearns, PE Program Manager [redacted] akearns@njtransit.com

NEW JERSEY TRANSIT REFERENCES



NEW JERSEY TRANSIT REFERENCES
WSP

PROJECT	START/END DATES	CLIENT	REFERENCE
Newark Penn Station Distributed Generation - 20% Preliminary Design WSP provided a feasibility study to add distributed generation to the NPS campus.	2017 - 2019	NJ TRANSIT	Nick Marton Senior Director NMarton@njtransit.com
Positive Train Control WSP is providing program management and oversight to ensure the timely completion of the positive Control System for NJ TRANSIT, in compliance with Congressional mandates and FTA regulations.	2019 - Ongoing	NJ TRANSIT	Don Blazina Senior Program Manager dblazina@njtransit.com
Transit Asset Management Program WSP is leading the development of NJ TRANSIT's enterprise wide asset management system.	2020 - Ongoing	NJ TRANSIT	Roberto Hilman Director of Enterprise Asset Management rhilman@njtransit.com
Capital Planning Task Order WSP is assisting in the development of NJ TRANSIT's first 5 year capital plan and supporting the annual revision of the plan to meet current needs.	2019 - Ongoing	NJ TRANSIT	Marc Tuozzolo Capital Planning mtuozzolo@njtransit.com
Newton Bus Garage Task Order, Trenton, NJ WSP is providing design and engineering services for the implementation of an electric bus capability at the Camden, NJ facility.	2019 - Ongoing	NJ TRANSIT	Marco Fernandez Capital Programs Project Coordinator mfernandez@njtransit.com
No. 17-048/Passaic Bergen Passenger Service Restoration WSP is preparing a technical update and assessment for the restoration of passenger service along the NYS&W corridor between Hawthorne and Hackensack, with additional analysis addressing extending service into Hudson County to connect with the Hudson-Bergen Light Rail Transit System (HBLRTS).	2018 - Ongoing	NJ TRANSIT	Blanca Quinde Senior Program Manager bquinde@njtransit.com
TOC 16-018D/Corridor Planning Future Train Storage & Maintenance Facility Location Study WSP is performing analyses of several sites on which NJ TRANSIT's newest train storage yard and maintenance facility would be located and developing operationally efficient yard layouts.	2018 - Ongoing	NJ TRANSIT	Joe Quinty Dir. of Project Planning / Capital Planning Programs jquinty@njtransit.com
2012 Rail Ops & Infrastructure Planning On-call: Newark Penn Station Circulation Phase 2, 10% Design Design of potential improvements to address existing shortcomings and proposed increased passenger services. The study included developing recommendations to provide additional and higher quality pedestrian routes to and between the station platforms. Identification and assessment of potential improvements from an architectural and visioning perspective, followed up with survey and structural, fire and life safety and MEP engineering support as well as overall station operations assessments leading feasibility verification, conceptual design and costs.	2013 - Ongoing	NJ TRANSIT	Alan Kearns, PE Manager, Capital Planning akearns@njtransit.com

NEW JERSEY TRANSIT REFERENCES WSP			
PROJECT	**START/END DATES**	**CLIENT**	**REFERENCE**
440 Project WSP is providing Conceptual (10%) and Preliminary Engineering (30%) for NJ TRANSIT's Hudson Bergen Light Rail Transit System (HBLRTS) Route 440 Extension and Bayfront Station in Jersey City, NJ.	2018 - Ongoing	NJ TRANSIT	Angelo Aprile Assistant Program Manager, Light Rail Operations aaprile@njtransit.com
2012 Rail Ops & Infrastructure Planning On-call: HBLRT Paterson Plank Road Perform a Grade Crossing Analysis that will examine transportation conditions at the existing grade crossing just south of the HBLRTS Second Street Station and prepare a Grade Separation Report.	2013 - Ongoing	NJ TRANSIT	Alan Kearns, PE Manager, Capital Planning akearns@njtransit.com
2009 Rail Ops & Infrastructure Planning On-call: Cab No Wayside (Rule 562) Signal System Final Design (a/k/a NEC Signal Block Improvements) Development of Rule 562 (Cab-No Wayside) signal system design for the Northeast Corridor for about 50 miles between MORRIS interlocking (Morrisville, PA) located at MP 58.3 to REA interlocking (Harrison, NJ) located at MP 7.8. The design is for all four tracks (six, where applicable) and to enable bidirectional train operations and includes diverging and merging route control lines at all intermediate interlockings. The first phase (between HAM and COUNTY interlockings; about 22 miles) is implemented by Amtrak as part of New Jersey High Speed Intercity Rail Program (NJ-HSIRP); commonly known as "Raceway" project.	2012 - 2014	NJ TRANSIT	Rich Wisneski Asst. Director, Capital Planning rwisneski@njtransit.com
County Yard Improvements Preliminary & Final Design & Construction Assistance, New Brunswick, NJ Providing preliminary engineering, final design and Construction Assistance Services for one of the key NJ TRANSIT resiliency projects being undertaken after Superstorm Sandy. WSP's role is to provide track alignment design, track engineering, geotechnical and drainage services, electric traction power design, signal system design, rail operations services as well as the entire range of disciplines related to a new Service & Inspection (S&I) facility.	2015 - Ongoing	NJ TRANSIT	Ed Fang Manager, Capital Programs and Planning efang@njtransit.com
2012 Rail Ops & Infrastructure Planning On-call: Newark Light Rail – Track Circuits 244T/255T Provided engineering and testing services for two track circuits near the Silver Lake train stations of Newark Light Rail.	2013 - Ongoing	NJ TRANSIT	Angelo Aprile Assistant Program Manager, Light Rail Operations aaprile@njtransit.com

NEW JERSEY TRANSIT REFERENCES
AMERCOM CORP.

PROJECT	START/END DATES	CLIENT	REFERENCE
NJ TRANSIT Contract No. 16-018D, TOC: Corridor Planning, Future Train Storage & Maintenance Facility Location Study TO# 1, Various Locations Hudson and Bergen Counties, NJ This project consisted of a needs assessment study, property assessment and site evaluation screening for additional train storage and maintenance facilities. Working as a sub-consultant, AmerCom was responsible for survey, geotechnical engineering and cost estimating services. Utilizing conceptual alternatives for rail alignments and storage yard options developed by the Prime consultant, AmerCom prepared a detailed cost analysis breakdown and summary matrix for all options considered.	2019 - 2020	NJ TRANSIT Capital Planning & Programs	Todd Discala NJT Project Manager tdiscala@njtransit.com
NJ TRANSIT Contract No. 16-037B, Task Order Contract: Architecture and Engineering Services, Assignment No. 5, GOB Parking Deck Replacement, Maplewood, NJ As sub-consultant, AmerCom performed property survey and mapping services as well as ROW documentation; Geotechnical Engineering; and Utility Investigations for the proposed new multi-level parking deck. Survey work included establishing horizontal and vertical controls; establishing ROW; field edit and survey report; surveying visible overhead and marked out subsurface utilities. Produced Survey plans, General Property Parcel Map and Individual Property Parcel Map. All underground utilities or appurtenances that were marked out by the NJ One Call prior to the survey and were located on the basemap. Geotechnical engineering services included subsurface soil investigation with the findings presented in a Geotechnical Data Report which included soil boring location plan, boring logs, laboratory test data results, and well and foundation recommendations.	2019 - 2020	NJ TRANSIT	Rita Bulsara, PE NJT Project Manager rbulsara@njtransit.com
NJT Contract No. 16-037, TOC: Architecture/ Engineering Services, AR No. 7 – Survey Northern Bus Garage – Locations 1 through 4, Village of Ridgefield Park, Bergen County, NJ As a sub-consultant, AmerCom performed property survey and mapping services as well as ROW documentation for the 4 properties totaling nearly 60 acres. Survey work included establishing horizontal and vertical controls; establishing ROW; field edit and survey report; surveying visible overhead and subsurface utilities. Produced Survey plans, General Property Parcel Map and Individual Property Parcel Maps for each of the properties in accordance with the NJ Department of Transportation (NJDOT) Survey Manual and the NJDOT ROW Engineering (ROWE) Manual.	2019 - 2019	NJ TRANSIT	Joseph Russo NJT Project Manager jrusso@njtransit.com

NEW JERSEY TRANSIT REFERENCES
MERCER PLANNING ASSOCIATES (MPA)

PROJECT	START/END DATES	CLIENT	REFERENCE
Transit Friendly Planning: A Guide for NJ Communities - Launch Event, NJ Statewide As a subconsultant on an on-call service contract with NJ TRANSIT, MPA coordinated the virtual Launch Event for the Transit Friendly planning Guide, including a 1-hour presentation and Q&A session. The second hour of the event provided attendees an opportunity to chat in "consultation rooms" with NJT staff and local and state agencies about current or future transit friendly planning projects in their communities.	2021 - 2022	NJ TRANSIT	Megan Massey Assistant Director Transit Friendly Planning MMassey@njtransit.com
Transit Friendly Planning: A Guide for NJ Communities, Contributing Editor, NJ Statewide As a subconsultant on an on-call service contract with NJ TRANSIT, MPA provided technical assistance, content development, and QA/QC for the update of this planning handbook.	2021	NJ TRANSIT	Megan Massey Assistant Director Transit Friendly Planning MMassey@njtransit.com
TOD in Your Downtown Forum Series, NJ Statewide As the managing entity of Downtown New Jersey, MPA collaborates with NJ TRANSIT/Transit Friendly Planning to coordinate an educational forum series about topics relevant to TOD and downtown revitalization.	2019 - Ongoing	Downtown New Jersey (in collaboration with NJ TRANSIT)	Megan Massey Assistant Director Transit Friendly Planning MMassey@njtransit.com
NJ TRANSIT Friendly Development Newsletter, NJ Statewide MPA's Courtenay Mercer serves on the editorial board of online news compendium hosted by NJ TRANSIT/Transit Friendly Planning.	2014 - Ongoing	NJ TRANSIT (pro bono)	Megan Massey Assistant Director Transit Friendly Planning MMassey@njtransit.com
Together North Jersey, Northern NJ As a subconsultant, MPA managed community engagement and stakeholder coordination for the Together North Jersey (TNJ) local demonstration project program, including social media management, online community engagement, implementation planning assistance, and inter-governmental coordination.	2014 - 2015	NJ TRANSIT Perkins Eastman	Vivian Baker, Assistant Director, Transit Friendly Land Use & Development (Retired)

NEW JERSEY TRANSIT REFERENCES
RICHARD GRUBB & ASSOCIATES, INC.

PROJECT	START/END DATES	CLIENT	REFERENCE
Danforth Road Bridge over NJ TRANSIT's Morristown Line at MP 26.79 (Structure No. 1468-171), Boroughs of Madison and Florham Park, Morris County, NJ RGA completed a cultural resources screening for proposed improvements to the Danforth Road Bridge over NJ TRANSIT's Morristown Line at MP 26.79 (Structure No. 1468-171) Boroughs of Madison and Florham Park, Morris County, New Jersey.	01/2020 - 03/2020	HDR, Inc.	Richard Semenick [redacted]
Hudson Tunnel Project, Town of Secaucus, Township of North Bergen, City of Union City, Weehawken Township, and City of Hoboken, Hudson County, NJ RGA completed a Phase IA archaeological survey and Historic Architectural Resources Background Study and Effects Assessment report in connection with NJ TRANSIT's proposed Hudson Tunnel Project, Town of Secaucus, North Bergen Township, City of Union City, Weehawken Township, and City of Hoboken, Hudson County, New Jersey.	2016 - 2017	AKRF, Inc.	Julia P. Cowing [redacted] jcowing@akrf.com
County Yard/Delco Lead Emergency Facility Project, City of New Brunswick and North Brunswick Twp, Middlesex County, NJ RGA completed Phase IA, IB and II archaeological surveys and Historic Architectural Resources Background Study report in connection with NJ TRANSIT's County Yard/ Delco Lead Emergency Train Station and Service and Inspection Facility Project.	2013 - 2019	BEM Systems, Inc.	Harold Olarte [redacted]

NEW JERSEY TRANSIT REFERENCES
SOWINSKI SULLIVAN ARCHITECTS, PC

PROJECT	START/END DATES	CLIENT	REFERENCE
NJ TRANSIT, Elizabeth Station, Elizabeth, NJ The improvements include constructing a new, larger station building, replacing and extending the existing passenger platforms, doubling the number of elevators to four, and replacing all stairways.	2018 - Ongoing	NJ TRANSIT	Ed Blanco Program Manager, Capital Programs eblanco@njtransit.com
NJ TRANSIT, Emergency Operations Center Maplewood, NJ Programmed, designed, and bid the construction of a 19,000 SF renovation, including a main operations area, and executive policy group area and operational support area.	2014 - 2017	NJ TRANSIT	Glenn Zuber Project Manager gzuber@njtransit.com
NJ TRANSIT, Elizabeth Station, Elizabeth, NJ The improvements include constructing a new, larger station building, replacing and extending the existing passenger platforms, doubling the number of elevators to four, and replacing all stairways.	2018 - Ongoing	NJ TRANSIT	Ed Blanco Program Manager – Capital Programs eblanco@njtransit.com
NJ TRANSIT, Hoboken Station Access Study, Hoboken, NJ This study presented solutions to increase the level of service provided to users of all the transit modes this terminal serves. Alternatives were evaluated for extending platforms to allow for longer consists, replacing low-level platforms with high-level accessible platforms and providing a mid-platform tunnel to improve transfers to PATH trains.	2019 - 2021	NJ TRANSIT	Alan Kearns, PE Program Manager akearns@njtransit.com

SECTION 5 – TECHNICAL SECTION





Technical Section 5

PROJECT BACKGROUND

Following significant studies conducted by NJ TRANSIT, in conjunction with Sandia National Laboratories, the New Jersey Governor's Office of Recovery and Rebuilding, USDOE, NJBPU, and other State agencies, WSP had the privilege of supporting NJ TRANSIT on the development of the 20% design of a distributed generation and distribution resource, with islanding mode capabilities at Newark Penn Station for increased resiliency and reliability. Throughout this development, collectively with the entire project team, WSP maintained the overall vision as outlined in the Sandia Report, which was to utilize distributed generation to protect the "inner core" rail system from regional power blackouts, by supplying independently generated electric power directly to the constituent systems, through engineered control technology that can deliver reliable and consistent power, as required by NJ TRANSIT. Utilizing this technology, the region would retain critical inner-core rail, light rail and bus service to a level of functionality in the event of a major power disruption.

Keeping this vision at the forefront of design concepts, additional benefits were explored to take full advantage of the technologies that were being considered. Distributed generation designed with micro-grid controls to enable off-grid capabilities allows a facility to continue operations during a utility power failure and can supply continuous base load power throughout the year resulting in energy cost savings. A well-designed system will supply the majority of the facility's energy needs and draw power from the utility grid to make up for any energy deficits. When the utility grid is down, the distributed generation system will transfer seamlessly to operate in off-grid mode or "islanded mode" and supply power to designated critical load allowing for continued operations.

The implementation and continuous operation of distributed generation technologies may also offset consumption of power from the bulk electric power grid, thereby replacing it with cost-effective clean technology that results in a cleaner emissions profile. When the utility grid is compromised, these distributed generation resources shall be able to operate in island mode and supply power to the facility in support of the NJ TRANSIT public transit system and limited Northeast Corridor Rail Passenger Service.

PROJECT UNDERSTANDING

As previously mentioned, WSP has been supporting NJ TRANSIT and team on the development of the 20% Conceptual Design, completed in 2019, maintaining the overall vision and objectives outlined below:

- Design a reliable power source that would allow the facility to operate without power from the local utility company, Public Service Electric and Gas Company (PSE&G), for a minimum of 14 days;
- Ability to lower the Dock Bridge during islanded mode;
- Design a system that is safe, simple, and cost effective for the current facility staff to operate and maintain; and
- Design a system that could be monetized to recoup operating costs.

To achieve the above goals, as part of the 20% conceptual design the team recommended the following:

- Two (2) gas-fired generator sets each rated at standby rating of 1000 kW/1250 kVA to serve the facility loads and to power the Dock Tower Bridge for an emergency closure;

- One (1) Emergency standby diesel-fired generator set rated at 450 kW/562 kVA to serve the facility emergency life safety loads.
- Future expansion of a 500 kW Fuel Cell System

Understanding that since the issuance of the 20% design documents, numerous factors have since changed and NJ TRANSIT has the Newark Penn Station Modernization Program underway - our team understands that updates to the design concepts will be required. While the objectives remain largely the same, the design solutions to achieve these may be altered and updated to reflect field conditions and areas of improvement relative to schedule, costs and efficiencies. With the knowledge of the existing systems and configurations, as well as strong working relationships with key team members, our team is well equipped to immediately begin the design validation and make suggestions relative to key updates. We anticipate that these recommendations will be collaborative in nature with the project team to streamline key decisions to support in expediting the project schedule.

The overall objective remains to produce design elements for the implementation and operation of distributed generation resources at Newark Penn Station, facility-wide power distribution and infrastructure for the electric power generated, associated control and management with inter-connection to the Regional Commercial Power Grid where technically feasible and desired by NJ TRANSIT. In addition, this effort will include all structural and infrastructure components and control elements necessary to maintain a defined level of operations at Newark Penn Station, complementing regional transportation of patrons along NJ TRANSIT Rail and Light Rail Lines. The locations and technologies to be used will be assessed, and then a preferred concept will be chosen which will then be advanced through final design and construction bid documents.

Our work plan below outlines our approach to the scope of services and areas to improve on the scope, schedule and efficiencies of the project to achieve these requirements.

WORK PLAN

Within this section, our team has outlined our approach to the technical scope of services, addressing details of the specific tasks that are required while expediting the project schedule. Through our intimate knowledge of the project, WSP is positioned to meet the aggressive schedule expectations, as outlined within the RFP document. In addition, where applicable, we have highlighted our key individuals' past experiences of similar scope and magnitude that clearly demonstrate our vast capabilities and qualifications to successfully complete this project for NJ TRANSIT.

The graphic on the next page highlights WSP's strategy to progress the project in a systematic, straightforward and logical manner, while looking for areas to improve on the project schedule and costs. Proposed timelines of each phase are identified, as well highlighting potential areas of improvement on the project schedule. Our expectation is that the major milestone deliverables for the success of this project are the Design Criteria Manual, agreed and accepted by all stakeholders and the 90% Design Submission, with a systematic progression of design details throughout. Additional details associated with this strategy are included in the sections to follow. As identified above, WSP is committed to meeting the schedule expectations of the project. Based on our intimate knowledge gained as a part of the initial development team, we will look to improve on the schedule. Updates to the schedule throughout the progression of the project will be provided by our Project Management Team and will accurately reflect the status of the project.

WSP WORK PLAN STRATEGY

Stage 1

Project Initiation/ Setup/Management

Task 1 – Project Management and Administration
Task 4 – Risk Management
Task 5 – System Safety and Security Management
Task 11 – As directed by NJ Transit

Schedule Duration:
3 weeks onset; ongoing throughout remaining phases.

Stage 2

Concept Design Validation

Task 2 – Engineering; Subtask 2.1 – Verification of Concept
Task 3 – Cost Estimating
Task 6 – Public Involvement and Agency Coordination
Task 7 – Integration and Interface
Task 8 – Constructability Reviews

Schedule Duration:
20 weeks

Stage 3

Design Development

Task 2 – Engineering; Subtask 2.2 – Engineering and Design
Task 3 – Cost Estimating
Task 6 – Public Involvement and Agency Coordination
Task 7 – Integration and Interface
Task 8 – Constructability Reviews

Schedule Duration:
50 weeks

Stage 4

Construction Documents

Task 2 – Engineering; Subtask 2.2 – Engineering and Design
Task 9 – Contract Packaging

Schedule Duration:
5 weeks

Stage 5

Bid Support Services

Task 10 – Preparation and Subsequent Support of Contract Bid Documents and Bidding Process

Schedule Duration:
Anticipated 52 weeks

Stage 1

Project Initiation / Setup / Management

PROJECT MANAGEMENT QUALIFICATIONS

As described in further detail below, Project Initiation, Setup and Management encompasses WSP's internal Project Management Systems, which are aligned with the NJ TRANSIT requirements, as outlined in the RFP document. Our Project Manager and Deputy Project Manager are well versed in the well-established tools and processes to effectively initiate and manage this project successfully. NJ TRANSIT's project management requirements are familiar to WSP, through projects such as the Final Phases of Implementation for the Positive Train Control Project and New York Penn Station Central Concourse Project. Our project management team is right-sized to efficiently fulfill all of NJ TRANSIT's project management reporting.

PROJECT MANAGEMENT EXPERTISE



The key to delivering successful projects in line with stakeholder objectives is for the project team to understand the unique requirements and issues associated with the scope of work, and properly executing the project with a focus on cost, schedule, quality and safety. Our experienced professionals assess and understand our client's priorities, while appraising the technical, environmental, and commercial issues surrounding each project. Our objective, strength, and staff passion is to provide clients peace of mind that WSP has their best interests in mind throughout project execution.

PROJECT INITIATION / SETUP / MANAGEMENT PROOF

Project:
NJ TRANSIT Hudson Bergen Light Rail Transit System Route 440 Extension

Key Services:
WSP provided conceptual and preliminary design for a 0.8 mile-long extension of the West Side Avenue Branch from West Side Avenue Station, across NJ State Route 440 and to the proposed Bayfront Station, which is a new terminal located within the Bayfront mixed-use development. In addition, WSP provided project management oversight and construction support services for the final design and construction of modifications to West Side Avenue Station.

Project Management activities were robust and transparent, resulting in project costs that were well under budget. These activities encompassed budget and schedule control, quality management, and risk management as required by the Federal Transit Administration, in seeking federal funding for construction. Document controls were established using NJ TRANSIT's Electronic Content Management System (ECMS). WSP also prepared a Preliminary Hazards Analyses (PHA), a Threat and Vulnerability Analyses (TVA), and a Safety Certifiable Checklist (SCCL) to track safety and security issues for the project.

Key Personnel:
Paul Sullivan

BEST-IN-CLASS PROJECT MANAGEMENT

Our team combines extensive industry experience with best-in-class project management processes, techniques, and tools for success. We develop the optimal delivery strategy, overseeing the planning, organization, and control of the work required to implement that strategy. We then establish an appropriate and effective assurance regime and identify and address any deviations from the plan as they occur.

We offer a full suite of project management services, including:

- Program / Project Management
- Project Controls / Document Control
- Planning, Environmental and Design Management
- Quality Assurance
- Construction Services
- Commissioning and Startup

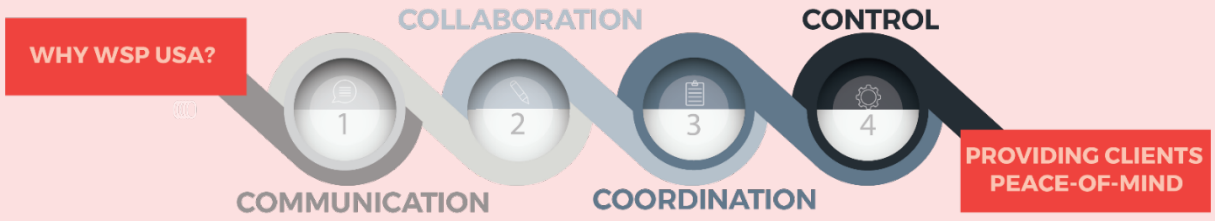
- Advisory Services
- Stakeholder Communications

Our team's wide-ranging experience covers the following project delivery methods:

- Traditional design, bid, build (DBB)
- Design/Build (D/B)
- Early Contractor Involvement (ECI)
- Engineering, Procurement, Construction (EPC)
- Engineering, Procurement, Construction Management (EPCM)
- Integrated Project Delivery (IPD)
- Public-Private Partnership (PPP or P3)

PROJECT MANAGEMENT METHODOLOGY

Our approach to project management relies on the guiding philosophy of effective communication, collaboration, coordination, and control. With these 4 Cs at the core of our efforts, we can address risks before they are realized, and effectively and efficiently solve challenges should they emerge.



Communication: WSP promotes both formal and informal communication channels to make sure issues are identified, addressed, and resolved as expediently and as efficiently as possible. At project initiation, we prepare a specific project management plan outlining internal interfaces and communication with our team and our clients, and for external communications with contractors, consultants, and other stakeholders responsible for delivering a project. Setting out the means of communication between the various elements of the team is vital to ensure that all parties have the information they need, when they need it, and that time is not wasted on unnecessary meetings or searching for information.

Collaboration: WSP functions as a fully integrated team working collaboratively with our clients. We establish and promote a seamless organization by removing organizational barriers and fostering a "one team, one vision" approach. WSP applies innovative methodologies and tools for real-time collaboration to allow for more effective and accurate design and quality management.

Coordination: The project manager (PM) serves as the main point of contact, responsible for coordinating contractual matters and delivery of the project. The PM's responsibility is to oversee and guide the delivery of services and staff which includes the coordination with the project team, the client, OEMs, vendors, suppliers, regulatory bodies and other key stakeholders throughout the duration of the project. Our objective is to keep our clients informed, involved and engaged throughout the project, with our PM leading and coordinating an experienced, integrated team with the specific combination of technical and management expertise across all required disciplines necessary to meet contract requirements.

Control: Strong project controls is a cornerstone of a well-organized and efficiently managed project. Our project control management tools are flexible enough to meet the diverse and complex requirements of any project, large or small, and yet provide focused control of individual project progress and performance. Project control management is critical to the overall success of each project. It allows the project management team to manage a project by making timely decisions from an accurate and informed knowledge of the project's status and forecast.

An experienced project manager has been assigned to this project, who is then responsible and accountable for all activities on the project, including:

- Providing leadership and direction to the project team to fulfil the project goals and objectives
- Ensuring the safety of all employees on the project team
- Ensuring that risks are identified and effectively managed
- Ensuring the team delivers quality services that meet the client's needs
- Developing a respectful and collaborative relationship with client project managers and stakeholders
- Adherence to the client's and WSP's policies, processes and procedures at the project level

As required in ***Subtask 1.1***, a project management plan (PMP) is prepared and implemented by WSP at the outset of the project. At a minimum the PMP includes the following:

- Project description
- The project execution strategy—how the project will be delivered and reported
- The scope of the services, including the work breakdown structure
- Performance criteria including KPI's to enable a determination of the project's success
- Organizational structure, roles, responsibilities and accountabilities
- Interfaces and communications management
- Risks and opportunities
- Functional management (e.g. engineering management, project services, health and safety, etc.)

The PMP is supported by a set of functional plans that further elaborate how the PMP will be met. These functional plans may include (subject always to the requirements of the project):

- Risk Management Plan
- Health and Safety Plan
- Quality Management Plan
- Construction Management Plan
- Commissioning Management Plan
- Project controls and project integration management
- Contracts and procurement
- Document control

Anticipated Deliverables:

- Draft PMP (4 weeks from NTP)
- Final PMP (8 weeks from NTP)
- Updates - periodically as needed or as directed by NJ TRANSIT

SUCCESSFUL DELIVERY SUPPORTED BY PROVEN PROGRAM/PROJECT CONTROL SYSTEMS

WSP has developed a dynamic, flexible, and robust system to help ensure that the overall project and program scope is monitored and executed according to cost and schedule requirements, quality and safety standards, and regulatory requirements.

Our team understands that project scope, cost, and schedule are interrelated and must be managed concurrently. We do so by creating, implementing, and effectively managing quantitative project metrics. The key to successful project controls is to have sufficient tools in place that allow the project team to:

- Measure a project's status (including budgetary and physical deliverable progress)
- Monitor a project's status against an agreed baseline
- Forecast budgetary and physical deliverable progress
- Control the project by making informed strategic decisions

Our project control management processes and tools provide the foundations for monitoring and managing project activities to control safety, quality, costs, schedule, risk, general documents management, and other key functions, resulting in informed and proactive decision-making needed to meet project and program objectives. Detailed project reports are delivered to each of our PMs on a weekly basis which allow them to monitor the

project in real time, without spending a significant amount of time or effort mining data from project staff or from complex internal financial systems.

As identified within ***Subtask 1.2.1 Final Scoping / Final Design Schedule***, WSP proposes to complete all tasks through bid documents within eighteen (18) months of Notice to Proceed, as per RFP Addendum 2, and this milestone will be reflected in the project schedule. Our schedule will be comprehensive, in that it will include the tasks from NTP and through the bidding period and can also include the construction schedule at NJ TRANSIT's discretion, with further construction sequencing detail added as it becomes known through design development. The schedule reporting requirements, as per the Superstorm Sandy Recovery and Resilience Program, will be implemented.

The design schedule will have realistic design durations including the time spent for pre-submission quality reviews, as well as NJ TRANSIT review periods. Together with the NJ TRANSIT project management team, we will monitor the schedule to identify in an anticipatory manner any stalled design and review activities and decisions needed to be made. We will work with the NJ TRANSIT Project Manager to quickly resolve project schedule issues. In addition to the schedule, we will carry an Action Items list that will track all open items, as a means to clear anticipated stalls.

Project Baseline Schedule

One of the key components to successful project delivery is the development and maintenance of a comprehensive Critical Path Method (CPM) Project Baseline Schedule (PBS). The PBS is a powerful tool that when developed and implemented will help:

- Communicate the overall sequence of events required for successful project delivery (from now through construction bidding and then to turnover to NJ TRANSIT)
- Show which activities are on the critical path
- Show when third-party and stakeholder approvals and activities are to occur, and to provide sufficient float for those activities that are outside of NJ TRANSIT's control
- Allow the project stakeholders an understanding of current project progress and understand deviations from the plan when they arise: is the project ahead of, on, or behind schedule?
- Understand potential issues impeding planned progress. This allows for stakeholder review and analysis of potential mitigation strategies to help the team implement the most efficient and cost-effective plan for the project to get "back on track"
- Communicate with follow-on designers, reviewers, decision makers, et al, and understand clearly when a deliverable is due and how the preceding work will potentially influence follow-on work

The Project Baseline Schedule (PBS) will be developed and will cover all stages outlined in the RFP and can include construction and turnover for NJ TRANSIT operations. The PBS will account for the major design, submission, review, and approval times required as major design components then will segue into the actual construction activities, as directed by NJ TRANSIT. We anticipate pinpointing dates for major accomplishments, such as beneficial use, substantial completion and final completion and turnover to NJ TRANSIT. We are prepared to use Primavera 6 software but have found that using Microsoft Project or Excel for this project's size and complexity may be suitable. We wish to discuss with NJ TRANSIT further on the software to be utilized.

This phased and sequential approach to the development of the Baseline Construction Schedule from Conceptual Design through Final Design (at the Verification/20%, 30%, 60%, 90%, and 100% stages) will allow for a Project Baseline Schedule that has been developed via a comprehensive organizational architecture and feedback loop of the design progress and how the design relates to the prerequisite construction information (building systems and types, means and methods, material lead-times, cost efficiencies, et al.). This, in turn, allows design decisions to be determined early. This approach also ties into the Cost Estimating from a systemic level of detail during the

different design levels. During the Conceptual Design phase, the first output deliverable will be the Preliminary Baseline Schedule that will be developed with the required Design activities, submission dates, review durations, and rough construction activities. This Schedule will continue its path to becoming the ultimate final product that will then progress into the Design Verification Phase (0% to 20%); Final Design Phase (at 30%, 60%, 90%, and 100% levels); to then become the active Project Baseline schedule against which monthly performance and progress will be gauged against.

The major aspects of the Preliminary Baseline Schedule will be identified and related to the Cost elements of the project. The basic architecture of the Schedule will consist of these areas where activities will then be added and located:

- Milestones
- Design Phases, inclusive of design timeframes, submission and review timeframes, milestones for completion
- Permitting, preconstruction and procurement

Preliminary Construction durations based upon the design documents areas, square footage, production rates to determine early durations for activities that will fall under individual work breakdown structures (WBS):

- Mobilization
- Long-lead procurements (which could be outside of the construction contract)
- Building function relocation or tenant lease expiration (if needed)
- Demolition and Site Preparation
- Structure
- Envelope
- Interiors (Rough-Ins and Finishes)
- Existing MEP/FP Relocations (HVAC, Plumbing, Electrical, Fire Protection, et al.)
- New MEP Installation
- Equipment / Furnishings
- Special Construction
- Sitework

As the Design Phases advance, the work breakdown structures identified above will become more refined, as sub-WBS nodes are added (for areas, sections, et al.), and the activities that have been added will also have been determined during the feedback loop procedures to assure that the Baseline Schedule captures the required Construction sequences.

Anticipated Deliverables:

- Work Breakdown Structure Codes
- Baseline Project Schedule and Narrative - Draft (3 weeks from NTP) and Final (2 weeks from receipt of NJ TRANSIT comments)
- Monthly Progress Schedule and Schedule Status Report
- Recovery Plan and Schedule, as required

QUALITY MANAGEMENT

Quality is defined as the degree to which project requirements have been met. This includes not just the explicit contract requirements, but also the Standard of Care in our respective industries. It is imperative that our deliverables and services fulfill these requirements.

As required in ***Subtask 1.3 Quality Control***, our quality management will be accomplished using a synergistic approach that considers the requirements of the pertinent project documents, including the design criteria to be developed for the 20% Design Validation, the Project QA/QC Plan, and associated quality control procedures that provide guidance on the implementation and conclusion of project activities.

WSP will submit our Quality Management Plan (QMP) for NJ TRANSIT approval within 4 weeks of Notice to Proceed. All quality documents (such as relines and mark-ups) created by the WSP Team will be available for NJ TRANSIT inspection and audit throughout the course of the project, as well as for a period of 7 years after completion of the project.

WSP has committed to a company-wide quality system based on the ISO 9001:2008 standard. Work processes and procedures outlined in our Quality Management System and Project Delivery Handbook describe WSP's policy for QA/QC applying International Standard ISO 9001:2015 requirements to those processes. WSP's Newark Office, which will manage this project, has applied the ISO 9001:2008 standard on over 300 professional services contracts to date. All work performed under this contract, including that of our subconsultants, will be conducted in accordance with the WSP quality system.

As shown on our organization chart, Edrea Tan is WSP's designated Quality Manager. She will be responsible for managing internal quality audits, which WSP will perform at least quarterly. Edrea will also work with Melissa Poggi, our Project Manager, to resolve any found quality deficiencies. We will provide NJ TRANSIT with a schedule of when audits will take place and provide audit results with 5 days of audit completion. We will follow up with a report of preventative and corrective actions taken and to be taken within 30 days of audit completion.

During design development, the tracking of deliverables development, and submission, NJ TRANSIT and stakeholder comments and resolutions are the core of the project organization. WSP will prepare a Design Control Plan (DCP) that will track and report the design products, review comments and comment resolution. The Action Items lists, which will be prepared under Task 1.2.1, will be a tactic of the DCP, and will help move items to closure on a week-by-week basis.

Anticipated Deliverables:

- Quality Management Plan
- Internal Quality Management Review Reports
- Audit Reports
- Report of Completion of Corrective Actions
- Design Control Plan (DCP)

COST MANAGEMENT

WSP's internal systems and reporting provide project managers with greater visibility of, and better control over, budget and actual progress against costs, resulting in cost-effective project delivery.

The Baseline Budget is considered a Project Management Document forming part of the PMP. The Baseline Budget is broken down into its components in accordance with the Work Breakdown Structure (WBS) developed during planning and project initiation. The WBS must therefore be developed as an orderly and logical rollout of

the project so it is usable as the primary cost reference. Any changes to the Baseline Budget can only be done through an approved change control process.

Cost control describes the activities that allow the project to monitor and manage changes to the cost baseline. The key to controlling cost is to analyze the relationship between actual expenditure, baseline cost budget and cost of physical work accomplished. As part of our internal control system, Earned Value reporting is used as a basis for cost management. The Earned Value is the value assigned to the work which was accomplished during each reporting period. This is monitored against the Planned Value, which is assigned at the beginning of the project and is the estimated value of work to be accomplished in each period. WSP tracks the Earned Value on a bi-weekly basis for all energy projects.

Cost management and control includes:

- Effective monitoring and influencing factors that cause changes to the cost base line. These factors can include scope control, labor productivity, contractor management, contracts administration, client relationship
- Ensuring that change requests are acted on in a timely manner
- Ensuring that actual cost does not exceed approved funding
- Monitoring cost performance to identify poor performing areas and take necessary corrective actions
- Providing accurate reporting to stakeholders
- Maintaining rigorous documentation of cost trends
- Identifying causes of variances from baseline (positive and negative)

SCHEDULE MANAGEMENT

WSP will develop and maintain a project schedule that represents a practical plan to complete the contracted scope of work and to meet the overall client schedule objectives. The schedule will be prepared to a level of detail sufficient to assure adequate planning of the project and to permit monitoring and evaluation of progress and the analysis of time impacts.

The development of the schedule takes into consideration the needs of our clients and the project, including procurement and construction staging/ phasing, approvals and permitting, construction and start-up milestones.

The Baseline Schedule is considered a Project Management Document forming part of the PMP and is used as an effective management tool by which the WSP project team and our clients can measure progress of the work, identify areas of schedule risk, and mitigate against any potential delays on a timely basis.

Schedule control is achieved through continual assessment of the percent completion of activities. Variances and changes from the schedule are reviewed and analyzed by the PM and the client when necessary to identify the problems and implement corrective actions for either revising the schedule or mitigating its delays. Any changes to deliverable dates will be reviewed and approved by our client prior to implementation.

Project schedules can be prepared using various software packages, including MS Excel, MS Project, Primavera dependent on what is considered fit for purpose for the project based on complexity and client requirements.

RISK MANAGEMENT

WSP recognizes that the effective management of project risks is fundamental to delivering the project within budget and on schedule while achieving our clients' objectives. A Risk Management Plan (RMP) is developed for each project for this purpose. The RMP provides a formal, systematic process for identifying, assessing, evaluating, mitigating, managing, and documenting risks that could jeopardize the on-budget and on-schedule completion of the project.

The risk management process is structured around the following fundamental activities:

- **Identifying** perceived risk events that might impact the project budget and/or schedule.
- **Assessing** the likelihood of the risk events' occurrence or probability and their cost and schedule magnitude.
- **Mitigating** the potential impacts by carefully evaluating risk treatments options (reduce, share, transfer, avoid and accept) and developing primary mitigation actions; finding ways to reduce the perceived risk and secondary mitigation actions; and identifying the planned mitigation strategies and treatment options. High-risk event mitigation will be implemented as early as possible in the project schedule so that potentially negative outcomes can be mitigated without or with minimal contingency.
- **Monitoring** cost, and schedule mitigation and the emergence of new risks is a continuous process. The RMP identifies the key risks and respective mitigation plans. This is captured in WSP's Risk Management Information System (RMIS) which includes a Risk Register that is updated continuously as new information becomes available and the project progresses.

DOCUMENT CONTROL

The maintenance and control of documents and records is an important element of the project management system that provides the following:

- Control of incoming and outgoing official project correspondence
- Control of all project records
- Retrievability, security, and business continuity
- Centralized document and records management system for use by the entire project team

As part of ***Subtask 1.2.2 Records Management Control System***, WSP will set up a password protected document control system to share documents between the parties. We have used Project Wise, SharePoint, Microsoft Teams and other software, and we offer these options to NJ TRANSIT. We anticipate discussing and then deciding together which software to utilize at project kick-off. All of the options that we will discuss will have all of the functionality requested by NJ TRANSIT, including transmitting documents NJ TRANSIT's Electronic Content Management System (ECMS).

We will provide an experienced document control specialist, subject to NJ TRANSIT's approval, who will be responsible for managing, processing, transferring and sharing project documents, data, files and drawings. The document control specialist will utilize NJ TRANSIT's Electronic Content Management System (ECMS) as the project cabinet for archiving all project related documents and correspondence/emails. He/she will be available to download documents at NJ TRANSIT's offices. All the project related files will be maintained and processed in a manner that compiles with NJ TRANSIT's Capital Program Document Controls Procedures, which is to provide:

- The creation and maintenance of authentic, reliable, and usable records
- Proper utilization of NJ TRANSIT's NJTDCS to assure the trustworthiness and authenticity of data

During the project, our document control specialist will coordinate and maintain internal document control procedures, which will be in compliance with NJ TRANSIT Capital Program Document Control Procedures, to identify and manage correspondence, business documents, current revision of instructions, procedures, drawings, specifications, reports and analyses, etc. The document control specialist will ensure the internal document control procedure is properly implemented across the project teams. The specialist will communicate between design and construction teams to make sure the project documents transmission & delivery are well organized and on schedule. The specialist will create and maintain project logs, such as RFI Log, Design Deliverables Log, Submittals Logs, in order to track the status on these documents. Upon requested, the specialist will develop drawings control index & specifications control index systems for the whole project.

The document control specialist will manage the entire project documents which include, but not limited to, the following:

- General Project correspondence

- Contracts, specifications, progress reports, invoices
- Budget & finance data
- Drawings, plans, & images
- Project related email messages & attachments
- CDs, DVDs, and other hard media
- Native files & image files of all documents
- Any other Project related correspondence

The specialist will manage all hard copy and electronic documents. Also, the specialist will be responsible for:

- Scanning documents in PDF-A format and indexing
- Posting of scanned documents for future retrieval
- Electronic notification to document recipients
- Maintaining and processing Project documents provided by the originators
- Filing of original hard copies (if applicable)

Upon requested by NJ TRANSIT, the specialist will be available to go to the NJ TRANSIT office for assisting the process of uploading documents in ECMS. Upon the completion of the project, the document control specialist will provide all finalized documents compiled to NJ TRANSIT using NJ TRANSIT approved computer storage for reconciliation of the project file stored on ECMS. The specialist will organize and generate the final project delivery documents: compiled drawings, specs & etc.

Anticipated Deliverables:

- Identification of appropriate support staff subject to NJ TRANSIT approval
- Development of the Records Document Management System

As per ***Subtask 1.4, Project Configuration Management***, at the onset of the project, our document control specialist will manage the drafting of a Configuration Management Plan (CMP) in conformance with ISO 10000 which will outline the procedure and process to organize the manage project design document, including drawings, calculations, worksheets, specifications, and the reports and keep it updated as project progresses. We will maintain a complete list or database of this configuration management asset to ensure accessibility for the project team and client, and to highlight the current version of all design documents. We coordinate with the Quality Manager to analyze, develop and ensure processes for accurately record all project and contract documents, providing configuration management status accounting via custom reports, charts, etc. for distribution per NJ TRANSIT's approved schedules.

Throughout the project, our document control specialist will maintain the contract document log to track all design drawings, calculations, specifications, worksheet and reports as well as each document's version control history.

Anticipated Deliverables:

- Configuration Management Plan – Draft and Final
- Contract Document Log

PROGRESS REPORTING / PROJECT MEETINGS

Capitalizing on our years of experience on mega projects and programs, from concept to construction, the WSP Project Controls team will implement project and program control processes, analysis, and reporting that will provide NJ TRANSIT with the tools, strategies, and solutions to fully assess the risks and opportunities to support successful design and construction of the Newark Penn Station Modernization Project.

The key for the NJ TRANSIT project management team is for these processes and tools to be dynamic and adaptable to meet the complex requirements of the program and stakeholders. To that end, we will map

information from different data sources to create a secure online dashboard reporting for NJ TRANSIT and project stakeholders to provide real or near real time information based on discrete project elements. These dashboards will provide a holistic view of the program and can allow us to present indicators of project performance at a high level while also providing the ability to drill down into project details such as each project's schedules, budgeted costs versus actuals, risks and etc.

As required per ***Subtask 1.2.3 Monthly Progress Reporting***, specifically, this will cover/include:

- Overall Monthly Progress achieved
- Schedule Narrative with:
  - A forecast of completion dates, critical path activities, slippages, recovery and etc. This will also include a 90-Calendar Day anticipated deliverable outlook.
  - Overall versus Baseline Project Schedule progress curve
- Any other additional comparative graphics as may be required by NJT
- Cost Narrative with:
  - A comprehensive analysis of project expenditure for WSP and its subs with a comparison of the current and planned cost expenditures against the approved Budget. This will include associated graphs showing planned/estimated expenditures, actual and variance in the expenditures.
  - Related graphs, including, but not limited to:
    - An earned value analysis and graph showing planned versus actual schedule percent complete and earned value per resource
    - Planned versus actual team labor
- Areas of concern impacting the schedule and budget along with the proposed resolution for corrective action and schedule recovery
- Analysis of DBE participation against plan
- Certification by the Quality Manager certifying the work completed and QMP process followed

Anticipated Deliverables:

- Monthly Progress Report
- Monthly Payment Application
- Monthly Quality Certificate
- Final Invoice

In accordance with ***Subtask 1.5, Project Meetings***, consistent and well-documented meetings will provide momentum for decision making and the overall success of the project. The initial Kick-off meeting will be scheduled by NJ TRANSIT to discuss the startup and management of the project. Thereafter the WSP Team will schedule monthly systems interface and integration meetings on a recurring basis. In addition, monthly (bi-weekly during the 20% design validation task) status and progress meetings will be held, again on a recurring basis.

For all meetings, notes and Action Items lists will be prepared and used to set agendas. WSP will prepare these documents. Participation by WSP will be as a core team comprising Melissa Poggi, the Project Manager, Paul Sullivan, the Deputy Project Manager, and WSP's project controls lead for the status meetings. Technical lead will participate es the agenda call for.

Anticipated Deliverables:

- Kickoff Meeting Minutes
- Interface and Integration Management Meeting Minutes
- Progress Meeting Minutes

HEALTH AND SAFETY

Zero Harm



WSP maintains a Zero Harm policy—through a partnership of management and staff, we strive to provide and maintain a safe and healthy workplace in which no one is harmed, and the environment is protected. Our Zero Harm policy includes an established project safety review process, in which risks are identified and either managed or eliminated. Every project involving field work includes a Project Safety Plan, and our subcontractors are required to adhere to our safety plan or provide one for review and approval. Throughout our organization, safety leadership teams seek to instill a positive safety culture in every country and region where we operate, and to incorporate rigorous health and safety standards into all aspects of our business.

Our health and safety management system is certified to the OHSAS 18001:2007 standard. We also maintain a Global Health and Safety Policy Statement that is made available to all employees across our worldwide operations.

As requested in ***Task 5, System Safety and Security***, the development of a Safety and Security Management Plan (SSMP), the key guidance document that defines how safety and security will be integrated into the project. This task aligns with FTA guidance, FTA C5800.1. WSP has developed similar document for hundreds of transit and rail projects and is well-versed in providing a compliant, but customized document for use on the project. The SSMP, a sub-plan of the PMP, will contain all the required eleven (11) sections, developed to set forth a process that will define a pathway to a safe and security outcome.

WSP will start the task by developing a rough draft SSMP document, incorporating known project elements and information. Typically, our approach to save time and project funds, is to convene a workshop with knowledgeable NJ TRANSIT and project staff to discuss and clarify key sections of the SSMP. Usually the most challenging sections are those that detail roles and responsibilities for safety and security, as well as, clarifying the approach to safety and security certification. The workshop format allows quick conversations to clarify these elements and eliminate steps in the comment and resolution process. After all elements are updated in the rough draft, WSP will provide the document for a final review to capture any outstanding issues and clarifications. Typically, the SSMP is developed early in the project to guide safety and security activities. It is usually updated at Final Design/Construction to capture any changes that can impact safety or security.

WSP noted that other activities that typically are required in the design phase are not stated as requirements within Task 5. These are all activities described in the SSMP. If these activities, such as the development of the Safety and Security Certification Plan (SSCP), safety analysis (PHA), security risk assessment (TVA), safety and security design criteria and the development of safety and security certification checklists and verification of the design, are needed WSP can provide these services under the "As Needed" provision of the contract. For information, these typical requirements are very briefly described below:

Safety and Security Certification Plan (SSCP)

The goal of safety and security certification is to verify that all safety hazards and security vulnerabilities have been identified, evaluated, and properly mitigated to a level acceptable to the agency and to provide objective evidence that the elements of the project are safe to use. WSP can develop a SSCP based on the Federal Transit Administration's Handbook for Transit Safety and Security Certification.

Preliminary Hazard Analysis (PHA)

A PHA is part of a formalized process to identify, evaluate and control safety hazards. The purpose of the PHA is to provide an early assessment of the hazards associated with a design. Its goal is to assess conditions that could potentially affect a system's safe operation. The PHA would be developed in accordance with the FTA Hazard Analysis Guidelines for Transit Projects and agency safety plans.

Threat and Vulnerability Assessment (TVA)

Providing passengers and employees with a safe and secure transit environment requires planning in advance of criminal or terrorist acts. A security risk assessment can be conducted to evaluate the project's susceptibility to threats and to identify vulnerabilities. The assessment would form the basis for design measures to be incorporated to reduce or mitigate the risk of serious consequences.

Safety and Security Committees

FTA requires projects to activate committees to support safety and security within the project. Typically, this includes a Safety and Security Committee and a Fire Life Safety and Security Committee. WSP could support the safety and security committees, including meeting facilitation and agendas.

Design Safety and Security Certification

Safety and Security certification is the process of verifying critical safety and security activities are managed for the project. The process begins once the risk management program identifies the mitigations to reduce the risks related to safety and security hazards and vulnerabilities. The mitigations, as well as, identified safety codes and standards are put together in a Certified Items List, or CIL, which provides the basis for the certification efforts. WSP could support all elements of certification, including the development of the CIL and design certification, which could be handed off for others to do the construction certification.

Stage 2

Concept Design Validation

WSP understands that various factors have changed since the development of the 20% Concept Design, most notably the demolition of the Old Boiler House Building. While this and other factors will ultimately affect certain elements and details of the project, the overall objective remains the same and the use of innovative technologies to achieve these objectives remains critical to the project's success. Due to our extensive involvement in the development to date and our ability to maintain continuity in our project delivery team, we will be able to immediately begin the validation and value engineering exercise without a learning curve. For these reasons, we are confident that we will meet the aggressive schedule expectations associated with this crucial phase of the work plan.

CONCEPT DESIGN VALIDATION PROOF

Project:
UCONN On-Site Generation Analysis

Key Services:
WSP provided analysis and validation of on-site generation / microgrid proposals submitted by (6) developers across (6) campuses for UCONN. A comparative analysis was prepared reviewing installed generating capacity, proposed technologies, financial incentives, estimated savings, greenhouse gas emissions and ownership models.

Key Personnel:
Ambrish Desai
Andrew Koch

As an initial step in the Concept Design Validation, as per ***Task 3 – Cost Estimating***, WSP is prepared to independently validate the cost estimate established during the 20% baseline design. To achieve this requirement, we will be utilizing the services of our established DBE Subconsultant, AmerCom. This estimate will be completed within two (2) months of NTP and will include a reconciliation report addressing major differences between the two estimates.

Upon this initial estimate, our team is prepared to support various cost/performance estimates for various design options that may be developed at this stage to aid in developing final design requirements and to help support approval and funding of the energy infrastructure improvements.

As part of ***Subtask 2.1 – Verification of Concept***, we will work with NJ TRANSIT to outline the specific changes since the 20% Concept Design; we will identify key decisions necessary to validate and progress the design efforts; develop required stakeholder engagement plans; review / verify permit requirements and status to date; reassess available technologies for considerations; coordinate with ongoing construction / planned projects at Newark Penn Station; and look to hold workshops with the project team to achieve a consensus on the final basis of design. The outcome of this work will result in a clearly defined project that will achieve the goals and objectives of NJ TRANSIT presented as the ***Design Criteria Manual***. The elements of the Design Criteria Manual will consist of the following main components:

- Permit and Regulatory Compliance Matrix / Timelines
- Load Profiles of Facility (peak & non-peak)
- Operational requirements / constraints
- Comprehensive review and summary of available technologies
- Benefit-to-Cost Analysis / Life Cycle Cost Analysis of viable DER options (limited to 3 viable options)
- Proposed construction schedules of viable DER options
- Integration into existing systems / operations / building fabric
- Analysis of critical operations to be maintained during islanded operations
- General Arrangement / Site Options accounting for structural integrity, resiliency, foundations, earthwork, utility interconnections, availability of fuel sources
- Results of Value Engineering Exercise
- Summary results of public involvement and agency coordination efforts

Maintaining the main objectives of the project at the core of this stage of the project, our focus will be on reviewing and analyzing the appropriate technologies and the pros and cons of each. Balancing the resiliency aspect of the project with specific operational requirements and various logistical, physical and utility constraints, we will conduct a comparative screening analysis of the various options for review and look to obtain an approved consensus on the path forward for detailed design. Some of the proposed technologies that will be considered will include, but not be limited to the following:

- Solar / Photovoltaic
- Battery Energy Storage Systems
- Reciprocating Engines
- Fuel Cells

In addition, various fuel sources will be considered to support decarbonization goals, such as renewable natural gas and hydrogen, with accommodations built into the proposed concepts to support these in the future if not readily available at the time of installation.

Understanding that a consensus on the final design cannot be accomplished without input from relevant stakeholders, as required within ***Task 6 – Public Involvement and Agency Coordination***, our team is prepared to assist NJ TRANSIT in targeted outreach efforts as necessary and appropriate. These shall include, but not be limited to the following: North Jersey Transportation Planning Authority, other regional planning and transportation organizations, the City of Newark and associated local government units, electric distribution companies, and other entities as necessary and appropriate.

The objective of this task is to support NJ TRANSIT's efforts regarding public information, stakeholder outreach and agency coordination. Our team is prepared to provide assistance and technical support necessary for activities that shall focus upon dissemination of engineering detail status to interested parties including, but not limited to, preparation of graphics such as maps, schematics, physical design and layout sketches, written handouts, Power Point presentations, brochures, videos, and draft progress engineering/design packages and subsets thereof, etc. A second objective is to assist NJ TRANSIT's efforts to fulfill State and Federal regulatory requirements for public and/or agency participation where necessary and applicable. NJ TRANSIT shall lead targeted outreach efforts to seek input from relevant stakeholders, including the Federal and State Regulatory agencies, North Jersey Transportation Planning Authority, other regional planning and transportation organizations, municipalities and local government units, electric distribution companies, and other entities as necessary and appropriate.

If needed, open houses will be designed to encourage one-on-one discussions between the project staff and members of the public, rather than a large group discussion. Upon the direction of NJ TRANSIT, open houses may be held during milestone points in the engineering/design process. Our team will determine the need for translators or special accommodations at open houses and will recommend facilities that are accessible to persons with disabilities.

When required by NJ TRANSIT, WSP is prepared to assist in presentations to Federal, municipal, county and State representatives and other interested parties. It is understood that all public outreach activities, including meetings or hearings with local, county and citizen groups shall be initiated and coordinated through NJ TRANSIT and our team, at the direction of NJ TRANSIT, will prepare graphics such as maps, schematics, physical design and layout sketches, written handouts, etc. for assistance and technical support when necessary for these activities. Our team will attend meetings and events, assisting NJ TRANSIT in accordance with a community information program as directed by NJ TRANSIT. For these efforts, we have anticipated a maximum of ten (10) meetings.

Crucial to the project's success is the development and adherence to an Integration Management Plan (IMP) as required within ***Task 7 – Integration and Interface***. Appreciating the complexity of the project, WSP will take on the responsibility for implementing an interface and integration process within our overall design process. This will ensure that individual design elements of the project interface properly among themselves, existing NJ TRANSIT facilities and infrastructure, as applicable, and the NJ TRANSIT Corporate-wide SANDY Recovery and Resiliency Plan. We appreciate that numerous other projects are ongoing, as well, and strict coordination of our activities with other consultants, as well as governmental agencies, individuals and other entities that may be impacted by the Project through NJ TRANSIT will be required.

As part of the Concept Design Validation and development of the Design Criteria Manual, our team will prepare and submit to NJ TRANSIT for its approval an Integration Management Plan (IMP). The IMP will establish and maintain a comprehensive, systematic, documented, verifiable and continuous integration process throughout the duration of the Project in order to achieve NJ TRANSIT's objective as stated herein. At a minimum, the interface and integration efforts shall:

- Follow the Work Breakdown Structure (WBS) adopted for the Project and allow capability for future WBS level expansion
- Provide an integration design document that systematically identifies and formally documents all interfaces and establishes a process for addressing each interface
- Define methods to confirm interface compatibility and demonstrate said compatibility through tests or other accepted verification methods
- Coordinate all civil infrastructure, utility, electrical and mechanical interfaces to ensure that the are compatible with other applicable Project Area design elements
- Allow NJ TRANSIT to independently assess the effectiveness of, and audit, the Consultant's integration process

A key component to the IMP will be the development and maintenance of an Interface Database that lists all physical elements and other interfaces that may be encountered on the Project. Data fields/tables to be included in the database shall include such items as:

- Type of interface with relevant characteristics
- Purpose of the interface
- Status
- Relevant safety standard, if any
- Primary responsibility for defining the interface
- Open issues /conflicts

Updates to the plan will be made throughout the design duration of the project to properly reflect and address all identified interfaces.

Stage 3

Design Development

SUMMARY OF SERVICES

Upon final review and approval of the Design Criteria Manual, our team will be well-equipped and prepared to progress the project forward into the design development stage. Expending the effort in the initial Concept Design Verification Phase of the project will reap tremendous benefits in the progression of the design. Having an approved, clear design criteria manual to act as the basis of design will allow our team to progress the design efficiently and expeditiously.

DESIGN DEVELOPMENT PROOF

Project:
Amalgamated Warbasse Houses Co-Generation Facility

Key Services:
WSP provided detailed design and support services for a 4MW gas reciprocating combined heat and power plant at Amalgamated Warbasse Houses in Brooklyn, NY. Services included architectural, structural, mechanical, electrical and balance of plant. Unique resiliency techniques, such as a raised structural foundation, were designed to accommodate the base flood elevation of the site.

Key Personnel:
Ambrish Desai
Rob Bury
Andrew Koch
Gordon Ng

In order to progress beyond the 20% Design, as outlined in the RFP documents ***Subtask 2.2 Engineering and Design***, during design development our team will systematically prepare 30%, 60%, 90% and 100% Design Deliverables. The design deliverables will vary at each submission with continued progression of the details throughout each submission. While certain details are outlined in this proposal relative to the submissions and associated design deliverables, a detailed schedule of deliverables will be produced at the beginning of this phase of the project to effectively align expectations of design deliverables and associated design reviews. Further clarity in the scope of services to be provided at this stage is identified below as well as proposed deliverable packages for each submission. The level of detail for each element will be coordinated with the National Environmental Policy Act (NEPA), Permitting and Regulatory Compliance engineering data requirements as well as Risk Assessment, and Contract Packaging tasks to produce the best value for NJ TRANSIT to move the project forward to completion.

In an effort to properly outline the scope of services and associated manhour estimate for the Engineering and Design Phase, WSP has based these services on the assumption that the concepts carried forward to detailed design will be similar in size and nature of that within the Preliminary 20% Concept Design developed by the AECOM/WSP team initially. Specifically, we have assumed a combination of (1) backup/standby power generation; (2) a minimum of 2 generating units operating in parallel with the utility grid; and (3) future connections / interconnections for either a fuel cell, PV or BESS solution to be installed. Additionally, given the requirement for geotechnical, structural, architectural and civil components, WSP has assumed that the distributed generation assets would be located within a new structure as opposed to located within an existing structure. Should an alternative location be determined during the Concept Validation Phase of the project, certain disciplines may require less or more effort, thereby impacting the overall manhours. Understanding that these assumptions may change upon the Concept Design Validation Phase of the project, WSP reserves the right to discuss and negotiate with NJ Transit should the Engineering and Design Phase deviate from this assumption.

30% Design Submission

Considering the 20% Design will have taken into consideration numerous details relative to the electrical, mechanical and structural components of the design, the 30% design effort will be primarily focused on developing the remaining design criteria and critical elements. Specifically, ***topographic surveys and subsurface utilities drawings*** will need to be developed, as well as ***geotechnical investigation plans and boring programs*** to support the continued design efforts necessary for later phases of the project. In addition, identification of ***all required utility services*** necessary will be established and preliminary interconnection design details and agreements will be outlined in this submission. Continued development of regulatory requirements for air, noise and environmental will develop to ensure proper approvals are achieved and incorporated into the design

elements. Finally, further development of the ***architectural space planning, major mechanical and electrical plans and diagrams*** and remaining balance of plant design details will continue.

Anticipated Deliverables:

- Development of Geotechnical Investigation Plan and Boring Program
- Topographical Survey as detailed above.
- Topographic Survey (Supplement to NJ TRANSIT's baseline mapping as necessary)
- Subsurface Utility Engineering Plan
- Existing Utility Drawings
- Utility Agreements
- Utility Catalog and Files
- Architectural Layouts / Space Planning
- Structural Framing Plans
- Mechanical Plans / P&IDs
- Electrical Plans / Single Line Diagrams
- Table of Contents for Proposed Technical Specifications

60% Design Submission

Upon review, collaboration and incorporation of the 30% design comments, our team will continue the progression of design to a 60% design development level. At this stage of the design, ***major coordination amongst all disciplines*** occurs to ensure appropriate interconnections, conflict resolution and final space planning. ***Staging plans*** will also be developed during this design submission to maintain operations and outline specific interconnection details and temporary services (if required) to maintain operation. Major equipment technical specifications will be provided, as well as technical specification outlines for all material necessary to complete the installation will be provided at this stage. In addition, at this stage of design, we will begin to incorporate our ***constructability review*** (described in further detail later) to evaluate issues that affect the construction, adjacent properties and the public as well as provide alternative design considerations that factor in cost and schedule. ***All major design elements and key decisions will be finalized at this stage*** with agreement from all stakeholders that any changes beyond this stage of design will have adverse impacts to cost and schedule and may incur additional design fees to accommodate such changes.

Anticipated Deliverables:

- Boring Plan and Profiles
- Geotechnical Report, with boring logs and analysis for each geologically discrete project element.
- Section 1(A) Report of Archeological Resources and Effects as necessary.
- Performance Specification for Communications Backbone Power Management
- Proposed Utility Relocation Drawings
- Utility Service Drawings (Water, Sewer, Drainage, Telecom, Electrical, Natural Gas)
- Maintenance of Traffic
- Site Grading
- Outline of Baseline Operations Model, including applicable drawings, specifications, graphs and diagrams as necessary in support of the concept operating plan
- Architectural Layouts / Space Planning
- Structural Calculations
- Structural Foundations / Framing Plans
- Mechanical Plans / P&IDs
- Mechanical Equipment Schedules
- Electrical Plans / Single Line Diagrams
- Electrical Relay / Protection and Control 3-Line Diagrams

- Electrical Calculations (Short Circuit Calculations, Arc Flash, Voltage Drop, Panel Sizing)
- Electrical Schedules (Cable / Conduit / Panel / Switchgear)
- SCADA / Communication Points Lists / Sequence of Operations
- Plumbing / Fire Protection Riser Diagrams (Natural Gas, Sanitary / Drainage, Domestic Water)
- Plumbing / Fire Protection Floor Plans
- Typical Plumbing / Fire Protection Details
- Plumbing / Fire Protection Schedules
- Plumbing / Fire Protection Calculations
- Constructability Review Report
- Staging Plans
- Technical Equipment / Material Specifications

90% Design Submission

Upon review, collaboration and incorporation of the 60% design comments, our team will continue the progression of design to a 90% detailed design level. The ***intention of this submission is to finalize all design details*** and have a design submission that is complete, pending final review comments by NJ TRANSIT. At this submission all ***staging plans will be finalized, all design coordination will be complete, constructability reviews will continue***, and construction details will be incorporated for each discipline. Final technical specifications will be provided by all disciplines for all equipment, material and testing requirements necessary for the project's construction / installation. Finally, ***a division of responsibility*** will be developed in coordination with NJ Transit to properly identify roles and responsibilities between NJ Transit Operations & Maintenance, Contractor, Utilities, etc. At this stage, WSP will be ***prepared to submit to NJ DCA*** for code compliance reviews to ensure appropriate time is allotted within the schedule for review and incorporation of comments prior to the final design submission.

Anticipated Deliverables:

- Updates to all 60% Anticipated Deliverables Identified Above
- Division of Responsibility

100% Design Submission

Upon incorporation of the 90% design submission review comments, our team's intention is that the design package will be complete and ready for final 100% Design Submission. No further engineering is anticipated at this stage of the design, rather incorporation of final review comments / resolution to obtain approval of the final 100% Design that will be utilized to package accordingly for bid purposes.

Anticipated Deliverables:

- Updates to all 90% Anticipated Deliverables Identified Above

Additional Services Throughout Design Development

As mentioned in each of the design submissions above, the following scope of services will be provided throughout the design development phase of the project.

Cost Estimating

As part of the Design Development, specifically at the 60% and 100% Design Deliverable submittals, as per ***Task 3 – Cost Estimating***, we will prepare an engineer's estimate, including quantity take-offs and cost estimates for each of the major items on all plans. The final estimate (100% submittal) will be an accurate and fully quantified estimate for all elements of the project and will be utilized to evaluate Construction Bids. The estimates will be developed and formatted to comply with the FTA's Standard Cost Category (SCC) methodology. Up-to-Date unit prices will be used in every version of the estimate.

Our team will leverage our cost consultants to support implementation of methods and procedures to incorporate cost savings into the final design. We understand the need to produce designs that are consistent with the available budget and at every stage will review and check on conformance, while looking for areas to improve on cost to remain within budget.

Public Involvement and Agency Coordination

Throughout the design development stage, as directed and organized by NJ TRANSIT and required per ***Task 6 – Public Involvement and Agency Coordination***, WSP is prepared to continue assisting NJ TRANSIT in the Public Involvement and Agency Coordination as previously described in the Concept Design Validation Phase of the project. Required outreach, open houses and assistance in the development of material and/or meetings will be supported by our team as the design progresses throughout this phase of the project.

Integration and Interface

Continued maintenance and updates to the Integration Management Plan (IMP) will be provided throughout the design development as previously described in the Concept Design Validation Phase of the project as required per ***Task 7 – Integration and Interface.***

Constructability Reviews

As part of the 60% and 100% Submissions, WSP will utilize the services of our Construction Services Group to provide ***Task 8 - Constructability Reviews.*** This shall include, but not be limited to, evaluating issues that affect the construction, adjacent properties, and the public. Our team will follow Construction Industry Institute (CII) guidelines, which defines constructability as "the optimum use of construction knowledge and experience in planning, design, procurement and field operations to achieve the overall project objectives." Our team conducting these services are well-versed in NJ TRANSIT projects and will be vital and involved with the project from the earliest stages to ensure that the construction focus, and their experience are properly communicated to the project's planners and engineers. Constructability shall be used as a design consideration, by factoring in cost and schedule effectiveness.

Sample project issues to be considered include:

- Ground Water Control and Containment – evaluation of containment systems, impact on adjacent structures, recharging the water table, construction of groundwater cut-off systems, dewatering needs which shall include provisions for construction monitoring and requirements for drawdown
- Utilities – evaluate relocations and restorations as needed; minimize large magnitude relocations
- Maintenance and Protection of Vehicular and Pedestrian Traffic
- Environmental Issues – sensitive areas, hazardous materials, high impact mitigations, compliance with conditions of permits and approvals, etc.
- Materials Handling and Disposal / Spoils Disposal
- Construction Equipment Clearance
- Underpinning of existing facilities/building, as applicable
- Temporary Support Structures - lateral support for excavations, design of proposed support systems, limits of such systems, easement takings, etc.
- Staging of work elements
- Improvement of a Contractor's productivities
- Temporary / construction power and other utility requirements
- Signal, communication and electric traction modifications

DISCIPLINE SPECIFIC SCOPE OF SERVICES

SURVEYING

FIELD SURVEYS

WSP will provide topographic land surveying services. Topography for this task will be collected by Conventional Survey, Survey Control and Terrestrial Laser Scanning. Several different methods of obtaining topographic measurement shall be used for this project to produce a comprehensive map of the existing conditions. Surveying shall be performed in accordance with NJDOT Survey Standards, and "Topographical Survey Reference NJDOT Survey Standards" outlined in Subtask 2.2.5 in the RFP. All survey work shall be conducted under the direction of a surveyor licensed in the state of New Jersey.

Field Limits for the topographic basemapping have been undefined at the time of this proposal. The assumption is that two 100-foot square areas have been included.

Survey Control and Topography

The North American Datum of 1983 (NAD 83) latest adjustment and the North American Vertical Datum of 1988 (NAVD 88) referenced to the New Jersey State Plane Coordinate System. Primary Control will be established at the project area by utilizing WSP's Leica's GPS (Survey Grade) receiver in combination with the "Mid-Atlantic North Region Smartnet RTN Network" continually operating reference stations.

Survey Control

Primary Survey Control

Primary Survey Control for the project will be established by using WSP's Leica GPS (Survey Grade) receiver in combination with the Mid-Atlantic North Region Smartnet RTN Network reference stations. Coordinates for primary control will be established utilizing WSP's GPS (Survey Grade) receiver utilizing the "Mid-Atlantic North Region Smartnet RTN Network". WSP will take two (2) observations for each point with each observation collecting data at 1-second intervals for five minutes. It is estimated that up to four (4) Primary Survey Control points will need to be observed. These points will be established about the perimeter of the project area and be the foundation for the development of a supplemental survey control network. Primary Survey Control points will meet at a minimum Second Order, Class II positional tolerance.

Supplemental Survey Control

A Supplemental control will be established from the primary control points by traversing through appropriate physical, fixed objects and establishing coordinate values for these objects. Horizontal and Vertical Control will originate and terminate on primary control. For this project, it is assumed that up to four (4) supplemental control points will be established around the perimeter of the project area. Supplemental Control will meet Third Order accuracy.

Levels

Closed looped differential level runs will be performed on all control points.

This survey control will be the basis for the supplemental survey to be performed under this agreement and for use by NJ TRANSIT's contractor for future construction layout.

Survey Control Report

WSP will prepare the Survey Report in accordance with the requirements of the NJ TRANSIT. Included in the report will be a narrative description of the survey methodology, the initial control survey (which establishes the primary project control to be used for the entire project), topographic survey, tie sketches for each horizontal and vertical control point. This report will be prepared in accordance with the NJ TRANSIT guidelines. In absence of said guidelines WSP will follow guidelines as set forth by the NJDOT.

Topographic Survey

WSP will conduct a field survey to capture the topographic and planimetric detail in the two areas. Field survey will include topographic details and location of physical items found on site. WSP will identify general features visible from the ground such as valves, utility poles, etc. Field personnel will walk the length of the project (excluding active railroad corridors) and acquire information including but not limited to material types, structure types, objects obscured at the time of map complication, visible utilities etc. The information generated under this task will be incorporated into the survey.

Flood Map Base Elevations

WSP will obtain the latest published Floodway and floodplain maps as developed by FEMA and extract the base flood elevation (BFE) for the project area and reference into the basemapping. We expect that portions of the street level will be with the Passaic River floodplain.

Property Boundaries

Examination of the tax assessment maps for Newark Penn Station indicates that NJ TRANSIT has ownership rights with respect to the buildings and infrastructure located on about Newark Penn Station.

We will examine ownership records, valuation maps, plans and documents provided by NJ TRANSIT and establish ownership lines, as defined by said documents with respect to Blocks and Lots as defined above. Boundary information will be created as a separate drawing that can also be referenced to the project basemapping.

Assumptions

- WSP will have full access to the project site coordinated by the Client and escort provided, if required. All spaces shall be fully accessible and without obstruction. Outages and fowling will be coordinated and scheduled three (3) days prior to field effort.
- Property boundary survey portion of the scope will only be performed if the areas to be surveyed are within fifteen (15) feet of an existing property boundary or a PSE&G connection.
- The Subsurface Utility Engineering portion of the scope will only be performed during 60% and final design efforts and nor for any other phase of design.

CIVIL / UTILITY ENGINEERING SERVICES

After a preferred location is established, our team will begin work with utility owners to determine possible utility impacts or conflicts resulting from the proposed work. We understand what it takes to work with the public and private utility stakeholders that operate in the city from previous work performed in the City of Newark. For example, our intersection safety improvements projects on Broad Street involved roadway and sidewalk reconstruction through multiple intersections, which we see as similar to this project, if a new building is to be constructed at the building line. These projects included drainage relocations and new street level lighting infrastructure that was proposed amongst a wide-range of aerial and underground utilities. Existing utilities were identified using available information from as-builts and input from the utility owner, then verified using Ground Penetrating Radar (GPR) scanning. GPR scanning allows for quick and accurate development of Existing Utility Drawings and for preliminary design to progress with confidence prior to the need for Test Pits. Coordination with utility owners will be key to delivering a successful design and meeting our project schedule.

Under this task, our team will develop site drawings to support the proposed DG equipment installations and associated structures at both Newark Penn Station and any off-site locations selected. Drawings will be produced for all Design Packages, 30% to 100% - we anticipate the following list of plans will be required:

1. Existing Conditions Plan – WSP will prepare an existing condition plan for the project area. Site Plan – WSP will prepare a plan to indicate the layout of all site features including the proposed equipment and buildings. The plan will indicate the location and type of installation for all site features proposed on the site such as sidewalk, curbing, walls, fencing.

2. Grading and Drainage Plan – WSP will prepare a grading and drainage plan for the project based on the needs of the project site. The plan will be devised to accommodate on-site flows, in addition to any potential stormwater management.
3. Existing Utility Plan – Existing Utility plans will be developed identifying all aerial and subsurface facilities within the project limits.
4. Subsurface Utility Plan – Utility plans will be prepared in accordance with the applicable utility standards and specifications. The plan will indicate existing utilities to be removed, abandoned, and plugged. Proposed connections to existing services will also be identified on these plans.
5. Utility Relocation Plan – Relocation plans will be prepared in accordance with the applicable utility standards and specifications and depict all utility relocation required to accommodate the proposed design.
6. Construction Details – WSP will prepare detailed drawings for all proposed site features, drainage structures, and utility features as identified within the plan drawings.

Subsurface Utility Engineering

WSP will obtain the services of a firm experienced in the location of subsurface utilities to designate (Mark-Out) existing subsurface utilities at existing ground level. WSP survey crew will then locate these existing utility mark-outs by field survey methods upon the surface. The located mark out of utilities will then be plotted in CADD and referenced into the basemapping to enhance existing conditions for the project. Limits for the SUE utility designation will be determined based upon need. No utility designation will be performed on active railroads or within buildings.

General identification of the type of utility will be noted "Gas, Water, Electric" upon the plan but the identification and ownership of each utility is not included as part of this task.

If required, additional investigative services using test holes will be conducted for specific utility locations that can't be found using the above methods. This service includes supervision, field crew, and our vacuum excavation vehicle to perform a maximum of eight (8) test holes to locate various utilities such as gas, fiber-optic cable, electric, sanitary force mains water and telephone lines. Our deliverables will be a Test Hole Plan showing the utility size, type, down measurement to the top each utility from the set reference point and signed by a Licensed Land Surveyor. Horizontal and Vertical locations of all test holes will be provided by others and shown on the above-mentioned Test Hole Plan.

Drainage Survey

WSP will locate storm drainage features and obtain drainage information on structures along the area of the project that will be affected by the proposed design. This information will include positional coordinate information, grate or rim elevation, invert elevation, pipe size and material type. It is anticipated that two (2) days of traffic control services and Police escort will be required to access manholes located in active roadways.

The Subsurface Utilities marks and drainage rim elevations will be located utilizing conventional survey methods and added to the basemapping.

SUBSURFACE INVESTIGATIONS / GEOTECHNICAL SERVICES

WSP will perform geotechnical engineering studies for design, specifically for foundation requirements, if needed, of the proposed distributed generation system. WSP is providing similar services for the new Service and Inspection Facility for the County Yard Project. The study will include a report and foundation recommendations for the required facility modifications for support of the various equipment and structure. As part of this effort the geotechnical effort will include:

- The collection and review of existing geotechnical test borings and laboratory data provided by NJ TRANSIT and collected from subsurface information collected from WSP's project files of nearby projects.

- Implementation of a subsurface investigation program, including geotechnical borings and laboratory testing, to provide information required foundation design and to minimize uncertainty in subsurface conditions. WSP has assumed five (5) test borings will be performed to depths of about 75-feet each. A laboratory testing program will be developed, as required, and based on ground conditions observed.
- Prior to beginning the field investigation, WSP will prepare a Site-Specific Work Plan (SSWP) that includes details of the investigation, including boring locations and depths, proposed drilling equipment, traffic control and Railroad Flagging requirements (if required), pedestrian protection, safety, anticipated work hours, duration of the program and other details. The SSWP will be submitted for review and approval.
- As part of the geotechnical field investigation, the services of our Archeological Sub-consultant, Richard Grubb and Associates (RGA), will provide field inspection to determine the possible existence of archeologically significant artifacts. RGA will prepare and submit documentation in compliance with applicable requirements set forth by the New Jersey State Historic Preservation Office.
- After completion of the subsurface investigation, WSP geotechnical engineers will prepare and submit a geotechnical engineering report to support final design that includes the results of foundation analysis and foundation recommendations, requirements for temporary excavation support, underpinning and dewatering (if required). The report will be submitted to NJ TRANSIT for review and approval.

ENVIRONMENTAL SERVICES – NOISE, VIBRATION & AIR QUALITY

Noise and vibration produced by generators and other mechanical components of the proposed distributed electrical generation system at Newark Penn Station has the potential to adversely affect adjacent station functions and/or sensitive land uses in the community. WSP's acoustical engineers will complete a community noise and vibration assessment to (1) measure existing ambient noise levels in the area, (2) select relevant criteria limits, (3) estimate future operational noise and vibration levels generated by the project, and (4) recommend mitigation measures to demonstrate compliance with applicable regulatory limits. **We are performing a similar assessment currently for the NJ TRANSIT New York Penn Station Central Concourse Project.** The assessment will be documented in a Noise and Vibration Technical Report. As the project progresses to final design, WSP will review and refine acoustical calculations, as needed, to ensure that the project meets the required regulatory limits.

WSP will conduct a review of community noise and vibration regulations potentially applicable in this project. That review will certainly include the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment Manual, the State of New Jersey's noise regulation 32 NJR 2230, Chapter 29, Noise Control, Section 7 enforced by the New Jersey Department of Environmental Protection (NJDEP), and the Newark City Ordinance, Chapter 3 Noise Control, Section 20.

WSP is fully-equipped with appropriate community noise and vibration monitors and predictive models. All of WSP's instrumentation meets the accuracy requirements found in ANSI Standard S1.4. WSP uses several computer models, most importantly, the Cadna-A noise model that implement ISO Standard 9613 for outdoor sound propagation.

With regards to the construction phase, WSP will develop performance-based Construction Noise and Vibration Specifications to be included in the project's bid packages. WSP is nationally renowned for construction noise and vibration assessment and control. WSP will also continue on this project to assist NJ TRANSIT with noise or vibration related Requests for Information (RFI) submitted by interested contractors.

If the distributed generation facility were to be located inside the station building, then noise and vibration also has the potential to affect other areas within the building such as public address system speech intelligibility within the station and use of adjacent commercial tenant spaces. If determined to be necessary, design of the facility to meet appropriate interior noise level criteria could also be completed by WSP. This would involve an assessment to quantify background noise levels inside the facility caused by HVAC equipment. The National Fire Protection Association (NFPA) has established interior noise guidelines to ensure adequate speech indelibility in the event of an emergency requiring evacuation of the space.

WSP has experience assessing and mitigating noise from power generation systems on multiple similar projects. For example, for the Amtrak River to River Rail Resiliency (R4) project, WSP performed a community noise analysis in both Manhattan and Long Island to assess the impacts of proposed new generators supporting the East River transit tunnels. Mitigation measures included required noise reduction specifications for generator housings and exhaust stacks. Similarly, WSP completed acoustical measurement, modeling, and mitigation design for the Hess Newark Energy Center, which is a 640 MW combined cycle natural gas power plant, to achieve compliance with New Jersey DEP and City of Newark noise regulations. Mitigation measures included noise barriers for cooling towers, sound isolating building designs for the powerhouse, and acoustical louvers for ventilation openings.

From the air quality perspective, air quality effects are highest for traditional fossil fuel combustion systems since they combust fuel (typically diesel or natural gas) and result in emissions of regulated air pollutants including toxic air pollutants and greenhouse gases. Generation technologies that emit regulated air pollutants to the atmosphere (e.g. internal combustion engines, microturbines, etc.) are subject to regulatory approval via established air permitting processes at the state and federal level. Renewable technologies, fuel cells, and storage technology may not require any air permitting for operation.

In the design process, WSP's air quality staff will provide support by estimating potential emissions for generation concepts developed by the design team, provide a preliminary assessment of air quality permit requirements, and assist when requested by NJ TRANSIT to provide information, data or other materials to support preparation of air permit applications by other entities. We expect to establish this level of understanding based on the design stage of the project that identifies candidate electric generation technologies in sufficient detail to move forward with emission estimates. We expect this to occur at the 20% or 30% design stage. As design progresses to 60%, 90% and 100%, WSP air quality staff will evaluate the design progression for changes that may affect the initial air quality assessment. Often generation capacity changes as electrical loads and distribution are refined based on additional information or updates to projected future needs, which in turn would require adjustments to the initial emission assessment.

WSP has air quality experience on similar projects for Amtrak and a confidential client's web services data center backup power system. For these projects, we developed an air quality emissions assessment based on early design (30%) parameters, then updated the assessment as design progressed to later stages. For Amtrak, WSP is providing an air quality emissions assessment and air permit application preparation for backup power systems for tunnel ventilation (R4 Project). For a confidential client's large datacenter backup power system, consisting of over 20 backup diesel fueled internal combustion engine driven electric generators, WSP is providing emission estimates and air quality dispersion modeling to evaluate compliance with ambient air quality standards and for support to the client's air permit application for the site.

ARCHITECTURAL

The key station imagery and functional planning issues that must be understood, addressed, and resolved as part of this architectural design process are listed and further described below:

- Agency Requirements: NJ TRANSIT and Amtrak
  - The NJ TRANSIT Station Design Guidelines, as well as Amtrak's standards, are intended to ensure that corporate goals and program with respect to customer safety and service are maintained and enhanced wherever improvements are made. Within this framework, flexibility to address station specific and architecturally distinct station contexts and needs are provided by the railroad.
- Railroad Architecture
  - Throughout the history of the American Railroads, the design of station facilities has played a central role in the development of the communities that surround them. Discussion of towns and cities often is oriented around their railroad station. They are "landmarks" that have continued to have meaning and presence. The "Landmark" quality that such a station suggests will be met within established budgets through creative design.

- Visual Compatibility and Continuity
  - Typically, our discussions related to visual compatibility and continuity for stations is related to good design requiring compatibility between the rail station and its context. A wholistic approach to tie the station together will be key.

Functional Planning

Our team will utilize BIM (Building Information Modeling), including various software programs to create and develop three-dimensional models and renderings for construction document production and internal NJ TRANSIT and external stakeholder presentation purposes. The architectural design will be produced using Autodesk Revit, which is used to create construction documents as well as three-dimensional views for use in creating renderings and walkthroughs. Revit provides real-time visual information which facilitates streamlined collaboration and information-sharing amongst the entire design team. For further visualization, Lumion will be used for high-quality renderings and walk-throughs, and Autodesk Navisworks for clash detection and interdisciplinary model reviews.

Code Compliance

In addition to comparing the different standards of the railroads servicing the Newark Penn Station, the code and permitting aspects will be an important element of the project. It is our understanding that the existing facilities are owned by NJ TRANSIT, but the different Rights of Way are owned by either NJ TRANSIT or Amtrak. Our assumption is that since NJ TRANSIT is procuring this project, we will use the typical NJ TRANSIT code and approval process, which is to have the New Jersey Department of Community Affairs (NJ DCA) provide code compliance reviews at approximately the 90% design stage. If it is determined that Amtrak will be the Authority having Jurisdiction, our team is also familiar with their requirements and the use of NFPA130, Standard for Fixed Guideway Transit and Passenger Rail Systems for station of this type. Where the codes and guidelines conflict, the design will be based on the most restrictive of the standards.

Historic Preservation Process And Issues

Each aspect of this project will be evaluated both as an individual component and as a part of the whole. This will help to determine the most appropriate course of action. These options will consider historicity, current use, compatibility to the existing structure, future maintenance and project budget. This review will also take into account the review process and constraints of the New Jersey Historic Preservation Office. We have executed multiple projects, including at Newark Penn Station, over the past two decades ranging from restoration to demolition at historic rail properties in multiple states.

Two prime factors contribute to successful restoration: the appropriate level of intervention and value versus the cost of the work. There will always be choices when planning a project of this scale and building age.

For each aspect of the work there will be a level of acceptance wherein the appropriate repair and cost will satisfy the task at hand. It is anticipated that the options will vary depending on the orientation and exposure, extent of deterioration, degree of compatibility with existing methods, as well as capital cost and maintenance factors which must be assessed to accurately budget and estimate the probable construction cost for the entire project and extend the life of original materials which are to remain.

The project will face challenges in the integration of new electrical and communications systems and functional requirements within the existing structure so as not to excessively compromise its historic integrity. There must be a balance between the former uses and the new functions to which the historic structure will be modified to secure its future. The design of these systems for renovation projects is generally more difficult than for new construction. New systems must be carefully fit into a building which was never designed to accommodate them. In the case of an eligible or listed building, it may not be enough to simply screen new equipment; appropriately designed systems must be incorporated in the building so the equipment and service lines become imperceptible. This approach is also true for historic finish materials. We intend to use NJ TRANSIT's Cultural Resources Manual for Newark Pennsylvania Station, dated May 2010, to identify original station materials and historic fabric.

Design Criteria

As a result of our preliminary assessment of the scope of work we anticipate that all architectural design work performed shall conform to the following codes and regulations in addition to the NJ TRANSIT and Amtrak design standards and guidelines:

- 2018 International Codes as adopted by the state of New Jersey, including:
  - 2018 International Building Code, NJ Edition
  - 2018 International Fire Code
  - 2018 International Mechanical Code
  - 2018 International Fuel Gas Code
- New Jersey Rehabilitation Subcode
  - NJUCC, Subchapter 6
- New Jersey Plumbing Subcode
  - 2018 National Standard Plumbing Code, NJ Edition
- New Jersey Energy Subcode
  - ASHRAE 90.1-2016
- New Jersey Electrical Subcode
  - 2017 National Electrical Code (NFPA 70)
- Fire-resistance ratings of building elements and UL-rated assemblies as required

Hazardous Materials

- Fire-resistance ratings of building elements and UL-rated assemblies, as required
- Battery room floors shall be made acid-resistant and shall be sufficiently impervious to contain leaks and spills
- National Electric Code (NEC)-required working spaces around each piece of equipment. These spaces shall be free of obstructions including columns, cross-bracing, ductwork, piping, sprinklers, and lighting.

Building Elements

- Provide painted areas for designated egress routes/walkways within the facility. For all lines provide thick-film reflective thermoplastic compound.
- Provide a fire extinguisher at each exit door
- Flooring shall be electrically insulated from electrical equipment
- Provide insulation at all exterior wall systems. Minimum R-value shall meet New Jersey Energy Code requirements.
- Ceilings shall be painted a light color to improve light reflectance. Where fireproofing is required, coating for steel, including columns and metal deck, shall be spray-on high density, cementitious fireproofing. All exposed fireproofing shall be painted white with one primer coat and one topcoat of paint.
- Emergency exit doors shall be metal, shall open in the direction of exit, and shall be equipped with panic hardware. Minimum door width to be 36”
- Interior doors shall be hollow metal flush or louvered. Minimum door width to be 36”
- Provide through-penetration firestopping where conduit, piping, or other materials pass through fire-rated walls
- Finish materials shall be cost-effective, durable, and low maintenance

In coordination with the engineering disciplines, utilizing the design criteria identified above, architectural details that will be provided and designed as part of the design development include but are not limited to the following key components:

- Life Safety / Egress Plans
- Construction Floor Plans / Part Plants
- Building Elevations / Sections
- Architectural Details
  - Walls, Doors, Partitions
  - Firestopping
- Schedules
- Performance Criteria / Programming
- Architectural Technical Equipment / Material Specifications

STRUCTURAL ENGINEERING

Structural engineers will evaluate the Distribution Generation concepts to identify areas where structural evaluations for modifications or strengthening will be required, as well as new structures such as at the boiler building site. Engineers will advise the team of the cost and operational impacts from the resulting structural work to assist in the development of a cost-conscious and best value approach. This will include input on construction sequencing. A thorough structural analysis of the impacted structures will be performed on the selected concept. This will include establishing the criteria and details for support of utilities from the existing structure, as well as a design for structural reinforcing and new support structures. This type of structural retrofit was designed by WSP at Newark Penn Station as part of the Newark Penn Station Passenger Circulation Study, Phase 2, where new stairs and ramps were introduced within the NPS structure. Any structural analysis will include the members subject to the added load, including but not limited to dead, live, wind, snow, seismic, and fatigue loads, as well as all members along the load path that are adversely impacted by these loads. Evaluation of any existing structures will be performed according to the International Existing Building Code, International Building Code, NJ Edition, and AREMA where members include loads for rail supporting structures, as well as all applicable standards.

If a photovoltaic (PV) system is selected as part of the microgrid, a comprehensive analysis of the support structure will be performed. Typically, existing roofs are the best locations to host photovoltaic systems and they generally have the least amount of shade can be installed with simple structural supports. They can also be installed as part of canopy structures at street level to provide shelter to patrons, however such interventions are much costlier. It is imperative that PV systems be thoroughly analyzed according to the requirements of ASCE 7. Roof deployed PV systems can generate very high wind uplift loads, especially along the perimeter of the roof and behind parapets. As a cost-effective solution, we recommend the use of a modular low-profile systems that can incorporate either ballast or positive roof attachments. Modular systems are benefitable in that they can be expanded to any desired array, which can help reduce design loads by increasing the effective area of any such system. A ballasted approach is recommended since it does not require any penetrations through the roofing materials; it is also quicker and cheaper to install. The drawback of using ballast is the increase in dead load to the structure, especially at the corners of the system, which could exceed the roof capacities; in such scenario we recommend a combination of anchors to the roof structure that are compatible with the roofing material and ballast on interior modular sections. Regardless of the selected concept, our engineers will provide a high value solution based upon our extensive knowledge of these systems.

Significant structural effort will be afforded to the ancillary structures that will house a selection or a combination of generators, natural gas engines, electrical switchgear and control equipment, and fuel cells. Engineers will initiate work with an evaluation of the concepts reviewed for the 20% design. The evaluation will include a review of the design criteria, which will include evaluation of the design loads, such as floor and roof live loads, equipment, and machinery impact loads, serviceability, fire rating and maintenance requirements. Attention must be provided to the floor framing system supporting engines or generators due to their size as they are a source of vibration. While these structures do not need to consider occupancy comfort, they must consider any vibration limitations for electronic or control equipment that may be present, or tolerances of the equipment itself. To mitigate such effects, adequate mass of the floor system should be provided where feasible and/or isolation provided where accepted. Engineers will also consider maintenance requirements for each equipment

and evaluate if any special provisions, such as addition of a monorail or lift equipment, will be needed. The design will comply with OSHA requirements in addition to any Building Code requirements.

Use of pre-engineered structures will be investigated where feasible as they can provide a cost-effective solution in comparison to conventional structures. Where the use of these structures is determined, structural engineers will develop a complete foundation and concrete work drawings with performance requirements for the superstructure.

ELECTRICAL

As the overall performance objective of the project is to enable critical facility operations capability in the event that electricity cannot be supplied from the existing commercial grid, the electrical design and interconnection with the local utility will be of utmost importance to the success of the project. Upon approval of the Design Criteria Manual, electrical details will be engineered and designed for the appropriate distributed energy resource system to supply necessary electrical power to Newark Penn Station with the ability to operate in the following modes:

- Grid-tied mode that shall supply continuous power to offset a portion of the facility's use of commercial grid electric power
- Islanded Mode that shall meet the critical operational power needs for the Incident Transportation Plan as described within the RFP, allowing for operation of facility critical elements

Upon appropriately sizing the equipment within the Design Concept Validation Phase of the project, accounting for the peak loads, as well as daily load curves and load duration curves, necessary electrical interconnections into the existing electrical distribution system will be developed. Appropriate switchgear, metering, relaying, protection and control and utility interface requirements will be designed to allow the system to operate in parallel operation with the local utility company, as well as in Island Mode, isolated from the utility grid to service existing critical loads within the facility to maintain critical operations. To allow for proper operation, additional modifications to existing switchgear, transfer switches and any existing on-site generation capabilities will be made to operate in conjunction with the proposed distributed energy resource installed as part of this project.

In order to properly allow for both parallel and island mode capabilities, proper distributed generation controls and load management shall be provided to allow paralleling and synchronizing to the grid, safely disconnecting from the grid, and synchronizing and paralleling with other generators. Connections into the existing EMS and Supervisory Control and Data Acquisition (SCADA) Systems will be provided to ensure proper monitoring and control (where applicable) of the system. While operating in island mode, it is crucial to have proper load management whereas to ensure proper operation to maintain critical loads without overloading the capacity of the existing on-site generation. These systems will be detailed throughout the development of the design and will be coordinated with NJ TRANSIT as well as PSE&G for review and approvals throughout.

Development of Concept of Operations

The Concept of Operations will be developed with consideration for ease of inspection and maintenance, and ability to create generation in emergency and normal operations, and with automatic switchover and back-start capability. We intend to develop the Concept of Operations collaboratively with NJ TRANSIT user groups, to ensure that the operations of proposed distributed generation facilities are aligned with other station operations. The requirements of Operational Design Concept/SANDIA Phase 1 Report – Appendix 1 will be included.

CYBER SECURITY AND COMMUNICATION SYSTEMS

WSP is already highly familiar with NJ TRANSIT's Cyber Security and Communications standards from supporting NJT Positive Train Control (PTC) system implementation. Our staff fully understands NJ TRANSIT's approach to cyber security requirements and industry standard for power grid industrial control system, including NERC Critical Infrastructure Protection (CIP) design. WSP will work closely with NJ TRANSIT staff and other stakeholders to develop cyber security policies and procedures. In addition, network topology or segmentation, redundancy and future growth, physical protection to restrict access with access control and video surveillance and security controls policy will be develop.

WSP will establish and provide a design for the Communications Systems architecture and infrastructure that would provide necessary communications to operate Distributed Generation, as well as interconnect with commercial power grid or other power source as needed. A complete independent network systems – microgrid control network and corporate network, will be designed with redundancy and spare capacity for growth in future. Our goal is to provide highly reliable network design that can with stand test of time and expand, grow as the technologies updates and changes.

SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)

WSP is well aware with Supervisory Control and Data Acquisition (SCADA) system design approaches from our previous work on NJ TRANSIT and other rail clients. Integration of new SCADA system will be design shall be provided to meet standards applicable to protection of critical control systems. WSP will identify existing system and equipment, provide design that will replace and seamlessly integrate to existing NJ TRANSIT's SCADA system. Also, the design shall be in accordance with applicable Federal, State, PJM and PSE&G requirements and standards, as well as NJ TRANSIT standards, as applicable. Our extensive experience with rail clients includes Amtrak, Metropolitan Transportation Authority, New York City Transit and Metropolitan Transportation Authority – Metro North Railroad.

MECHANICAL / PLUMBING / FIRE PROTECTION

In close coordination with all other disciplines, our mechanical, plumbing and fire protection engineers will develop engineering and design details associated with the various systems that will support the selected distributed generation assets. In addition, we anticipate that there may be building systems relocations if the chosen concept is located within the station facilities. We are currently designing similar relocations of station systems for the New York Penn Station Central Concourse project, and have a strong familiarity with the facilities at Newark Penn Station from previous planning and design assignments. Understanding that these may vary, we have outlined the typical technical services as it relates to on-site power generation to capture the anticipated services required to complete the necessary balance of plant systems.

- Review of diesel fuel requirements for the proposed equipment
- Review of diesel storage capacity needed to meet the run-time requirement of the diesel generator
- Establish location of proposed underground diesel storage tank with maintenance and access considerations included
- Design for installation of underground diesel storage tank
- Design of vent/overflow and fill piping and systems for diesel storage tanks
- Design of diesel fuel oil piping systems including transfer pumping (if needed)
- Review of natural gas requirements for the proposed equipment
- Design of natural gas piping systems from utility rig/meter station to equipment
- Evaluation and design of exhaust breeching and stack(s) required for engine generators including exhaust silencers, as required
- Heating, Ventilation, Air Conditioning Units
- Supply / Exhaust Fans
- Natural Gas Flow Diagram
- Sanitary / Drainage Riser Diagrams

- Domestic Water Riser Diagram
- Plumbing / Fire Protection Floor Plans
- Typical Plumbing / Fire Protection Details
- Plumbing / Fire Protection Schedules
- Plumbing / Fire Protection Calculations
- Plumbing / Fire Protection Technical Equipment / Material Specifications
- Gas Service Modification Application Approval
- Coordination with all other engineering disciplines
- Review of code requirements for proposed equipment and systems

The above considerations will be included in our deliverables consisting of technical specifications and design drawings.

KEY ASSUMPTIONS / CLARIFICATIONS / EXCLUSIONS

1) *In an effort to properly outline the scope of services and associated manhour estimate for the Engineering and Design Phase, WSP has based these services on the assumption that the concepts carried forward to detailed design will be similar in size and nature of that within the Preliminary 20% Concept Design developed by the AECOM/WSP team initially. Specifically, we have assumed a combination of (1) backup/standby power generation; (2) a minimum of 2 generating units operating in parallel with the utility grid; and (3) future connections / interconnections for either a fuel cell, PV or BESS solution to be installed. Additionally, given the requirement for geotechnical, structural, architectural and civil components, WSP has assumed that the distributed generation assets would be located within a new structure as opposed to located within an existing structure. Should an alternative location be determined during the Concept Validation Phase of the project, certain disciplines may require less or more effort, thereby impacting the overall manhours. Understanding that these assumptions may change upon the Concept Design Validation Phase of the project, WSP reserves the right to discuss and negotiate with NJ TRANSIT should the Engineering and Design Phase deviate from this assumption.*
2) Conduct emissions evaluation and preliminary assessment of air permit permitting requirements for up to 4 generation concepts.
3) Provide up to three updates to the air emission assessment for the generation concept carried forward as design progresses (60%, 90%, 100%).
4) Assist, when requested by NJ TRANSIT, by providing information, data or other materials to support air permit applications prepared by other entities.
5) Existing Natural Gas to building is inadequate. Natural gas service is available in the street but connection will need to be replaced with a new, higher capacity service with new meter/regulator set capable of supporting new Direct Generation equipment.
6) Existing Sanitary/Storm connections are available but would need to be relocated to match new building footprint.
7) The existing domestic water service connection is too small, so two separate NEW water connections must be made from the street to serve Fire Protection and Domestic water, each with Municipal standard (domestic) 2"meter/RPZ back flow preventors, or (fire) 8" double detector check valve assembly.
8) Available water pressure in the street is assumed to be adequate for operating plumbing fixtures and fire protection systems, no booster pump required.
9) All new plumbing equipment shall be installed per State of New Jersey Resiliency requirements above the flood plain elevations, or use hydrostatic flood proof construction if the equipment space cannot be raised above this elevation.
10) Plumbing systems will be self-contained to the Direct Generation Building footprint with no services extending to the overpass or Newark Penn Station.
11) Newark Penn Station and overpass plumbing work would only involve relocating/offset of existing plumbing systems to make space for running ductbanks back and forth to/from the DG building (enabling).
12) Direct Generation building will be self-contained to building footprint with no extending of fire protection elements beyond to adjacent Newark Penn Station.
13) Clean Agent fire suppression to only those spaces identified in the scope of work (Comms & Battery Rooms) any other directed space protection with clean agent would be a change order.

Stage 3: Design Development

14) All new Fire Protection equipment shall be installed per State of New Jersey Resiliency requirements above the flood plain elevations, or use hydrostatic flood proof construction if the equipment space cannot be raised above this elevation.
15) BIM, Revit, and/or 3D modeling not included; drawings will be standard 2D drawings using AutoCAD.
16) Assumed five (5) test borings at approximately 75-feet each.
17) WSP takes exception to the following as stipulated within the RFP as it relates to Cost Estimating and Value Engineering Exercises that cannot be properly estimated at the time of RFP submission: ..."should NJ TRANSIT determine that the expected construction cost for any element exceeds or would potentially exceed the available budget, measures shall be taken to:
    - Seek alternatives to reduce the estimated construction cost, including substitution of materials or methods of construction, deletion of features, etc.;
    - Seek other methods to mitigate the cost increases without minimizing safety or performance."
18) WSP has assumed that no hours are required to be included for Task 11 – As Directed by NJ TRANSIT. WSP further assumes that NJ TRANSIT will issue a Directive Letter for all additional or supplemental tasks under Task 11 that will be incorporated into the Contract by Change Order pursuant to Article 5-Modification of Agreement. This is in accordance with paragraph 2 under "Task 11 – As Directed by NJ TRANSIT" in Attachment C of RFP No. 21-059 (page 81 of Attachment C).

Stage 4

Construction Documents

Upon final review / approval of the design documents, WSP will coordinate with NJ TRANSIT on the packing of the final Issued for Construction Documents required for ***Task 9 – Contract Packaging***. Our team will incorporate all final review comments and will assess with NJ TRANSIT the various components, potential sub-projects, early action activities, constraints, and construction approaches and develop recommendations for contract packaging and procurement strategies that would produce the best overall value to NJ TRANSIT.

Our team will determine factors such as the size and types of contracts, project delivery approaches, and mitigation of constraints brought on by long- lead items. We will advise NJ TRANSIT as to the efficacy of procurement methods such as "EPC", etc. and how they might be applied to the DG component phase of the NJ TRANSIT-DG Project. We are prepared to consider and report on the benefits and drawbacks of each recommended approach, such as increased cost, level of risk, integration issues, and funding stream to come to an overall consensus with NJ TRANSIT on the best approach to deliver the construction of the project.

Upon approval of the proposed contracting mechanism, WSP will finalize all necessary Issued for Construction Documents and package these appropriately for bid.

CONSTRUCTION DOCUMENT PROOF

Project:
Starrett City Planned Outage

Key Services:
WSP provided various construction packages associated with the planned outage of the 18MW Cogeneration Facility at Starrett City / Spring Creek Towers in Brooklyn, NY. Packages included repairs to Cooling Towers; Addition of 5kV Cubicle to Existing Switchgear; 20MW Temporary Generator Plant; and Major Valve Replacement. These were developed based on the contracting/procurement of the construction phase to multiple contractors / vendors.

Key Personnel:
Ambrish Desai
Rob Bury
Andrew Koch

Stage 5

Bid Support Services

In conjunction with NJ TRANSIT, as required within ***Task 10 – Preparation and Subsequent Support of Contract Bid Documents and Bidding Process***, upon review and approval of the final Construction Documents, WSP will assist in preparing documentation necessary for the procurement of the construction, commissioning, operation, and/or maintenance services to support operation of the Newark Penn Station component of the Distributed Generation services, in accordance with Federal, New Jersey State and NJ TRANSIT regulations, standards and requirements as applicable. Included in these services are administrative and technical support to NJ TRANSIT in the solicitation, review and award of a successful bid.

WSP is prepared to assist NJ TRANSIT in the preparation of bid documents, including the necessary bidding information, bidding forms and Special Provisions of the contract. In addition, our team will be available to assist in answering RFI's, producing Addenda, and preparation of Conformed Bid documents. It is assumed that the bid process will involve at least a two-step process and we are prepared to assist NJ TRANSIT in the evaluation of bidders technical and cost proposals. WSP's current assignments as Construction Manager for the Elizabeth Station Reconstruction and as designer for the County Yard Improvements project, which is ready to be put on the street, provides us with insights on NJ TRANSIT's requirements during the bidding phase.

BID SUPPORT SERVICES PROOF

Project:
Starrett City Planned Outage

Key Services:
WSP provided various construction packages associated with the planned outage of the 18MW Cogeneration Facility at Starrett City / Spring Creek Towers in Brooklyn, NY. Packages included repairs to Cooling Towers; Addition of 5kV Cubicle to Existing Switchgear; 20MW Temporary Generator Plant; and Major Valve Replacement. These were developed based on the contracting/procurement of the construction phase to multiple contractors / vendors.

Key Personnel:
Ambrish Desai

SECTION 6 – TEAM ORGANIZATION / RESOURCE ALLOCATION





Team Organization / Resource Allocation 6

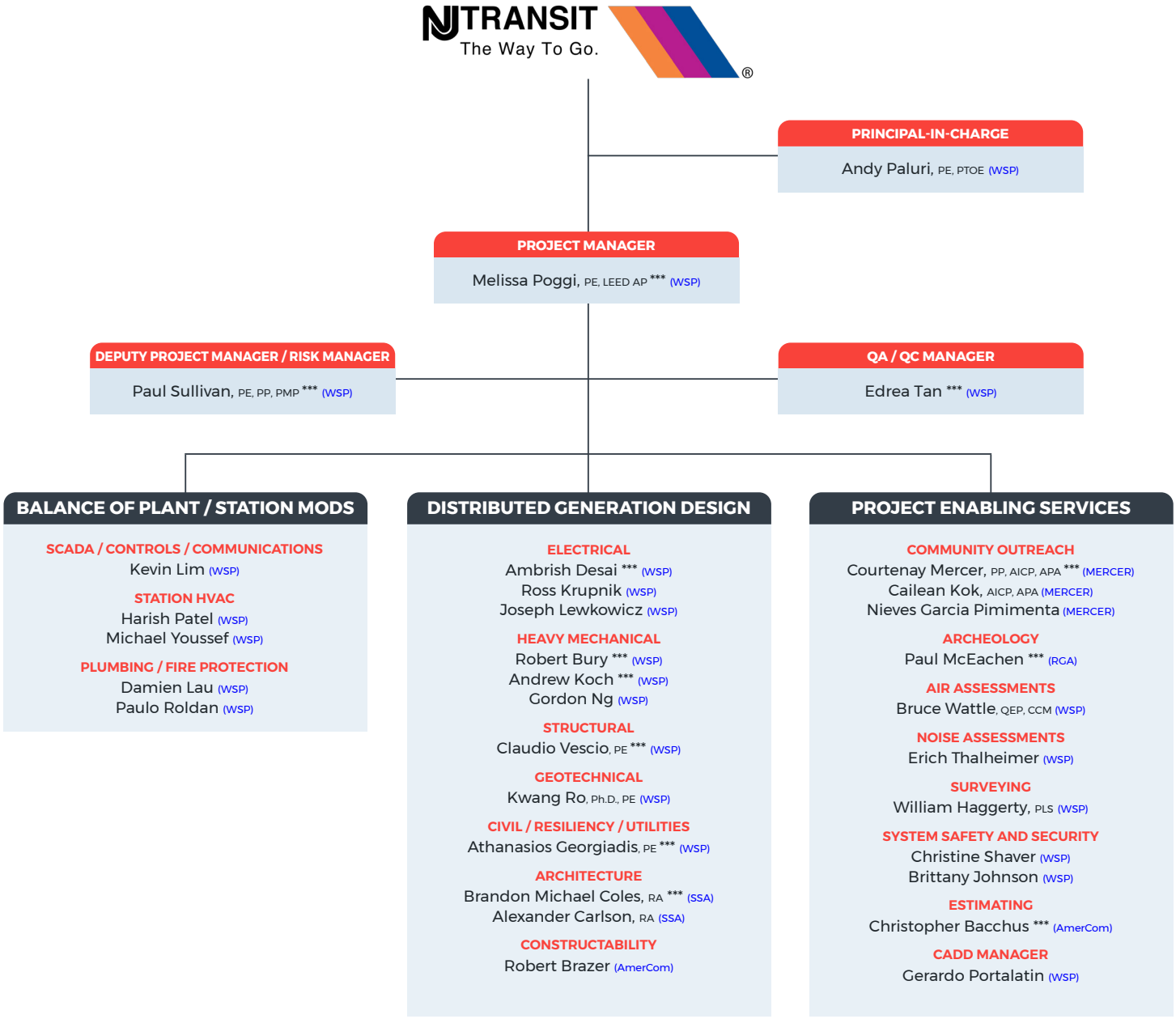
Our team is comprised of firms with the right expertise to deliver all aspects of the project. Many subconsultants have worked successfully with WSP in the recent past, have familiarity with Newark Penn Station, and/or are nationally recognized leaders in their specialties. We have prepared an organization of firms as well as key individuals who will focus on integrating their areas of scope efficiently towards a comprehensive and holistic set of deliverables. In addition, the project controls functions have been carefully crafted to meet NJ TRANSIT's requirements and to keep the team on pace with respect to schedule and budget.

TEAM ORGANIZATION CHART

WSP has included four sub-consultants on the project. All four of these firms are certified DBEs. By including these sub-consultants, **we have achieved a DBE goal of over 32.63% of staff hours for the project**, which exceeds the 22% minimum goal. The full organization chart is shown on page 6 - 2.



ORGANIZATIONAL CHART



WSP TEAM SUBCONSULTANTS	
AmerCom Corporation (DBE) (AmerCom)	Estimating & Constructability
Richard Grubb & Associates, Inc. (DBE) (RGA)	Archeology
Mercer Planning Associates (DBE) (MPA)	Community Outreach
Sowinski Sullivan Architecture (DBE) (SSA)	Architecture

***** DENOTES KEY PERSONNEL**

Please see on the following pages our matrices of Person-hours by task and firm and DBE status as well as by task and individuals.

SUMMARY OF PERSON HOURS BY FIRM AND TASK													
FIRM	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	TOTAL	%	DBE STATUS
WSP USA, Inc.	864	5,256	86	144	35	40	220	222	64	108	7,039	67.37%	-
Richard Grubb & Associates	0	185	0	0	0	0	0	0	0	0	185	1.77%	DBE
AmerCom Corp.	80	0	480	104	0	0	0	80	40	0	784	7.50%	DBE
Sowinski Sullivan	100	1,758	0	0	0	80	0	0	30	136	2,104	20.14%	DBE
Mercer Planning Associates	41	0	0	0	0	295	0	0	0	0	336	3.22%	DBE
TOTAL	1,085	7,199	566	248	35	415	220	302	134	244	10,448	100%	32.63%

PERSON HOURS SUMMARY BY TASK AND INDIVIDUALS (NOT INCLUDING TASK 5.11 - AS DIRECTED)												
FIRM / INDIVIDUAL NAME	TITLE	HOURS & PERCENTAGE BY TASK & INDIVIDUAL										TOTAL
		TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	
WSP												
Athanasios Georgiadis	Senior Civil Engineer	0	164	0	8	0	0	0	8	4	8	192
Isabella Steiner	Assistant Civil Engineer	0	280	8	0	0	0	0	0	0	0	288
Rita Radzeviciene	CADD - Civil	0	112	0	0	0	0	0	0	0	0	112
Bruce Wattle	Air Quality Lead	0	32	0	4	0	0	0	0	0	0	36
Khamini Persaud	Air Quality Engineer	0	100	0	0	0	0	0	0	0	4	104
Erich Thalheimer	Lead Acoustical Engineer	0	92	0	4	0	0	0	0	0	0	96
Sam Pendyala	Senior Acoustical Engineer	0	40	0	0	0	0	0	0	0	0	40
Edward Tadross	Lead Environmental Scientist - Acoustics	0	44	0	0	0	0	0	0	0	0	44
Local Technician	Acoustical Field Assistant	0	28	0	0	0	0	0	0	0	0	28
Kevin Lim	Communications Lead	0	16	0	0	0	0	0	0	0	0	16
Shahid Mehmood	Senior Comms Engineer - SCADA	0	88	8	4	0	0	0	8	4	4	116
Amelia Ramnauth	Communications Engineer	0	144	0	0	0	0	0	0	0	0	144
Brittany Johnson	Safety and Security Specialist	0	0	0	0	25	0	0	0	0	0	25
Stephanie Sprague	Safety and Security QA	0	0	0	0	10	0	0	0	0	0	10
Claudio Vescio	Supervising Engineer (Structural)	0	71	0	8	0	0	0	8	0	0	87
Brian Dastis	Lead Structural Engineer	0	184	8	4	0	0	8	0	4	8	216
Emanuele Morbidoni	Senior Structural Engineer	0	280	0	0	0	0	0	0	0	0	280
Isabel Weil	Assistant Structural Engineer	0	120	0	0	0	0	0	0	0	0	120
William Haggerty	Topo Survey Manager	0	58	0	0	0	0	0	0	0	0	58
Michael Beym	Topo Survey Coordinator	0	81	0	0	0	0	0	0	0	0	81
Antonio Stevens	Topo Surveyor	0	108	0	0	0	0	0	0	0	0	108
Arvind Kannan	Senior CAD Operator 2 - Topo	0	40	0	0	0	0	0	0	0	0	40
Rob Bury	Sr. Technical Manager (Mechanical)	0	104	0	8	0	0	0	0	8	0	120
Gordon Ng	Supervising Engineer (Mechanical)	0	160	8	20	0	0	8	8	0	16	220

PERSON HOURS SUMMARY BY TASK AND INDIVIDUALS (NOT INCLUDING TASK 5.11 - AS DIRECTED)												
FIRM / INDIVIDUAL NAME	TITLE	HOURS & PERCENTAGE BY TASK & INDIVIDUAL										TOTAL
		TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	
WSP												
Andrew Koch	Project Engineer II (Mechanical)	0	319	0	0	0	0	0	0	0	8	327
Melissa Poggi	Project Manager	446	0	0	16	0	40	40	4	20	12	578
Paul Sullivan	Deputy Project Manager	86	0	0	40	0	0	60	4	0	0	190
Edrea Tan	QA/QC Manager	70	0	0	0	0	0	80	0	0	0	150
Jerry Portalatin	CADD Manager	80	0	0	0	0	0	0	0	0	0	80
Tara Simlick	Document Controls Manager	90	0	0	0	0	0	0	0	0	8	98
John Kalb	Scheduling Manager	60	0	0	0	0	0	0	0	0	0	60
Bob Bretz	Projectwise Manager	20	0	0	0	0	0	0	0	0	0	20
Patti Cormiel	Contract Manager	12	0	0	0	0	0	0	0	0	0	12
Ragui Fahmy	Senior Director - Geotechnical	0	151	0	4	0	0	0	8	4	0	167
Wanxing Liu	Engineer - Geotechnical	0	170	8	0	0	0	0	0	0	8	186
Jerry Chen	Engineer - Geotechnical	0	100	0	0	0	0	0	0	0	0	100
Harish Patel	Director - Mechanical Engineering	0	88	0	0	0	0	0	0	0	0	88
Michael Youssef	Mechanical Engineer	0	136	8	8	0	0	0	8	4	8	172
Damien Lau	WSP Supvr Engineer Plbg FP	0	56	0	8	0	0	0	0	0	0	64
Paulo Roldan	WSP Senior Engineer Plbg FP	0	116	0	0	0	0	0	8	4	8	136
John Bartell	WSP Engineer	0	120	8	0	0	0	8	0	0	0	136
Tom Marko	Construction Manager	0	0	0	0	0	0	0	120	0	0	120
Shamoun Mahgerefth	Sr. Director - Estimating	0	0	30	0	0	0	0	30	0	0	60
Ambrish Desai	Supervising Electrical Engineer	0	108	0	8	0	0	0	0	0	0	116
Kerrine Bryan	Electrical Engineer	0	498	0	0	0	0	0	8	12	0	518
Ross Krupnik	Lead Electrical Engineer	0	318	0	0	0	0	16	0	0	16	350
Joe Lewkowicz	Jr. Electrical Engineer	0	730	0	0	0	0	0	0	0	0	730
	TOTAL	864	5,256	86	144	35	40	220	222	64	108	**7,039**

PERSON HOURS SUMMARY BY TASK AND INDIVIDUALS (NOT INCLUDING TASK 5.11 - AS DIRECTED)												
FIRM / INDIVIDUAL NAME	TITLE	HOURS & PERCENTAGE BY TASK & INDIVIDUAL										TOTAL
		TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	
RICHARD GRUBB & ASSOCIATES												
Richard Grubb	Director	0	1	0	0	0	0	0	0	0	0	1
Paul McEachen	Principal Sr. Archaeologist	0	8	0	0	0	0	0	0	0	0	8
Allison McGovern	Sr. Archaeologist	0	76	0	0	0	0	0	0	0	0	76
Alison Gall	Archaeologist	0	12	0	0	0	0	0	0	0	0	12
Patricia McEachen	Drafter	0	16	0	0	0	0	0	0	0	0	16
Cathy Smyrski	Editor	0	8	0	0	0	0	0	0	0	0	8
John Stiteler	Geomorphologist	0	64	0	0	0	0	0	0	0	0	64
	TOTAL	0	185	0	0	0	0	0	0	0	0	**185**

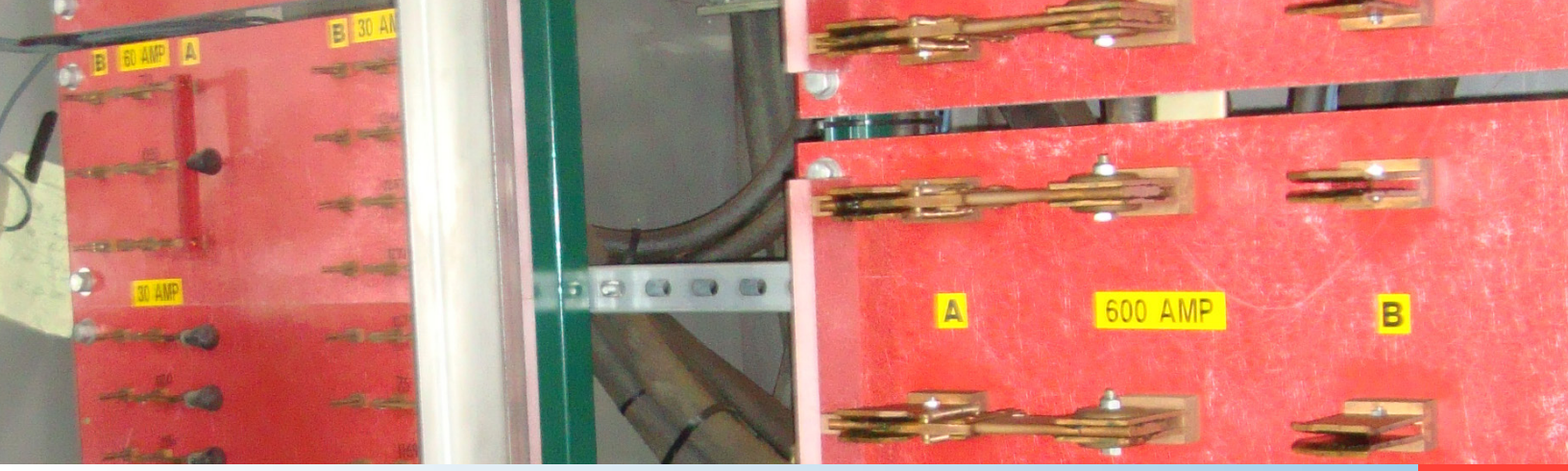
PERSON HOURS SUMMARY BY TASK AND INDIVIDUALS (NOT INCLUDING TASK 5.11 - AS DIRECTED)												
FIRM / INDIVIDUAL NAME	TITLE	HOURS & PERCENTAGE BY TASK & INDIVIDUAL										TOTAL
		TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	
AMERCOM CORP.												
Chris Bacchus	Senior Engineer - PIII	0	0	270	40	0	0	0	0	0	0	310
Mike Marino	Senior Engineer - PIII	0	0	110	0	0	0	0	0	40	0	150
Dan Chiang	Junior Engineer - PI	0	0	100	64	0	0	0	0	0	0	164
John Accetta	Senior Engineer - PIII	80	0	0	0	0	0	0	0	0	0	80
Robert Brazer	Resident Engineer/Project Engineer- PV	0	0	0	0	0	0	0	80	0	0	80
	TOTAL	80	0	480	104	0	0	0	80	40	0	**784**

PERSON HOURS SUMMARY BY TASK AND INDIVIDUALS (NOT INCLUDING TASK 5.11 - AS DIRECTED)												
FIRM / INDIVIDUAL NAME	TITLE	HOURS & PERCENTAGE BY TASK & INDIVIDUAL										TOTAL
		TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	
SOWINSKI SULLIVAN												
Malik Basnight	Architect I	0	252	0	0	0	12	0	0	0	0	264
Marc Giangreco	Architect II	10	370	0	0	0	0	0	0	30	0	410
Jeffrey Sroka	Architect III	24	432	0	0	0	0	0	0	0	60	516
Adrienne Arthur	Architect IV	28	328	0	0	0	30	0	0	0	40	426
Alexander Carlson	Architect V	32	216	0	0	0	30	0	0	0	16	294
Lee Boyce	Architect VI	0	60	0	0	0	0	0	0	0	8	68
Brandon Coles	Architect VII	0	32	0	0	0	4	0	0	0	8	44
Richard Sullivan	Architect VIII	6	68	0	0	0	4	0	0	0	4	82
	TOTAL	100	1,758	0	0	0	80	0	0	30	136	**2,104**

PERSON HOURS SUMMARY BY TASK AND INDIVIDUALS (NOT INCLUDING TASK 5.11 - AS DIRECTED)												
FIRM / INDIVIDUAL NAME	TITLE	HOURS & PERCENTAGE BY TASK & INDIVIDUAL										TOTAL
		TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	
MERCER PLANNING ASSOC.												
Courtenay Mercer	Principal-in-Charge	41	0	0	0	0	67	0	0	0	0	108
Cailean Kok	Senior Planner	0	0	0	0	0	143	0	0	0	0	143
	TOTAL	41	0	0	0	0	295	0	0	0	0	**336**

SECTION 7 – QUALITY MANAGEMENT / QUALITY ASSURANCE PLAN





Quality Management / Quality Assurance Plan

7

WSP's commitment to quality is at the heart of the firm's culture and is at the root of more than a century of client satisfaction. Under the guidance of Melissa Poggi, our proposed Project Manager, and Edrea Tom, our proposed QA/QC Manager, our team will work closely with NJ TRANSIT to make sure all deliverables within the contract are in compliance with WSP's overall quality assurance process and our project-specific NJ TRANSIT-approved Project Management Plan (PMP). In her Project Management capacity, Melissa will serve to enforce the overall QA/QC effort, which will be led by each of the design discipline leads.

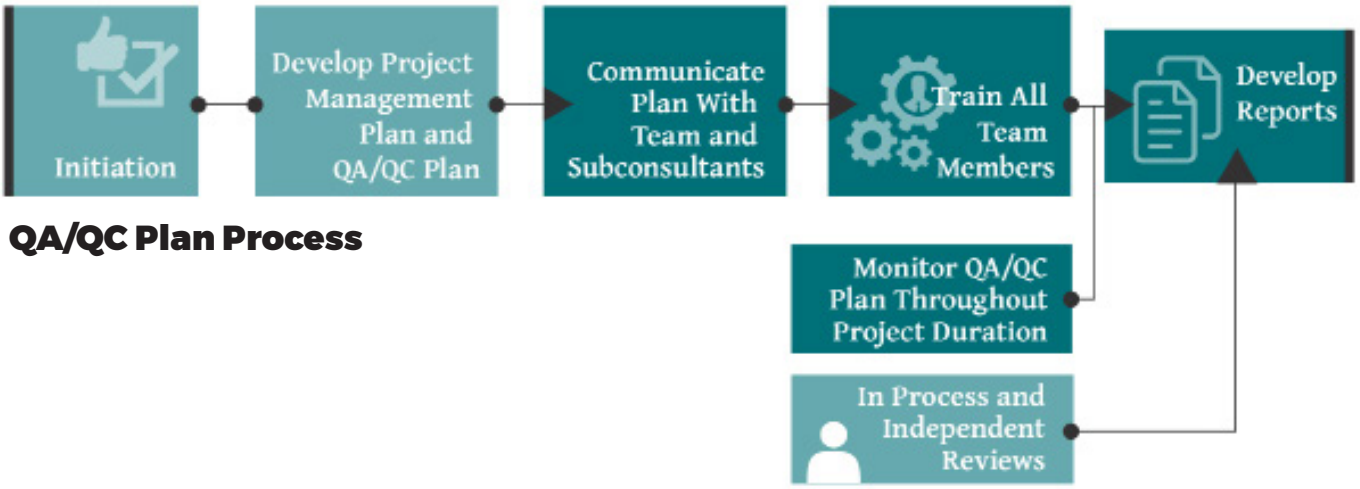
OUR PLAN FOR QUALITY

Every employee of WSP and our subconsultants is responsible for quality and it is integral to every task and work product. Quality will be scheduled into all phases of work to address all issues, avoid rework, contain time and costs and deliver work products that meet NJ TRANSIT's requirements and standards. The WSP team approaches quality assurance as a comprehensive process that begins with delivery of the project-specific QA/QC Plan and continues through Invitation for Bid (IFB) documents and then final reporting/project close-out after construction is completed. Our quality control approach can be summarized as follows:

- Assign technically qualified personnel
- Assign technically qualified personnel to lead all aspects of assessment and design
- Continue to communicate project requirements to all staff
- Provide training and development of staff as needed
- Issue any changes to the QA/QC Plan or highlight aspects of the plan in anticipation of submissions through Bulletins (see example below)
- Perform in-process reviews by senior technical specialists in each discipline
- Verify that all project issues and technical accuracy are correctly incorporated in deliverables
- Conduct QA audits (scheduled and unscheduled) of work products and deliverables to confirm that QC activities are being implemented and are effective
- Provide NJ TRANSIT access to QA/QC documents and records

QUALITY COMMITMENT TO THE NEWARK PENN STATION DG PROJECT

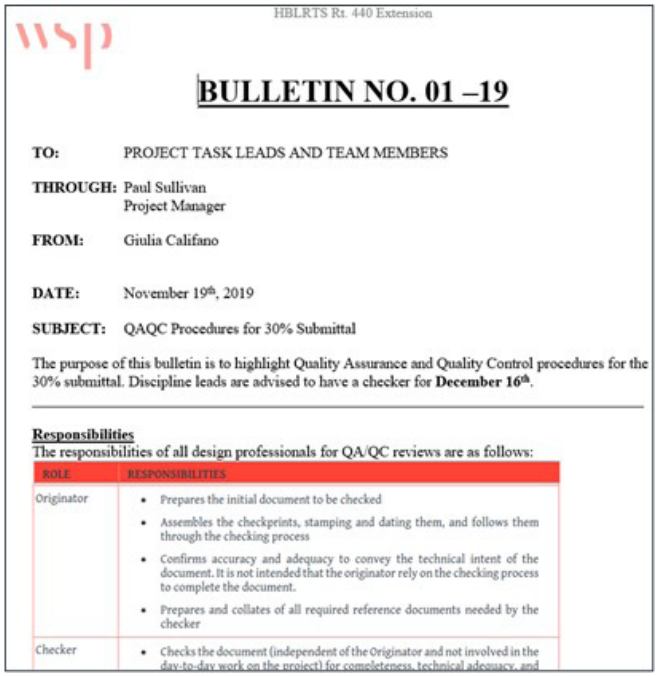
WSP has committed to a company-wide quality system based on the ISO 9001:2015 standard, as was last independently certified on January 20, 2021. Work processes and procedures outlined in our Quality Management System and Project Delivery Handbook describe WSP's policy for QA/QC applying International Standards (ISO 9001:2015) requirements to those processes.



QA/QC Plan Process

Simultaneous to the development of the WSP Project Management Plan (PMP), Melissa and Edrea will manage the preparation of the draft project-specific Quality Management Plan (QMP). It will be Melissa's responsibility, with support from Edrea and a project controls staff, to manage the project within the framework of the QMP. A copy of the QMP will be submitted to the NJ TRANSIT project manager for review and approval. Upon NJ TRANSIT approval, the QMP will be disseminated for use to all team members, including WSP and subconsultants. Subconsultants have the right to use their own QA/QC Plans, and they will comply with and be attached to the QMP.

WSP uses Bulletins to reinforce upcoming deliverable dates and QA/QC requirements:



HBLRTS Rt. 440 Extension

BULLETIN NO. 01 –19

TO: PROJECT TASK LEADS AND TEAM MEMBERS

THROUGH: Paul Sullivan
Project Manager

FROM: Giulia Califano

DATE: November 19th, 2019

SUBJECT: QAQC Procedures for 30% Submittal

The purpose of this bulletin is to highlight Quality Assurance and Quality Control procedures for the 30% submittal. Discipline leads are advised to have a checker for **December 16th**.

Responsibilities
The responsibilities of all design professionals for QA/QC reviews are as follows:

ROLE	RESPONSIBILITIES
Originator	• Prepares the initial document to be checked • Assembles the checkprints, stamping and dating them, and follows them through the checking process • Confirms accuracy and adequacy to convey the technical intent of the document. It is not intended that the originator rely on the checking process to complete the document. • Prepares and collates of all required reference documents needed by the checker
Checker	• Checks the document (independent of the Originator and not involved in the day-to-day work on the project) for completeness, technical adequacy, and

OUR NEWARK OFFICE

WSP's Newark office is certified to the ISO 9001:2015 standard and we have applied this quality system on more than 300 professional services contracts to date. All work performed under this contract, including that of our subconsultants, will be conducted in accordance with the WSP quality system.

Our Preliminary Project Specific QA/QC Plan is on the following pages.

ATTACHMENT 1

PRELIMINARY PROJECT QUALITY ASSURANCE/QUALITY CONTROL PLAN (QA/QC)

NEWARK PENN STATION DISTRIBUTED GENERATION PROJECT

WSP USA PROJECT NO. XXXXX

March 3, 2022

Prepared by: _____ Date: _____

Project Manager - WSP

Approved by: _____ Date: _____

NJ TRANSIT Corp.

FOREWORD

This document shall serve as the Project Quality Assurance/Quality Control (QA/QC) Plan for the *Newark Penn Station Distributed Generation Project.* This document describes the project's general and detailed quality control/quality assurance procedures and management responsibilities, and defines the various roles, responsibilities, issues and guidelines for the successful completion of this project.

This document will be stored electronically with the Project Management Plan on the *Newark Penn Station Distributed Generation Project* design documents platform. Revisions to this document may be required as the project progresses. *No hardcopy revisions will be issued.* For the latest revision of this document, please refer to the electronic version noted above.

QUALITY MANAGEMENT

Quality Objectives and Procedure

It is WSP USA's policy to provide quality professional services and project deliverables to its clients, consistent with the scope of services. WSP USA) Quality Management Systems (QMS) shall be followed to assure the control of quality during the development of this project.

Client/Third Party Approval Process

When specified within the proposal, deliverables will be submitted to NJ TRANSIT and/or other stakeholders for review and comments. All comments received will be reviewed and responses provided for disposition. Comment responses will be returned to NJ TRANSIT for final disposition. Comments that require revisions to reports and/or plans will be incorporated into the next deliverable. Document deliverables will satisfactorily address all open comments unless prior agreement is reached with NJ TRANSIT to allow the item to remain open for future disposition.

Critical Project Elements

Critical project elements will be identified using the project schedule as items within the critical path. Further, items that have significant bearing on project cost will be identified for review by NJ TRANSIT. Items within the initial critical path include (TBD). The critical path may change during the performance of work due to adjustment of priorities. The critical path will be tracked on a regular basis as defined within the PMP.

Outside Technical Assistance Required

Design discipline leads will provide outside assistance and oversight of the QA/QC procedures. They will be responsible for identifying technical expertise as necessary to conduct independent reviews.

Procedure to Resolve Technical Differences

Differences of opinion regarding design elements, quality reviews or details of the project developed by internal reviews are to be brought to the attention of the Project Manager. The Project Manager, in consultation with other professionals within WSP, will render and document a decision. The Project Manager's decision will be final unless overturned by appeal to the Principal-in-Charge.

Planned Special Quality Attention

All design professionals will follow the established design criteria that will be the instructions to the designers on technical requirements to be implemented into their designs. Design documentation and drafting standards will be instructions for the designers to follow on how design information is to be conveyed to reviewers, third parties, and construction and manufacturing contractors. Configuration management and design review will address coordination and consolidation of various designs produced by multiple disciplines headed by

each task lead and oversight by the Project Manager, Station Design Coordinator, and discipline leads.

Change Procedures

Changes to completed, or partially completed, work products shall be controlled. Any changes which may require a change to the project scope, schedule or budget are to be brought to the attention of the Project Manager, who is responsible for documenting and controlling such changes, to ensure that the client and all project staff are informed of the changes and have the opportunity to properly incorporate any implications into the work product. Any changes that have no impact to the project scope, budget, and schedule are to be handled by the affected task lead with the knowledge of the Project Manager.

Approval Procedures

All engineering and architectural drawings, designs and reports will be back checked by and approved by professional engineers or registered architects, overseen by tasks leads, the Deputy Project Manager and the Project Manager. An independent QA/QC review will take place, per discipline, by individuals identified by the QA/QC managers of the overall project design.

Assessment of Meeting Client Needs

The overall design shall be in conformance with approved project standards, criteria, specifications, third party requirements and regulations. The proposal identifies various tasks that will identify client needs and develop a design that supports those needs.

QUALITY CONTROL

Deliverable Reviews

Responsibilities

The Project Manager is responsible for establishing the level of review required for the project, for selecting appropriately qualified personnel to perform the required reviews and for defining the level of review and the review team in the Project Management Plan (PMP). The PM is also responsible for maintaining a record of each review and the disposition of the review comments.

Process

A review is performed for each project deliverable prior to its final submittal to the client. Deliverable review evaluates the overall validity of the deliverable with respect to the project requirements and is independent of document checking, which takes place prior to the review. The intensity of the review is commensurate with the size and complexity of the project. The PMP, developed by the PM, specifies the schedule for reviews, the type and intensity of the review required for each project deliverable, and the appropriate personnel to perform the reviews. This may include experience staff actively involved in other aspects of the project, WSP staff not involved in the project or independent consultants called in solely for the purpose of the review.

The deliverable review assesses the project deliverable against the following:

- Applicable project design criteria and requirements
- Applicable codes, technical guidelines, and professional standards
- Available design documents
- Previous review comments, if applicable
- Interface requirements with other system elements
- Accepted industry practices
- Cost effectiveness

Constructability, construction schedule including milestones, and interfaces with other contracts

Records

All deliverable review comments and/or marked review documents shall be retained in the project file along with a record of the disposition of the comments, if applicable.

Design Procedures

Planning Documents, Reports and Drawings

Planning Documents, Reports and Drawings are used for communicating assessments, studies, concepts and details and for guiding others in producing the desired end product. It is essential that they show complete information clearly so that conflicts and misunderstandings of the requirements are avoided.

Responsibilities

- The Task Lead is responsible for the preparation of the documents, and for identifying project staff responsible for developing, drafting, reviewing and checking the documents. The Task Lead may be the Originator or the Checker, but not both.
- The Originator is responsible for developing the original content in conformance with the contract and project requirements.
- For Drawings, the Drafter is responsible for producing the drawings in accordance with the project drafting standards.
- The Checker, who is independent of the Originator, is responsible for checking the document for conformance with the contract requirements.

Process

<u>Preparation</u>

Documents are prepared under the supervision of the Task Lead by the Originator. The Originator will review and back check the document during the various stages of preparation. In an effort to reduce the consumption of resources electronic review and comment procedures should be the

preferred method of preparation. The PM or client may select for specific projects that hard copy reviews are required.

Checking

Prior to the final deliverable submittal, a final electronic check print (CAD or PDF) is prepared for each document. WSP staff shall follow the guidelines shown in Appendix A, "QC/QA of Design Deliverables", for final check print procedures. This process is recommended for use by all but as a minimum, each document shall be checked for conformance with objectives and/or design and the requirements of the document standards applicable to the project and verifies that the design output conforms to the design input requirements. This process may include activities such as performing alternative calculations; comparing the details presented with similar proven details, if applicable; and undertaking tests and demonstrations to confirm the information presented on the document. The checker clearly comments on the document or separate comment sheet with any alterations or corrections.

Prior to having the changes incorporated on the document, the originator reviews the changes and accepts them by electronic response.

The Originator or drafter incorporates any alterations or corrections on the document and indicates on the originators electronic response that each correction has been completed. Prior to each deliverable submittal, a final electronic check is prepared for each document. The document designated as the final check shall contain the following information:

- Final document designation
- Indication of "Checked By" with electronic signature or initials of Checker and date of check
- Indication of "Reviewed By" with electronic signature or initials of Originator and date, as evidence of acceptance of changes
- Indication of "Corrected By" with electronic signature or initials of Drafter and date, as evidence of incorporation of corrections on the final check print
- Indication of "Approved By" with electronic signature or initials of Task Lead and date of approval

Submittals

Documents shall be submitted in accordance with identified contract and project milestone requirements. The submittals shall be marked with the completion stage and the date.

Records

The following records shall be maintained in the project files:

- All document review comments and issued submittals emails shall be filed in the WSP Projects folder for the project.
- Electronic copies of review comments and responses documents shall also be filed in the project folder on the local server in the Project Deliverables QC/QA Documentation folder.

Record copies of each submittal of the documents, including revisions, at least until a subsequent submittal is made.

Final submittals, until a subsequent submittal is made.

For WSP staff, the records shall be maintained in the Project Files in accordance with the project specific file structure established in the PMP.

Calculations and Cost Estimates

Responsibilities

The Task Lead is responsible for preparing contract and project discipline-related criteria and for designating an Originator and a Checker. The Task Lead may be the Originator or the Checker, but not both.

The Originator is responsible for preparing the calculations and/or cost estimates in accordance with the contract requirements, project-specific guidelines, codes, criteria and standards and confirming any changes made by the Checker.

The Checker, who is independent of the Originator, is responsible for verifying the correctness of the assumptions upon which the calculations and/or cost estimates are based and for compliance with the contract requirements and project-specific guidelines, codes, criteria and standards.

Process

<u>Preparation</u>

In an effort to reduce the consumption of resources electronic review and comment procedures should be the preferred method of preparation. The PM or client may select for specific projects that hard copy reviews are required.

Each computation sheet shows:

The project title

The subject of the calculations and/or cost estimates

A consecutive page number

The name or the initials of the Originator and Checker

Dates of preparation and check

All calculations and/or cost estimates include:

Criteria and source referencing the design requirements

Design assumptions

References, if any, indicating specific paragraph or section numbers

Back-up materials, appropriately identified

Dimensional units

For computer-generated calculations and/or cost estimates, the Originator prepares:

Input that is clear and easily understood

All manual calculations and/or cost estimates necessary to develop the input to the computer program

The Originator reviews the results of computer programs to verify that results are reasonable and electronically signs and dates the first page of the output document.

Checking

Calculations and/or cost estimates are checked for the following:

Proper documentation

Technical concept

Numerical accuracy

WSP staff shall follow the guidelines shown in Appendix A – "QC/QA of Design Deliverables", for documentation of calculation and/or cost estimate checking. This process is recommended for use by all but at a minimum, the checking process below should be followed.

Checker gives the Originator comments and required corrections on an electronic copy of the original computation sheets.

The Originator and Checker resolve and electronically document the resolution of the Checker's comments and corrections. The Task Lead determines a course of action for any unresolved differences. The Originator makes the necessary changes.

If corrections are significant, the original calculation and/or cost estimate is regenerated and checked as new.

If independent check calculations are used, they are prepared in the manner outlined in Section 2.1.2. If the results of an independent check differ from the original calculation, the Task Lead determines which of the approaches is more appropriate for the design in question and that calculation and/or cost estimate is then subjected to checking.

For computer-generated calculations and/or cost estimates, the Checker verifies that:

All input data are correct

Results are reasonable and correct

If required, the Originator revises the input. The Checker electronically signs and dates the front page of the finished output document.

Computer-assisted calculations and/or cost estimates, such as those using spreadsheets, are spot-checked and signed and dated manually on the front page of the calculations and/or cost estimates.

Records

The following records shall be maintained in the project files:

All calculations and cost estimates review, comment and issued submittals emails shall be filed in the WSP Projects folder for the project.

Electronic copies of review comments and responses documents shall also be filed in the project folder on the local server in the Project Deliverables QA/QC Documentation folder.

For WSP staff, the records shall be maintained in the Project Files in accordance with the project specific file structure established in the PMP.

Specifications

Responsibilities

The Task Lead is responsible for determining which specification sections will be prepared and shall identify, in conjunction with the discipline leaders, personnel to prepare and check the specifications along with technical resources to assist during the preparation. The Task Lead may be the Originator or the Checker, but not both.

The Originator is responsible for preparing the specifications in accordance with the contract requirements, project-specific guidelines, codes, criteria and standards and confirming any changes made by the Checker.

The Checker, who is independent of the Originator, is responsible for verifying the correctness of the assumptions upon which the specifications are based and for compliance with the contract requirements and project-specific guidelines, codes, criteria and standards.

Process

<u>Preparation</u>

The Task Lead collects available standards or sample documents from the client to form a basis for the project specifications. The specification format follows the client's specified standards. If the client has defined no standards, industry standards appropriate to the type of work performed are used, as defined by the Task Lead.

The Task Lead prepares a summary list of items of work that identifies which items conform to standard specifications, which items require project-specific specifications, and the Originator and Checker responsible for each section.

In an effort to reduce the consumption of resources electronic review and comment procedures should be the preferred method of preparation. The PM or client may select for specific projects that hard copy reviews are required.

The Originator develops the specifications addressing, at a minimum, the following elements:

Description of work

Material requirements

Construction requirements

Measurement and payment

Checking

The Task Lead shall ensure that the specifications are checked. The following provides a basis for checking:

Conformance to client's standards and format

Design assumptions, where applicable

A clear and complete definition of work of the section

Identification of items of work and all products/materials required

Current code and manufacturer references, where applicable

No internal inconsistencies

Consistency between the contract documents

No superfluous material that could cause confusion during construction

Identification of measurement and payment terms for each item

Clear and consistent language

WSP staff shall follow the guidelines shown in Appendix A – "QC/QA of Design Deliverables", for documentation of specification checking. This process is recommended for use by all but at a minimum, the checking process below should be followed.

If the "Boiler Plate" (Division 0) is written or modified by WSP, the Task Lead shall arrange for the modified sections to be checked by a WSP specification specialist. The Task Lead shall forward the entire construction bid package to the specialist for the check. The specialist shall discuss any comments with the Task Lead and furnish comments in writing. An electronically marked up copy of the affected pages will be sufficient to communicate the comments.

When changes are proposed during the checking process, the electronically marked document shall be reviewed by the Originator, who shall resolve or accept each comment prior to incorporation of the proposed changes.

The project specifications shall be reviewed by the PM to verify completeness and consistency with client and project requirements and to verify that all specification sections are coordinated among the various disciplines on the project. Any changes necessary as a result of that review shall be communicated to the Originators and Checkers.

Records

The following records shall be maintained in the project files:

All specifications review, comment and issued submittals emails shall be filed in the WSP Projects folder for the project

Electronic copies of review comments and responses documents shall also be filed in the project folder on the local server in the Project Deliverables QA/QC Documentation folder

A list of the items of work required for the project

A record copy of the completed specifications with each section electronically signed or initialed by the Checker along with the comments, disposition of comments and Originator initials indicated

A record copy of the completed specifications as submitted to the client, with the PM's signature (signature method electronic/hard copy submittal dependent) on the transmittal or on the specification cover sheet

For WSP staff, the records shall be maintained in the Project Files in accordance with the project specific file structure established in the PMP.

Reports

Responsibilities

The Task Lead is responsible for determining the content of the report and, in conjunction with the respective discipline leaders, identifies appropriate personnel to prepare and check the report. The Task Lead may be the Originator or the Checker, but not both.

The Originator is responsible for preparing the reports in accordance with the contract requirements, project-specific guidelines, codes, criteria and standards and confirming any changes made by the Checker.

The Checker, who is independent of the Originator, is responsible for verifying the correctness of the assumptions upon which the reports are based and for compliance with the contract requirements and project-specific guidelines, codes, criteria and standards.

Process

<u>Preparation</u>

The Task Lead communicates the objectives of the report and any specific requirements for content or format to the Originator, Contributors and Checker. Report preparation includes the following activities:

For elaborate reports (i.e. reports with multiple Contributors), the Originator develops an outline or table of contents and distributes it to the Contributors.

The Contributors develop their designated sections conforming to the outline, format and style established, collecting technical information as required. Technical input involving calculations is subject to the requirements of the procedures for preparation of calculations. Graphs, figures and other supporting materials are included as required.

In an effort to reduce the consumption of resources electronic review and comment procedures should be the preferred method of preparation. The PM or client may select for specific projects that hard copy reviews are required.

The Originator collects the Contributors' input and assembles the draft report.

Checking

WSP staff shall follow the guidelines shown in Appendix A – "QC/QA of Design Deliverables", for documentation of report checking. This process is recommended for use by all but at a minimum, the checking process below should be followed.

The Checker investigates materials included in the report and verifies that the information presented conforms to the requirements established for the project, that the presentation is effective and orderly, and that the material included has been checked for accuracy.

The Checker also evaluates the report to establish that the material presented justifies any conclusions drawn and that the report addresses the appropriate issues in accordance with the scope of the assignment.

For brief reports, such as letter reports, a single person customarily prepares the report and the report is checked by the Task Lead, or if prepared by the Task Lead, checked by the PM, prior to submittal to the client.

Revisions resulting from the internal checking process are resolved or accepted with the checked t prior to being incorporated into the submission-ready report.

The 'as-submitted' copy of the report is initialed (signature method electronic/hard copy submittal dependent) by the Checker as evidence of the review. All marked copies if any need not be kept unless required by the contract.

Records

The following records shall be maintained in the project files:

All report review, comment and issued submittals emails shall be filed in the WSP Projects folder for the project.

Electronic copies of review comments and responses documents shall also be filed in the project folder on the local server in the Project Deliverables QA/QC Documentation folder.

For elaborate reports, the table or contents or outline of the report, with the names of the Originator, the Contributors, and the Checker.

A record copy of the final report, initialed (signature method electronic/hard copy submittal dependent) by the Checker and Originator, as submitted to the client.

For WSP staff, the records shall be maintained in the Project Files in accordance with the project specific file structure established in the PMP.

Field Procedures

Data Collection and Field Investigation

Responsibilities

The Task Lead identified by the PM is responsible for ensuring that the requirements of this procedure are met.

Process

Data Collection

Data collection is performed by obtaining appropriate source materials, contacting identified sources and soliciting input, and reviewing and assessing the data when received for its suitability to the project and its completeness for project needs.

Field Investigation

The project scope of work includes defined tasks for field investigations. Prior to initiating the field investigation an investigation plan is prepared. The plan may be a simple statement of the objectives of the investigation, but if necessary addresses personnel assignments, team composition, work hours, emergency and daily contacts, site access procedures, equipment requirements, schedule, training, safety procedures, quality control measures and investigation procedures, including data formats and recording media, as applicable.

The quality control section of the plan defines the roles and responsibilities of each of the investigation team members and describes the methods that will be used to verify the information being collected.

The field investigation plan is provided to all members of the investigation team.

Training is provided as required to review the responsibilities of each team member, the investigation procedures to be implemented, the records to be maintained and any safety issues related to the field activities. Team leaders are responsible for ensuring that all team members receive the materials necessary for them to understand their responsibilities.

The Task Lead oversees the field activities, evaluates the effectiveness of the investigations relative to the project requirements and prepares a summary of the investigation findings.

For projects where field investigation is not a defined scope activity, and for projects where follow-up field visits are required after the completion of the initial investigations, the investigator informs the task leader of the findings, and prepares an investigation memorandum. The memorandum describes the purpose of the visit, summarizes the information obtained and attaches field notes prepared during the trip.

Records

The following records shall be maintained in the project files:

Documents collected

The field investigation plan and list of recipients

Records of training documents

Field notes and other documents generated during the site investigations, including any electronic data files or photographs

The field investigation summary report and memoranda, as appropriate or directed by the PM

Equipment Calibration and Maintenance

Responsibilities

The Discipline Lead is responsible for providing, storing, maintaining and calibrating equipment needed for the performance of project activities by staff within their discipline.

When equipment is obtained for, and used by, a specific project, the PM is responsible for ensuring that the equipment is properly calibrated and in operating condition prior to its use on the project.

The Task Lead is responsible for ensuring that the equipment is properly calibrated and in operating condition prior to its use in task activities.

Process

Storage and Sign-Out

Field equipment, when not in use, shall be stored in a secure, dry, indoor location, protected from the elements and from extreme temperature variations.

A log of field equipment shall be maintained and field equipment, when used, shall be signed out on the log sheet so that if calibration issues arise, the proper staff can be notified.

Calibration and Checking

Equipment requiring calibration shall be calibrated in accordance with the manufacturer's criteria to a nationally or internationally recognized standard. The status of the equipment as received by the service provider shall be documented and retained in the files. It is recognized that manufacturer's recommendation may call for more frequent calibrations than are necessary for the types of services provided by WSP USA. Calibrations may be at less frequent intervals where there is technical expertise to support less frequent calibration and is approved by the discipline leader. The frequency of calibration for equipment requiring calibration shall be noted in the calibration log.

Prior to initiating field activities, the task leader or user shall inspect equipment necessary for the field assignment to verify that it is in working condition. Any suspect equipment shall be clearly marked "Do Not Use," reported to the discipline leader and shall not be used until its status has been clarified. If equipment is found to be out of calibration after use, the extent shall be quantified and the Project Managers or Task Leads of tasks that used the equipment since the last calibration shall assess the impact and take corrective action. The affected project records shall show the conclusion of this assessment, either if it was of no consequence or a description of the corrective action.

Maintenance

Field equipment damaged during use on a project shall be reported by the responsible Task Lead and repaired or replaced as directed by the Discipline Lead. At the end of the fieldwork, all equipment used shall be checked to ensure that it is still in working condition, and returned to its proper storage location. Subject equipment shall be identified and reported as indicated above.

Records

The following records shall be maintained in the project files:

A field equipment usage log

A field equipment calibration log shall be maintained with the field equipment log for equipment requiring calibration. Logs for equipment calibration shall be maintained for the duration of the equipment's use.

Records of disposition of suspect or damaged equipment

QUALITY ASSURANCE

Audits

Internal Audits

Projects may undergo periodic internal audits to satisfy our ISO 9001 certification requirements. Projects are selected by the Area Manager and company audit team on a case by case basis and the PM is notified in advance of the audit. See QM 202, "Internal Audits" for more detailed instructions. Results of these audits and corrective actions from these audits are maintained in the project files.

External Audits

The contract scope of work, Section 32, allows NJ TRANSIT to review the implementation of the QA plan and to perform audits in its discretion. The records described herein shall be saved to permit external audits to occur by NJ TRANSIT. Should an audit occur, the results will be maintained in the project files.

WSP Project Peer Review

In addition to the deliverable reviews outlined in Section 2.1, a WSP Project Peer Review(s) may be performed during project execution with periodic follow-ups over the duration of the project. The purpose of the Project Peer Review(s) is to guide the WSP PM toward achieving technical, financial and client success during project execution.

Management/Review of Subconsultants

All task leads, independent WSP reviewers, Station Design Coordinator and Project Manager are to oversee and review all subconsultants' work to ensure it conforms with contract requirements. Subconsultants shall be required to develop their own QA Plans consistent with the flow down

clause of contract imposed by Section (TBD), subject to all terms and conditions and also subject to audit by NJ TRANSIT.

REFERENCES

WSP USA Quality Manual (QM 100)
PD Handbook

FORMS

- Supplier-Subcontractor QA/QC Plan (PD 201-08C)

QA Review Certification (PD 206-01)

Appendix A
QC/QA of Design Deliverables

This review and checking of design deliverables should be documented as indicated. Reviews are generally associated with milestones or contract deliverables.

CHECKER – shall be a qualified engineer with more experience than the originator.

CHECKING

1. Identify the document or documents to be reviewed and indicate who the reviewers and checkers are by stamping the document or by other indication.
2. YELLOW pencil or highlighter will be used to identify CORRECT features.
3. RED pencil or highlighter will be used to identify errors. Errors must be written in a clear manner for correction.
4. All comments or instructions will be written in pen or pencil (not red) with a cloud or leader line to indicate the checking comment.
5. The document is signed and dated by the checker.

BACKCHECKING

1. All YELLOW or RED identified changes are agreed to between the originator and checker.
2. GREEN pencil or highlighter checks are used to identify agreed changes or additions.
3. GREEN cross outs indicate agreed indication of no change required based on the checkers comments.
4. The document is signed and dated in the checkprint stamp or where indicated on the document.

CALCULATION REVIEWS

1. Checker uses YELLOW and RED indicators for the review. Comments are written in pencil or ink.
2. Checker signs and dates document where indicated upon completion of the review.
3. Document originator reviews comments and discusses required changes with checker.
4. Document is revised based on changes or signed off and dated by the originator and checker upon completion.

DOCUMENT VERIFICATION (QA)

1. Documents are managed by the originator so that all comments and corrections are identified, documented and completed.
2. BLUE pencil or highlighter is used on the review document, to indicate corrected comments or changes that have been made in the next version of the document.
3. The originator or backchecker will review the revised document (clean copy) to ensure all corrections have been made in the next version. GREEN pencil is used to identify which BLUE changes have been corrected.
4. The document is signed and dated by the reviewer.

DOCUMENTATION

All review documents are kept as part of the project file.

SECTION 8 – CONFLICT OF INTEREST





Conflict of Interest 8

CONFLICT OF INTEREST

WSP and our team members have identified the following projects (past and present) that have been completed for NJ TRANSIT relating to the services requested under this RFP.

PROJECT NAME & BRIEF DESCRIPTION	START/END DATES	PROJECT SUPERVISOR
WSP		
New York Penn Station Central Concourse Improvements to platform access and passenger circulation.	10/2020 - Ongoing	Alan Kearns
Hudson-Bergen Light Rail Transit System Project is being delivered under a design-build-operate-maintain (DBOM) contract, and is the first new start rail system in New Jersey in more than 50 years. WSP reviews and comments on all final design submittals and works directly with the DBOM.	10/1993 – Ongoing	Angelo Aprile (current)
Rail Operations & Infra. Planning On-Call contract for rail operations and infrastructure planning task orders.	10/2010 – 5/2018	Alan Kearns
Emergency Work Hurricane Sandy Architectural and engineering services related to storm resiliency.	12/2012 – 11/2018	Angelo Aprile
Track/Replacement Maintenance at Bloomfield & Davenport Track repair and maintenance at Bloomfield and Davenport.	5/2013 – 6/2021	Angelo Aprile
County Yard Improvements Preliminary and final design, engineering, and construction assistance services for improvements to the county yard train storage yard.	10/2014 – Ongoing	Ed Fang
Morris Ave Bridge Replacement Construction Services for Superstructure Replacement of Morris Avenue Bridge over NJ Transit Morristown Line.	7/2015 – 2018	Irene Kravets, retired
Route 440 Extension Preliminary Engineering for HBLRTS Route 440 Extension.	3/2018 – Ongoing	Angelo Aprile
Passaic-Bergen Passenger Restoration Services Review changes in local conditions, technology, policy and operations affecting the corridor and the costs and benefits of extending the corridor to Hudson County.	6/2018 – Ongoing	Lou Millan
CM Services for Elizabeth Station Facilities Construction Management services for the Elizabeth Train Station.	10/2018 – Ongoing	Eduardo Blanco

PROJECT NAME & BRIEF DESCRIPTION	START/END DATES	PROJECT SUPERVISOR
Passaic Bus Terminal Environmental task order for permitting and environmental support for Passaic Bus Terminal.	6/2019 – Ongoing	Dara Callender
Final Phase Positive Train Control (PTC) Deliver program management and oversight support during remaining activities related to Positive Train Control (PTC) project.	10/2019 – Ongoing	Frederick N. Chidester
Enterprise Asset Management Program Management Office Help establish an enterprise asset management program for the program management office including implementation of the transit asset management plan over the next five years.	12/2019 – Ongoing	Roberto Hilman
Transit Capital Planning Planning support to NJ TRANSIT for capital planning.	1/2020 – Ongoing	Mark Tuozzolo
Hunter Flyover Concept Update Planning task order under the Rail Operations & Infrastructure Planning contract.	6/2020 – Ongoing	Alan Kearns
NJT Design, Engineering, And Construction Assistance for Penn Station NY Central Concourse Preliminary design/engineering, final design/engineering, and construction assistance for Penn Station NY Central Concourse.	1/2021 – Ongoing	Alan Kearns
Newark Penn Station Distributed Generation - 20% Preliminary Design Feasibility study to add distributed generation to the NPS campus.	2017 - 2019	Nick Marton
Raritan Valley Transit Master Plan Task order for updating the costs, benefits and community outreach for several planned interrelated transit improvements on and around the Raritan Valley Line	2/2022 - Ongoing	Mike Viscardi
AmerCom		
Contract No. 16-018D, TOC: Corridor Planning, Future Train Storage & Maintenance Facility Location Study TO# 1 This project consisted of a needs assessment study, property assessment and site evaluation screening for additional train storage and maintenance facilities. Working as a sub-consultant, AmerCom was responsible for survey, geotechnical engineering and cost estimating services. Utilizing conceptual alternatives for rail alignments and storage yard options developed by the Prime consultant, AmerCom prepared a detailed cost analysis breakdown and summary matrix for all options considered.	2019 – 2020	Todd Discala, NJT Project Manager
Contract No. 13-005, Task Order Contract: Stations, Access and Site Planning NJT Commuter Rail Station Guidelines & Standards Manual - Revise and Update: Statewide, NJ Working as a sub-consultant, AmerCom was responsible for developing cost estimation chapter in the 2015 NJ Transit Commuter Rail Stations Guidelines and Standards Manual. Prepared cost estimating guidelines and design of software for use in developing planning costs for future NJ Transit projects. The cost estimation accounts for materials, design/construction contingencies as well as cost escalation.	2014 – 2015	William Lawson, Project Manager
Contract No. 13-007, Task Order Contract: Bridge and Railway Engineering Morgan Bridge Rehabilitation Project over Cheesequake Creek, NJ Coast Line Working as a sub-consultant, AmerCom provided Topographic survey and mapping; preparation of Right-of-Way documents; Geotechnical investigation and design; Structural Design of a new bridge control platform; and construction cost estimation.	2014 – 2020	Thomas Switzer, PE, Project Manager

PROJECT NAME & BRIEF DESCRIPTION	START/END DATES	PROJECT SUPERVISOR
Mercer Planning		
Contract #16-040B, Transit Friendly Planning, Land Use and Development Various planning services provided through on-call task orders, including the Transit-Friendly Planning Guide website and technical assistance to local government.	01/2018 – 12/2023	Megan Massey, Assistant Director
Richard Grubb & Associates, Inc.		
Vessel 98, North Jersey Coast Line Raritan River Draw Bridge Replacement Project RGA is conducting a Phase III archaeological data recovery of Vessel 98 in the City of Perth Amboy, Middlesex County as part of NJ TRANSIT's North Jersey Coast Line Raritan River Draw Bridge Replacement project.	07/2020 – Ongoing	RGA was a subconsultant under BEM Systems, Inc.
Lackawanna Records Building RGA is preparing Historic American Buildings Survey (HABS) documentation of the Lackawanna Records Building, Hoboken Rail Yard, City of Hoboken, Hudson County, New Jersey.	05/2020 – Ongoing	RGA was a subconsultant under BEM Systems, Inc.
Danforth Road Bridge over NJ TRANSIT's Morristown Line at MP 26.79 RGA completed a cultural resources screening for proposed improvements to the Danforth Road Bridge over NJ TRANSIT's Morristown Line at MP 26.79 (Structure No. 1468-171) connecting the Boroughs of Madison and Florham Park, Morris County, New Jersey.	01/2020 – 03/2020	RGA was a subconsultant under HDR, Inc.
High Street Bridge over NJ TRANSIT's Morristown Line at MP 20.88 RGA completed a cultural resources screening for proposed improvements to the High Street Bridge over NJ TRANSIT's Morristown Line at MP 20.88 (Structure No. 2062-157) in the City of Summit, Union County, New Jersey.	2019 – 2020	RGA was a subconsultant under HDR, Inc.
Undergrade Bridge 41.29 over Mill Road on the NJ TRANSIT Morristown Line RGA is preparing a Phase IA archaeological survey, Historic Architectural Resources Background Study, and effects assessment report in connection with NJ TRANSIT's proposed replacement of Undergrade Bridge 41.29 over Mill Road on the NJ TRANSIT Morristown Line in the Borough of Wharton, Morris County, New Jersey.	2019 – Ongoing	RGA was a subconsultant under Greenman-Pedersen, Inc.
Hudson-Bergen Light Rail, Route 440 Extension In 2012, RGA completed a Phase IA archaeological survey, Historic Architectural Resources Background Study, and effects assessment report in connection with NJ Transit's extension of the existing Hudson-Bergen Light Rail Line, City of Jersey City, Hudson County, New Jersey. RGA also assisted with the preparation of a Programmatic Agreement (PA) to help facilitate the cultural resources process during the design and construction of the Preferred Alternative. The firm subsequently provided oversight for stipulations of the PA, including a geomorphological survey, and design consultation services.	2012; 2018 – 2020	RGA was a subconsultant under AKRF, Inc. and WSP USA, Inc.
Hudson Tunnel Project RGA completed a Phase IA archaeological survey and Historic Architectural Resources Background Study and Effects Assessment report in connection with NJ TRANSIT's proposed Hudson Tunnel Project, Town of Secaucus, North Bergen Township, City of Union City, Weehawken Township, and City of Hoboken, Hudson County, New Jersey.	2016 – 2017	RGA was a subconsultant under AKRF, Inc.
Bergen County Line MP 6.34, Culvert Replacement Design RGA completed a Phase IA archaeological survey and Historic Architectural Resources Background Study and Effects Assessment report in connection with NJ TRANSIT's proposed replacement of the County Line MP 6.34 Culvert, Boroughs of Rutherford and East Rutherford, Bergen County, New Jersey.	02/2016 – 12/2016	RGA was a subconsultant under HDR, Inc.
Hoboken Terminal Yard Power Supply System RGA completed a Phase IA archaeological survey and Historic Architectural Resources Background Study and Effects Assessment report in connection with NJ TRANSIT's Hoboken Terminal Yard Power Supply System Project, City of Hoboken, Hudson County, New Jersey.	2015 – 2016	RGA was a subconsultant under LCOR, Inc.

PROJECT NAME & BRIEF DESCRIPTION	START/END DATES	PROJECT SUPERVISOR
TransitGrid Project RGA completed cultural resource surveys in connection with the NJ TRANSIT's TRANSITGrid project in support of a NEPA Environmental Impact Statement. The project area includes the site of two natural gas-fired electric power generating plants and solar arrays, and the transmission line routes within the Morris & Essex Railroad line right of way between the existing Kearny Substation and the Henderson Street Substation in the City of Jersey City, Hudson County, New Jersey.	2015 – 2018	RGA was a subconsultant under BEM Systems, Inc.
Train Controls Infrastructure Resiliency Project, Hudson-Bergen Light Rail, Main Line, Bergen County Line, Pascack Valley Line, Raritan Valley Line, and Morris & Essex Line RGA completed cultural resources screening services in connection with NJ TRANSIT's Train Controls Infrastructure Resiliency Project, along sections of six railroad lines: Hudson-Bergen Light Rail, Main Line, Bergen County Line, Pascack Valley Line, Raritan Valley Line, and Morris & Essex Line in Hudson, Bergen, and Somerset Counties, New Jersey and Rockland County, New York.	2015 – 2016	RGA was a subconsultant under BEM Systems, Inc.
North Jersey Coast Line Raritan River Draw Bridge Replacement Project RGA completed a Phase IA archaeological survey and Historic Architectural Resources Background Study, and Effects Assessment report in connection with NJ TRANSIT's proposed replacement of the North Jersey Coast Line Raritan River Draw Bridge, Cities of Perth Amboy and South Amboy, Middlesex County, New Jersey.	2015 – 2016	RGA was a subconsultant under BEM Systems, Inc.
Brielle Drawbridge over Manasquan River RGA completed a Phase IA archaeological survey and an historic architectural effects assessment for proposed improvements to the Brielle Drawbridge over Manasquan River in the Borough of Brielle, Monmouth County and Borough of Point Pleasant Beach, Ocean County, New Jersey.	09/2015 – 10/2015	RGA was a subconsultant under HDR, Inc.
Gladstone Line Culvert Replacement RGA provided historic preservation services in connection with the replacement of NJ TRANSIT's Gladstone Line Culvert (M.P. 41.64), Boroughs of Peapack and Gladstone, Somerset County, New Jersey. Project tasks included photo-documentation of existing conditions of the culvert prior to construction, and working closely with the contractor, in consultation with the NJ Historic Preservation Office, during the disassembly of the existing culvert and subsequent reconstruction.	06/2015 – 08/2015	RGA was a subconsultant under Hutton Construction.
Long Slip Fill Project RGA completed a supplemental Phase IA archaeological survey, Historic Architectural Resources Background Study, and Effects Assessment report, in connection with NJ TRANSIT's Long Slip Fill Project, City of Hoboken and City of Jersey City, Hudson County, New Jersey. RGA subsequently completed HAER recordation of the Pullman Yard Concrete Bumpers, a contributing resource to the National Register-eligible Old Main Delaware, Lackawanna & Western Railroad Historic District.	2014 – 2015; 2018	RGA was a subconsultant under BEM Systems, Inc.
County Yard/Delco Lead Emergency Train Storage and Service and Inspection Facility Project RGA completed a Phase IA archaeological survey, Historic Architectural Resources Background Study, and effects assessment report in connection with NJ TRANSIT's Improvements to County Yard, City of New Brunswick and North Brunswick Township, Middlesex County, New Jersey. RGA subsequently drafted a Programmatic Agreement (PA) outlining procedures to resolve adverse effects to these historic properties and to develop a protocol for further archaeological investigations. RGA is presently carrying out the stipulations of the PA, which include HABS/HAER recordation and interpretive signage.	2013 – 2020	RGA was a subconsultant under BEM Systems, Inc.

PROJECT NAME & BRIEF DESCRIPTION	START/END DATES	PROJECT SUPERVISOR
Morgan Drawbridge Raised Control Project RGA worked on a Phase IA archaeological survey, Historic Architectural Resources Background Study, and effects assessment report in connection with NJ TRANSIT's Electrical Upgrades to Morgan Draw Bridge over Cheesequake Creek, Old Bridge Township and Borough of Sayreville, Middlesex County, NJ. RGA is presently carrying out the Phase IB archaeological survey.	2014; 2020 – Ongoing	RGA was a subconsultant under HDR, Inc. and BEM Systems, Inc.
Lyndhurst Rail Station RGA completed a Phase IA archaeological survey and historic architectural resources background study in connection with NJ TRANSIT's accessibility improvements project at the Lyndhurst Rail Station.	2012 – 2013	Dara Callender
Sowinski Sullivan Architects, PC		
Secaucus Junction Expansion Study Sowinski Sullivan provided architectural design services for conceptual study to identify and evaluate station expansion.	2021 – Ongoing	Todd Discala
Penn Station NY Capacity Improvements Sowinski Sullivan was the architect on a team developing a conceptual study to identify capacity enhancements for Penn Station New York.	2018 – 2021	Todd Discala
Newark Light Rail ADA Compliance Sowinski Sullivan was the project architect to make improvements which allowed for compliance with ADA standards.	2020 – Ongoing	Paul V. Giammona, AIA
Master Specification Study The primary focus is to transition master specifications into the updated 6-digit CSI format creating a uniform standard.	2020 – Ongoing	Thomas Gallagher, PE
Hoboken Station Access Study Sowinski Sullivan was the architect tasked with developing conceptual designs for improved passenger circulation at Hoboken Terminal.	2019 – 2021	Alan Kearns
93CJ001, Hudson Bergen Light Rail Transit Extension Sowinski Sullivan was the architect tasked with developing conceptual designs for improved passenger circulation at Hoboken Terminal.	2018 – 2020	Angelo Aprile
16-006, Long Slip Project This project involved infilling a river slip and installing three high platforms.	2018 – Ongoing	James Lutz
16-015X, Elizabeth Station Sowinski Sullivan is the architect for the Elizabeth Station Reconstruction project.	2018 – Ongoing	Ed Blanco
15-031, Micro Grid Generator Project	2016 – Ongoing	Nick Marton
Hudson Bergen Light Rail Performance Assessments Sowinski Sullivan was the architect leading a performance review of the stations and shops of the Hudson Bergen Light Rail System.	2015 – 2018	Lew Morgan
19-019, Facility and Rail Inspection Projects	2014 – 2018	various
13-041, County Yard Improvements Sowinski Sullivan is the architect on a team for the expansion of the existing County Yard site in New Brunswick, New Jersey, which New Jersey Transit plans to acquire.	2014 – Ongoing	Edward Fang
Jersey Avenue Station Sowinski Sullivan is the architect for the replacement of the Jersey Avenue Station in South Brunswick, New Jersey.	2014 – Ongoing	Ed Blanco

PROJECT NAME & BRIEF DESCRIPTION	START/END DATES	PROJECT SUPERVISOR
Meadows Maintenance Facility Resiliency Improvements Sowinski Sullivan was the architect tasked with developing a damage assessment report which detailed the extent of damages throughout the complex caused water infiltration during Superstorm Sandy.	2014 – Ongoing	Kerry Donovan
Emergency Operations Center Sowinski Sullivan was part of a team for the New Jersey Transit (NJT) Emergency Operation Center (EOC). The team explored the construction of a joint-use facility to house an EOC and a Transit Operation Center (TOC) at three potential locations.	2014 –2017	Glenn Zuber
New Brunswick Station Sowinski Sullivan is the architect on a team for the new station at North Brunswick located along the "New Jersey Speedway" section of the Northeast Corridor (NEC).	2013 – Ongoing	Edward Fang
13-066, New Brunswick Station Platform Extension Sowinski Sullivan is the architect on a team for a platform extension at New Brunswick Station. The existing high-level platform to the west will be extended by 230-feet, providing level boarding access for two additional train cars.	2014 – Ongoing	Rafael Duran
Wesmont Station Sowinski Sullivan was the architect on a team of consultants that designed a new station to anchor transit-oriented development (TOD) that will span over 70 acres in Wood Ridge, New Jersey.	2010 – 2016	Roberson Edwards

WSP USA • 2 GATEWAY CENTER, 10TH FLOOR, NEWARK NJ 07102 • WWW.WSP.COM

REVISED COST PROPOSAL FOR

Final Design, Engineering and Other Technical Services Associated with the Newark Penn Station Distributed Generation (DG) Project

Request for Proposal No. 21-059 | April 27, 2022

Revised May 16, 2022



SUBMITTED TO:

NJTRANSIT
The Way To Go.®

SUBMITTED BY:

wsp

April 25, 2022
Revised May 16, 2022

Faith Blair - Acting Director, Contract Unit - Procurement Department
NJ TRANSIT
Procurement Department
One Penn Plaza East, 6th Floor
Newark, NJ 07105

Submitted electronically: fblair@njtransit.com

Re: Revised Cost Proposal for RFP No 21-059 - Newark Penn Station Distributed Generation (DG) Project

Dear Ms. Blair:

WSP USA Inc. (WSP) has prepared our cost proposal for the Newark Penn Station Distributed Generation (DG) Project, which has been prepared in accordance with NJ TRANSIT's request for a cost proposal letter dated April 20th, 2022, as well as your email from May 10th, 2022 with the instructions to add 300 as-directed hours to Task 11.

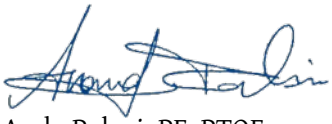
Enclosed in this package, you will find the following documentation:

- **Cost Proposal** (Exhibits 1 – 5)
- **Form A**
- **Form A1**
- **Form B** for our five DBE sub-consultants:
  - AmerCom Corporation
  - Mercer Planning Associates, LLC
  - Richard Grubb and Associates, Inc.
  - Sowinski Sullivan Architects, PC
  - Jersey Boring & Drilling Co., Inc.
- DBE Documentation / Certifications

Thank you for the opportunity to submit out cost proposal. WSP looks forward to working with NJ TRANSIT on this project. Should you have any questions regarding our cost proposal, please contact me at 609.512.3614 or andy.paluri@wsp.com.

Sincerely,

WSP USA Inc.



Andy Paluri, PE, PTOE
District Manager - Mid-Atlantic / Senior Vice President

WSP USA
Suite 1000
Two Gateway Center
Newark, NJ 07102

Tel.: +1 973 353-9100
wsp.com

Cost Proposal



COST AND FEE FIRM RECAP - TEAM SUMMARY

FIRM: WSP USA Inc.
(Prime Consultant Name)

	FIRM	PERSON HOURS	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD)	SUBTOTAL	FIXED FEE (PROFIT) @ 10%	DIRECT EXPENSES	TOTAL COST
Firm 1:	WSP USA Inc.	7,240	$ 467,067.82	$ 610,691.18	$ 1,077,759.00	$ 107,775.90	$ 83,136.47	$ 1,268,671.37
Firm 2:	Richard Grubb & Associates (DBE)	191	$ 7,445.02	$ 10,828.04	$ 18,273.06	$ 1,827.31	$ 550.00	$ 20,650.36
Firm 3:	AmerCom Corp. (DBE)	808	$ 39,028.20	$ 63,734.61	$ 102,762.81	$ 10,276.28	$ 250.00	$ 113,289.09
Firm 4:	Mercer Planning Assoc. (DBE)	345	$ 17,885.56	$ 18,064.42	$ 35,949.98	$ 3,595.00	$ 4,750.00	$ 44,294.97
Firm 5:	Sowinski Sullivan (DBE)	2,164	$ 86,727.02	$ 123,117.68	$ 209,844.70	$ 20,984.47	$ 3,406.15	$ 234,235.32
	TOTAL (TEAM)	10,748	$ 618,153.62	$ 826,435.92	$ 1,444,589.54	$ 144,458.95	$ 92,092.62	*$ 1,681,141.11*

DBE PARTICIPATION

		% OF TOTAL COST
Firm 2:	Richard Grubb & Associates (DBE)	1.23%
Firm 3:	AmerCom Corp. (DBE)	6.74%
Firm 4:	Mercer Planning Assoc. (DBE)	2.63%
Firm 5:	Sowinski Sullivan (DBE)	13.93%
	Jersey Boring & Drilling (DBE Vendor - 60% Counted)	1.78%
	TOTAL (DBE)	*26.32%*

COST AND FEE TASK RECAP - TEAM SUMMARY

FIRM: WSP USA Inc. TEAM (ALL FIRMS)

	TASK DESCRIPTION	PERSON HOURS	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD) @ ABC.DE%	SUBTOTAL	FIXED FEE (PROFIT) @ 10%	DIRECT EXPENSES	TOTAL COST
TASK 1	Project Management and Administration	1,085	$ 75,944.49	$ 100,107.04	$ 176,051.54	$ 17,605.15	$ 1,430.00	$ 195,086.69
TASK 2	Engineering	7,199	$ 390,184.62	$ 518,974.84	$ 909,159.46	$ 90,915.95	$ 83,833.87	$ 1,083,909.27
TASK 3	Cost Estimating	566	$ 29,304.72	$ 45,590.63	$ 74,895.35	$ 7,489.54	$ 250.00	$ 82,634.89
TASK 4	Risk Management	248	$ 17,652.36	$ 24,429.50	$ 42,081.87	$ 4,208.19	$ -	$ 46,290.06
TASK 5	System Safety and Security Management	35	$ 1,822.22	$ 2,382.55	$ 4,204.77	$ 420.48	$ -	$ 4,625.25
TASK 6	Public Involvement and Agency Coordination	415	$ 21,329.70	$ 24,047.32	$ 45,377.02	$ 4,537.70	$ 6,407.95	$ 56,322.67
TASK 7	Integration and Interface	220	$ 18,121.40	$ 23,693.73	$ 41,815.13	$ 4,181.51	$ -	$ 45,996.65
TASK 8	Constructability Reviews	302	$ 26,171.92	$ 36,084.48	$ 62,256.40	$ 6,225.64	$ -	$ 68,482.04
TASK 9	Contract Packaging	134	$ 7,546.35	$ 10,584.77	$ 18,131.12	$ 1,813.11	$ -	$ 19,944.23
TASK 10	Prep. and Subsequent Contract Bid Doc. Support	244	$ 12,846.96	$ 17,471.79	$ 30,318.75	$ 3,031.88	$ 170.80	$ 33,521.43
TASK 11	As directed by NJT	300	$ 17,228.88	$ 23,069.25	$ 40,298.13	$ 4,029.81	$ -	$ 44,327.94
	TOTAL (TEAM)	10,748	$ 618,153.62	$ 826,435.92	$ 1,444,589.54	$ 144,458.95	$ 92,092.62	*$ 1,681,141.11*

COST AND FEE TASK RECAP BY FIRM

FIRM: WSP USA Inc.

	TASK DESCRIPTION	PERSON HOURS	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD) @ 130.75%	SUBTOTAL	FIXED FEE (PROFIT) @ 10%	DIRECT EXPENSES	TOTAL COST
TASK 1	Project Management and Administration	864	$ 64,554.23	$ 84,404.66	$ 148,958.89	$ 14,895.89	$ 960.00	$ 164,814.78
TASK 2	Engineering	5,256	$ 313,846.50	$ 410,354.29	$ 724,200.79	$ 72,420.08	$ 82,176.47	$ 878,797.34
TASK 3	Cost Estimating	86	$ 6,958.12	$ 9,097.74	$ 16,055.86	$ 1,605.59	$ -	$ 17,661.44
TASK 4	Risk Management	144	$ 13,508.36	$ 17,662.19	$ 31,170.55	$ 3,117.06	$ -	$ 34,287.61
TASK 5	System Safety and Security Management	35	$ 1,822.22	$ 2,382.55	$ 4,204.77	$ 420.48	$ -	$ 4,625.25
TASK 6	Public Involvement and Agency Coordination	40	$ 3,184.90	$ 4,164.26	$ 7,349.16	$ 734.92	$ -	$ 8,084.08
TASK 7	Integration and Interface	220	$ 18,121.40	$ 23,693.73	$ 41,815.13	$ 4,181.51	$ -	$ 45,996.65
TASK 8	Constructability Reviews	222	$ 20,443.92	$ 26,730.43	$ 47,174.35	$ 4,717.43	$ -	$ 51,891.78
TASK 9	Contract Packaging	64	$ 4,832.75	$ 6,318.82	$ 11,151.56	$ 1,115.16	$ -	$ 12,266.72
TASK 10	Prep. and Subsequent Contract Bid Doc. Support	108	$ 6,830.92	$ 8,931.42	$ 15,762.34	$ 1,576.23	$ -	$ 17,338.58
TASK 11	As directed by NJT	201	$ 12,964.50	$ 16,951.08	$ 29,915.58	$ 2,991.56	$ -	$ 32,907.14
	TOTAL	7,240	$ 467,067.82	$ 610,691.18	$ 1,077,759.00	$ 107,775.90	$ 83,136.47	$ 1,268,671.37

COST AND FEE TASK RECAP BY FIRM

FIRM: Richard Grubb & Associates (DBE)

	TASK DESCRIPTION	PERSON HOURS	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD) @ 141%	SUBTOTAL	FIXED FEE (PROFIT) @ 10%	DIRECT EXPENSES	TOTAL COST
TASK 1	Project Management and Administration	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 2	Engineering	185	$ 7,211.20	$ 10,487.97	$ 17,699.17	$ 1,769.92	$ 550.00	$ 20,019.09
TASK 3	Cost Estimating	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 4	Risk Management	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 5	System Safety and Security Management	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 6	Public Involvement and Agency Coordination	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 7	Integration and Interface	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 8	Constructability Reviews	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 9	Contract Packaging	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 10	Prep. and Subsequent Contract Bid Doc. Support	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 11	As directed by NJT	6	$ 233.82	$ 340.07	$ 573.89	$ 57.39	$ -	$ 631.28
	TOTAL	191	$ 7,445.02	$ 10,828.04	$ 18,273.06	$ 1,827.31	$ 550.00	$ 20,650.36

COST AND FEE TASK RECAP BY FIRM

FIRM: AmerCom Corp. (DBE)

	TASK DESCRIPTION	PERSON HOURS	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD) @ 163.304%	SUBTOTAL	FIXED FEE (PROFIT) @ 10%	DIRECT EXPENSES	TOTAL COST
TASK 1	Project Management and Administration	80	$ 3,712.00	$ 6,061.84	$ 9,773.84	$ 977.38	$ -	$ 10,751.23
TASK 2	Engineering	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 3	Cost Estimating	480	$ 22,346.60	$ 36,492.89	$ 58,839.49	$ 5,883.95	$ 250.00	$ 64,973.44
TASK 4	Risk Management	104	$ 4,144.00	$ 6,767.32	$ 10,911.32	$ 1,091.13	$ -	$ 12,002.45
TASK 5	System Safety and Security Management	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 6	Public Involvement and Agency Coordination	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 7	Integration and Interface	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 8	Constructability Reviews	80	$ 5,728.00	$ 9,354.05	$ 15,082.05	$ 1,508.21	$ -	$ 16,590.26
TASK 9	Contract Packaging	40	$ 1,938.40	$ 3,165.48	$ 5,103.88	$ 510.39	$ -	$ 5,614.27
TASK 10	Prep. and Subsequent Contract Bid Doc. Support	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 11	As directed by NJT	24	$ 1,159.20	$ 1,893.02	$ 3,052.22	$ 305.22	$ -	$ 3,357.44
	TOTAL	808	$ 39,028.20	$ 63,734.61	$ 102,762.81	$ 10,276.28	$ 250.00	$ 113,289.09

COST AND FEE TASK RECAP BY FIRM

FIRM: Mercer Planning Assoc. (DBE)

	TASK DESCRIPTION	PERSON HOURS	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD) @ 101%	SUBTOTAL	FIXED FEE (PROFIT) @ 10%	DIRECT EXPENSES	TOTAL COST
TASK 1	Project Management and Administration	41	$ 3,075.00	$ 3,105.75	$ 6,180.75	$ 618.08	$ 50.00	$ 6,848.83
TASK 2	Engineering	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 3	Cost Estimating	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 4	Risk Management	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 5	System Safety and Security Management	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 6	Public Involvement and Agency Coordination	295	$ 14,344.00	$ 14,487.44	$ 28,831.44	$ 2,883.14	$ 4,700.00	$ 36,414.58
TASK 7	Integration and Interface	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 8	Constructability Reviews	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 9	Contract Packaging	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 10	Prep. and Subsequent Contract Bid Doc. Support	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 11	As directed by NJT	9	$ 466.56	$ 471.23	$ 937.79	$ 93.78	$ -	$ 1,031.56
	TOTAL	345	$ 17,885.56	$ 18,064.42	$ 35,949.98	$ 3,595.00	$ 4,750.00	$ 44,294.97

COST AND FEE TASK RECAP BY FIRM

FIRM: Sowinski Sullivan (DBE)

	TASK DESCRIPTION	PERSON HOURS	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD) @ 141.96%	SUBTOTAL	FIXED FEE (PROFIT) @ 10%	DIRECT EXPENSES	TOTAL COST
TASK 1	Project Management and Administration	100	$ 4,603.26	$ 6,534.79	$ 11,138.05	$ 1,113.80	$ 420.00	$ 12,671.85
TASK 2	Engineering	1,758	$ 69,126.92	$ 98,132.58	$ 167,259.50	$ 16,725.95	$ 1,107.40	$ 185,092.85
TASK 3	Cost Estimating	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 4	Risk Management	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 5	System Safety and Security Management	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 6	Public Involvement and Agency Coordination	80	$ 3,800.80	$ 5,395.62	$ 9,196.42	$ 919.64	$ 1,707.95	$ 11,824.01
TASK 7	Integration and Interface	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 8	Constructability Reviews	0	$ -	$ -	$ -	$ -	$ -	$ -
TASK 9	Contract Packaging	30	$ 775.20	$ 1,100.47	$ 1,875.67	$ 187.57	$ -	$ 2,063.24
TASK 10	Prep. and Subsequent Contract Bid Doc. Support	136	$ 6,016.04	$ 8,540.37	$ 14,556.41	$ 1,455.64	$ 170.80	$ 16,182.85
TASK 11	As directed by NJT	60	$ 2,404.80	$ 3,413.85	$ 5,818.65	$ 581.87	$ -	$ 6,400.52
	TOTAL	2,164	$ 86,727.02	$ 123,117.68	$ 209,844.70	$ 20,984.47	$ 3,406.15	$ 234,235.32

TASK 1: Project Management and Administration

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer		$ 55.40	$ -
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA		$ 68.15	$ -
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer		$ 60.99	$ -
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)		$ 72.57	$ -
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager	446	$ 79.62	$ 35,511.66
Paul Sullivan	Deputy Project Manager	86	$ 136.88	$ 11,771.57
Edrea Tan	QA/QC Manager	70	$ 51.26	$ 3,588.45
Jerry Portalatin	CADD Manager	80	$ 67.59	$ 5,406.84
Tara Simlick	Document Controls Manager	90	$ 37.25	$ 3,352.47
John Kalb	Scheduling Manager	60	$ 54.09	$ 3,245.35
Bob Bretz	Projectwise Manager	20	$ 60.12	$ 1,202.46
Patti Cormier	Contract Manager	12	$ 39.62	$ 475.44
Ragui Fahmy	Senior Director - Geotechnical		$ 105.53	$ -
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer		$ 48.80	$ -
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection		$ 68.98	$ -
John Bartell	WSP Engineer		$ 48.65	$ -

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	
TOTAL ESTIMATED HOURS		864		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 64,554.23
OVERHEAD @	130.75% OF BARE COST			$ 84,404.66
SUBTOTAL -- SALARY + OVERHEAD				$ 148,958.89
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 14,895.89
TOTAL LABOR				$ 163,854.78
DIRECT EXPENSES			$	
Itemize:	Travel		$ 600.00	
	Reproduction		$ 360.00	
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ 960.00
TOTAL THIS TASK				$ 164,814.78

TASK 2: Engineering

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer	164	$ 55.40	$ 9,086.18
Isabella Steiner	Assistant Civil Engineer	280	$ 34.81	$ 9,745.97
Rita Radzeviciene	CADD - Civil	112	$ 51.45	$ 5,762.38
Bruce Wattle	Air Quality Lead	32	$ 58.41	$ 1,868.96
Khamini Persaud	Air Quality Engineer	100	$ 42.87	$ 4,286.97
Erich Thalheimer	Lead Acoustical Engineer	92	$ 94.14	$ 8,661.21
Sam Pendyala	Senior Acoustical Engineer	40	$ 47.63	$ 1,905.23
Edward Tadross	Lead Environmental Scientist - Acoustics	44	$ 78.64	$ 3,460.13
Local Technician	Acoustical Field Assistant	28	$ 46.58	$ 1,304.10
Kevin Lim	Communications Lead	16	$ 102.24	$ 1,635.80
Shahid Mehmood	Senior Comms Engineer - SCADA	88	$ 68.15	$ 5,997.62
Amelia Ramnauth	Communications Engineer	144	$ 35.83	$ 5,159.76
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)	71	$ 78.66	$ 5,584.86
Brian Dastis	Lead Structural Engineer	184	$ 60.99	$ 11,222.63
Emanuele Morbidoni	Senior Structural Engineer	280	$ 51.66	$ 14,463.92
Isabel Weil	Assistant Structural Engineer	120	$ 34.51	$ 4,140.83
William Haggerty	Topo Survey Manager	58	$ 79.62	$ 4,618.11
Michael Beym	Topo Survey Coordinator	81	$ 39.46	$ 3,196.63
Antonio Stevens	Topo Surveyor	108	$ 36.33	$ 3,923.48
Arvind Kannan	Senior CAD Operator 2 - Topo	40	$ 56.89	$ 2,275.76
Rob Bury	Sr. Technical Manager (Mechanical)	104	$ 97.69	$ 10,160.14
Gordon Ng	Supervising Engineer (Mechanical)	160	$ 72.57	$ 11,611.87
Andrew Koch	Project Engineer II (Mechanical)	319	$ 46.33	$ 14,778.19
Melissa Poggi	Project Manager		$ 79.62	$ -
Paul Sullivan	Deputy Project Manager		$ 136.88	$ -
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical	151	$ 105.53	$ 15,934.82
Wanxing Liu	Engineer - Geotechnical	170	$ 70.39	$ 11,966.36
Jerry Chen	Engineer - Geotechnical	100	$ 51.15	$ 5,114.97
Harish Patel	Director - Mechanical Engineering	88	$ 99.10	$ 8,720.91
Michael Youssef	Mechanical Engineer	136	$ 48.80	$ 6,636.83
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection	56	$ 80.42	$ 4,503.49
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection	116	$ 68.98	$ 8,002.00
John Bartell	WSP Engineer	120	$ 48.65	$ 5,837.40

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer	108	$ 108.88	$ 11,759.26
Kerrine Bryan	Electrical Engineer	498	$ 68.94	$ 34,332.79
Ross Krupnik	Lead Electrical Engineer	318	$ 72.81	$ 23,154.30
Joe Lewkowicz	Jr. Electrical Engineer	730	$ 45.25	$ 33,032.65
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		5,256		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 313,846.50
OVERHEAD @	130.75% OF BARE COST			$ 410,354.29
SUBTOTAL -- SALARY + OVERHEAD				$ 724,200.79
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 72,420.08
TOTAL LABOR				$ 796,620.87
DIRECT EXPENSES			$	
Itemize:	Travel		$ 2,842.17	
	Reproduction		$ 173.50	
	Mailing/Federal Express			
	Materials			
	Traffic Control		$ 10,400.00	
	Police		$ 2,000.00	
	Survey Crew OT		$ 1,560.80	
	Geotechnical Laboratory		$ 3,500.00	
	SUE		$ 11,700.00	
	Jersey Boring & Drilling		$ 50,000.00	
TOTAL DIRECT EXPENSES				$ 82,176.47
TOTAL THIS TASK				$ 878,797.34

TASK 3: Cost Estimating

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer		$ 55.40	$ -
Isabella Steiner	Assistant Civil Engineer	8	$ 34.81	$ 278.46
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA	8	$ 68.15	$ 545.24
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer	8	$ 60.99	$ 487.94
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)	8	$ 72.57	$ 580.59
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager		$ 79.62	$ -
Paul Sullivan	Deputy Project Manager		$ 136.88	$ -
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Kwang Ro	Senior Tech Principal - Geotechnical		$ 114.81	$ -
Ragui Fahmy	Senior Director - Geotechnical		$ 105.53	$ -
Wanxing Liu	Engineer - Geotechnical	8	$ 70.39	$ 563.12
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer	8	$ 48.80	$ 390.40
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection		$ 68.98	$ -
John Bartell	WSP Engineer	8	$ 48.65	$ 389.16

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating	30	$ 124.11	$ 3,723.21
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		86		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 6,958.12
OVERHEAD @	130.75% OF BARE COST			$ 9,097.74
SUBTOTAL -- SALARY + OVERHEAD				$ 16,055.86
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,605.59
TOTAL LABOR				$ 17,661.44
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 17,661.44

TASK 4: Risk Management

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer	8	$ 55.40	$ 443.23
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead	4	$ 58.41	$ 233.62
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer	4	$ 94.14	$ 376.57
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA	4	$ 68.15	$ 272.62
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)	8	$ 78.66	$ 629.28
Brian Dastis	Lead Structural Engineer	4	$ 60.99	$ 243.97
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)	8	$ 97.69	$ 781.55
Gordon Ng	Supervising Engineer (Mechanical)	20	$ 72.57	$ 1,451.48
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager	16	$ 79.62	$ 1,273.96
Paul Sullivan	Deputy Project Manager	40	$ 136.88	$ 5,475.15
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical	4	$ 105.53	$ 422.11
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer	8	$ 48.80	$ 390.40
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection	8	$ 80.42	$ 643.36
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection		$ 68.98	$ -
John Bartell	WSP Engineer		$ 48.65	$ -

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer	8	$ 108.88	$ 871.06
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		144		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 13,508.36
OVERHEAD @	130.75% OF BARE COST			$ 17,662.19
SUBTOTAL -- SALARY + OVERHEAD				$ 31,170.55
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 3,117.06
TOTAL LABOR				$ 34,287.61
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Library			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 34,287.61

TASK 5: System Safety and Security Management

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer		$ 55.40	$ -
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA		$ 68.15	$ -
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist	25	$ 40.57	$ 1,014.30
Stephanie Sprague	Safety and Security QA	10	$ 80.79	$ 807.92
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer		$ 60.99	$ -
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)		$ 72.57	$ -
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager		$ 79.62	$ -
Paul Sullivan	Deputy Project Manager		$ 136.88	$ -
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical		$ 105.53	$ -
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer		$ 48.80	$ -
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection		$ 68.98	$ -
John Bartell	WSP Engineer		$ 48.65	$ -

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		35		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 1,822.22
OVERHEAD @	130.75% OF BARE COST			$ 2,382.55
SUBTOTAL -- SALARY + OVERHEAD				$ 4,204.77
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 420.48
TOTAL LABOR				$ 4,625.25
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 4,625.25

TASK 6: Public Involvement and Agency Coordination

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer		$ 55.40	$ -
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA		$ 68.15	$ -
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer		$ 60.99	$ -
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)		$ 72.57	$ -
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager	40	$ 79.62	$ 3,184.90
Paul Sullivan	Deputy Project Manager		$ 136.88	$ -
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical		$ 105.53	$ -
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer		$ 48.80	$ -
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection		$ 68.98	$ -
John Bartell	WSP Engineer		$ 48.65	$ -

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		40		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 3,184.90
OVERHEAD @	130.75% OF BARE COST			$ 4,164.26
SUBTOTAL -- SALARY + OVERHEAD				$ 7,349.16
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 734.92
TOTAL LABOR				$ 8,084.08
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 8,084.08

TASK 7: Integration and Interface

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer		$ 55.40	$ -
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA		$ 68.15	$ -
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer	8	$ 60.99	$ 487.94
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)	8	$ 72.57	$ 580.59
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager	40	$ 79.62	$ 3,184.90
Paul Sullivan	Deputy Project Manager	60	$ 136.88	$ 8,212.73
Edrea Tan	QA/QC Manager	80	$ 51.26	$ 4,101.08
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical		$ 105.53	$ -
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer		$ 48.80	$ -
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection		$ 68.98	$ -
John Bartell	WSP Engineer	8	$ 48.65	$ 389.16

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer	16	$ 72.81	$ 1,165.00
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		220		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 18,121.40
OVERHEAD @	130.75% OF BARE COST			$ 23,693.73
SUBTOTAL -- SALARY + OVERHEAD				$ 41,815.13
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 4,181.51
TOTAL LABOR				$ 45,996.65
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Support			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 45,996.65

TASK 8: Constructability Reviews

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer	8	$ 55.40	$ 443.23
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA	8	$ 68.15	$ 545.24
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Nadeem Sandhu	CADD - SCADA		$ 62.64	$ -
Christine Shaver	Safety and Security Manager		$ 89.57	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)	8	$ 78.66	$ 629.28
Brian Dastis	Lead Structural Engineer		$ 60.99	$ -
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)	8	$ 72.57	$ 580.59
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager	4	$ 79.62	$ 318.49
Paul Sullivan	Deputy Project Manager	4	$ 136.88	$ 547.52
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical	8	$ 105.53	$ 844.23
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer	8	$ 48.80	$ 390.40
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection	8	$ 68.98	$ 551.86
John Bartell	WSP Engineer		$ 48.65	$ -

Tom Marko	Construction Manager	120	$ 94.32	$ 11,318.35
Shamoun Mahgerefth	Sr. Director - Estimating	30	$ 124.11	$ 3,723.21
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer	8	$ 68.94	$ 551.53
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		222		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 20,443.92
OVERHEAD @	130.75% OF BARE COST			$ 26,730.43
SUBTOTAL -- SALARY + OVERHEAD				$ 47,174.35
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 4,717.43
TOTAL LABOR				$ 51,891.78
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 51,891.78

TASK 9: Contract Packaging

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer	4	$ 55.40	$ 221.61
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA	4	$ 68.15	$ 272.62
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer	4	$ 60.99	$ 243.97
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)	8	$ 97.69	$ 781.55
Gordon Ng	Supervising Engineer (Mechanical)		$ 72.57	$ -
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager	20	$ 79.62	$ 1,592.45
Paul Sullivan	Deputy Project Manager		$ 136.88	$ -
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical	4	$ 105.53	$ 422.11
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer	4	$ 48.80	$ 195.20
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection	4	$ 68.98	$ 275.93
John Bartell	WSP Engineer		$ 48.65	$ -

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer	12	$ 68.94	$ 827.30
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		64		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 4,832.75
OVERHEAD @	130.75% OF BARE COST			$ 6,318.82
SUBTOTAL -- SALARY + OVERHEAD				$ 11,151.56
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,115.16
TOTAL LABOR				$ 12,266.72
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 12,266.72

TASK 10: Prep. and Subsequent Contract Bid Doc. Support

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer	8	$ 55.40	$ 443.23
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Khamini Persaud	Air Quality Engineer	4	$ 42.87	$ 171.48
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA	4	$ 68.15	$ 272.62
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer	8	$ 60.99	$ 487.94
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)	16	$ 72.57	$ 1,161.19
Andrew Koch	Project Engineer II (Mechanical)	8	$ 46.33	$ 370.61
Melissa Poggi	Project Manager	12	$ 79.62	$ 955.47
Paul Sullivan	Deputy Project Manager		$ 136.88	$ -
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager	8	$ 37.25	$ 298.00
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Ragui Fahmy	Senior Director - Geotechnical		$ 105.53	$ -
Wanxing Liu	Engineer - Geotechnical	8	$ 70.39	$ 563.12
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer	8	$ 48.80	$ 390.40
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection	8	$ 68.98	$ 551.86
John Bartell	WSP Engineer		$ 48.65	$ -

Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer	16	$ 72.81	$ 1,165.00
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT		$ 64.50	$ -
TOTAL ESTIMATED HOURS		108		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 6,830.92
OVERHEAD @	130.75% OF BARE COST			$ 8,931.42
SUBTOTAL -- SALARY + OVERHEAD				$ 15,762.34
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,576.23
TOTAL LABOR				$ 17,338.58
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 17,338.58

TASK 11: As directed by NJT

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer		$ 55.40	$ -
Isabella Steiner	Assistant Civil Engineer		$ 34.81	$ -
Rita Radzeviciene	CADD - Civil		$ 51.45	$ -
Bruce Wattle	Air Quality Lead		$ 58.41	$ -
Sam Pendyala	Air Quality Engineer		$ 47.63	$ -
Khamini Persaud	Air Quality Engineer		$ 42.87	$ -
Erich Thalheimer	Lead Acoustical Engineer		$ 94.14	$ -
Jacob Poling	Senior Acoustical Engineer		$ 61.84	$ -
Sam Pendyala	Senior Acoustical Engineer		$ 47.63	$ -
Edward Tadross	Lead Environmental Scientist - Acoustics		$ 78.64	$ -
Local Technician	Acoustical Field Assistant		$ 46.58	$ -
Kevin Lim	Communications Lead		$ 102.24	$ -
Shahid Mehmood	Senior Comms Engineer - SCADA		$ 68.15	$ -
Mostafa Fetouh	Senior Comms Engineer		$ 62.13	$ -
Amelia Ramnauth	Communications Engineer		$ 35.83	$ -
Nadeem Sandhu	CADD - SCADA		$ 62.64	$ -
Christine Shaver	Safety and Security Manager		$ 89.57	$ -
Brittany Johnson	Safety and Security Specialist		$ 40.57	$ -
Stephanie Sprague	Safety and Security QA		$ 80.79	$ -
Claudio Vescio	Supervising Engineer (Structural)		$ 78.66	$ -
Brian Dastis	Lead Structural Engineer		$ 60.99	$ -
Emanuele Morbidoni	Senior Structural Engineer		$ 51.66	$ -
Isabel Weil	Assistant Structural Engineer		$ 34.51	$ -
William Haggerty	Topo Survey Manager		$ 79.62	$ -
Michael Beym	Topo Survey Coordinator		$ 39.46	$ -
Thomas Drumm	Topo Surveyor		$ 46.23	$ -
Antonio Stevens	Topo Surveyor		$ 36.33	$ -
Ian St. Hilaire	Topo Survey Manager		$ 67.71	$ -
Arvind Kannan	Senior CAD Operator 2 - Topo		$ 56.89	$ -
Rob Bury	Sr. Technical Manager (Mechanical)		$ 97.69	$ -
Gordon Ng	Supervising Engineer (Mechanical)		$ 72.57	$ -
Andrew Koch	Project Engineer II (Mechanical)		$ 46.33	$ -
Melissa Poggi	Project Manager		$ 79.62	$ -
Paul Sullivan	Deputy Project Manager		$ 136.88	$ -
Edrea Tan	QA/QC Manager		$ 51.26	$ -
Jerry Portalatin	CADD Manager		$ 67.59	$ -
Tara Simlick	Document Controls Manager		$ 37.25	$ -
John Kalb	Scheduling Manager		$ 54.09	$ -
Bob Bretz	Projectwise Manager		$ 60.12	$ -
Patti Cormier	Contract Manager		$ 39.62	$ -
Kwang Ro	Senior Tech Principal - Geotechnical		$ 114.81	$ -
Ragui Fahmy	Senior Director - Geotechnical		$ 105.53	$ -
Wanxing Liu	Engineer - Geotechnical		$ 70.39	$ -
Jerry Chen	Engineer - Geotechnical		$ 51.15	$ -
Harish Patel	Director - Mechanical Engineering		$ 99.10	$ -
Michael Youssef	Mechanical Engineer		$ 48.80	$ -
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection		$ 80.42	$ -

Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection		$ 68.98	$ -
John Bartell	WSP Engineer		$ 48.65	$ -
CADD - Plumb/FP	WSP CADD Plumbing & Fire Protection		$ 37.26	$ -
Alan Thompson	WSP QA/QC - Plumbing & Fire Protection		$ 78.67	$ -
Tom Marko	Construction Manager		$ 94.32	$ -
Shamoun Mahgerefth	Sr. Director - Estimating		$ 124.11	$ -
Ambrish Desai	Supervising Electrical Engineer		$ 108.88	$ -
Kerrine Bryan	Electrical Engineer		$ 68.94	$ -
Ross Krupnik	Lead Electrical Engineer		$ 72.81	$ -
Joe Lewkowicz	Jr. Electrical Engineer		$ 45.25	$ -
As Directed	As Directed by NJT	201	$ 64.50	$ 12,964.50
TOTAL ESTIMATED HOURS		201		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 12,964.50
OVERHEAD @	130.75% OF BARE COST			$ 16,951.08
SUBTOTAL -- SALARY + OVERHEAD				$ 29,915.58
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 2,991.56
TOTAL LABOR				$ 32,907.14
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
	Traffic Control			
	Police			
	Survey Crew OT			
	Geotechnical Laboratory			
	SUE			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 32,907.14

TOTAL SUMMARY

FIRM: WSP USA Inc.

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Athanasios Georgiadis	Senior Civil Engineer	192	$ 55.40	$ 10,637.48
Isabella Steiner	Assistant Civil Engineer	288	$ 34.81	$ 10,024.43
Rita Radzeviciene	CADD - Civil	112	$ 51.45	$ 5,762.38
Bruce Wattle	Air Quality Lead	36	$ 58.41	$ 2,102.58
Khamini Persaud	Air Quality Engineer	104	$ 42.87	$ 4,458.45
Erich Thalheimer	Lead Acoustical Engineer	96	$ 94.14	$ 9,037.79
Sam Pendyala	Senior Acoustical Engineer	40	$ 47.63	$ 1,905.23
Edward Tadross	Lead Environmental Scientist - Acoustics	44	$ 78.64	$ 3,460.13
Local Technician	Acoustical Field Assistant	28	$ 46.58	$ 1,304.10
Kevin Lim	Communications Lead	16	$ 102.24	$ 1,635.80
Shahid Mehmood	Senior Comms Engineer - SCADA	116	$ 68.15	$ 7,905.95
Amelia Ramnauth	Communications Engineer	144	$ 35.83	$ 5,159.76
Brittany Johnson	Safety and Security Specialist	25	$ 40.57	$ 1,014.30
Stephanie Sprague	Safety and Security QA	10	$ 80.79	$ 807.92
Claudio Vescio	Supervising Engineer (Structural)	87	$ 78.66	$ 6,843.42
Brian Dastis	Lead Structural Engineer	216	$ 60.99	$ 13,174.39
Emanuele Morbidoni	Senior Structural Engineer	280	$ 51.66	$ 14,463.92
Isabel Weil	Assistant Structural Engineer	120	$ 34.51	$ 4,140.83
William Haggerty	Topo Survey Manager	58	$ 79.62	$ 4,618.11
Michael Beym	Topo Survey Coordinator	81	$ 39.46	$ 3,196.63
Antonio Stevens	Topo Surveyor	108	$ 36.33	$ 3,923.48
Arvind Kannan	Senior CAD Operator 2 - Topo	40	$ 56.89	$ 2,275.76
Rob Bury	Sr. Technical Manager (Mechanical)	120	$ 97.69	$ 11,723.24
Gordon Ng	Supervising Engineer (Mechanical)	220	$ 72.57	$ 15,966.32
Andrew Koch	Project Engineer II (Mechanical)	327	$ 46.33	$ 15,148.80
Melissa Poggi	Project Manager	578	$ 79.62	$ 46,021.83
Paul Sullivan	Deputy Project Manager	190	$ 136.88	$ 26,006.96
Edrea Tan	QA/QC Manager	150	$ 51.26	$ 7,689.53
Jerry Portalatin	CADD Manager	80	$ 67.59	$ 5,406.84
Tara Simlick	Document Controls Manager	98	$ 37.25	$ 3,650.47
John Kalb	Scheduling Manager	60	$ 54.09	$ 3,245.35
Bob Bretz	Projectwise Manager	20	$ 60.12	$ 1,202.46
Patti Cormier	Contract Manager	12	$ 39.62	$ 475.44
Ragui Fahmy	Senior Director - Geotechnical	167	$ 105.53	$ 17,623.28
Wanxing Liu	Engineer - Geotechnical	186	$ 70.39	$ 13,092.61
Jerry Chen	Engineer - Geotechnical	100	$ 51.15	$ 5,114.97
Harish Patel	Director - Mechanical Engineering	88	$ 99.10	$ 8,720.91
Michael Youssef	Mechanical Engineer	172	$ 48.80	$ 8,393.64
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection	64	$ 80.42	$ 5,146.85
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection	136	$ 68.98	$ 9,381.65
John Bartell	WSP Engineer	136	$ 48.65	$ 6,615.72

Tom Marko	Construction Manager	120	$ 94.32	$ 11,318.35
Shamoun Mahgerefth	Sr. Director - Estimating	60	$ 124.11	$ 7,446.41
Ambrish Desai	Supervising Electrical Engineer	116	$ 108.88	$ 12,630.31
Kerrine Bryan	Electrical Engineer	518	$ 68.94	$ 35,711.62
Ross Krupnik	Lead Electrical Engineer	350	$ 72.81	$ 25,484.29
Joe Lewkowicz	Jr. Electrical Engineer	730	$ 45.25	$ 33,032.65
As Directed	As Directed by NJT	201	$ 64.50	$ 12,964.50
TOTAL ESTIMATED HOURS		7,240		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 467,067.82
OVERHEAD @	130.75% OF BARE COST			$ 610,691.18
SUBTOTAL -- SALARY + OVERHEAD				$ 1,077,759.00
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 107,775.90
TOTAL LABOR				$ 1,185,534.90
DIRECT EXPENSES			$	
Itemize:	Travel		$ 3,442.17	
	Reproduction		$ 533.50	
	Mailing/Federal Express		$ -	
	Materials		$ -	
	Traffic Control		$ 10,400.00	
	Police		$ 2,000.00	
	Survey Crew OT		$ 1,560.80	
	Geotechnical Laboratory		$ 3,500.00	
	SUE		$ 11,700.00	
	Jersey Boring & Drilling		$ 50,000.00	
TOTAL DIRECT EXPENSES				$ 83,136.47
TOTAL SUMMARY				$ 1,268,671.37

TASK 2: Engineering

FIRM: Richard Grubb & Associates (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Richard Grubb	Director	1	$ 62.00	$ 62.00
Paul McEachen	Principal Sr. Archaeologist	8	$ 50.00	$ 400.00
Allison McGovern	Sr. Archaeologist	76	$ 38.00	$ 2,888.00
Alison Gall	Archaeologist	12	$ 27.00	$ 324.00
Patricia McEachen	Drafter	16	$ 26.70	$ 427.20
Cathy Smyrski	Editor	8	$ 28.75	$ 230.00
John Stiteler	Geomorphologist	64	$ 45.00	$ 2,880.00
As Directed	As Directed by NJT		$ 38.97	$ -
TOTAL ESTIMATED HOURS		185		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 7,211.20
OVERHEAD @	145.44% OF BARE COST			$ 10,487.97
SUBTOTAL -- SALARY + OVERHEAD				$ 17,699.17
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,769.92
TOTAL LABOR				$ 19,469.09
DIRECT EXPENSES			$	
Itemize:	Travel		$ 500.00	
	Reproduction			
	Mailing/Federal Express		$ 50.00	
	Materials			
TOTAL DIRECT EXPENSES				$ 550.00
TOTAL THIS TASK				$ 20,019.09

TASK 11: As directed by NJT

FIRM: Richard Grubb & Associates (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Richard Grubb	Director		$ 62.00	$ -
Paul McEachen	Principal Sr. Archaeologist		$ 50.00	$ -
Allison McGovern	Sr. Archaeologist		$ 38.00	$ -
Alison Gall	Archaeologist		$ 27.00	$ -
Patricia McEachen	Drafter		$ 26.70	$ -
Cathy Smyrski	Editor		$ 28.75	$ -
John Stiteler	Geomorphologist		$ 45.00	$ -
As Directed	As Directed by NJT	6	$ 38.97	$ 233.82
TOTAL ESTIMATED HOURS		6		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 233.82
OVERHEAD @	145.44% OF BARE COST			$ 340.07
SUBTOTAL -- SALARY + OVERHEAD				$ 573.89
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 57.39
TOTAL LABOR				$ 631.28
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 631.28

TOTAL SUMMARY

FIRM: Richard Grubb & Associates (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Richard Grubb	Director	1	$ 62.00	$ 62.00
Paul McEachen	Principal Sr. Archaeologist	8	$ 50.00	$ 400.00
Allison McGovern	Sr. Archaeologist	76	$ 38.00	$ 2,888.00
Alison Gall	Archaeologist	12	$ 27.00	$ 324.00
Patricia McEachen	Drafter	16	$ 26.70	$ 427.20
Cathy Smyrski	Editor	8	$ 28.75	$ 230.00
John Stiteler	Geomorphologist	64	$ 45.00	$ 2,880.00
TOTAL ESTIMATED HOURS		191		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 7,445.02
OVERHEAD @	145.44% OF BARE COST			$ 10,828.04
SUBTOTAL -- SALARY + OVERHEAD				$ 18,273.06
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,827.31
TOTAL LABOR				$ 20,100.36
DIRECT EXPENSES			$	
Itemize:	Travel		$ 500.00	
	Reproduction		$ -	
	Mailing/Federal Express		$ 50.00	
	Materials		$ -	
TOTAL DIRECT EXPENSES				$ 550.00
TOTAL SUMMARY				$ 20,650.36

TASK 1: Project Management and Administration

FIRM: AmerCom Corp. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Chris Bacchus	Senior Engineer - PIII		$ 50.80	$ -
Mike Marino	Senior Engineer - PIII		$ 48.46	$ -
Dan Chiang	Junior Engineer - PI		$ 33.00	$ -
John Accetta	Senior Engineer - PIII	80	$ 46.40	$ 3,712.00
Robert Brazer	Resident Engineer/Project Engineer- PV		$ 71.60	$ -
As Directed	As Directed by NJT		$ 48.30	$ -
TOTAL ESTIMATED HOURS		80		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 3,712.00
OVERHEAD @	163.30% OF BARE COST			$ 6,061.84
SUBTOTAL -- SALARY + OVERHEAD				$ 9,773.84
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 977.38
TOTAL LABOR				$ 10,751.23
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 10,751.23

TASK 3: Cost Estimating

FIRM: AmerCom Corp. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Chris Bacchus	Senior Engineer - PIII	270	$ 50.80	$ 13,716.00
Mike Marino	Senior Engineer - PIII	110	$ 48.46	$ 5,330.60
Dan Chiang	Junior Engineer - PI	100	$ 33.00	$ 3,300.00
John Accetta	Senior Engineer - PIII		$ 46.40	$ -
Robert Brazer	Resident Engineer/Project Engineer- PV		$ 71.60	$ -
As Directed	As Directed by NJT		$ 48.30	$ -
TOTAL ESTIMATED HOURS		480		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 22,346.60
OVERHEAD @	163.30% OF BARE COST			$ 36,492.89
SUBTOTAL -- SALARY + OVERHEAD				$ 58,839.49
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 5,883.95
TOTAL LABOR				$ 64,723.44
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express		$ 250.00	
	Materials			
TOTAL DIRECT EXPENSES				$ 250.00
TOTAL THIS TASK				$ 64,973.44

TASK 4: Risk Management

FIRM: AmerCom Corp. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Chris Bacchus	Senior Engineer - PIII	40	$ 50.80	$ 2,032.00
Mike Marino	Senior Engineer - PIII		$ 48.46	$ -
Dan Chiang	Junior Engineer - PI	64	$ 33.00	$ 2,112.00
John Accetta	Senior Engineer - PIII		$ 46.40	$ -
Robert Brazer	Resident Engineer/Project Engineer- PV		$ 71.60	$ -
As Directed	As Directed by NJT		$ 48.30	$ -
TOTAL ESTIMATED HOURS		104		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 4,144.00
OVERHEAD @	163.30% OF BARE COST			$ 6,767.32
SUBTOTAL -- SALARY + OVERHEAD				$ 10,911.32
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,091.13
TOTAL LABOR				$ 12,002.45
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 12,002.45

TASK 8: Constructability Reviews

FIRM: AmerCom Corp. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Chris Bacchus	Senior Engineer - PIII		$ 50.80	$ -
Mike Marino	Senior Engineer - PIII		$ 48.46	$ -
Dan Chiang	Junior Engineer - PI		$ 33.00	$ -
John Accetta	Senior Engineer - PIII		$ 46.40	$ -
Robert Brazer	Resident Engineer/Project Engineer- PV	80	$ 71.60	$ 5,728.00
As Directed	As Directed by NJT		$ 48.30	$ -
TOTAL ESTIMATED HOURS		80		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 5,728.00
OVERHEAD @	163.30% OF BARE COST			$ 9,354.05
SUBTOTAL -- SALARY + OVERHEAD				$ 15,082.05
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,508.21
TOTAL LABOR				$ 16,590.26
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 16,590.26

TASK 9: Contract Packaging

FIRM: AmerCom Corp. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Chris Bacchus	Senior Engineer - PIII		$ 50.80	$ -
Mike Marino	Senior Engineer - PIII	40	$ 48.46	$ 1,938.40
Dan Chiang	Junior Engineer - PI		$ 33.00	$ -
John Accetta	Senior Engineer - PIII		$ 46.40	$ -
Robert Brazer	Resident Engineer/Project Engineer- PV		$ 71.60	$ -
As Directed	As Directed by NJT		$ 48.30	$ -
TOTAL ESTIMATED HOURS		40		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 1,938.40
OVERHEAD @	163.30% OF BARE COST			$ 3,165.48
SUBTOTAL -- SALARY + OVERHEAD				$ 5,103.88
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 510.39
TOTAL LABOR				$ 5,614.27
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 5,614.27

TASK 11: As directed by NJT

FIRM: AmerCom Corp. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Chris Bacchus	Senior Engineer - PIII		$ 50.80	$ -
Mike Marino	Senior Engineer - PIII		$ 48.46	$ -
Dan Chiang	Junior Engineer - PI		$ 33.00	$ -
John Accetta	Senior Engineer - PIII		$ 46.40	$ -
Robert Brazer	Resident Engineer/Project Engineer- PV		$ 71.60	$ -
As Directed	As Directed by NJT	24	$ 48.30	$ 1,159.20
TOTAL ESTIMATED HOURS		24		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 1,159.20
OVERHEAD @	163.30% OF BARE COST			$ 1,893.02
SUBTOTAL -- SALARY + OVERHEAD				$ 3,052.22
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 305.22
TOTAL LABOR				$ 3,357.44
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 3,357.44

TOTAL SUMMARY

FIRM: AmerCom Corp. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Chris Bacchus	Senior Engineer - PIII	310	$ 50.80	$ 15,748.00
Mike Marino	Senior Engineer - PIII	150	$ 48.46	$ 7,269.00
Dan Chiang	Junior Engineer - PI	164	$ 33.00	$ 5,412.00
John Accetta	Senior Engineer - PIII	80	$ 46.40	$ 3,712.00
Robert Brazer	Resident Engineer/Project Engineer- PV	80	$ 71.60	$ 5,728.00
As Directed	As Directed by NJT	24	$ 48.30	$ 1,159.20
TOTAL ESTIMATED HOURS		808		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 39,028.20
OVERHEAD @	163.30% OF BARE COST			$ 63,734.61
SUBTOTAL -- SALARY + OVERHEAD				$ 102,762.81
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 10,276.28
TOTAL LABOR				$ 113,039.09
DIRECT EXPENSES			$	
Itemize:	Travel		$ -	
	Reproduction		$ -	
	Mailing/Federal Express		$ 250.00	
	Materials: Renderings		$ -	
TOTAL DIRECT EXPENSES				$ 250.00
TOTAL SUMMARY				$ 113,289.09

TASK 1: Project Management and Administration

FIRM: Mercer Planning Assoc. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Courtenay Mercer	Principal-In-Charge	41	$ 75.00	$ 3,075.00
Cailean Kok	Senior Planner	0	$ 45.00	$ -
Nieves Pimienta	Senior Communications Associate	0	$ 42.00	$ -
TBD	Intern	0	$ 17.50	$ -
As Directed	As Directed by NJT		$ 51.84	$ -
TOTAL ESTIMATED HOURS		41		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 3,075.00
OVERHEAD @	101.00% OF BARE COST			$ 3,105.75
SUBTOTAL -- SALARY + OVERHEAD				$ 6,180.75
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 618.08
TOTAL LABOR				$ 6,798.83
DIRECT EXPENSES			$	
Itemize:	Travel		$ 50.00	
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ 50.00
TOTAL THIS TASK				$ 6,848.83

TASK 6: Public Involvement and Agency Coordination

FIRM: Mercer Planning Assoc. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Courtenay Mercer	Principal-In-Charge	67	$ 75.00	$ 5,025.00
Cailean Kok	Senior Planner	143	$ 45.00	$ 6,435.00
Nieves Pimienta	Senior Communications Associate	57	$ 42.00	$ 2,394.00
TBD	Intern	28	$ 17.50	$ 490.00
As Directed	As Directed by NJT		$ 51.84	$ -
TOTAL ESTIMATED HOURS		295		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 14,344.00
OVERHEAD @	101.00% OF BARE COST			$ 14,487.44
SUBTOTAL -- SALARY + OVERHEAD				$ 28,831.44
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 2,883.14
TOTAL LABOR				$ 31,714.58
DIRECT EXPENSES			$	
Itemize:	Travel		$ 200.00	
	Reproduction		$ 1,000.00	
	Mailing/Federal Express		$ -	
	Materials (Translation Services)		$ 3,500.00	
TOTAL DIRECT EXPENSES				$ 4,700.00
TOTAL THIS TASK				$ 36,414.58

TASK 11: As directed by NJT

FIRM: Mercer Planning Assoc. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Courtenay Mercer	Principal-In-Charge		$ 75.00	$ -
Cailean Kok	Senior Planner		$ 45.00	$ -
Nieves Pimienta	Senior Communications Associate		$ 42.00	$ -
TBD	Intern		$ 17.50	$ -
As Directed	As Directed by NJT	9	$ 51.84	$ 466.56
TOTAL ESTIMATED HOURS		9		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 466.56
OVERHEAD @	101.00% OF BARE COST			$ 471.23
SUBTOTAL -- SALARY + OVERHEAD				$ 937.79
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 93.78
TOTAL LABOR				$ 1,031.56
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 1,031.56

TOTAL SUMMARY

FIRM: Mercer Planning Assoc. (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Courtenay Mercer	Principal-In-Charge	108	$ 75.00	$ 8,100.00
Cailean Kok	Senior Planner	143	$ 45.00	$ 6,435.00
Nieves Pimienta	Senior Communications Associate	57	$ 42.00	$ 2,394.00
TBD	Intern	28	$ 17.50	$ 490.00
TOTAL ESTIMATED HOURS		345		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 17,885.56
OVERHEAD @	101.00% OF BARE COST			$ 18,064.42
SUBTOTAL -- SALARY + OVERHEAD				$ 35,949.98
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 3,595.00
TOTAL LABOR				$ 39,544.97
DIRECT EXPENSES			$	
Itemize:	Travel		$ 250.00	
	Reproduction		$ 1,000.00	
	Mailing/Federal Express		$ -	
	Materials		$ 3,500.00	
TOTAL DIRECT EXPENSES				$ 4,750.00
TOTAL SUMMARY				$ 44,294.97

TASK 1: Project Management and Administration

FIRM: Sowinski Sullivan (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Malik Basnight	Architect I		$ 23.02	$ -
Marc Giangreco	Architect II	10	$ 25.84	$ 258.40
Jeffrey Sroka	Architect III	24	$ 33.60	$ 806.40
Adrienne Arthur	Architect IV	28	$ 38.39	$ 1,074.92
Alexander Carlson	Architect V	32	$ 50.31	$ 1,609.92
Lee Boyce	Architect VI		$ 62.68	$ -
Brandon Coles	Architect VII		$ 73.62	$ -
Richard Sullivan	Architect VIII	6	$ 142.27	$ 853.62
As Directed	As Directed by NJT		$ 40.08	$ -
TOTAL ESTIMATED HOURS		100		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 4,603.26
OVERHEAD @	141.96% OF BARE COST			$ 6,534.79
SUBTOTAL -- SALARY + OVERHEAD				$ 11,138.05
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,113.80
TOTAL LABOR				$ 12,251.85
DIRECT EXPENSES			$	
Itemize:	Travel		$ 420.00	
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ 420.00
TOTAL THIS TASK				$ 12,671.85

TASK 2: Engineering

FIRM: Sowinski Sullivan (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Malik Basnight	Architect I	252	$ 23.02	$ 5,801.04
Marc Giangreco	Architect II	370	$ 25.84	$ 9,560.80
Jeffrey Sroka	Architect III	432	$ 33.60	$ 14,515.20
Adrienne Arthur	Architect IV	328	$ 38.39	$ 12,591.92
Alexander Carlson	Architect V	216	$ 50.31	$ 10,866.96
Lee Boyce	Architect VI	60	$ 62.68	$ 3,760.80
Brandon Coles	Architect VII	32	$ 73.62	$ 2,355.84
Richard Sullivan	Architect VIII	68	$ 142.27	$ 9,674.36
As Directed	As Directed by NJT		$ 40.08	$ -
TOTAL ESTIMATED HOURS		1,758		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 69,126.92
OVERHEAD @	141.96% OF BARE COST			$ 98,132.58
SUBTOTAL -- SALARY + OVERHEAD				$ 167,259.50
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 16,725.95
TOTAL LABOR				$ 183,985.45
DIRECT EXPENSES			$	
Itemize:	Travel		$ 341.59	
	Reproduction		$ 765.81	
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ 1,107.40
TOTAL THIS TASK				$ 185,092.85

TASK 6: Public Involvement and Agency Coordination

FIRM: Sowinski Sullivan (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Malik Basnight	Architect I	12	$ 23.02	$ 276.24
Marc Giangreco	Architect II		$ 25.84	$ -
Jeffrey Sroka	Architect III		$ 33.60	$ -
Adrienne Arthur	Architect IV	30	$ 38.39	$ 1,151.70
Alexander Carlson	Architect V	30	$ 50.31	$ 1,509.30
Lee Boyce	Architect VI		$ 62.68	$ -
Brandon Coles	Architect VII	4	$ 73.62	$ 294.48
Richard Sullivan	Architect VIII	4	$ 142.27	$ 569.08
As Directed	As Directed by NJT		$ 40.08	$ -
TOTAL ESTIMATED HOURS		80		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY

TOTAL SALARY (BARE COST)				$ 3,800.80
OVERHEAD @	141.96% OF BARE COST			$ 5,395.62
SUBTOTAL -- SALARY + OVERHEAD				$ 9,196.42
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 919.64
TOTAL LABOR				$ 10,116.06
DIRECT EXPENSES			$	
Itemize:	Travel		$ 1,707.95	
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ 1,707.95
TOTAL THIS TASK				$ 11,824.01

TASK 9: Contract Packaging

FIRM: Sowinski Sullivan (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Malik Basnight	Architect I		$ 23.02	$ -
Marc Giangreco	Architect II	30	$ 25.84	$ 775.20
Jeffrey Sroka	Architect III		$ 33.60	$ -
Adrienne Arthur	Architect IV		$ 38.39	$ -
Alexander Carlson	Architect V		$ 50.31	$ -
Lee Boyce	Architect VI		$ 62.68	$ -
Brandon Coles	Architect VII		$ 73.62	$ -
Richard Sullivan	Architect VIII		$ 142.27	$ -
As Directed	As Directed by NJT		$ 40.08	$ -
TOTAL ESTIMATED HOURS		30		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 775.20
OVERHEAD @	141.96% OF BARE COST			$ 1,100.47
SUBTOTAL -- SALARY + OVERHEAD				$ 1,875.67
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 187.57
TOTAL LABOR				$ 2,063.24
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 2,063.24

TASK 10: Prep. and Subsequent Contract Bid Doc. Support

FIRM: Sowinski Sullivan (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Malik Basnight	Architect I	0	$ 23.02	$ -
Marc Giangreco	Architect II	0	$ 25.84	$ -
Jeffrey Sroka	Architect III	60	$ 33.60	$ 2,016.00
Adrienne Arthur	Architect IV	40	$ 38.39	$ 1,535.60
Alexander Carlson	Architect V	16	$ 50.31	$ 804.96
Lee Boyce	Architect VI	8	$ 62.68	$ 501.44
Brandon Coles	Architect VII	8	$ 73.62	$ 588.96
Richard Sullivan	Architect VIII	4	$ 142.27	$ 569.08
As Directed	As Directed by NJT		$ 40.08	$ -
TOTAL ESTIMATED HOURS		136		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 6,016.04
OVERHEAD @	141.96% OF BARE COST			$ 8,540.37
SUBTOTAL -- SALARY + OVERHEAD				$ 14,556.41
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 1,455.64
TOTAL LABOR				$ 16,012.05
DIRECT EXPENSES			$	
Itemize:	Travel		$ 170.80	
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ 170.80
TOTAL THIS TASK				$ 16,182.85

TASK 11: As directed by NJT

FIRM: Sowinski Sullivan (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Malik Basnight	Architect I		$ 23.02	$ -
Marc Giangreco	Architect II		$ 25.84	$ -
Jeffrey Sroka	Architect III		$ 33.60	$ -
Adrienne Arthur	Architect IV		$ 38.39	$ -
Alexander Carlson	Architect V		$ 50.31	$ -
Lee Boyce	Architect VI		$ 62.68	$ -
Brandon Coles	Architect VII		$ 73.62	$ -
Richard Sullivan	Architect VIII		$ 142.27	$ -
As Directed	As Directed by NJT	60	$ 40.08	$ 2,404.80
TOTAL ESTIMATED HOURS		60		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 2,404.80
OVERHEAD @	141.96% OF BARE COST			$ 3,413.85
SUBTOTAL -- SALARY + OVERHEAD				$ 5,818.65
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 581.87
TOTAL LABOR				$ 6,400.52
DIRECT EXPENSES			$	
Itemize:	Travel			
	Reproduction			
	Mailing/Federal Express			
	Materials			
TOTAL DIRECT EXPENSES				$ -
TOTAL THIS TASK				$ 6,400.52

TOTAL SUMMARY

FIRM: Sowinski Sullivan (DBE)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Malik Basnight	Architect I	264	$ 23.02	$ 6,077.28
Marc Giangreco	Architect II	410	$ 25.84	$ 10,594.40
Jeffrey Sroka	Architect III	516	$ 33.60	$ 17,337.60
Adrienne Arthur	Architect IV	426	$ 38.39	$ 16,354.14
Alexander Carlson	Architect V	294	$ 50.31	$ 14,791.14
Lee Boyce	Architect VI	68	$ 62.68	$ 4,262.24
Brandon Coles	Architect VII	44	$ 73.62	$ 3,239.28
Richard Sullivan	Architect VIII	82	$ 142.27	$ 11,666.14
As Directed	As Directed by NJT	60	$ 40.08	$ 2,404.80
TOTAL ESTIMATED HOURS		2,164		

SUPPORT STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
TOTAL ESTIMATED HOURS		0		

TOTAL SALARY (BARE COST)				$ 86,727.02
OVERHEAD @	141.96% OF BARE COST			$ 123,117.68
SUBTOTAL -- SALARY + OVERHEAD				$ 209,844.70
FIXED FEE @	10% OF BARE COST + OVERHEAD			$ 20,984.47
TOTAL LABOR				$ 230,829.17
DIRECT EXPENSES			$	
Itemize:	Travel		$ 2,640.34	
	Reproduction		$ 765.81	
	Mailing/Federal Express		$ -	
	Materials		$ -	
TOTAL DIRECT EXPENSES				$ 3,406.15
TOTAL SUMMARY				$ 234,235.32

STAFFING SCHEDULE BY FIRM

FIRM: WSP USA, Inc. TEAM (ALL FIRMS)

STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	HOURLY RATE	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	TASK 11	TOTAL	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD)	FIXED FEE (PROFIT) @	TOTAL LABOR COST
		$	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	$		10.00%	$
Athanasios Georgiadis	Senior Civil Engineer	$ 55.40	-	164	-	8	-	-	-	8	4	8	-	192	$ 10,637.48	$ 13,908.51	$ 2,454.60	$ 27,000.59
Isabella Steiner	Assistant Civil Engineer	$ 34.81	-	280	8	-	-	-	-	-	-	-	-	288	$ 10,024.43	$ 13,106.94	$ 2,313.14	$ 25,444.51
Rita Radzeviciene	CADD - Civil	$ 51.45	-	112	-	-	-	-	-	-	-	-	-	112	$ 5,762.38	$ 7,534.32	$ 1,329.67	$ 14,626.37
Bruce Wattle	Air Quality Lead	$ 58.41	-	32	-	4	-	-	-	-	-	-	-	36	$ 2,102.58	$ 2,749.13	$ 485.17	$ 5,336.88
Khamini Persaud	Air Quality Engineer	$ 42.87	-	100	-	-	-	-	-	-	-	4	-	104	$ 4,458.45	$ 5,829.42	$ 1,028.79	$ 11,316.66
Erich Thalheimer	Lead Acoustical Engineer	$ 94.14	-	92	-	4	-	-	-	-	-	-	-	96	$ 9,037.79	$ 11,816.90	$ 2,085.47	$ 22,940.16
Sam Pendyala	Senior Acoustical Engineer	$ 47.63	-	40	-	-	-	-	-	-	-	-	-	40	$ 1,905.23	$ 2,491.09	$ 439.63	$ 4,835.94
Edward Tadross	Lead Environmental Scientist - Acoustics	$ 78.64	-	44	-	-	-	-	-	-	-	-	-	44	$ 3,460.13	$ 4,524.12	$ 798.42	$ 8,782.67
Local Technician	Acoustical Field Assistant	$ 46.58	-	28	-	-	-	-	-	-	-	-	-	28	$ 1,304.10	$ 1,705.11	$ 300.92	$ 3,310.13
Kevin Lim	Communications Lead	$ 102.24	-	16	-	-	-	-	-	-	-	-	-	16	$ 1,635.80	$ 2,138.80	$ 377.46	$ 4,152.06
Shahid Mehmood	Senior Comms Engineer - SCADA	$ 68.15	-	88	8	4	-	-	-	8	4	4	-	116	$ 7,905.95	$ 10,337.03	$ 1,824.30	$ 20,067.28
Amelia Ramnauth	Communications Engineer	$ 35.83	-	144	-	-	-	-	-	-	-	-	-	144	$ 5,159.76	$ 6,746.39	$ 1,190.62	$ 13,096.77
Brittany Johnson	Safety and Security Specialist	$ 40.57	-	-	-	-	25	-	-	-	-	-	-	25	$ 1,014.30	$ 1,326.20	$ 234.05	$ 2,574.55
Stephanie Sprague	Safety and Security QA	$ 80.79	-	-	-	-	10	-	-	-	-	-	-	10	$ 807.92	$ 1,056.36	$ 186.43	$ 2,050.71
Claudio Vescio	Supervising Engineer (Structural)	$ 78.66	-	71	-	8	-	-	-	8	-	-	-	87	$ 6,843.42	$ 8,947.77	$ 1,579.12	$ 17,370.31
Brian Dastis	Lead Structural Engineer	$ 60.99	-	184	8	4	-	-	8	-	4	8	-	216	$ 13,174.39	$ 17,225.52	$ 3,039.99	$ 33,439.90
Emanuele Morbidoni	Senior Structural Engineer	$ 51.66	-	280	-	-	-	-	-	-	-	-	-	280	$ 14,463.92	$ 18,911.57	$ 3,337.55	$ 36,713.04
Isabel Weil	Assistant Structural Engineer	$ 34.51	-	120	-	-	-	-	-	-	-	-	-	120	$ 4,140.83	$ 5,414.13	$ 955.50	$ 10,510.46
William Haggerty	Topo Survey Manager	$ 79.62	-	58	-	-	-	-	-	-	-	-	-	58	$ 4,618.11	$ 6,038.18	$ 1,065.63	$ 11,721.91
Michael Beym	Topo Survey Coordinator	$ 39.46	-	81	-	-	-	-	-	-	-	-	-	81	$ 3,196.63	$ 4,179.59	$ 737.62	$ 8,113.84
Antonio Stevens	Topo Surveyor	$ 36.33	-	108	-	-	-	-	-	-	-	-	-	108	$ 3,923.48	$ 5,129.95	$ 905.34	$ 9,958.77
Arvind Kannan	Senior CAD Operator 2 - Topo	$ 56.89	-	40	-	-	-	-	-	-	-	-	-	40	$ 2,275.76	$ 2,975.55	$ 525.13	$ 5,776.44
Rob Bury	Sr. Technical Manager (Mechanical)	$ 97.69	-	104	-	8	-	-	-	-	8	-	-	120	$ 11,723.24	$ 15,328.13	$ 2,705.14	$ 29,756.51
Gordon Ng	Supervising Engineer (Mechanical)	$ 72.57	-	160	8	20	-	-	8	8	-	16	-	220	$ 15,966.32	$ 20,875.97	$ 3,684.23	$ 40,526.52
Andrew Koch	Project Engineer II (Mechanical)	$ 46.33	-	319	-	-	-	-	-	-	-	8	-	327	$ 15,148.80	$ 19,807.05	$ 3,495.59	$ 38,451.44
Melissa Poggi	Project Manager	$ 79.62	446	-	-	16	-	40	40	4	20	12	-	578	$ 46,021.83	$ 60,173.55	$ 10,619.54	$ 116,814.92
Paul Sullivan	Deputy Project Manager	$ 136.88	86	-	-	40	-	-	60	4	-	-	-	190	$ 26,006.96	$ 34,004.10	$ 6,001.11	$ 66,012.17
Edrea Tan	QA/QC Manager	$ 51.26	70	-	-	-	-	-	80	-	-	-	-	150	$ 7,689.53	$ 10,054.06	$ 1,774.36	$ 19,517.96
Jerry Portalatin	CADD Manager	$ 67.59	80	-	-	-	-	-	-	-	-	-	-	80	$ 5,406.84	$ 7,069.44	$ 1,247.63	$ 13,723.91
Tara Simlick	Document Controls Manager	$ 37.25	90	-	-	-	-	-	-	-	-	8	-	98	$ 3,650.47	$ 4,772.98	$ 842.34	$ 9,265.79
John Kalb	Scheduling Manager	$ 54.09	60	-	-	-	-	-	-	-	-	-	-	60	$ 3,245.35	$ 4,243.29	$ 748.86	$ 8,237.50
Bob Bretz	Projectwise Manager	$ 60.12	20	-	-	-	-	-	-	-	-	-	-	20	$ 1,202.46	$ 1,572.22	$ 277.47	$ 3,052.15
Patti Cormier	Contract Manager	$ 39.62	12	-	-	-	-	-	-	-	-	-	-	12	$ 475.44	$ 621.63	$ 109.71	$ 1,206.78
Ragui Fahmy	Senior Director - Geotechnical	$ 105.53	-	151	-	4	-	-	-	8	4	-	-	167	$ 17,623.28	$ 23,042.43	$ 4,066.57	$ 44,732.28
Wanxing Liu	Engineer - Geotechnical	$ 70.39	-	170	8	-	-	-	-	-	-	8	-	186	$ 13,092.61	$ 17,118.58	$ 3,021.12	$ 33,232.30
Jerry Chen	Engineer - Geotechnical	$ 51.15	-	100	-	-	-	-	-	-	-	-	-	100	$ 5,114.97	$ 6,687.82	$ 1,180.28	$ 12,983.07
Harish Patel	Director - Mechanical Engineering	$ 99.10	-	88	-	-	-	-	-	-	-	-	-	88	$ 8,720.91	$ 11,402.59	$ 2,012.35	$ 22,135.85
Michael Youssef	Mechanical Engineer	$ 48.80	-	136	8	8	-	-	-	8	4	8	-	172	$ 8,393.64	$ 10,974.69	$ 1,936.83	$ 21,305.16

STAFFING SCHEDULE BY FIRM

Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection	$ 80.42	-	56	-	8	-	-	-	-	-	-	-	64	$ 5,146.85	$ 6,729.50	$ 1,187.64	$ 13,063.99
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection	$ 68.98	-	116	-	-	-	-	-	8	4	8	-	136	$ 9,381.65	$ 12,266.51	$ 2,164.82	$ 23,812.98
John Bartell	WSP Engineer	$ 48.65	-	120	8	-	-	-	8	-	-	-	-	136	$ 6,615.72	$ 8,650.05	$ 1,526.58	$ 16,792.35
Tom Marko	Construction Manager	$ 94.32	-	-	-	-	-	-	-	120	-	-	-	120	$ 11,318.35	$ 14,798.74	$ 2,611.71	$ 28,728.79
Shamoun Mahgerefth	Sr. Director - Estimating	$ 124.11	-	-	30	-	-	-	-	30	-	-	-	60	$ 7,446.41	$ 9,736.18	$ 1,718.26	$ 18,900.85
Ambrish Desai	Supervising Electrical Engineer	$ 108.88	-	108	-	8	-	-	-	-	-	-	-	116	$ 12,630.31	$ 16,514.13	$ 2,914.44	$ 32,058.89
Kerrine Bryan	Electrical Engineer	$ 68.94	-	498	-	-	-	-	-	8	12	-	-	518	$ 35,711.62	$ 46,692.94	$ 8,240.46	$ 90,645.02
Ross Krupnik	Lead Electrical Engineer	$ 72.81	-	318	-	-	-	-	16	-	-	16	-	350	$ 25,484.29	$ 33,320.71	$ 5,880.50	$ 64,685.49
Joe Lewkowicz	Jr. Electrical Engineer	$ 45.25	-	730	-	-	-	-	-	-	-	-	-	730	$ 33,032.65	$ 43,190.18	$ 7,622.28	$ 83,845.11
As Directed	As Directed by NJT	$ 64.50	-	-	-	-	-	-	-	-	-	-	201	201	$ 12,964.50	$ 16,951.08	$ 2,991.56	$ 32,907.14
Richard Grubb	Director	$ 62.00	-	1	-	-	-	-	-	-	-	-	-	1	$ 62.00	$ 90.17	$ 15.22	$ 167.39
Paul McEachen	Principal Sr. Archaeologist	$ 50.00	-	8	-	-	-	-	-	-	-	-	-	8	$ 400.00	$ 581.76	$ 98.18	$ 1,079.94
Allison McGovern	Sr. Archaeologist	$ 38.00	-	76	-	-	-	-	-	-	-	-	-	76	$ 2,888.00	$ 4,200.31	$ 708.83	$ 7,797.14
Alison Gall	Archaeologist	$ 27.00	-	12	-	-	-	-	-	-	-	-	-	12	$ 324.00	$ 471.23	$ 79.52	$ 874.75
Patricia McEachen	Drafter	$ 26.70	-	16	-	-	-	-	-	-	-	-	-	16	$ 427.20	$ 621.32	$ 104.85	$ 1,153.37
Cathy Smyrski	Editor	$ 28.75	-	8	-	-	-	-	-	-	-	-	-	8	$ 230.00	$ 334.51	$ 56.45	$ 620.96
John Stiteler	Geomorphologist	$ 45.00	-	64	-	-	-	-	-	-	-	-	-	64	$ 2,880.00	$ 4,188.67	$ 706.87	$ 7,775.54
As Directed	As Directed by NJT	$ 38.97	-	-	-	-	-	-	-	-	-	-	6	6	$ 233.82	$ 340.07	$ 57.39	$ 631.28
Chris Bacchus	Senior Engineer - PIII	$ 50.80	-	-	270	40	-	-	-	-	-	-	-	310	$ 15,748.00	$ 25,717.11	$ 4,146.51	$ 45,611.63
Mike Marino	Senior Engineer - PIII	$ 48.46	-	-	110	-	-	-	-	-	40	-	-	150	$ 7,269.00	$ 11,870.57	$ 1,913.96	$ 21,053.52
Dan Chiang	Junior Engineer - PI	$ 33.00	-	-	100	64	-	-	-	-	-	-	-	164	$ 5,412.00	$ 8,838.01	$ 1,425.00	$ 15,675.01
John Accetta	Senior Engineer - PIII	$ 46.40	80	-	-	-	-	-	-	-	-	-	-	80	$ 3,712.00	$ 6,061.84	$ 977.38	$ 10,751.23
Robert Brazer	Resident Engineer/Project Engineer- PV	$ 71.60	-	-	-	-	-	-	-	80	-	-	-	80	$ 5,728.00	$ 9,354.05	$ 1,508.21	$ 16,590.26
As Directed	As Directed by NJT	$ 48.30	-	-	-	-	-	-	-	-	-	-	24	24	$ 1,159.20	$ 1,893.02	$ 305.22	$ 3,357.44
Malik Basnight	Architect I	$ 23.02	-	252	-	-	-	12	-	-	-	-	-	264	$ 6,077.28	$ 8,627.31	$ 1,470.46	$ 16,175.05
Marc Giangreco	Architect II	$ 25.84	10	370	-	-	-	-	-	-	30	-	-	410	$ 10,594.40	$ 15,039.81	$ 2,563.42	$ 28,197.63
Jeffrey Sroka	Architect III	$ 33.60	24	432	-	-	-	-	-	-	-	60	-	516	$ 17,337.60	$ 24,612.46	$ 4,195.01	$ 46,145.06
Adrienne Arthur	Architect IV	$ 38.39	28	328	-	-	-	30	-	-	-	40	-	426	$ 16,354.14	$ 23,216.34	$ 3,957.05	$ 43,527.52
Alexander Carlson	Architect V	$ 50.31	32	216	-	-	-	30	-	-	-	16	-	294	$ 14,791.14	$ 20,997.50	$ 3,578.86	$ 39,367.51
Lee Boyce	Architect VI	$ 62.68	-	60	-	-	-	-	-	-	-	8	-	68	$ 4,262.24	$ 6,050.68	$ 1,031.29	$ 11,344.21
Brandon Coles	Architect VII	$ 73.62	-	32	-	-	-	4	-	-	-	8	-	44	$ 3,239.28	$ 4,598.48	$ 783.78	$ 8,621.54
Richard Sullivan	Architect VIII	$ 142.27	6	68	-	-	-	4	-	-	-	4	-	82	$ 11,666.14	$ 16,561.25	$ 2,822.74	$ 31,050.13
As Directed	As Directed by NJT	$ 40.08	-	-	-	-	-	-	-	-	-	-	60	60	$ 2,404.80	$ 3,413.85	$ 581.87	$ 6,400.52
Courtenay Mercer	Principal-In-Charge	$ 75.00	41	-	-	-	-	67	-	-	-	-	-	108	$ 8,100.00	$ 8,181.00	$ 1,628.10	$ 17,909.10
Cailean Kok	Senior Planner	$ 45.00	-	-	-	-	-	143	-	-	-	-	-	143	$ 6,435.00	$ 6,499.35	$ 1,293.44	$ 14,227.79
Nieves Pimienta	Senior Communications Associate	$ 42.00	-	-	-	-	-	57	-	-	-	-	-	57	$ 2,394.00	$ 2,417.94	$ 481.19	$ 5,293.13
TBD	Intern	$ 17.50	-	-	-	-	-	28	-	-	-	-	-	28	$ 490.00	$ 494.90	$ 98.49	$ 1,083.39
As Directed	As Directed by NJT	$ 51.84	-	-	-	-	-	-	-	-	-	-	9	9	$ 466.56	$ 471.23	$ 93.78	$ 1,031.56
TOTAL (ALL FIRMS)			*1,085*	*7,199*	*566*	*248*	*35*	*415*	*220*	*302*	*134*	*244*	*300*	*10,748*	*$ 618,153.62*	*$ 826,435.92*	*$ 144,458.95*	*$ 1,589,048.49*

STAFFING SCHEDULE BY FIRM

FIRM: WSP USA Inc.

STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	HOURLY RATE	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	TASK 11	TOTAL	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD)	FIXED FEE (PROFIT) @	TOTAL LABOR COST
		$	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	$	130.75%	10.00%	$
Athanasios Georgiadis	Senior Civil Engineer	$ 55.40	-	164	-	8	-	-	-	8	4	8	-	192	$ 10,637.48	$ 13,908.51	$ 2,454.60	$ 27,000.59
Isabella Steiner	Assistant Civil Engineer	$ 34.81	-	280	8	-	-	-	-	-	-	-	-	288	$ 10,024.43	$ 13,106.94	$ 2,313.14	$ 25,444.51
Rita Radzeviciene	CADD - Civil	$ 51.45	-	112	-	-	-	-	-	-	-	-	-	112	$ 5,762.38	$ 7,534.32	$ 1,329.67	$ 14,626.37
Bruce Wattle	Air Quality Lead	$ 58.41	-	32	-	4	-	-	-	-	-	-	-	36	$ 2,102.58	$ 2,749.13	$ 485.17	$ 5,336.88
Khamini Persaud	Air Quality Engineer	$ 42.87	-	100	-	-	-	-	-	-	-	4	-	104	$ 4,458.45	$ 5,829.42	$ 1,028.79	$ 11,316.66
Erich Thalheimer	Lead Acoustical Engineer	$ 94.14	-	92	-	4	-	-	-	-	-	-	-	96	$ 9,037.79	$ 11,816.90	$ 2,085.47	$ 22,940.16
Sam Pendyala	Senior Acoustical Engineer	$ 47.63	-	40	-	-	-	-	-	-	-	-	-	40	$ 1,905.23	$ 2,491.09	$ 439.63	$ 4,835.94
Edward Tadross	Lead Environmental Scientist - Acoustics	$ 78.64	-	44	-	-	-	-	-	-	-	-	-	44	$ 3,460.13	$ 4,524.12	$ 798.42	$ 8,782.67
Local Technician	Acoustical Field Assistant	$ 46.58	-	28	-	-	-	-	-	-	-	-	-	28	$ 1,304.10	$ 1,705.11	$ 300.92	$ 3,310.13
Kevin Lim	Communications Lead	$ 102.24	-	16	-	-	-	-	-	-	-	-	-	16	$ 1,635.80	$ 2,138.80	$ 377.46	$ 4,152.06
Shahid Mehmood	Senior Comms Engineer - SCADA	$ 68.15	-	88	8	4	-	-	-	8	4	4	-	116	$ 7,905.95	$ 10,337.03	$ 1,824.30	$ 20,067.28
Amelia Ramnauth	Communications Engineer	$ 35.83	-	144	-	-	-	-	-	-	-	-	-	144	$ 5,159.76	$ 6,746.39	$ 1,190.62	$ 13,096.77
Brittany Johnson	Safety and Security Specialist	$ 40.57	-	-	-	-	25	-	-	-	-	-	-	25	$ 1,014.30	$ 1,326.20	$ 234.05	$ 2,574.55
Stephanie Sprague	Safety and Security QA	$ 80.79	-	-	-	-	10	-	-	-	-	-	-	10	$ 807.92	$ 1,056.36	$ 186.43	$ 2,050.71
Claudio Vescio	Supervising Engineer (Structural)	$ 78.66	-	71	-	8	-	-	-	8	-	-	-	87	$ 6,843.42	$ 8,947.77	$ 1,579.12	$ 17,370.31
Brian Dastis	Lead Structural Engineer	$ 60.99	-	184	8	4	-	-	8	-	4	8	-	216	$ 13,174.39	$ 17,225.52	$ 3,039.99	$ 33,439.90
Emanuele Morbidoni	Senior Structural Engineer	$ 51.66	-	280	-	-	-	-	-	-	-	-	-	280	$ 14,463.92	$ 18,911.57	$ 3,337.55	$ 36,713.04
Isabel Weil	Assistant Structural Engineer	$ 34.51	-	120	-	-	-	-	-	-	-	-	-	120	$ 4,140.83	$ 5,414.13	$ 955.50	$ 10,510.46
William Haggerty	Topo Survey Manager	$ 79.62	-	58	-	-	-	-	-	-	-	-	-	58	$ 4,618.11	$ 6,038.18	$ 1,065.63	$ 11,721.91
Michael Beym	Topo Survey Coordinator	$ 39.46	-	81	-	-	-	-	-	-	-	-	-	81	$ 3,196.63	$ 4,179.59	$ 737.62	$ 8,113.84
Antonio Stevens	Topo Surveyor	$ 36.33	-	108	-	-	-	-	-	-	-	-	-	108	$ 3,923.48	$ 5,129.95	$ 905.34	$ 9,958.77
Arvind Kannan	Senior CAD Operator 2 - Topo	$ 56.89	-	40	-	-	-	-	-	-	-	-	-	40	$ 2,275.76	$ 2,975.55	$ 525.13	$ 5,776.44
Rob Bury	Sr. Technical Manager (Mechanical)	$ 97.69	-	104	-	8	-	-	-	-	8	-	-	120	$ 11,723.24	$ 15,328.13	$ 2,705.14	$ 29,756.51
Gordon Ng	Supervising Engineer (Mechanical)	$ 72.57	-	160	8	20	-	-	8	8	-	16	-	220	$ 15,966.32	$ 20,875.97	$ 3,684.23	$ 40,526.52
Andrew Koch	Project Engineer II (Mechanical)	$ 46.33	-	319	-	-	-	-	-	-	-	8	-	327	$ 15,148.80	$ 19,807.05	$ 3,495.59	$ 38,451.44
Melissa Poggi	Project Manager	$ 79.62	446	-	-	16	-	40	40	4	20	12	-	578	$ 46,021.83	$ 60,173.55	$ 10,619.54	$ 116,814.92
Paul Sullivan	Deputy Project Manager	$ 136.88	86	-	-	40	-	-	60	4	-	-	-	190	$ 26,006.96	$ 34,004.10	$ 6,001.11	$ 66,012.17
Edrea Tan	QA/QC Manager	$ 51.26	70	-	-	-	-	-	80	-	-	-	-	150	$ 7,689.53	$ 10,054.06	$ 1,774.36	$ 19,517.96
Jerry Portalatin	CADD Manager	$ 67.59	80	-	-	-	-	-	-	-	-	-	-	80	$ 5,406.84	$ 7,069.44	$ 1,247.63	$ 13,723.91

STAFFING SCHEDULE BY FIRM

Tara Simlick	Document Controls Manager	$ 37.25	90	-	-	-	-	-	-	-	-	8	-	98	$ 3,650.47	$ 4,772.98	$ 842.34	$ 9,265.79
John Kalb	Scheduling Manager	$ 54.09	60	-	-	-	-	-	-	-	-	-	-	60	$ 3,245.35	$ 4,243.29	$ 748.86	$ 8,237.50
Bob Bretz	Projectwise Manager	$ 60.12	20	-	-	-	-	-	-	-	-	-	-	20	$ 1,202.46	$ 1,572.22	$ 277.47	$ 3,052.15
Patti Cormier	Contract Manager	$ 39.62	12	-	-	-	-	-	-	-	-	-	-	12	$ 475.44	$ 621.63	$ 109.71	$ 1,206.78
Ragui Fahmy	Senior Director - Geotechnical	$ 105.53	-	151	-	4	-	-	-	8	4	-	-	167	$ 17,623.28	$ 23,042.43	$ 4,066.57	$ 44,732.28
Wanxing Liu	Engineer - Geotechnical	$ 70.39	-	170	8	-	-	-	-	-	-	8	-	186	$ 13,092.61	$ 17,118.58	$ 3,021.12	$ 33,232.30
Jerry Chen	Engineer - Geotechnical	$ 51.15	-	100	-	-	-	-	-	-	-	-	-	100	$ 5,114.97	$ 6,687.82	$ 1,180.28	$ 12,983.07
Harish Patel	Director - Mechanical Engineering	$ 99.10	-	88	-	-	-	-	-	-	-	-	-	88	$ 8,720.91	$ 11,402.59	$ 2,012.35	$ 22,135.85
Michael Youssef	Mechanical Engineer	$ 48.80	-	136	8	8	-	-	-	8	4	8	-	172	$ 8,393.64	$ 10,974.69	$ 1,936.83	$ 21,305.16
Damien Lau	WSP Supervising Engineer Plumbing & Fire Protection	$ 80.42	-	56	-	8	-	-	-	-	-	-	-	64	$ 5,146.85	$ 6,729.50	$ 1,187.64	$ 13,063.99
Paulo Roldan	WSP Senior Engineer Plumbing & Fire Protection	$ 68.98	-	116	-	-	-	-	-	8	4	8	-	136	$ 9,381.65	$ 12,266.51	$ 2,164.82	$ 23,812.98
John Bartell	WSP Engineer	$ 48.65	-	120	8	-	-	-	8	-	-	-	-	136	$ 6,615.72	$ 8,650.05	$ 1,526.58	$ 16,792.35
Tom Marko	Construction Manager	$ 94.32	-	-	-	-	-	-	-	120	-	-	-	120	$ 11,318.35	$ 14,798.74	$ 2,611.71	$ 28,728.79
Shamoun Mahgerefth	Sr. Director - Estimating	$ 124.11	-	-	30	-	-	-	-	30	-	-	-	60	$ 7,446.41	$ 9,736.18	$ 1,718.26	$ 18,900.85
Ambrish Desai	Supervising Electrical Engineer	$ 108.88	-	108	-	8	-	-	-	-	-	-	-	116	$ 12,630.31	$ 16,514.13	$ 2,914.44	$ 32,058.89
Kerrine Bryan	Electrical Engineer	$ 68.94	-	498	-	-	-	-	-	8	12	-	-	518	$ 35,711.62	$ 46,692.94	$ 8,240.46	$ 90,645.02
Ross Krupnik	Lead Electrical Engineer	$ 72.81	-	318	-	-	-	-	16	-	-	16	-	350	$ 25,484.29	$ 33,320.71	$ 5,880.50	$ 64,685.49
Joe Lewkowicz	Jr. Electrical Engineer	$ 45.25	-	730	-	-	-	-	-	-	-	-	-	730	$ 33,032.65	$ 43,190.18	$ 7,622.28	$ 83,845.11
As Directed	As Directed by NJT	$ 64.50	-	-	-	-	-	-	-	-	-	-	201	201	$ 12,964.50	$ 16,951.08	$ 2,991.56	$ 32,907.14
TOTAL			*864*	*5,256*	*86*	*144*	*35*	*40*	*220*	*222*	*64*	*108*	*201*	*7,240*	*467,068*	*610,691*	*107,776*	*1,185,535*

STAFFING SCHEDULE BY FIRM

FIRM: Richard Grubb & Associates (DBE)

STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	HOURLY RATE	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	TASK 11	TOTAL	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD)	FIXED FEE (PROFIT) @	TOTAL LABOR COST
		$	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	$	145.44%	10.00%	$
Richard Grubb	Director	$ 62.00	-	1	-	-	-	-	-	-	-	-	-	1	$ 62.00	$ 90.17	$ 15.22	$ 167.39
Paul McEachen	Principal Sr. Archaeologist	$ 50.00	-	8	-	-	-	-	-	-	-	-	-	8	$ 400.00	$ 581.76	$ 98.18	$ 1,079.94
Allison McGovern	Sr. Archaeologist	$ 38.00	-	76	-	-	-	-	-	-	-	-	-	76	$ 2,888.00	$ 4,200.31	$ 708.83	$ 7,797.14
Alison Gall	Archaeologist	$ 27.00	-	12	-	-	-	-	-	-	-	-	-	12	$ 324.00	$ 471.23	$ 79.52	$ 874.75
Patricia McEachen	Drafter	$ 26.70	-	16	-	-	-	-	-	-	-	-	-	16	$ 427.20	$ 621.32	$ 104.85	$ 1,153.37
Cathy Smyrski	Editor	$ 28.75	-	8	-	-	-	-	-	-	-	-	-	8	$ 230.00	$ 334.51	$ 56.45	$ 620.96
John Stiteler	Geomorphologist	$ 45.00	-	64	-	-	-	-	-	-	-	-	-	64	$ 2,880.00	$ 4,188.67	$ 706.87	$ 7,775.54
As Directed	As Directed by NJT	$ 38.97	-	-	-	-	-	-	-	-	-	-	6	6	$ 233.82	$ 340.07	$ 57.39	$ 631.28
TOTAL			-	*185*	-	-	-	-	-	-	-	-	*6*	*191*	*$ 7,445.02*	*$ 10,828.04*	*$ 1,827.31*	*$ 20,100.36*

STAFFING SCHEDULE BY FIRM

FIRM: AmerCom Corp. (DBE)

STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	HOURLY RATE	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	TASK 11	TOTAL	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD)	FIXED FEE (PROFIT) @	TOTAL LABOR COST
		$	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	$	163.30%	10.00%	$
Chris Bacchus	Senior Engineer - PIII	$ 50.80	-	-	270	40	-	-	-	-	-	-	-	310	$ 15,748.00	$ 25,717.11	$ 4,146.51	$ 45,611.63
Mike Marino	Senior Engineer - PIII	$ 48.46	-	-	110	-	-	-	-	-	40	-	-	150	$ 7,269.00	$ 11,870.57	$ 1,913.96	$ 21,053.52
Dan Chiang	Junior Engineer - PI	$ 33.00	-	-	100	64	-	-	-	-	-	-	-	164	$ 5,412.00	$ 8,838.01	$ 1,425.00	$ 15,675.01
John Accetta	Senior Engineer - PIII	$ 46.40	80	-	-	-	-	-	-	-	-	-	-	80	$ 3,712.00	$ 6,061.84	$ 977.38	$ 10,751.23
Robert Brazer	Resident Engineer/Project Engineer- PV	$ 71.60	-	-	-	-	-	-	-	80	-	-	-	80	$ 5,728.00	$ 9,354.05	$ 1,508.21	$ 16,590.26
As Directed	As Directed by NJT	$ 48.30	-	-	-	-	-	-	-	-	-	-	24	24	$ 1,159.20	$ 1,893.02	$ 305.22	$ 3,357.44
TOTAL			*80*	*-*	*480*	*104*	*-*	*-*	*-*	*80*	*40*	*-*	*24*	*808*	*$ 39,028.20*	*$ 63,734.61*	*$ 10,276.28*	*$ 113,039.09*

STAFFING SCHEDULE BY FIRM

FIRM: Mercer Planning Assoc. (DBE)

STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	HOURLY RATE	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	TASK 11	TOTAL	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD)	FIXED FEE (PROFIT) @	TOTAL LABOR COST
		$	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	$	101.00%	10.00%	$
Courtenay Mercer	Principal-In-Charge	$ 75.00	41	-	-	-	-	67	-	-	-	-	-	108	$ 8,100.00	$ 8,181.00	$ 1,628.10	$ 17,909.10
Cailean Kok	Senior Planner	$ 45.00	-	-	-	-	-	143	-	-	-	-	-	143	$ 6,435.00	$ 6,499.35	$ 1,293.44	$ 14,227.79
Nieves Pimienta	Senior Communications Associate	$ 42.00	-	-	-	-	-	57	-	-	-	-	-	57	$ 2,394.00	$ 2,417.94	$ 481.19	$ 5,293.13
TBD	Intern	$ 17.50	-	-	-	-	-	28	-	-	-	-	-	28	$ 490.00	$ 494.90	$ 98.49	$ 1,083.39
As Directed	As Directed by NJT	$ 51.84	-	-	-	-	-	-	-	-	-	-	9	9	$ 466.56	$ 471.23	$ 93.78	$ 1,031.56
TOTAL			*41*	-	-	-	-	*295*	-	-	-	-	*9*	*345*	*$ 17,885.56*	*$ 18,064.42*	*$ 3,595.00*	*$ 39,544.97*

STAFFING SCHEDULE BY FIRM

FIRM: Sowinski Sullivan (DBE)

STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	HOURLY RATE	TASK 1	TASK 2	TASK 3	TASK 4	TASK 5	TASK 6	TASK 7	TASK 8	TASK 9	TASK 10	TASK 11	TOTAL	TOTAL DIRECT LABOR COST	INDIRECT LABOR COST (OVERHEAD)	FIXED FEE (PROFIT) @	TOTAL LABOR COST
		$	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	HRS	$	141.96%	10.00%	$
Malik Basnight	Architect I	$ 23.02	-	252	-	-	-	12	-	-	-	-	-	264	$ 6,077.28	$ 8,627.31	$ 1,470.46	$ 16,175.05
Marc Giangreco	Architect II	$ 25.84	10	370	-	-	-	-	-	-	30	-	-	410	$ 10,594.40	$ 15,039.81	$ 2,563.42	$ 28,197.63
Jeffrey Sroka	Architect III	$ 33.60	24	432	-	-	-	-	-	-	-	60	-	516	$ 17,337.60	$ 24,612.46	$ 4,195.01	$ 46,145.06
Adrienne Arthur	Architect IV	$ 38.39	28	328	-	-	-	30	-	-	-	40	-	426	$ 16,354.14	$ 23,216.34	$ 3,957.05	$ 43,527.52
Alexander Carlson	Architect V	$ 50.31	32	216	-	-	-	30	-	-	-	16	-	294	$ 14,791.14	$ 20,997.50	$ 3,578.86	$ 39,367.51
Lee Boyce	Architect VI	$ 62.68	-	60	-	-	-	-	-	-	-	8	-	68	$ 4,262.24	$ 6,050.68	$ 1,031.29	$ 11,344.21
Brandon Coles	Architect VII	$ 73.62	-	32	-	-	-	4	-	-	-	8	-	44	$ 3,239.28	$ 4,598.48	$ 783.78	$ 8,621.54
Richard Sullivan	Architect VIII	$ 142.27	6	68	-	-	-	4	-	-	-	4	-	82	$ 11,666.14	$ 16,561.25	$ 2,822.74	$ 31,050.13
As Directed	As Directed by NJT	$ 40.08	-	-	-	-	-	-	-	-	-	-	60	60	$ 2,404.80	$ 3,413.85	$ 581.87	$ 6,400.52
TOTAL			*100*	*1,758*	-	-	-	*80*	-	-	*30*	*136*	*60*	*2,164*	*$ 86,727.02*	*$ 123,117.68*	*$ 20,984.47*	*$ 230,829.17*

DBE Forms



MANDATORY FORM FOR BIDDER/PROPOSER/PRIME: COMPLETE ENTIRELY FORM A (Fed)

First Tier DBE UTILIZATION - FORM A

Project Name: Final Design, Engineering and Other Technical Services for the Newark Penn Station Distributed Generation (DG) Project

NJT Contract No: 21-059

Assigned DBE Goal 22% NJT Procurement Specialist: Faith Blair

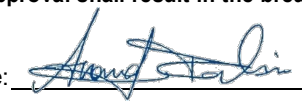
Contract Value ($):1,681,141.11

First Tier DBE must perform at least 51% of its subcontract value if subcontracting to a Second -Tier DBE or Non-DBE. Do not count Non-DBE portion toward the goal.

Name, Address and Telephone # of DBE Subcontractor/Subconsultant	Provide Detailed Scope of Work to be Performed (Identify all suppliers)	Dollar Value of Subcontract/Sub-consultant Work ($) Awarded	Percentage of Subcontract Work (%)
AmerCom Corporation 1259 Route 46 East, Bldg. #2 Parsippany, NJ 07054	Capital cost estimating and project scheduling, project controls support, constructability reviews, and CADD support	$113,289.09	6.74%
Mercer Planning Associates, LLC 344 Grove Street, Ste 256 Jersey City, NJ 07302	Community outreach	$44,294.97	2.63%
Richard Grubb and Associates, Inc. 259 Prospect Plains Road, Building D Cranbury, NJ 08512	Archeology	$20,650.36	1.23%
Sowinski Sullivan Architects, PC 25 Mohawk Avenue Sparta, NJ 07870	Architecture	$234,235.32	13.93%
Jersey Boring & Drilling Co., Inc. 36 Pier Lane West Fairfield, New Jersey 07004	Soil Borings	$50,000.00 * 60% = $30,000	1.78%
For DBE suppliers, show original subcontract value multiplied by 60% ($2,000*60%=$1200). For DBE portion of work, subtract Non-DBE portion of work from original subcontract value.	**TOTALS**	**$442,469.74**	**26.32%**

The undersigned will enter into a formal agreement with the DBE(s) listed in this schedule conditioned upon execution of a contract with NJ TRANSIT for the above referenced project. The undersigned understands that removal/replacement of the DBE(s) listed is NOT PERMISSIBLE for any reason (pre or post-award), without submitting a written request to the Office of Business Development and receiving WRITTEN APPROVAL from the Office of Business Development. Failure to obtain written approval shall result in the breach of contract and subject to corrective action to be determined by NJ TRANSIT.

Company Name: WSP USA Inc.

Authorized Signature: 

Company Address: Two Gateway Center, Suite 1000

Print Name: Anand Paluri, PE, PTOE

Newark, NJ 07102

Title: District Manager – Mid Atlantic / Senior Vice President

Federal Tax ID #: [redacted]

Prime Contractor's DBE Liaison Officer: Laura Unger (203)382-5282

Company Tel #: 973-353-9100

Date Signed: May 16, 2022

To Add Subs Use Additional Forms

BIDDER SOLICITATION & CONTRACTOR INFORMATION - FORM A1

NJT Contract No: 21-059

Prime Contractor: WSP USA Inc.

Date: May 16, 2022

Project Title: Final Design, Engineering and Other Technical Services for the Newark Penn Station Distributed Generation (DG) Project

Telephone #: (609) 512-3500

Complete the information below for Bidder/Proposer/Prime(s) working on the project. Use Page 2 for all subcontractors/subconsultants participating on or solicited for this project.

	Bidder/Proposer/Prime	Bidder/Proposer/Prime	Bidder/Proposer/Prime
Company's Full Name	WSP USA Inc.		
Address	2000 Lenox Drive, 3rd Floor		
City	Lawrenceville		
Zip	08648		
County	Mercer		
Phone	(609) 512-3500		
Fax	(609) 512-3600		
E-mail	complianceusa@wsp.com		
Owner	Parsons Brinckerhoff Holdings Inc.		
Date Established	10/5/1933		
Date Certified	Not certified		
Ethnicity	multiple		
Gender	multiple		
Certification Status: **DBE or Non-DBE**	Non-DBE		
Federal Tax ID # / SSN #	[redacted]		
Annual Gross Receipts: A – Less than $500K B - $500K to $1M C - $1M to $2M D - $2M to $5M E - $5M and over **indicate the letter that applies**	E		
Primary NAICS Code:	541330		

BIDDER SOLICITATION & CONTRACTOR INFORMATION - FORM A1

NJT Contract No: 21-059

Prime Contractor: WSP USA Inc.

Date: May 16, 2022

Project Title: Final Design, Engineering and Other Technical Services for the Newark Penn Station Distributed Generation (DG) Project

Telephone #: (609) 512-3500

Complete the information below for "all" subcontractors/subconsultants solicited for or participating on this project.

	Subcontractor/Subconsultant	Subcontractor/Subconsultant	Subcontractor/Subconsultant
Company's Full Name	AmerCom Corporation	Mercer Planning Associates, LLC	Richard Grubb and Associates, Inc.
Address	1259 Route 46 East Bldg. #2	344 Grove Street, Ste 256	259 Prospect Plains Road, Building D
City	Parsippany	Jersey City	Cranbury
Zip	07054	07302	08512
County	Morris	Hudson	Middlesex
Phone	973-402-6111	732-354-1316	609-655-0692
Fax	973-588-7020	N/A	609-655-3050
E-mail	abotas@amercom.org	info@mercerplanning.com	adomm@rgaincorporated.com
Owner	Corporation	Courtenay D. Mercer	Alice Domm
Date Established	July 1980	11/2007	5/3/1988
Date Certified	July 1980	10/2011	9/21/2010
Ethnicity	Asian Pacific Islander/Latino	Non-Hispanic	Caucasian
Gender	Male	Female	Woman
Certification Status: **DBE or Non-DBE**	DBE	DBE	DBE
Federal Tax ID # / SSN #	[redacted]	[redacted]	[redacted]
Annual Gross Receipts: A – Less than $500K B - $500K to $1M C - $1M to $2M D - $2M to $5M E - $5M and over **indicate the letter that applies**	E	A	D
Primary NAICS Code:	541330	541320	541620;541690;541720

BIDDER SOLICITATION & CONTRACTOR INFORMATION - FORM A1

NJT Contract No: 21-059

Project Title: Final Design, Engineering and Other Technical Services for the Newark Penn Station Distributed Generation (DG) Project

Prime Contractor: WSP USA Inc.

Date: May 16, 2022

Telephone #: (609) 512-3500

Complete the information below for "all" subcontractors/subconsultants solicited for or participating on this project.

	Subcontractor/Subconsultant	Subcontractor/Subconsultant	Subcontractor/Subconsultant
Company's Full Name	Sowinski Sullivan Architects, PC	Jersey Boring & Drilling Co., Inc.	
Address	25 Mohawk Avenue	36 Pier Lane West	
City	Sparta	Fairfield	
Zip	07870	07004	
County	Sussex	Essex	
Phone	973-726-3260	973-287-6857	
Fax	973-726-7986	973-521-7981	
E-mail	ssowinski@sowinskisullivan.com	shelley@jerseyboring.com	
Owner	Suzanne Sowinski, AIA, LEED AP	Shelley Lach	
Date Established	1996	1978	
Date Certified	1996	2/10/2000	
Ethnicity	White	White	
Gender	Female	Female	
Certification Status: **DBE or Non-DBE**	DBE	DBE	
Federal Tax ID # / SSN #	[redacted]	[redacted]	
Annual Gross Receipts: A – Less than $500K B - $500K to $1M C - $1M to $2M D - $2M to $5M E - $5M and over **indicate the letter that applies**	D	D	
Primary NAICS Code:	541310	238910	

INTENT TO PERFORM AS A 1ST TIER DBE - FORM B

The Bidder/Proposer/Prime is prohibited from completing any portion of this form and directing the DBE to sign a blank form.

DIRECTIONS: DBE(s) listed on the Form A must complete all information on this form.

WSP USA Inc.
Name of Bidder/Proposer/Prime:

AmerCom Corporation
Name of DBE Firm:

Project/Contract Name: Newark Penn Station Distributed Generation (DG) Project

IFB/RFP Contract Number: 21-059

Does the undersigned DBE (Answer Accordingly):

Intend to perform subcontract work in connection with the above–mentioned project as a Joint Venture? Circle one. (**Yes or No**)

Intend to subcontract any portion of its scope of work to a DBE(s)? Circle one. (**Yes or No**)
If yes, DBE Sub-Primes must complete and submit Form AA. **At what percent? _____%**

Intend to subcontract any portion of its scope of work to a **Non-DBE(s)**? Circle one. (**Yes or No**)
If yes, must complete and submit Form AA2. **At what percent? _____%**

The undersigned will perform the following described work on the above-referenced project: (*Provide a detailed description of the type of work you will perform on your subcontract. Attach a copy of quote approved and signed by Bidder (optional)).*

Prepare Monthly Project and Financial Progress and Cost Control Reports, provide input to update the Project Schedule, Update Records Management Control System, and construction cost estimating.

Dollar Value of DBE Subcontract: **$** $113,289.09

Total Quantity/Units (if applicable): N.A. **Per Unit Cost (if applicable): $** N.A.

The undersigned based the above scope of work and subcontract value on detailed project specs received from the Bidder contractor named above. Circle one. **(Yes or No)**

The Prime Contractor *projected* the following commencement and completion date for such work as follows:

DBE Contract Start Date: October 1, 2022 DBE Contract Completion Date March 31, 2024

The undersigned DBE will enter into a formal agreement for the above work with the Prime Contractor conditioned upon execution of a contract with NJ TRANSIT. As a DBE subcontractor, I will cooperate with the certification, compliance and monitoring process set forth by NJ TRANSIT. I attest that I will perform at least 51% of my subcontract with my own workforce for the referenced project.



May 12, 2022
Signature of 1st Tier DBE **Date**

Vice President
Title

Luis F. Barragan
Print Name

(973) 402-6111
Telephone #:

Failure to adhere to these instructions or the falsification of any information on this form shall result in breach of contract and subject to the appropriate penalties to be determined by NJ TRANSIT.

INTENT TO PERFORM AS A 1ST TIER DBE - FORM B

The Bidder/Proposer/Prime is prohibited from completing any portion of this form and directing the DBE to sign a blank form.

DIRECTIONS: DBE(s) listed on the Form A must complete all information on this form.

WSP USA Inc
Name of Bidder/Proposer/Prime:

Mercer Planning Associates, LLC
Name of DBE Firm:

Project/Contract Name: Newark Penn Station Distributed Generation

IFB/RFP Contract Number: 21-059

Does the undersigned DBE (Answer Accordingly):

Intend to perform subcontract work in connection with the above-mentioned project as a Joint Venture? Circle one. **(Yes or No)**

Intend to subcontract any portion of its scope of work to a DBE(s)? Circle one. **(Yes or No)**
If yes, DBE Sub-Primes must complete and submit Form AA. **At what percent?** _____%

Intend to subcontract any portion of its scope of work to a **Non-DBE(s)**? Circle one. **(Yes or No)**
If yes, must complete and submit Form AA2. **At what percent?** _____%

The undersigned will perform the following described work on the above-referenced project: (*Provide a detailed description of the type of work you will perform on your subcontract. Attach a copy of quote approved and signed by Bidder (optional)).*

Stakeholder and public engagement services

Dollar Value of DBE Subcontract: $ 44,294.97

Total Quantity/Units (if applicable): _____ **Per Unit Cost (if applicable): $**_____

The undersigned based the above scope of work and subcontract value on detailed project specs received from the Bidder contractor named above. Circle one. **(Yes or No)**

The Prime Contractor *projected* the following commencement and completion date for such work as follows:

DBE Contract Start Date: 10/1/22 DBE Contract Completion Date 3/31/24

The undersigned DBE will enter into a formal agreement for the above work with the Prime Contractor conditioned upon execution of a contract with NJ TRANSIT. As a DBE subcontractor, I will cooperate with the certification, compliance and monitoring process set forth by NJ TRANSIT. I attest that I will perform at least 51% of my subcontract with my own workforce for the referenced project.

Signature of 1st Tier DBE	5/12/22 **Date**	Principal **Title**
Courtenay D. Mercer **Print Name**		732-354-1316 **Telephone #:**

Failure to adhere to these instructions or the falsification of any information on this form shall result in breach of contract and subject to the appropriate penalties to be determined by NJ TRANSIT.

INTENT TO PERFORM AS A 1ST TIER DBE - FORM B

The Bidder/Proposer/Prime is prohibited from completing any portion of this form and directing the DBE to sign a blank form.

DIRECTIONS: DBE(s) listed on the Form A must complete all information on this form.

WSP
Name of Bidder/Proposer/Prime:

Richard Grubb and Associates, Inc.
Name of DBE Firm:

Project/Contract Name: Newark Penn Station Distributed Generation

IFB/RFP Contract Number: 21-059

Does the undersigned DBE (Answer Accordingly):

Intend to perform subcontract work in connection with the above–mentioned project as a Joint Venture? Circle one. (**Yes or No**)

Intend to subcontract any portion of its scope of work to a DBE(s)? Circle one. (**Yes or No**)
If yes, DBE Sub-Primes must complete and submit Form AA. **At what percent? _____%**

Intend to subcontract any portion of its scope of work to a **Non-DBE(s)**? Circle one. (**Yes or No**)
If yes, must complete and submit Form AA2. **At what percent? _____%**

The undersigned will perform the following described work on the above-referenced project: (*Provide a detailed description of the type of work you will perform on your subcontract. Attach a copy of quote approved and signed by Bidder (optional)).*

Phase IA Archaeological Survey

Dollar Value of DBE Subcontract: $20,650.36

Total Quantity/Units (if applicable): _____ **Per Unit Cost (if applicable): $**_____

The undersigned based the above scope of work and subcontract value on detailed project specs received from the Bidder contractor named above. Circle one. (**Yes or No**)

The Prime Contractor *projected* the following commencement and completion date for such work as follows:

DBE Contract Start Date: October 1, 2022 DBE Contract Completion Date March 31, 2024

The undersigned DBE will enter into a formal agreement for the above work with the Prime Contractor conditioned upon execution of a contract with NJ TRANSIT. As a DBE subcontractor, I will cooperate with the certification, compliance and monitoring process set forth by NJ TRANSIT. I attest that I will perform at least 51% of my subcontract with my own workforce for the referenced project.

Alice Domm 5/12/2022
Signature of 1st Tier DBE **Date**

President
Title

Alice Domm
Print Name

609-655-0692
Telephone #:

Failure to adhere to these instructions or the falsification of any information on this form shall result in breach of contract and subject to the appropriate penalties to be determined by NJ TRANSIT.

INTENT TO PERFORM AS A 1ST TIER DBE - FORM B

The Bidder/Proposer/Prime is prohibited from completing any portion of this form and directing the DBE to sign a blank form.

DIRECTIONS: DBE(s) listed on the Form A must complete all information on this form.

WSP USA Inc
Name of Bidder/Proposer/Prime:

Sowinski Sullivan Architects, PC
Name of DBE Firm:

Project/Contract Name: FINAL DESIGN, ENGINEERING AND OTHER TECHNICAL SERVICES FOR THE NEWARK PENN STATION DISTRIBUTED GENERATION (DG) PROJECT

IFB/RFP Contract Number: 21-059

Does the undersigned DBE (Answer Accordingly):

Intend to perform subcontract work in connection with the above–mentioned project as a Joint Venture? Circle one. (**Yes or No**)

Intend to subcontract any portion of its scope of work to a DBE(s)? Circle one. (**Yes or No**)
If yes, DBE Sub-Primes must complete and submit Form AA. **At what percent? _____%**

Intend to subcontract any portion of its scope of work to a **Non-DBE(s)**? Circle one. (**Yes or No**)
If yes, must complete and submit Form AA2. **At what percent? _____%**

The undersigned will perform the following described work on the above-referenced project: (*Provide a detailed description of the type of work you will perform on your subcontract. Attach a copy of quote approved and signed by Bidder (optional)).*

Architectural Services to integrate the power generation interventions within this Newark Penn station.

Dollar Value of DBE Subcontract: $ 234,235,32

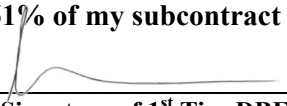
Total Quantity/Units (if applicable): N/A **Per Unit Cost (if applicable): $** N/A

The undersigned based the above scope of work and subcontract value on detailed project specs received from the Bidder contractor named above. Circle one. (**Yes or No)**

The Prime Contractor *projected* the following commencement and completion date for such work as follows:

DBE Contract Start Date: October 1st, 2022 DBE Contract Completion Date March 31st, 2024

The undersigned DBE will enter into a formal agreement for the above work with the Prime Contractor conditioned upon execution of a contract with NJ TRANSIT. As a DBE subcontractor, I will cooperate with the certification, compliance and monitoring process set forth by NJ TRANSIT. I attest that I will perform at least 51% of my subcontract with my own workforce for the referenced project.



5/12/2022
Signature of 1st Tier DBE **Date**

President
Title

Suzanne Sowinski
Print Name

973-726-3260 x124
Telephone #:

Failure to adhere to these instructions or the falsification of any information on this form shall result in breach of contract and subject to the appropriate penalties to be determined by NJ TRANSIT.

MANDATORY FORM FOR 1st TIER DBE: COMPLETE ENTIRELY FORM B (Fed)

INTENT TO PERFORM AS A 1ST TIER DBE - FORM B

The Bidder/Proposer/Prime is prohibited from completing any portion of this form and directing the DBE to sign a blank form.

DIRECTIONS: DBE(s) listed on the Form A must complete all information on this form.

WSP USA Inc.
Name of Bidder/Proposer/Prime:

Jersey Boring & Drilling Co., Inc.
Name of DBE Firm:

Project/Contract Name: Newark Penn Station Distributed Generation Project

IFB/RFP Contract Number: 21-059

Does the undersigned DBE (Answer Accordingly):

Intend to perform subcontract work in connection with the above–mentioned project as a Joint Venture? Circle one. **(Yes or No)**

Intend to subcontract any portion of its scope of work to a DBE(s)? Circle one. **(Yes or No)**
If yes, DBE Sub-Primes must complete and submit Form AA. **At what percent? _____%**

Intend to subcontract any portion of its scope of work to a **Non-DBE(s)**? Circle one. **(Yes or No)**
If yes, must complete and submit Form AA2. **At what percent? _____%**

The undersigned will perform the following described work on the above-referenced project: (*Provide a detailed description of the type of work you will perform on your subcontract. Attach a copy of quote approved and signed by Bidder (optional)).*

Subsurface drilling- soil borings & rock coring.

Dollar Value of DBE Subcontract: $ 50,000.00

Total Quantity/Units (if applicable): _____ **Per Unit Cost (if applicable): $**_____

The undersigned based the above scope of work and subcontract value on detailed project specs received from the Bidder contractor named above. Circle one. **(Yes or No)**

The Prime Contractor *projected* the following commencement and completion date for such work as follows:

DBE Contract Start Date: 10/1/2022 DBE Contract Completion Date 4/1/2023

The undersigned DBE will enter into a formal agreement for the above work with the Prime Contractor conditioned upon execution of a contract with NJ TRANSIT. As a DBE subcontractor, I will cooperate with the certification, compliance and monitoring process set forth by NJ TRANSIT. I attest that I will perform at least 51% of my subcontract with my own workforce for the referenced project.

Molly Lach 4/21/22
Signature of 1st Tier DBE **Date**

Corporate Secretary
Title

Molly Lach
Print Name

(973) 287 - 6857
Telephone #:

Failure to adhere to these instructions or the falsification of any information on this form shall result in breach of contract and subject to the appropriate penalties to be determined by NJ TRANSIT.

DBE Documentation / Certifications



Certified Profile

CLOSE WINDOW

Print

Business & Contact Information

BUSINESS NAME	**AmerCom Corp.,** DBA **AmerCom Corporation**
OWNER	**Mr. Richard Lee**
ADDRESS	**1259 Route 46 East, Bldg #2** **Parsippany, NJ 07054 [map]**
PHONE	**973-402-6111**
FAX	**973-588-7020**
EMAIL	**rlee@amercom.org**
WEBSITE	**http://www.amercomcorp.com**
COUNTY	**Morris (NJ)**

Certification Information

CERTIFYING AGENCY	**New Jersey Transit**
CERTIFICATION TYPE	**DBE - Disadvantaged Business Enterprise**
CERTIFIED BUSINESS DESCRIPTION	**Civil engineering, geophysical surveying, landscape surveying, GPS mapping, technical design engineering feasibility studies for highway, street, and bridges, engineering inspection services, traffic analysis counting surveys, and construction management.**

Commodity Codes

Code	Description
NAICS 237310	Construction management, highway, road, street and bridge
NAICS 237990	Construction management, mass transit
NAICS 541330	Engineering services
NAICS 541360	Geophysical Surveying and Mapping Services
NAICS 541370	Surveying and Mapping (except Geophysical) Services

From: New Jersey Transit <njtransit@sbdbe.com>
Date: June 21, 2021 at 12:45:13 PM EDT
To: Richard Lee <rlee@amercom.org>
Subject: NJ TRANSIT: Disadvantaged Business Enterprise certification for AmerCom Corp. dba AmerCom Corporation
Reply-To: New Jersey Transit <njtransit@sbdbe.com>

Richard Lee
AmerCom Corp. dba AmerCom Corporation
1259 Route 46 East, Bldg #2
Parsippany, NJ 07054

Re: Disadvantaged Business Enterprise certification for AmerCom Corp. dba AmerCom Corporation

Dear Richard Lee:

Congratulations! We are pleased to inform you that your company, AmerCom Corp. dba AmerCom Corporation has been found eligible for certification and is now certified officially as a Disadvantaged Business Enterprise (DBE) by NJ TRANSIT, on behalf of the New Jersey Unified Certification Program (NJUCP). This certification grants DBE status and benefits to your firm on federally funded projects by NJUCP Partners NJ TRANSIT, the New Jersey Department of Transportation, and the Port Authority of New York and New Jersey. Provided your company continues to meet the eligibility criteria and comply with the participation requirements established in Code of Federal Regulations Title 49 Part 26, your certification will remain in effect until your firm completes the program (graduates) or you choose to withdraw from the program.

Note: This certification letter is to be utilized as evidence of your firm's DBE Certification under the NJUCP.

DBE Program Participation Requirements

On an annual basis, at the anniversary of your certification date, you must submit a signed and notarized DBE "No Change Affidavit" affirming that there have been no changes within your company that would affect your eligibility or status as a DBE. It is your responsibility to notify this office in writing **within 30 days** of any significant changes to your company including but not limited to the ownership, control, and location. Failure to do so may result in decertification of your business.

NJ TRANSIT's Office of Business Development will provide you notice and reminders of when the information above is due and **reserves the right under regulation to request information from you regarding your company at any time.** Failure to provide information when due and/or respond to requests for information in a timely way, may result in decertification.

DBE Certification Information

Your company's NJUCP Identification number is [redacted]
Certification Effective Date - June 1, 2021

The following table lists the North American Industry Classification System (NAICS) code(s) and classification(s) that have been assigned to your company in accordance with the service(s) your company render(s) and the business description giving details to the specific services your firm provides. Your firm will be listed on the NJUCP Directory (https://njucp.dbesystem.com) which will indicate the type of work that your firm has been certified to perform.

Business Description: Civil engineering, geophysical surveying, landscape surveying, GPS mapping, technical design engineering feasibility studies for highway, street, and bridges, engineering inspection services, traffic analysis counting surveys, and construction management.

NAICS 237310: CONSTRUCTION MANAGEMENT, HIGHWAY, ROAD, STREET AND BRIDGE
NAICS 237990: CONSTRUCTION MANAGEMENT, MASS TRANSIT
NAICS 541330: ENGINEERING SERVICES
NAICS 541360: GEOPHYSICAL SURVEYING AND MAPPING SERVICES
NAICS 541370: SURVEYING AND MAPPING (EXCEPT GEOPHYSICAL) SERVICES

On behalf of the NJUCP, we welcome you to our DBE family. We are pleased to have you as a member and wish you much success.

Sincerely,

Adonis Abreu
Senior Business Development Specialist
NJ TRANSIT OFFICE OF CIVIL RIGHTS - BUSINESS DEVELOPMENT
This message was sent to: rlee@amercom.org
Sent on: 6/21/2021 11:45:05 AM
System ReferenceID: 137160163

Certified Profile

CLOSE WINDOW

Print

Business & Contact Information

BUSINESS NAME	**MERCER PLANNING ASSOCIATES INC**
OWNER	**Ms. Courtenay Mercer**
ADDRESS	**331 1/2 8th Street** **JERSEY CITY, NJ 07302 [map]**
PHONE	**732-354-1316**
EMAIL	**CMERCER@MERCERPLANNING.COM**
WEBSITE	**http://www.mercerplanning.com**
COUNTY	**Bergen (NJ)**

Certification Information

CERTIFYING AGENCY	**New Jersey Department of Transportation**
CERTIFICATION TYPE	**DBE - Disadvantaged Business Enterprise**
CERTIFIED BUSINESS DESCRIPTION	**PROVIDES LAND USE PLANNING CONSULTING SERVICES PRIMARILY TO GOVERNMENT ENTITIES**

Commodity Codes

Code	Description
NAICS 531390	Other Activities Related to Real Estate
NAICS 541320	Landscape architectural services

State of New Jersey

DEPARTMENT OF TRANSPORTATION
P.O. Box 600
Trenton, New Jersey 08625-0600

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DIANE GUTIERREZ-SCACCETTI
Commissioner

October 4, 2021

Courtenay Mercer
MERCER PLANNING ASSOCIATES INC
344 GROVE STREET, SUITE 256
JERSEY CITY, NJ 07302

RE: Renewal of DBE Certification - Anniversary Date: Annually on October 2
Dear Ms. Mercer:

We are pleased to inform you that your firm has been found eligible to continue as a Disadvantaged Business Enterprise (DBE) by the New Jersey Department of Transportation on behalf of the New Jersey Unified Certified Program (NJUCP).

Your certification status with the NJUCP will remain in effect as long as your firm continues to meet the DBE program's eligibility requirements outlined in U.S. Department of Transportation, Code of Federal Regulations Title 49 CFR Part 26. However, on an annual basis, you must submit the "No Change Affidavit" and supporting documents.

Additionally, if any time during the year there is a change in your firm, it is your obligation to notify this agency, in writing, within (30) days. Changes include, but are not limited to: ownership, and /or control, officers, directors, management, key personnel, scope of work performed, daily operations, ongoing business relationships with other firms or individuals, or the physical location of your firm. Failure to do so may result in the removal of your DBE Certification in accordance with §26.83(j) and §26.109(c).

The following table lists the North American Industry Classification System (NAICS) code(s) and description(s) that have been assigned to your business in accordance with the service(s) it render(s).

NAICS: Specialty Description
NAICS 531390: OTHER ACTIVITIES RELATED TO REAL ESTATE
NAICS 541320: LANDSCAPE ARCHITECTURAL SERVICES

Your firm will be listed in the NJUCP Directory which can be accessed at https://njucp.dbesystem.com.

If you have any questions regarding your DBE certification, you may email NJDOT's Disadvantaged and Small Business Program Unit at DOT.DBE_ESBEPrograms@dot.nj.gov or call (609) 963-2051.

Sincerely,

Nadir A. Jones

Nadir A. Jones, Manager
Contract Compliance & DBE/ESBE Support
Division of Civil Rights & Affirmative Action Nadir A. Jones, Manager

Certified Profile

CLOSE WINDOW

Print

Business & Contact Information

BUSINESS NAME	**Richard Grubb and Associates, Inc.,** DBA **RGA, Inc.**
OWNER	**Ms. Alice Domm, Esq.**
ADDRESS	**259 Prospect Plains Road** **Building D** **Cranbury, NJ 08512 [map]**
PHONE	**609-655-0692 Ext. 324**
FAX	**609-655-3050**
EMAIL	**adomm@rgaincorporated.com**
WEBSITE	**http://www.rgaincorporated.com**
COUNTY	**Middlesex (NJ)**

Certification Information

CERTIFYING AGENCY	**New Jersey Transit**
CERTIFICATION TYPE	**DBE - Disadvantaged Business Enterprise**
CERTIFIED BUSINESS DESCRIPTION	**Cultural resource compliance services (transportation), architectural history, historical research & archaeological needs including public involvement, interpretation & consulting, cultural resource surveys, and State Historical Preservation Office (SHPO) support services.**

Commodity Codes

Code	Description
NAICS 115310	Forest management plans preparation
NAICS 541310	Architectural Services
NAICS 541618	Other Management Consulting Services
NAICS 541620	Environmental consulting services
NAICS 541690	Other Scientific and Technical Consulting Services
NAICS 541720	Research and Development in the Social Sciences and Humanities

Alice Domm
Richard Grubb and Associates, Inc. dba RGA, Inc.
259 Prospect Plains Road
Building D
Cranbury, NJ 08512

Re: Disadvantaged Business Enterprise certification for Richard Grubb and Associates, Inc. dba RGA, Inc.

Dear Alice Domm:

Congratulations! We are pleased to inform you that your company, Richard Grubb and Associates, Inc. dba RGA, Inc. has been found eligible for certification and is now certified officially as a Disadvantaged Business Enterprise (DBE) by NJ TRANSIT, on behalf of the New Jersey Unified Certification Program (NJUCP). This certification grants DBE status and benefits to your firm on federally funded projects by NJUCP Partners NJ TRANSIT, the New Jersey Department of Transportation, and the Port Authority of New York and New Jersey. Provided your company continues to meet the eligibility criteria and comply with the participation requirements established in Code of Federal Regulations Title 49 Part 26, your certification will remain in effect until your firm completes the program (graduates) or you choose to withdraw from the program.

Note: This certification letter is to be utilized as evidence of your firm's DBE Certification under the NJUCP.

DBE Program Participation Requirements

On an annual basis, at the anniversary of your certification date, you must submit a signed and notarized DBE "No Change Affidavit" affirming that there have been no changes within your company that would affect your eligibility or status as a DBE. It is your responsibility to notify this office in writing **within 30 days** of any significant changes to your company including but not limited to the ownership, control, and location. Failure to do so may result in decertification of your business.

NJ TRANSIT's Office of Business Development will provide you notice and reminders of when the information above is due and **reserves the right under regulation to request information from you regarding your company at any time.** Failure to provide information when due and/or respond to requests for information in a timely way, may result in decertification.

DBE Certification Information

Your company's NJUCP Identification number is [redacted]
Certification Effective Date - September 1, 2021

The following table lists the North American Industry Classification System (NAICS) code(s) and classification(s) that have been assigned to your company in accordance with the service(s) your company render(s) and the business description giving details to the specific services your firm provides. Your firm will be listed on the NJUCP Directory (https://njucp.dbesystem.com) which will indicate the type of work that your firm has been certified to perform.

Business Description: Cultural resource compliance services (transportation), architectural history, historical research & archaeological needs including public involvement, interpretation & consulting, cultural resource surveys, and State Historical Preservation Office (SHPO) support services.

NAICS 115310: FOREST MANAGEMENT PLANS PREPARATION
NAICS 541310: ARCHITECTURAL SERVICES
NAICS 541618: OTHER MANAGEMENT CONSULTING SERVICES
NAICS 541620: ENVIRONMENTAL CONSULTING SERVICES
NAICS 541690: OTHER SCIENTIFIC AND TECHNICAL CONSULTING SERVICES
NAICS 541720: RESEARCH AND DEVELOPMENT IN THE SOCIAL SCIENCES AND HUMANITIES

On behalf of the NJUCP, we welcome you to our DBE family. We are pleased to have you as a member and wish you much success.

Sincerely,

Adonis Abreu

Senior Business Development Specialist
NJ TRANSIT OFFICE OF CIVIL RIGHTS - BUSINESS DEVELOPMENT

This message was sent to: adomm@rgaincorporated.com
Sent on: 8/24/2021 10:59:05 AM
System ReferenceID: 142331874

Certified Profile

CLOSE WINDOW

Print

Business & Contact Information

BUSINESS NAME	**Sowinski Sullivan Architects PC**
OWNER	**Suzanne Sowinski**
ADDRESS	**25 MOHAWK AVENUE** **SPARTA, NJ 07871-1808 [map]**
PHONE	**973-726-3260 Ext. 124**
FAX	**973-726-7986**
EMAIL	**ksullivan@sowinskisullivan.com**
WEBSITE	**http://www.sowinskisullivan.com**
COUNTY	**Sussex (NJ)**

Certification Information

CERTIFYING AGENCY	**The Port Authority of New York & New Jersey**
CERTIFICATION TYPE	**DBE - Disadvantaged Business Enterprise**
CERTIFIED BUSINESS DESCRIPTION	**Architecture firm** **Rail & bus stations** **Intermodal facilities** **Shops and yards** **Historic restoration** **Commercial space designs**

Commodity Codes

Code	Description
NAICS 541310	Architectural Services
NAICS 541320	Landscape architectural services
NAICS 541330	Engineering consulting services
NAICS 541410	Interior design services

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

March 2, 2022

Suzanne Sowinski-Sullivan
President
Sowinski Sullivan Architects P.C.
25 Mohawk Avenue
Sparta, NJ 07871-1808

RE: ANNUAL AFFIDAVIT - CONTINUED DBE ELIGIBILITY

Suzanne Sowinski-Sullivan:

We are pleased to inform you that **Sowinski Sullivan Architects P.C.,** continues to meet the eligibility criteria for Disadvantaged Business Enterprise (DBE) certification pursuant to U.S. Department of Transportation, Code of Federal Regulations Title 49 Part 26.

Annually, you must submit a signed and notarized Annual "No Change" Affidavit with supporting documentation. It is your responsibility to notify this office in writing within 30 days of any changes. Failure to do so may result in decertification of your business.

If you have any questions regarding this letter, you may contact me at (201) 395-3953 or via email at LAkopdzhanova@panynj.gov.

Sincerely,

Liza Akopdzhanova
Certification Analyst
Diversity, Equity & Inclusion Office

PORT AUTHORITY NY NJ
DISADVANTAGED BUSINESS ENTERPRISE
CERTIFIED

*Please be sure to add **panynj@diversitysoftware.com** - our official system email address- to your safe sender list so you don't miss any messages from us.*

Certified Profile

CLOSE WINDOW

Print

Business & Contact Information

BUSINESS NAME	**Jersey Boring & Drilling Co., Inc.**
OWNER	**Ms. Shelly Lach**
ADDRESS	**36 Pier Lane West** **Fairfield, NJ 07004** [map]
PHONE	**973-287-6857**
FAX	**973-521-7981**
EMAIL	shelley@jerseyboring.com
WEBSITE	http://www.jerseyboring.com
COUNTY	**Essex (NJ)**

Certification Information

CERTIFYING AGENCY	**New Jersey Transit**
CERTIFICATION TYPE	**DBE - Disadvantaged Business Enterprise**
CERTIFIED BUSINESS DESCRIPTION	**Contractor for environmental drilling; concrete core drilling; material testing; inspection services; test borings; well installations; geotechnical instrumentation installations; concrete and asphalt coring.**

Commodity Codes

Code	Description
NAICS 238910	Site Preparation Contractors
NAICS 237110	Drilling water wells (except water intake wells in oil and gas fields)
NAICS 237110	Water and Sewer Line and Related Structures Construction
NAICS 237110	Water well drilling, digging, boring or sinking (except water intake wells in oil and gas fields)
NAICS 238910	Boring, for building construction
NAICS 238910	Core drilling and test boring for construction
NAICS 238910	Drilled shaft (i.e., drilled building foundations) construction
NAICS 238910	Test boring for construction

Philip D. Murphy, Governor
Sheila Y. Oliver, Lieutenant Governor
Diane Gutierrez-Scaccetti, Commissioner
Kevin S. Corbett, President & CEO

NJTRANSIT
One Penn Plaza East
Newark, NJ 07105-2246
973-491-7000

December 11, 2020

Shelly Lach
Jersey Boring & Drilling Co., Inc.
36 Pier Lane West
Fairfield, NJ 07004

Re: Disadvantaged Business Enterprise certification for Jersey Boring & Drilling Co., Inc.

Dear Shelly Lach:

Congratulations! We are pleased to inform you that your company, Jersey Boring & Drilling Co., Inc. has been found eligible for certification and is now certified officially as a Disadvantaged Business Enterprise (DBE) by NJ TRANSIT, on behalf of the New Jersey Unified Certification Program (NJUCP). This certification grants DBE status and benefits to your firm on federally funded projects by NJUCP Partners NJ TRANSIT, the New Jersey Department of Transportation, and the Port Authority of New York and New Jersey. Provided your company continues to meet the eligibility criteria and comply with the participation requirements established in Code of Federal Regulations Title 49 Part 26, your certification will remain in effect until your firm completes the program (graduates) or you choose to withdraw from the program.

Note: This certification letter is to be utilized as evidence of your firm's DBE Certification under the NJUCP.

DBE Program Participation Requirements

On an annual basis, at the anniversary of your certification date, you must submit a signed and notarized DBE "No Change Affidavit" affirming that there have been no changes within your company that would affect your eligibility or status as a DBE. It is your responsibility to notify this office in writing **within 30 days** of any significant changes to your company including but not limited to the ownership, control, and location. Failure to do so may result in decertification of your business.

NJ TRANSIT's Office of Business Development will provide you notice and reminders of when the information above is due and **reserves the right under regulation to request information from you regarding your company at any time.** Failure to provide information when due and/or respond to requests for information in a timely way, may result in decertification.

DBE Certification Information

Your company's NJUCP Identification number is [redacted]
Certification Effective Date - February 1, 2021

The following table lists the North American Industry Classification System (NAICS) code(s) and classification(s) that have been assigned to your company in accordance with the service(s) your company render(s) and the business description giving details to the specific services your firm provides. Your firm will be listed on the NJUCP Directory (https://njucp.dbesystem.com) which will indicate the type of work that your firm has been certified to perform.

Business Description: Contractor for environmental drilling; concrete core drilling; material testing; inspection services; test borings; well installations; geotechnical instrumentation installations; concrete and asphalt coring.

NAICS 238910: SITE PREPARATION CONTRACTORS
NAICS 237110: DRILLING WATER WELLS (EXCEPT WATER INTAKE WELLS IN OIL AND GAS FIELDS)
NAICS 237110: WATER AND SEWER LINE AND RELATED STRUCTURES CONSTRUCTION
NAICS 237110: WATER WELL DRILLING, DIGGING, BORING OR SINKING (EXCEPT WATER INTAKE WELLS IN OIL AND GAS FIELDS)
NAICS 238910: BORING, FOR BUILDING CONSTRUCTION
NAICS 238910: CORE DRILLING AND TEST BORING FOR CONSTRUCTION
NAICS 238910: DRILLED SHAFT (I.E., DRILLED BUILDING FOUNDATIONS) CONSTRUCTION
NAICS 238910: TEST BORING FOR CONSTRUCTION

On behalf of the NJUCP, we welcome you to our DBE family. We are pleased to have you as a member and wish you much success.

Sincerely,

Adonis Abreu
Senior Business Development Specialist
NJ TRANSIT OFFICE OF CIVIL RIGHTS - BUSINESS DEVELOPMENT

WSP USA • 2 GATEWAY CENTER, 10TH FLOOR, NEWARK NJ 07102 • WWW.WSP.COM