

Technical Proposal

RFP No. 16-006

Submitted to **NJTRANSIT**

Submitted by **AECOM USA, Inc.**

Rail, Track and Station
Engineering & Construction
Assistance Services for the
**Long Slip Fill and Rail
Enhancement Project**





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Cover Letter and Introduction





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May 17, 2016

NJ TRANSIT Corporation
Procurement Department, 6th Floor
One Penn Plaza East
Newark, New Jersey 07105-2246
Attn: Bid Room

Re: RFP No. 16-006 – Rail, Track and Station Engineering and Construction Assistance Services for the Long Slip Fill and Rail Enhancement Project

To Whom It May Concern:

In October 2012, tidal flooding associated with Superstorm “Sandy” caused significant damage to NJ TRANSIT Rail Facilities in Hoboken; the flooding also resulted in an extended period of service interruption and damage to rolling stock stored at the Hoboken Yard. The surge created by Sandy inundated the Long Slip Canal and overtopped its bulkheads, significantly contributing to the flooding of the Yard as well as the City of Hoboken and Jersey City.

In conjunction with the design and construction of the Hudson-Bergen Light Rail Transit System in the late 1990s, AECOM and its Legacy companies studied the potential for filling Long Slip for virtually its entire length. AECOM and its Legacy companies have been involved on this project since.

The AECOM Team is experienced, knowledgeable and well positioned to execute the technical scope of work outlined in this Request for Proposal associated with the proposed station development and the rail systems and support structures needed to achieve the project goals. Currently, the AECOM led team is assisting NJ TRANSIT, under Contract Task Order 7, with project planning, coordination, permitting support and conceptual engineering services associated with the proposed canal filling, CSO extension and new rail facility development at the Long Slip site. Previously, AECOM and its Legacy companies provided professional services which included evaluation of design and construction alternatives, development of regulatory permitting applications, preparation of engineering drawings and specifications and coordination of interfaces with project stakeholders. Subsequently, two limited project development activities were completed in the 2013-2014 time period under an existing contract; initial data retrieval and review, performed under Contract Task Order 4, and FTA grant application support performed under Contract Task Order 4, Revision 1.

Our team brings the ideal mix of local expertise, knowledge, and innovation as evidenced by our team's collaborative work with all regulators, reviewers, and stakeholders of this project. Our team will be led by **Edward Hrinewski, STS, Project Manager**, who is no stranger to NJ TRANSIT. He has successfully led the development of HBLRT system's program, including the MOS-3/38th Street Bayonne Extension, Danforth Interlocking, MOS-1, and MOS-2 projects. These projects are proof of his ability to lead a major design effort.

As **Officer-in-Charge**, I will provide Mr. Hrinewski will top level leadership for cost, schedule, and quality, and will promote coordination with NJ TRANSIT for open communications and cost-effective solutions. I will provide the full corporate support necessary, and will oversee the broad execution of the project. Our project manager will also have the support of **John Fiore, PE** who will serve as **Program Coordinator**, and who is extremely familiar with this project and the project site. Mr. Fiore has been involved in the development of the Long Slip Canal Project for 17 years; he was the Task Manager for the 3-year engineering effort that developed



alternatives analyses associated with the extending of a municipal combined sewer overflow (CSO) and filling the canal to facilitate future development. Mr. Fiore's background and project specific experience will insure comprehensive coordination between the current engineering activities and the scope of work proposed in this request.

Our team also includes six local DBE firms who are well known by NJ TRANSIT and who have worked very successfully in the past with AECOM. They include **InGroup Consulting** (Records Management); **JCMS, Inc.** (Cost Estimating, Scheduling, Risk Management, and Records Management); **Naik Consulting Group, PC** (Surveying); **Sowiski Sullivan Architects, PC** (Access / Egress); **VJ Associates** (Value Engineering); and **Yu & Associates** (Geotechnical Engineering). We have also engaged the services of Jacobs Engineering Group, Inc. who will assist us with structural engineering, crew quarters building, and Track Design.

The AECOM Quality Program is based on our ISO 9001:2008 certification, and we will make sure that this program is carried out to meet your cost, schedule, and quality expectations throughout.

For this project to be successful, it will take a group of extremely dedicated and proven professionals who know the issues and have a track record of providing innovative, efficient, and implementable solutions; who offer a collaborative approach and have partnered with NJ TRANSIT and the FTA on past projects; and who are driven to deliver for NJ TRANSIT. Our team has the tools and depth of resources necessary for this assignment, as well as substantial prior experience in New Jersey, working under FTA guidelines, and extensive knowledge of the project site.

As required in the RFP, AECOM acknowledges receipt of Addendum Number 1, dated April 20, 2016; and Addendum Number 2, dated May 10, 2016.

We thank you for your consideration of AECOM's proposal and we await your guidance on the next steps in this procurement. Should you have any questions or require clarification, please feel free to contact me at 212.973.2901, or by email Julie.Dorazio@aecom.com.

Sincerely,

AECOM

A handwritten signature in blue ink that reads "Julie D'Orazio".

Julie D'Orazio, PE

Senior Vice President, Officer-in-Charge

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Qualifications of Firms





02 Qualifications of Firms

The Long Slip Fill and Rail Enhancement project, will allow NJ TRANSIT to operate train services for an extended period of time and recover more quickly from storm events. The surge created by Superstorm Sandy inundated the canal and overtopped its bulkheads, significantly contributing to the flooding of Hoboken Terminal and Yard, as well as the City of Hoboken and Jersey City. This project's intent is to fill the canal to an elevation above the FEMA base flood elevation, and six new tracks will be constructed on top of the fill. NJ TRANSIT needs a consultant who is known, who is knowledgeable about the project site, and trusted to deliver the project safely, without disruption to operations, on time and on budget. We believe we are the best team available for the job.

BENEFITS OF OUR ORGANIZATIONAL STRUCTURE

Our entire team shares a common vision: our success is dependent on how well we collaborate, share lessons learned, and discuss concepts and issues early in the process when decisions have the greatest impact. Team members were chosen for their direct relevant experience and proven past performance. They are proficient, easy to work with, and bring special talents. We will draw upon their depth of expertise, including team member synergies on previous projects to exceed expectations and deliver the project to NJ TRANSIT's expectations.

OUR TEAM'S CAPABILITY TO PERFORM ALL PHASES AND TASKS FOR THIS PROJECT

AECOM was created to design, build, finance, and operate the world's infrastructure. Whether we serve clients at one phase of the project lifecycle or throughout it, our role is to apply creative vision, technical expertise, interdisciplinary insight, and local experience to address complex challenges in new and better ways. We help our clients deliver critical resources and

Our team brings an organizational structure proven by experience to manage the NJ TRANSIT Long Slip Fill and Rail Enhancement project to its successful completion and to maximize value for NJ TRANSIT and the citizens of New Jersey. As you review our qualifications we ask that you consider the following characteristics:

Proven – A local team with knowledge and experience in New Jersey compliance and FTA guidelines.

Collaborative – We will collaborate with NJ TRANSIT, regulators, reviewers and stakeholders.

Driven – The A-team has the local qualifications and experience to deliver this project within schedule and budget.

We understand the uniqueness of this project and have structured the team around success factors such as:

Experience

- Members of our team have and continue to work on previous phases of this project
- Our Project Manager and Program Coordinator are exceptionally familiar with the project site
- More than 25 years of history working with NJ TRANSIT, including 18 years running the Hudson-Bergen LRT Line
- Working relationships with all stakeholders, including rail transit, and federal regulators / reviewers

Program Management Excellence

- Strict cost controls to deliver the project on budget
- Unified (paperless office) project controls to see that schedule milestones are met and costs controlled
- Mitigating risk factors seamlessly from the design phase through construction
- Glowing references from similar clients with challenging time frames



services, improve the places where people live and work, and sustain a world in which we can all flourish.

AECOM is a premier, fully integrated professional and technical services firm, with more than 80,000 employees — including architects, engineers, designers, planners, scientists, and management and construction services professionals — serving clients in more than 150 countries around the world. AECOM is ranked as the #1 engineering design firm by revenue in *Engineering News-Record* journal's annual industry rankings, and has been recognized by *Fortune* magazine as a World's Most Admired Company. The firm is a leader in all of the key markets that it serves, including transportation, facilities, environmental, energy, oil and gas, water, high-rise buildings, and government. AECOM provides a blend of global reach, local knowledge, innovation, and technical excellence in delivering customized and creative solutions that meet the needs of clients' projects. A Fortune 500 firm, AECOM companies, including URS Corporation and Hunt Construction Group, had revenue of approximately \$19 billion during the 12 months ended June 30, 2015.

MASS TRANSIT, RAILROADS, AND NJ TRANSIT

AECOM's transit-rail practice leads the way in the planning, design, and project management of major transportation systems, including rail, regional rail, light rail, and intercity rail. Our area of expertise include engineering design, program and construction management, planning, environmental analysis, system design and integration; stations and facilities design / architecture, and facility and asset management.



AECOM is ranked #1 in Design, Transit / Rail, and Transportation by Engineering News Record.

AECOM has extensive experience on some of NJ TRANSIT's most ambitious projects to date. This includes Design-Build-Operate-Maintain (DBOM) services for the

Hudson-Bergen Light Rail Transit (HBLRT) System

the largest transit DBOM in the United States. Work has included a 15.95-mile system with an additional 3 miles of yard track, rehabilitation of an existing 4,096-foot-long tunnel 160 feet below grade, 24 passenger stations and 18 elevators, five park-and-ride facilities, 52 Light Rail Vehicles (LRVs), a maintenance complex containing 75,000-square-foot LRV storage building, more than a dozen bridges, and state-of-the-art tunnel safety systems.



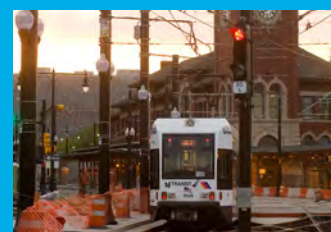
In addition to the initial system, our staff provided engineering design and construction services for improvements including the recently opened 8th Street Extension and an interlocking near Danforth Avenue Station.

Other major NJ TRANSIT projects include providing construction management for the **Portal Bridge Replacement** project; management of the 34-mile, 20-station **River Line**; assisting the master developer for the **Hoboken Terminal and Yard Complex**; providing design for the **ARC Mass Transit Tunnel** project; and providing project management and design for the **Newark-Elizabeth Light Rail Extension**.





AECOM team members bring significant experience on rail design projects



AECOM has provided services for virtually every transit agency in the US, and we are especially proud of our record with NJ TRANSIT and other agencies in the region.

KEY SUBCONSULTANTS

AECOM has selected as its key subconsultants firms that we have worked with successfully in the past, and that can provide a meaningful contribution on this project in support of AECOM.



Jacobs Engineering Group, Inc. (Jacobs®) is one of the largest global providers of comprehensive professional consulting services including planning, design, construction management, and financial analysis expertise to successfully implement projects for government and private sector clients. The firm has depth of resources, world-class expertise, and financial stability to guarantee successful project completion. For more than 65 years, Jacobs have been providing its expertise to regional

transit agencies, state departments of transportation, counties, and freight railroads including NJ TRANSIT, NJDOT, NJTA, DVRPC, PANYNJ, Metro-North Railroad (MNR), Long Island Rail Road (LIRR), New York City Transit (NYCT), and Amtrak.

The firm offers planning, design and construction management services for all types of transit facilities, including commuter rail, rapid transit, light rail and multimodal terminals, as well as Class I and short line freight railroads. They have experience in signaling, track design, bridges, catenary systems, electric traction power, stations, yards, maintenance facilities, structures, tunnels, and telecommunications systems.

Broadening this experience and discipline base are the in-house technical specialists in operations planning and computer simulation, allowing large- and small-scale projects to proceed through the planning and approval phases efficiently.

Jacobs first-hand knowledge of the rail industry translates into high value for NJ TRANSIT. Its staff includes several former Class I railroad employees from the B&M, Milwaukee Road, Penn Central, Conrail, Metro-North, and Amtrak. They are adept at providing construction management, inspection, architectural and facility design, as well as track and bridge design.



Jacobs' engineers provide rail transit and railroad clients with all the services necessary to bring a project from planning through design to construction. They can provide a railroad or transit authority with solutions that encompass all civil, structural, electrical and operating requirements. The company provide solutions for new starts/connections, service extensions and modernization of rail facilities including light rail, subways, elevated, commuter and freight service.

Jacobs area of expertise include:

- Construction and Project Management
- Civil / Structural Engineering
- Track Engineering
- Transportation Planning / Environmental Analysis
- Signal System / Train Control
- Facilities
- Communications Systems
- Traction Power Engineering
- Electrical Design

The firm has worked for numerous transit agencies and railroads nationwide including: NJ TRANSIT, MTA Long Island Rail Road, MTA Metro-North Railroad, MTA New York City Transit, Delaware River Port Authority, Southeastern Pennsylvania Transportation Authority, Massachusetts Bay Transportation Authority, New Jersey Department of Transportation, the Port Authority of New York and New Jersey, Washington Metropolitan Area Transit Authority, Mass Transit Administration of Maryland, Metropolitan Atlanta Rapid Transit Authority, Chicago Transit Authority, Amtrak, Northern Indiana Commuter Transportation District, Southern California Rapid Transit District, Minnesota Department of Transportation, Norfolk Southern Railroad, Conrail, and Metra.



Jois Construction Management System, Inc. (JCMS) has provided PM/CM, cost estimating, CPM scheduling, delay claim analysis, and web-based document control on a large number of infrastructure projects ranging in size from \$1 million to more than \$5 billion. JCMS is the only SBE/DBE firm that has provided cost estimating, scheduling and construction management services to NJ TRANSIT on many projects through Term Contract Assignments for more than 19 years, of which 13 years have been performed as a prime consultant. JCMS works with A/E firms from the beginning of a project and develop construction cost estimates through the various design phases and for various scenarios. Working with the project team the firms can develop order of magnitude scope with the project team during the Concept phase. During subsequent phases the firm can develop quantity take-off, obtain material pricing from vendors, develop labor/equipment crew requirements for each work component, estimate productivity rates based on previous similar experience analyze bidding climate, resource availability (manpower and equipment) and determine impact on construction time and cost. JCMS can also perform bid evaluation, analysis and bid reconciliation.

Over the years, JCMS has used Primavera software for scheduling more than 250 projects. The firm has provided CPM Scheduling services for large and complex projects that required extensive phasing requirements. JCMS' substantial experience in mass transit construction as it relates to procurement of special materials, productivity, outages etc. is critical to developing realistic plans for projects. The company has developed and maintained integrated master schedules, design schedules, pre-bid schedules and detailed cost and resource loaded construction schedules.

JCMS has provided services for all the major rail, transit, and transportation agencies and authorities in the region, including NJ TRANSIT.



Naik Consulting Group, PC (Naik), a full service engineering, surveying and construction management firm, brings an extraordinary breadth of talent, creativity and technical expertise to the multi-faceted NJ and NY rail and transit industry. Many of its senior personnel have been directly involved in the area's most high-profile rail and transit infrastructure projects over the past ten years.

The firm's individualized problem solving capabilities coupled with an experienced and dedicated staff in the areas of civil engineering, design, survey, (Including 3D scanning) and inspection enables it to be uniquely qualified to address the specific needs of the rail industry. Naik has been involved in various capacities with mechanical electrical engineering, railway electrification, power, signals, switches, ITS, utilities, platforms, signals, at-grade crossings, communications, train control, train and track safety and security, rails, overhead contact systems, track, operations and maintenance. Naik has also designed rail facilities and structures such as tunnels, substation, rail yards, stations and platforms.

Transit clients include NJ TRANSIT. Naik is providing surveying and mapping services for the entire transit line (385 miles) to support the design and implementation of ASES II Positive Train Control System, the implementation of technology to add protection against collisions of trains traveling less than 20 mph. Naik is also a member of teams for 10 Task-Order Contracts including several that are part of the SuperStorm Sandy recovery. Addition experience includes work on the NYCT Second Avenue Subway project, where since the inception of the massive program in 2001, Naik and its engineers and surveyors have contributed various services including survey, scanning, utilities, MEP, Site/Civil and structural design to this project and have provided survey and utility services on a number of the SuperStorm Sandy recovery projects. For the MTA Long Island Rail Road, Naik is providing survey, civil and utility design for Jamaica Station; and for the MTA Metro-North Railroad, Naik provided extensive survey and civil design services.



Founded in 1996 and headquartered in New Jersey with branch offices in Philadelphia and Harrisburg, Pennsylvania, Sowinski Sullivan Architects, P.C. (SSA) provides creative architectural services to a broad spectrum of public transportation clients. The firm's focus is Transportation Architecture, with almost a 100% of its project base being transportation facilities. Insightful programming, outstanding phased construction plans, historic preservation, thoughtful site design and experience with community planning benefit many transportation agency clients that include: NJ TRANSIT, Amtrak, the Port Authority of NY & NJ, New York City Transit, Metropolitan Transportation Authority, Metro North Railroad, Connecticut DOT, the Long Island Railroad, NFTA, NYSDOT, CDTA, SEPTA, PATCO, BARTA, COLTS, PennDOT, WMATA, Sound Transit, and the Minneapolis Southwest Light Rail Transit.

SSA has a large body of demonstrable experience in urban and suburban rail facilities as well as upgrades for new and existing facilities. SSA has designed improvements at more than 250 transit facilities over the past two decades on all types of facilities ranging from above and below grade stations, maintenance shops, welfare facilities, parking garages, control houses, and signal and yard towers. The work has covered every aspect of facility planning, design, renovation, expansion and restoration from major renovations to rail stations such as the design of a new station in Wood-Ridge, NJ, to the platform expansion at LIRR's Jamaica Station, including canopies and other platform amenities. Currently, SSA is working on the platform extension at NJ TRANSIT's New Brunswick Station, and also a new station in North Brunswick, which includes new platforms with access over the tracks from a pedestrian bridge; the firm is the architect for the expansion of the existing County Yards site in New Brunswick, NJ, which will include such upgrades as a new two track S&I facility with support spaces, welfare facilities and building replacement. SSA is also currently leading the design on the re-development of the New Haven-Hartford-Springfield (NHHS) Rail Line for CTDOT, which includes seven new stations and improvements at four others.



VJ Associates (VJA), is a noted industry full-service construction consulting firm with over 32 years of experience, providing value engineering and project controls services throughout the northeast. Established in 1984 by President Vijay Desai, VJ Associates is DBE/MBE Certified in NJ, and has a full time staff of more than 70 engineers and professionals, and support personnel with multi-disciplinary backgrounds and diverse experience. This ability to see the 'big picture' of a project from concept through to construction sets the firm apart from many such firms.

Professional accreditations held by VJA personnel include: AVS, CCP, LEED, PE, PMP, and RICS. In addition to value engineering, the firm also provides cost estimating, cost controls, scheduling, life cycle cost analysis, change order evaluation, litigation support, and claims analysis. Accuracy and timeliness are the cornerstones of VJA's culture. Its commitment to deliver superior service is demonstrated by its long-term relationships with institutional, architectural, engineering, public, private, and construction clients. The firm has offices in New Jersey, Philadelphia, New York, New England, and Washington, DC.

VJA has been providing Value Engineering services for the NJ TRANSIT's Long Slip Canal Fill and Rail Enhancement Project at the Hoboken Terminal and Hoboken Yard, following damage from Superstorm Sandy.

The firm also provided Value Engineering services for the 60% design stage document to the NYC Office of Management and Budget for the Metropolitan Avenue / Fresh Pond Road Bridge over the LIRR in Queens.



Yu & Associates (Yu), is an award winning engineering consulting firm founded in 1992. The firm specializes in geotechnical, environmental and site/civil engineering. Geotechnical engineering is the core business of YU, and they have extensive project experience on NJ Transit projects. Their professional staff is composed of licensed and experienced engineers well prepared to provide high quality and responsive services to our clients. YU is a certified disadvantage business enterprise (DBE) with NJ TRANSIT and is also a minority business enterprise (MBE) certified with numerous state and local agencies. Their office is located in Elmwood Park, New Jersey, within 15 miles from Newark.



Established in 1995, InGroup, Inc., is a WBE/DBE firm that provides strategic and support solutions for stakeholder engagement, outreach communications, public involvement, marketing and public relations. The firm has successfully provided outreach and related consulting services on NJ TRANSIT Task Order contracts. In particular, in working with AECOM and Legacy URS on the All-Weather Strategy, InGroup supported the documentation of the organization's emergency response protocols as well as training and training videos for NJ TRANSIT team members. In addition, the firm currently supports the AECOM / Legacy URS team on the NJ TRANSIT Long Slip Canal Fill and Rail Enhancement Project, Phase I, by providing document controls.

Other support roles have included outreach for planning and environmental review phases: Public Involvement Plans, database and correspondence logs, meetings and outreach efforts, stakeholder and agency coordination, Environmental Justice and Limited English Proficiency strategies, meeting moderation and facilitation, and award-winning public information materials such as brochures, fact sheets, website development, social media, infographics, PowerPoints, and more.



AVAILABILITY OF STAFF / ANTICIPATED WORKLOAD

An evaluation of our current project workload, taking into account resources involved with existing proposals and active projects, indicates that the designated key personnel, all full-time employees, will be available for this project.

Regardless of our proposed staff current commitments, they will be available for the necessary percentage of time, and for the necessary hours to carry out their roles as proposed.

AECOM commits to providing additional personnel as needed to properly staff and support the NJ TRANSIT Long Slip Fill and Rail Enhancement Project. This allocation of staff resources will enable us to meet NJ TRANSIT's specified deadlines.

A table illustrating our key staff availability at the time of Notice to Proceed, follows below.

Name/Role	Percent Dedicated to NJ TRANSIT Long Slip Fill & Rail Enhancement Project at NTP	Percent Dedicated to Other Projects
Edward Hrinewski, STS Project Manager	95	5% - Atlanta Streetcar Project Closeout
John DeVecchi, PE Design Manager	90	100% -MNR D/B Power/C&S - 50% by end of 2016
Julie D'Orazio, PE Officer-in-Charge	5	95% -Project Executive for various mass transit projects in the region
John Fiore, PE Program Coordinator	20	80% - Phase 1 of the Long Slip Fill and Rail Enhancement Project
Peter Totten, PE Quality Officer	10	90% - various quality related activities
Michael Naughton, PE, CCM Constructability	10	90% - Project Executive on Several Transit Projects
John Deerkoski, PE Structural / Civil Lead	60	25% - NJT Long Slip Phase 1 5% - TBTA QM-40 Tunnel Rehab 5% - NYSDOT R11 RDSA 5% - MNR Hudson Line Resiliency
Silverio (Sal) Conte Rail Systems Lead	60	various assignments as Principal-in-Charge
Peer Reviewers	10	90



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NJ TRANSIT Long Slip Canal Fill

Jersey City, NJ

Client

NJ TRANSIT

Project Value

\$100 million

Completion Date

2015

Twenty-First Century Rail Corporation, a special purpose company formed by AECOM, was responsible for the design and construction of the \$2 billion Hudson-Bergen Light Rail Transit System, and is now operating and maintaining the system. In conjunction with the design of the Hoboken Terminal segment of the system, AECOM provided engineering services associated with the Long Slip Canal Fill Project. These services included alternatives evaluation, conceptual design development, and final engineering associated with the filling of a 2000-foot channel along the Hudson River adjacent to Hoboken Yard. The task included design of a 10' x 12' combined sewer outfall extension, design of a pedestrian bridge, bulkhead restoration and canal closure retaining walls, geotechnical analyses, evaluation of impacts to adjacent land uses and regulatory considerations. The pedestrian bridge and bulkhead restoration was constructed in 2008-2009. The combined sewer extension and canal fill effort was deferred to a future date.

In October 2012, tidal storm surge associated with Superstorm Sandy caused significant damage to NJ TRANSIT facilities in Hoboken. The surge inundated the canal and overtopped its bulkheads, significantly contributing to flooding of Hoboken Yard as well as the City of Hoboken and Jersey City. Subsequently, NJ TRANSIT engaged URS to assist with a re-evaluation of the previous canal fill design, enhancements to improve future resiliency and technical support associated with the FTA grant application process to support project development.

In 2015, AECOM assisted NJ TRANSIT with alternatives analysis, project development and stakeholder coordination, preliminary civil design, geotechnical engineering, assess and utility design, constructability assessment, preliminary cost estimating and coordination of future rail systems and operational enhancements.





NJ TRANSIT Portal Bridge Capacity Enhancement

Secaucus, NJ

Client
NJ TRANSIT

Project Value
\$1.4 billion

Completion Date
Ongoing



AECOM is the lead member of a joint venture team selected to provide construction management services for the Portal Bridge Capacity Enhancement (PBCE) project. This project is a key element of New Jersey's "once in a generation" transportation initiative to double the capacity and expand the service area for NJ TRANSIT commuter trains going to midtown Manhattan from Northern New Jersey. It will also eliminate reliability and maintenance issues of the existing 100-year old two-track Portal swing bridge that crosses the Hackensack River just west of the Secaucus Transfer facility.

The PBCE Project provided a new 5-track alignment crossing the Hackensack River on northern 3-track and southern 2-track fixed bridges, feeding a new Northeast Corridor (NEC) and ARC configuration eastward through Secaucus. The two new fixed 3-span, network tied arch bridges, situated approximately 50 feet above mean high water, and the NEC operations they carry will be immune from the roughly 200 annual maritime movements that currently traverse the Portal Bridge channel and cause frequent train delays from bridge openings and failed re-engagement of the miter rails.

The new bridges are also intended to allow an increase in operating speed through this section to 90 mph, from the current 60 mph. An additional crossing under the relocated NEC is also included, providing direct access to NJ TRANSIT's

M&E Line.

On the east side of the Hackensack River, the PBCE project contains north and south alignments of approximately $\frac{3}{4}$ of a mile each, most of which are on elevated structure constructed from temporary work platforms built over a wetlands area. On the west side of the Hackensack River, the project contains north and south alignments on elevated structure of a approximately $\frac{3}{4}$ of a mile each that will be constructed from existing and new access roads. The westernmost limit of the PBCE entails new track construction approximately one mile in length virtually in the same footprint of the existing tracks.

The project also involves relocation of a 138kv feeder, marine finger pier construction, and demolition, cleanup, and associated systems work, including an increase in the size and complexity of both Swift and Lack interlocks. The PBCE work is being accomplished in a corridor that averages 160 feet in width, is 2.5 miles in length and has the most active passenger rail main line in North America running through it.



NJ TRANSIT Hudson-Bergen Light Rail Line

Hudson / Bergen Counties, NJ

Client

NJ TRANSIT

Project Value

\$2.25 billion

Completion Date

Ongoing

The \$2.25 billion Hudson-Bergen Light Rail Transit (HBLRT) System consists of 15.9 miles of track and 24 stations serving seven cities in Hudson County from Bayonne to North Bergen. It is the largest public works program in New Jersey history and the largest transit DBOM in the United States. This ambitious FTA-funded transportation project was a public-private partnership with NJ TRANSIT, yet was designed to FRA standards. The alignment is built on private rights-of-way, city streets, and elevated structures. HBLRT operates on a dedicated right-of-way including bridges, grade separation viaducts, and at-grade roadway crossings through the streets of Jersey City—one of the more densely populated cities in North America.

With a weekday daily ridership of over 45,000, the success and contribution of the HBLRT is clearly demonstrated by the enormous growth of commercial and residential development in this formerly depressed area along the Hudson River waterfront. The scope of work included:

- 15.94-mile system with an additional 3 miles of yard track
- The rehabilitation of an existing 4,096-foot-long tunnel 160 feet below grade
- 24 passenger stations and 18 elevators
- Five park-ride facilities
- 52 light rail vehicles
- A maintenance complex containing 9 storage tracks, 5 maintenance tracks, a 100,000 square foot maintenance shop, a 75,000-square-foot Light Rail Vehicle (LRV) storage building, a 40-acre storage yard, car wash, paint shop, maintenance pits, and machine shop
- More than a dozen bridges
- State-of-the-art tunnel safety systems include fire detection, fire suppression, four tunnel ventilation fans, two platform ventilation fans, two shaft pressurization fans, and emergency lighting and communications. The new underground station is accessed by high-speed elevators from an intermodal facility at grade level.



In addition to the MOS -1 and MOS-2, the initial system, AECOM provided engineering services, design, and construction services for improvements including the recently opened 8th Street Extension (MOS-2 extension) and an interlocking near Danforth Avenue Station.

On the 8th Street Extension Project (MOS-2 extension), a 0.8-mile extension of the HBLRT system from southern terminus of 22nd Street to 8th Street, AECOM provided design and construction. Scope included catenary, signals, communications systems including control center upgrades, system safety certification, and startup, testing, and commissioning.

AECOM designed, constructed, and commissioned the new interlocking consisting of a diamond crossover and siding track south of Danforth Avenue Station which provides increased service capabilities and will integrate with the 8th Street extension. Scope includes civil work, track work, and systems. Systems upgrades included installation of new system-wide cabling and cable way, wayside signal equipment, track installation, and overhead catenary.

Since the inaugural opening of first phase in April 2000, the firm has continuously operated HBLRT and maintained the infrastructure, rail system, stations, and facilities. This operation and maintenance of the LRT System will continue through April 2020.



NJ TRANSIT Newark-Elizabeth Rail Link Extension

Newark, NJ

Client
NJ TRANSIT

Completion Date
2006

Project Value
\$100 million

This project involved an approximate one-mile extension of the Newark City subway linking NJ TRANSIT's Broad Street Station and Pennsylvania Station. The project includes an 800-foot long tunnel segment connecting to the existing subway tunnel, with surface running for the remainder of the route.

The new tunnel extension was built using the cut-and-cover method. AECOM designed the track alignment so that the existing turnout tunnels could be used as much as possible reducing impacts to the existing structure. The track structure utilized vibration dampening fasteners to minimize the noise and vibration impacts on nearby historic structures. The extension has an emergency ventilation system and ancillary rooms containing an electrical substation.



The remaining portion of the MOS-1 alignment is surface-running and includes four stations. A portion of at-grade track alignment is on a floating slab structure to provide noise and vibration mitigation for the nearby New Jersey Performing Art Center. The streets along the right of way was reconstructed from building face to building face to accommodate the track which required an alignment shift for the roadway. Existing underground utilities were relocated as required. Stations were designed to provide visual compatibility with the historic buildings, NJPAC, and neighborhoods that surround densely developed downtown Newark.



In addition to trackwork and track alignment, AECOM provided project management, civil and utility design for the at-grade segment of the project. AECOM also provided project coordination for geotechnical and environmental investigations, surveying, noise and vibration testing and design.



NJ TRANSIT Newark City Subway Extension and Vehicle Base Facility

Bloomfield, NJ

Client
NJ TRANSIT

Project Value
\$78 million

Completion Date
2002



AECOM provided track alignments, preliminary design and preparation of a design/build contract. The firm (formerly Washington Group International) was the prime contractor for design and construction management of the one-mile Newark City Subway (NCS) Line Extension, three new stations and a new Light Rail Vehicle Base Facility (VBF) in Belleville/Bloomfield, with a total project value of \$78 million.

In addition to providing complete site civil and facilities engineering on the 18-acre VBF site, the firm performed detailed railroad engineering, including track, signals, communications, highway-grade crossing warning devices and traffic preemption, overhead catenary system and traction power substation design for both the NCS and Conrail track on the Orange Industrial Track. The existing Conrail Orange Industrial Track was purchased by New Jersey Transit and rebuilt under this contract to provide shared right-of-way for NCS LRVs and Conrail freight traffic. AECOM oversaw more than 20 procurement contracts for this project.

A new fleet of 16 Light Rail Vehicles, identical to the LRV fleet provided for the Hudson-Bergen Light Rail Transit Project, was delivered and service tested as part of this contract. The new Vehicle Base Facility was specifically designed to house and maintain the new LRV fleet, plus maintain the existing Presidential Conference Committee fleet during testing and commissioning of the new vehicles.

The NCS facility consists of the 70,000 SF LRV Maintenance Shop and Administration Building and the LRV Storage Building. The first floor of the LRV Maintenance Shop and Administration Building houses industrial areas, offices, a first aid room and welfare facilities. The second level includes administrative areas, the operation center, and communication room.



THE Trans Hudson Express Tunnel (ARC)

New York / New Jersey

Client

PORT AUTHORITY OF NEW YORK
AND NEW JERSEY / NJ TRANSIT

Completion Date

cancelled in 2010

Project Value

\$15 billion



AECOM as part of a joint venture, known as THE Partnership, provided NJ TRANSIT with preliminary engineering and final design services for the \$8.7 billion access to the Region's Core (ARC) Tunnel. Formerly known as the Trans-Hudson Express Tunnel, the facility was projected to more than double commuter rail capacity between New Jersey and New York.

The project comprised of a commuter rail project to increase passenger service capacity on the NJ TRANSIT between Secaucus junction in New Jersey and Manhattan in New York City. New infrastructure would have included new trackage, a new rail yard, and a tunnel under the Hudson River. Construction began in mid-2009 and the project was slated for completion in 2018, but it was cancelled in October 2010. The project was initiated after studies conducted in the 1990s determined that new rail tunnels under the Hudson River were the best approach to address transportation needs for the New York Metropolitan area.

The project would have more than doubled the number of trains from New Jersey to midtown Manhattan, providing direct, one-seat service from most of NJ TRANSIT's rail lines, as well as more frequent service to in-state destinations. The new tunnels would have connected to a six-track, state-of-the-art construction of a new station under 34th Street east of the existing Penn Station with pedestrian connections to the existing station and NYCT's Eighth, Seventh, and Sixth avenues, and Broadway subway lines.

The team developed an integrated program schedule to analyze the impact of ROW/property easement schedules on the overall program. The team also reviewed a 6,000 activity Oracle Primavera schedule and boiled it down to a Level 2 program schedule that the management team could then use to conduct what-if analyses at the program level. With that schedule tool, the management team could easily understand and communicate how changes in one contract would ripple through the program. Matrix was responsible for performing all environmental investigation activities along the entire alignment corridor. Specific activities include the performance of preliminary assessments and site investigations and preparation of property acquisition environmental cost estimating report.



AMTRAK Gateway Program

Northeast Corridor

Client
AMTRAK

Completion Date
estimated construction: 2025

Project Value
\$20 billion



AECOM, in joint venture, is advancing the Gateway Program from its current feasibility phase to a thorough examination of key operational and rail system design issues focused on capacity, reliability, flexibility, resiliency, and safety. The Gateway Program is a visionary series of projects that will provide infrastructure improvements necessary to meet projected growth in Northeast Corridor rail traffic.

The project is a proposed high-speed rail corridor to allviate the bottleneck along the Northeast Corridor (NEC) between Newark, NJ and the New York City. If constructed, the project would add 25 train slots during peak periods to the current system used by Amtrak and NJ TRANSIT, which has reached capacity. The project would build new rail bridges in the NJ Meadowlands, dig new tunnels under the Hudson Palisades and the Hudson River, convert part of the James Farley Post Office into a rail station (this is ongoing), and add a terminal annex to NY Penn Station.

The Gateway Project was unveiled in 2011, one year after the cancellation of the similar Access to the Region's Core (ARC) project, and was originally projected to cost \$14.5 billion and take 14 years to build.

The objectives of the System Level Study are to: Define a feasible systems plan for improving passenger service through the area of the Northeast Corridor (NEC) between Newark, New Jersey, and the connection to the New Haven Line in New Rochelle, New York; Identify course of action for bringing the project through the environmental phase of study; and Establish a business plan for the development and implementation of the Program in a manner that optimizes the use of the funding received for the project.

The joint venture will explore operational functions and associated potential benefits of advancing new tunnels under the Hudson River, including developing a concept of operations (ConOps) that is integrated with rail system designs to generate additional Trans-Hudson capacity. The joint venture will also provide recommendations for signal design, rail vehicle integration, investigate and recommend feasible conceptual traction power system design alternatives that support operational concepts, integration with tunnel design, cost estimating and development of a phased deployment plan.



Portal Bridge Capacity Enhancement Project

Kearny and Secaucus, NJ

Client

NJ TRANSIT

Project Value\$950 Million Two-Track North Bridge
(estimated construction cost 2013)**Contract No.**

08-042

Completion Date

2017 (estimated construction)

Jacobs is part of the Tri-Venture Team “Portal Partners” providing professional railway, structural, civil, utilities, and geotechnical services for the replacement of Portal Bridge over the Hackensack River on the Northeast Corridor in Kearny and Secaucus, NJ. The Tri-Venture is under contract with NJ TRANSIT, in a cooperative effort with Amtrak.

Portal Bridge serves the Amtrak Northeast Corridor, the busiest stretch of railroad in the country, spanning the Hackensack River between Kearny and Secaucus in Hudson County, NJ. The existing bridge is a bottleneck to Amtrak and the heavy NJ TRANSIT operations, and it experiences frequent interruptions to passenger service due to marine traffic. The Portal Bridge Capacity Enhancement (PBCE) project involves replacing the vital 100-year-old two-track railroad bridge, which experiences frequent mechanical failures. The existing two-track swing bridge will be replaced with two fixed bridges, to be located on either side of the existing bridge, with the two new bridges carrying a total of five tracks. The project extends from the New Jersey Turnpike in Kearny to the Frank R. Lautenberg Station at Secaucus Junction in Secaucus, and is approximately 2.5 miles in length.

Portal Bridge is over 100 years of age and is nearing the end of its functional life. Furthermore, the structure is outdated and incapable of adapting to the present demands for expanded rail service into Manhattan. The bridge has inadequate clearances to accommodate much of the present marine traffic navigating the Hackensack River. Preliminary Engineering was completed to replace the existing two-track swing bridge with two (north and south) fixed bridges to be located on either side of the existing bridge; with the two new bridges carrying a total of five tracks and supporting NJ TRANSIT Trans Hudson Express (THE) Tunnel Project for additional capacity enhancement into New York City. These bridges would each be a three-span, network tied arch structure of 400-foot length, and obtain 50-foot vertical clearance over the river.

The team conducted an in-house Value Engineering (VE) study on the 50% Preliminary Engineering submission. The effort was led by Jacobs, who provided a Certified Value Specialist (CVS) facilitator, and it was comprised of members who are not directly involved in the design effort from each design firm. Additionally, at the 100% Preliminary Engineering level our CVS facilitator led a VE study with independent firms as study members. Portal Partners is also performing qualitative risk assessment during the Preliminary Design phase, and the results of the risk



assessment were incorporated into the VE process. The VE served as an excellent reality check on the project status at an early stage to allow the owners to consider alternative design, constructability and contract packaging approaches.

Final Engineering Design was completed and provides a two-track, fixed bridge to the north to replace the aging existing bridge. The bridge will be a three-span, network tied arch structure, with each span measuring 400 feet, and the bridge will have a 50-foot vertical clearance over the river. The new “north” bridge has an estimated construction value of \$950 million. Related project work elements include items such as structural, track, civil, signal, communication, traction power, catenary, railroad-operational control centers, operational analyses, and constructability efforts. All construction work requires coordination of multiple contractors, railroad force accounts, third parties such as fiber optic and public utilities (water, electric, gas, sewer). Phasing and sequencing will be maintained to keep the railroad operating efficiently during all stages of the construction work.

Jacobs coordinated with all impacted utility companies and developed relocation schemes for impacted utilities and coordinated agreements between NJ TRANSIT and each utility company. Agreements were in accordance with State Utility Accommodation policies and Code of Federal Regulations 23 CFR Parts 645 Utilities and 646 Railroads. Impacted utilities included a high-pressure petroleum transmission pipeline and gravity and force main sewer lines conveying in excess of 1 MGD. Coordination of easements including preparation of drawings, legal descriptions, and individual property parcel maps were prepared for the petroleum pipeline and sewer lines. Special requirements were designed for construction adjacent to a historically significant water main, which required a leak detection and vibration monitoring plan.



Design, Engineering, and Construction Services for County Yard Improvements

North Brunswick, NJ

Client	Project Value
NJ TRANSIT	\$230 Million
Dates	Contract No.
2014 - Present	13-041

Jacobs is part of the Tri-Venture Team “Portal Jacobs has been contracted to design the County Yard Improvements Project. The County Yard Improvements Program consists of four basic elements. 1.) A new 5-track train storage yard capable of storing 10 passenger trains for a total of 120 cars for overnight storage and light maintenance of Electric Multiple Unit (EMU) trains consists; 2.) A new 2-track Service and Inspection Facility; 3.) Improvements to the Delco Lead to added resiliency in the form of additional “safe harbor” storage for the NJ TRANSIT fleet along the NEC during a future catastrophic event; and 4.) A new Jersey Avenue Station with high level platforms along the NEC.



The project included an operational analysis covering yard functions and interface with main line operations on the Northeast Corridor (NEC); concept definition of the new yard, including layout of tracks, roads, structures, drainage, utilities, catenary, wayside and traction power, communications, and site mitigation measures required to construct the yard; and preliminary and final design of the selected alternative including a 30,000 square foot Crew and Spare Parts Storage Facility and a 1,250 foot long 2-track S&I Facility. The project also includes the redesign of Handy, Millstone and Delco Interlockings and the design of a new Jersey Avenue passenger station on the NEC. Another element of the project includes double tracking 4.3 miles of the Delco Lead to the west of the yard to provide a safe harbor for NJ TRANSIT’s fleet from the MMC (288 cars) during extreme storm events. The project includes preparation of all environmental permits (NJDEP, DRCC, SHPO, FSCD and technical support during construction. NJ TRANSIT will advance a National Environmental Policy Act (NEPA) review separate from this effort. In February 2013, the FTA finalized new rules concerning the applicability of NEPA Categorical Exclusions (CE’s) to certain categories of transit projects.

In advancing this project from project definition / conceptual planning through final design, construction bid services, and construction services - Jacobs approach was focused on

achieving the following project objectives:

Key Project Objectives

1. Approach design with the understanding of achieving short-term objectives of increasing storage and the longer-term objective of removing trains from the NEC by 2017.
2. Provide adequate overnight storage capacity to accommodate the number of eastbound train starts and provide for operating flexibility to maximize on-time performance and minimize train conflicts.
3. Assure the improvements in County Yard are fully integrated with the design for Mid-Line Loop flyover.
4. Accommodate future freight traffic on the Millstone Branch.
5. Upgrade the Delco Lead track to passenger train operating standards (60 mph track speeds, ATC based signal system, overhead catenary, etc.), either as a double or single track with passing sidings.
6. Improve platform access by designing new high-level station platforms and eliminating the existing low-level platforms.
7. Maintain train operations through construction and maintain a safe environment for passengers, crews, and maintenance of equipment employees.



8. Incorporate safety and security into the design of the yard and facilities to minimize risk and allow for a secure yard and facility.
9. Advance the project consistent with the schedule expectations of NJ TRANSIT and the requirements of the funding sources.
10. Identify innovative and cost saving concepts that increase the cost-effectiveness and return on investment for the project.
11. Minimize environmental permits and permitting requirements.

Yard Design

The yard is designed to hold ten 12-car trains, with two trains per track on five tracks. The facility will be designed to allow the following work to be performed in a safe and efficient manner: 1) The daily FRA mandated walking inspection would be easily performed since the roadways will be paved and lighted; 2) Toilet servicing; 3) Car cleaning, inspection, and minor repairs.

Adequate track centers will be provided such that one side of every train will be accessible by the toilet servicing truck. Paved roadways with overhead lighting will provide a safe means for train crews to move from and to the trains from their crew quarters.

Delco Lead

Existing Delco Lead is a 10 mph stub-ended freight track, not currently in active use by Conrail, to serve several industrial customers in the distance between Jersey Avenue and the proposed Mid-Line Loop. The Delco Lead track forms an extremely vital rail link to be constructed between the expanded County Interlocking at Milepost 33 and the Mid-Line Loop at Milepost 38, which is about 5 miles to the south (railroad west) of Jersey Avenue Station. It needs to be upgraded to passenger train operating standards (60 mph track speeds, ATC-based signal system, overhead catenary, etc.). Approximately 22,000 feet of this section will be double-tracked to offer storage space for 288 pieces of rolling stock during a catastrophic storm, and also to provide a series of passing sidings to provide maximum operational flexibility.

Jersey Avenue Station

Today, the WB NEC Jersey Avenue Station, unlike all other stations on the NEC, sports a very simple low-level platform, black topped, with little shelter. It is the only NJ TRANSIT station not handicap accessible on the NEC from Trenton to New York. All other NEC stations have “high-level platforms” (HLP) serving EB and WB sides of the NEC. The EB Jersey Avenue Station platform parallels the Millstone Running Track. Both the EB and WB station platforms are separated by the station’s parking lot.

In conjunction with the expanded County Yard, EB and WB NEC Jersey Avenue new high-level station platforms will alleviate the inconvenience to passengers; who now board and depart trains at the existing Jersey Avenue Station on the Millstone Branch. As proposed in the County Yard project design plans, there will be two new high-level platforms on the NEC. These station platform improvements will be fully ADA compliant and vastly benefit NJ TRANSIT customers, while longer platforms will enable access of full-length 12-car trains and provide greater capacity.



Frank R. Lautenberg Rail Station at Secaucus Junction

Secaucus, NJ

Client

NJ TRANSIT

Project Budget

\$38,450,026

Dates

October 1991 - December 2003

NJ TRANSIT's Frank R. Lautenberg Rail Station at Secaucus Junction is a major rail transportation hub located at the junction of the Northeast Corridor (NEC) and NJ TRANSIT's Main Line and Bergen County in the Hackensack Meadowlands. The new passenger transfer station requires major rail and structure improvements to all three Rail lines. Jacobs was responsible for conceptual planning, environmental assessment, operations, and preliminary / final design of the project, including services during construction. The NEC was expanded from 2 to 4 tracks for approximately 2 miles between Bergen and Portal Interlockings with the 2 outside mainline tracks utilized for 100 mph through service and the 2 interior tracks designed to accommodate a new center and 2 new side platforms for commuter service. Due to the project's proximity to one of the most highly traversed railroad corridors in the nation, close coordination with all involved Railroad agencies was required to develop design documents to expedite construction.

We designed the high-speed turnouts and trackwork to enable NEC Line trains stopping at the station to enter or leave the mainline tracks at 80 mph without interruption to Amtrak's Inter-City rail service. Additional track work included realignment of NJ TRANSIT's Main Line and Bergen County Line to accommodate new platforms and structures associated with the transfer station. Provisions and conceptual track designs were also prepared for the West Shore Connection and a pocket track that permits a direct connection between the NEC and NJ TRANSIT's Main Line.

Major structural improvements included design of approximately two miles of single-track viaduct structure founded on deep caisson or pipe pile foundations; three 900-foot, 14-span single track through-girder bridges; the 312,000 square foot station and platforms at two levels; and a 2000-foot timber and steel trestle structure to permit construction access over wetlands for the project.



The geotechnical work for this project included a detailed subsurface investigation program, laboratory testing, foundation analyses and design, as well as the design of embankments. The foundation design consisted of pile bent supported viaducts, rock socketed caissons, retaining walls, and catenary pole foundation. Concrete-filled pipe piles, caissons, and H-pile foundation systems were utilized. Large diameter liner plates were utilized for the construction of caisson foundation through the boulder-filled railroad embankment slopes. The geotechnical work also included embankment design, surcharging and soil stabilization to construct access roads on soft ground. Embankment construction and surcharging was performed in stages. Instrumentation consisting of settlement plates and piezometers were used to monitor the embankment behavior.

The soil investigation included soil and rock sampling, the installation of observation wells and visual classification of rock and soil samples. The laboratory-testing program included sieve and hydrometer testing, Atterberg limits, unconfined compression and consolidation testing on soil samples and unconfined compression tests on rock samples.

Other key design elements included: civil, hydrology and utility designs; cost estimates; designs for electrification, signals and communications, compatible with longer-term overall NEC improvements; and environmental assessment of proposed improvements, considering noise / vibration,



landfill / hazardous waste potential, terrestrial / aquatic resources and historic / cultural resources.

Maintaining Railroad operations during construction was critical, and we worked closely with the Railroads to “cluster schedule” an adjustment to the schedule throughout the day (and especially at night), to expand the windows when work could be completed. Detailed construction staging schematics were prepared for each construction phase and step to ensure safe and efficient construction without disrupting the high-speed service. Each step was included in the CPM construction schedule and keyed to a narrative that completely describes the construction program. The staging plan was then used as a vehicle to perform an internal constructability review.

Value Engineering studies were conducted on the 30% and 60% design packages for track alignment and structures, catenary, traction power, construction staging and temporary pole line and roadway construction. A VE study was also conducted on the 30% design package for the station complex. The station VE study addressed construction phasing including egress and fire safety concerns.

Bid package preparation, bid phase assistance, and construction support services were provided for ten construction contracts and three turnout procurement contracts.





NJSEA and NJ TRANSIT, Meadowlands Rail and Roadway Improvement Project

Rutherford, NJ

Client	Dates	Total Construction Value
NJ TRANSIT	2004 (start)	\$214 Million
	2007 (design completion)	
	2009 (construction completion)	

The Meadowlands Railroad and Roadway Improvement Project is a multi-agency and tri-state cooperative effort to provide a rail mass transportation alternative to access the Meadowlands Sports and Entertainment Complex in East Rutherford, NJ.

The primary program includes the construction of a new rail line and train station under the sponsorship of the NJSEA, NJ TRANSIT, and the PANYNJ. Ancillary to the railroad construction program are several companion highway projects being undertaken by the NJDOT and the NJTA. In a historical first, rail operations are now being jointly and cooperatively provided over three states by NJ TRANSIT, Metro-North Railroad (MNR), and Long Island Rail Road (LIRR).

The total project construction cost is approximately \$214 million, which includes the construction of 2.3 miles of new two-track rail infrastructure and 2 miles of new roadway; 3,500 linear feet of viaduct; \$20 million train station; 3 bridges; 2 pedestrian overpasses; 435,000 cubic yards of embankment; railroad signal and communications systems; electric distribution systems; and extensive utility relocation activities.

Jacobs was retained to provide engineering, planning, and environmental services for this project. We identified potential modal and alignment solutions to reach this massive entertainment, arena, sports venue, and office destination located only eight miles from Manhattan.

The project included travel demand forecasting, network modeling, and operational analysis, Preliminary and Final Engineering, and preparation of an EO 215 EIS for the rail service located within the Hackensack Meadowlands Area. A majority of the project alignment is located within the Meadowlands Sports Complex property, owned and operated by the NJSEA.

The Meadowlands Rail Project was developed to respond to serious local and regional transportation needs within the Meadowlands study area including lack of modal choice beyond automobile and bus to reach the area; existing modes



cannot keep up with the growing demand for trips to this area; and lack of access to the area for the transit-dependent populations of eastern New Jersey and New York City. Travel time to the area is unreliable due to extremely congested conditions on area roadways, particularly during weekday peak periods and during Sports Complex events. A lack of interconnectivity to the extensive NJ TRANSIT regional rail network, despite its proximity (only 4 miles) to the Secaucus Junction Station, which links all major rail lines in New Jersey, existed. From Secaucus Junction, connections to NJ TRANSIT's extensive 11-line Northern New Jersey regional rail network can be made, including service to Penn Station New York.

The rail service was proposed for implementation in two phases. The First Phase was Final Designed as a spur from the Pascack Valley Line into the Sports Complex site, terminating at a station near the existing pedestrian overpass of Route 120. Upon completion, the future Phase 2 creates a loop through the Meadowlands area connecting to the Bergen Line for multiple service options while running over an entirely new right-of-way. The rail service required new infrastructure improvements, including connections to NJ TRANSIT's Pascack Valley and Bergen County/Main Lines, and on the Bergen Line, will connect to the proposed new EnCap rail station on the Bergen Line.



Structures

Our Structures Department prepared the designs, construction plans, and specifications for the elevated rail-carrying viaducts, rail-carrying bridges, retaining walls, sign support structures, pedestrian overpasses, rail station, and all ancillary structures. Close coordination with NJ TRANSIT regarding its needs and requirements led to the successful completion of the project. Work also involved developing unique structural solutions to allow for the construction to be adequately staged, such that operations at the Sports Complex could be maintained.

Utilities

Jacobs was responsible for all aspects of utility engineering, with a utility construction budget exceeding \$3 million. This included identifying subsurface utilities via surface geophysical techniques, preparing utility cost estimates, coordinating with various utility agencies, and preparing plans and specifications. During the early stages of design, subsurface utilities were identified using surface geophysical techniques in accordance with CI/ASCE 38-02. After potential conflicts were identified, the relocation and protection design was discussed in detail with the owning utility companies. Several utility easements were prepared in coordination with the utility company and the client. Sanitary sewer design included relocating a wastewater force main, relocating several sewer lines, which involved temporary bypasses and filing a Treatment Work Approval (TWA) permit with NJDEP. Sewer design followed NJAC 7:14A-23.

Construction Staging

One of the most complex undertakings of this project was developing a construction staging plan that would not encumber the daily activities at the Meadowlands Complex but, more importantly, during sports and concert events. In addition, there were other on-going construction projects in the immediate vicinity including the new MetLife Stadium, Xanadu (now American Dream), and roadway improvement projects along Route 120 - Paterson Plank Road, and NJ Turnpike Interchange 16W and Route 3. As available space within the Complex was at a premium, contractors were competing for the same laydown and construction staging areas. Jacobs coordinated with the designers of each of these projects to make sure that the plans of all of these on-going projects were coordinated to minimize contractor conflicts.

The Pascack Valley Line provides access to businesses in the region for deliveries of raw materials by freight. Another staging aspect was verifying that freight deliveries to these businesses could be made for the duration of construction. Working closely with the property owners and the freight companies, Jacobs and NJ TRANSIT were able to develop a plan that would provide large enough construction windows to complete the work and allow the companies to continue to do business as usual.



3

Full-Time Office





03 Full-Time Office

AECOM has the availability of three full-services in New York City alone, with numerous other project offices throughout the five boroughs of the City, as well as other full-service and project offices throughout the tri-state area; in addition to the offices from our team of subconsultants.

We hereby certify that a full-time office will be maintained during the project time-frame, and that our Project Manager will be able to be reached through this office during regular working hours.

The following office will be established as the primary location of our Project Manager:

AECOM
One Penn Plaza, Suite 600
New York, NY 10119
212.736.4444 Tel
212.629.4249 Fax

Proximity: approximately 5 miles (by car); also approximately 20 minutes by mass transit (PATH)

Type and Amount of Work Performed: Design Management and Project Management

Additional offices that may be involved with some of the work for this project, include:

AECOM
605 Third Avenue
New York, NY 10158
212.973.2900

Proximity: approximately 6 miles (by car)

Type and Amount of Work Performed: Design

AECOM
125 Broad Street
New York, NY 10004
212.377.8400
212.377.8410

Proximity: approximately 5 miles (by car)

Type and Amount of Work Performed: Design

4

Qualifications of Individuals





04 Qualifications of Individuals

We carefully selected our management and discipline leads and assigned them tasks that are within their expertise. Our locally-based project team is staffed with highly-skilled professionals who have worked on numerous rail / transportation infrastructure engineering projects throughout the United States, including several for NJ TRANSIT. The success of this project is entirely dependent upon the degree of expertise held by our staff.

Overall management of this contract will be accomplished through the direct efforts of our Project Manager, Edward Hrinewski, STS. The Officer-in-Charge, Julie D'Orazio, PE, will oversee the broad execution of the project and assist Mr. Hrinewski in ensuring the quality of each task deliverable. She will also be supported by John Fiore, PE, who will serve as Program Coordinator and who is extremely familiar with this project and the project site, having worked on various facets of the project and the projects site for 17 years.

Julie D'Orazio, PE - Officer-in-Charge, has more than 25 years of management and design experience on rail transit projects. She currently serves as the leader for the Northeast market segments for transit-rail and she is responsible for providing leadership, strategic guidance, and management. In addition to providing technical oversight and managing project personnel, she takes full responsibility for quality, safety, financial integrity, and schedule performance of major design projects. She also has experience formulating comprehensive QA/QC programs, performing audits, and providing QA/QC training. Ms. D'Orazio's recent experience includes a number of successful transit projects entailing design and construction of railroad platforms, track, bridges, and ancillary facilities. Her experience also encompasses management of topographic surveys; providing systems engineering services during the construction phase; applying best practices to capital program/project development and delivery; performing traction power transformer analyses for transit substations; preparing preliminary and final construction bid documents; assessing constructability; and performing building information modeling process reviews and analyses.

In addition to providing technical oversight and managing project personnel, Ms. D'Orazio is responsible for quality, safety, financial integrity and schedule performance. She will oversee the corporate commitment to the project and facilitate a successful on time, within budget delivery.

Leading the team as **Project Manager** is **Edward Hrinewski, STS**, who has more than 40 years of extensive project and construction management experience in the rail transportation and heavy industrial fields. He has spent the last 19 years successfully managing major design-build transit projects including oversight of multidisciplinary engineering teams, procurement, construction, quality, safety, and startup. He has achieved increasingly responsible levels of corporate and project management assignments on Design-Build-Operate-Maintain (DBOM) projects, such as the Hudson-Bergen Light Rail Project for NJ TRANSIT and design-build projects such as the Atlanta Streetcar project for MARTA / City of Atlanta. His project management responsibilities have included all elements of management, including successfully planning, organizing, and controlling engineering, procurement, construction, start-up of large scale projects. He is a member of the Project Management Institute and has received numerous corporate awards for outstanding management of design-build projects.

His career and experience have placed him in the perfect position to perform this assignment for NJ TRANSIT — he has:

- Unsurpassed commuter and passenger rail experience local to the area
- More than 20 years of experience working with rail in an inter-city environment
- Experience with the design and construction of electrical power transmission and utility interconnections



- Proven leadership with design and construction for rail transit projects
- A 20-year working history with NJ TRANSIT

Mr. Hrineski served as Senior Project Director on the NJ TRANSIT Hudson-Bergen LRT project (MOS-2, MOS-3 and Danforth Interlocking); and as Project Manager (MOS-1). Most recently has been serving as Senior Project Director on the MTA of Harris County for Houston (TX) Metro (MOS-1).

John Fiore, PE - Program Coordinator, has more than 40 years of experience in project management and the supervision of civil engineering and design for transportation, environmental, urban development, and security projects. He has been involved in the development of the Long Slip Canal Project for 17 years. His specific experience extends back to 1999 when the Hudson-Bergen Light Rail (HBLR) engineering team was designing the Hoboken Terminal route segment over Long Slip. Mr. Fiore was the Task Manager for the 3-year engineering effort that developed alternatives analyses associated with the extending of a municipal combined sewer overflow (CSO) and filling the canal to facilitate future development. The engineering services also included design of a pedestrian bridge, bulkhead restoration and technical support of the environmental permitting effort. This task resulted in the preparation of contract documents for public bidding but the procurement was suspended before implementation.

Following Superstorm "Sandy", the project was re-purposed under NJ TRANSIT's Resilience Program to achieve reliable capacity improvements by constructing a new passenger station above the reclaimed canal. AECOM was retained under a series of task order assignments to support the FTA grant application process as well as conceptual engineering services, stakeholder coordination, permitting support and previous design updating. Mr. Fiore has served as Project Manager for these tasks and will continue in this role through the current AECOM task which includes planning, preliminary design and final design of the project's initial phase as well as construction support services. Mr. Fiore's background and project specific experience will ensure comprehensive coordination between the current engineering activities and the scope of work proposed in this RFP.

His many years of civil / structural engineering experience includes responsibility for site planning, site development engineering, railroad / mass transit and roadway design, stormwater management, urban and industrial infrastructure design, preparation and technical coordination of regulatory agency site permit applications, and facility site security including threat assessments, mitigation development, perimeter protection and structural hardening. Mr. Fiore is responsible for technical performance and administration of engineering staff including planning and assigning work; establishing and monitoring budgets and schedules; reviewing design reports, calculations, specifications and drawings; and assuring quality of work.

Mr. Fiore's has been involved in the development of the Long Slip Canal Project for 17 years. He served as the Task Manager for the 3-year engineering effort that developed alternatives analyses associated with the extending of a municipal CSO and filling the canal to facilitate future development.

John DeVecchi, PE - Design Manager, has more than 40 years of engineering, design, and project management experience, of large transportation, particularly rail and mass transit projects. He has served as Project Manager or Deputy Project Manager on a variety of multi-disciplined projects throughout the Northeast. He has extensive experience providing design and engineering services for most of the regions rail and mass transit agencies and authorities including NJ TRANSIT, PANYNJ PATH, MTA Metro-North, NYCT and LIRR. Mr. DeVecchi served as Project Manager on the Newark-Elizabeth Rail Link's preliminary engineering and draft environmental impact statement. He also served as Project Engineer for the design modifications to the Northeast Corridor for Secaucus / Allied Junction Rail Transit Station. Other NJ TRANSIT experience includes Mr. DeVecchi's role as Project Manager on the Hunter Connection reconfiguration; on the restoration of passenger of service on the New York and Susquehanna Railroad; and on the North Jersey Coast Line electrification and modernization project.

Mr. DeVecchi has extensive NJ TRANSIT experience including work on the Newark-Elizabeth Rail Link, the Secaucus / Allied Junction Rail Transit Station, the New York and



Susquehanna Railroad, Hunter Connection Reconfiguration, and the North Jersey Coast Line Electrification and Modernization Project.

Peter Totten, PE will serve as **Quality Officer**. He is a senior quality manager with a background in project management and design, with more than 40 years of experience. He is responsible for the overall performance and quality of engineering and design on transit / rail and security projects involving architecture, civil, structural, mechanical, electrical, and plumbing, performed in the New York office. His project experience includes design engineering for the Hudson-Bergen Light Rail Transit System project and numerous infrastructure projects in the New York / New Jersey metropolitan region. He has participated in the preparation and revision of AECOM's Quality Assurance Manual Corporate Standards and is one of AECOM's leading quality management system (QMS) experts. He is thoroughly familiar with ISO 9001:2008 requirements and in tailoring quality systems for project-specific requirements to meet client-specified standards and program goals.

Mr. Totten supervised engineering and design of mechanical systems (fire protection, HVAC, plumbing, and drainage) for service and maintenance shops, storage buildings, and passenger terminals for the NJ TRANSIT Hudson-Bergen LRT project.

Michael Naughton, PE - Constructability, has more than 21 years of dedicated professional experience in the design and management of rail transit projects. He also has more than five years of experience working at NJ TRANSIT as a Structural Engineer and Project Manager on bridge improvement projects, track survey, and station rehabilitation programs. His project experience includes his roles as Systems Manager on the East Side Access Program, Construction Manager on the Newark Elizabeth Rail Link project, Civil Engineering Manager on the Access to the Region's Core project, Construction Manager on the Amtrak East River Tunnel Vent Plant project, and most recently he served as Construction Manager on the NYCT Montague Tunnel project. Mr. Naughton has also provided planning services for the NJ TRANSIT RiverLINE for the Operations and Maintenance Program performed by Bombardier.

Mr. Naughton was Resident Engineer for NJ TRANSIT's \$200 million Newark Light Rail Extension project and Deputy Civil Design Manager for the Trans-Hudson Express project.

John Deerkoski, PE - Structural / Civil Engineering Lead, is a Senior Project Manager and Structural Engineer with more than 30 years of experience in structural design and inspection, construction inspection, and construction engineering of bridges, rail, and building structures for both public and private clients. His responsibilities include project management, performing or checking design calculations, and preparing contract drawings, specifications and estimates at the conceptual through final design phases. Mr. Deerkoski has extensive experience providing professional services for many of the region's transit / rail agencies and authorities, including NJ TRANSIT, Amtrak, Long Island Rail Road (LIRR), Metro-North Railroad, and New York City Transit. He has held key roles on the following projects: NJ TRANSIT Mainline Second Track, NJ Transit Secaucus Transfer Station Main Line Bridges, MNR Mid Harlem Third Track, MNR Shell Flyover, MNR Shell at Grade, MNR North Avenue Bridge Replacement. Mr. Deerkoski is a past member of AREMA Committee 15 Steel Structures and is the AECOM Bridge Practice lead for the NYC Metro Region that is comprised of 82 Bridge Engineers, and is a member of the AECOM National Bridge Practice.

Mr. Deerkoski has extensive rail / transit experience as a structural / civil engineer. Projects included the NJ TRANSIT Mainline Second Track and Secaucus Transfer Station / Main Line Bridges and the design of Metro-North Railroad Mid Harlem Third Track and the Shell Flyover project. In addition, he has worked on many projects performing bridge assessments for Metro-North Railroad, the Long Island Rail Road, and Amtrak.



Silverio (Sal) Conte - Rail Systems Lead, is a known industry traction power expert, with more than 38 years of experience in electrification and systems of complex commuter railroads, Light Rail Transit Systems, and streetcar complex systems projects. His experience includes serving as Chief Engineer of the Electrical Department and Deputy General Manager of the Infrastructure Engineering Department for NJ TRANSIT. Mr. Conte developed and implemented risk management strategies for NJ TRANSIT major projects with systems integration components through design, procurement, systems installation, construction and testing / commissioning. Additional experience includes NJ TRANSIT's ARC Tunnel Electric Traction System Design, the Montclair Connection, the Hoboken Terminal Substation, and the re-electrification of the North Jersey Coast Line section from Matawan to Long Branch.

For more than 30 years, Mr. Conte worked for NJ TRANSIT in progressively responsible positions, including Electric Traction Engineer, Chief Engineer of the Electrical Department, and Deputy General Manager of the Infrastructure Engineering Department. As Electric Traction Engineer, he provided electrical system design, estimating, planning, project layout, and monitoring of 3,000-volt electric traction DC substations. He also handled the maintenance, construction, and repair of all electrical power and light rail facilities.



Edward Hrinewski, STS

AECOM Project Manager

Years of Experience

With AECOM: 43

With Other Firms: 0

Education

Bachelor of Engineering, Stevens
Institute of Technology, 1973

Specialized Training

STS - Safety Trained Supervisor

Work History

March 2012 to Present, AECOM, Project
Director— Atlanta Streetcar design-
build project

May 2002 to February 2012, AECOM,
Senior Project Director- HBLRT,
Houston Metro

April 2000 to April 2002, AECOM Project
Manager, HBLRT

November 1996 to March 2000, AECOM,
Supervising Project Controls Manager,
HBLRT

1994 to 1996 AECOM, Regional Project
Controls Manager

1973 to 1994 AECOM, Assistant Field
Engineer through Project Controls
Manager

About Mr. Hrinewski

Mr. Hrinewski, a lifelong AECOM professional, has more than 40 years of project management experience on large-scale, highly-visible, fast-track projects. He spent 23 years in power generation and approximately 20 years in rail transit.

He brings a wealth of experience with NJ TRANSIT having served 14 years in various management roles, primarily on the NJ TRANSIT's Hudson-Bergen Light Rail Transit (HBLRT) system program. He also brings a “lesson-learned” approach from other prominent transit agencies, having served as Project Director on the Atlanta Streetcar Project for MARTA and as Senior Project Director for Houston's Metro Guided Rapid Transit Systems.

In his career, he has managed or coordinated with all the key disciplines required for this NJ TRANSIT project. This includes: system safety, security, public involvement, agency coordination, FTA funding reviews, coordination management traction power, rail force account, project controls, and all specialty resources including civil, structural, MEP, and Environmental.

Relevant Project Experience

New Jersey Transit, Hudson-Bergen Light Rail Transit System (HBLRT); Jersey City, NJ. The \$2.25 billion HBLRT Program is an FTA-funded 15.9-mile transit system in New Jersey. The HBLRT is a design-build-operate-maintain project that consists of electrified double track and features overhead catenary, track, traction power supply substations, ATP train signal system, 54 light rail vehicles, 25 passenger stations, 5 park-and-ride lots, 25 interlockings, and a maintenance and storage yard complex including a control center. The maintenance complex contains 9 storage tracks and 5 maintenance tracks, a 100,000-square-foot maintenance shop, a 75,000-square-foot light rail vehicle storage building, and a 40-acre storage yard. The maintenance shop includes a car wash, paint shop, maintenance pits, and machine shop. The system operates on a dedicated right-of-way, adjacent to a Class 1 freight corridor, on elevated structures and in the streets of Jersey City—one of the more densely populated cities in North America. HBLRT is the only rail transit system to receive VPP status. Mr. Hrinewski served in various positions with increasing responsibility including:

- **MOS-3/8th Street Bayonne Extension, NJ TRANSIT** – Senior project director responsible for the design-build contract for a one-mile extension to a new terminal station on the south end of the system. Scope included new track, civil construction TPSS, catenary system, and train signal extension. Mr. Hrinewski coordinated with NJ TRANSIT staff and AECOM operations staff for construction of the extension,

**Edward Hrinewski**

AECOM Project Manager

- including cut-in to operating territory.
- **Danforth Interlocking, NJ TRANSIT** – Senior project director responsible for the design-build contract for civil works and track, including double diamond and a new siding, track, catenary system, and train signal scope for new CIH on a new interlocking on the existing operating system. Also coordinated with the HBLRTS operations staff. Work was largely performed on scheduled weekend track outages and off-hour single track operations.
- **MOS-2, NJ TRANSIT** – Project director responsible for the design-build contract for the \$600 million second phase of the HBLRTS through revenue service. This phase was put into service as five segments with overlapping design, construction, startup, and commissioning schedules. The major element of this phase of the program was construction and commissioning of the 4800-foot Weehawkin Tunnel facility.
- **MOS-1, NJ TRANSIT** – Project manager responsible for the design-build second segment of the HBLRTS first phase. This included elevated structures and a terminal station incorporated into the NJ TRANSIT Hoboken NJ Commuter Terminal. Completed \$120 million worth of construction three months ahead of schedule.

Metropolitan Transit Authority of Harris County, Houston Metro, Phase 1, Houston, Texas. Senior project director for this project which included advancement of the preliminary engineering for a design-build project for 19.8 miles of light rail and 26 new stations divided among four corridors, and an intermodal facility for a design-build program valued at \$1.5 billion. Mr. Hrinewski was responsible for the contract that included advancement of the preliminary engineering to 30% using four civil engineering groupings as well as oversight of the constructability studies, estimating the installed capital cost, development of extensive community relations structure, and developing a detailed project schedule.

MARTA and the City of Atlanta, Atlanta Streetcar Project. Project Director on this \$59 million project, a cooperative effort by the City of Atlanta, the Atlanta Downtown Improvement District, and MARTA. The 2.7 mile Atlanta Streetcar runs through the heart of Atlanta's business, tourism, and convention corridor. URS has the design-build contract responsible for all aspects of the project including design, safety, quality assurance/control, subcontracting, construction and startup/commissioning, thru ready for revenue service. URS is also managing community relations for the project and the extensive scope of public utility relocations within the design-build scope as well as coordination with numerous private utilities. URS performed technical and design-to-budget reviews throughout the design phases with construction management staff and construction subcontractors. He is responsible for the overall project management for design-build, including coordination with the project sponsors.

AECOM, Princeton, New Jersey. Regional project controls manager responsible for project control functions on all domestic and international projects. His responsibilities included staffing, training, and supervising global project control operations for large-scale, lump-sum, date-certain EPC projects ranging from \$100 million to \$800 million. He managed the project controls tasks throughout the project cycle, including proposal development through project initiation, engineering, procurement, construction, and startup on multiple projects. Representative projects include the PP9 Power Project in Saudi Arabia; Uch Power Project in Pakistan; Puerto Plata Barge Mount Power Plant in the Dominican Republic; Tang Shan Power Project in China; Gordonsville Cogeneration Project in Virginia; Cogeneration Project for DuPont in Texas; and the Independence Cogeneration Project in New York, which was a 1,000 MW combined cycle plant constructed in 26 months.



John DeVecchi, PE

Design Manager

Years of Experience

With AECOM: 16

With Other Firms: 26

Education

BS, Civil Engineering, Manhattan
College, Riverdale, NY, 1974

Professional Licenses/Certifications

Professional Engineer: NJ; NY

Professional Societies/Affiliations

American Society of Civil Engineers

Work History

June 2000 to Present, AECOM

January 1984 to June 2000, Edwards &
Kelsey - Project Manager / Associate VP

July 1974 to January 1984, Burns and
Roe - Project Engineer

About Mr. DeVecchi

Mr. DeVecchi has more than 40 years of engineering, design, and project management experience, of large transportation, particularly rail and mass transit projects. He has served as Project Manager or Deputy Project Manager on a variety of multi-disciplined projects throughout the Northeast. He has extensive experience providing design and engineering services for most of the regions rail and mass transit agencies and authorities including NJ TRANSIT, PANYNJ PATH, MTA Metro-North, NYCT and LIRR. Mr. DeVecchi served as Project Manager on the Newark-Elizabeth Rail Link's preliminary engineering and draft environmental impact statement. He also served as Project Engineer for the design modifications to the Northeast Corridor for Secaucus / Allied Junction Rail Transit Station. Other NJ TRANSIT experience includes Mr. DeVecchi's role as Project Manager on the Hunter Connection reconfiguration; on the restoration of passenger of service on the New York and Susquehanna Railroad; and on the North Jersey Coast Line electrification and modernization project.

Relevant Project Experience

MTA Metro-North Railroad, Design Build Power/C&S Infrastructure Improvements Hudson Line CP19 to CP35, New York, NY. Project Manager-Design as subconsultant to Judlau/TC Electric, Joint venture to upgrade Power and C&S systems and to raise all vital equipment onto raised structural platforms, set four feet above FEMA Base Flood Elevations. Disciplines under Mr. DeVecchi's purview include Civil, Structural, Environmental, Traction Power, Signals and Communications.

PANYNJ PATH, Harrison Station Replacement and Upgrade Project, Harrison, NJ. As part of a "Call-In" Agreement, Mr. DeVecchi completed an assignment as PATH's Agent/Project Manager for a \$250 Million project to replace the two existing station buildings with four new elevated station buildings. This assignment included review of design packages; coordination with PATH facility forces, PA Engineering and Construction Management Departments and outside stakeholders (Amtrak, Town of Harrison, utility companies, etc.); budget/schedule management; and weekly progress reporting. Mr. DeVecchi's efforts have resulted in significant client-recognized savings (totaling several million dollars) to the project. (February 2012-October 2014).

NJ TRANSIT, Hunter Connection Reconfiguration, Newark, NJ. Project Manager for final design and contract plans, specifications and construction cost estimates to upgrade the speed of NJ TRANSIT's Raritan Valley Line service on the connecting track between AMTRAK's Northeast Corridor and Conrails Lehigh Valley Branch from 15 mph to 45 mph. Reconfiguration included environmental, civil, trackwork, traction power, signals and temporary signals and staging plans to ensure uninterrupted service during construction.



John DeVecchi, PE
Design Manager

NJ TRANSIT, Restoration of Passenger Service on the NY and Susquehanna (NYS&W) Railroad, New York, NY.

Project Manager for final design and contract plans, specifications and construction cost estimates to restore passenger service on the freight-only NYS&W Railroad. Work included track re-alignment over a 26-mile route, new passenger stations and parking facilities, a signals and communications system and the evaluation of various locations to accommodate a new rail yard and terminus.

NJ TRANSIT, Design Modifications to Northeast Corridor (NEC) for Secaucus/Allied Junction Rail Transit Station, NJ.

Project Engineer (and later Project Manager) for the design of improvements along approximately two miles of the NEC rail line to facilitate trains stopping on the NEC at the proposed Transfer Station in the Hackensack Meadowlands.

MTA LIRR, East Side Access Program, New York, NY.

Served as Facilities Engineering Manager of Manhattan Packages for this project for the Metropolitan Transportation Authority Capital Construction Company/Long Island Rail Road (MTACC/LIRR) to bring LIRR commuter rail service directly to the lower level of Grand Central Terminal (GCT). The project involves more than 20,000 linear feet of underground tunnel construction, including reconstructing 2,500 linear feet of tunnels within GCT. Mr. DeVecchi served as an extension of MTA staff in overseeing the MTA's consultants for the seven construction packages in Manhattan and GCT with a focus on construction staging; constructability; maintenance and protection of traffic (MPT); railroad operations to ensure that the needs of all interfacing railroads (LIRR, Metro North, NYCT and AMTRAK) are met; underpinning of major structures, utility relocations, and environmental issues. Other duties included: Team Leader to implement Executive Order 111 (to meet New York State requirements to reduce energy use by 20%); and on-going review of FTA 'Transit Security Design Considerations' with the goal of determining possible security upgrades either as design revisions or new implementations. During the construction phase, Mr. DeVecchi served as Construction Manager overseeing the work of two construction contracts to ensure timely completion of an ESA Force Account Headquarters facility and an ESA Force Account Warehouse.

PANYNJ PATH Expert Design and Technical Services for Security Capital Programs, NY and NJ. Senior Project Manager for a number of assignments for URS on this program from December 2007 through January 2012:

- managed the URS Stage IV Construction Services Program for the 22,000 square foot Train Operations Building, including review of shop drawings, requests for information, post award construction contract changes, and construction counsel to the Port Authority for the building, building interiors, MEP/FP systems, security systems and site work;
- managed the 800 MHz Trunked Radio Communication System- RF System and Integration Work, including Design services and Stage IV construction services. This project involved extensive work in the PATH tunnels, and Mr. DeVecchi personally led nighttime tunnel conditions inspections over a six month period. For Work Order 2 of this 800 MHZ Project, Mr. DeVecchi single-handedly discovered and participated in the resolution of a serious installation problem that would have resulted in failure of the radio communications system to pass final operational testing.

Bergen County Rail Transit Planning, New Jersey. Project Manager for the planning and engineering analyses to define projects that integrate the public transit system in Bergen County. This project included investigating the revitalization of passenger service on the New York and Susquehanna Railroad with connection to the Passaic Valley Line, the West Shore Line, Allied Junction/Secaucus Transfer and ferry service along the Hudson River waterfront.

NJ TRANSIT, Newark-Elizabeth Rail Link, PE/DEIS, NJ.

Project Manager for preliminary engineering and draft EIS for the new LRT rail link from downtown Newark to downtown Elizabeth. This 8.8-mile, 12 to 17-station LRT line is configured as an extension to the Newark City Subway and includes linkage to a new Northeast Corridor rail station, the Newark International Airport people mover, a new LRT maintenance facility and a new bus/rail terminal.

MTA Metro-North Railroad, Hudson Line Station Rehabilitation Tarrytown Station, Tarrytown, NY.

Design Manager, Mr. DeVecchi led the design effort to support the Construction Management Team of this \$23 Million Project. This challenging task involved assuming the design duties of the original design team that had gone out of business. Efforts included review of contractor submittals and Requests for Information as well as the preparation of revised designs initiated by Metro-North Railroad to incorporate lessons learned at other recently rehabilitated stations.



Julie D'Orazio, PE

Officer-in-Charger

Firm

AECOM

Education

BE, Mechanical Engineering, State University of New York at Stony Brook, 1988

Post Graduate Courses Towards MBA, Fordham University, 1998-2000

Registrations

Professional Engineer: NY #071019

Certified Quality Manager

Years of Experience

27

Affiliations

ACEC NY State

AREMA Technical Committee

ASCE Metropolitan Section

ASCE Lower Hudson Valley Branch

About Ms. D'Orazio

As the leader for the northeast market segments for transit-rail, Ms. D'Orazio is responsible for providing leadership, strategic guidance and management. Ms. D'Orazio has over 25 years of management and analytical design experience on highway, railroad, and transit projects. In addition to providing technical oversight and managing project personnel, she takes full responsibility for quality, safety, financial integrity, and schedule performance of major design projects. She also has experience formulating comprehensive quality assurance/quality control (QA/QC) programs, performing audits, and providing QA/QC training. Her recent experience includes a number of successful transit projects. These assignments entailed design and construction of railroad bridges, elevators, platforms, track, and ancillary facilities. Her experience also encompasses management of topographic surveys; providing systems engineering services during the construction phase; applying best practices to capital program/project development and delivery; performing traction power transformer analyses for transit substations; preparing preliminary and final construction bid documents; assessing constructability; and performing building information modeling process reviews and analyses.

Moynihan Station Development Phase 1, New York. Serving as JV Board Member for Phase 1 of the project which includes the expansion of the present Long Island Rail Road (LIRR) West End Concourse to provide additional width and extend the length to serve platforms 3 through 11 within New York Penn Station in Manhattan, which handles more than 1,000 trains per day serving Amtrak, NJ TRANSIT, and LIRR. This phase also provides ventilation improvements for the Penn Station train shed area and additional passenger access points at 31st Street and 33rd Street to the West End Concourse. Mr. Bennett was responsible for a team of engineers who performed pre-award constructability and technical accuracy reviews of the contract drawings and specifications. Construction value Phase 1 \$230M.

MTA-1264A On-Call Program Management Consultant Services Baltimore, MD. Served as JV Board Member providing Program Management Services for the proposed Purple Line. The Purple Line is a proposed 16-mile light rail line extending from Bethesda in Montgomery County to New Carrollton in Prince George's County. It would provide a direct connection to the WMATA Red, Green and Orange Lines; at Bethesda, Silver Spring, College Park, and New Carrollton. The Purple Line would also connect to MARC commuter rail, Amtrak, and local bus services. The Purple Line will operate mainly in dedicated lanes, allowing for fast, reliable transit operations. Twenty-one initial station locations have been identified with additional stations under consideration. MBTA Green Line Light Rail Service Final Design, Boston MA. Serving as JV Board Member for final design services to extend from a relocated Lechmere Station in East Cambridge to College Avenue in Medford, with a branch to Union Square in Somerville. The extension includes the placement of 4.5 miles of new light rail track and systems, the



Julie D'Orazio, PE
Officer-in-Charge

relocation of 4 additional miles of track, reconstruction of eight bridges, seven new stations, including the relocation of Lechmere Station, a maintenance facility, and the purchase of 24 cars to service the new extension. The project requires 39 property takings. Construction value \$1.2B.

Amtrak Gateway System Level Study, NJ-NY. Serving as JV Board Member for the Gateway Program which is a visionary series of projects that will yield multi-generational benefits for the Northeast Region's economy, mobility and sustainability. It will provide for redundancy and better reliability of the regional connection from NJ to NY. It will vastly alter and improve intercity, regional and commuter rail traffic through Penn Station, addressing serious Trans-Hudson capacity limitations, reliability, and redundancy while providing infrastructure improvements necessary to meet projected growth in Northeast Corridor rail traffic. AECOM, in joint venture, has been selected by Amtrak to advance their Gateway Program from its current feasibility phase to a thorough examination of key operational and rail system design issues focused on capacity, reliability, flexibility, resiliency and safety.

CM-1355 Indefinite Quantity A/E Design Services for MTA NY Transit. Served as Project Manager for the following tasks:

Systems Engineering Services for Change Management Process for Construction Phase: **Performed systems engineering support to develop and apply best practice systems engineering capability and processes to capital program/ project development and delivery.**

Traction Power Transformer Analysis: **Performed a comparative analysis between dry-type and oil filled traction power transformers to develop the standard for all future NYCT new and rehabilitation substation projects.**

Building Information Modeling (BIM) Process Review and Analysis: **Provided services for the creation of a BIM Implementation and Management Plan to advance the goal of performing all of NYCT's design contracts in BIM in an effective manner.**

Rehabilitation of Queens Boulevard and Woodhaven Boulevard Bridges, Queens, NY for MTA-Long Island Rail Road. Served as Project Manager for final design of both bridges which carry the four Main Line Branch tracks and consist of steel through plate girder/ floorbeam construction. The design included complex staging design to maintain both rail operations and vehicular traffic and coordination with OCMC to obtain traffic stipulation permits.

Croton-Harmon and Peekskill Station Improvements, NY MTA – Metro-North Railroad. Served as Project Manager responsible for final design for partial platform replacement, building roof replacement and general station repairs at Croton-Harmon. At Peekskill Station, design included rehabilitation of pedestrian overpass, platform reconstruction and addition, major elevator rehabilitations, canopy roof replacement, new lighting and overall general station repairs.

Rehabilitation of the Seaford Station Platforms, Seaford, NY MTA-Long Island Rail Road. Served as Project Manager for final design for re-constructing platforms, canopies and stairs, installing a new hydraulic elevator, rehabilitating the waiting areas at platform level and providing for ADA compliant improvements throughout the station area. The design work included field inspection of existing platform support structure, testing and coring of existing platform support beams and soil borings. The initial phase included preparation of a Conceptual Design Report to evaluate two alternative designs to replace the platform structure; cast-in-place versus precast. A matrix criteria was developed that included constructability, degree of impact to operations, level of site labor involved, schedule, quality and cost. A recommended alternative was presented and accepted by LIRR.



John Fiore, PE

Program Coordinator

Years of Experience

With AECOM: 43

With Other Firms: 5

Education

Master of Science, Management Engineering, Long Island University, 1971

BS, Civil Engineering, Worcester Polytechnic Institute, 1967

Professional Licenses and Certifications

Professional Engineer: NY, NJ

Legacy URS Corporation Project Manager Certification, 2009

Professional Affiliation

American Society of Civil Engineers, Life Member

Work History

August 1970 to Present, AECOM and Legacy companies, various capacities

June 1967 to July 1970, M.W. Kellogg Company

About Mr. Fiore

Mr. Fiore has more than 40 years of experience in project management and the supervision of civil engineering and design for transportation, environmental, urban development, and security projects. He has been involved in the development of the Long Slip Canal Project for 17 years. His specific experience extends back to 1999 when the Hudson-Bergen Light Rail (HBLR) engineering team was designing the Hoboken Terminal route segment over Long Slip. Mr. Fiore was the Task Manager for the 3-year engineering effort that developed alternatives analyses associated with the extending of a municipal combined sewer overflow (CSO) and filling the canal to facilitate future development. The engineering services also included design of a pedestrian bridge, bulkhead restoration and technical support of the environmental permitting effort. This task resulted in the preparation of contract documents for public bidding but the procurement was suspended before implementation.

Relevant Project Experience

NJ TRANSIT, Long Slip Canal Fill and Rail Enhancement Project, Jersey City / Bayonne, NJ. Project Manager responsible for the following tasks associated with re-purposing of the Long Slip Canal Fill Project originally developed as part of the HBLR Project:

- Project development and FTA grant application technical support (Task Order 4)
- Project planning, conceptual design, permitting support and related engineering support services including stakeholder coordination with PANYNJ and JCMUA (Task Order 7)
- Preliminary and final engineering services in support of NJ TRANSIT's Resiliency Program

NJ TRANSIT, Hudson-Bergen Light Rail Transit (HBLRT) Project, Hudson / Bergen Counties, NJ. Supervising Civil Engineer / Project Manager / Task Manager / Supervising Civil Engineer responsible for the following tasks associated with the HBLRT DBOM Project:

- Mill Creek CIH Replacement – Managed resiliency project to replace damaged rail infrastructure to conform to new flooding criteria
- O&M Facility Equipment Replacement – Managed project to assess impacts associated with replacing equipment damaged by Superstorm "Sandy"
- HBLRT Exchange Place Station Extension – Managed design associated with extending station platforms to accommodate larger vehicle consists



Peter Gregory, CSP
Safety Manager

- 8th Street Extension; Bayonne – Supervised preparation of track design for one-mile extension of light rail system to Bayonne (S30 Segment). Design included operating speed optimization and review of civil engineering, right-of-way and construction staging issues.
- Greene Street Extension Outfall; Jersey City - Supervised civil engineering and design for a 43-acre infrastructure improvement project adjacent to the light rail right-of-way, which included design of four city streets, and a new storm drainage, sanitary sewer and water distribution system.
- Long Slip Fill Project; Jersey City - Supervised alternatives evaluation, preliminary design development, and final engineering associated with the filling of a 2000-foot channel along the Hudson River adjacent to Hoboken Yard. Task included design of a 10' x 12' combined sewer outfall extension, design and construction of a pedestrian bridge, bulkhead restoration and canal closure retaining walls, geotechnical analyses, evaluation of impacts to adjacent land uses and regulatory considerations.
- Various tasks including track design management for the N40 segment, right-of-way fencing for the N15/N25 segments and new vehicle storage site development.

NJ TRANSIT, Newark City Subway Extension and Vehicle Base Facility, Belleville, Bloomfield, NJ. Supervising Civil Engineer responsible for design of double track extension alignment for light rail project; reconstruction of grade crossings; vehicle maintenance facility site engineering, rail yard and utility design; and project permitting. Responsibilities also included storm water management, utility relocations and resolution of environmental impacts.

Jersey City Redevelopment Agency / T&M Associates, Canal Crossing Redevelopment, Light Rail Station Feasibility Study, Jersey City, NJ. Task Manager / Leader for a feasibility study and conceptual design of a new rail station on the Bayonne Branch of the

Hudson-Bergen Light Rail System to support an urban redevelopment project.

Houston METRO Solutions, Light Rail Transit System Expansion, Houston, TX. Civil Engineer, evaluated siting alternatives and developed conceptual design options for light rail vehicle yard and maintenance shop facility to support the construction of four new light rail corridors.

MTA NYCT, Capital Security Program, New York, NY. Project Manager for several confidential security projects under a contract to provide design of security solutions and related technical and construction services for MTA facilities throughout New York City. MTA facilities include rail transit, commuter rail, bridges, buses, stations/terminals, maintenance facilities and office buildings.

Bayonne Local Redevelopment Authority, Peninsula at Bayonne Harbor, Bayonne, NJ. Project Manager for a task order assignment providing engineering services in support of infrastructure design and transportation systems planning for a site development project. Tasks include subsurface utility design review, streetcar system planning, conceptual alignment development, operations and maintenance facility site planning and vehicle options.

NYCDEP, East of Hudson Facilities, Westchester and Putnam County, NY. Lead Civil Engineer responsible for new facility site development including master planning, site preparation, access road design, storm water management, soil erosion and sediment control design.

Passaic County Department of Public Works, Rehabilitation of Arch Street Bridge, Paterson, NJ. Supervising Civil Engineer responsible for design and preparation of construction documents associated with reconstruction of bridge approach roads using NJDOT standards and procedures. The project successfully overcame the challenges of restoring an historic bridge in a restrictive urban environment.



Peter Totten, PE

Quality Officer & Quality Assurance Plan

Years of Experience

With AECOM: 46

With Other Firms: 2

Education

Master of Science, Nuclear Engineering,
Polytechnic Institute of New York, 1976

Bachelor of Engineering, Mechanical
Engineering, Manhattan College, 1968

Professional Licenses and Certifications

Professional Engineer: New York, New
Jersey, Connecticut, Pennsylvania,
Florida, Massachusetts, Virginia, Texas,
Georgia

American Society of Mechanical
Engineers

American Society of Civil Engineers

American Public Transportation
Association, Security Risk Management
Working Group

AECOM Certified Project Manager

Specialized Training

Contractor Trainer – PATH On-Track
Safety Training (Roadway Worker
Protection)

AECOM – Field Safety Trainer

Safety Trained Supervisor

Work History

1970 to Present, AECOM, Vice
President, NY Metro Area Quality
Manager

1969 to October 1970, Grumman
Aerospace Corporation, Acoustics
Engineer

1968 to June 1969, Pratt & Whitney,
Acoustics Engineer

About Peter

Mr. Totten, a manager and engineer with more than 40 years of experience, is responsible for the overall performance and quality of engineering and design on projects in areas including rail, security, architecture, civil and structural, and mechanical, electrical, and plumbing (MEP) performed out of the New York office. His current project-related responsibilities include managing the engineering and design activities of the Hudson-Bergen Light Rail Transit System project, as well as many of the infrastructure security projects performed from the New York office. Mr. Totten has served as a lecturer for several in-house courses, including Six Sigma, mechanical engineering, nuclear engineering, and quality assurance. He has participated in the preparation and revision of the Quality Assurance Manual Corporate Standards.

Relevant Project Experience

Area Quality Manager, New York Metro Area. As AECOM's Area Quality Manager, Mr. Totten has the overall responsibility for the effective implementation of the QMS on projects within the area. His duties include:

- Participating in area-wide initiatives and supporting the regional quality manager and America's director of quality as required to improve the QMS as needed
- Providing input to the continual improvement process, verifying that regional factors are considered
- Leading a team of office quality officers within their area and providing guidance regarding QMS implementation
- Requiring that quality orientation is provided to new employees, including guidance to the LMS curriculum on the QMS
- Evaluating and reporting on the effectiveness of the QMS within the area
- Tracking performance of the area relative to one or more key performance indicators for the QMS, communicating results to the regional quality manager, regional manager, office managers, and office quality officers, and taking corrective action as needed
- Working with office quality officers to verify the level of implementation of the QMS and that corrections and corrective actions emanating from audits or other sources have been addressed, implemented and are effective; should a nonconformity be discovered, Peter works with the office quality officers, project managers, project directors, office managers and upper management, as appropriate and required, to address the nonconformity
- Facilitating project reviews for high risk/high reward projects so that they receive the proper level of management oversight and support
- Verifying that client feedback is being solicited, analyzed and acted upon as required

**Peter Totten, PE**

Quality Officer

- Developing and sharing case studies and lessons learned to foster continual improvement
- Issuing a quarterly quality management summary report, at a minimum, to the regional manager and his/her management staff, and to the regional quality manager
- Participating in area or regional conference calls on quality management

New Jersey Transit, Hudson-Bergen Light Rail Transit System, Hudson/Bergen Counties, NJ.

Supervised engineering and design of mechanical systems (fire protection, HVAC, plumbing and drainage, compressed air) for service and maintenance shops, storage buildings, and passenger terminals for HBLRT, the first public-private partnership design-build-operate-maintain (DBOM) project in the United States. Work included preparation of equipment specifications for rail car wash system, spray paint booth, wheel truing machine, rail vehicle car lift system, cranes, package boilers, and oil/water separators. Revenue service for the initial operating segment was initiated 44 months after Notice to Proceed. Project manager for the engineering for additional upgrades and modifications to the system, including Danbury Interlocking and the Weehawken Pedestrian Bridge East Tower project.

Tappan Zee Hudson River Crossing, Tarrytown, NY. Led the Accident, Threat, Vulnerability and Risk Assessment (ATVRA) of the new Tappan Zee Bridge (Tappan Zee Hudson River Crossing). Risks included accidental and man-made events. This work was in support of the design and construction of the new bridge, a 3-mile (approximate) span crossing the Hudson River approximately 30 miles north of New York City, and joining Westchester and Rockland Counties. The \$3+ billion project will replace the current bridge with a modern span, including a cable-stayed section.

MTA Capital Security Program, New York, NY. Project manager and manager of engineering for confidential security projects under a contract to provide design of security solutions and related technical and construction services for MTA facilities throughout New York City, which include rail transit, commuter rail, bridges, buses, stations/terminals, maintenance

facilities, and office buildings. Active participant in all task orders for this program and reviewed design bases prepared by the design teams. Participated in threat, vulnerability and risk (TVR) workshops and reviewed all TVR reports. Task orders included major facilities including the overbuild of commercial properties and the potential interrelationships and consequences of an event in a facility and its effects on the nearby facilities and structures.

Transbay Joint Powers Commission, San Francisco, CA.

Led the update to the Risk and Vulnerability Analysis (RVA) of the Bus Bridge/Ramp (including cable-stayed bridge), and led the new RVA for the Downtown Extension (DTX) train box and train platform, and DTX tunnel. Risks included accidental, man-made, and natural events. This work was in support of the Transbay Transit Center Project, a transportation and housing project in downtown San Francisco. The \$4 billion project will replace the current Transbay Terminal at First and Mission streets in San Francisco.

New Jersey Department of Transportation, Delaware River Infrastructure Protection Project (DRIPP), New Jersey, and Pennsylvania. Project manager to complete the design and deployment for NJDOT and NJ Office of Homeland Security to complete DRIPP. The project included the analysis of Maritime Domain Awareness gaps, and the development of a coordinated Security Regional Network with detection and assessment systems to link all landside and marine public and private critical infrastructure and assets along 120 miles of the Delaware River and within the Delaware Bay. The systems deployed include video and video analytics, and coordination involves federal, state, and local law enforcement, first responder, transportation, environmental agencies/authorities, as well as port community stakeholders.



Michael Naughton

Constructability

Years of Experience

With AECOM: 13

With Other Firms: 8

Education

MS, Transportation Planning, New Jersey Institute of Technology, 1998

BS, Civil Engineering, Manhattan College, 1995

Professional Licenses and Certifications

Member, American Public Transportation Association, Commuter Rail Committee

APTA 2016 National Leadership Program

Member, Construction Management Association of America, 2009-Present

Member, American Society of Civil Engineers, 1993-Present

OSHA 10-hr Certification

Practicing Institute of Engineering - How Well do you Know NYCT?

Professional / Project Awards

- NYCT Montague Tunnel Rehabilitation Project - 2014 recognition by NY State Governor Cuomo.
- NJ Transit Newark Elizabeth Light Rail project - 2008 Platinum award for Engineering Excellence in Transportation Engineering, American Counsel of Engineering Companies (ACEC) - New York.
- NJ Transit Hoboken Terminal Restoration Project - 2000 Renovation Project of the Year Award, New York Construction News

Work History

February 2003-Present, AECOM
Construction Manager

February 2000-February 2003, Parsons Corporation Facilities Design Manager

January 1995-February 2000, NJT
Project Manager

About Mr. Naughton

Mr. Naughton has more than 21 years of dedicated professional experience in the design and management of rail transit projects. He has five years of experience working at NJ TRANSIT as a Structural Engineer and Project Manager on bridge improvement projects, track survey, and station rehabilitation projects. Additional experience includes his roles as Systems Manager on the MTA LIRR East Side Access Project, Construction Manager on the NJ TRANSIT Newark Elizabeth Rail Link Project, Civil Manager on the NJ TRANSIT Access to the Regions Core Project, Construction Manager on the Amtrak East River Tunnel Vent Plant Project, and most recently Construction Manager on the MTA NYCT Montague Tunnel Project. Mr. Naughton has also provided planning services for the NJ TRANSIT RiverLINE for the Operation & Maintenance Program performed by Bombardier.

Relevant Project Experience

NJ TRANSIT Trans-Hudson Express Project (Access to Regions Core).

Deputy Manager during the preliminary engineering design phase for the new tunnel design project, which was intended to expand commuter rail operations between New Jersey and New York City, as part of the Access to the Region's Core Project. Responsibilities included managing a design staff of more than 20 full time designers on civil, utilities, environmental, permitting, real estate, alignment, and survey; and led the quality assurance/quality review of design submittals.

NJ TRANSIT Newark Light Rail Extension. Resident Engineer for the \$200M project to extend the light rail system from Newark Penn Station to Newark Broad Street Station. **This project included** a deep cut and cover cast-in-place tunnel under Mulberry Street, at-grade segment with 4 new stations, multiple electrical substations, and a new emergency ventilation system for the tunnel. Responsibilities include managing team of inspectors and schedulers; performing quality assurance audits; preparing independent construction cost estimates; chairing bi-weekly contractor meetings; negotiating contractor change orders; reviewing shop submittals; approving contractor invoicing; coordinating with public utilities and neighboring property owners; and contract closeout.

NJ TRANSIT RiverLINE LRT O&M Infrastructure RFP Development.

Responsible for the preparing the RiverLINE Operations and Maintenance document, which is being used by NJ TRANSIT in a RFP to solicit a new third party contractor for O&M services. The RiverLINE is a 34 mile light rail system operating via temporal separation agreement with Conrail, between Trenton and Camden NJ. This O&M document focused primarily on the infrastructure (track, civil, structures, operations control center, signals, communications, stations, yards, facilities, fare collection).



Michael Naughton, PE
Constructability

LIRR East Side Access Project. Deputy Systems Design Manager during the preliminary engineering design of the East Side Access Project. This +\$7 billion transportation project will provide Long Island Rail Road commuters access to the east side of Manhattan. Responsibilities included managing the systems design for the proposed low level LIRR Station at Grand Central Terminal, and managing the construction support services for the Arch Street Yard and Maintenance Facility. Specific activities included issuing design change requests; performing construction cost estimating; performing pedestrian planning studies; lead member of the Right of Way / Real Estate Acquisition Committee, reviewing contractor submittals, and responding to requests for information.

Honolulu Authority for Rapid Transit (HART). Constructability reviewer for the design of the 3rd segment (Airport Guideway), and the 4th segment (City Center). The design of the two segments is based on a aerial guideway of precast segmental post tensioned box girders, on concrete piers. Constructability review included the following disciplines: structural, civil, track alignment, MPT, and utilities.

NJ TRANSIT Portal Bridge Replacement. Project Manager/Chief Resident Engineer for the estimated \$780 million construction project to replace the existing 100 year old "Portal" swing bridge on the Amtrak Northeast Corridor, with a new fixed span bridge over the Hackensack River connecting Kearny and Secaucus NJ. This project includes infrastructure improvements and new structures for the north and south approaches to the two bridges. Responsibilities included reviewing contracts, cost estimates, constructability, schedule, budget, contract packaging, preparation of the Project Work Plan, Health & Safety Plan, and the Quality Assurance/Quality Control Plan.

PATH NY/NJ Capital Program Management Department. Senior Planner providing technical, managerial, and planning support to the PATH CPMD. Responsibilities include reviewing the list of planned major capital projects under the ambitious ten year \$4.3B capital improvement plan, determining the optimum construction start and finish dates for each project, as well as forecasting the required PATH facility forces coordination and support. Provided support and guidance to Operations Department for track outage

scheduling and facility force work schedules.

NJ TRANSIT Hoboken Terminal Main Waiting Room. Project Manager for the \$14M historic restoration of the Hoboken Terminal Main Waiting Room, originally constructed in 1907 and is listed on the National and State Registers of Historic Places. Responsibilities included managing construction budget and schedule; coordinating NJ TRANSIT force account support for utility relocations; permit coordination with the NJ Department of Consumer Affairs and the NJ Department of Environmental Protection; issuing contract modifications; and performing quality assurance and safety audits.

Amtrak, East River Tunnel Ventilation Shaft Rehabilitation, Long Island City, New York. Resident Engineer for the \$80M project to rehabilitate Amtrak's East River Tunnel Ventilation Facility in Long Island City NY. Responsibilities included managing CM staff of inspectors, schedulers, estimators and engineers; review of contractor submittals; coordinating required track outages, power outages and manpower support with Amtrak and the Long Island Railroad; performed quality assurance audits; chairing bi-weekly progress meetings; contractor change order negotiations; coordinated extensive mechanical and electrical testing of fans, pumps, substations, SCADA, fire standpipe, security and other systems; ran the project close out effort (as-builts, O&Ms, owner training, warranties, final invoicing, release of liens, archiving).

NJ TRANSIT Civil/Structures Right of Way Improvements. As a engineer in the NJT Structural Engineering Department, designed many right-of-way infrastructure improvement projects and provided construction support services for those projects. Designs included: through girder bridge replacements, retaining walls, culverts, swing bridge control cable routing, track realignments; permanent steel walkway structures on bridges, and bridge worker FRA required fall restraint systems. Also performed bridge inspections; tunnel inspections; and coordinated track and power outage requests.



John Deerkoski, PE

Structural / Civil Lead

Years of Experience

With AECOM: 5

With Other Firms: 25

Education

BE, Civil Engineering, Manhattan
College School of Engineering, 1987

Professional Licenses and Certifications

Professional Engineer: NY

Work History

December 2011-Present, AECOM and
Legacy companies

December 2005 to November 2011,
TranSystems

October 1995 to December 1995,
Parsons Brinckerhoff

June 1987 to September 1995, Edwards
and Kelcey, Inc.

About Mr. Deerkoski

Mr. Deerkoski is a Senior Project Manager and Structural Engineer with more than 30 years of experience in structural design and inspection, construction inspection, and construction engineering of bridges, rail, and building structures for both public and private clients. His responsibilities include project management, performing or checking design calculations, and preparing contract drawings, specifications and estimates at the conceptual through final design phases. Mr. Deerkoski has extensive experience providing professional services for many of the region's transit / rail agencies and authorities, including NJ TRANSIT, Amtrak, Long Island Rail Road (LIRR), Metro-North Railroad, and New York City Transit. He has held key roles on the following projects: NJ TRANSIT Mainline Second Track, NJ Transit Secaucus Transfer Station Main Line Bridges, MNR Mid Harlem Third Track, MNR Shell Flyover, MNR Shell at Grade, MNR North Avenue Bridge Replacement. Mr. Deerkoski is a past member of AREMA Committee 15 Steel Structures and is the AECOM Bridge Practice lead for the NYC Metro Region that is comprised of 82 Bridge Engineers, and is a member of the AECOM National Bridge Practice.

Relevant Project Experience

NJ TRANSIT, Long Slip Canal Fill and Rail Enhancement Project, Jersey City / Bayonne, NJ. Structural Design Manager for the previous phase of this same project, which included project planning, conceptual design, permitting support and related engineering support services including stakeholder coordination with PANYNJ and JCMUA (Task Order 7). The work also included preliminary and final engineering services in support of NJ TRANSIT's Resiliency Program.

NJ TRANSIT, Hudson-Bergen Light Rail Transit (HBLRT) Project, Hudson / Bergen Counties, NJ. Structural Design Manager, responsible for the following tasks associated with the HBLRT DBOM Project:

- HBLRT Exchange Place Station Extension – design associated with extending station platforms to accommodate larger vehicle consists
- Long Slip Fill Project; Jersey City - alternatives evaluation, preliminary design development, and final engineering associated with the filling of a 2000-foot channel along the Hudson River adjacent to Hoboken Yard. Task included design of a 10' x 12' combined sewer outfall extension, design and construction of a pedestrian bridge, bulkhead restoration and canal closure retaining walls, geotechnical analyses, evaluation of impacts to adjacent land uses and regulatory considerations.

NJ TRANSIT, Mainline Second Track Project, Clifton and Patterson, NJ. Project Structural / Civil Engineer for the design and construction support for this project that added a Second Track to the Mainline through Clifton and Patterson, NJ. Structures include the design of two (80- and 120-foot long) thru-girder bridges; a 45-foot long pre-stressed concrete voided slab highway bridge, and 1 mile of tied back retaining walls and a caisson supported relieving platform to protect a 100 year old 5-foot diameter brick sewer.



John Deerkoski, PE
Structural / Civil Lead

NJ TRANSIT, Allied Junction/Secaucus Transfer Station Main Line Bridge, Secaucus, NJ. Design Engineer responsible for performing the foundation and superstructure design and preparing contract drawings and cost estimates for three multiple span bridges. Design included feasibility studies and cost analyses in accordance with the latest seismic criteria of the American Railway Engineering Association (AREA) and the American Association of State Highway and Transportation Officials (AASHTO).

MTA LIRR, Rehabilitation of Three Bridges, Hog Island Channel Bridge, Powell Creek Bridge and Dutch Kills Creek Bridge, New York, NY. Principal-in-Charge: Performed site visits to confirm existing conditions noted on recent inspection and flag reports. Finalized contract drawings and specifications for complete bridge replacement at Hog Island Channel and Powell Creek. Prepared repair details for the west abutment of Dutch Kills Creek Bridge. Details included concrete and timber pile repairs. All submittals prepared in accordance with AREMA and LIRR standards.

MTA Metro-North Railroad, Mid-Harlem Third Track Design, Mt. Vernon, NY. Lead Structural Designer for this construction contract to add a second track along MNR's Harlem Line. The work included design of four new bridge structures and the rehabilitation of two existing bridge structures along with the design of three types of retaining walls. Bridge types included welded steel through girder, pre-stressed concrete box-beam, and multi-stringer. Responsibilities included the preparation of contract plans, specifications, and estimates from conceptual design through final plan phases. All bridge structures and walls were designed to resist seismic loads.

MTA Metro-North Railroad, Engineering and Design of Shell Flyover, New Rochelle, NY. Structural Project Engineer for this transit project to eliminate a major at-grade interlocking of Amtrak and MNR trains by reconfiguring the existing tracks to carry Amtrak trains over MNR trains. Structural work included the design of seven new bridge structures, nearly 1 mile (1.6 kilometers) of retaining walls, and two station platforms. Bridge structures included one, two, and three-span stringer bridges and a through-girder bridge.

MTA LIRR, Design of 12 Bridges, NY. Project Manager for this contract to perform an in-depth inspection, load rating and rehabilitation of the LIRR Woodhaven Boulevard Bridge and 8,000 linear feet of reinforced concrete gravity retaining walls and bridge abutments. As a result of the load ratings, the Woodhaven

Boulevard Bridge was strengthened to carry Cooper E50 live load. The calculation of the factors of safety against overturning and sliding for the retaining walls revealed that the walls need to be tied back to achieve factors of safety that meet those required by the 2001 AREMA code. Material testing of the concrete from the retaining walls identified that large portions of the walls are suffering from a severe alkali silica reaction (ASR) which required the repair and replacement of portions of the wall.

NYS Thruway, Design/Build Replacement of the Tappan Zee Bridge, New York, NY. Structural Group Lead / Technical Advisor, AECOM is a major subconsultant to the Design-Build Team and is performing approx. 15% of the design for the new bridge. As part of this effort AECOM is performing the following services: Independent check for the bridge approaches (from piles to deck), design of the Westchester & Rockland Retaining Walls, design of the AETC Temporary and Permanent Toll gantries, design of access roadway underpass, security design, design of the approach span precast deck system, foundation design, seismic engineering.

MTA Metro-North Railroad, Grand Central Terminal Leak Remediation / Structural Design Final Design, New York, NY. Project Manager for the project to perform superstructure/deck replacement for the roof of the GCT trainshed that carries Vanderbilt Avenue. The bridge deck was replaced between 42nd Street and 45th Streets. As part of the project structural repairs were made to the elevated Park Avenue Viaduct from 42nd Street to 45th Street. Rehabilitation includes repairs to the deck, replacement of the expansion joints, steel repairs, and repairs to the ornamental façade of the historic bridges over 45th Street. In addition, maintenance repairs to the historic façade of the GCT terminal at street level. Due to the complexities of vehicular and pedestrian traffic and terminal operations extension coordination was required with NYCDOT, MNR, property owners, SHPO and the PDC.

Amtrak, Pelham Bay Bridge and Approaches, NYC. Project Engineer: Project Engineer for the in-depth structural, electrical, and mechanical inspection and load rating of this 39-span bascule bridge. The main bridge is an 82-foot (25-meter) Scherzer rolling bascule bridge. The project scope included strain gage balancing, electrical testing, adding a counterweight to rebalance the bridge, and preparing repair plans for the approach span concrete pile bents.



Silverio (Sal) Conte

Rail Systems Lead

Years of Experience

With AECOM: 3

With Other Firms: 35

Education

BS, Electrical Engineering, New Jersey Institute of Technology, 1980

Professional Societies / Affiliations

American Railway Engineering and Maintenance-of-Way Association (AREMA)

Institute of Electrical and Electronics Engineers (IEEE)

Specialized Training

Safety Training Observation Program "STOP" & T.Q.S.s.

Designing electrical systems for facilities lighting, electrical distribution, and motor selection/NJ TRANSIT Rail Operations

Amtrak Safety Trained

Work History

February 2013 to Present, AECOM, Rail System Manager

August 2011 to December 2012, STV, Director of System Projects

March 1981 to June 2011 - NJ Transit, New Jersey

About Mr. Conte

Mr. Conte, a know industry traction power expert, has more than 38 years of experience in electrification of complex commuter railroad systems, Light Rail Transit Systems, and streetcar complex systems projects. He has expertise in the design and construction and maintenance of OCS, Traction Power Substations, 12kV and 25kV systems. His experience includes serving as Chief Engineer of the Electrical Department and Deputy General Manager of the Infrastructure Engineering Department for New Jersey Transit. Sal developed and implemented risk management strategies for NJ Transit major projects with systems integration components through design, procurement, systems installation, construction, and testing / commissioning.

Relevant Project Experience

NJ TRANSIT, Amtrak Portal Bridge Capacity Enhancement, NJ. Director of System Projects. Performed a review of the 60% catenary design and specification and for constructability for the new two proposed tracks over Portal Bridge; provided numerous comments and suggestions to improve their catenary design.

NJ TRANSIT, ARC Tunnel Electric Traction System Design, NJ. Chief Electrical Engineer. Reviewed and approved the electric traction system design for the NJ TRANSIT's Access to the Region's Core (ARC) tunnel. The design included an expansion of the Meadows 230-Kv supply substation, an additional supply substation at Tonnelle Avenue in Jersey City, NJ, an auto transformer station at West End in Jersey City, NJ, and a tie-switching station in Manhattan.

NJ TRANSIT, Penn Station Newark Substation Replacement and Back-up Generator, NJ. Chief Electrical Engineer: Designed built, tested, and commissioned the replacement of the 1930 vintage supply substation used to feed the Penn Station facility in Newark, NJ. The scope of work involved replacing the 4160-V incoming service switchgear and relays, dock tower breakers that feed the Amtrak dock tower bridge outside of Penn Station, and 480-V PCB oil-filled transformers and switchgear with air-cooled 4160/480/277-V transformers and draw-out breaker-type switchgear with solid state smart relays. The entire substation was designed and built to operate remotely from the NJ TRANSIT power dispatcher control center, as well as a 2-MW generator located outside Penn Station Newark to back feed the substation with 4160V in the event of a power outage. The generator was designed to feed the entire terminal and turn on automatically within seconds in the event that both 4160-V feeds are lost to the Penn Station substation.

NJ TRANSIT, Morrisville Yard Phases I and II, Morrisville, PA. Chief Electrical Engineer, oversaw the design, installation, testing, and commissioning of the tie-station that feeds the Morrisville Yard. Inspected the catenary

**Sal Conte**

Traction Power Design/Tech Assistance and
Shop Drawings

system and made corrective adjustments to the wires to ensure proper movement of the trains, in addition, coordinated with Amtrak on the expansion of the Morrisville substation to install new transformers and breakers to feed the Morrisville Yard. The Phase II expansion of Morrisville Yard improved operational efficiency and provided storage for the new multi-level rail cars, capacity for future service increases, and enhanced service reliability on the Northeast Corridor. Phase II also included construction of 10 electrified tracks, a service and inspection facility with two elevated inspection tracks, a wheel-truing facility, an expansion of the crew quarter facilities, and an employee parking area. Coordinated with Amtrak on the expansion of the Morrisville substation to install new transformers and breakers to feed the Morrisville Yard.

NJ TRANSIT / Amtrak, NERC Committee. Chief Electrical Engineer: Participated on behalf of NJ TRANSIT with Amtrak on the North America Electric Reliability Corporation (NERC) committee to investigate and determine cause of May 2006 New England Corridor outage from Washington to New York City. The Committee adopted Mr. Conte's recommendation to install a 90MW frequency converter at Metuchen, NJ, and perform a relay coordination study of the Amtrak system.

NJ TRANSIT, Montclair Connection, NJ. Chief Engineer: Electrical Reviewed and approved the consultant's design of the Montclair Connection, a short section of double-track rail connecting Bay Street Station to the Great Notch Station on the Boonton Line, also reviewed the electrification of the section, which included a large yard. The \$60 million Montclair Connection, which opened in 2002, provided hourly, weekday service to Penn Station in Manhattan, as well as continued service to Hoboken Terminal. Tested and commissioned the electrification of the line, which included the expansion of the Bay Street autotransformer station, a new signal generating station, and switching station at Great Notch, NJ.

NJ TRANSIT, Hoboken Terminal Substation, NJ. Chief Electrical Engineer: Designed, built, tested, and commissioned a new Hoboken Terminal substation to replace the 1930s-era substation. The new substation

featured a split 480V bus arrangement with draw-out breakers and 13.2/480V transformers on each bus with all solid state relay equipment. It is controlled remotely from the power supervisor control center in Kearny, NJ.

NJ TRANSIT, Re-Electrification NJCL from Matawan to Long Branch, NJ . Chief Electrical Engineer: Re-electrified NJ TRANSIT's North Jersey Coast Line (NJCL) from Matawan to Long Branch, NJ, to solve train-loading problems and sluggishness. Tested and commissioned the new electrification system to increase the traction power from 12,000 to 25,000 V. To accomplish this, he conducted a load flow and a relay coordination study and replaced some existing equipment, including the relay settings and associated breakers. Also tested the electrical system ground fault and circuits; performed a train load test to check the settings; and commissioned the system into service.

NJ TRANSIT, South Amboy Substation, NJ.

Electric Traction Engineer: Re-designed, built, and commissioned electrification of the South Amboy Substation for NJ TRANSIT. The substation is fed by Amtrak 138 kV, 25-cycle transmission lines and provides 12-kV, 25-cycle traction power to the catenary system from Union to Matawan, NJ, on the NJ TRANSIT/North Jersey Coast Line. To accomplish this, the contaminated soil around the station had to be removed and replaced while the steel 138Kv transmission towers and outdoor steel bus work was sandblasted and repainted. Other components were also replaced; including the outdoor disconnect switches, lightning arrestors, potential transformers and current transformers, and insulation. Both 4.5MW transformers were replaced with 10MW transformers, and the antiquated breakers were replaced with modern vacuum breakers. A new factory-tested control panel with solid state relays was installed in the rehabilitated control building, and new cable trough with new cables was installed connecting the outdoor equipment with the control panel equipment. Tested the equipment and placed it in service.



Shah Habibullah, PE

Bridge / Viaduct Engineering

Years of Experience

With AECOM: 28

With Other Firms: 22

Education

MS, Structural Engineering, Polytechnic University of New York, 1990

MS, Civil Engineering, Asia Institute of Technology, Bangkok, 1975

BS, Civil Engineering, Bangladesh University of Engineering and Technology, India, 1965

Professional Licenses and Certifications

Professional Engineer: NJ; NY; MA

Legacy URS Corporation Project Manager Certification

Professional Societies/Affiliations

American Society of Civil Engineers

American Society of Highway Engineers

Awards

NYACE Most Economic Structure for Design of Jersey Avenue Viaduct , HBLRT Project, 2002

Work History

January 1988 - Present, AECOM and Legacy companies

January 1980 to January 1987, Pavlo Engineering, Company

January 1979 to January 1980, Amman and Whitney

January 1977 to January 1979, Blauvelt Engineering Company

January 1966 to January 1977, Water and Power Development Authority of Bangladesh

About Mr. Habibullah

Mr. Habibullah has more than 40 years of experience in the design of bridges and highways. He has worked on design, inspection and rehabilitation of bridges in New York, New Jersey, Virginia, Louisiana, California, Florida, Connecticut, and Ohio. This work has involved project initial concept, overall coordination, client contact, management skill, and quality control of the project. Mr. Habibullah has extensive experience in the total structural design and detailing of new bridges, steel and concrete retrofit, and seismic retrofit. Mr. Habibullah served as Engineering Manager on the NJ TRANSIT Hudson-Bergen Light Rail Transit System, in charge of final design of all bridges for the Second Operating System; these included the Jersey Avenue Viaduct, the Baldwin Avenue Viaduct, the Pershing Road Bridge, the 21st and 22nd Street Bridges, and an additional three railroad bridges and five highway bridges.

Relevant Project Experience

NJ TRANSIT, Hudson-Bergen Light Rail Transit System, Hudson/Bergen Counties, NJ. Engineering Manager in charge of final design of all bridges for Second Operating System (HBLRT/SOS - Bridges) a design-build-operation-maintenance (DBOM) project involving erection of 50-mile long light rail tracks and placement and operation of light rail cars. Work for the subtask included total design/rehabilitation of the following bridges:

(a) Jersey Avenue Viaduct - \$12 M: New 1000-foot long structure carrying 2-tracks, supported on steel curved girders and concrete caissons extended as columns; received an award from NYACE in the year 2002 for most economic structure.

(b) Baldwin Avenue Viaduct - \$7 M: New 750-foot long structure carrying 2-tracks, supported on continuous steel curved girders and concrete caissons extended as columns.

(c) Pershing Road Bridge - \$5 M: Total replacement of superstructure and rehabilitation of substructures of 225-ft long 5-span existing highway bridge over HBLRT.

(d) 21st and 22nd Street Bridges – \$3 M: Total replacement of superstructures and rehabilitation of abutments for two existing railroad bridges 60-ft long each.

(e) 3 Railroad and 5 Highway Bridges - \$4 M: Rehabilitation of the existing bridges for extended service life.

Responsibility included technical supervision of engineering design and preparation of drawings and specifications, and providing construction support services including shop drawing review, response to RFI, material catalog review and approval. Responsibility also required technical coordination with the client and its consultant Person Brinkerhoff (PB) and

**Shah Habibullah, PE**

Bridge / Viaduct Engineering

also coordination with other disciplines such as civil, electrical, catenaries and architectural.

NJ DOT, Straight Bridge over Passaic River, Newark/Harrison, NJ. Project Manager for preliminary design of the bridge including preparation of Design Report. The project involved in-depth inspection, preparation Design Report of the existing truss bridge, alternate design study and preparation of Preliminary Plans for a new 225-ft long three-span bridge. Project required coordination with the utility companies, SHPO, and local community. Responsible for overall project management, technical supervision, client coordination, quality control etc.

NJ DOT, Bridge Carrying Route 322 over Conrail, Trenton, NJ. Structural Engineer for preparation of Design Report. The project involved field inspection, alternate design study for rehabilitation/ replacement of the existing bridge over railroad, and preparation of Design Report and recommendation. Responsible for field inspection, alternate study and preparation of design report.

NYSDOT, Emergency Bridge Conditions and Flag Repairs, New York, NY. Project Manager for repairing emergency conditions of bridges in various counties of New York City. The project involved in retrofit design of many deficient conditions for , Whitestone Expway Viaduct including ramps, Grand Street and Bedford Avenue Bridge over BQE, Meeker Avenue Viaduct, Spring Creek Bridge on Belt Parkway and many other small tasks. The retrofit work included severe section losses, thru holes and cracks in steel stringers, floor beams, girders and box beams, severe concrete spalling in pier cap beams, columns, deck slab and severe section losses in steel piles and concrete pile bents etc. requiring reinforcement of steel members, replacement of deteriorated concrete with new concrete, use of fiber reinforced polymer (FRP) for repaired concrete cap beams and columns, installation of supplemental relief piles etc. Responsible for overall project management, technical supervision, client coordination, quality control, construction support services and coordination etc.

NYSDOT, Deficient Bridges Design, Region 11, New York, NY. Project Manager for repairing deficient conditions of bridges in various counties of New York City. The project involved in retrofit design of many deficient conditions for Kosciuszko Bridge, Bruckner Expressway over Bruckner Blvd, Sheridan Expressway Ramp and addressing Red Flags for Major Deegan Expressway Ramp and FDR South St. Viaduct foundation and many other small tasks. The retrofit work included severe section losses, thru holes and cracks in steel stringers, floor beams, girders and box beams, severe concrete spalling in pier cap beams, columns, deck slab and severe section losses in steel piles and concrete pile bents etc. requiring reinforcement of steel members, replacement of deteriorated concrete with new concrete, use of fiber reinforced polymer (FRP) for repaired concrete cap beams and columns, installation of supplemental relief piles etc. Responsible for overall project management, technical supervision, client coordination, quality control, construction support services and coordination etc.

NYSDOT, Rehabilitation Design of 18 Bridges over Sunrise Highway, Suffolk County, NY. Project Manager for the rehabilitation design of bridges over a stretch of 30 miles along Sunrise Highway (Route 27). Work consisted of in-depth inspection, load rating, asbestos investigation, seismic evaluation, preparation of design report, preliminary and final rehabilitation design; Responsible for overall project management, technical supervision, client coordination, quality control, and coordination etc.

NYSDOT, Region 10, Preventive Maintenance Repair at 11 Locations, NY. Project Manager for providing final design of bridge joint deck replacement for eleven bridges in the Nassau & Suffolk counties. The project involved in-depth inspection, and evaluation, Asbestos Investigation, preparation of design report, repair recommendation and preparation of final plans. Responsible for overall project management, technical supervision, quality control and client coordination.



Eugene Teperman, PE

Bridge / Viaduct Engineering

Years of Experience

With AECOM: 9

With Other Firms: 23

Education

MS, Transportation Engineering,
Moscow Institute of Transportation
Engineers, 1983

Professional Licenses and Certifications

Professional Engineer: NY; MA

Legacy URS Corporation Project
Manager Certification

Professional Societies/Affiliations

American Society of Civil Engineers

Specialized Training

Project Management Training Course,
2003

FHWA Sponsored Inspection Training
Course, 2005

Work History

December 2007 to Present, AECOM,
Structural Engineer

December 1999 to December 2007,
Parsons Brinckerhoff, Structural
Engineer

October 1998 to December 1999,
Hardesty & Hanover, LLP, Project
Engineer

December 1995 to December 1998,
Weidlinger Associates, Inc., Senior
Engineer

December 1992 to December 1995,
Bettigole Andrews and Clark, Inc.,
Designer

December 1987 to December 1992,
State Department of Rehabilitation and
Maintenance of Bridges, Designed Steel

About Mr. Teperman

Mr. Teperman has more than 32 years of experience as a Project Manager and Project Engineer experienced in design and rehabilitation of roadways, bridges, viaducts, retaining walls, elevated subway stations and other major structures, including airport, offshore, sign structures and underground structures located in congested urban settings for NYCDDC, NYCDOT, NYSDOT and the PANYNJ. Mr. Teperman has extensive experience with NYCDDC and currently manages the reconstruction of several bridges located throughout New York City.

Relevant Project Experience

NJ TRANSIT, Main and Pascack Valley Line Right-of-Way (ROW)

Improvements, NJ. Task Leader responsible for the design of the new Hazel Street Bridge (bridge with large skew) for NJ TRANSIT, including prestressed voided slabs, deck, abutments, and utility support. Also developed staging and erection procedures.

NJ TRANSIT, Southern New Jersey Light Rail Transit (LRT) System, Award Winning Crosswicks Creek and Rancocas Creek Bridges, NJ.

Task Leader responsible for the design of the main span of the Crosswicks Creek Bridge, abutments, pedestrian crossing and developed details for future jacking operations. Additionally, for the Rancocas Creek Bridge, checked design calculations and contract drawings for prestressed concrete box beams, abutments, intermediate piers, and steel tied arch geometry.

MTA NYCT, Line Subway Extension, New York, NY. Task Leader developed the design calculations and the contract drawing for cut and cover sections, circular tunnel section and performed preliminary layout of the station building as well as demolition plans. Developed a STAAD model for a cut and cover section.

MTA NYCT, IRT #7 Subway Line Extension, New York, NY. Lead Structural Engineer for design of underpinning of the existing 8th Avenue Subway Station structure to accommodate the IRT #7 Line Extension crossing under the existing tunnels and station. Performed conceptual, preliminary and advanced design of underground structures including cut-and-cover station structures. Designed retaining wall for protection of Amtrak tracks during future 7 Subway station construction.

Queens Midtown Viaduct, Queens, NY. Project Engineer performed design of the details for rehabilitation of the floorbeams including repair of flanges, webs, knee braces. Reviewed shop drawings. Assisted with construction support services and prepared rehabilitation reports including cost estimating.

PANYNJ, Tunnel Hardening, NY and NJ. Lead Structural Engineer for development of structural hardening solutions to protect critical multi-billion dollar underground/underwater tunnel structures. AECOM is

**Eugene Teperman**

Bridge / Viaduct Engineering

responsible for structural analysis, and preliminary and final engineering. The work includes the relocation of electrical and mechanical systems, including the relocation of existing fiber optic cables to maintain system functionality throughout the project.

PANYNJ, Security Capital Program, New York, NY. Lead Structural Engineer for design of a \$100 million Flood Mitigation Program for PATH. The program includes structural modification, electronic systems, and track and utility modifications

Replacement of Two Bridges in Bergen County, NJ. Chief Inspector responsible for construction cost estimating and progress reports preparation. Administered and maintained all records, activities and office duties. Provided engineering services and performed construction inspection.

Biennial Inspection of Bridges in Hudson County, NJ. Structural Engineer for this work which included full depth field inspections, preparation of reports, SI&A sheets and PONTIS forms. Performed superstructure load rating analysis for 15 county bridges using programs BAR7, PS3 and STAAD3.

PANYNJ, George Washington Bridge Rehabilitation of Upper Level Sidewalks, New York, NY. Project Engineer for rehabilitation of upper level sidewalks and New York anchorage. Was responsible for design, construction cost estimate and final contract documents preparation.

NYCDOT, Forensic Investigation of the Multispan Highway Bridge, Brooklyn, NY. Project manager responsible for inspection, investigation of causes of the bridge and retaining wall distress and for rehabilitation recommendations.

NYSDOT, Gowanus Expressway, Brooklyn, NY. Lead Structural Engineer responsible for development of the tunnel and ramps cross sections for the Draft Environmental Impact Statement (DEIS) tunnel alternative design, and for a conceptual study for replacing the existing 4-mile (6.4-kilometer) viaduct and elevated interchanges with tunnels.

Ninth Street Bridge over the Gowanus Canal - Structural Engineer - New York, NY . Provided construction support services, redesigned SE retaining wall, barrier gate support. Designed new fender system. Prepared application and obtained a permit from NYCDEP.

Dunraven Causeway Bridge, New York, NY. Project Engineer responsible for development of the various schemes of reconstruction of Causeway, preliminary and final design of the new bridge as well as for construction cost estimate and erection procedures.

NYSDOT, Willis Avenue Bridge over the Harlem River, Bronx, NY. Project Engineer responsible for preparation of scopes for subsurface exploration program, topographical survey, underwater survey and inspection, seismic peer review, etc. Prepared presentations for involved city and state agencies. Was responsible for coordination of the Value Engineering Study, follow-up meetings, H&H responses to the Value Engineering proposals and reconciled cost estimate for the selected scheme. Revised BRPR and developed new scheme of reconstruction of the bridge. Coordinated and supervised subconsultants, attended progress and all agencies meetings. Prepared proposal for final design, finalized preliminary design, developed layout of new piers in the Bronx (Harlem River Yard). Established new layout of waterways and location of new pivot pier after presentation of several schemes to the USCG. Developed plans for land acquisition, stages of construction. Performed load rating of members of the existing swing span.

Manhattan Bridge over the East River, New York, NY. Structural Engineer, designed stringers for approaches. Provided review of shop drawings as part of the construction support services. Participated in preliminary design and construction cost estimating of rehabilitation of West walkway and West upper roadway. Developed details for rehabilitation of deteriorated stringers, floorbeams, lateral braces and gusset plates. Designed standpipe connections. Inspected members of the suspended spans and approaches during special and in-depth inspections. Inspected cables, suspenders and deck joints. Checked and revised design calculations and contract drawings of erection gantry.



Todd Schickel, PE

Bridge / Viaduct Engineering

Professional Background

- Education
 - M.S., Structural Engineering, Rutgers University, New Brunswick, NJ, 1981
 - B.S.C.E., Civil Engineering, Rutgers University, New Brunswick, NJ, 1975
- Professional Associations
 - AISC: American Institute of Steel Construction
 - ASCE: American Society of Civil Engineers
 - ASHE: American Society of Highway Engineers
- Licenses/Certificates
 - Professional Engineer, NJ
- Specialized Training
 - American Galvanizers Association Galvanizing Seminar, 06/09/2011
 - Subsurface Utility Engineering Seminar, 04/19/2011
 - Integral Waterproofing and Corrosion Protection for Concrete, 01/13/2011
 - Prestressed Concrete Bridge Design Seminar (LRFD), 03/16/2010
 - High-Load Multi-Rotational Bearings and Seismic Isolation Devices, The Practicing Institute of Engineering, Inc., 10/04/006
 - Engineered Solutions with High Performance Grout, Five Star Products, Inc., 05/31/2006
 - Steel Bridge Forum, American Iron and Steel Institute, 04/29/1998
 - Precast, Prestressed Concrete Bridge Design, International Bridge Conference, 06/17/1998
 - International Bridge Conference, Anchor Bolts for Bridge and Cantilever Structures, 06/04/1997
- Total Years Experience
 - 40
- Joined Jacobs in 1981

Todd serves as the Manager of the Structures Division in our Morristown, NJ office, responsible for a staff of nine structural engineers. He has extensive experience in highway and railroad bridge design, rehabilitation, and inspection, and has managed major highway and railroad bridge design and inspection programs for a variety of clients in a variety of settings throughout the Northeast.

Todd is currently serving as the Deputy Section Leader for the Ohio River Bridges East End Crossing Project. Todd recently served as Deputy Project Manager for the Portal Bridge Capacity Enhancement Project for NJ TRANSIT, and as the Structural Design Leader for Design Section No. 8 of the \$1.25 Billion Interchange 6 to 9 Widening Program for the NJ Turnpike Authority. In prior projects, he served as the Deputy Project Manager and Project Structural Engineer on the project that brought NJ TRANSIT rail service into the Meadowlands Sports Complex in East Rutherford, NJ, and as the Project Manager for the NJ Turnpike Interchange 16W Improvement Project located immediately adjacent to the Meadowlands Sports Complex.

Other projects that Todd managed include two separate projects for the inspection of 97 undergrade railroad bridges and 53 undergrade railroad bridges located on various lines throughout NJ TRANSIT's rail system.

Representative Project Assignments

NJ TRANSIT, Portal Bridge Capacity Enhancement Project, Kearny and Secaucus, NJ

Deputy Project Manager responsible for the management of the design of several bridges, temporary construction platforms / trestles, retaining walls, and rail system support structures along the western portion of the project, from the Hackensack River to the NJ Turnpike. A major challenge on the project was to design uniform and constructable bridges in coordination with various rail systems equipment needs and their supporting structures. Of particular note was the

challenge to design constructable temporary and permanent construction platforms / trestles to be used by a variety of contractors required to construct the large and complex railroad bridge structures. Final design efforts included a three-span network tied arch, with each span measuring 400 feet, along with numerous other through-girder and multi-span viaduct approach structures. The estimated construction value of the project is \$950 million.

**Todd Schickel, PE**

Bridge / Viaduct Engineering

NJ TRANSIT, Design Services for New Wesmont Passenger Station, Wood-Ridge, NJ

Project Structural Engineer responsible for managing the structural design and preparation of structural drawings for a new NJ TRANSIT Rail Station. The station elements include a new 375-foot long center island platform, elevators, and a pedestrian overpass. Since the project is located within a historic rail corridor, the architecture of the platform amenities needed to be reminiscent of the era. The design also included overpass and stair-tower layouts for three alternative station locations. Jacobs also provided professional services during construction.

NJSEA / NJ TRANSIT, Meadowlands Rail & Roadway Improvement Project, East Rutherford, NJ

Deputy Project Manager and Project Structural Engineer responsible for the design of rail and roadway bridge structures, toll plazas, pedestrian bridges, subterranean utility vaults, retaining walls, sign support structures, and the design of a new NJ TRANSIT Rail Station including platforms, stairways, ramps, and ancillary structures. The rail service now operates over a new 2.3-mile railroad alignment connecting with NJ TRANSIT's Pascack Valley Line. A majority of the project alignment is located within the Meadowlands Sports Complex property, owned and operated by the NJSEA. Included in the project was a new rail station servicing passengers to MetLife Stadium, the Meadowlands Racetrack, the former Izod Arena, and the Meadowlands Xanadu (now American Dream) project.

NJ TRANSIT, Frank R. Lautenberg Rail Station at Secaucus Junction, Secaucus, NJ

Lead Structural Engineer responsible for the management of the structural design portion of this extensive project. The project included 7,000 linear feet of elevated rail structure, seven through-girder railroad bridge crossings, foundations for the Secaucus Transfer Station and future 40-story high-rise overbuild, retaining walls, and ancillary structures. A special feature of this project included developing a variety of constructable details for all of the above-mentioned structures with said construction being performed adjacent to an operating high-speed rail system (Amtrak's Northeast Corridor Main Line). Also served on several Technical Evaluation Committees with NJ TRANSIT, evaluating the qualifications of prospective contractors for the construction of the project.

NJ TRANSIT, Main-Bergen Connection and Main Line Improvements for Secaucus Junction, Secaucus, NJ

Project Manager responsible for the management of the design of two multi-span elevated structures, one culvert replacement, and one through-girder bridge rehabilitation for this project to connect NJ TRANSIT's Main Line and Bergen County Line. The elevated structures are supported on steel pipe pile foundation with precast pile caps, and consist of prestressed concrete box beams spanning over wetlands. Additional responsibilities include the management of the construction support services for the project. Todd also served on the Technical Evaluation Committee with NJ TRANSIT, evaluating the qualifications of prospective contractors for the construction of the project.

NJ TRANSIT, Consulting Services for Undergrade Bridge Inspections, Statewide, NJ

Project Manager responsible for the management of two separate railroad bridge inspection programs. The projects included the field inspection (including coring and testing of brick and/or stone structures), rating, and report preparation for 97 railroad bridges on one project, and 53 bridges on another project, throughout New Jersey. Several of the structures dated back to the 1840's. Information from these inspections was used to create a database for NJ TRANSIT's new Bridge Management System (BRIMMS).



Michael Kaminski, PE

Crew Quarters Building

Professional Background

- **Education**
 - M.S., Structures, Rutgers University, College of Engineering, New Brunswick NJ, 1977
 - B.S., Civil Engineering, Rutgers University, College of Engineering, New Brunswick NJ, 1975
- **Professional Associations**
 - ASCE: American Society of Civil Engineers
- **Licenses/Certificates**
 - Professional Engineer in NY and NJ
- **Specialized Training**
 - Flexible and Rigid Pavement Design, 08/13/2013
 - Avoiding Failures of Retaining Walls Design Short Course, 10/17/2013
- **Joined the industry in 1977**
- **Joined Jacobs in 1986**

Michael has over 38 years experience in structural engineering, design, and inspection of railroad and highway bridges, with responsibilities encompassing steel, prestressed concrete, reinforced concrete, and pipe support design. He has provided expert testimony at planning board hearings and has participated as the structural engineering representative for a variety of value engineering studies for transit agencies.

Representative Project Assignments

NJ TRANSIT, Superstorm Sandy Recovery Program, Meadowlands Maintenance Complex (MMC) and Rail Operations Center (ROC), Kearny, NJ

Lead Structural Engineer responsible for the design of permanent measures to protect the Meadows Maintenance Complex (MMC) and the Rail Operations Center (ROC) facilities from future flooding events. As part of the Superstorm Sandy Recovery Program, the design effort included the hardening of the exterior building walls, installation of new swing and drop down flood gates to protect overhead train doors and man doors, and construction of platforms for support and access to equipment raised above flood levels.

NJ TRANSIT, Portal Bridge Capacity Enhancement (PBCE) Project, Kearny and Secaucus, NJ

Structural Engineer responsible for the design and analysis of drilled shafts, concrete support slabs, Track 5 tunnel, and infill for the elevated Duck Under structure carrying mainline tracks. He was also responsible for the design of several multi-span approach viaducts adjacent to the Portal Bridge. Jacobs is part of the Tri-Venture Team "Portal Partners" providing professional railway, structural, civil, and geotechnical services for the replacement of Portal Bridge over the Hackensack River. Final Design advanced a two-track fixed bridge to the north to replace the existing aging bridge. The estimated construction value of the project is \$950 million.

NJ TRANSIT, Design Services for New Wesmont Passenger Station, Wood-Ridge, NJ

Lead Structural Engineer responsible for the structural design, analysis, and preparation of all structural drawings for the new NJ TRANSIT Rail Station. The station is the focal point of a transit-oriented development plan for the area. Station elements include a new 375-foot long center island platform, elevators, and a pedestrian overpass. Since the project is located within a historic rail corridor, the architecture of the platform amenities needed to be reminiscent of the era. Jacobs also provided professional services during construction.

NJ TRANSIT, Newark Drawbridge Rehabilitation, Harrison and Newark, NJ

Structural Engineer responsible for providing designs and drawings for the rehabilitation of the Newark Drawbridge approach spans. Jacobs led a multi-consultant team to develop the rehabilitation of the existing two-track Newark Drawbridge and its approaches. The 3,300+-foot long project provided connection with the reconstructed Broad Street Station to the west and the Warren Street Bridge in Harrison to the east, over 2,000 feet on structure. The project required us to rehabilitate the existing structures and develop a workable plan for replacing the existing two tracks with a modern three-track crossing. The rehabilitation construction was completed in 2009.



Michael Kaminski, PE
Crew Quarters Building

NJSEA / NJ TRANSIT, Meadowlands Rail and Roadway Improvement Project, East Rutherford, NJ

Structural Engineer responsible for structural design, analysis, and preparation of all structural drawings for the new NJ TRANSIT Rail Station. The service operates over a new 2.3-mile railroad alignment connecting with NJ TRANSIT's Pascack Valley Line. A majority of the project alignment is located within the Meadowlands Sports Complex property, owned and operated by the NJSEA. Included in the project was a new rail station servicing passengers to MetLife Stadium, the Meadowlands Racetrack, the former Izod Center Arena, and the Meadowlands Xanadu Project (now American Dream). The design for this \$150 million rail project included new track, structures, viaducts, roadwork, sitework, utilities, geotechnical, drainage, construction phasing, signals, communications, and the new station.

NJ TRANSIT, Main-Bergen Connection and Main Line Improvements for Secaucus Junction, Secaucus, NJ

Lead Structural Engineer responsible for the design of a through-girder bridge rehabilitation for this project to connect NJ TRANSIT's Main Line and Bergen County Line. The existing bridge had active rails in three girder bays, and the fourth bay required rehabilitation for the installation of a new rail. Numerous steel details were developed for the rehabilitation, bearings were replaced on the entire structure, and substructure repairs were included.

NJ TRANSIT, Frank R. Lautenberg Rail Station at Secaucus Junction, Secaucus, NJ

Structural Engineer responsible for the structural design, analysis, and preparation of drawings for an elevated signal shed support structure and a mainline track temporary shielding wall. Due to the project's proximity to one of the most highly traversed railroad corridors in the nation, close coordination with all involved railroad agencies was required to develop design documents to expedite construction. Bid package preparation, bid phase assistance, and construction support services were provided for ten construction contracts and three turnout procurement contracts.

NJ TRANSIT, Townley Station Value Engineering Study, Union, NJ

Structural Engineer responsible for modifying designs or details to save fabrication and/or construction costs, while maintaining or improving the structure's intended function. The Townley Station project included reconstruction of a rail bridge, realignment of tracks, relocation of existing interlocking a new station with center high-level platform, a pedestrian tunnel, 440 parking slots, CATV, and signage.

Amtrak, Ivy City Yard Maintenance Facility, Washington, DC

Structural Engineer responsible for the design, analysis, and drawing preparation for catenary support structures within an operating maintenance railroad yard. Jacobs was responsible for the design and field coordination of Amtrak Force Account construction. The project was related to the high-speed equipment maintenance facility, which occupies the present location of Ivy City Yard. Before the maintenance facility was constructed, Amtrak had to relocate Ivy City Yard, and we prepared structural designs for the new catenary system for the new Ivy City Yard. The project also included wiring diagrams, erection diagrams, staging plans, survey, and foundation review for the new Ivy City Yard. The construction proceeded on a daily basis as design continued. The fast-track nature of the project required close coordination with Amtrak forces to schedule design, steel fabrication, shop drawing review, and construction.



James Taylor, PE, LEED AP

Miscellaneous Rail Structures

Years of Experience

With AECOM: 15

With Other Firms: 22

Education

MS, Structural Engineering, Tulane University, 1982

BS, Civil Engineering, Howard University, 1979

Professional Licenses and Certifications

Professional Engineer: NJ; NY; MD; VA; LA

Legacy URS Corporation Project Manager Certification

Professional Societies/Affiliations

Tau Beta Pi

Louisiana Engineering Society

Specialized Training

Confined Space Entry training required under OSHA 29 CFR 1910.146.

Track Safety Training: NJ TRANSIT, Metro-North, MTA, and Amtrak

Legacy URS Health and Safety Training

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

MicroStation CADD

Ultrasonic Digital Thickness - Measurement QAD-9.52 UDT

10 hour OSHA Hazard Recognition Training for the Construction Industry

Work History

January 2001 to Present, AECOM, Senior Bridge Engineer

January 1996 to January 2001, NJ TRANSIT, Rail Structures Department, Principal Project Engineer

January 1990 to January 1996, Stone & Webster, Project Engineer

January 1987 to January 1990, The RBA Group, Project Engineer

January 1985 to January 1986, Bernard Johnson, Inc., Senior Bridge Engineer

January 1980 to January 1985, DMJM

About Mr. Taylor

Mr. Taylor has more than 37 years of experience and management and leadership experience. He is well versed in the complete project execution of all types of projects for clients such as the NJ TRANSIT, NJ Turnpike Authority, the MTA Triborough Bridge and Tunnel Authority, the Port Authority of New York and New Jersey, the State Department of Transportation in New Jersey and New York. He has broad-based experience in the design and evaluation of concrete, steel, prestressed concrete and timber structures of highway and railroad bridges. He has extensive experience in the inspection and load rating of railway and highway bridges. He has hands-on experience in construction and building inspection. Mr. Taylor is responsible for all logistical and financial aspects of his projects, including staffing, scheduling, budgeting and invoicing and is intimately familiar with the implementation of Corporate Quality Assurance and Quality Control policies and procedures on many of AECOM projects. For five years in the mid-90s, Mr. Taylor served NJ TRANSIT's Rail Structures Department as a Principal Project Engineer.

Relevant Project Experience

NJ TRANSIT, Undergrade Bridge Inspections, Morristown and Gladstone Lines, NJ. Project Manager on NJ Transit's Undergrade Bridge Inspections, where he led the inspection, rating, analysis and prioritization of undergrade bridges on the Morristown and Gladstone lines. Managed staff of engineers and performed the quality control review for all reports submitted to NJ Transit.

NJ TRANSIT, In-House Design for Several Projects, NJ. Principal Project Engineer, responsible for providing technical design guidance and technical review on the following projects performed with consultant design services. Design Consultant (HNTB) Movable Roller Girder Repairs at NJCL 30.48 over Shark River in Belmar, New Jersey; Design Consultant (STV) New Subway Bridge over M&E 8.50/Orange Street Subway Station Replacement Project in Newark, New Jersey.

NJ TRANSIT, Principal Project Engineer, Newark, NJ. Designs / Rehabilitation / Repairs on the following Projects:

- Gladstone Line 41.87 Park Avenue Bridge Replacement over Peapack Brook
- Hetfield Avenue Bridge Rehabilitation RVL 19.85
- Main Line 7.48 Electrical Platform for Building at Newark Drawbridge
- Morris & Essex Line 2.64 Lower Hack Structural Steel support of track miter rails
- Morris & Essex Line 7.48 Newark Draw Structural Steel support track miter rails
- Morris and Essex Line 2.64 Lower Hack Crane for Stair Tower
- Raritan Valley Line 19.85 Hetfield Avenue Roadway Resurfacing and Steel Repairs
- Emergent structural repairs at Upper Hack ML 5.48 from bridge raise impact
- Morris and Essex Line Steel Repairs 0.66 Grove St. Bridge

**James Taylor, PE, LEED AP**

Miscellaneous Rail Structures

- North Jersey Coast Line 16.08 Navesink River Bridge New Bridge Walkway
- Raritan Valley Line 66.51 Pine Hollow Bridge Replacement
- Raritan Valley Line 66.51 Pine Hollow Bridge Lifting Frame Design for bridge removal
- North Jersey Coast Line 0.39 River Draw Bridge - New Bridge Walkway
- Boonton 17.57 Peckman River - New Bridge Walkway
- Morris and Essex Line 2.64 Lower Hack New Stair Tower
- Morris and Essex Line Roseville Cut New Stair Tower
- Morris and Essex Line 7.53 Viaduct Emergency Repairs
- Morris and Essex Line 7.89 over Martin Luther King Blvd. Emergency Column Replacement & Steel Repairs
- Morris and Essex Line 0.80 over Hoboken Avenue - Emergency Replacement of Cracked Stringers
- Morris and Essex Line 0.66 over Grove Street - Replace Cracked Stringer
- Morris and Essex Line 8.42 Roseville Substation Support Framing/Platform for new Substation Building
- North Jersey Coast Line 36.09 Brielle Bridge Diesel Generator Steel Support Framing
- Morris and Essex Line 7.48 Newark Draw - Electrical Bungalow Steel Support Framing
- Raritan Valley Line 53.38 Buffalo Hollow Bridge Replac.
- Montclair 11.34 over 2nd River - Pedestal Bearing Replacement
- Gladstone Line 41.87 Park Avenue Bridge Replacement
- Emergent Repair Catenary Column Y-173 Avenel, NJ
- Emergent Repairs - Replace Crack Column Cap Plate
- Boonton Line 33.81 Wye Track - Replace Cracked Stringer and Miscellaneous Steel
- New Brielle Bridge Walkway Replacement NJCL 36.09
- Emergent Repair Newark Broad Street Station Platform
- Bergen MP 5.48 HX Counterweight Access Stair System
- Emergent Repair M&E 7.59 Bridge Walkway and Column Repairs
- Temporary Construction Support and Beam Splice Details for Column Removal Roseville Avenue
- Dover Yard Portal Catenary Structure Beam Splice Details and Construction Support
- Boonton Line 32.93 Foxhill Road Bridge Replacement
- Signal Structure Foundations, Green Interlocking M&E Line

- Emergent Platform Inspection - Newark Penn Station
- Boonton Line 10.42 over Spruce Street - Emergency Replacement of Crack Stringer

NJ TRANSIT, Various Projects, Design Supervision, Newark, NJ. Responsible for the design supervision of New Jersey Transit Engineers on the following in-house design projects: Morris and Essex Line 7.53 to 7.59 Newark Viaduct New Bridge Walkways; Morris and Essex Line 6.83, 6.93 & 7.72 New Bridges Walkways; Main Line 2.19 over Conrail New Bridge Walkway; BCL 14.20 over Van Riper Avenue New Bridge Walkway; Morris and Essex Line 7.41 & 7.42 over Harrison Avenue New Bridge Walkways; BCL 11.16 over Saddle River New Bridge Walkway; Main Line 8.23 Stuyvesant Avenue Replacement of Cracked Stringers; New Jersey Coast Line 36.09 Brielle Bridge - Floorbeam Replacements; Morris and Essex 0.57 over Luis Marin Boulevard New Direct Fixation Deck; Hoboken Yard Catenary Structures; Morris and Essex Line MP 7.25 Cleveland Avenue Bridge Steel Repairs; Morris and Essex Line 9.8 and 10.0 Signal Structure Improvements; Montclair 12.23 Signal Structure Improvements; Gladstone Line 30.47 New Bridge Walkway over Passaic River; Boonton Line 15.96 Clove Road Bridge New Bridge Walkway; Boonton Line 13.7 Signal Structure Improvements; Morris and Essex Line 6.72 and 6.83 Cracked Steel Stringer Replacements; New Stair Tower Access at River Draw NJCL 0.39.

NJ TRANSIT, Rail/Structures Department, Newark, NJ. Principal Project Engineer responsible for managing technical staff on the design of moderate to complex projects including the construction, rehabilitation and alteration of all structures along the right-of-way of New Jersey Transit. Prepared technical specifications and bid documents for major projects assigned for construction. Successfully completed assigned projects ahead of schedule. Accurately estimated costs of various projects for Department and NJ Transit Board approval. Designed and Engineer-of-Record for Pine Hollow, Park Avenue, and Buffalo Hollow Bridge Replacements.



Craig Jenne, PE

Civil / Utilities

Years of Experience

With AECOM: 9

With Other Firms: 3

Education

BS, Civil Engineering, Virginia Polytechnic Institute and State University, 2003

Professional Licenses and Certifications

Professional Engineer: NJ; NY; FL

Legacy URS Corporation Project Manager Certification

Certified Municipal Engineer/New Jersey

Professional Societies/Affiliations

Tau Beta Pi

Louisiana Engineering Society

Specialized Training

FEMA Disaster Training, 2002

Work History

November 2011 to Present, AECOM

Legacy companies

April 2011 to November 2011, Dynamic Engineering Consultants, PC

February 2009 to April 2011, Jenne Associates, LLC

January 2005 to February 2009, Legacy URS Corporation, Florida

January 2004 to January 2005, Legacy URS Corporation, New Jersey

About Mr. Jenne

Mr. Jenne is a civil transportation engineer (drainage and utilities), with more than 12 years of professional experience including rail, capacity improvements, reconstruction / rehabilitation, regional stormwater improvements, regulatory permitting, utility design and construction support services. His expertise includes hydrology studies, hydraulic drainage design, highway and urban roadway, permitting, cost estimating, soil and erosion control, management of post-design construction and preparing technical specifications. Mr. Jenne has also been managing / mentoring staff at the Civil Surface Transportation Drainage Group at AECOM.

Relevant Project Experience

NJ TRANSIT Long Slip Canal Fill and Rail Enhancement Project, Jersey City, NJ. Assisted in project management, civil site design and permitting support. Performed stormwater hydraulic, earthwork and utility relocation designs. Prepared engineering report for NJDEP Multi-Permit Application (Waterfront Development, Water Quality, Coastal Zone Management). This project consists of alternatives evaluation, conceptual design development, and final engineering associated with the filling of a 2000-foot channel along the Hudson River adjacent to Hoboken Yard for a future elevated rail section. Also included design of a 10' x 12' combined sewer outfall (CSO) extension, canal closure retaining walls, geotechnical analyses and evaluation of impacts to adjacent land uses.

Borough of Ridgefield, Assistant Municipal Engineer, Bergen County, NJ. Performed municipal engineering services including capital improvement grant applications, roadway milling and resurfacing designs for various roadway segments, Department of Public Works building site design, Municipal construction project management and tax map updates.

Borough of Ridgefield and Borough of Guttenberg, Zoning Board Engineer, Bergen and Hudson counties, NJ. Served as the Board Engineer. Services included reviewing development applications, planning zoning regulation changes, managing project inspections and assisting in capital grant applications.

McDonald's Corporation, Various Counties, NJ. Performed the civil site design for various commercial McDonald's sites expansions. Services included civil site design including building, parking and access layout, hydrology analysis, drainage conveyance and stormwater detention designs, project management and permitting.

CVS Corporation, Various Counties, NJ. Civil Engineer performed the cost/benefit analysis for various commercial sites targeted by CVS marketing. Services also include civil site design including building, parking and access layout, drainage conveyance and stormwater detention designs, project management and permitting.



Craig Jenne, PE
Civil / Utilities

DSNY/NYCDEP Fresh Kills Landfill Closure, Staten Island, NY. Assisted in project management for landfill closure design. Performed stormwater, hydraulic, gas extraction and remediation, earthwork and concrete structure designs. Wrote and compiled specifications, design reports and construction management documentation. Managed and organized submittals and RFIs for services during construction. This project consisted of the closing of the Fresh Kills Landfill including liner closure, slurry wall, earthwork grading and gas extraction system design.

DSNY/NYCDEP Penn and Fountain Landfill Closures, New York, NY. Performed stormwater, hydraulic, gas extraction and remediation, earthwork and concrete structure designs. This project consisted of the closing of the Penn and Fountain Landfills including liner closure, earthwork grading and gas extraction system design.

NYSDOT Route 347, Mount Pleasant Road to Terry Road, Town of Smithtown, Suffolk County, NY. Performed drainage independent technical review for storm water management design for design-build project for the widening and reconstruction of NY Route 347.

I-95 / I-295 North and SR 9A/US 17 Interchange Improvements, FDOT District Two, Duval County, FL. Engineer of Record and managed the drainage pond, offsite drainage designs, floodplain compensation and stormwater permitting. This project consists of widening I-295 from a four lane divided highway to a six lane (expandable to eight) divided highway and associated flyover ramps in all directions.

Central Polk Parkway, New Alignment from Polk Parkway to US 17, Florida's Turnpike Enterprise, Polk County, FL. Engineer of Record and managed the drainage conveyance system and pond designs including regional stormwater solutions, prepared permits and evaluated floodplain impacts and compensation. This project consists of widening a tolled arterial highway from four lanes to an all-electronic-tolling (AET) eight lane highway. This project is a new facility/alignment connection Polk Parkway to ultimately to I-4.

Veterans Expressway (SR 589) Widening from Memorial Highway to Gunn Highway, Florida's Turnpike Enterprise, Hillsborough County, FL. Performed the drainage conveyance system and pond designs, obtained permits and managed drainage post-design drainage services and also performed the roadway alignment and profile designs. This project consists of widening a tolled arterial highway from four lanes to an all-electronic-tolling (AET) eight lane highway.

66th Street (SR 693) Resurfacing, Rehabilitation and Restoration (RRR) from CR 694/Park Blvd to CR 376/142nd Ave, FDOT District Seven, Pinellas County, FL. Engineer of Record and managed the conveyance system, offsite drainage system upgrades and stormwater permitting. This project consists of widening to the median to accommodate bike lanes in the typical for each direction and pedestrian and signaling improvements to the corridor.

SR 82 (Immokalee Road) Widening from West of Alabama Road to East of Homestead Road, FDOT District One, Lee County, FL. Engineer of Record and managed the drainage pond, conveyance system and offsite drainage designs. This project consists of widening a two lane undivided arterial roadway to a four lane (expandable to six) divided arterial roadway.

SR 55 (US-19) Corridor Improvements and Re-Construction from North of SR 580 to Northside Drive, FDOT District Seven, Pinellas County, FL. Engineer of Record and managed the drainage pond, conveyance system, floodplain compensation and offsite drainage designs. This project consists of re-constructing a six lane divided highway to a six lane controlled-access facility with one-way frontage lanes in both directions.

SR 686 Corridor Connector, FDOT District Seven, Pinellas County, FL. Engineer of Record and managed the stormwater modeling and pond design, drainage conveyance system and floodplain compensation designs. This project consists of connecting Roosevelt Street through the airport corridor down to 118th Street via newly configured mainlines and ramps.



Andrew Leung, PE

Geotechnical Engineering

EDUCATION AND TRAINING

University of Illinois, Master of Science in Geotechnical Engineering -1982

University of London, University College, Bachelor of Science in Civil Engineering -1980

REGISTRATION

Professional Engineer - New York, New Jersey, 1985



EXPERIENCE SUMMARY

Mr. Leung has over 30 years of technical and project management experience in geotechnical and environmental engineering for the planning, design, construction, and rehabilitation of various civil works. His experience includes the design and construction supervision of dams, instrumentation systems and performance monitoring for landfill and underground structures, design of shallow foundations and pile foundations for on-shore and marine structures and analysis of slopes in soil and rock. His environmental experience encompasses all phases of hazardous and solid waste management projects. His technical experience has focused mainly on the geotechnical aspects of waste management, including remedial design, groundwater monitoring, hydrologic and hydraulic evaluations, and geotechnical and geophysical investigations. Types of projects include major transportation infrastructure design, airports, port, waterfront, sanitary landfills, dams, and residential and commercial buildings.

REPRESENTATIVE PROJECTS

Terminal C Expansion and Adam's Ditch Enclosure, Newark International Airport, Newark, NJ, Continental Airlines, Inc - Geotechnical Engineer responsible for the expansion and improvement of Terminal C. Responsible for the development of the subsurface exploration programs, engineering analyses, and evaluations; the preparation of engineering reports, construction drawings, and specifications; and the provision of geotechnical consulting services during construction. Design work included the use of light-weight fill to support slabs on-grade; tunneling to install utility lines; pile foundations to support airport runway as part of Adam's ditch enclosure; slope stability analyses; cost and benefit evaluations; sheetpile bulkheads and mechanically stabilized earth walls. Performed slope stability analysis with the program PCSTABL, lateral loads on piles analysis with LPILE, and soil-structure interaction analysis with CWALSHT.

NJDOT, I-295 / I-76 / Route 42 Direct Connection Project - Project Manager for the subsurface investigation program which consisted of approximately 750 borings with a total footage of over 40,000 LF. Responsibilities included managing project team communication among field and office personnel, along with coordinating with client and the project in order to perform quality control services and achieve quality assurance.

New Jersey Turnpike Interchange 6-9 Widening Project - Project Manager responsible for the geotechnical exploration program for the proposed widening project. The program plans to add 170 lane miles at a cost of about \$2-billion dollars. Approximately 1,700 borings with a total estimated footage of 80,000 LF and up to 50 piezometers are included in the subsurface investigation program. Up to 16 drill rigs are operating simultaneously to complete the field exploration program within the estimated six months' period.

NJ Garden State Parkway Widening Project MP 63.0 to 80.8- Project Manager responsible for developing the drilling program and managing an inspection team of 10 to perform the investigations for over 250 soil borings and 13,500 LF of drilling and sampling along 17 miles of roadway. Project included providing design recommendations and preparing data interpretative report for bridges, culverts and sign structures. Prepared subsurface information and soil profiles using gINT v.7 software.

YU & Associates, Inc.



Andrew Leung, PE

Geotechnical Engineering

ANDREW LEUNG, P.E.

Representative Projects (Cont'd)

NJDOT, I-295 & Route 38 Improvement Project, - Project Manager responsible for the on-going geotechnical investigation for the Final design phase of the proposed improvement. Subsurface investigation work includes the use of STP and CPTU drilling testing and sampling. Responsibilities include developing the subsurface exploration program with the highway designer, preparation of bidding document, coordination for permit applications, and gathering of subsurface information.

New Jersey Department of Transportation (NJDOT), Duck Island Landfill Project, NJ - Project Manager for the closure design of the 36-acre sanitary landfill in Hamilton Township, NJ. Provided end-to-end, fast-track site formation from planning to completion for a site design with extensive environmental constraints for the NJDOT. Managed and engineered the geotechnical and hydrologic investigations, and developed the engineering design focus for the landfill. Geotechnical investigations included the design of an exploration program and the performance of a site formation analysis including settlement and stability evaluations. Part of the closure plan also included an environmentally friendly design of gabion retaining structures to minimize wetland disturbances as well as facilitate the site drainage criteria. In addition, design included a convertible passive gas collection system, traffic impact studies, and landscaping design. A total of eight federal, state, and local permits were secured on behalf of the NJDOT in an extremely challenging project schedule. Client rating of 5.0 /5.0 (Excellent rating) was awarded consecutively. The design team won the New Jersey Quality Initiative (NJQI) Award for Teamwork and Quality Merit Award in 2004.

NJTA Interchange 12 Design of Final Improvements, Carteret, NJ - Turnpike Authority plans to expand Interchange 12 to increase the existing 7 toll lanes to 14 lanes, and construct a new flyover for an existing rail line. Project Manager responsible for coordinating the geotechnical exploration program of over 200 soil borings and 10,000 LF of drilling and sampling. Geotechnical design services also included establishing foundation design criteria, performing slope stability analyses for embankment, settlement analysis for a new Mechanical Stabilized Earth retaining wall, and conducting foundation evaluation and providing recommendations for a proposed retaining wall.

Kosciuszko Bridge, Brooklyn and Queens, New York – Principal-in-Charge responsible for overseeing the geotechnical exploration program, developed by the design/build team, and preparing geotechnical data reports for the proposed construction associated with the highway widening project.

East Side Access Instrumentation Installation and Monitoring Program, MTA, NY - Principal –in-Charge responsible for providing technical support to the construction management team in charge of the geotechnical instrumentation program. The East Side Access (ESA) project connects the Long Island Rail Road (LIRR) in Queens to a new LIRR terminal beneath Grand Central Terminal in Manhattan. Prior to starting construction, geotechnical instruments will be installed above ground and in the subway tunnels to measure any movement, settlement, tilt, strain and induced vibrations from tunneling, excavation and construction activities. Instruments include automated motorized total stations (AMTS) with reflective prismatic targets, manual survey points, inclinometers, extensometers, observation wells, tilt meters, seismographs, dynamic strain gages, and liquid level settlement systems (LLSS). Many of the instruments are designed to be read remotely and automatically. Support will also be provided to a web-based data management system to ensure the data are processed, presented and reported in a timely, accessible and understandable manner. By monitoring all instruments and conducting continuous review of data collected and processed, the ESA Project Team will be able to determine whether excavation, tunneling or construction activities may have an adverse effect on surrounding structures.

YU & Associates, Inc.



Richard Baron, PLS

Surveying



PROFESSIONAL REGISTRATIONS

2004	Registered Professional Land Surveyor, NY # 050551
1989	Registered Professional Land Surveyor, NJ #24GS03447900
1993	Registered Professional Land Surveyor, PA #SU-044571-R

AREAS OF EXPERTISE

- ✓ 37 years of experience
- ✓ NJ Transit Experience
- ✓ Land Surveying operations and ROW management
- ✓ Extensive experience in GPS, Cadastral, hydrographic, topographic, structural and construction survey
- ✓ Familiar with use of GPS , precision total stations and sub-aqueous profiling equipment
- ✓ Ability to review plans for constructability and prepare comments

PROFESSIONAL EXPERIENCE

Mr. Baron has over 37 years of diversified experience in land surveying. He has been responsible for managing ground, topographic, utility, boundary, wetland, and planimetric survey services including: record research and keeping, data processing, traverse adjustment, writing legal descriptions and reports, subdivision design, plotting, field data collection, calculations, and preparation of basemapping. His work experience includes the use of GPS, sub-aqueous bottom profiling equipment for Hydrographic Surveys, and precision electronic total stations in conjunction with electronic data collectors and traditional as well as digital and scanning equipment.

PROJECT EXPERIENCE

NJ Transit Super Storm Sandy Emergency Repairs~ Repair, Reconstruction and/or Replacement of Electrical Substations and Related Equipment at Hoboken Terminal/Yard, Meadows Maintenance Complex (MMC) and Bay Head Yard, NJ: Under a New Jersey Transit Architectural/Engineering Task Order contract, NJ Transit looked to repair, reconstruct and/or replace various general power substations, traction power substations, switching substations, and related facilities at Hoboken Terminal/Yard, Meadows Maintenance Complex (MMC) and Bay Head Yard operating locations that were damaged as a result of SuperStorm Sandy in October, 2012. As Survey Manager, Mr. Baron oversaw the project survey services for the three (3) substation locations. The services included the establishment of horizontal controls in NJ State Plane Coordinates NAD83 and respective vertical datum, NAVD88. Additional survey tasks included field locations for the proposed substation and basemapping for physical features, wetland delineation, existing switching fixtures, track locations, catenary and access roadways. Mr. Baron attended the required NJ Transit Safety Training Course. He monitored the field survey of locations for proposed substations including the Hoboken facility electrical substation relocation at Pullman, Observer Highway and Henderson substation locations, the MMC existing substation facility parking area, high tension overhead wire location and elevations, and access roadways, and the Bay Head substation location, track location, and gravel parking area.

NJ Transit Task Order Contract No. 13-002: Critical Asset Survey along Bergen County, Main, Pascack Valley and Morris & Essex Lines, NJ: Under a New Jersey Transit Environmental Task Order contract, NJ Transit sought to have a survey of critical assets along 4 rail lines performed.. As Survey Manager, Mr. Baron oversaw survey and basemapping services including topographic, utility, structural and planimetric. The survey work included the establishment of horizontal controls in NJ State Plane Coordinates NAD83 and respective vertical datum, NAVD88. Survey tasks include survey around site structures within the NJT ROW, cross-sections every 10', four corners of each existing structure at ground level and Threshold/Entrance Elevation, shots on top of near Rail and wetland mark-outs. A Survey Report was prepared.



Richard Baron, PLS
Surveying



NJ Transit ASES II- Positive Train Control Design (PTC), Entire Length of NJT System, NJ: Project Surveyor for providing surveying and mapping services to support the design and implementation of the ASES II Positive Train Control System (PTC) for NJ Transit. The project involved mapping specific features including: rails, switches, platforms, signals, and at-grade crossings for the entire NJ Transit rail system. Raw data are being captured using low-altitude aerial LiDAR, orthophotography, and oblique aerial video. Additionally, areas obscured from the air were mapped using terrestrial scanning and RTK GPS units. All features were mapped in state plane coordinates. Final deliverables consisted of straight-line diagrams in conjunction with Excel tabular data that were used to populate the design database.

NJ Transit SuperStorm Sandy Emergency Repairs~ Newark Penn Station and Seaucus Transfer Station, Newark and Secaucus, NJ: Under a New Jersey Transit Bridge & Railway Engineering Task Order contract, NJ Transit is looking to provide emergency repairs due to Super Storm Sandy. As Survey Manager, Mr. Baron oversaw survey services under a very aggressive design schedule for these repairs. The survey work included the establishment of horizontal controls in NJ State Plane Coordinates NAD83 and respective vertical datum, NAVD88. In addition to the typical existing conditions base-mapping features, our field crews obtained the location and elevation of critical existing physical features such as; subway ventilation grating, doorway openings, stairways, escalators, elevator openings, station platforms and electrical substation locations.

NJ Transit Task Order No. 13-002: Monitoring Wells, Jersey City, NJ: Under a New Jersey Transit Environmental Task Order contract, NJ Transit requested that seven monitoring wells located at the Hudson-Bergen Light Rail Transit System West Side Avenue Station Park and Ride be surveyed due to damage from SuperStorm Sandy. As Survey Manager, Mr. Baron oversaw survey and basemapping services including topographic, utility, structural and planimetric survey services. The survey work included the establishment of horizontal controls in NJ State Plane Coordinates NAD83 and respective vertical datum, NAVD88.

NJ Transit Replacement and Upgrade of CNG Fueling at the NJ Transit Howell Township Bus Facility, Route 9, Howell Township, NJ: Under a New Jersey Transit Environmental Task Order contract New Jersey Transit replaced and increased CNG fueling capabilities at their facility located at 1251 Route 9 North. As Survey Manager, Mr. Baron oversaw surveying services for the Howell Bus Facility, to allow New Jersey Transit to replace and increase CNG fueling capabilities as part of the SuperStorm Sandy recovery effort. Survey/Row services include horizontal controls in NJ State Plane Coordinates NAD83 and respective vertical datum, NAVD88, basemapping, and field location surveying. All documentation is being performed in accordance with NJ Transit Design Standards.

PANYNJ World Trade Center Permanent PATH Terminal Task Order #2, Cortland St. 1/9 Station, New York, NY: Project Surveyor for survey services for PATH improvements, responsible for establishing a subordinate horizontal and vertical control network throughout the limits of this task, tied directly to the primary geodetic network established during the Main Control Network Phase. These points include control to align and position the 3D scans. This network is also being utilized to perform survey observations of additional utility, structural, planimetric and topographic features. All observations have been performed utilizing electronic total station surveying systems coupled with on-board data collection software and Leica Digital Scanning Levels for vertical control. Elements being surveyed include: beams, columns, girders, crash-walls, walls, stairwells, underpasses (Dey Street), passenger mezzanines (north end), emergency/egress exits, tracks, booths and utilities. In addition, all visible rail and rail systems elements are being surveyed, including top of running rails, electrical systems, uinage inlets, duct banks, miscellaneous structures, milepost markers and other railroad monumentation.



Richard Sullivan, RA, LEED AP, GGP

Access / Egress

people, building, and planet

sowinskisullivan
ARCHITECTS

EDUCATION

B. Architecture, New York Institute of Technology

1985

EMPLOYMENT HISTORY

Sowinski Sullivan Architects, PC, Director of Design

1996 – Present

di Domenico + Partners, Partner

1994 – 1996

Weintraub and di Domenico, Intern Architect - Partner

1985 – 1994

PROFESSIONAL AFFILIATIONS:

Registered Architect: NY; NJ; DC; FL

Member: NCARB; Metropolitan Railway Club of NY; Metropolitan Roamers of NY; National Trust for Historic Preservation; International Code Council; Board Member-March of Dimes Philadelphia Chapter and Transit Builders Trust

QUALIFICATIONS:

Richard Sullivan is the Director of Design for Sowinski Sullivan Architects, PC. He has planned, designed and/or managed improvements at over 250 transportation facilities throughout North America in the past two decades on all types of facilities ranging from major above and below grade stations, shops, yards, employee welfare facilities and development work associated with transportation.

With over 30 years of technical and design experience in public facility design, Mr. Sullivan provides creative architectural services to a broad spectrum of public transportation clients throughout North America. Insightful programming, outstanding phased construction plans, historic preservation, thoughtful site design and experience with community planning benefit many clients including NJ TRANSIT.

REPRESENTATIVE PROJECTS INCLUDE:

NJ Transit New Brunswick Station, New Brunswick, NJ

Mr. Sullivan is the Principal Architect for the platform extension at New Brunswick Station. The 230 foot extension is a continuation of the existing high level platform to the west, providing level boarding access for two additional train cars. The existing stair from platform level to the street below will be removed and replaced with a stair meeting egress requirements. All elements are developed in accordance with NJ Transits station design guidelines.

NJ Transit North Brunswick Station, North Brunswick, NJ

Mr. Sullivan is the Principal Architect on a team for the new North Brunswick Station along the Northeast Corridor (NEC). The station is sub task to the Mid Line loop project which will provide a loop for trains to cross the NEC tracks and return east. The station will provide access to passengers for the future TOD to be constructed on the former Johnson & Johnson site. An inbound and outbound platform will be provided with access over the NEC tracks via a pedestrian bridge equipped with elevators for ADA access.

NJ Transit Wesmont Station, Wood-Ridge, NJ

Mr. Sullivan was the Principal Architect for the new station at Wood Ridge, NJ. This new station will anchor a new transit village-style mixed use project that will span over 70 acres. The station is being developed in accordance with NJ Transits sustainable design guidelines. The sustainable efforts for this new station include utilizing Brownfield land (former site of the Curtiss-Wright industrial building), natural daylighting and natural ventilation. The station is comprised of one center island high-level platform, an overpass, two elevators and stair towers.

**Richard Sullivan, RA, LEED AP, GGP**

Access / Egress

people, building, and planet

sowinskisullivan
ARCHITECTS**NJ Transit County Yard, New Brunswick, NJ**

Mr. Sullivan is the Principal Architect for the expansion of the existing County Yard site. Yard upgrades include a new two track S&I facility with support spaces, Material storage and Welfare Facilities, Replacement of Amtrak C&S building. Crew Quarters and Coach Cleaners building which may be integrated into the main shop, other smaller satellite buildings consist of; Security Booth, Compressor Building, Refuse Area, Central Toilet Collection Building, Covered Vehicle Storage.

NJ Transit Jersey Avenue Station, South Brunswick, NJ

Mr. Sullivan is the Principal Architect for a new station along the Northeast Corridor in South Brunswick, NJ. This new station will include two high level platforms to serve both eastbound and westbound trains; the scope of work also includes elevator/stair towers, canopies, shelters, a pedestrian overpass that will connect the parking area to the island platforms, as well as signage throughout the station.

CTDOT/Amtrak New Haven-Hartford-Springfield-Rail (High Speed Line) Project, Various Locations, CT

Mr. Sullivan is the Principal Architect for eleven (11) new stations for CTDOT's New Haven – Hartford – Springfield Rail Project. Sowinski Sullivan Architects, PC (SSA) is the architect on a team that is the program manager and preliminary designer for the redevelopment of New Haven-Hartford-Springfield (NHHS) Rail line, which includes seven new stations and improvements at four others. Improvements will include high-level platforms for both directions of train travel, overhead pedestrian access to cross the tracks, and parking to accommodate projected ridership. The services being performed will comply with CTDOT & Amtrak criteria as well as strive for a high performance building equivalent to LEED silver requirements. The scope of the project required design criteria to be established for the stations, development of a model station in BIM based upon the design criteria, site specific data collection, and parking assessments. This preliminary research was utilized to develop a conceptual and subsequent preliminary design for each station. SSA is leading the design and coordination of consultants for the final design team as it moves forward in a phased manner.

Long Island Rail Road Jamaica Station Expansion, Jamaica, Queens, NY

Mr. Sullivan is the Principal Architect for the expansion of Jamaica Station, the hub of the LIRR. Project scope includes adding a new high level platform, canopy, elevators, escalators, stairs, waiting room, signage, and SHPO interface. Scope also includes extending the Westerly Bridge and connection to the existing Yard Bridge Portal.

Metro North Railroad Stamford Station Improvements, Stamford, CT

Mr. Sullivan was the Principal Architect for the improvements to the Stamford Railroad Station. Scope of work includes the extension of the existing pedestrian overpass with stairs to the platform & street level, extension of the existing center island platform canopies, new platform shelters, and installation of new & upgrade of existing signage throughout the station. Tasks also include working with the team for public interface and coordination with other ongoing station improvements being undertaken by the department, the city and private developers.



Theodore Turanick

Track Engineering

Professional Background

- **Education**
 - A.A.S., Construction Technology, New York City Community College of Applied Arts and Science, 1956
- **Professional Associations**
 - AREMA: American Railway Engineering and Maintenance of Way Association
 - Metropolitan Railway Club of New York
- **Licenses/Certificates**
 - OSHA 10-Hour Construction Safety & Health Training Course, (09/17/2013)
- **Years of Experience**
 - 55
- **Joined Jacobs** in 1956

Ted has held responsible positions on our major rail, subway, and highway projects. He has vast experience and the ability to quickly develop solutions to complex design problems. His technical ability encompasses all facets of rail engineering including conceptual track layout, special trackwork design, civil design, construction staging and sequencing, cost estimating, contract specifications, and preparation of final contract documents. During his career, Ted has prepared thousands of contract documents for NJ TRANSIT, AMTRAK, Metro-North Railroad, SEPTA, Conrail, NYCTA, PANYNJ, SIRTOA, WMATA, SCRTD, MARTA, NFTA, MBTA, MTA, and other state and private sector clients.

His insights have proved invaluable in “pulling together” all the disciplines involved in producing final design packages.

Representative Project Assignments

NJ TRANSIT, County Yard Improvements, New Brunswick, NJ, Preliminary Design

Senior Track Designer for the County Yard Improvements Program, which consists of four distinct components: reconstruction of Delco Lead to provide resiliency storage; construction of a new Service and Inspection (S&I) facility; expansion of the County Yard; and construction of a new Jersey Avenue station. The S&I Facility will accommodate two 12-car consists, and will be approximately 1,250 feet long and 55 feet wide. The S&I Facility will also include a crew quarters and spare parts storage. The existing County Yard will be expanded to provide overnight storage for ten EMU train for cleaning and light maintenance before being put into revenue service. The yard will also include sanding facilities, compressed air, wayside power, and a relocated Amtrak C&S Facility. A new Jersey Avenue Station will also be designed to make this station ADA accessible by installing new high-level platforms and elevators.

NJ TRANSIT, Design Services for New Wesmont Passenger Station, Wood-Ridge, NJ

Project Track / Civil Engineer responsible for the development of a new center-island, high-level platform station on NJ TRANSIT's Bergen County Line. Responsible for development of contract plans, specifications, and cost estimates, and developing construction staging and sequencing required to maintain train operations during track relocations and center-island platform construction.

NJ TRANSIT, Portal Bridge Capacity Enhancement Project, Kearny and Secaucus, NJ

Project Civil Engineer responsible for the development of Early Action Contracts for construction access roads, utility relocations, specifications, constructability review, and cost estimates. Jacobs is part of the Tri-Venture Team “Portal Partners” providing professional railway, structural, civil, and geotechnical services for the replacement of Portal Bridge over the Hackensack River on the Northeast Corridor in Kearny and Secaucus, NJ. Preliminary Engineering was completed to replace the existing two-track swing bridge with two fixed bridges, to be located on either side of the existing bridge; with the two new bridges carrying a total of five tracks.



Theodore Turanick
Track Engineering

NJSEA and NJ TRANSIT, Meadowlands Rail and Roadway Improvement Project East Rutherford, NJ

Project Civil/Track Engineer responsible for design of track alignment and special trackwork, preparation of contract documents, specifications, construction sequencing, and estimates. Jacobs provided engineering, planning, and environmental services for a new rail station and rail service for the Meadowlands Sports Complex area. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The service operates over a new 2.3-mile railroad alignment connecting with NJ TRANSIT's Pascack Valley Line. A majority of the project alignment is located within the Meadowlands Sports Complex property.

NJ TRANSIT, Frank R. Lautenberg Rail Station at Secaucus Junction, Secaucus, NJ

Track Engineer responsible for the track alignment and high-speed turnouts to enable Northeast Corridor trains to exit and stop at the proposed rail transfer station and re-enter the mainline traffic at 70 mph. Work involved the development and evaluation of track alternatives on embankment and structure over the two miles of available trackage, constructability analysis, construction staging, and construction access to this site within the Hackensack Meadowlands. The project costs totaled \$450 million for nine separate construction contracts.

MTA – Metro-North Railroad, Highbridge Yard-Design-Build, Bronx, NY

Track Designer responsible for the preparation of contract documents to provide a 4,000 foot-long, ten-track storage and maintenance yard facility. Yard layouts required accommodating and servicing the current M-1/M-3 MU car fleet, push-pull dual mode train sets, and the new M-7 car fleet. Project elements included third rail electrification on all tracks, diesel fueling facility, toilet servicing, water supply on all yard tracks, and a two-track, 900-foot long Car Appearance Facility. A new 16-megawatt traction power substation on site was also included. The project cost was \$76 million. Jacobs' primary design responsibilities included civil (under- and above-ground utilities), trackwork, traction power, third rail, structural (shop and substation foundations, building and roof structures, high-level platforms, and overpass), systems integration, and communications system, CCTV cameras, and a security system, which is integrated with the fire protection system.

NJ TRANSIT, Expansion of Port Morris Yard, Landing, NJ

Project Civil/Track Engineer responsible for the preparation of a new yard master plan for the existing Port Morris Yard in Landing, NJ. Ted developed the yard and shop layouts to accommodate the track and the cost estimate for the full build-out. The project involves design of a new 1,100 foot, 2-track, S&I facility, new locomotive shop, and doubling the rail car storage capacity within the yard.

NJ TRANSIT, Montclair Connection Final Design and Construction Services, Montclair and Little Falls, NJ

Project Manager responsible for final design packages for the connection of the Montclair Branch and Boonton Line in Montclair, NJ near Bay Street. The project included a 1,500-foot, two-track connection of the Montclair Branch with the Boonton Line, new universal cross-overs, new high-level platforms, a new station building, and overhead pedestrian access. Electrification was extended through the connection and five miles west along the Boonton Line to Great Notch Station. At Great Notch, a new three-track electric train storage yard and crew facility was designed. The new facility has male and female locker rooms, showers, bathroom facilities, an employee check-in facility, yardmaster's office, and maintenance storage. Utilities for the facility and yard included a raised inspection track, sand tower, compressed air, refuge disposal, wayside power, and water supply.



William Norquist, PE

Track Engineering

Years of Experience

With AECOM: 15

With Other Firms: 16

Education

BST, Civil Engineering Technology,
Spring Garden College, 1984

AST, Architecture, Spring Garden
College, 1984

AST, Construction Engineering
Technology, Spring Garden College,
1984

Professional Licenses and Certifications

Professional Engineer: PA; MD; AZ

Professional Societies/Affiliations

American Society of Civil Engineers

American Railway Engineering and
Maintenance-of-Way Association

Specialized Training

CSX - Roadway Worker Protection On-
Track Safety
e-RailSafe

Work History

January 2000 to Present, AECOM
Technical Manager, Transit/Rail/Freight

May 1988 to January 2000, SEPTA,
Project Manager

March 1986 to May 1988, NYCT, Project
Coordinator

June 1984 to March 1986, Conrail,
Assistant Supervisor-Maintenance of
Way

About Mr. Norquist

Mr. Norquist has more than 31 years of experience in the design, planning, construction, and maintenance of freight and rail transit projects in the US and abroad. In addition to over 16 years of experience as a consulting engineer at AECOM, his career includes experience in the maintenance of track construction for a Class I railroad as a design engineer and project manager for two of the largest transit authorities in the United States.

Relevant Project Experience

Maryland Department of Transportation and Maryland Transit Administration, Baltimore Red Line, Baltimore, Maryland.

Task leader and senior engineer for final design of track and alignment elements of the development of a new light rail system in Baltimore. Responsible for development of the track alignment and track structure, and coordination with the systems, civil, architectural, and structural engineering disciplines.

Metropolitan Council, Minneapolis Southwest Light Rail Transit, Minneapolis, Minnesota.

Task leader - light rail transit in charge of all track and systems engineers developing preliminary engineering to progress the design of an extension of the Green line (Central Corridor LRT) from Hopkins, Minneapolis to Eden Prairie, Minneapolis. Design involved identifying alignment adjustments to the locally preferred alternative route for the 7.2-mile west segment of this 15.8-mile double track extension of the existing light rail system. Preliminary engineering design elements supervised include track and alignment, traction power site selection, grade crossing protection, communications, signals, and all special trackwork.

Metropolitan Council, Minneapolis Central Corridor Light Rail Transit, Minneapolis, Minnesota.

Senior track engineer to provide rail transit expertise and quality control in support of the design of a new 11-mile light rail line between Minneapolis and Saint Paul. Assisted with the development of track structure design, selection of track structure components, and the development of all track alignment for this new light rail system.

Los Angeles County Metropolitan Transportation Authority, Metro Gold Line Eastside Extension, Los Angeles, California.

Senior track engineer for development of final design-build documents for extension of the light rail line through East Los Angeles. Provided rail transit expertise in finalizing design for track alignment and special trackwork in ballasted, direct fixation, and embedded street track, including the use of noise and vibration mitigation measures.

Valley Metro, Northwest Light Rail Transit Extension, Phoenix, Arizona.

Senior track engineer responsible for the final design of horizontal and vertical alignments of a 3.3-mile double-track extension of the existing

**William Norquist, PE**

Track Engineering

light rail system. The design effort entailed coordination with all infrastructure and systems design disciplines, including a contract for the advanced procurement of interlocking materials. The design also required the development of new tee-rail design elements in lieu of the authority's girder groove rail standards.

Port Authority Trans-Hudson Corporation (PATH), Update of PATH's Track Maintenance Standards Manual, Jersey City, New Jersey. Project manager for the preparation of an undated Track Maintenance Standards Manual (TSM) for the PATH system. This was a Task Order assignment part of multi-year an on-call engineering contract with PATH. AECOM compiled multiple outdated and disparate versions of PATH track standard memoranda, directives and maintenance procedures. AECOM compiled a new formatted TSM format and developed a formalized Track Maintenance Standards Manual.

Delaware River Port Authority, PATCO Rehabilitation of Track Structure on Viaducts, Philadelphia, Pennsylvania. Project Engineer for preliminary and final design of and construction services for the rehabilitation of the track infrastructure on the Benjamin Franklin Bridge and the concrete viaducts of the Port Authority Transit Corporation (PATCO) heavy rail transit system. Design included alignment modifications and resilient fastener installation, noise and vibration mitigation and development of phasing to ensure continuity of service during construction as a primary concern. Rail/structure interaction on the suspension bridge and assessment of rail expansion joints was also included.

Metropolitan Washington Aviation Authority, Dulles Corridor Metrorail – Phase 2, Fairfax and Loudoun Counties, Virginia. Track and alignment discipline leader for the development of final alignment and design-build procurement documents for the 11.4-mile extension of the WMATA heavy rail system from Wiehle Avenue in Fairfax County, through Dulles International Airport, and on to Route 772 in Loudoun County. In responsible charge of all track and alignment engineering work, schedule development, budget control, and progress reporting for the track design effort for the main line, as well as for the study of numerous alignment alternatives within Dulles Airport property.

Delaware River Port Authority, PATCO Rehabilitation of Track Structure on Viaducts, New Jersey. Project engineer for preliminary and final design of and construction services for the rehabilitation of the track infrastructure on the Benjamin Franklin Bridge and the concrete viaducts of the PATCO heavy rail transit system. Design included alignment modifications and resilient fastener installation, noise and vibration mitigation and development of phasing to ensure continuity of service during construction as a primary concern. Rail/structure interaction on the suspension bridge and assessment of rail expansion joints was also included.

Amtrak, Washington Union Station Terminal Infrastructure Terminal Infrastructure Plan: Concept Planning and Design, Washington, D.C. Rail Engineering Task Leader for the conceptual planning and design of the track and rail terminal for the historic Washington Union Station. Led the rail engineering team in developing the improved rail capacity, increased passenger capacity, and conceptual construction phasing elements required to develop the landmark station into a world-class, sustainable, transportation hub for 2040 and beyond. Developed concepts for the development of future Amtrak high speed rail alignments through the Washington, D.C. metropolitan area.

Southeastern Pennsylvania Transportation Authority, SEPTA Trolley Modernization Feasibility Study, Philadelphia, PA. Project Manager for the development of the Feasibility Study for the proposed replacement of SEPTA's aging regional trolley system with new, modern streetcars and ADA-accessible passenger stations and amenities. Led a team of engineers, station architects, rail vehicle engineers, rail operations professionals and estimators in assessing the feasibility of the trolley system replacement, and making recommendations regarding the implementation of the proposed modernization.

Chicago Transit Authority, CTA Track Maintenance Standards Manual and Training, Chicago, IL. Technical Manager and primary author for the development of an undated Track Maintenance Standards Manual (TSM) for the CTA.



William Jagerberger, PE

Traction Power Engineering

Years of Experience

With AECOM: 6

With Other Firms: 30

Education

BS, Electrical Engineering, New York University, 1969

Professional Licenses and Certifications

Professional Engineer: NJ; NY; Ontario, Canada

Work History

January 2010 to Present, AECOM
Legacy Companies

September 2007 to January 2010,
Parsons Transportation Group

May 1986 to September 2007, PANYNJ
PATH

December 1970 to May 1986, NYCT,
LIRR, and SIRTOA

About Mr. Jagerberger

Mr. Jagerburger has more than 36 years of engineering experience in traction power design working for four transit systems: NYCT, PATH, SIRTOA and LIRR. He has extensive experience in the rehabilitation of old and new traction power substations and auxiliary power substations, rehabilitation of subway lines, subway station renovation, modification, installation and rehabilitation of manholes and duct lines, installation of emergency vent fans, pumping equipment, supervisory control systems, stray current mitigation systems and cathodic protection systems. This includes system studies and measurement, implementation of codes and standards, e.g., NEC, NYC Building Code, NYC Electrical Code, NEMA, IEEE, ANSI, NFPA, OSHA, BOCA, etc., equipment testing, and preparation of contact documents. Projects have included: power transformers, rectifiers, medium voltage and low voltage AC switchgear, DC switchgear, lighting, power distribution, motors and motor control centers, variable speed drives, supervisory control systems, direct wire control systems, battery systems, UPS equipment, intrusion alarm equipment, fire alarm systems, key interlock systems and communication equipment. His work experience also includes the removal of old electrical equipment such as MCC, switchgear, transformers, etc., while providing continuity of facility operations. Mr. Jagerburger has participated in working groups for the IEEE Traction Power Sub-Committees.

Relevant Project Experience

Sheppard East Light Rail Transit System, Traction Power System, Toronto, Ontario, Canada. System Engineer Traction Power responsible for the design of 10 traction power substations for the Sheppard East Light Rail Transit System in Toronto, Canada. The scope of work included load flow analysis, preparing contract drawings for the purchase of 10 prefabricated substations that included traction power rectifiers, transformers, DC switchgear, auxiliary power equipment and installation of this equipment to the Toronto Hydro Electrical System, Overhead Contact System, running rails and Scada system.

MTA SIRTOA, Grant City Substation, Staten Island, NY. Prepared contract construction documents and reviewed shop drawings for the 4 MW Grant City Substation. Prepared contract construction documents and reviewed drawings for a new control center at St. George Substation. Performed studies for additional substations in Staten Island.

**William Jagerberger, PE**

Traction Power Engineering

MTA LIRR, East Side Access Traction Power, New York, NY. Power Manager responsible for traction power as well as facility power contracts for the Long Island Rail Road East Side Access Project. Supervise 8 Engineers. Prepared 90% contract documents for Contract CSO 81 and CSO 84, these contracts include a 60 MVA Bulk Power Substation, 8 Traction Power Substations, 10 Facility Power Substations and a 2 MW 13.8 KV Emergency Generator System.

PANYNJ PATH, Traction Power Projects, New Jersey / New York. Lead Engineer /Senior Engineer, Engineering Department, Electrical Design PATH. Supervised multiple discipline engineers and consultants and was responsible for various PATH traction power projects. Lead Engineer for the replacement of Traction Power Substations 7, 8 and 9 and DC switching stations 6 and 10 Lead Engineer for the Replacement and Upgrade of Christopher Street Traction Power Substation.

- Reviewed and audited consultants design documents for the restoration of Downtown PATH service for the World Trade Center. This project included a 6 MW traction power substation, auxiliary power systems for the passenger station, duct banks, SCADA, signal infrastructure, blue light stations, etc.
- Prepared construction contract documents and reviewed shop drawings for PATHs Portal Substation. This is a 6 MW traction power substation.
- Reviewed and audited consultants design documents and shop drawings for PATHs Harrison Main Repair Facility and Rail Yard. This project included an 8 MW substation for yard power and a 4 MW substation for shop power as well as associated power systems for the complex.

- Prepared DC power study from Newark to Portal for the replacement or upgrade of traction substations to support PATHs new AC propulsion train cars.
- Designed PATH duct bank replacement for 140,000 ft. of duct banks and cables, while maintaining train service.
- Reviewed and audited consultants design documents for passenger platform extensions for 10 car train service from Newark to World Trade Center.

MTA NYCT, Division-Manager, New York, NY. Division-Manager of Design 2, Power Engineering Design. Supervised 3 to 4 professional engineers and 16 graduate engineers. Mr. Jagerburger was responsible for \$250 million in Capital Programs.

MTA NYCT, New Routes Projects, New York, NY. Included design for duct banks, substations and cathodic protection of the 63rd Street tunnel. Various modernization programs for the IRT, BMT and IND systems. Including substations, tunnel duct banks, passenger station extensions, SCADA systems, control systems, medium voltage power systems, etc.



Anoop Ganjoo

Traction Power Engineering

Years of Experience

With AECOM: 2

With Other Firms: 31

Education

MS, Electrical Engineering (Power Apparatus and Systems), Indian Institute of Technology, Delhi, India

BS, Electrical Engineering, Regional Engineering College, Srinagar, India

About Mr. Ganjoo

Mr. Jagerburger has more than 36 years of engineering experience in traction power design working for four transit systems: NYCT, PATH, SIRT OA and LIRR. He has extensive experience in the rehabilitation of old and new traction power substations and auxiliary power substations, rehabilitation of subway lines, subway station renovation, modification, installation and rehabilitation of manholes and duct lines, installation of emergency vent fans, pumping equipment, supervisory control systems, stray current mitigation systems and cathodic protection systems. This includes system studies and measurement, implementation of codes and standards, e.g., NEC, NYC Building Code, NYC Electrical Code, NEMA, IEEE, ANSI, NFPA, OSHA, BOCA, etc., equipment testing, and preparation of contact documents. Projects have included: power transformers, rectifiers, medium voltage and low voltage AC switchgear, DC switchgear, lighting, power distribution, motors and motor control centers, variable speed drives, supervisory control systems, direct wire control systems, battery systems, UPS equipment, intrusion alarm equipment, fire alarm systems, key interlock systems and communication equipment. His work experience also includes the removal of old electrical equipment such as MCC, switchgear, transformers, etc., while providing continuity of facility operations. Mr. Jagerburger has participated in working groups for the IEEE Traction Power Sub-Committees.

Relevant Project Experience

NJ TRANSIT, Trans-Hudson Express Tunnel Project, Newark, NJ. Senior Electrical Engineer for the Detailed design (60% design level) of 25 kV 60 Hz AC traction power and systemwide Signal power elements including layout of traction substations, routing of traction feeders and interface with OCS design elements; traction power simulation inputs; supporting civil and structural design packages for embedded conduits and duct banks for traction power and signal power.

PANYNJ, PATH DC Substation # 8, NJ. Senior Electrical Engineer, completed Stage I design for the replacement of existing PATH DC Substation # 8, including substation layout, interface with architectural and structural groups for building design, access to the substation, modification to routing of incoming utility feeders, routing of new dc positive and return feeders and replacement of existing signal power substation to ensure seamless switch over of operation from existing to the new traction and signal power substation.

MTA LIRR, East Side Access Program, New York, NY. Senior Electrical Engineer, developed traction power system design from 30% design stage till 90% design stage, including traction substations, third rail, facility power substations, traction and facility power distribution in tunnels and ventilation plant buildings.

MTA NYCT, Second Avenue Subway, New York, NY. Senior Electrical

**Anoop Ganjoo**

Traction Power Engineering

Engineer, traction power system 30% design including layout of traction substations and routing of dc positive feeders to third rails and the return feeders.

DRPA / PATCO, Control Center and SCADA Upgrade, NJ/PA. Senior Electrical Engineer, responsible for review of technical specifications for control center replacement and SCADA system upgrade at this third rail DC traction transit system running on grade/elevated and underground sections in New Jersey and Pennsylvania.

MTA NYCT/LIRR/Metro-North Railroad, New York, NY. Senior Electrical Engineer, responsible for traction power system maintenance and repair program certification.

MDOT M1 Rail LRT Project, Detroit, MI. Senior Traction Power Engineer, detailed design of traction power system at 100% design stage, including traction substations, routing of dc positive feeders to OCS and charging stations, routing of return feeders, and facility power distribution.

MBTA, Wellington Facility Expansion Project, Boston, MA. Senior Traction Power Engineer, design of traction power feed arrangement to third rails on new tracks in the yard and redeveloping the overall sectionalizing arrangement in the yard for improved train movements.

Denver Eagle P3 Project, Denver, CO. Senior Electrical Engineer, detailed design of systemwide signal power elements, interface with OCS design elements and systemwide grounding and bonding on single phase 25kV, 60 Hz AC traction power system.

Delhi Metro, Underground Mass Rapid Transit Project, India. Traction Power Expert, as a part of the team of General Consultants to Delhi Metro, responsible for conceptual planning and design of traction power system elements – including specifications, design & build of 66kV/33kV main substations for power 33kV AC/1500V DC traction substations, 33kV/415V auxiliary services substations, 33kV cable network through underground rail tunnels, 1500V DC rigid conductor catenary system in tunnels and flexible catenary in maintenance facility depot including sectioning, SCADA control, overall grounding, bonding and stray current control, and interface specifications/requirements including EMI/EMC of traction system with other subsystems. (Subsequently, based on techno-economic considerations, 25 kV AC traction system with rigid over line catenary was adopted for the underground corridor of Delhi Metro.)

RITES Ltd., Delhi, India. Traction Power Expert, responsible for planning, design and evaluation of 750V dc third rail traction power system for Delhi underground Metro including assessment of traction and auxiliary power requirement, space planning, planning of cable routes from utility companies, design of the layout of traction substations, auxiliary services substations, third rail sectionalizing and feeding arrangement including track interfaces, and preparation of bid documents.

Indian Railways Class I Service, India. Deputy Chief Electrical Engineer / Senior Electrical Engineer / Assistant Electrical Engineer. Major work areas included:

- Prototype development of roof mounted type air conditioning units, inverters (110V dc to 415V, 3 phase ac) and higher capacity VRLA maintenance free batteries for Indian Railway passenger coaches.
- Responsible for design review, construction management and commissioning of new 25kV AC electric traction substations on a major railway division.
- Responsible for maintenance management, construction management and material resources planning for 25kV AC catenary, traction substations and SCADA control system on a major railway division.
- Responsible for maintenance management, material resources planning, design aspects and development of spares for 25kV AC electrical passenger and freight locomotives and electrical multiple units on a major railway division.
- Responsible for train operation planning for 25kV AC rolling stock (both passenger and freight locomotives) and electrical multiple units on a major division. Also involved in trials of new rolling stock and running trials of long haul freight trains.

Tata Electric Company, Mumbai, India. Testing and Commissioning Engineer, for 220kV switch yard electrical power equipment, viz. power transformers, SF6 circuit breakers, CTs, PTs, LAs and protection relaying equipment in 500 MW thermal power plant switch yard at Trombay, Mumbai.



Joseph Olidort, PE

Catenary Engineering

Years of Experience

With AECOM: 18

With Other Firms: 20

Education

MS, Structures, Technion-Israel
Institute of Technology, 1975

BS, Civil Engineering, Tashkent Institute
of Transportation Engineering, 1972

Professional Licenses and Certifications

Professional Engineer: NJ; NY

Specialized Training

Secure Risk

Work History

January 1998 to Present, AECOM
Legacy Companies

January 1990 to January 1998, Volmer
Associates, LLP

January 1993 to January 1990, Earth
Tech

January 1981 to January 1983, Sole-
Bone Construction Corporation,
Jerusalem

January 1978 to January 1981,
Reichman & Schnek Consulting,
Warshavsky & Achbert, Jerusalem

About Mr. Olidort

Mr. Olidort has more than 38 years of civil / structural experience in a wide variety of structures: buildings, bridges, railroad catenary structures, and security projects. He has extensive experience with rail structures, including catenary work involved design of foundations for catenary and light poles, among other aspects. Mr. Olidort was responsible for the design of several new and rehabilitated bridge structures for the Hudson-Bergen Light Rail Transit System, including an 1,100-foot long viaduct, as well as the design of a new nine-span overpass structure over the Croton-Harmon railroad facility for Metro-North Commuter Railroad. As a structural engineer, Mr. Olidort has been responsible for inspection, structural design, and design coordination of various industrial, commercial and residential buildings.

Relevant Project Experience

NJ TRANSIT, Hudson-Bergen Light Rail Transit System, Bridge Inspections, New Jersey, NJ. Inspection Team Leader, Led the inspection of thirteen rehabilitated and new bridge structures for the Hudson-Bergen Light Rail along the Main Operating System 2 (MOS2) segment of the light rail line. Some structures were designed for freight rail loads in addition to the light rail and were inspected within five years after rehabilitation/construction. Bridges included: Longslip Channel (4 span bridge over water at Hoboken), Tonnelle Avenue Station-North & South (two pedestrian overpasses), Baldwin Avenue Viaduct (6 span viaduct at Weehawken), Jersey Avenue Viaduct (10 span viaduct), Grove Street, Garfield Avenue, West Side Avenue (pedestrian arch bridge), Conrail Flyover (4 span viaduct at Bayonne), 34th St. Station (3 span pedestrian overpass), 21st Street, 22nd Street, and Newport Garage Access.

NJ TRANSIT, Hudson-Bergen Light Rail Transportation System, Hudson and Bergen Counties, NJ. Senior Project Engineer in charge of the design of several bridge structures (new and rehabilitated) along the Main Operating System 2 light rail line. Also in charge of the inspection and structural evaluation of the existing structures prior to rehabilitation design. Some structures were designed for freight rail loads in addition to the light rail.

CT Department of Transportation, New Haven Line Catenary Replacement, New Haven, CT. Lead Structural Engineer responsible for the structural design of catenary structures including foundations and truss structures in various field conditions for this 30 plus miles of Metro-North main line.



Joseph Olidort, PE
Civil / Utilities

Georgia Department of Transportation, The Atlanta Streetcar Project, GA. Lead Structural Engineer responsible for structural design of catenary support poles and their foundations. This project is a 2.9 mile streetcar system that runs within embedded track, at-grade, in an East-West loop from the Martin Luther King Jr. National Historic Site to Centennial Olympic Park. The project includes 12 stop locations and will utilize a fleet of modern streetcar vehicles which will travel within mixed traffic on multiple streets in the City of Atlanta.

New Orleans Regional Transit Authority, Louisiana Avenue Improvements, New Orleans, LA. Lead Structural Engineer. Design work involved light poles relocation and their foundation design due to construction of a box culvert below Louisiana Ave. in New Orleans to improve the interior drainage of New Orleans. Also, developing provisions for replacing the streetcar and the overhead catenary system at St. Charles Avenue.

NJ DOT, Route 152 Bridge, Atlantic County, NJ. Structural Engineer responsible for the design of prestressed concrete superstructure and prestressed concrete pile bents.

NJ DOT, Delaware River Infrastructure Protection Project (DRIPP), NJ. Lead Structural Engineer responsible for structural design of pole foundations and other support structures for this project that includes the development of a coordinated Security Regional Network with detection and assessment systems to link all landside and marine public and private critical infrastructure and assets along 120 miles of the Delaware River and within the Delaware Bay. The systems deployed include video and video analytics and coordination involves Federal, State, and Local Law Enforcement, First Responder, Transportation, Environmental Agencies/Authorities, as well as Port Community stakeholders.

MTA NYCT, Broadway-East New York Station Rehabilitation, Brooklyn, NY. Project Engineer in charge of the design of the new passenger overpass structure replacing existing underpass. New structure design also included modification design for a significant part of the existing elevated station structure.

MTA NYCT, Station Vent Structures, Manhattan and Brooklyn, NY. Project Engineer responsible for the coordination of a project that included the inspection of 83 subway stations, development of a report, structural emergency repairs, and reconstruction plans.

MTA NYCT, Times Square Station Rehabilitation, New York, NY. Project Engineer in charge of the design of Stage II construction, including installation of new ramps, escalators and elevators and cutting large openings in existing mezzanine floors and support wall. The design involved extensive retrofit and modification for a significant part of the existing station structure.

MTA Metro-North, Croton Point Avenue Bridge Replacement, Croton Harmon, NY. Project Engineer in charge of the structural rehabilitative design of a nine-span (three three-span continuous units) steel structure over the Croton-Harmon railroad facility in Croton-Harmon.



Paul Tegnazian

Catenary Engineering

Years of Experience

With AECOM: 3

With Other Firms: 0

Education

BS, Civil Engineering, Rensselaer Polytechnic Institute, Troy, NY, 2013

Professional Licenses and Certifications

Engineer-in-Training (EIT)

Specialized Training

PANYNJ PATH Roadway Workers Protection, 2013

Work History

June 2013 to Present, AECOM Legacy Companies

About Mr. Tegnazian

Mr. Tegnazian has three years of experience having worked on several projects, as illustrated below, in his short professional career. His experience involves work with third rail and catenary systems, including 750V DC light rail and streetcar systems, and 25kV systems.

Relevant Project Experience

PANYNJ PATH Tunnel E Salt Mitigation Study, New York, NY. Assistant Rail Systems Engineer. Providing inspection services to conducted inspection of high voltage and traction power equipment. Compiling the mechanical, structural and electrical groups' reports. Responsible for creating the report.

Massachusetts Bay Transportation Authority, Wellington Shop Expansion, Boston, MA. Assistant Rail Systems Engineer, providing design services to coordinate trolley bus and traction power in 30% design submission. Provide summary of specifications required.

Michigan DOT, M-1 Rail System, Detroit, MI. Assistant Rail Systems Engineer, Providing design services for this new construction streetcar. Assisting with design calculations. Responsible for converting the overhead contact system and traction power specifications into MDOT format.

Metropolitan Atlanta Rapid Transit Authority, Atlanta Streetcar, GA. Assistant Rail Systems Engineer, Providing design services for this new construction streetcar. Assisting with submittals and required design calculations.

GO! Transit Future 25kV Electrification, Toronto Rail Yard Expansion, Totonto, Ontario, Canada. Assistant Rail Systems Engineer providing design services. Assisted with providing sectionalizing, rail return, and grounding and bonding one line diagrams.



Paul Tegnazian

Catenary Engineering

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Ishverlal Patel

Electrical Engineering

Years of Experience

With AECOM: 36

With Other Firms: 15

Education

BS, Electrical Engineering,
Northeastern University, 1965

Work History

January 1980 to Present, AECOM
Legacy Companies

January 1974 to January 1980,
American Electric Power

January 1972 to January 1974,
Fischback & Moore Electric

January 1970 to December 1972,
Joseph R. Loring & Associates, Inc.

January 1965 to January 1969, Gujarat
State Electricity Board, India

About Mr. Patel

Mr. Patel is an electrical engineer with more than 40 years of experience in engineering, design and layout of switchgear, motor control centers, power and lighting panels, including cables and conduits, for mass transit facilities, commercial, industrial, and residential projects. His experience includes field survey, design and inspection at New York City subway stations for power upgrade and rehabilitation and field survey of New York City bus depots for security system assessments and recommendations. He is familiar with control wiring analysis, wiring schematics, cost estimating and coordination of electrical work with other trades and has on-site field experience.

Relevant Project Experience

NJ TRANSIT, Hudson-Bergen Light Rail Transit System, Hudson and Bergen Counties, NJ. Senior Electrical Engineer. Designed lighting and power system for light rail transit stations in Hudson County. Designed platform lighting as well as parking area lighting including conduit and cable system for power supply. Also worked on public address, telephone and CCTV camera systems. Prepared cost estimates, man-hour estimates, and coordinated work with vendor and client, provided calculation of voltage drop, cable and conduit sizing, and equipment design.

MTA NYCT, Subway Station Modernization (CM-769, CM-771), New York, NY. Electrical Engineer. Inspected and evaluated existing conditions of electrical distribution systems and determined the necessary modifications to upgrade the systems for 60 subway stations. The inspection and analysis covered the electrical system for each station, beginning at the utility connection point at the service end-entrance box to the utilization loads, and included all major alternating current equipment components connected in the distribution system between the entry point and the existing electrical distribution room/area, mechanical equipment, and lighting system. Prepared contract plans and specifications for the upgrading, renovating, and modification of stations to support short and long-term projected load growth expansion, including Automatic Fare Collection (AFC) equipment).

MTA NYCT, Rockaway Line Elevated Stations, New York, NY. Electrical Engineer. Responsible for survey, inspection and design engineering of the electrical systems and rehabilitation of six elevated stations along the Rockaway Line, Borough of Queens (CM-747).

MTA NYCT, Power Distribution System, New York, NY. Electrical Engineer, responsible for electrical engineering, survey inspection and design engineering of power distribution system at 11 subway stations and yards for car cleaning facilities (CM-706R).

**Ishverlal Patel**

Electrical Engineering

NYCSCA, Design & Construction Support, New York, NY. Electrical Engineer. Surveyed school buildings in New York City to inspect various systems such as fire alarm system, public address system, intrusion alarm, CCTV camera system, and security lighting system. Prepared report stating field condition, provided recommendations and estimated cost to upgrade or install new system, and developed design for new systems. Surveyed and prepared cost estimate for computer labs, physics and science labs, and emergency generators. Reviewed shop drawings for construction and resolved field problems in coordination with the contractors and other trades. Work also included inspection and cost estimating for upgrading or modernizing the main power supply to school buildings, including building lighting and power systems.

PANYNJ, PATH Salt Mitigation Study, New Jersey / New York. Field Inspector for the survey of PATH tunnel E from Exchange Place to World Trade Center to study the effects of Superstorm Sandy on various 650 volt D.C. traction power equipment. Reviewed the effects of salt water on 650 volt D.C. circuit breakers and disconnect switches, 2 KV D.C. traction power cables, impedance bonds, negative return system, 25 KV A.C. high voltage cables, etc., and prepared report on findings.

MTA Capital Security Program, New York, NY. Electrical Engineer. Participated in task order to develop consequence management measures for a major rail terminal under a contract to provide design of security solutions and related technical and construction services for MTA facilities.

Toronto Transit Commission, Sheppard Avenue East Light Rail Transit System, Toronto, Ontario, Canada. Electric Traction Power Engineer for this work which included designing traction power substation which includes physical size of traction power substation building, sizing traction power equipment such as medium voltage AC switchgear, rectifier transformer, rectifier, D.C. switchgear and miscellaneous power panels. Prepared single line diagram with equipment rating; substation grounding system including negative return cables and conduits; and sizing and routing conduit duct banks.

Atlanta Street Car, Maintenance Facility Power, GA. Senior Electrical Engineer for traction power discipline providing OCS power in the Maintenance Facility using 750V D.C. contactors, designing negative return cable system within the facility, working on device interlocking system. Sizing medium voltage switchgear and medium voltage step down transformer for the maintenance facility.

New York City Department of Environmental Protection, Kensico Fluoride Facility, Westchester County, NY. Electrical Engineer. Electrical system upgrading of fluoride facility water treatment plant for NYC DEP in upstate New York. Work includes the design and coordination of security system at NYC DEP facilities.

New York City Office of Management and Budget, Fire Stations and Libraries, New York, NY. Electrical Engineer. Conducted electrical system condition study for New York City fire stations and libraries in all boroughs. Prepared database report of electrical equipment and lighting system stating the life of equipment in percentage for budgetary purposes. Also prepared report for New York City Parks on electrical systems.

General Services Administration, Secret Service Office, World Trade Center, New York, NY. Electrical Engineer. Performed field survey, inspection and design engineering for power distribution

Various Projects, Electrical Engineer, New York, NY. Electrical Engineer. Responsible for design and layout of cable trays and pilasters for power, control and instrumentation cables. Designed overhead and underground electrical conduit layout including manhole systems; design and layout of grounding various electrical equipment, trays, sizing feeders for motors, transformers, MCCs and other equipment. Prepared single line diagram voltage drop calculations.



Andrew Jones, PE

Power Analysis

Years of Experience

With AECOM: 13

With Other Firms: 18

Education

BTech, Electrical Engineering
Technology, Rochester Institute of
Technology, 1983

Professional Licenses and Certifications

Professional Engineer: NY; PA

Professional Societies/Affiliations

Institute of Electrical and Electronic
Engineers

Specialized Training

EEE Arc Flash class, 2011, IEEE
Grounding class, 2006, Member of IEEE
Traction Power Standards Committee,
2006-current

Work History

August 2002 to Present, AECOM, Senior
Power Engineer

October 1983 to August 2002, Amtrak,
various electrical engineering positions

About Mr. Jones

Mr. Jones is an electrical engineer with more than 31 years of extensive experience in railway (traction) power systems, and related SCADA systems. His work has included design, development of specifications, project management, negotiating interconnection agreements with utilities, commissioning new facilities, and training maintenance employees. Mr. Jones has worked on multiple DC traction projects involving load flow analysis, sizing and location of rectifier stations, design of substations, design of contact rail systems, and stray current concerns. His AC traction experience includes serving as an Amtrak project manager for three static frequency converter projects and related facilities. He has conducted load flow analysis of railways. Since joining AECOM, Mr. Jones' project experience includes signal power line design for high speed improvements in New Jersey, and serving as part of the design team for a new 138 kV-12 kV traction power substation at Bryn Mawr, Pennsylvania. His background also includes electromagnetic interference analysis, grounding design, and SCADA work.

Relevant Project Experience

MTA Long Island Rail Road, Ronkonkoma Second Track, New York, NY.

Member of team extending existing traction power system to a second track being built along an existing single-track route.

MTA Long Island Rail Road and Amtrak, Penn Station DC Study, New

York, NY. Assessment of East River Tunnels and Sunnyside-Harold area for corrosion protection and related matters resulting from the unique situation of ac and dc traction power systems on the same tracks in this area.

Metropolitan Transportation Authority Capital Construction, New York

City Transit, Second Avenue Subway, New York, NY. Lead Traction Power Engineer responsible for the design of the traction power system for a new 8.5-mile subway line with 16 stations, all in new tunnels, which will run from 125th Street to the financial district in Manhattan. Also prepared a transient analysis of the traction power system to address concerns about short-circuit ratings of circuit breakers fed from multiple rectifier/substation equalizing sources.

Amtrak, New Jersey Raceway, NJ. Electrical Engineer part of design team that designed a 6,900-volt 100 Hz distribution system for signal power.



Andrew Jones, PE
Civil / Utilities

Amtrak, Zoo to Paoli Line Modernization, Pennsylvania.

Participated in the design of a new traction power substation and approximately 20 miles of both new HV transmission circuits and MV overhead contact system to replace century-old facilities, improve reliability of transmission, and reduce maintenance costs.

Amtrak, East River Tunnel 1st Avenue Shaft Rehabilitation, New York, NY.

Led a committee consisting of representatives for the owner, the contractor, the construction manager, and the designer to investigate certain electrical hazards and recommend mitigation measures.

Amtrak, Richmond Static Frequency Converter, Philadelphia, Pennsylvania. Project manager for the design and installation of a 180-MW, \$140 million facility using 69 kV services from utility and providing output at 138 kV 25 Hz for use by the railroad.

Amtrak, Sunnyside Yard Static Frequency Converter Project, Queens, New York. Project manager for design and installation of a \$28 million, 30-MW frequency converter using 138 kV services from utility, to produce an output at 12 kV 25 Hz for use by the railroad.

Amtrak, Jericho Park Static Frequency Converter Project, Bowie, Maryland. Project manager for design and installation of a \$13.5 million 20 MW frequency converter project, including 230 kV service from utility, with an output at 138 kV for use by the railroad.

Amtrak, High Speed Train Evaluations, Philadelphia. Participated in the evaluation of the Swedish X2000 and German ICE trains as they operated on Amtrak's New York to Washington Line in preparation for Amtrak's purchase of new high-speed trainsets. Responsible for instrumentation of the trains, evaluation of energy consumption, and effects of the new trains on the existing traction power system

Amtrak, Centralized Electrification and Traffic

Control. Field and Commissioning Engineer for \$35 million, large-scale SCADA project covering key areas of Amtrak's Northeast Corridor (Washington to Philadelphia, and New Haven to Boston). The system provided for both train dispatcher's control of interlockings, and power director's control of traction power facilities.

Metropolitan Washington Airports Authority, Dulles MetroRail Extension Phase 2, Washington, District of Columbia. Provided modeling of a traction power system for extension of a heavy rail transit system to Dulles International Airport and design of traction power substations for this route. Estimating vehicle characteristics, computing load flows, and writing reports.

Maryland Transit Administration, Baltimore Red Line, Maryland. Providing modeling of a traction power system for a proposed light rail line in Baltimore. Estimating vehicle characteristics, computing load flows, writing reports, and evaluating proposed substation locations. Worked on electromagnetic compatibility issues between the dc traction power system in a tunnel portion of the work, and adjacent medical imaging systems at a hospital.



Richard Barrett

Signal Coordination

Years of Experience

With AECOM: 10

With Other Firms: 20

Education

BS, Electrical Engineering, Western
New England College, 1991

Professional Societies/Affiliations

American Railway Engineering and
Maintenance-of-Way Association

About Mr. Barrett

Mr. Barrett has more than 30 years of extensive experience directly related to management, design, construction, and in-service testing of signalling, train control, and communications for rail transit systems and railroads. This experience includes design of both relay and microprocessor interlockings, as well as designs of cab signal systems. He is experienced in both conventional and predictor-based grade crossing control systems. He has developed signal system training courses, as well as a signal maintenance course used to train and certify signal maintainers.

Relevant Project Experience

MTA Metro-North Railroad, Communication and Signal Strategy, New York, NY. Signal Lead responsible for developing a communications and signal master plan and strategy report for the Metro-North territory east of the Hudson River. Prepared contract documents for procurement of a new, prewired, “PTC ready” signal and communications system. The documents provided updated specifications and detailed the requirements to upgrade the existing systems. Also prepared construction specifications and plans for the installation of new communications and signal cables for the New Haven Line between Woodlawn, New York, and CP 229 in Greenwich, Connecticut, and for the Hudson Line between Croton-Harmon and Poughkeepsie, New York. The project includes four options that would require additional contract documents for new prewired signal equipment procurement, as well as construction specifications and installation plans for C&S cables on selected segments of the New Haven Line and for the entire New Canaan Branch.

MTA NYCT, Staten Island Railway, Staten Island, NY. Signal Field Support Services, New York, New York. Responsible for resolving wayside signal and CTC office anomalies and upgrades to a newly commission 14-mile double track bi-directional 100 Hz cab signal/speed control system incorporating color position-light wayside signals only at interlockings, positive stop, and a new supervisory control system. Responsible for the developing the signal system training course to certify signal maintainers.

MTA Metro-North Railroad, C&S Engineering Services for West of Hudson, New York, NY. Signal engineer responsible to provide engineering, design, cost estimation, systems assessment, system recommendations, and CAD drawing as-built services relating to Metro-North’s Port Jervis Line in the West of Hudson territory.

MTA LIRR, Wantagh and Amityville Interlocking Improvements, New York, NY. Project Manager responsible for providing detailed checks of new signal circuit design, inter “tie-in” signal circuit revision designs, vital and non-vital software and hardware, and all related circuit plans, and the procurement plans and specifications for huts and cases, and other signal equipment for Wantagh and Amityville interlocking.



Richard Barrett
Signal Coordination

MTA LIRR, Signal Straight Line Re-drawing, New York, NY. Project Manager responsible for replacing the entire straight line plans (scaled “road diagram plans”) with new AutoCAD drawings on 11-inch by 17-inch bond paper containing one section of track that will align with the adjacent plans, and drawn at 500 feet per inch so the distances can be scaled.

MTA, Metro-North Railroad, Upper Harlem Signal Design, New York, NY. Signal Engineer responsible for the block design, signal control line design, typical signal logic and circuit design, planning, specification writing, and tie-in circuit design.

MTA Metro-North Railroad, CP 46 Signal, New York, NY. Project Manager responsible for the engineering, planning, specification writing, tie-in circuit design, and engineering services during construction for the CP 46 signal project, providing for a new processor-based interlocking and master location on the Hudson Line at milepost 46.

MTA Metro-North Railroad, Interlocking CP 39, Peekskill, New York, NY. Checker responsible for the final project signal circuit check for the new processor-based interlocking designated CP 39, and the adjacent new Master Location 409, both replacing the original CP 40 on the Hudson Line at mileposts 39.9 and 40.9 respectively.

MTA Metro-North Railroad, CP 8 and CP 53 Signal, New York, NY. Signal engineer responsible for the engineering, planning, specification writing, tie-in circuit design, and engineering services during construction for the CP 8 and CP 53 signal project, providing for two entirely new processor-based interlockings on the Hudson Line at mileposts 7 and 53, respectively.

MTA Metro-North Railroad, Upper Harlem Line / Brewster North to Wassaic Signal, New York, NY. Signal engineer responsible for the block design, signal control line design, typical signal logic and circuit design, planning, specification writing, bid phase services, and engineering services during construction for two of four of the Upper Harlem Line/Brewster North to Wassaic signal project. This work extended from CP 154 (inclusive) at Brewster North to Dover Plains, and included the recent (approximate 5-mile) extension

of train service to Wassaic that has been in revenue service for about one year. This signal project extended 28 miles, and utilized electronic tract circuits and processor-based interlocking logic for nine new control points to upgrade the originally manual block territory to standard Metro-North cab signal without wayside automatic signal operation. In conjunction with the new signal system, the project also included the interface to and conversion to overlay track circuits of 17 existing grade crossings, and the provision of grade crossing logic for three additional crossings on the Wassaic extension. The project also included the specifications for the plowing of signal, communications, and fiber optic cable the entire 28-mile length of the line.

MTA LIRR, Checking/Design Services, New York, NY. Senior Circuit Checker responsible for detail signal circuit design and checking of signal circuit designs by LIRR design staff. Worked at LIRR’s Hillside facility with LIRR signal designers on various projects including detailed hardware check and software check for the new processor-based interlocking at east New York; detail hardware check for the new microprocessor interlocking at port. Provided design support, checking and field support for conversion of electro-pneumatic switches at Divide interlocking to M-23 electric movements and solid state SSR/SML switch control. Provided signal circuit design to incorporate an automatic derail at Jay interlocking, including interface revisions to the existing interlocking machine at Jay and revisions to outlying circuits for the control, indication, and locking of the new derail. Provided signal circuit design assistance, working directly with LIRR signal circuit designers, to provide circuit revisions for the addition of several switches and signals to the existing KO-2 interlocking in Ronkonkoma to serve a new car washing facility. Provided detailed signal circuit check for the “B” crossing upgrades. The check included 25 crossing designs in various locations on the mainline, Montauk, Long Beach, and Far Rockaway branches. Provided design services for signal circuit changes at approximately 60 highway grade crossings to provide changes for Loss of Shunt protection, revised “RWSP” logic, and installation of new or modified lock-out “LOTE” timers.



David Lehman, PE

Communications / SCADA

Years of Experience

With AECOM: 8

With Other Firms: 31

Education

MBA, Business Administration, Loyola College, 1976

BS, Electrical Engineering, University of Delaware, 1972

Professional Licenses and Certifications

Professional Engineer: NJ; NY; PA; MD; IL; CT; MA; RI

Professional Societies/Affiliations

Institute of Electrical and Electronic Engineers

Work History

August 2002 to Present, AECOM, Senior Power Engineer

October 1983 to August 2002, Amtrak, various electrical engineering positions

About Mr. Lehman

Mr. Lehman has nearly 40 years of extensive experience in various phases of electric power system planning; communications; engineering, design, and construction of high and extra high voltage substations and transmission lines, distribution systems, and electrical facilities. Design responsibilities have included electrical, process, control, automation, building, and facilities, including studying, configuring, designing, specifying, implementing, inspecting, testing, and maintaining systems.

Relevant Project Experience

MTA NYCT, Second Avenue Subway, New York, NY. Provided electrical engineering design of the traction power substations for the Second Avenue Subway Project, a new transit line to serve the east side of Manhattan. Responsibilities included power distribution, grounding, and SCADA.

MTA LIRR, East Side Access Program, New York, NY. Provided electrical engineering design of the air ventilation structures and traction power substations for the East Side Access Project, to provide direct access for the Long Island Rail Road to Grand Central Terminal. The scope included power distribution, lighting, grounding, fire protection, security, SCADA, and communication systems.

MTA NYCT, Traction Power Study, New York, NY. Traction power study of 60 Hz emission interference with the signal system - engineering analysis of the traction power system to determine if any 60 Hz emission interference could affect the signal system and trigger the on-board train EMI detector.

AMTRAK, High Speed Rail Northend Electrification Program, NY.

Engineering, installation, construction management, and commissioning services for the remote supervisory equipment to be used as part of the Amtrak Northend Electrification Program. The remote equipment included 25 remote terminal units (RTU) with supporting batteries and battery chargers for substations, switching stations, and paralleling stations; and 30 outdoor RTUs for interlockings. Mr. Lehman's services included preparation of technical installation documents, scheduling of activities, configuration management, engineering review of documentation, construction services, and commissioning.

**David Lehman, PE**

Communications / SCADA

AMTRAK Retrofit RTU Project. Engineering, fabrication, construction installation, and commissioning services for the remote supervisory equipment retrofitted into the central instrument houses along the railroad. The remote equipment included 12 remote terminal units (RTU). Services included preparation of technical design documents, RTU fabrication, scheduling of activities, configuration management, construction installation services, and commissioning.

Areva T&D, Inc. Design verification of a proposed “Statcom” static var system addition to the Northeast Utilities Glenbrook Substation and National Grid Brayton Point Substation. Systems verified included physical electrical plans, station service, building electrical services, lighting, and grounding.

Sunoco, Inc. Lifecycle cost comparison between motor and steam-drive prime movers. Mr. Lehman evaluated initial costs, operation and maintenance costs, and failure rates of various size motors. He also evaluated performance degradation over the life of the system.

PPL Utilities, Inc., Steel City Substation, Bethlehem, Pennsylvania. Provided project administration of the design services contract as well as design for the new four-bay, breaker, and a half 500 kV yard and two-bay, breaker and a half 230 kV yard in support of a new IPP facility. A 750 MVA transformer is connected in bay 3 North Line Terminal position. Mr. Lehman was responsible for coordination and preparation of structural and physical electrical plans, elevations, details, and bills of materials for fabrication and construction of all the above-grade structures, foundations, duct banks, and grounding systems. He was also responsible for the relay and control engineering and design for the new substation and transmission lines.

Standard Substation RTU Design and Substation Design Packages, GPU Service, Inc. Electric engineering and design of a standard RTU design consisting of a MOSCAD PLC system including 900 Mhz radio/transmitter, main processor, power supply, input modules, output modules, and analog modules. A standard number of modules was selected sufficient for all sites. The RTU was designed in an outdoor enclosure to be used indoors or outdoors. Mr. Lehman provided electric engineering and design, and preparation of construction drawings and bills of material for five RTU installations at Moore Substation, Lacey Substation, Lakewood Cogeneration Remote Location, and Campus Drive PDS Substation.

RTU Replacement Project, Orange and Rockland Utilities. Field replacement of six RTUs with new electronic components. Mr. Lehman was responsible for the development of new drawings, revising existing drawings, procurement of equipment, and field installation.

Confidential Client. Cogeneration interconnection study for the connection of a 45 MW power plant to an existing plant. The study consisted of interconnection line conceptual design, substation conceptual design, protective relaying, and cost estimates of the interconnection and substation.

Confidential Client. Transmission interconnection study for the connection of a 750 MW power plant to the PJM transmission grid. The study encompassed transmission voltage level selection, transmission line conceptual design, substation conceptual design, protective relaying, cost estimates of the transmission and substation, and coordination with transmission supplier.



Nicholas Tomizawa, AICP, CEM

System Safety Management Plan

Years of Experience

With AECOM: 6

With Other Firms: 8

Education

MCRP, Rutgers University Bloustein School of Policy and Planning, 2000

BA, University of Wisconsin – Madison, 1991

JD, Hofstra University School of Law, 1998

Professional Licenses and Certifications

State Bar of New York

American Institute of Certified Planners

Certified Emergency Manager

Specialized Training

ICS 100, 200, 300, 400, 700, 800

Texas A&M Engineering and Extension (TEEX) Jurisdictional Crisis Incident Management

DHS Homeland Security Exercise and Evaluation Program (HSEEP)

Work History

September 2009 to Present, AECOM, Program Manager – Transportation Resilience

June 2008 to July 2009, NYC Office of Emergency Management – Senior Transportation Planner

October 2005 to April 2008, Gale International, LLC – VP – Project Development

June 2004 to August 2005, Parson Brinkerhoff – Security Planner

October 2000 to May 2004, Transportation Resource Associates – Project Manager

June 2000 to September 2000, Edwards & Kelcey Engineers – Planner

About Mr. Lehman

Mr. Tomizawa has 14 years of experience conducting transportation system safety and security assessments and audits; writing and critiquing numerous Federal Transit Administration (FTA) System Safety Program Plans (SSPP), Security and Emergency Preparedness Plans (SEPP), Security and EM Concepts of Operations (CONOPS), Safety/Security Certification Plans (SSCP), Safety and Security Management Plans (SSMP), Emergency Operations Plans (EOP), and Continuity of Operations Plans (COOP); preparing DOTs and transportation systems for state safety and security audits; and conducting regulatory and policy research for various government agencies and industry organizations. He is also a Certified Emergency Manager and a Certified Urban Planner, was a senior planner for the New York City Office of Emergency Management, and was the city's Emergency Support Function 1 (Transportation) coordinator for activations of the City's Emergency Operations Center.

Relevant Project Experience

NJ TRANSIT Hurricane Response Strategy Development – Rail Operations, Light Rail, Bus and Paratransit, Newark, New Jersey. Project manager working to develop a Hurricane Response Strategy (HRS) for the different operational modes of New Jersey Transit (NJT). The HRS introduces the concept of Zero Hour (the arrival of sustained storm force winds) as the point from which all agency preparedness activities work back, which synchronizes NJ TRANSIT with state and local hurricane plans in the tri-state region. Nick developed sets of protective measures to shelter over 700 rail vehicles and protect assets from storm damage at various NJ TRANSIT locations, including its largest maintenance facility (the Meadows Maintenance Complex), Hoboken Terminal, and Oradell Bus Garage. URS coordinated, planning closely with the various operational groups in NJ TRANSIT, including the rail operations GM, DGMs of transportation, mechanical and engineering, heads of IT and procurement, the AGM of bus operations, public relations, and the NJ TRANSIT police department office of emergency management.

FEMA New England Cyber Disruption Plan, Boston, MA. Plan manager for the FEMA New England Cyber Disruption Coordination Plan, a nationally first-of-its-kind project to develop a framework to guide multi-jurisdictional incident management of massive cyber disruptions. Nick fostered collaboration between the Boston and Providence Urban Area Security Initiatives (UASI), and the States of Rhode Island and New Hampshire, and the Commonwealth of Massachusetts to develop a comprehensive framework to prepare for, respond to, and recover from catastrophic interruptions of IT systems and networks. Pursuant to a DHS/FEMA grant, he provided a full range of emergency management plan development services for the region, including:



Nicholas Tomizawa, AICP, CEM
System Safety Management Plan

- Working with state and city emergency management agencies to revise state and city emergency operations plans to include cyber disruption teams and cyber disruption plans
- A review and assessment of emergency plans, policies and procedures from each jurisdiction
- Coordination with law enforcement, IT, emergency management, National Guard and other key stakeholders to develop jurisdictional cyber disruption teams, subject-matter experts to assist and inform regional, state, and local government policymakers and first responders in the event of major cyber incidents
- Developing training programs for each jurisdiction to implement training and exercise classes on Cyber Disruption Plans

Foothill Consortium Risk Assessment and Security/Emergency Management Plan Development Services, Los Angeles, CA. Project manager working to deliver security consulting services to a partnership of Foothill Transit, Long Beach Transit, the City of Los Angeles Department of Transportation (LADOT), and the Santa Monica Big Blue Bus. Managed the implementation and delivery of safety and security assessments, and plan development services for all four agencies through funding from the Department of Homeland Security (DHS) Transit Security Grant Program. In an unusually short timeframe of five months (due to grant administration constraints), delivering on budget and on time over 20 deliverables to four separate agencies, an aggressive schedule more usually allotted for one single document for one agency. The project produced safety, security, and emergency management organizational and operational reviews at each agency simultaneously to develop a Threat and Vulnerability Assessment (TVA), risk mitigation reports, and mitigation strategies (including practical, cost-effective measures to respond to identified risks), and plan documents compliant with FTA, Federal Highway Administration (FHWA), American Public Transportation Association, and the Federal Emergency Management Agency's National Incident Management System (NIMS). Developed plans based on FTA systems planning templates including Security

and Emergency Preparedness Plans (SEPP), Emergency Response Operations Plans (EROP), and Continuity of Operations Plans (COOP) for each of the four transit systems. The review and work product reflect each agency's unique organizational and operational characteristics and needs.

PennDOT Rail Transit Safety Review Program. System safety/security /emergency management plan evaluator of SEPTA and the Port Authority of Allegheny County for the Pennsylvania Department of Transportation. Oversaw the annual plan review process for both FTA- and FRA-regulated vehicles. Worked with system safety and security departments on revisions and development of SSPP and SEPP for both SEPTA and PAT.

FTA Security and Emergency Management Technical Assistance, Top 25 Transit Agencies in the U.S. As part of a technical assistance team dispatched by the Federal Transit Administration, Nick provided security and emergency management reviews and technical assistance to several of the Top 25 transit agencies in the U.S., reviewing and providing technical assistance to develop safety and security plans for the MBTA, New Jersey Transit, AC Transit, and GCRTA.

Threat & Vulnerability Assessment for the Atlanta Streetcar, Atlanta, GA. Nick assessed the design and alignment of the Atlanta Streetcar expansion. Along with the System Safety team, assessed threats and hazards to the design and alignment from engineering, passenger experience, and emergency services coordination perspectives.

Threat & Vulnerability Assessment for the Detroit M1 Streetcar, Detroit, MI. Assessed the design and alignment of the 3-mile M1 Streetcar expansion on Woodward Avenue. Along with the System Safety team, assessed threats and hazards to the design and alignment from engineering, passenger experience, and emergency services coordination perspectives.



Ginger Adams, IAF-CPF, CVS-Life, FSAVE

Value Engineering

Introduction

Award-winning facilitator Ginger Adams has more than 35 years experience in business, including 27 years managing and facilitating problem solving, issue resolution, partnering, consensus building, and planning events. Focused predominantly on construction industry and governmental agency processes and projects, Ginger's experience includes a variety of business processes, building types, and transportation elements such as roads, highways, bridges, rail, and transit centers. She has extensive knowledge of and experience in Value Analysis (also known as Value Engineering), and was the first female president (1994 through 1996) of SAVE International, the U.S. organization that promotes the use of and education in VAVE.

Awards and Recognition

Ginger received Certificates of Recognition from the Federal Highway Administration for her work as Facilitator on:

- State Route 125, San Diego, CA — Most Outstanding Value Engineering Study of 1994
- Cuesta Grade Operational Improvements, San Luis Obispo County, CA — Most Outstanding Value Engineering Study of 1997
- SR 46 Widening Projects, San Luis Obispo County, CA — Most Outstanding Value Engineering Study of 2000

Ms. Adams was the *first consultant to ever receive this award*.

Additional awards include the following from the American Association of State Highway & Transportation Officials (AASHTO) Value Engineering Conference:

- Statewide Document Retrieval System (DRS), Caltrans Headquarters, Sacramento, CA — Most Value Added Process Study of 2011
- Right-of-Way Decertification Process, Caltrans District 11, San Diego, CA — Most Value Added Process Study of 2003
- Trash Total Maximum Daily Load (TMDL), Caltrans District 7, Los Angeles, CA — Most Value Added Process Study of 2005

The U. S. Army Engineer District, Alaska, recognized Ginger with Commander's Coins (Award for Excellence) for the following projects:



- Mobility Test Complex, Cold Regions Test Center, Fort Greely, AK – Design Charrette – June, 2003
- US Army Alaska Master Plan, Ft. Richardson, AK MILCON Projects – Programming Charrette – August, 2003



Certification

Certified Value Specialist, Life — No. 900501
SAVE International

Certified Professional Facilitator — Certificate No. RC570
International Association of Facilitators





Ginger Adams, IAF-CPF, CVS-LIFE, FSAVE
Value Engineering

Employment Record

Advantage Facilitation Services
(June, 2005 to present) Principal
Value Management Strategies, Inc.
(1998 - 2005) Executive Vice President
VEI, Inc./Edwards & Kelcey (now part of Jacobs Engineering Group)
(1978 - 1998) Vice President
Robertshaw Controls Company
(1970 - 1978) Administrative and Sales Support Staff



Professional Affiliations

SAVE International:

- Dean, College of Fellows, 2003-2010
- Asst. to Vice President-Global Affairs, 2004-2007
- President, 1994-1996
- Executive Vice President, 1992-1994
- South Central Regional Vice President, 1988-1990
- National Director of Conferences, 1983-1992

Lawrence D. Miles Value Foundation

- Member, Board of Directors, 2015-present

International Association of Facilitators, Member

- Chair, 2011 IAF North America Conference
- Co-Chair, 2013 IAF North America Conference
- Chair, 2017 IAF North America Conference

Representative Experience

Ginger has performed as a facilitator for more than 55 public agencies and private sector organizations throughout the United States and Canada. These include cities, counties, State agencies, transit/transportation authorities, Federal government agencies, architect/engineer firms, and non-profit associations. She has facilitated more than 70 value engineering workshops on transportation/transit projects in the past 25 years, including the following relevant projects:

Caltrain, Centralized Equipment Maintenance & Operations Facility, San Jose, California
City of New York, Replacement of Bruckner Bridge Over Westchester Creek, Bronx, NY
City of New York, Reconstruction of Metropolitan Avenue/Fresh Pond Road Bridge Over the Long Island Railroad, Queens, NY
City of New York, Rehabilitation of Bruckner Bridge Over Westchester Creek, Bronx, NY
City of New York, Seismic Retrofit of the Macombs Dam Bridge over the Harlem River, Bronx, NY
City of New York, Rehabilitation of the 5th Avenue Bridge Over the CONRAIL & NYCT Sea Beach Lines, Brooklyn, NY
City of Sacramento, Sacramento Railyards Track Relocation Project, Sacramento, CA
Dallas Area Rapid Transit, Line Section G-2, Dallas, TX
Dallas Area Rapid Transit, CityPlace Station Finish-Out, Dallas, TX
Fort Worth Transportation Authority, RAILTRAN Corridor, Ft. Worth, Texas
Santa Clara Valley Transportation Authority, Silicon Valley Rapid Transit Project, Tunnel Segment
Santa Clara Valley Transportation Authority, Silicon Valley Rapid Transit Project, Line Segment
Santa Clara Valley Transportation Authority, Silicon Valley Rapid Transit Project, Stations
Sun Metro, Oregon Street Transit/Pedestrian Mall, El Paso, TX
Sun Metro, Eastside Transit Terminal, El Paso, Texas



Kevin Meehan

Cost Estimating

JCMS, Inc.

30 Years of Excellence

Experience Highlights:

Extensive experience in providing Cost Estimating services on transportation, industrial and commercial projects in addition to strong field construction experience

Total Experience:

15 years

Education:

BS - Civil & Environmental Engineering, Rutgers College of Engineering, New Brunswick, NJ, 1999

Training: Track Certified – NJ Transit, 2014

Skills: E=MC² Estimating software, Timberline Estimating, OST (On-Screen Takeoff) Microsoft Office, Excel, Word, Sage, InSite Sitework, Prolog, Endeavor, Paydirt, Roctek, HCSS HeavyBid.

Mr. Meehan has over fifteen (15) years experience in the field of Construction Cost Estimating. His diverse experience comprises a wide variety of projects that includes estimation of Transit / Industrial / Commercial/ Institutional/ High-Rise / Educational etc. Mr. Meehan has been responsible for developing budgetary and final construction cost estimates, contract pricing and change orders, contract negotiations, interface and coordination with contractors, owners and A/E consultants on project issues, assisting owners on construction phasing and scheduling, coordinating with the A/E of record regarding change orders, interpretation of contract documents, submittal and approvals and related technical matters, review of contractors claims of disputed work, providing detailed takeoff and pricing for sitework, foundations and recommending appropriate action to owner.

PROJECT EXPERIENCE:

NJ Transit - Sandy Recovery and Long Term Flood Mitigation and Resiliency: Secaucus Junction and Newark Penn Station. Flood barriers, electrical redundancy, Sandy repairs.

The Secaucus Junction Platform Extensions project is a \$1.5M effort to extend two island platforms an additional 120 feet each on the four tracks NJ Transit Main Line.

NJ Transit - Hoboken Terminal and Yard: Sandy Repairs and Remediation, Flood Mitigation and Resiliency: The project is to restore the terminal and yard operations, while at the same time increasing the system's

resiliency - its ability to withstand and recover quickly from future storms. Mr. Meehan is responsible for providing cost estimating services.

NJ TRANSIT- Sandy Recovery: Initial Flood Assessment, Newark, NJ: Estimate includes cost for Flood Mitigation, Backup Generator & Electrical hook-up-conduits-wire-transfer switch, Sump Pump, Trash Pump, On call implementation cost for contractor before and after storm for NJ Transit facility: Newark Penn Station, Secaucus junction, NLR Bloomfield Station, NLR Broad St. Station.

NJ Transit - Capital Asset Replacement Program (HBLR & SNLRT), NJ: The CARP program consists of projects including Resurfacing of the Plank Interlocking and the Lackawanna Curve, Harborside track replacement, Replacement of light fixtures, the UPS system and fire protection piping at the LRV Maintenance Facility, bollard replacement at the Newport Viaduct and replacement of various equipment and furniture. Mr. Meehan is responsible for providing capital cost estimates for NJ Transit's Hudson-Bergen Light Rail and River Line system infrastructure and facilities.

NJ Transit – Design, Engineering and construction Assistance for NEC Mid Line Loop Project, New Jersey: NEC Mid Line Loop project is intended to improve NJT commuter Rail service by eliminating the grade crossing conflict that exists on NEC approximately at MP32 @ Jersey Avenue Station/County Yard Facility. Responsible for conceptual estimate. Prepared estimate from Conceptual design report and 10% Design drawings.

LIRR- Replacement of the Port Washington Yard Traction Power Substation, New York, NY: He is responsible for managing change order process and negotiations, for the construction of a new Traction Power Substation located within the LIRR yard in Port Washington, Nassau County, New York.

LIRR - Station Master's Office Renovation, New York, NY: The renovation of Station Master's Office (SMO) on the concourse level of New York's Penn Station is a \$2.5M project to update the nexus of the railroad's station monitoring and information network. Mr. Meehan provided preconstruction management and estimating services.

PROJECT MANAGEMENT AT ITS BEST



Kevin Meehan
Cost Estimating

JCMS, Inc.

30 Years of Excellence

AMTRAK – Sunnyside Yard Expansion, New York, NY: Lead Estimator The work includes infrastructure improvements necessary to support pre-gateway expansion including High Speed Rail (HSR) frequency between NY and Washington D.C. Responsible for executing the cost estimate for the feasibility study to Sunnyside yard development.

LIRR - Jamaica Stations Expansion Project, New York, NY: The “Jamaica Capacity Improvements – Phase I Design” shall provide the Cross-Borough Scoot and the infrastructure improvements needed to increase capacity required for ESA operations. Provided estimating services at 30, 60, 90 and 100%.

MNR - Grand Central Terminal Leak Remediation, New York, NY: Grand Central Terminal in midtown Manhattan is planning a \$20M Leak Remediation project to repair and prevent damage from water intrusion. Mr. Meehan provided preconstruction management and estimating services.

As Lead Estimator, currently working on Various PATH Task Orders:

PATH Task Order # 4 Replacement of Track, Third Rail and Appurtenances in Tunnel E & F at Exchange Place / New York, New York / PANYNJ

PATH Task Order # 12 Replacements of Auxiliary **Power Equipment** and Cables at Exchange Place / Jersey City, New Jersey / PANYNJ

PATH Task Order # 5 Replacement of Signal Cabling and Equipment at Tunnels E & F, New York, NY / PANYNJ

PATH Task Order # 8 Replacement of Blue Light Station, 480V Power Distribution and Tunnel Lighting at Tunnel E & F / New York, NY / PANYNJ

PATH Task Order # 6 Replacement of 27kV, 15kV, traction power and Inter-tripping cables at Tunnel E & F, Exchange Place & WTC / New York, NY / PANYNJ

PATH Task Order # 19 Exchange Place Station-Escalator Replacements / Jersey City, NJ / PANYNJ

PANYNJ – Newark Aviation Fuel System Modification, Newark, NJ: The \$90M Newark Liberty International Airport Fuel Systems Modifications project will install nearly 30,000 linear feet of underground double walled aviation fuel piping. The project will also add two new 47,600 bbl above ground tanks, two new truck fueling racks, a contact water treatment facility, fuel selection area manifold, modifications to four pump stations including new PLCs and controls. Mr. Meehan is responsible for providing cost estimating services.

CATS Charlotte Area Transit System- Lynx Blue Line Extension, Charlotte, NC: The Charlotte Area Transit System Blue Line Extension is a \$1 billion, 9.3 mile extension of the Charlotte, NC light rail system. The extension will service 11 new stations, including seven walk-up stations and four stations with park and ride facilities. His responsibility is to perform a Risk Management and Contingency Review.

PANYNJ - National September 11th Memorial & Museum, New York, NY: Provide detailed cost estimates for bid packages relating to the \$530 Million Museum/Memorial portion of the reconstruction of the World Trade Center site. Provided detailed takeoff and pricing for sitework, foundations, super-structure and architectural building elements. Analyzed and tracked cost impact of revisions, changes, addenda, etc. Negotiated contract pricing and change orders with subcontractors and general contractors.

FTA –PMO -Blue Line Extension of the Charlotte Light Rail System, Raleigh, North Carolina 2012
Sr. Cost Estimator \$ 1.1 billion, 9.3 mile extension of the Charlotte, NC light rail system. The extension will service 11 new stations, including seven walk-up stations and four stations with park and ride facilities. Mr. Meehan was responsible for the estimating portion of FTA PMOC risk analysis before project was released for final design.

Chronological History of Employment:

JCMS, Inc., Mercerville, NJ, Lead Estimator 2010- Ongoing

Gilbane Building Co., Lawrenceville, NJ Sr. Estimator 2008-2009

Bovis Lend Lease, Inc., Princeton, NJ Senior Estimator 2000–2007

PROJECT MANAGEMENT AT ITS BEST



Sebastian DiBlasi

Scheduling

JCMS, Inc.

30 Years of Excellence

Experience Highlights:

Extensive Project Control and cost control services to the construction industry.

Total Experience:

27 years

Education:

B.S - Economics with Industrial Management Concentration, College of Staten Island

Associates of Science - Civil Engineering Technology, College of Staten Island

Skills:

Primavera Project Planner P6 and version 3.1, Microsoft Project, Suretrak, AutoCAD Releases 2004, Excel and Word

OSHA 10 Hour Certified

Mr. DiBlasi is Senior Scheduler with over (27) twenty seven years' experience working on various types of projects including infrastructure, highway, commercial, high-rise construction, pharmaceuticals, educational, medical facilities and retail ranging in cost from less than \$1 million to over \$1 billion. He has developed project control procedures manuals and provided scheduling services during both design and construction phases of projects. His duties involved developing and monitoring summary and detailed cost and resource loaded CPM schedules, updating and tracking critical activities, developing and monitoring cash flow analysis and manpower projections, reviewing contractor prepared CPM schedules, preparing management reports etc. He has been responsible for developing cashflow and manpower projections and/or utilized earned value analysis dependent upon project type, ensuring that all project control and critical path methodologies are adhered to on all projects. Mr. DiBlasi has also provided training in the fundamentals of CPM scheduling to project staff.

PROJECT EXPERIENCE:

Sr. Scheduling Engineer Provided scheduling services on following projects

The New Jersey Transit NEC Initiatives Project involves the removal and realignment of the current railroad tracks to improve rail services from Hoboken Terminal to Newark Penn Station. The project involves track realignment, installation of new electrified track, replacement of track turnouts and signals, replacement of overhead catenary structures, installation of retaining wall systems and drainage improvements. Responsibilities include development of the project schedules during the various phases of design.

New Jersey Transit - Bayhead Substation Replacement, Bayhead, NJ: \$15 M Rehabilitation of existing Substation Damaged by Superstorm Sandy. Replacement included power units and generator building

New Jersey Transit - Hoboken Terminal / Yard Depot Substation, Hoboken, NJ: \$15 M Replacement of existing substation by converting old pullman terminal building into a functional substation

PANYNJ-PATH Replacement of Substation No. 9, New York, NY: \$30 Million Replacement of existing Substation building with new facility

MNR- Harmon V - Stage 1-from track 146 to east wall of track 132, New York, NY: This contract, for Phase V - Stage 1 will be for the demolition and replacement of the eastern side of the Harmon Main Shop facility (Building 6) and demolition of the Blow Shed facility. The eastern portion of the shop will be replaced with a two track, 10-car double-ended Consist Shop Facility. The portion of the existing shop to be demolished will be from the existing Track 146 to the east wall of Track 132.

PANYNJ- PATH Task Order # 6 Replacement of 27kV, 15kV, traction power and Inter-tripping cables at Tunnel E & F, Exchange Place & WTC, New York, NY

Parsons Brinckerhoff, Lawrenceville, NJ

03/2011 -2015

New Jersey Turnpike 6 to 9 Widening Project

Review construction documents and specifications to identify work and logic sequences to be reflected in contractors' progress schedule. Review and monitor contractors' monthly progress schedule updates for various assigned contracts regarding impacts to the 6 to 9 Widening Program. Create, maintain and issue monthly schedule review analysis reports for the various assigned contracts. Analyze construction delay claims from contractors.

Ferreira Construction Company, Branchburg, NJ

9/2010 - 3/2011

PANYNJ- World Trade Center Site Retail Development, New York, NY

PROJECT MANAGEMENT AT ITS BEST



Sebastian DiBlasi
Scheduling

JCMS, Inc.

30 Years of Excellence

Key contact with Owner's Program Management, Retail Group and Design Partners related to Retail Portion of Project. Developed, updated and monitored summary, detailed and milestone construction schedules using CPM methodology. Reviewed and monitored Integrated Master Schedule developed by WTC Redevelopment regarding impacts to Retail Program. Reviewed construction documents and specs to identify work and logic sequences to be reflected in Retail Schedule

Maitra Associates, P.C., Somerset, NJ

4/2007 – 6/2010

Senior Level Logistics Manager (Senior Scheduler)

PANYNJ - World Trade Center Redevelopment Project, New York, NY

Key contact with Owner's Program Management staff, Port Authority Construction Management Division (CMD) and World Trade Center Corporation (WTCC) staff. Prepared and issued monthly schedule review analysis reports to PANYNJ management. Developed schedule analysis reports for various phases of the project. Assisted in the development of site logistics and coordination plans for WTC HUB and SITE projects. Developed and coordinated weekly schedules for PATH Track Work Outages. Assisted the Program Logistics Group, Sam Schwartz Engineering and URS with development of the truck delivery access model

Faithful & Gould, Princeton NJ

1/2006 – 3/2007

Senior Scheduling Consultant: Developed schedule analysis reporting for following projects

- **Las Vegas Tower**
- **Genentech R&D Facility**

Utilized Earned Value Management on certain projects. Developed and monitor summary, detailed and milestone construction schedules using CPM and bar charts. Developed and monitored cost-loaded schedules for certain projects. Developed and monitored manpower projections and forecasting for various projects.

Torcon, Inc., Westfield, NJ

1995 - 2005

Scheduling Engineer Oversee the Project Controls group consisting of 6 project controls engineers. Provide oversight of all project controls activities to ensure that company standards are met. Conduct project controls team meetings. Utilize Earned Value Management on certain projects. Develop and monitor summary, detailed and milestone construction schedules using CPM and bar charts. Update, monitor and report status of cost to date, estimated cost to complete and earned value

Bristol Myers Squibb (BMS) Building 21 Lab Facility, Hopewell, NJ

New two story 134,000 SF Biology Lab Building with vivarium facility with connection to two (2) existing buildings. New facility included research labs, environmental rooms and tissue culture rooms.

Trump Taj Mahal Casino Parking Structure Expansion, Atlantic City, NJ

Other projects include:

The Valley Hospital Additions & Renovations

FAA Air Traffic Control Tower @ Newark Airport

The Valley Hospital Ambulatory & Cancer Care Center

Wyeth Pharmaceuticals Building 240 Research Development Lab

Fairfield Suites Skyline Towers

Schering Plough Clinical Bulk Supply Facility Pilot Plan Bldg. U-18

Chronological History of Employment:

JCMS, Inc., Mercerville, NJ	Sr. Scheduling Engineer	2015-Ongoing
Parsons Brinkerhoff, Lawrenceville, NJ	Sr. Scheduling Engineer	2011-2015
Ferreira Construction Company, Branchburg, NJ	Sr. Scheduling Engineer	9/2010 - 3/2011
Maitra Associates, P.C., Somerset, NJ		4/2007 – 6/2010
Faithful & Gould, Princeton NJ		1/2006 – 3/2007
Torcon, Inc., Westfield, NJ		1995 - 2005

PROJECT MANAGEMENT AT ITS BEST

5

Key Personnel





05 Key Personnel

AECOM certifies that the listed key personnel are either employed by team members, or will be on board and assigned to the project in the manner prescribed in our proposal.

We hereby certify that all key personnel proposed for the NJ TRANSIT Long Slip Fill and Rail Enhancement Project are presently employed by AECOM and by our proposed subconsultants, and will be assigned to the project in the manner prescribed in our proposal.

6

References





06 References

Our team has provided quality services to many agencies across the nation, as demonstrated throughout this proposal and which can be affirmed by our references.

FIRM REFERENCES

Project Name and Brief Description	Reference Contact Information	Start/End Dates
AECOM		
Long Slip Canal Fill. AECOM (legacy URS) provided engineering services associated with the Long Slip Canal Fill Project. These services included alternatives evaluation, conceptual design development, and final engineering associated with the filling of a 2000-foot channel along the Hudson River adjacent to Hoboken Yard.	NJ TRANSIT Nick Valente One Penn Plaza East Newark, NJ 07105-2246 973.491.7211 NJ TRANSIT [REDACTED]	2000 – 2003 Alternative Analysis, Concept Design 2008 –2009 Pedestrian Bridge Construction 2013 – Fill Project Development Preliminary/Final Eng
Hudson-Bergen Light Rail Line. FTA-funded transportation project was a public-private partnership with NJ TRANSIT, yet was designed to FRA standards. The alignment is built on private rights-of-way, city streets, and elevated structures. HBLRT operates on a dedicated right-of-way including bridges, grade separation viaducts, and at-grade roadway crossings through the streets of Jersey City	NJ TRANSIT Design-Build Contract: Charles “Ty” Dickerson One Penn Plaza East Newark NJ 07105 973.491.8480 O&M Contract: [REDACTED]	1996 – 2020 MOS-1: 1996 – 2000 MOS-2: 2000 – 2003 MOS-2b: 2003 – 2006 MOS -3: 2006 – 2011 O&M: 2000 – 2020
NJ TRANSIT Hurricane Response Strategy Development – Rail Operations, Light Rail, Bus and Paratransit. The HRS introduces the concept of Zero Hour (the arrival of sustained storm force winds) as the point from which all agency preparedness activities work back, which synchronizes NJT with state and local hurricane plans in the tristate region.	NJ TRANSIT [REDACTED] Sandy Recovery Project Manager One Penn Plaza East Newark, NJ, 07105 [REDACTED]	5/2013 – 6/2015
PATH Tunnel Hardening & Water Mitigation. AECOM (legacy URS) developed structural resiliency and hardening solutions to protect critical multi-billion dollar underground/ underwater tunnel structures for the Port Authority.	PANYNJ [REDACTED] former Project Manager Journal Square Trans. Center, 10th flr. Jersey City, NJ [REDACTED]	2007 – ongoing
Amtrak American Recovery and Reinvestment Act (ARRA) – Program Management Oversight. AECOM (legacy URS), in joint venture, has been awarded a nationwide contract by Amtrak to provide Program Management Oversight (PMO) services of projects being funded through the American Recovery and Reinvestment Act of 2009 (Stimulus Act).	Amtrak [REDACTED] Senior Program Director, Stimulus 30th Street Station, Philadelphia, PA [REDACTED]	2009 – ongoing






Project Name and Brief Description	Reference Contact Information	Start/End Dates
Second Avenue Subway. AECOM, as part of a joint venture, is prime consultant for the architectural and engineering design of the new Second Avenue Subway in Manhattan, planned to be completed in four phases.	New York City Transit [REDACTED] Chief Engineer 2 Broadway, B8.76, New York, NY 10004 [REDACTED]	12/2005 – ongoing
Long Island Rail Road East Side Access. Program and construction management services for its \$8.76 billion East Side Access (ESA) Project, which is to be commissioned in 2019.	MTA Capital Construction [REDACTED] Senior Program Executive 469 7th Avenue, New York, NY [REDACTED]	To be completed 2019
Jacobs Engineering Group, Inc.		
Meadowlands Rail & Roadway Improvement Project, East Rutherford, NJ - Jacobs provided professional railway, structural, civil, highway, and geotechnical engineering services for a new rail station, rail service, and new roadways for the Meadowlands Sports Complex area.	NJ TRANSIT/NJSEA One Penn Plaza East Newark, NJ 07105-2246 [REDACTED], Senior Program Manager [REDACTED] Contract was with NJSEA	2004 to 2007 (Design) Miscellaneous Support Services Continued Until 2010
Portal Bridge Capacity Enhancement Project - Jacobs is part of the Tri-Venture Team “Portal Partners” providing professional railway, structural, civil, and geotechnical services for the replacement of Amtrak’s Portal Bridge over the Hackensack River.	NJ TRANSIT One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	2008 - Est. Const. Completion 2019 (Ongoing)
Frank R. Lautenberg Rail Station at Secaucus Junction, Secaucus, NJ - Jacobs provided conceptual planning, environmental assessment, and preliminary / final design of railways and rail structures, and rail operations oversight for this project, including services during construction.	NJ TRANSIT One Penn Plaza East Newark, NJ 07105-2246 [REDACTED] [REDACTED]	19991 - 2004
InGroup Consulting		
Cross Harbor Freight Program, Tier I EIS - The Federal Highway Administration (FHWA) and the Port Authority of New York and New Jersey (PANYNJ) Cross Harbor Freight Program (CHFP) seeks to improve the movement of goods across New York Harbor between the east-of-Hudson and west-of-Hudson regions by enhancing freight transportation. InGroup managed community outreach and stakeholder relationship efforts for the CHFP Tier I Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA), the Mayor’s Office of Environmental Coordination initiative of City Environmental Quality Review (CEQR) and the New York State Environmental Quality Review (SEQR) Act, which resulted in a Record of Decision (ROD). InGroup outreach services included development and execution of a public involvement and agency coordination plan, comprising stakeholder identification and coordination; public hearing planning and logistics; meeting and hearing moderation; meeting minutes; coordination of translation/interpretation services and stenographer; development of project-related collateral; media relations; video; and database management.	Port Authority of New York & New Jersey 4 World Trade Center 150 Greenwich St., 17th Floor New York, NY 10007 Contact: [REDACTED] Project Manager; Director of Port Initiatives [REDACTED]	2010 to 2015



Project Name and Brief Description	Reference Contact Information	Start/End Dates
Bayonne Bridge Navigational Clearance Program - The project would raise bridge's roadway some 64 feet to 215 feet, high enough to allow the post-Panamax container vessels expected to reach the U.S. East Coast from Asia after an enlarged Panama Canal opens in 2014. The 80-year-old bridge, which spans the Kill van Kull channel between Bayonne, N.J., and Staten Island, N.Y., is a major commuter thoroughfare. InGroup provided outreach coordination for the environmental review phase of NEPA-compliant project, which resulted in an Environmental Assessment (EA) project. InGroup services included public meeting planning, coordination, and logistics; meeting minutes; coordination of translation/interpretation services and stenographer; hearing moderation; development and production of informational materials; media relations; comment recording and summaries; and fulfillment of project mailings. InGroup was also engaged to manage and moderate community meetings during the project's early construction phase.	Port Authority of New York & New Jersey 4 World Trade Center 150 Greenwich St., 17th Floor New York, NY 10007 Contact: [REDACTED], Manager, Community and Government Relations [REDACTED]	2012 and 2014
2 Governor's Office of Storm Recovery APA Hearings No. 6 and No. 8 - The Governor's Office of Storm Recovery (GOSR) was required by U.S. Department of Housing and Urban Development (HUD) to develop a public outreach plan and conduct public hearings for the second tranche of funding available for areas affected by Hurricanes Sandy, Irene, and Lee. The Action Plan, including any amendments, was distributed and presented at the public hearings. For DASNY Action Plan Amendments No. 6 and No. 8, the team coordinated a series of public hearings from New York City to Albany. InGroup developed a market analysis; outreach coordination and event de-escalation plans; press advisories; legal notices; and hearing-related collateral and signage. InGroup handled all logistics for the public hearings and providing post-hearing support, including logging of comments and comment summaries and coordination of responses to comments.	DASNY 1 Penn Plaza 52nd Floor New York, NY 10119-0098 [REDACTED] Environmental Manager, Office of Environmental Affairs [REDACTED]	2014 and 2015
Jois Construction Management System, Inc.		
NJ Transit/Amtrak - Portal Bridge Capacity Enhancement Project between Kearny and Secaucus, NJ - The release of \$38.5 million funds by the Federal Railroad Administration (FRA) for the new Portal Bridge project signaled the final design phase to raise and replace the century-old Portal Bridge with two (2) new bridges: a three-track bridge to the north, and a two-track bridge to the south which will improve the reliability of AMTRAK and NJ Transit trains	AECOM 125 Broad Street New York, NY 10004 [REDACTED]	2010 - Ongoing
AMTRAK - Concept Design for Replacement and Expansion of Amtrak Bridge No. 7.80 (Over NJ Transit) AND Amtrak Bridge No. 7.96 (Over PATH and Conrail) - Concept Design for Replacement and Expansion of Amtrak Bridge No. 7.80 (Over NJ Transit) AND Amtrak Bridge No. 7.96 (Over PATH and Conrail). The project was to provide Concept Design (CD) services for the Amtrak Bridge No. 7.80 (Over NJ Transit) and Amtrak Bridge No. 7.96 (Over PATH and Conrail) Replacement and Expansion Project, referred to as the Sawtooth Bridges. Replacement and expansion of these bridge structures will improve rail operations along the Northeast Corridor and in particular this section in New Jersey.	AECOM 125 Broad Street New York, NY 10004 [REDACTED]	2012



Project Name and Brief Description	Reference Contact Information	Start/End Dates
NJ Transit- Bay Head Rail Yard Improvements, Bayhead, NJ - The Project consisted of installing a pedestal pit for servicing and maintenance of the trains in the Bay Head Rail Yard. Project also involved construction of facilities like substation building and compressor building to support the operation of the pit.	NJ Transit One Penn Plaza East Newark, NJ 07105 	2012
Naik Consulting Group, Inc.		
New Jersey Transit, Super Storm Sandy Emergency Repairs~ Repair, Reconstruction and/or Replacement of Electrical Substations and Related Equipment at Hoboken Terminal/ Yard Meadows Maintenance Complex (MMC) and Bay Head Yard, NJ: Under a NJ Transit Task Order contract, NJ Transit is looking to repair reconstruct and/or replace various general power substations, traction power substations, switching substations, and related facilities at Hoboken Terminal/ Yard, Meadows Maintenance Complex (MMC) and Bay Head Yard operating locations that were damaged as a result of Superstorm Sandy in October, 2012.	 Gannett Fleming Southfield Center Suite 205 1 Cragwood Road South Plainfield, NJ 07080-2448 	2013 - 2014
New Jersey Transit Replacement and Upgrade of CNG Fueling at the NJ Transit Howell Township Bus Facility, Route 9 Howell Township, NJ: Under a New Jersey Transit Task Order contract, NJ Transit replaced and increased CNG fueling capabilities at their facility located at 1251 Route 9 North, Howell Township, that was damaged as a result of Super Storm Sandy in October, 2012. Naik provided utility coordination and survey services including the preparation of a utility contact list/tracking form, initial utility contact letter to the utility companies for each site, record research and existing utility plans. Survey/Row services included horizontal controls in NJ State Plane Coordinates NAD83 and respective vertical datum, NAVD88, basemapping, and field location surveying to allow New Jersey Transit to replace and increase CNG fueling capabilities as part of the SuperStorm Sandy recovery effort.	 Project Manager BEM Systems, Inc. 100 Passaic Avenue Chatham, NJ 07928 	2013 - 2014
Amtrak Metuchen Frequency Converter, Edison Township, NJ: Amtrak is building a new Sitras SFC plus static frequency converter for upgrading its facility in northern New Jersey. This converter upgrading project is part of the New Jersey High Speed Rail Improvement Program (HSRIP) being carried out by Amtrak The Sitras SFC plus static frequency converter is a multilevel direct converter that supplies single-phase traction power networks from three-phase networks. It essentially consists of only one converter that directly couples the two networks	 Program Director, Freq. Converters/ Substation Amtrak 30th Street Station Fourth Floor, South Tower Philadelphia, PA 19104 	2012 - 2014



Project Name and Brief Description	Reference Contact Information	Start/End Dates
Yu & Associates, Inc.		
Portal Bridge Capacity Enhancement Project Kearny & Secaucus, NJ	NJ TRANSIT & Amtrak The Portal Partners (Gannett Fleming, HNTB and Jacobs, Tri-Venture) [REDACTED] Project Manager 1010 Adams Avenue, Audubon, Pennsylvania 19403 [REDACTED]	2012
Trans-Hudson Tunnel New York and New Jersey	NJ TRANSIT The Partnership [REDACTED] - Project Manager 2000 Lenox Drive, 3rd Floor Lawrenceville, NJ 08648 [REDACTED]	2006 - 2010
MSU Rail Station and Parking Garage Little Falls, NJ	NJ TRANSIT Prismatic Development Corporation [REDACTED] - Project Manager 60 Route 46 East Fairfield, NJ 07004 [REDACTED]	2003 - 2007

Key Personnel References

Edward Hrinewski - AECOM Project Manager References

Project Name & Brief Description	Reference Contact Information	Start/End Dates
Hudson Bergen Light Rail MOS 3 Extension. Design Build- New interlocking in the operating system and system Design Build for 1 mile extension	NJ TRANSIT [REDACTED] Senior Project Manager NJ TRANSIT Headquarters One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	2008 – 2011
Hudson Bergen Light Rail Program. Design Build O & M program for major Light Rail System in Northern NJ.	NJ TRANSIT [REDACTED], Sr Program Manager NJ TRANSIT Headquarters One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	1996 – 2006
Atlanta Streetcar Design /Build. Design Build of 2.4 mile Streetcar system in downtown Atlanta	MARTA [REDACTED] Project Director MARTA Headquarters 2424 Piedmont Road, NE Atlanta, GA 30324 [REDACTED]	2012 – present

**John DeVecchi - Design Manager**

Project Name & Brief Description	Reference Contact Information	Start/End Dates
Design Build Power/C&S Infrastructure Improvements MNR Hudson Line CP19 to CP35	Judlau/TC Electric, Joint Venture [REDACTED] 303 South Broadway, Suite 125 Tarrytown, NY 10591 [REDACTED]	2015 - Ongoing
Port Authority Trans Hudson Corporation (PATH) – Harrison Station Replacement and Upgrade Project	PATH [REDACTED] Program Director One PATH Plaza Journal Square, NJ [REDACTED]	Jan 2012 - Oct 2014
MTA/LIRR Long Island Railroad – East Side Access	LIRR [REDACTED] Chief Engineer LIRR [REDACTED]	2000 - 2007

Julie D’Orazio – Officer-in-Charge

Project Name & Brief Description	Reference Contact Information	Start/End Dates
LIRR Double Track	LIRR [REDACTED] Program Director CPM 144-41 94th Avenue – 3rd Floor Jamaica, NY 11435 [REDACTED]	2013
Amtrak Washington union Station	[REDACTED] Sr. Director, NEC Business Development AMTRAK, NEC Infrastructure & Investment Development Tele: [REDACTED] E-mail: Janet.Campbell-Lorenc@amtrak.com	2012
NYCT South Ferry	[REDACTED] Program Officer Sandy Recovery & Resiliency Division 2 Broadway, 7th Floor, Room A7.101 Branko.Kleva@nyct.com [REDACTED]	2014



John Fiore, PE – Program Coordinator

Project Name & Brief Description	Reference Contact Information	Start/End Dates
Long Slip Canal and Rail Enhancement Project. <ul style="list-style-type: none"> – 1999-2003 Project development – Project development and FTA grant application technical support – Project planning, conceptual design, permitting support and related engineering support services – Preliminary and final engineering services in support of NJ TRANSIT's Resiliency Program 	NJ TRANSIT [REDACTED] Program Manager NJ TRANSIT Headquarters One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	1999 - Ongoing
Hudson Bergen Light Rail Program <ul style="list-style-type: none"> – Design Build O & M program for major Light Rail System in Northern NJ. – Misc. HBLRT Engineering support services 	NJ TRANSIT [REDACTED] Sr Program Manager NJ TRANSIT Headquarters One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	1996 - Ongoing
Hudson Bergen Light Rail MOS 3 Extension. Design Build- New interlocking in the operating system and system Design Build for 1 mile extension	NJ TRANSIT [REDACTED], Senior Project Manager NJ TRANSIT Headquarters One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	2008 - 2011

Michael Naughton, PE – Constructability

Project Name & Brief Description	Reference Contact Information	Start/End Dates
Newark Elizabeth Light Rail Extension	NJ TRANSIT [REDACTED] Project Director One Penn Plaza, Newark, NJ [REDACTED]	2003 - 2007
Long Island City Vent Plan Rehabilitation	Amtrak [REDACTED] Director Life Safety 360 West 31st Street, Suite 400, New York, NY 10001 [REDACTED]	2008 - 2010
Portal Bridge Capacity Enhancement Project	NJ TRANSIT [REDACTED] - Director One Penn Plaza, Newark, NJ [REDACTED]	2013 – present

**John Deerkoski, PE – Structural / Civil Lead**

Project Name & Brief Description	Reference Contact Information	Start/End Dates
Long Slip Canal and Rail Enhancement Project.	NJ TRANSIT [REDACTED] NJ TRANSIT Headquarters One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	1999 - Ongoing
NJ TRANSIT Mainline Second Track Design	[REDACTED] Senior Director, Construction Management NJ TRANSIT Headquarters One Penn Plaza East Newark, NJ 07105-2246 [REDACTED]	2001 - 2002
MTA Metro-North Railroad, Mid-Harlem Line, Third Track Project	Metro-North Railroad [REDACTED] Vice President, Chief Engineer 420 Lexington Avenue New York, NY 10170 [REDACTED]	1991 - 1993

Silverio (Sal) Conte – Rail Systems Lead

Project Name & Brief Description	Reference Contact Information	Start/End Dates
NJ TRANSIT Positions Deputy General Manager of Infrastructure (2009 - 2011) Chief Electrical Engineer (1980 - 2009)	NJ TRANSIT [REDACTED] (former VP and General Manager of Operations) now with Metro-North Railroad as Chief Transportation Officer 420 Lexington Avenue New York, NY 10170	1980 - 2011
MTA Long Island Rail Road, Penn Station Substation (EO1) Replacement	Long Island Rail Road [REDACTED] Manager 347 Madison Avenue, 13th Floor New York, NY 10017 [REDACTED]	2014 - 2015
Metro-North Railroad, Design/Build Hudson Line	Judlau / TC Electric [REDACTED] 1445 117th Street, Suite 6 College Point, NY 11356 [REDACTED]	2014 - Ongoing

7

Work Plan





07

Work Plan

The AECOM Team is experienced, knowledgeable and well positioned to execute the technical scope of work outlined in this Request for Proposal associated with the proposed station development and the rail systems and support structures needed to achieve the project goals. Our Project Management Team will develop and utilize a number of task-specific plans to inform NJ TRANSIT and the project staff, anticipate actionable issues and expedite flow of information and status.

INTRODUCTION AND BACKGROUND

In October 2012, tidal flooding associated with superstorm “Sandy” caused significant damage to NJ TRANSIT Rail facilities in Hoboken. Flooding also resulted in an extended period of service interruption and damage to rolling stock stored at Hoboken Yard. Long Slip is a former barge canal approximately 1800 feet long by 100 feet wide along the southern boundary of Hoboken Yard that provided navigable access to the Hudson River for many decades following its construction in the 1870’s. Its depth currently varies between 2 feet and 17 feet and fluctuates with the tidal flow of the Hudson River. The canal no longer has a navigable function.

The surge created by superstorm “Sandy” inundated the canal and overtopped its bulkheads, significantly contributing to the flooding of Hoboken Yard as well as the City of Hoboken and Jersey City.

In conjunction with the design and construction of the Hudson-Bergen Light Rail System in the late 1990’s and early 2000’s, AECOM and its legacy companies studied the potential for filling Long Slip for virtually its entire length. Filling would require the extension of an existing combined sewer overflow (CSO) operated by the Jersey City Municipal Utility Authority (JCMUA) from its existing outfall at the west end of Long Slip to a new outfall at the east end of Long Slip adjacent to the





west bank of the Hudson River. Implementation of the Long Slip Canal Fill Project would provide significant storm surge mitigation by eliminating Long Slip as a conduit for flood water.

In addition to filling the canal, the filled area is proposed to be raised above the anticipated future flood elevation to keep NJ Transit facilities and rolling stock safe during a flood. The new area would include station platforms and canopies and be connected back to the track system west of Marin Boulevard so that rail service could be continued while the at grade yard and equipment are inundated or out of service.

Project activities associated with the original Long Slip Fill concept completed by legacy AECOM included evaluation of design and construction alternatives, development of regulatory permitting applications, preparation of engineering drawings and specifications and coordination of interfaces with project stakeholders. Subsequently, two limited project development activities were completed in the 2013-2014 time period under an existing contract; initial data retrieval and review, performed under Contract Task Order 4, and FTA grant application support performed under Contract Task Order 4, Revision 1. Currently, the AECOM led team is assisting NJ TRANSIT, under Contract Task Order 7, with project planning, coordination, permitting support and conceptual engineering services associated with the proposed canal filling, CSO extension and new rail facility development at the Long Slip site.

In 2016, the AECOM Team will continue our decade's long engineering support and begin Task 8 services which include preliminary engineering and, following completion of the NEPA review process, final engineering and construction support services. The technical scope of work to be performed under this phase of the project is based on advancing the concepts and strategies developed by the AECOM Team and NJ TRANSIT during those Task 7 activities related to the Long Slip Canal site now ongoing.

The AECOM Team is experienced, knowledgeable and well positioned to execute the technical scope of work outlined in this Request for Proposal associated with the proposed station development and the rail systems and support structures needed to achieve the project goals.

Principal tasks include the following:

- Incorporation of the AECOM design plans and specifications for the above-grade fill material and retaining walls at the Long Slip site that will provide a support for the proposed passenger track and platform area;
- Incorporation of the NJ TRANSIT design plans and specifications for the station building/crew quarters, platforms and canopies;
- All remaining structural and rail systems work to extend rail service from the main line west of Hoboken to the Long Slip site including bridge/viaduct structures, track design, traction power, catenary, utility systems, access and all related rail infrastructure

In addition to the technical activities, the scope of work will also require a comprehensive, proactive project management approach to address NJ TRANSIT and FTA Resilience Project requirements. The objective of this task is to keep NJ TRANSIT informed in a timely fashion with regard to both technical progress and financial status of the project. Another objective is to maintain a continuous and timely dialogue and flow of information between the AECOM Team and NJ TRANSIT.

The AECOM project management team will develop and utilize a number of task-specific plans to inform NJ TRANSIT and the project staff, anticipate actionable issues and expedite flow of information and status. The following documents represent examples of management tools that will be employed:

- Project Management Plan
- Project Schedule / Work Breakdown Structure
- Design Control Plan
- Quality Management Plan
- Risk Management Plan
- Configuration Management Plan
- Document Management System (web-based)

The goals of this project phase will be to:

- Establish proactive project management systems and procedures that address and facilitate planning, team communications, quality, safety, document control, progress and financial reporting and risk management;
- Fully coordinate all design elements with previously developed designs addressing coordination interfaces and stakeholder issues;



- Refine track alignments and special trackwork design incorporating NJ TRANSIT guidance regarding operational considerations;
- Develop optimal bridge and viaduct designs from Marin Boulevard to Long Slip maximizing clearances and minimizing surface impacts;
- Develop cost effective foundation designs for the Crew Quarters Building, station platforms and selective railroad infrastructure based on updated geotechnical criteria and NJ TRANSIT design standards;
- Identify existing utility services within the project limits, determine need for temporary or permanent relocation, assess costs, staging and interface issues;
- Develop design plans that provide fully functional temporary and permanent access to critical rail facilities while maintaining current operations;
- Insure project permitting requirements and technical conditions are incorporated in contract documents;
- Develop accurate construction cost estimates and schedules for each milestone submittal addressing all elements of project development with appropriate contingency;
- Provide clear, concise contract documents that facilitate public bidding and unambiguous interpretation;
- Validate preliminary/final design of project elements through value engineering and peer reviews;
- Support subsequent construction activities in a timely responsive manner.

MANAGEMENT PROPOSAL

TASK 1 - PROJECT MANAGEMENT

Subtask 1.01 - Project Management Plan

The Project Management Plan (PMP), is the overarching governing documentation of the project to the close-out of the planned capital grant for the project. The PMP will be an evolving document, used by NJ TRANSIT and AECOM to establish and disseminate its policies and practices overseeing all requisite project activities. It will include procedures for NJ TRANSIT, AECOM management and staff, and all other parties as applicable that best ensure that performance is (qualitatively and quantitatively) measurable through sound design, engineering and comparable industry practices that are readily identifiable, credible and consistently applied. The PMP will be prepared and implemented by AECOM and NJ

TRANSIT at the outset of the project and will clearly define the roles and responsibilities of all parties involved. Formal lines of communication will be outlined, budgets will be established, schedules agreed upon, quality control procedures identified and invoicing procedures established.

The PMP will adhere to and comply with all the FTA regulatory mandates and associated guidance including 49 CFR Part 633 – Project Management Oversight, FTA Circulars 5800.1 and 5010.1D, FTA Project and Construction Management Guidelines, and the FTA Safety and Security Certification Handbook. The PMP shall be of sufficient detail to monitor the Project's planning, engineering, and third party coordination throughout the duration of the Contract. AECOM will utilize and comply with the document formats and requirements for Programmatic submittals developed by NJ Transit to be in conformance with reporting to be utilized in NJ TRANSIT's Superstorm Sandy Recovery and Resilience Program.

The PMP shall include appropriate charts and narrative to describe the organization, relationships, responsibilities, and procedures to be implemented to manage all aspects of the Project. At a minimum, the PMP shall address the following:

- Project staff organization describing reporting relationships, statements of functional relationships, job descriptions, and job qualifications;
- A budget covering the project management organization, appropriate consultants, utility relocation, stakeholder interface and coordination, project audits, and any other management systems as necessitated;
- Communications protocol;
- Design Management - internal reviews and checking procedures
- A construction schedule;
- A document control procedure and record-keeping system;
- A change order procedure which includes a documented, systematic approach to the handling of construction change orders;
- A description of organizational structures, managerial/technical skills, and staffing levels required throughout the construction assistance phase;
- Quality control (QC) and quality assurance (QA) programs which define functions, procedures, and responsibilities for construction and for system installation and integration of system components;



- Materials testing policies and procedures;
- An internal plan implementation and reporting requirements;
- Criteria and procedures to be used for testing the operational system or its major components;
- Periodic updates of the plan, especially related to project budget and project schedule, financing and risk management;
- Safety and security management – this section to be fully described and detailed in the project Safety and Security Management Plan (see Subtask 3.1 below)

Task Deliverables

1. Draft PMP – Four (4) weeks from NTP
2. Final PMP – Two (2) weeks after receiving comments from NJ TRANSIT and the FTA
3. Updates to the PMP, shall be made annually, as changes dictate or as directed by NJ TRANSIT

Subtask 1.02 - Project Control

The AECOM Team, after discussion with NJ TRANSIT, will establish a formal Critical Path Method (CPM) project schedule (Primavera 6.0) for the performance of this assignment. CPM updates will be provided to NJ TRANSIT on a monthly basis or upon request. The CPM will also be updated with the latest simulation of the risk management software (Primavera's Risk Analysis) to identify any emerging risks that will impact the Project's schedule, budget or quality so they can be mitigated before they manifest. In addition, the AECOM Team will establish a system of monthly progress and cost control reports attached to monthly invoices in accordance with the Sample Invoice Report included in RFP Attachment C. All sub-consultants employed will render invoices for the general time periods that are utilized by the AECOM Team.

Issues identified following NJ TRANSIT invoice review will be resolved to NJ TRANSIT's satisfaction within two working days. The report form as well as invoice(s) will include a written description of current technical, budget and schedule status as well as a comparison of this information to the preceding month, project-to-date and projected future work efforts as applicable. Milestones, decisions made, issues and action items will be highlighted. Any unanticipated delays or gains or

cost adjustments driven by unforeseen circumstances will be discussed in terms of completing the overall project on time and within budget. The AECOM Team will provide a summary of all invoice costs in a format depicting values as described in RFP Attachment C. The AECOM project management team is familiar with this process and has experienced staff and procedures in place based on the current Long Slip assignment to facilitate these activities.

Subtask 1.03 - Project Schedule

The AECOM Team will develop and maintain a detailed project engineering schedule. The purpose of the schedule is to provide an effective management tool by which the AECOM Team and NJ TRANSIT can measure progress of the work, identify areas of schedule risk, and mitigate against any potential delays on a timely basis. The actual number of activities in the schedule will be sufficient to assure adequate planning of the Project and to permit monitoring and evaluation of progress and the analysis of time impacts. The AECOM Team will continue to work closely with NJ TRANSIT and their Resilience Program Team to evaluate and refine each element of the project schedule.

The AECOM Team will use Project Primavera 6.0, or NJ TRANSIT approved equal to develop the project schedule. The format of the schedule shall include bar chart plots and shall show columns for:

- Activity ID
- Activity Description
- Original Duration
- Early Start, Late Start, Early Finish and Late Finish
- Total Floats

Following Notice to Proceed (NTP), the AECOM Team will develop a "Work Breakdown Structure (WBS)" for the task order in an organizational chart format and submit to NJ TRANSIT for approval. The WBS will reflect all the major elements and sub-elements of the scope of services.

Using the NJ TRANSIT approved WBS; the AECOM Team will develop the design services schedule that will represent the entire scope of services in activities no longer than a month in duration. If any activities are longer in duration, it will be substantiated in the schedule narrative report.



The schedule activities will include but are not limited to:

- Interim and final contractual milestones with constraint dates;
- All phases of design development activities;
- Design submittals;
- Submittal review by NJ TRANSIT;
- Interface coordination and dependencies with proceeding, concurrent and follow on contracts;
- Non-Contractual milestones (without constraint dates) to highlight end of a phase;
- Work to be performed by third party agencies and/ or consultants;
- All permitting activities and the processes involved in obtaining each of those permits

The draft baseline schedule and the schedule narrative report will be submitted within three (3) weeks from NTP. The schedule narrative report will list schedule assumptions, calendar(s), holidays included in the schedule, estimate of resources, and discuss basis of activity durations and the project longest path.

AECOM will revise/modify and resubmit the schedule incorporating NJ TRANSIT review comments, if any, prior to proceeding with resource/cost loading the schedule. The NJ TRANSIT approved schedule loaded with resource and cost will be submitted in two (2) weeks and will be the project baseline schedule. It will be the basis for schedule updates and project control reports. The AECOM Team will prepare and maintain the schedule according to the contract specification and established industry practices.

The schedule will be updated monthly statusing activity progress, resource consumption and cost accrual. AECOM will submit the updated schedule and narrative report five days before the progress meeting for review by NJ TRANSIT. The narrative report will include progress achieved; issues encountered and its impact on the schedule, if any; problem areas and anticipated delays; corrective action and recovery plan; status of longest path and changes in it since the previous update; and work planned for the next period. In addition, the monthly report will include earned value report, resource usage & budgeted and actual cost comparison, and graphical progress report.

If there are delays to interim milestones or the project completion, AECOM will develop a Recovery Plan & Schedule detailing the mitigation plan and submit to NJ TRANSIT.

Task Deliverables

1. Work Breakdown Structure Codes
2. Baseline Schedule – draft and final
3. Monthly Progress Schedule and Schedule Status Report
4. Recovery Plan and Schedule, as required
5. As-Built Schedule
6. Construction Schedule

AECOM will create an intra-project, secured, website through which the team can communicate and information can be shared. The site will be maintained throughout the duration of the contract. At the end of the contract the information on the site will be submitted to NJ TRANSIT.

Subtask 1.04 - Records Management Control System

The AECOM Team will develop and maintain a system to identify and manage correspondence, business documents, and current revision of instructions, procedures, drawings, specifications, reports and analyses. The document database developed on this project shall be kept current throughout the term of the Contract and provided to NJ TRANSIT in a condition suitable for use by others without need for additional licenses for another 5 years from Project Completion. A software allowance will be included in our cost proposal to account for this future application. It will be in compliance with the Configuration Management Plan. Consistent with NJ TRANSIT's objective, it will result in the establishment of a "paperless" project to the extent as practicable.

AECOM is currently assembling a records management staff to support NJ TRANSIT in conjunction with the preliminary and final design services associated with the initial phase of the Long Slip Project. There will be significant economies of scale in conjunction with staff training and implementation of this subtask across both phases of the project benefitting the entire program.

The system at a minimum will provide the following definition and components:

- A system designed around the AECOM evaluation and analysis of NJ TRANSIT's work flow and business practices;



- An electronic interface ("desktop") that requires nominal user training and provides quick response time for document creation, storage, and retrieval;
- A highly secure system that can assign different access clearances for staff and project stakeholders;
- A system that is fully compatible with and utilizes the same assumptions as the NJ TRANSIT ECMS document control system.

The system will manage manual and electronic documents including:

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

The system will provide the following features:

- Central clearinghouse for all project documents
- Categorization of inbound traffic
- Marking of each document with (at a minimum):
 - Originating date
 - Received date
 - From organization
 - To organization
 - Subject
 - Unique sequence number
- Scanning and indexing
- Posting of scanned documents for retrieval
- Email notification to document recipients
- Maintenance of the document database
- On-site printing capability for all document sizes and formats
- Filing of original hardcopy
- Transmitting of original hardcopy to offsite records warehouse (If needed for compliance with NJDARM requirements)

The system will also provide a fully-integrated Electronic Content Management (ECM) system, including the following components:

- Digital Mailroom (DM) - or future project field office
- Scan, index & distribute
- Electronic Document Management System (EDMS) - web-based
- Electronic Document posting & notification
- Document collaboration capabilities
- Email management including forced classifications
- Check-in and check-out protocols
- Revision control
- Audit trail
- Security (document by user/group)
- Watermarking for printed copies
- Administrator reports
- Workflow
- Records Management (RM)
- Retention schedules
- Notification of destruction

We understand that NJ TRANSIT is using an in-house Enterprise Content Management System (ECMS), using Open Text Live Link as the platform. AECOM will provide personnel at a designated NJ TRANSIT Office to assist NJ TRANSIT in data entry as well as down loading and up loading of documents into the NJ TRANSIT ECMS. The schedule for data uploads to the NJ TRANSIT ECMS will be determined subsequent to Contract award. However, such uploads will occur at a minimum on a monthly basis. For estimating purposes, AECOM has included a team staff member for an average of two full days per week for the duration of the design and construction support periods to assist NJ TRANSIT with data entry. It is anticipated that AECOM will employ an ftp site or similar portal to transfer documents between NJ TRANSIT's ECMS and the AECOM document system. The personnel assigned will be cognizant of NJ Division of Archives and Records Management (DARM) regulations concerning document scanning and management procedures.

Task Deliverables

1. Monthly Progress Reports Records Document Management System
2. Monthly Quality Certificate Identification of appropriate support staff subject to NJ TRANSIT approval



Subtask 1.05 - Monthly Progress Reporting

The AECOM Team will carefully monitor the progress of the Project during design and provide NJ TRANSIT with Monthly Progress Reports. The approved schedules will be used by the Team to ensure adequate planning, scheduling, management, and execution of the Project and to enable NJ TRANSIT to evaluate Project progress and requests for payments by the AECOM Team.

The AECOM Team is familiar with document formats and requirements for Programmatic submittals in conformance with reporting to be utilized in NJ TRANSIT's Superstorm Sandy Recovery and Resilience Program based on current assignments for the Long Slip Project.

AECOM will submit one (1) hard copy and one (1) electronic copy of the Monthly Progress Report to NJ TRANSIT by the 7th day of each month that will cover a reporting period for the preceding month. The Monthly Progress Report will be submitted by the Team's principal and will include as a minimum the following:

- A written review of the progress achieved for that month with specific reference to the activities detailed on the Baseline Schedule and detailed progress on each stage of the design during the reporting period.
- Details of any delays specifically highlighted together with details of the AECOM actions/proposals to mitigate risks or other action taken for corrective action and schedule recovery
- Areas of concern and proposed resolution
- Planned schedule percentage complete versus actual percentage achieved and earned value versus planned usage for each resource will be computed per task in tabular format from the resource and price loading. An overall cumulative progress curve shall be plotted with the horizontal axis in calendar months
- Comparative progress curves and histograms showing actual versus planned performance with respect to major activities as may be required by NJ TRANSIT
- A monthly update of the overall progress curve (or S curve) versus baseline progress curve
- Updates of the Consultant's labor curve table showing actual and planned labor, including subconsultant labor
- Status of DBE participation
- An up-to-date copy of the Delivery Submittal Schedule to NJ TRANSIT

- Other content as directed by NJ TRANSIT.

AECOM will provide a certificate signed by the Quality Manager certifying for the previous month that:

- All work, including that of sub-consultants at all tiers, has been checked and/or inspected by the Team's quality staff and that all work, except as specifically noted in the certification, conforms to the requirements of the Contract.
- The QMP and all measures and procedures and procedures provided therein are functioning properly and are being followed, except as specifically noted in the certification.

Task Deliverables

1. Monthly Progress Reports
2. Monthly Quality Certificate

Subtasks 1.06, 1.07, 1.08, 1.10, 1.11 - Quality Management

AECOM will develop a comprehensive Quality Management Plan (QMP) for the Project. The quality program will be conducted on an ongoing basis during the entire period of performance of the Contract based upon the QMP approved by NJ TRANSIT. It will cover AECOM and all sub-consultants; the procedures will be uniformly applied to all phases of the project. The Quality Control plan will require the completion, checking, and correcting of work products before releasing them, to ensure accuracy, completeness, and ability to be understood by target audience.

The QMP will be prepared in general accordance with the established guidelines of the FTA, which essentially follow Article 4.0 of the ISO 9001:2000 and ISO 10013 guides. The QMP will be an executable system of processes defined and established for the Project. As a minimum, the QMP will include a Quality Policy and Procedures, and reference other plans as may be specified herein and elsewhere in the Contract. The Plan will be an updated extension of the plan and procedures currently being implemented but will be administered separately.

NJ TRANSIT has developed document formats and requirements for Programmatic submittals in conformance with reporting to be utilized in NJ TRANSIT's Superstorm Sandy Recovery and Resilience Program (SSRRP). In order to maintain consistency, it is assumed that such requirements related to



the Project Quality Control Plan submission will be available to AECOM subsequent to Contract award.

The QMP will document how the AECOM Team will execute the project to assure that:

- The design process translates NJ TRANSIT's needs and requirements into an acceptable design
- The Project is properly completed and furnished to NJ TRANSIT on time and within budget.

During the term of the Contract, the AECOM (URS) Team will exercise positive control over the entire Project including the work of all subcontractors and subconsultants as described in the approved QMP.

AECOM expects to be fully certified under ISO 9001:2000 by the end of 2016. Therefore, the quality principles established by ISO 9001:2000, as set forth herein, form the basis for the quality system and Quality Management Plan required to be established.

AECOM will appoint an experienced, qualified Quality Manager trained in accordance with established quality management standards, requirements and regulations. The selection of this individual is subject to NJ TRANSIT approval. The Quality Manager will perform as the Management Representative and will:

- Be responsible for implementing the QMP and will have the authority to stop the Project. There will be a clearly articulated Quality Policy approved by the Executive(s) of AECOM and it will be widely publicized and known throughout the project team
- Report directly to the AECOM Project Manager or more senior employee
- Have direct access to a senior executive at AECOM
- Be responsible for ensuring that the Quality System is effective in ensuring that all Contract requirements are satisfied.
- Have direct access to and by NJ TRANSIT's Quality Director.

An Internal Quality Management Review will occur at least bimonthly. A report regarding the results of the review will be forwarded to NJ TRANSIT. Organizational and technical interfaces will be defined in a manner that assures inter-discipline coordination and communication among and between designers and major subcontractors and subconsultants and NJ TRANSIT.

AECOM will establish and implement procedures to identify, collect, index, file, store and retrieve all quality records required by the Contract and generated pursuant to the Quality Management Plan and will include the records of sub-consultants and subcontractors, as appropriate. These procedures will include an electronic database to track and maintain control over all quality records generated by the Contract, which shall be part of the Records Management System and subject to data transfer to the NJ TRANSIT ECMS system referenced above.

Quality records shall be stored and maintained in such a way that they are readily retrievable and provided with a suitable environment that will minimize deterioration or damage, and prevent unauthorized alteration or loss. Quality control records will be legible, reproducible, and identifiable with the item involved, and contain the date of origination and identity of the originator, verifier, and/or responsible supervisor. AECOM will retain all quality records for a period of seven (7) years from the date of completion of the Project unless otherwise specified in the Contract. All quality records will be made available to NJ TRANSIT throughout the retention period.

AECOM will establish a procedure for conducting internal quality audits throughout the period of performance of the Contract as follows:

- Perform internal audits at least quarterly.
- Identify in the audit any deficiencies found in the quality system, the causes of deficiencies and the status of corrective action or preventive action, when appropriate.
- Provide the audit results to NJ TRANSIT within five (5) days of the completion of the audit, including required corrective actions.
- Provide a final report to NJ TRANSIT confirming the completion of required corrective actions within thirty (30) days of the audit.

Task Deliverables

1. Quality Management Plan
2. Internal Quality Review Reports
3. Audit Reports
4. Report of Completion of Corrective Actions



Subtask 1.09 - Design Control

The AECOM Team will develop a Design Control Plan (DCP), establishing design control procedures that will be integrated and consistent with the requirements described throughout the Request for Proposal. The Plan will visibly track and report the status of design products to be submitted by the Team for NJ TRANSIT review. The AECOM Team will revise, update, and submit the Plan for approval as required. The Plan will:

- Define procedures for completing internal verification prior to the submission of documents to NJ TRANSIT for its review. Design Verification Activities will include checking and back-checking calculations, drawings, specifications and other design elements without reliance on review and comments from NJ TRANSIT and will be conducted before providing each design submittal to NJ TRANSIT.
- Define how design inputs and changes will be managed by AECOM in a manner that assures Contract and design team requirements are correctly translated into the drawings and specifications.
- Include a Design Review Schedule which will be revised as needed as the design progresses.
- Be consistent with and follow the Quality Management Plan and specifically track all design and design verification activities included in the approved Quality Management Plan.
- Be in a format that allows the AECOM Team and NJ TRANSIT to reasonably understand the means by which each design element of the project is being completed. It will provide planned versus actual schedule performance and be accurate and useful as a means for NJ TRANSIT to determine how the design is proceeding throughout the design phase of the Project.
- Include subcontracted design elements.

The Design Control Plan will be consistent with the plan being implemented on the current Long Slip assignments but will be administered independently.

Task Deliverables

1. Design Control Plan

Subtask 1.12 - Configuration Management

The AECOM Team will prepare a Configuration Management Plan (CMP) and submit to NJ TRANSIT for its approval. The CMP will utilize a proven, auditable electronic based configuration

management system for the design of the Project. The AECOM Team will maintain document change control, including engineering plans, drawings and specifications and will update all project documents as the design progresses. Configuration management will provide an accurate historical record that can trace decisions made throughout the life of the Project.

The AECOM Team will develop and maintain a Contract Documents Log created in an electronic data base format acceptable to NJ TRANSIT for NJ TRANSIT's review and approval. The Log will list all design drawings, specifications, design calculations, analyses, reports and other documents to be prepared by the Consultant. Only one (1) version of a document may be effective at any one time. The Log will function to keep a history of each document created by the design team and its evolutionary status. The Log will form an integrated part of the Records Management System.

At the end of the Project, the AECOM Team will provide NJ TRANSIT, in electronic format, a complete configuration management history, fully documenting all required project information, including the final revision status of all design elements that will allow for the progress of the Project design to proceed.

The Configuration Management Plan and Contract Document Log will be designed to facilitate integration with the initial phases of the project to provide a well-coordinated record of the project in its entirety.

Task Deliverables

1. Configuration Management Plan - draft and final
2. Contract Document Log

Subtask 1.13 Project Meetings

AECOM will attend and participate in the meetings set forth herein with NJ TRANSIT, its representatives, government officials or other parties interested in the Project as may be determined by NJ TRANSIT. The Team will prepare a record of the meetings containing: the date and place, meeting purpose, names and titles of those present, a brief description of the matters discussed, agreements reached/decisions made, action items and the party responsible for taking the identified action. Meeting minutes will be prepared and provided within seven (7) calendar days from the meeting date to NJ TRANSIT



for review and comments. Final meeting minutes will be issued to all appropriate parties within two (2) calendar days of receipt of comments from NJ TRANSIT.

AECOM will attend a kickoff meeting with NJ TRANSIT within ten (10) calendar days of issuance of the Notice to Proceed for the Contract. The purpose of meeting will be to review the parties' responsibilities, major project milestones, procedures and submittals and personnel assignments. This meeting will be chaired by NJ TRANSIT and be attended by representatives of NJ TRANSIT, all key personnel identified by AECOM and all major sub-consultants proposed by AECOM. Agenda items will include:

- AECOM's personnel roster
- Confirmation of all sub-consultants
- AECOM's project schedule, WBS, critical paths and major milestones
- Project Management Plan
- Design Management Plan
- Interface and Integration Management Plan
- Configuration Management Plan
- Quality Management Plan, including quality documents & records to be generated
- Procedures for processing design decisions and approvals
- Procedure for processing applications for payment
- Mobilization Issues

AECOM will conduct monthly progress meetings with NJ TRANSIT on a regularly established date, or as directed by NJ TRANSIT. Progress meetings will be held in addition to other specific meetings held for other purposes. The meeting will address technical and administrative issues of concern, determine courses of action, develop appropriate deadlines for resolution of issues, and assign individuals responsible for resolution of those issues. AECOM and NJ TRANSIT will determine who will attend the meetings.

Status meetings will be held prior to the submittal of the Application for Payment. The purpose of the meetings is to determine that the status of activities as stated in AECOM's Monthly Progress Report and Progress Schedule are correct. This meeting will be attended by NJ TRANSIT and AECOM. NJ TRANSIT disposition on the matter will be documented. AECOM will prepare meeting minutes.

Task Deliverables

1. Kickoff Meeting Meetings
2. Progress Meeting Minutes
3. Project Meeting Minutes

Subtask 1.14 Payment Procedures

AECOM will notify NJ TRANSIT in writing that verifiable progress has been achieved and request reimbursement in connection with said progress. NJ TRANSIT will ascertain whether the claimed progress has been achieved or not during the status review meetings and by review of valid Progress Reports as prescribed above.

Applications for payment will at a minimum contain:

- Name and address
- The remittance address or bank to which payment is to be made
- The Contract name or title and Contract number
- An actual invoice for the amount identified above plus any other amounts due AECOM under any other provision of the Contract signed by the Project Manager.
- AECOM certification that the amount requested is due and payable under the Contract and has not been previously invoiced or paid
- Timesheets
- Supporting documentation for all expenses incurred
- DBE participation levels
- Subconsultant invoices

Task Deliverables

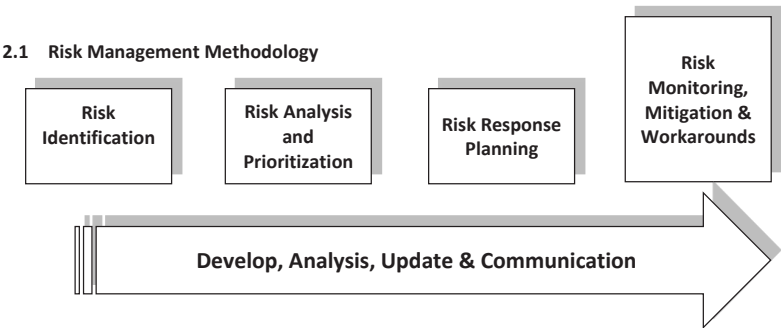
1. Applications for Payment
2. Final Invoices



TASK 2 - RISK MANAGEMENT

2.1 - Introduction and Project Description

2.1 Risk Management Methodology



The following methods will be used to assist in the identification and assignment of risks associated with the project:

- Brainstorming
- Interviewing
- SWOT (Strengths, Weaknesses, Opportunities and Threats)
- Evaluating risks
- Developing mitigation and related potential cost reduction for constant updating

2.1.1 Identify, Analyze, Prioritize and Assign Risks

Risk Identification and Risk Register: The AECOM Project Manager, working with the project team and project sponsors, will ensure that risks are actively identified, analyzed, and managed throughout the life of the project. Risks will be identified as early as possible in the project so as to minimize their impact. The project manager will serve as the Risk Manager for this project.

Risk identification will involve at least two workshops. The AECOM Project Manager and expert Team members will meet with NJ TRANSIT and review the preliminary Risk Register. A Risk Register will be refined to add or remove risks. Discussions will include who should own the risk and possible mitigation and workaround strategies. The deliverable will be a **Draft Risk Register** which will be sent to NJ TRANSIT for review two (2) weeks before the Risk Workshop. After that review the project team will conduct a **Risk Workshop** with appropriate stakeholders. The Risk Team will include an evaluation of environmental factors, organizational culture and the project management plan including the project scope, schedule, cost, or quality. Careful attention will be given to the project deliverables, assumptions, constraints, WBS, cost/effort estimates, resource plan, Risk and other key project documents.

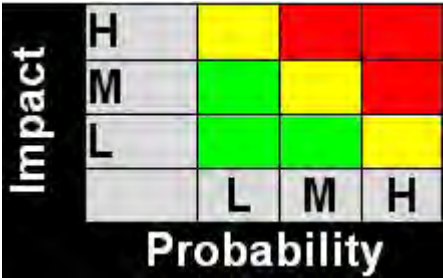
The probability and impact of occurrence for each identified risk will be assessed by the project manager, with input from the project team using the following approach:

Probability

- HIGH - Greater than 70% probability of occurrence
- MEDIUM - Between 30% and 70% probability occurrence
- LOW - Below 30% probability of occurrence

Impact

- HIGH - Risk that has the potential to greatly impact project costs, project schedule or performance
- MEDIUM - Risk that has the potential to slightly impact project costs, project schedule or performance
- LOW - Risk that has relatively little impact on cost, schedule or performance





Risks that fall within the RED and YELLOW zones will have a risk response plan which may include both a risk response strategy and a risk contingency plan.

The Risk Management Plan will facilitate the tracking of each major risk (those falling in the Red & Yellow zones) which will be assigned to a risk owner for monitoring and controlling purposes to ensure that the risk will not “fall through the cracks”.

For each major risk, one of the following approaches will be selected to address it:

- **Avoid** – Eliminate the threat or condition or protect the project objectives from its impact by eliminating the cause
- **Mitigate** – Identify ways to reduce the probability or the impact of the risk
- **Workarounds** – Nothing will be done
- **Contingency** – Define actions to be taken in response to risks
- **Transfer** – Shift the consequence of a risk to a third party together with ownership of the response by making another party responsible for the risk (buy insurance, outsourcing, etc.)

For each risk that will be mitigated, the project team will identify ways to prevent the risk from occurring or reduce its impact or probability of occurring. This may include prototyping, adding tasks to the project schedule, adding resources, etc. Any secondary risks that result from risk mitigation response will be documented and follow the risk management protocol as the primary risks.

For each major risk that is to be mitigated or that is accepted, a course of action will be outlined in the event that the risk does materialize in order to minimize its impact.

2.2 Risk Monitoring, Mitigation / Control and Communicate Risk Issues

The level of risk on a project will be tracked, monitored and controlled and reported throughout the project lifecycle.

Risks will be assigned a risk owner(s) who will track, monitor and control and report on the status and effectiveness of each risk response action to the Project Manager and Risk Management Team monthly.



A “Top 10 Risk List” will be maintained by the PM/Risk Manager or Project Team and will be reported as a component of the project status reporting process for this project.

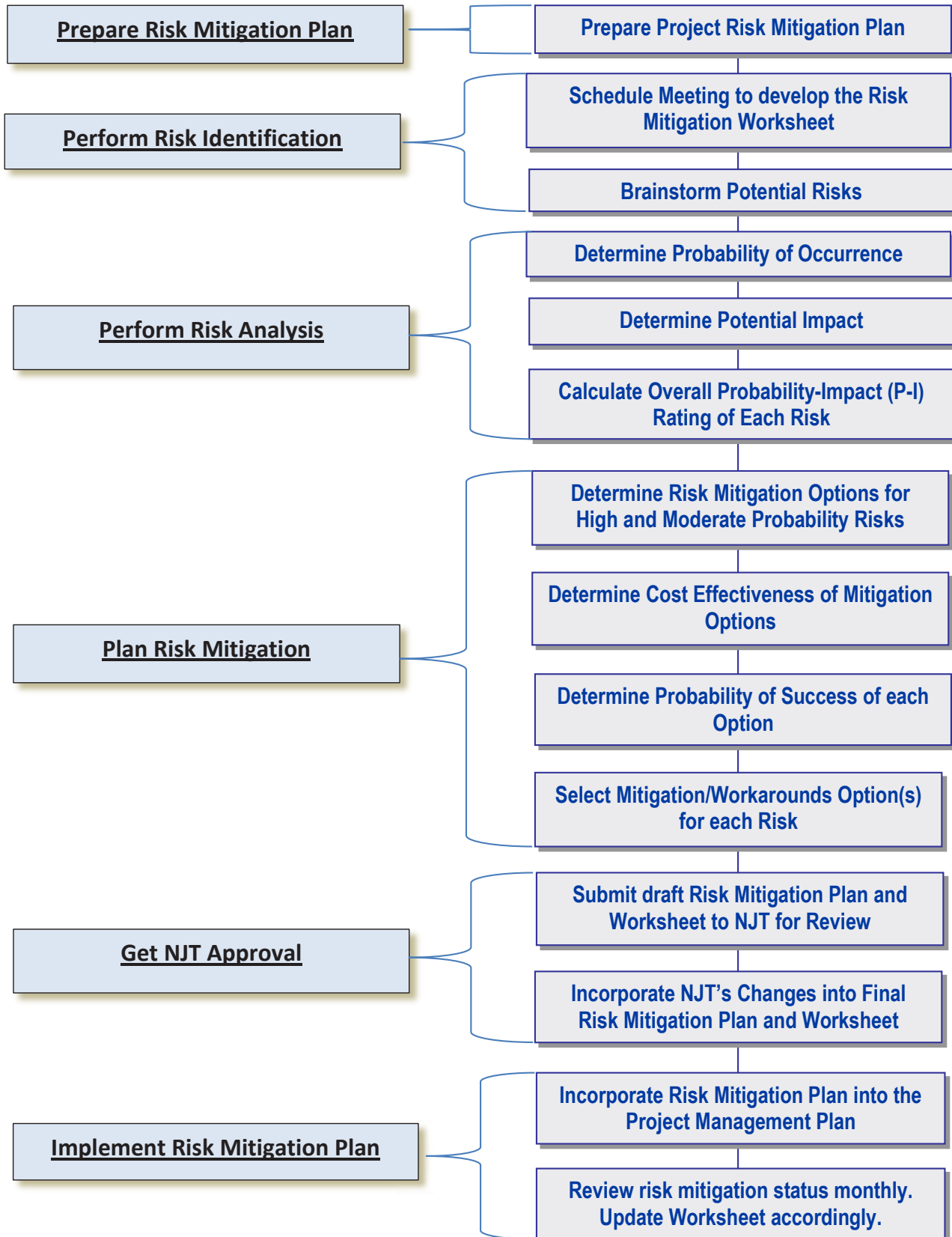
All project change requests will be analyzed for their possible impact to the project risks. The Risk Register will be circulated for review and comments each month and updated monthly to address comments.

As Risk Events occur, the list will be re-prioritized during weekly reviews and the Risk Management Plan and Risk Register updated to reflect any and all changes to the risk lists including secondary and residual risks.

NJ TRANSIT will be notified immediately of important changes to risk status and clear consistent mitigations of that risk will be a component of the monthly Project Status Report.

The Risk Manager (PM) will:

- Review, reevaluate, and modify the probability and impact for each risk item (timeframe, as needed, every two weeks, etc.)
- Analyze any new risks that are identified and add these items to the risk list (or risk database).
- Monitor and control risks that have been identified.
- Review and update the top ten risk list (timeframe, as needed, every two weeks, etc.)

**PROJECT RISK MANAGEMENT FLOW CHART**



- Escalate issues/ problems to management (List factors that would need to be escalated to management. Examples: documented mitigation actions are not effective or producing the desired results; the overall level of risk is rising.)

The Risk Owner will:

- Help develop the risk response and risk trigger and carry out the execution of the risk response, if a risk event occurs.
- Participate in the review, re-evaluation, and modification of the probability and impact for each risk item on a weekly basis.
- Identify and participate in the analysis of any new risks that occur.
- Escalate issues/problems to PM that,
 - Significantly impact the projects triple constraint or trigger another risk event to occur
 - Require action prior to the next weekly review
 - Risk strategy is not effective or productive causing the need to execute the contingency plan

2.3 Document and Control Risk Management Documentation

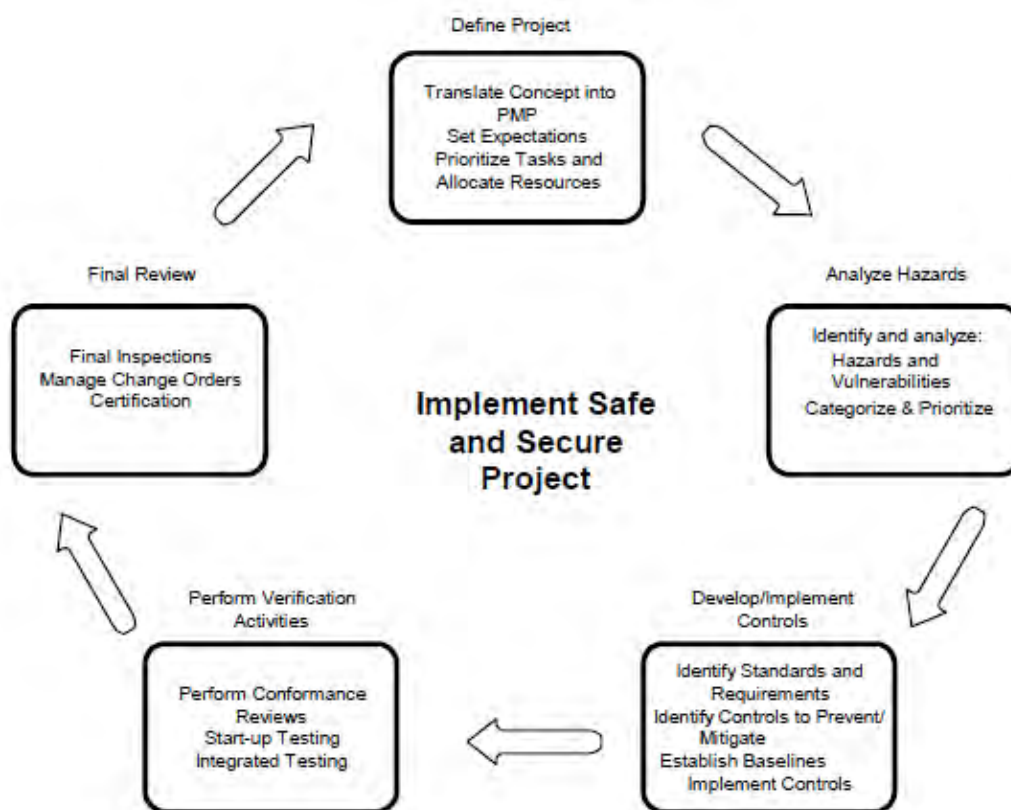
Risk activities, risk register, risk analysis and documentation will be developed and analyzed in using Oracle Primavera Risk Analysis and SecureRisk™ software. The results will be presented in a timely report format with supporting graphics.

Task Deliverables

1. Risk Management Plan, associated meetings and workshop findings, reports, updates of the Risk Register following Project Progress

2.3.1 Responsibilities, Analyze, Prioritize and Assign Risks

RESPONSIBLE PARTY	ACTION
Project Manager / Risk Manager	The Risk Manager or PM is a member of Project Team and determines if the Risk is unique, identifies risk interdependencies across projects, verifies if risk is internal or external to project, assigns risk classification and tracking number. During the life of the project, they continually monitor the projects for potential risks.
Project Team	The Project Team is responsible for identifying the risks, the dependencies of the risk within the project, the context and consequence of the risk. They are also responsible for determining the impact, timing, and priority of the risk as well as formulating the risk statements.
Risk Owner(s)	The risk owner determines which risks require mitigation and contingency plans; he/she generates the risk mitigation and contingency strategies and performs a cost benefit analysis of the proposed strategies (using SecureRisk™). The risk owner is responsible for monitoring and controlling and updating the status of the risks throughout the project lifecycle and recommending additional mitigations as required. The risk owner can be a member of the project team.
Other Key Stakeholders	The other stakeholders assist in identifying and determining the context, consequence, impact, timing, and priority of the risk



TASK 3 - SYSTEM SECURITY AND EMERGENCY MANAGEMENT

Subtask 3.1 - System Safety Management Plan (SSMP)

The Project Safety and Security Management Plan (SSMP) is the complement to the PMP which describes and explains NJ TRANSIT's and AECOM's approach to ensuring that Project will be designed and delivered in a safe and secure manner. The SSMP describes the safety and security roles and responsibilities of NJ TRANSIT and Project personnel and the processes by which they identify, consider, and unintentional (hazards) and intentional (threats) risks to the Project.

As per 49 CFR Part 633, FTA Circular 5800.1, and the FTA Safety and Security Certification Handbook, URS shall prepare a SSMP to document the approach taken to perform safety and security activities which contains 11 sections:

- Section 1: Management Commitment and Philosophy
- Section 2: Integration of Safety and Security into Project Development Process

- Section 3: Assignment of Safety and Security Responsibilities
- Section 4: Safety and Security Analysis
- Section 5: Development of Safety and Security Design Criteria
- Section 6: Process for Ensuring Qualified Operations and Maintenance Personnel
- Section 7: Safety and Security Verification Process (Including Final Safety and Security Certification)
- Section 8: Construction Safety and Security
- Section 9: Requirements for 49 CFR part 659, Rail Fixed Guideway Systems; State Safety Oversight
- Section 10: FRA Coordination
- Section 11: DHS Coordination

As per FTA Circular 5800.1, URS will develop a Safety and Security Certification Plan (SSCP) to detail the processes described in Sections 4-8 of the SSMP. To develop the SSCP, The AECOM Team will comply with guidance set forth in the FTA Safety and Security Certification Handbook while identifying, documenting and addressing risks as outlined in Task 2 above,



as well as ensuring that identified mitigations to risks addressed have been incorporated into the design and final constructed deliverable in Task 6 below.

Task Deliverables

1. SSMP - draft and final
2. SSCP - draft and final

WORK PLAN

The AECOM Team has completed or is currently performing a number of tasks associated with Phase 1 of the Long Slip Canal and Rail Enhancement Project including conceptual design development, preliminary and final engineering, stakeholder coordination and permitting support. These tasks also include conceptual track work configuration, facility substructures and foundations; utility assessments; level of service planning and simulations; platform emergency evacuation planning and all technical support required to advance the final Phase 1 design. The two most critical goals of the AECOM Team are to use our recent and current experience to link the Phase 1 and Phase 2 projects into a seamless integrated facility and by doing so, reduce the overall design and implementation schedule to conform to the FTA grant target.

TASK 4 - PRELIMINARY DESIGN (PHASE 2)

The following subtasks will be performed under Phase 2, Task 4:

Phase 1A Conceptual Design

Under this phase we will review the prior design work and prepare the Pedestal Pit Conceptual Design.

Subtask 4.1a - Review of Preceding Design Work

Having completed the specific Phase 1 engineering tasks previously mentioned and in recognition of almost two decades of project development at the Long Slip site, the AECOM Team is prepared to advance the Phase 2 tasks without any "learning curve". The team has examined track configuration alternatives; developed the overall project "footprint"; performed surface surveys and subsurface investigations; met and interfaced with all project stakeholders. Therefore, as the author of virtually all of the previous design documents, the AECOM Team will require little or no review time before

beginning this phase of the project, to the benefit of the project design schedule.

Subtask 4.1b - Pedestal Pit Feasibility Report and Conceptual Design

The AECOM Team will prepare a feasibility report and conceptual design for the construction of a pedestal pit adjacent to the center island high level platform on the northernmost track, in accordance with NJ TRANSIT standard requirements for pedestal pit tracks. The length of the pit will be in compliance with AREMA and NJ TRANSIT clearance requirements. Both cast in place and precast concrete will be considered during the feasibility study. Other issues to be considered will be storm drainage, electric supply, compressed air and hot and cold water for maintenance functions, emergency egress from the pit, staging, phasing and constructability, and the impact of the pedestal pit on project cost and schedule.

One of the key issues to be addressed is access/egress. The team has had recent experience with the unions in the planning of the County Yard Shop and discussions we had with them about the Morrisville yard pit track lead us to consider several factors. The pit itself is considered a confined space and is therefore subject to less stringent egress and headroom considerations. That being said, there are issues to consider. The pit depth between rails should be approximately 4'8" below top of rail. This will enable inspectors of differing heights to perform their duties in a reasonably efficient and safe environment. If the pit limits are strictly between rails only inspections can be performed, with the need to send a bad order car to another location for any repairs. If we create a larger pit outside of the under car space it would be at an elevation approximately 3' above the center pit and could be used for minor repairs.

Regardless of the approach, the center pit will require regular egress points. At Morrisville, the agreed upon frequency was one per each two car pair, or 170' on center. We may be able to spread these out a little but the issue will still be the relationship between track bed, retaining walls and adjacent grade elevation at the maintenance access road. All of this will require careful study and coordination.

If so directed by NJ TRANSIT, our team will complete the preliminary and final design of the pedestal pit based on



the feasibility report approved by NJ TRANSIT; however, no design work will be commenced without authorization from NJ TRANSIT.

Phase 1B Preliminary Design

The 30% preliminary design will reflect the results of the conceptual design and direction received from NJ Transit regarding alternatives. It will also be coordinated with our Long Slip Fill contract documents and adjacent projects. Along with the drawings the submission will include the Project Definition Report.

Subtask 4.2 - Preliminary Design

As an initial activity, the AECOM Team will prepare a Phase 2 Project Definition Report. This report will identify the basis of design including technical assumptions, pre-requisite site conditions as established for the Phase 1 project, Structural and rail systems design criteria, expected permit stipulations and performance requirements for all applicable Phase 2 project elements. In addition, the report will summarize both resolved and outstanding issues with project stakeholders, particularly where related to design or performance criteria.

Preliminary design activities will also include development of preliminary drawing and specification lists, a preliminary construction schedule and an updated cost estimate. Coordination activities related to adjacent projects currently in progress, particularly with regard to the new Henderson Street Substation and related services, will continue.

As part of the project's Phase 1 activities, the AECOM Team will validate the conceptual design basis with respect to platform configuration by performing a pedestrian flow assessment to certify compliance with applicable codes concerning evacuation and access/egress requirements. In conjunction with the Phase 2 project activities, access/egress issues will continue to be assessed in accordance with the ADA Standards for Accessible Design, NFPA 130 – Standard for Fixed Guideway Transit and Passenger Rail Systems and applicable building codes. The AECOM Team will work closely with the NJ TRANSIT platform design team to insure code conformance and site development compatibility.

The proposed platform arrangement and surrounding site geometry present several egress challenges. Code compliance for egress will be complicated. Each island platform is proposed to be 18' wide and approximately 1000 feet long. This





creates an occupant load of approximately 1200 people using 15P/SF for the A-3 use group. All of these code parameters have been agreed to between NJ TRANSIT and the DCA over several years of interactive discussions and agreements. The proposed layout shows egress at both ends of the platform; to the east will be the primary access to the terminal and to west the intent is that an emergency egress corridor below the platform will be provided to the adjacent city street. The code mandates that no more than 50% of the total exit capacity can be assigned to one means of egress, meaning that the two platform ends would need to accommodate the emergency egress capacity equally unless a third exit location were to be created. Given that requirement, the population exiting to the east could easily be accommodated in a plaza like space created between the new Crew Quarters Building/Station being designed by NJ TRANSIT and the platform ends.

To the west this becomes more problematic. The proposed platform width of 18' creates a distance between adjacent track centers of about 29 feet causes the maximum available width of a platform end stair or ramp to be only 12 feet which would allow for less than 480 people using the code requirement of .3" per person. This will not satisfy the requirement of 600 people on a 1000 foot long platform. An alternate would be to add a third means of egress at the midpoint of the platforms, but there would need to be discussion of accessibility and the already narrow platform width.

The use of a 12' ramp would be more beneficial (.2" per person), but that would require that the ramp be of significant length that would likely interfere with the track layout. These are all issues that would have to be examined during the preliminary design phase and referred back to the NJ TRANSIT team that is designing the platforms and canopies.

Subtask 4.3 - Update Design Criteria

The AECOM Team will review and update the general and project specific design criteria by discipline for all project elements included in the scope of work. New requirements and modifications identified during the Phase 1 design as well as structural and rail systems design criteria will be addressed. Updated criteria will be included in the Project Definition Report referenced previously.

Subtask 4.4 - Track Design

As part of the conceptual design effort, the AECOM Team studied the track configuration developed by NJ TRANSIT in conjunction with the FTA grant application and evaluated alternatives to optimize land use and site development considerations. That effort is currently continuing with refinements based on using larger turnouts and addressing operational factors. The minimum elevation of the top of rail will be 14.5. Validation of the conceptual design basis will continue through the coming months under the current scope of work as the AECOM Team performs capacity simulations using RTC software to assess proposed rail operations. The simulation study will allow the AECOM Team to test the expected train performance of alternate configurations against one another; in addition, the model can assist the engineering effort by testing the most cost-effective and/or buildable solutions against the operating requirements provided by NJ TRANSIT.

Under the proposed scope of work, the AECOM Team will advance the previous design development plans and prepare preliminary and final design documents. In addition to operational considerations, the key issues associated with finalizing horizontal and vertical alignments are primarily related to surface impacts, clearances and structural interfaces. Beginning at the western interface, the new alignment will pass over Marin Boulevard on a new bridge structure between two existing bridges, both with substandard clearances. It will then pass over the western portion of Pullman Yard as it extends to the closure abutment near the west end of Long Slip. The objectives of the design refinements will be as follows:

- Optimize horizontal / vertical curve locations and special trackwork configuration
- Minimize surface impacts to Pullman Yard
- Maximize vertical clearance over Marin Boulevard and the Long Slip access road
- Optimize viaduct support pier locations
- Avoid surface and subsurface impacts to existing utilities, particularly the JCMUA CSO pipe
- Avoid impacts to proposed new Henderson Street Substation and its utilities
- Consider future HBLR initiatives such as the wye bypass track
- Maximize accessibility to the HBLR substation at grade north of the wye
- Minimize impacts to current operations
- Consider constructability and future maintenance



The track design team will pay particular attention to turnouts and crossovers at junctions with existing rail lines and from the yard lead tracks to avoid special trackwork in horizontal or vertical curvature. Long lead components of the track design will be identified and their installation schedule implications analyzed. Preliminary track construction phasing at junctions with existing Track 4 (Main) and Track 119 will be developed.

The AECOM Team will fully coordinate the track design with related structural support systems, catenary structure locations and access requirements. The team will work closely with NJ TRANSIT to address interfaces with rail infrastructure, particularly with regard to integration of the signal system and interlocking as well as the proposed station platform design provided by NJ TRANSIT.

Special attention will be made to identify and minimize property impacts, grades, clearances and adverse impacts to operations and constructability. Track geometry must allow for vehicular access, both emergency and maintenance, and pedestrian access to the terminal and yard facilities.

Subtask 4.5 - Civil Design

There are a number of civil engineering challenges that must be addressed early in the design process. The AECOM Team is currently providing conceptual design development for this aspect of the project and is well versed in the key issues which include the following:

- Preparation of the canal fill site to facilitate foundation construction
- Grading, drainage and demolition in the vicinity of the viaduct structure
- Resolution of utility impacts east of Marin Boulevard
- Coordination of Long Slip site development with current and future projects
- Construction sequencing and staging to minimize operational disruptions while maintaining accessibility
- Contractor staging and laydown areas

Under its current design services, the AECOM Team has developed a plan for filling the canal and placing an earth surcharge above for a consolidation period. The Phase 2 scope of work will include removal of the surcharge when the settlement objectives have been achieved and placement of a low density structural fill material up to the underside of

the planned subballast. The sequencing of these activities in conjunction with the installation of the perimeter retaining walls and west closure abutment will be addressed during preliminary design.

Construction of the viaduct from Marin Boulevard to Long Slip will require demolition and regrading of a portion of Pullman Yard. In addition to track removal and resetting of bumpers east of the viaduct, a new access/service roadway is expected to be extended from the north side of Long Slip, under the viaduct and exiting the site at approximately the location of the existing gate on Marin Boulevard. The issue of available vertical clearance is critical at the roadway underpass and some regrading is expected to be required to maximize the clearance. The AECOM Team is very familiar with all of the related issues including grading and drainage at the underpass as well as potential utility impacts and is currently working on solutions as part of the current Phase 1 project activities.

There are a number of projects in the design or planning stage that have interfaces or potential impacts on the Long Slip Project site development. The Henderson St. Substation replacement project, just south of the planned Long Slip viaduct, has been considered by the AECOM Phase 1 Long Slip design. Project interfaces with respect to its access road and utility services will be incorporated into planning and preliminary design of the viaduct structure. In addition, the Long Slip design will plan for a future "Wye" bypass track associated with the Hudson-Bergen Light Rail (HBLR) system along the south side of the project site. As the Design-Build-Operate-Maintain contractor and current operator of the HBLR, AECOM has intimate knowledge and site specific reference material available to facilitate evaluation of project interfaces.

Finally, the AECOM Team expects to devote a considerable effort, in close coordination with NJ TRANSIT, to developing a logical plan of construction sequencing and staging to minimizing operational disruptions while maintaining accessibility for normal and emergency operations. The areas west of Marin Boulevard and within Pullman Yard will be specifically and separately addressed. The Team will also perform independent constructability reviews at key milestones to insure all issues and interfaces are considered.



Subtask 4.6 - Buildings and Structures

The AECOM structural team assembled for this project has extensive experience designing railroad bridges and structures. Key members have held key roles on the following NJ Transit projects: Hudson Bergen Light Rail, Long Slip Phase I, Mainline Second Track, Rancocus Arch and trestle, Secaucus Transfer Station and Mainline bridges. We have designed numerous structures similar to the ones identified in this project.

The AECOM Team will provide the structural engineering and design of the following structures:

1. Viaduct from Marin Boulevard to Long Slip
2. Thru girder bridge over Marin Boulevard
3. Major Drainage Structures
4. Retaining Walls
5. Access Ramps
6. Catenary Poles / Structures / Foundations
7. Major Utility Supports

8. High Level Platform Foundations
9. Crew Quarters Building Foundation
10. Misc. signal, communications, control and electrical rooms / enclosures

The successful structural designs for this project will provide solutions that are well coordinated with the other disciplines, meet the needs of NJ Transit preferences regarding operations and maintenance, and work around existing site constraints such as utilities. The existing site is quite constrained and there is little room for construction and staging areas for the contractor. In addition, it is paramount to minimize operational impacts to NJ Transit.

We will also prepare designs that will enable the contractor to utilize like construction equipment and methods for the different components. This will make the structures easier to construct and be more efficient for the contractors.



Viaduct and Bridge Structures

In general, we will provide bridge and viaduct structures that are comprised of longitudinal steel stringer bridges with cast in place decks and with ballasted decks. However, the bridge over Marin Boulevard and the viaduct span above the access road to long slip will need to be thru girder bridges to maximize the vertical clearance of the roadways below. The Marin Bridge will also have to have an open deck with direct fixation due to extremely tight clearances.



Due to the number of underground utilities and limited space for spread footings or pile caps, we believe that drilled shafts would be the most appropriate foundations for these structures. The drilled shafts can be located to place them between utilities due to their small footprint. If drilled shafts are used at different locations we will attempt to make them of uniform size to minimize the number of rigs that the contractor will need.

Viaduct from Marin Boulevard Bridge to Long Slip

The structure will be a 5 or 6 span viaduct comprised of primarily longitudinal stringers with a cast in place concrete deck with ballast. All spans will be simple supported. Due to the track geometry the stringers will be flared to follow the track layout. It is anticipated that the span over the access roadway will be a thru girder bridge to minimize the structure depth and provide the maximum vertical clearance below. The piers will be comprised of drilled shafts and a precast concrete cap upon which the superstructure is placed.

Under Phase I the AECOM / URS team will design the west wall of the Long slip fill area to be a cast in place abutment with the abutment seats placed low. The new viaduct structure will be supported by pedestals built into the URS designed abutment.

Marin Boulevard Bridge

The structure over Marin Boulevard is anticipated to be a through girder-floorbeam structure that will mimic the style of the recently constructed through girder bridges adjacent to the proposed location of this bridge. The bridge will carry both tracks from the rail yard to the main tracks. In order to maintain the same minimum vertical clearance below the structure (currently posted as 12'-3"), the through-girder floorbeam structure appears to be the most appropriate structure type. Based on field observations, the adjacent NJ TRANSIT bridges over Marin Boulevard are open deck structures. However, during the early stages of the project, we will consider several types of bridge superstructures (including a ballasted deck) in order to determine the most efficient and cost-effective structure.

Depending on the final span length of the structure and on the final horizontal spacing of the tracks, the bearings for the main girders may be either reinforced elastomeric bearings or disc bearings.





To the east, the span over Marin Boulevard will be supported by a pier of the adjacent viaduct structure. To the west, the span over Marin Boulevard will be supported by a full-height wall type abutment. The wall of the proposed abutment will be aligned at both its north and south ends with the abutments of the adjacent bridges over Marin Boulevard. If required, the facing of the proposed abutment can also match the stone facing of the older adjacent bridges. Embankment fill will be required to create the necessary rail embankment behind the proposed west abutment. The proposed structure will also be flanked by an approach slab on the west end of the structure.

It is our understanding that NJ TRANSIT prefers conventional cast-in-place reinforced concrete retaining walls where necessary. All bridge and other structural work will be performed in accordance with AREMA Chapters 8 and 15, as modified by any preferences of NJ TRANSIT Structural Design personnel.

Platform, Canopy and Crew Quarters Foundations

It is our understanding that the station platforms, canopies, buildings and crew quarters are being designed by NJ TRANSIT forces. Our team will obtain all necessary plans, details and

specifications from NJ TRANSIT to determine loads that will be applied to the design of all foundations required to support these structures. All of the foundation plans and specifications will be included in the contract documents for this project.

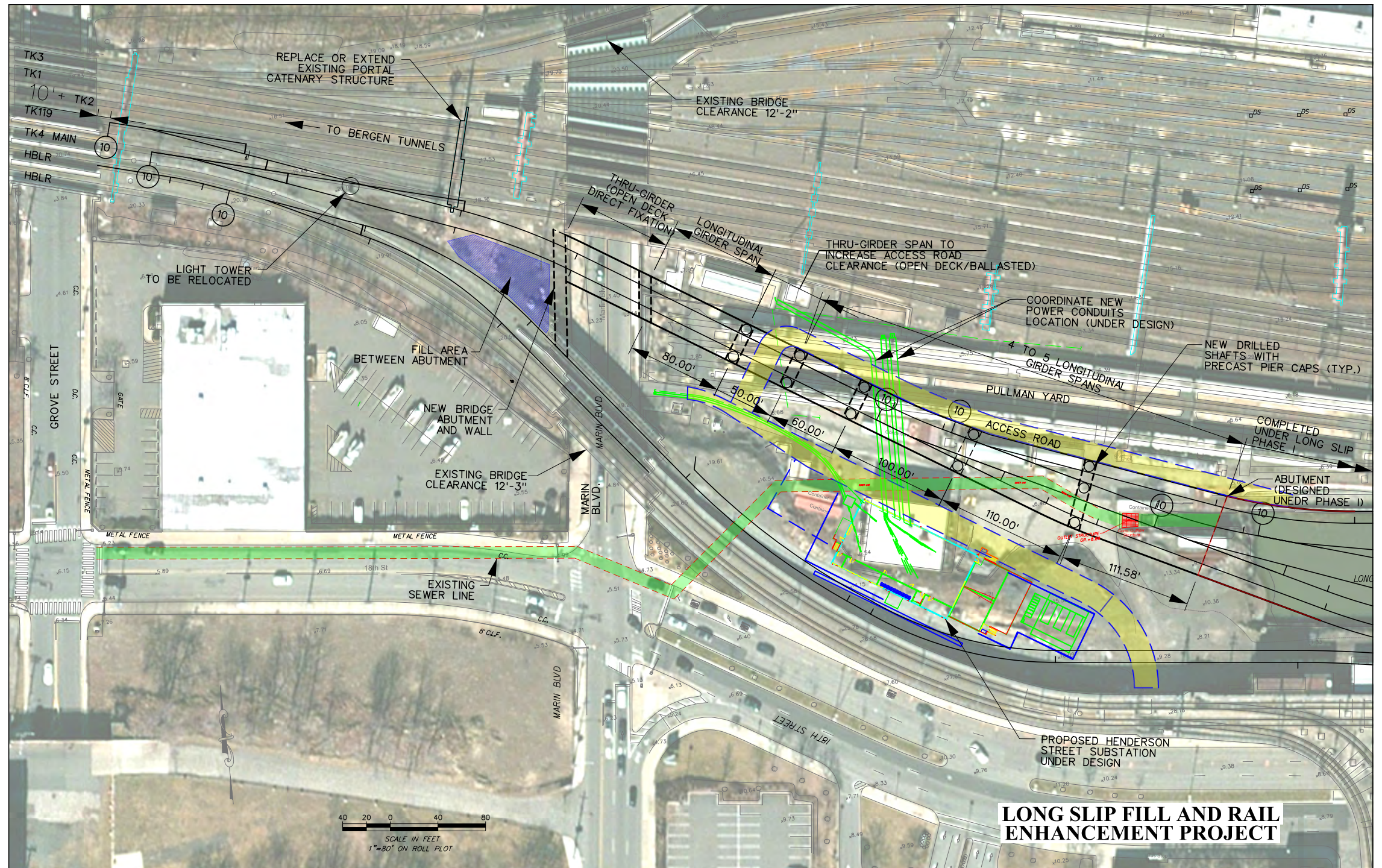
Among the items that will be considered under this task include the analysis of site, track and platform widths to insure emergency vehicular access, passenger movements, maintenance vehicle access, and safe refuge areas for passengers in the event of an emergency

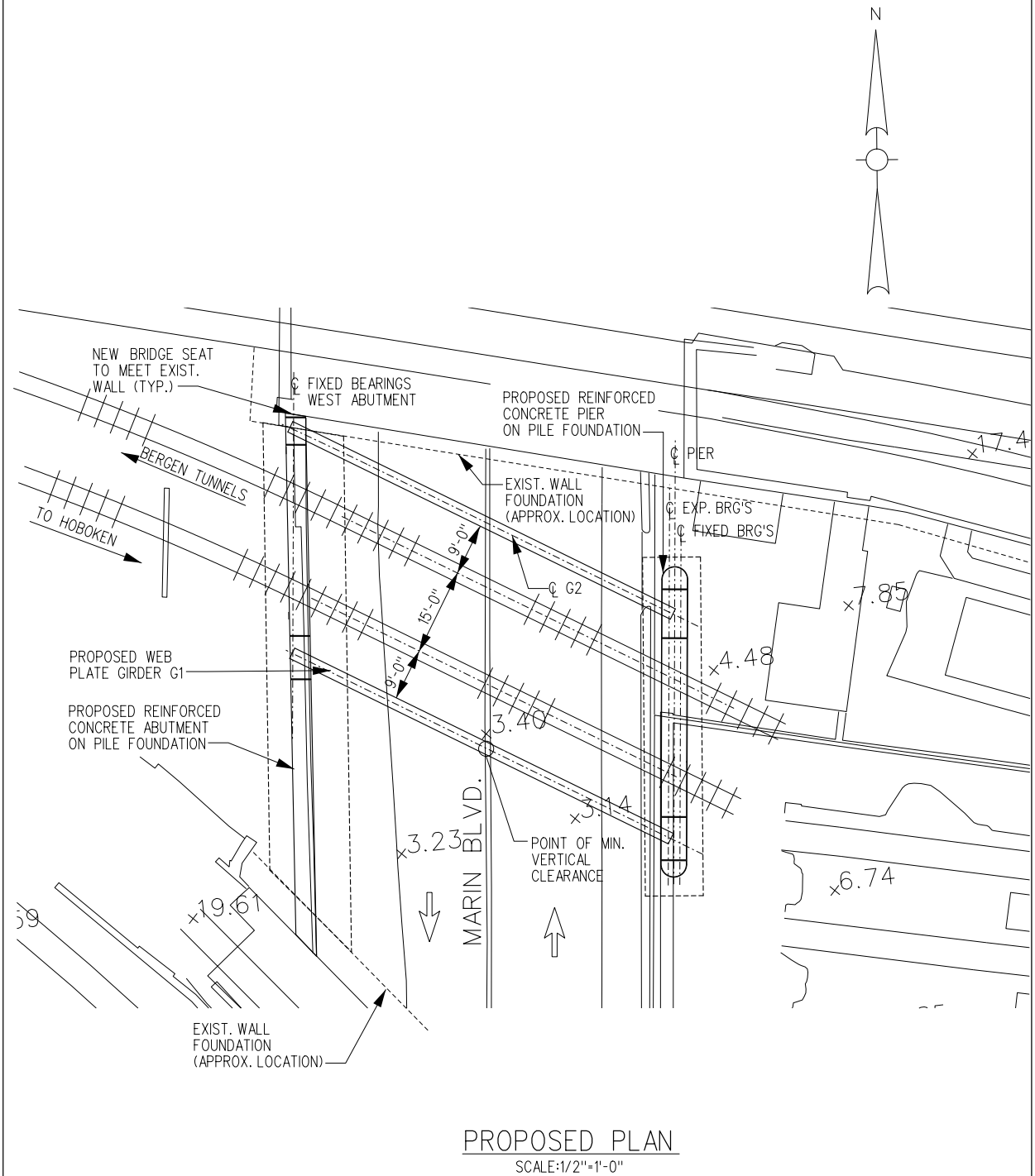
It is our understanding that foundation designs for platforms, canopies, buildings and crew quarters will require review by the Port Authority of New York and New Jersey, and that structural monitoring during construction may be required as it related to PANYNJ (PATH) facilities in the immediate area.

Retaining Walls

Retaining walls will be needed on the west side of the Marin Boulevard bridge abutment as either wingwalls running parallel to the track or as walls running perpendicular and tying into the two abutments for the bridges on either side. There could be merit to attaching the abutments and providing a wall between







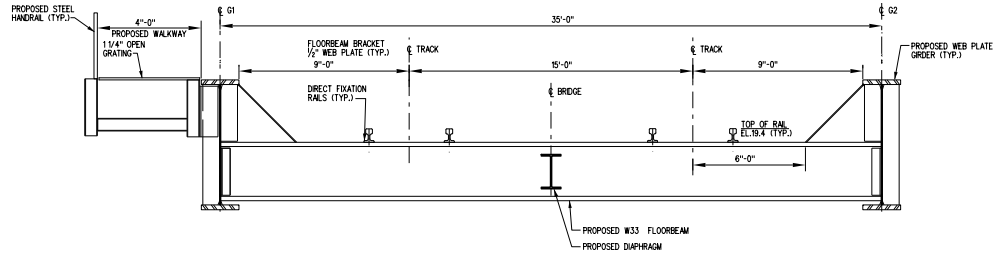
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CANAL FILL AND RAIL ENHANCEMENT
PROJECT

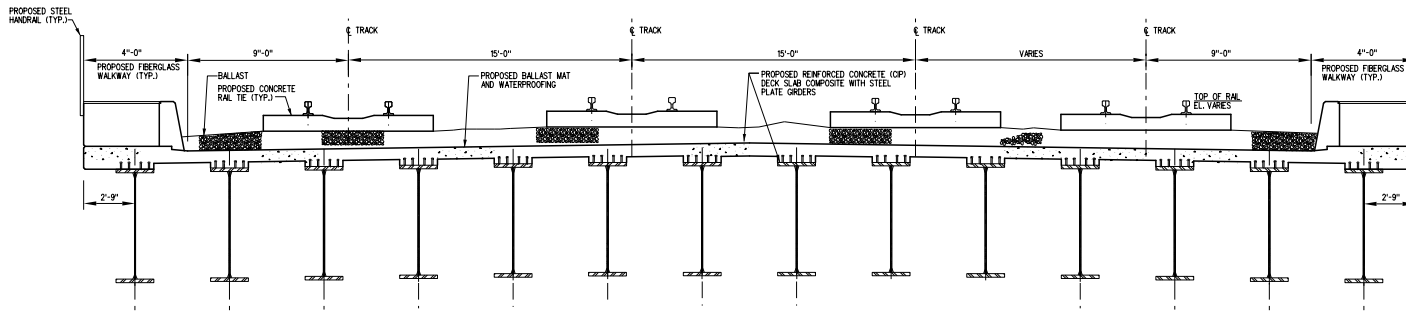
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PROPOSED SECTION
THROUGH GIRDER STRUCTURE AT MARIN BLVD



PROPOSED SECTION
LONGITUDINAL GIRDER



URS
URS Corporation

DRAWN:

CHECKED:

APPROVED:

PROFESSIONAL ENGINEER
N.J. LIC. No.

DATE: _____

TRACK AND STATION
ENGINEERING & CONSTRUCTION
ASSISTANCE SERVICES FOR LONG SLIP
CANAL FILL AND RAIL ENHANCEMENT PROJECT



the existing abutments. These options will be studied as part of the preliminary design.

If the Long Slip access road needs a vertical clearance that cannot be achieved solely by using the through girder structure above, then the road may need to be depressed. If this is necessary, then retaining walls will be designed to retain the adjacent fill.

Catenary poles and structures will be designed and the supporting bridge or viaduct structures will be designed to accommodate the loads from the OCS system. This will be carefully coordinated with the OCS group.

Major Drainage Structures

- It is assumed that a total of two major drainage structures will be modified / designed

Major Utility Support

- It is assumed that a total of three utility supports will be designed

Structural Fill

- A structural fill will be developed to rest on top of the stabilized soil base as part of the URS contract. The fill will be designed to accommodate the loads from the retaining walls and platform / canopy footings. The design of the foundations will be coordinated with our design for the first phase

Foundations for the below noted structures will be designed to the Final 100% level. We will coordinate with the NJ Transit groups providing the design of the structures to obtain the loads on the foundation.

- Platform and Canopy Foundations – It is assumed that the foundations will be a spread footing with a hammerhead and that the components will be pre-cast. The canopy will mount to the top of the platform hammerhead. The platform deck and canopy design will be provided by others.
- Station / Crew Quarters Building Foundations – Drilled shaft and reinforced concrete cap beams will be designed to accept the building reactions. The building loads are to be provided to URS, by others, for the design of the foundations

Subtask 4.7 - Traction Power / Electrical Design

With the Long Slip Canal Fill and Rail Enhancement Project, NJ TRANSIT will be able to increase Hoboken Terminal Station capacity by adding six additional tracks with three new platforms above the former Long Slip Canal. Two new lead tracks will emanate from Track 4 Main and Track 119 that further branch off into a total of six new tracks, all with an Overhead Contact System (OCS) wire. These six new tracks will be provided with three new platforms, each platform will have canopy lighting serving a pair of tracks with OCS. The addition of six new tracks may result in enhanced traction power requirements. However, it is presumed that NJ TRANSIT has already taken this into consideration and Grove Auto Station, which in turn is connected through two 27.6 kV feeders to Mason Supply Substation, has sufficient capacity to meet the enhanced traction power requirements.

For the trains to operate on the two new Long Slip lead tracks and the associated branch tracks, an Overhead Contact System will be provided. The OCS on the lead tracks will be connected to Track 4 and Track 119 that are energized through Trolley Breakers T4E and TMT in Grove Auto Station. The Long Slip lead tracks will be sectionalized from the mainline through section insulators with motorized bypass disconnect switches capable of being remotely operated from the Rail Operation Center at Kearny through SCADA system to a new Remote Terminal Unit housed in a new RTU building. The RTU will be designed to include a Programmable Logic Controller and will be carried out in accordance with NJ TRANSIT design standards and in coordination with NJ TRANSIT's Rail Electrical Traction Power Department.

The AECOM Team understands there are other projects occurring in the vicinity such as the new Henderson Street Substation that must be coordinated. In addition, new platform canopies and a new Crew Quarters Building at the east end of the Long Slip Canal will be designed by NJ TRANSIT. Necessary coordination and interface will be done with the other teams that are doing structural and electrical power design for these allied projects to come up with a suitable power supply arrangement including the design for the feeder line routing, and canopy lighting on the new three platforms.

Our proposal includes an allowance of 200 hours to relocate electrical feeders on the new catenary poles that will be used only at the sole discretion of NJ TRANSIT and this time



allowance will be utilized and charged only when explicitly authorized by NJ TRANSIT.

Due to the proximity of Long Slip project to the existing Hudson Bergen Light Rail that operates at 750V dc, stray current control analysis will be performed to analyze the interfaces between the new and the existing systems to recommend stray current and corrosion control mitigation measures as necessary.

Initially, the AECOM Team will establish lines of communication with the other project teams in the area. This will be followed up with a kick-off meeting with NJ TRANSIT Electric Traction Department to gather all the relevant documentation from NJ TRANSIT and to develop the most suitable design for the traction power feed arrangement and OCS. These designs will meet all the operating requirements of the railroad, provide easy sectionalizing capability and ease of maintenance.

Specific documents that the team proposes to gather include:

- NJ TRANSIT Design Standards
- As-Built Drawings
- OCS Plans near the Proposed Long Slip Canal turnouts from the mainline
- Relevant details and directive drawings
- Site and Building Layout Plans for the Grove Street Autotransformer Station
- Single Line Diagrams
- Sectionalizing Diagrams
- Grove Street Autotransformer Station Drawings
- Henderson Street Switch House drawings and feeding circuits
- Traction Power Load Flow Studies for:
 - Mason Supply Substation
 - Grove Street Autotransformer Station

Traction Power Technical Approach

The AECOM Team will identify where the traction power will come from to feed the OCS. There are several options on how to provide power to the new OCS. Each option requires that we review various Traction Power Load Flow Studies to determine the capacity of the existing traction power system.

Option 1 (included in AECOM proposal): Utilize existing circuits, no additional equipment proposed in Grove Autotransformer Station.

In the existing set up, Trolley breaker TMT Breaker feeds Track 4 Main OCS. The OCS on new Long Slip lead track emanating from Track 4 Main will be connected to mainline OCS through a motorized sectionalizing switch (normally closed). This will provide sectionalizing to the proposed three southern platform tracks; Track 1, Track 2, and Track 3.

In the present set up, Trolley breaker T4E Breaker feeds the OCS on Track 119. The OCS on new Long Slip lead track emanating from Track 119 Lead will be connected to mainline OCS through a motorized sectionalizing switch (normally closed). This will provide sectionalizing to the proposed three northern platform tracks: Track 4, Track 5, and Track 6.

Option 2 (this option is not part of the AECOM proposal)

If in our interaction with NJ TRANSIT, it is found that the trolley breakers TMT and T4E in Grove Street Autotransformer Station are presently working at full capacity and cannot handle the additional Long Slip track load, and if NJ TRANSIT requires it, we can provide a complete design for the addition of new trolley breakers at Grove Auto Station and also analyze the capacity and the loading on the existing autotransformers to make further informed decisions. There appears to be sufficient space available to add a new breaker to the trolley bus to feed the Long Slip tracks by simply expanding the yard fence area.

Option 3 (this option is not part of the AECOM proposal)

Based on the load analysis as described in the Option 2 above, if it is realized that the existing autotransformers in the Grove Auto Station have reached their capacity limit, and if NJ TRANSIT requires it, the AECOM Team will determine if Grove Auto station has space available to add a new autotransformer and trolley breaker to feed the Long Slip tracks. The capacity of the existing feeders from the Mason Supply Substation to Grove Auto Station would also be analyzed in this design option.

If space is available in the existing station footprint, a new autotransformer and trolley breaker would be installed to provide trolley feed to the new Long Slip lead tracks.

Option 4 (this option is not part of the AECOM proposal)

If Grove Street Autotransformer Station requires capacity enhancement and there is not enough space to add a new autotransformer and a trolley breaker, a possible solution would be to install a trolley feeder all the way from Mason Supply



substation through North or South Bergen Tunnel tube to provide traction power feed to the Long Slip lead tracks.

Overhead Contact System Approach

The new Overhead Contact System (OCS) will consist of a two wire (messenger and trolley) simple catenary, fixed termination system energized to 27.6 kV AC. The design will satisfy the NJ TRANSIT design standards and electrified rail related codes. There are at least seven distinct sections of the Long Slip rail alignment that require careful consideration in relation to the OCS.

The first distinct section is the turnouts off of the mainline tracks to the Long Slip Station. In order to begin the OCS, a structure is required to terminate the messenger and trolley wire. We will review the feasibility of using existing structures near the Long Slip lead tracks before proposing new structures. If new structures are to be proposed, they will be selected from the standard NJ TRANSIT catenary poles for termination loads. As for the foundation, it is expected that a caisson will be most efficient. To maintain electrical continuity between the existing OCS for Track 4 Main and Track 119 and the Long Slip Rail Yard OCS, jumpers will be implemented as required.

Just east from the turnouts of Section 1 is Section 2. Here we noticed an existing portal structure with a brace that will likely penetrate the clearance envelope of the proposed Long Slip rail facility track. This portal structure spans Tracks 3, 1, 2, 119, and 4 Main. In order to not impact the proposed track alignment, we propose two solutions to this problem. The first option to be investigated involves extending the existing portal to span the additional 2 lead tracks. After conducting an analysis of the existing structure's capacity, additional support may be required. The other option involves designing and erecting a completely new portal that spans all seven tracks, and then remove the existing portal after supporting the Main Line Tracks' catenary from the new portal.

Section 3 of the alignment is along a through-girder bridge. Due to geometric constraints, it is preferable not to use median pole structures. One clear option is to mount the catenary poles on brackets (an outrigger system) that will be attached to the outer face of the girders. There is another option which involves placing the poles beside the bridge structure such that caisson foundations may be used. We noted that due to a turnout for a branch track, a termination pole will be required in this section. If placing the termination pole beside the bridge

structure is not feasible, the AECOM Team will modify the bridge pier cap design to accommodate the termination load.

Between Section 2 and Section 3, we will provide section break insulators that can be bypassed with motorized sectionalizing switches. In the event that a new trolley breaker is required and installed at Grove Street autotransformer station to feed the Long Slip tracks, separate feeders will be designed and installed for the new OCS.

After the bridge and adjacent to the filled canal, we come across Section 4. This is west of the lead tracks branch into the six yard tracks. This area will require new OCS terminations and thus termination poles. Depending on site soil conditions; the AECOM Team may consider integrating the termination poles with the retaining walls or bridge abutment.

Section 5 is slightly east of Section 4 such that it's within the filled canal, but west of the proposed platforms. This area may have portal structures or pole structures. The team will investigate whether the foundations will be spread footings supported much like the tracks are by the foam concrete or standard caisson foundations.

At the platform area (Section 6), three options are available for the catenary structures and each of those options have two options for the foundation. All options will require coordination with the NJ TRANSIT Design Services Unit. Option 1 for the catenary structures is to use median poles, centered on the platforms. Option 2 is to use a portal structure with the columns on the outer platforms and using standard cantilever arms for Proposed Tracks 1 and 6 which are on the outside of the portal structure. Option 3 is a portal structure with two bays; where the outer supports are integrated with the retaining wall and the middle support is integrated with the platform.

Still within Section 6, the foundations for each of the three listed options are as follows. Option 1 is to penetrate through the platform and canopy such that the catenary structure is supported on a spread footing that is independent from the platform foundation. Option 2 is similar to Option 1, except that the catenary structure will be supported on top of the platform pier.

The last distinct section of the alignment, Section 7 is at the end of the station tracks. This is where the six sets of catenary wires must be terminated. A simple solution is to terminate each track's OCS to its own termination pole. These poles will



have a deep shaft foundation or be integrated into the retaining wall structure. However, due to the OCS proximity to the proposed Crew Quarters facility, the AECOM Team will consider using either guy wires from the termination poles to the facility or avoid up to 4 poles and terminate to the facility directly. This will require coordination with the NJ TRANSIT Design Service Unit and as such, the AECOM Team will provide structural design advice related to OCS support off of this facility.

Platform Lighting Technical Approach

The AECOM Team will meet with the NJ TRANSIT passenger station engineering department to determine the type of light fixture they wish to include as part of AECOM design on the Long Slip platforms and to determine NJ TRANSIT standard foot candle requirements. AECOM assumes the light fixtures will be similar to the existing fixtures that are presently under the canopies in Hoboken terminal for consistency purpose, but we will provide whatever NJ TRANSIT Engineering feels is most suitable including antique and energy efficient light fixtures. The platform lighting can be designed using tapered tubular pole mounted light fixtures on the center of each of the platforms or under the platform canopy.

Each platform will have multiple circuits feeding every other light fixture so that in the event of a circuit fault there will always be lighting on the platform. We will provide lighting distribution panel for each platform with either a time clock or dawn to dusk photocell to turn the lighting on and off. Each lighting panel can be fed from the closest available source which can be coordinated with other NJ TRANSIT projects such as the Crew Quarter building that will require three phase, 480 Volt service and can easily be stepped down to the required lighting voltage and extended to feed the lighting panels. Otherwise service can also be obtained either from the new Henderson Street Switch house, the existing Hoboken Terminal substation or from the Ferry Switch House.

Subtask 4.8 - Signal Design

The signal system design and any necessary modifications to the existing system will be completed by NJ TRANSIT using in-house staff. The AECOM Team will fully coordinate and assist NJ TRANSIT with any interface issues to insure an efficient operation system that achieves the project goals.

Subtask 4.9 - Cost and Schedule

Following NTP, the AECOM Team will develop, with the NJ TRANSIT, the work breakdown structure (WBS) for the project, level of detail of the cost estimate and the FTA Standard Cost Category (SCC) estimating format. The estimate will be organized and sorted by FTA SCC codes with sub-sections and summaries by WBS location. The estimate will also separate contract from force account work, consistent with the project documents. The estimate will identify takeoff quantities, provided by drawing, vendor and material quotes, material and labor productivity calculations, schedule of burdened labor rates, cut and fill estimates and references to published cost data as applicable.

For force account work, the AECOM Team will request applicable wages, crew makeups and productivities from NJ TRANSIT in order to determine costs of work to be performed and constraints on adjacent work.

Following the completion of Preliminary Design, the AECOM Team will prepare the Preliminary Cost Estimate for each element of the project. The cost estimate will be based on current prices and will be escalated to the mid-point of construction based on an estimated construction start date. Costs will be sorted by FTA SCC cost categories and grouped according to WBS cost centers as previously noted and will contain appropriate contingencies.

Based on constructability aspects of the project, the AECOM Team will develop appropriate productivity rates, reflective a project being constructed adjacent to an active rail yard and terminal. At the Preliminary Design stage, the Team will solicit quotes for major procurement items from specified vendors as well as others from the Blue Book, Sweets Catalog etc. The quotes received from the vendors will be reviewed and incorporated into the Estimate.

The Preliminary Construction Cost Estimate will be issued within two weeks of the Preliminary design submittal. After NJ TRANSIT review, AECOM will prepare a revised cost estimate incorporating stakeholder comments on the Preliminary Design estimate.

Similarly, as the 30% design is prepared, the AECOM Team will review prior design assumptions and will conduct a site visit to understand the existing construction constraints. The preliminary schedule will be consistent with the scope of the



project at the 30% design stage and will show the estimated duration for major elements of the project commensurate with the status of design development. Potential construction packaging will also be evaluated.

Subtask 4.10 - Supplemental Survey

Recent survey base maps and supplemental ground survey previously prepared and utilized for conceptual design development will be re-evaluated to determine if selective updates or additional supplementation is required to support completion of final design documents. Particular emphasis will be given to the identification and measurement of critical horizontal and vertical clearances from Marin Boulevard to Long Slip to support the track design and structural engineering activities.

This subtask will also address survey support for the proposed geotechnical and environmental subsurface investigation programs as well as temporary and permanent utility relocations. Where a need for test pits probes or other geophysical testing is identified to evaluate existing subsurface conditions, the survey subcontractor will provide horizontal and vertical control to insure that the investigative survey results are accurately incorporated into the topographic maps.

In addition, survey data including surface features and underground utilities developed for NJ TRANSIT by other consultants in conjunction with adjacent projects will be reconciled by the AECOM Team where the projects have overlapping interests. This effort will include data collection, identification and resolution of conflicts as well as required coordination with the NJ TRANSIT Team.

Subtask 4.11 - Utility Relocation Preliminary Estimates

The AECOM Team will inventory and update the utility information within and immediately adjacent to the project limits that was collected and documented during the Phase 1 design stage. Composite plans of existing utility data previously prepared and collected will be electronically catalogued for future reference. The Team will identify the locations of possible utility impacts or conflicts resulting from the project and determine the required improvement. Although little or no impact to public utilities are expected in the Marin Boulevard right-of-way, there are a number of overhead and underground utilities and rail systems that are expected to be

impacted by the new bridge and viaduct system adjacent to and over Pullman Yard. Coordinated utility relocation drawings will be prepared for each system element addressing separation criteria, external loading, construction staging and system interfaces.

In conjunction with design development, the AECOM Team will develop preliminary utility cost estimates for all temporary and permanent work, including providing support during construction. The Detailed Cost Estimate stage will include material, labor and equipment quantities and cost in FTA SCC format and grouped by WBS code. Special attention will be given to interfaces among utility providers, NJT force account and third party contractors. Through discussions with the designer and NJ TRANSIT, JCMS will determine which work will need to be performed outside normal hours or out of sequence. The cost impacts as the result of these situations will be reflected in the estimates accordingly.

- If required, the Team will prepare sketches, plans, and agreements, along with descriptions of work, to accompany utility permit applications. The Team will also be available to assist NJ TRANSIT in preparing agreements for the correction of utility-related problems with the respective utility owners, if required. However, as previously stated, no public utility issues are anticipated.

Subtask 4.12 - Geotechnical Investigations

The AECOM Team is fortunate to include Yu & Associates to provide geotechnical engineering services for Phase 2 of the Long Slip Project. YU, being involved with both the Hudson Bergen Light Rail Transit (HBLRT) project (including the HBLRT bridge over Marin Boulevard) and Phase 1 of Long Slip Channel filling and surcharging, is uniquely qualified and well suited to perform geotechnical work for Phase 2 of this project. YU is most familiar with the subsurface and site conditions and project requirements. Based on nearby test boring data, the site area may have a fill layer about 10 to 15 feet thick, overlying marine clay, glacial soil and then bedrock. Bedrock may be encountered at 40 to 60 feet below street level. It is our understanding that the new bridge, viaduct and crew quarters building will require drilled shaft or pile foundations. The foundation type(s) for other structures, such as platforms (to be supported by footings per Phase 1) and catenary structures (to be supported by drilled piers per Phase I), will need to be confirmed. The following geotechnical services are anticipated to be included in the scope of work:



YU & Associates, as part of the AECOM Team, will review all available preceding conceptual design work prepared by AECOM and others (if any) with respect to anticipated geotechnical concerns. YU worked with AECOM as their geotechnical subconsultant during the channel filling design and conceptual design for the proposed track and structures in the project area. YU will assist AECOM in the geotechnical related items to develop a project plan for preliminary through final design.

In conjunction with Task 4.1b (Pedestal Pit), YU will assist the AECOM Team to prepare a feasibility report and conceptual design to construct a pedestal pit adjacent to the center island high level platform on the northern most track. Geotechnical assessment and preliminary analyses for the pedestal pit will be conducted by YU and the AECOM Team. Input in foundation and geotechnical related items will be provided to assist the team in a preparing preliminary level construction cost estimate and schedule.

Upon review of all available subsurface information, the AECOM Team will develop a geotechnical investigation program for additional borings with soil/rock sampling and testing as necessary. Test borings will be drilled at the bridge abutment, viaduct pier and retaining wall locations as well as locations of other structural elements as necessary. Soil and rock laboratory testing including index testing, strength testing and consolidation of marine clays will be conducted. After the proposed geotechnical investigation program is approved by NJ TRANSIT, the AECOM Team will retain a specialty subcontractor to conduct the field investigation work and will oversee the field operation on a full time basis. As part of the geotechnical engineering evaluation, the team will conduct a site specific seismic analysis to assess the seismic characteristics of the site for the bridge and other structures. The team will conduct a liquefaction potential study of submerged soil induced by seismic shaking. Potential impact to the existing 10-ft diameter combined sewer will be studied. The AECOM Team will prepare a geotechnical report to summarize results of subsurface profiles, boring logs/plan and analyses of each discrete project element. Note that the geotechnical investigation program with foundation recommendation at the proposed crew quarters building is anticipated to be part of the Phase 1 work.

Subtask 4.13 - Environmental

The AECOM Team will provide technical support to NJ TRANSIT and their environmental consultant in conjunction with environmental subsurface investigations and permitting support to address regulatory agency issues. Contract documents will incorporate the Soil Management and Reuse Plan into the Environmental Health and Safety Plan provided by NJT. The Team will support the permit application process by others including preparation of project component descriptions and providing in-progress design drawings and enhanced graphics of the design plans for reporting purposes. The AECOM Team will also incorporate explicit permit conditions provided by the regulatory agencies into the plans and specifications and will provide designs that provide a particular emphasis on storm water management and soil erosion and sediment control measures.

Subtask 4.14 - Optional Pit Pedestal

If directed by NJ TRANSIT, the AECOM Team will complete the preliminary design of the pedestal pit discussed in Subtask 4.1b. AECOM will not charge any time against this task, unless explicitly authorized to do so by NJ TRANSIT.

Subtask 4.15 - Value Engineering

Following completion and submittal of the Preliminary Design Phase, the AECOM Team will retain an independent specialty firm as previously noted to provide Value Engineering (VE) services. The Design Team will cooperate fully with the VE Team, participate in the process and provide all technical data as required. The VE Team will be led by a Certified Value Specialist (CVS) and will include representatives of all appropriate engineering disciplines as well as cost estimators.

In order for the Value Engineer to perform the VE design review, the AECOM Team will provide the following as requested:

- Five (5) hardcopies and electronic pdf of the Draft Feasibility Report and Preliminary Design Documents
- Access to project documents
- One (1) copy of design, cost estimate and schedule calculations



A one week VE workshop will be held with the following activities:

- The AECOM Team will attend an introductory session the morning of the first day of the VE workshop.
- During the week that the VE workshop is being conducted, the AECOM Team will be available to communicate with the Value Engineer's team to answer questions regarding the project design.
- Approximately ten days after the conclusion of the VE workshop the VE firm will provide NJ TRANSIT and the AECOM Team with a preliminary copy of the Value Engineering's design review report. The report will contain VE recommendations and claimed cost savings that could be realized by NJ TRANSIT, if they were to accept the VE recommendations. The AECOM Team will review the VE design review reports. The AECOM Team will submit written comments on each VE recommendation. The comments will include potential impacts caused by the VE recommendation, such as schedule delays, re-design cost, and impact on other work and construction costs. The comments will include AECOM's opinions of the VE recommendations and their validity for acceptance or rejection. The comments will be submitted to NJ TRANSIT no later than seven calendar days after the presentation meeting described below.
- Approximately five days after receipt of the preliminary VE report a presentation meeting with the AECOM Design Team, Value Engineering Team and NJ TRANSIT will be held. The purpose of the meeting is for the Value Engineer to present the basis for their VE recommendations and claimed cost savings.

Task Deliverables

1. PE Feasibility Report copies and Design Documents / Data to VE participants as required
2. PE VE Report Review comments within 14 days of receipt of VE Report

Subtask 4.16 - As-Directed Preliminary Design

The AECOM Team will include in an allowance of 1500 hours in excess of the hours necessary to complete all the work previously described, to be used at the sole discretion of NJ TRANSIT. The Team will not charge any time against this task unless explicitly authorized to do so by NJ TRANSIT.

TASK 5 - FINAL DESIGN PLANS, SPECIFICATIONS AND ESTIMATES (PHASE II)

Complete plans, specifications, estimates, and construction schedule will be completed during this phase and all permits and necessary construction documents will be finalized. The design will be submitted and reviewed at the 60%, 90%, and 100% complete levels. The documents will incorporate the designs that we developed in the prior phase for the filling of Long Slip, the retaining walls and the NJ Transit developed documents for the platforms, canopies, and crew quarter building.

Subtask 5.1 - Design Development (60% Documents)

This subtask will involve advancing the preliminary design documents to the 60% level and addressing comments relative to the 30% design submittal. It will include the following activities:

- Updated listing of all anticipated drawings
- All general drawings and other drawings progressed to 60% level of detail such that a reviewer will be able to understand all major design elements. It will include staging drawings or special conditions indicating the staging of the work with railroad operations or other, critical work restrictions.
- Project Definition Report (Final)
- First draft of major specification sections (CSI Format)
- 60% level construction cost estimate and construction schedules.
- 30% review comments and responses report. 30% review comments shall be incorporated into the 60% documents

Task Deliverables

1. One (1) electronic and eight (8) copies of the construction documents including drawings, specifications, calculations, project construction schedule, and cost estimates. The drawing allocation shall include six (6) half-scale sets of prints, one (1) full size set of prints, and one (1) half-scale reproducible set of originals.

Subtask 5.1.1 Optional Pedestal Pit (60% Documents)

If directed by NJ TRANSIT, the AECOM Team will complete 60% design documents in accordance with the preliminary design and all comments received from NJ TRANSIT. This subtask will only be advanced if directed by NJ TRANSIT.



Subtask 5.2 - Final Design (90% Documents)

This subtask will involve advancing the progress design documents to the 90% level and addressing comments relative to the 60% design submittal. It will include the following activities:

- Completed drawings sufficient to clearly indicate magnitude and intent of the design. 90% submission will be complete such that the design can be progressed seamlessly towards final drawings without the need for redesign or re-engineering.
- All specifications sections (CSI Format)
- Completed constructability review with report
- Completed staging requirements
- 90% level cost estimates and construction schedules, prepared item by item, developed where appropriate using labor, materials, equipment and productivity/ efficiency factors (e.g., accounting for night, overtime, weekend, train operations interruptions, etc. work).
- 60% review comments and responses report. 60% review comments will be incorporated into the 90% documents

Task Deliverables

1. One (1) electronic and eight (8) copies of the construction documents including drawings, specifications, calculations, project construction schedule, and cost estimates. The drawing allocation shall include six (6) half-scale sets of prints, one (1) full size set of prints, and one (1) half-scale reproducible set of originals.

Subtask 5.1.1 Optional Pedestal Pit (90% Documents)

If directed by NJ TRANSIT, the AECOM Team will complete 90% design documents in accordance with the 60% Complete Design Documents and all comments received from NJ TRANSIT. This subtask will only be advanced if directed by NJ TRANSIT.

Subtask 5.3 - Final Design (100% Documents)

This subtask will involve advancing the pre-final design documents to the 100% level and addressing comments relative to the 90% design submittal. It will include the following activities:

- Completed design drawings for disciplines/systems/ staging specified for Design Development
- Completed technical specifications (CSI Format)

- Assistance in the preparation of Special Provisions, as required;
- An estimate of quantities and a final detailed cost estimate formatted in the form of the Bidders Proposal, including unit prices where appropriate; and documentation of analyses used to establish unit and lump sum prices;
- Utility agreements, plans, and evidence of coordination with utility facilities affected by the project;
- Bidders' proposal form by discipline, including quantities where appropriate;
- 90% review comments and responses report. 90% review comments shall be incorporated into the 100% documents
- Proposed project construction schedule

At this submission, all plans and specifications will be complete.

Task Deliverables

1. One (1) electronic and eight (8) copies of the construction documents including drawings, specifications, calculations, project construction schedule, and cost estimates. The drawing allocation shall include six (6) half-scale sets of prints, one (1) full size set of prints, and one (1) half-scale reproducible set of originals. The half scale and full size drawings will also be submitted individually as PDF files.

Subtask 5.3.1 Optional Pedestal Pit (100% Documents)

If directed by NJ TRANSIT, the AECOM Team will complete 100% design documents in accordance with the 90% Complete Design Documents and all comments received from NJ TRANSIT. This subtask will only be advanced if directed by NJ TRANSIT.

Subtask 5.4 - Peer Review

At the 60% design development level and prior to final design levels, the AECOM Team will conduct a Peer Review of the design to validate that the overall engineering and quality objectives of the Long Slip Canal Fill & Rail Enhancement Project have been successfully addressed. One of the primary objectives will be to assure that the integration of the different systems and disciplines are advancing the project successfully. The Peer Review will also include a constructability review, analysis of construction cost estimates and proposed follow-on contract packaging suggestions prepared by the AECOM Team.



The Peer Review team will consist of senior engineering personnel from the AECOM Team firms who are not associated with or have had any knowledge or involvement with the technical details of the Long Slip Canal Fill & Rail Enhancement Project prior to being assigned to the team. The review team may also involve other transit agency personnel, third party consultants/contractors and/or FTA/PMO personnel. The Peer Review team personnel will be approved by NJ TRANSIT and will include selected NJ TRANSIT personnel. Information and data to be presented during the Peer Review will not be made available to any member of the Peer Review team prior to the review. The Peer Review discussion and results will be documented in a report within 7 days of the completion of the Peer Review.

Task Deliverables

1. Peer Review Report

Subtask 5.5 - Interagency Coordination - Final Design

This subtask is established to provide assistance/services to NJ TRANSIT during the course of the design effort, which may require/involve coordination with various Federal, State, County or local authorities. The AECOM Team will provide services such as:

- Attend meetings and events, assisting NJ TRANSIT in accordance with an environmental or community information program.
- Record and prepare minutes of all meetings.

As requested, the AECOM Team has allowed 500 hours for Task 5.5, to be used at the discretion and direction of NJ TRANSIT. The Team will not charge any time against this allotment, unless explicitly authorized to do so by NJ TRANSIT. Coordination with the Jersey City Municipal Utilities Authority and the Port Authority of New York and New Jersey is considered part of the design and will not be charged to this Task.

Subtask 5.6 - As-Directed Final Design

The AECOM Team will include in an allowance of 1000 hours in excess of the hours necessary to complete all the work previously described, to be used at the sole discretion of NJ TRANSIT. The Team will not charge any time against this task unless explicitly authorized to do so by NJ TRANSIT.

Subtask 5.7 - Construction Bid Package

At the 100% design and engineering stage, the technical specifications and prints of the final drawings (which include revisions incorporated as a result of the final review), will undergo one final review. The approved drawings and specifications (known as the contract drawings or construction bid documents) will then be used by NJ TRANSIT in the procurement process to solicit construction services and equipment for the project.

The AECOM Team will prepare Final Design Documents signed and sealed as appropriate. Final Design Documents will be submitted to NJ TRANSIT for approval. Final drawings and specifications will set forth in detail the requirements for the construction of the entire project including necessary bidding information. The Team will also assist in the preparation of the complete bid package which will include the following.

- Fully completed drawings for disciplines/systems specified in the final review
- Fully completed technical specifications using the format of the Construction Specifications Institute (CSI)
- Special Provisions
- An estimate of quantities and final detailed cost estimate, including unit prices where appropriate, along with documentation of analyses used to establish unit and lump sum prices;
- Utility agreements, plans, and evidence of coordination with utility facilities affected by the project;
- Bidder proposal form by discipline, including quantities, where appropriate;
- Construction staging plans and temporary signage plans as equipped for each stage of construction; and
- Proposed project construction schedule with phasing and operational constraints

The Contract Drawings will observe the following signature procedures:

- The AECOM Team will sign and seal all drawings prepared by the Team with a New Jersey Licensed Professional Engineer or Registered Architect.
- Subconsultants will sign and seal their own drawings. The AECOM logo shall appear on each drawing prepared by a Subconsultant.



Final design calculations and related diagrams prepared to support the project will address the following:

1. The AECOM Team will submit complete design computations and design drawings covering all foundations, structural framing and supports such as primary framing members, bracing, etc.
2. Calculations will clearly distinguish between new and existing construction. Documents from which existing dimensions and existing member properties were obtained shall be referenced in the calculations.
3. All engineering calculation sheets will be numbered, dated and indexed. The index sheets will define the total number of the sheets submitted and will bear the seal and signature of an experienced engineer holding a Professional Engineer's License in the State of New Jersey and who is familiar with and in responsible charge of the design.
4. If computations are submitted in computer printout form, the following will be furnished:
 - a. Descriptions and proof adequacy of the program. The description of each program will include: type of problems solved by the program; nature and extent of the analysis; assumptions made in the program; instructions for interpreting the computer output format.
 - b. The design criteria used and the diagram showing the loading conditions and loading combinations.
 - c. The design constants and equations used, including all references
 - d. Indexed and clearly identified input and output sheets for the entire structure or for those portions of the structure which will be sufficient to enable NJ TRANSIT to evaluate the structure.
 - e. A clear diagram of all member forces (axial, shear, bending, or other forces as appropriate) for each loading condition controlling the design

The AECOM Team will prepare a construction schedule which will include the following:

•

1. An estimate of the time required to complete construction presented in bar chart form using days, weeks or months as appropriate for the limit of time. The schedule will indicate coordinated construction activities including NJ TRANSIT track outages if required. This Construction schedule is for NJ TRANSIT project control purposes only, and will not be for use by any Contractor.
2. The delivery time required for long-lead time apparatus and material will be determined. Material lists for all long-lead or NJ TRANSIT supplied materials, equipment and apparatus will be prepared and submitted to NJ TRANSIT for approval and advertising for bids.

The AECOM Team will provide Construction Bid Services during the procurement period including the following activities:

- Answer questions asked of NJ TRANSIT staff by bidders during the bid period
- Review contractor's bid documents for conformity with technical requirements and completeness of response of the bid package and reasonableness of bid quoted.
- Prepare bid document addenda including Contract Drawing revisions and engineering calculations, as necessary or as requested by NJ TRANSIT for NJ TRANSIT approval and issuance. Originals will be furnished for final printing.
- Conform all contract drawings to Addenda as directed by NJ TRANSIT after award of the construction contract. All contract drawings will be conformed and marked as such within one month of the construction bid opening date.
- Questions regarding the platform, canopy and their respective design drawings will be addressed by NJ TRANSIT.

The AECOM Team will exercise reasonable care in the preparation of contract documents to conform to all applicable code requirements in effect at the time of issuance of the contract documents.

Task Deliverables

1. 100% complete documents (Construction Bid Package). Ten (10) copies of the construction documents including drawings, specifications, project manual, project construction schedule, and cost estimates. The drawing allocation shall include one (1) full size reproducible set of originals, five (5) full size set of prints. The half scale and full size drawings will also be submitted individually as PDF files.



TASK 6 - CONSTRUCTION SUPPORT SERVICES (PHASE III)

The AECOM Team will provide construction support services beginning with a review and updating of the previously prepared documents, and continuing through the contract period until closeout. Review of significant shop drawings, attendance at selected progress meetings, and similar support service will be provided. Involvement will be at the request and under the direction of the NJ TRANSIT Project Manager.

The AECOM Team has been designated to provide similar construction support services for the Phase 1 project. Therefore, the team will be able to take advantage of site and project knowledge; management and staff efficiencies; and stakeholder coordination continuity to execute these services.

As part of the services performed under this task, the AECOM Team will attend one pre-construction meeting and selected construction progress meetings. Specific subtasks included in project construction support services follow.

Subtask 6.1 - Response to Questions

As necessary throughout the construction period, the AECOM Team will provide the required technical expertise necessary to respond to any design document related question or request for clarification. This service will be available for issues brought forward by NJ TRANSIT, the prime contractor, his subcontractors, or any related or impacted Federal, State, County or municipal entity. For cost estimating purposes, the AECOM Team has assumed approximately **75 questions** or requests for clarification will be received and responded to without significant design implications. This subtask does not include responses related to NJ TRANSIT in-house designs but does include the review and comment associated with draft responses prepared by NJ TRANSIT. Construction support activities under this Task will be undertaken only as requested by the NJ TRANSIT Project Manager.

Subtask 6.2 - Change Order Preparation / Evaluation

When requested by NJ TRANSIT, the AECOM Team will assist in the review and analysis, and provide recommendations on Contractor requests for change and change orders through the preparation of detailed cost estimates. Cost estimates shall include material quantities and cost, labor quantities and all direct and indirect costs, and an analysis of the contractor's proposal for alternate methods and materials.

In addition, the Team will prepare all necessary change order documents (i.e. designs, specifications, cost estimates, schedule analysis) as required by NJ TRANSIT for effective change order evaluation, negotiation and construction. For cost estimating purposes, the AECOM Team has assumed approximately **10 minor change order evaluations** will be received. This subtask does not include evaluation of change orders related to NJ TRANSIT in-house designs but the team will be apprised of related requests for change orders.

Subtask 6.3 - Shop Drawing Review and Material Approvals

The AECOM Team will review and approve all project design related shop drawings and material submittals as designer-of-record. This subtask does not include a review of submittals related to NJ TRANSIT in-house designs. However, the team will be apprised of submittals, reviews and responses to these designs. AECOM reviews and approvals will be completed and returned no later than ten (10) working days after receipt from the Construction Manager / Contractor.

Subtask 6.4 - Punch List Inspection / Development and Certification of Substantial Completion

The AECOM Team will participate in the inspection and assist in the development of the final punch list to be received by the contractor prior to Final Acceptance. Under this Task, the Team will also provide the necessary services to qualify or not qualify the project as "substantially complete" and offer documented notification of same. This subtask does not include inspection or punch list development related to NJ TRANSIT in-house designs. However, the team will be apprised of the punch list, reviews and responses for these designs.

Subtask 6.5 - Final Inspection / Project Acceptance

As the designer of record, the AECOM Team will participate in the final project inspection following completion of punch list activities and provide NJ TRANSIT with formal written notification of project acceptance. This subtask does not include inspections related to NJ TRANSIT in-house designs. However, the team will be apprised of the inspection and acceptance of these designs.



Subtask 6.6 - As-Built Drawings

Upon the completion of construction, the AECOM Team will modify the original contract drawings to reflect “as-built” conditions. The construction management forces and/or the contractor will furnish the verified “as-built” information to be incorporated. The AECOM Team estimated approximately **200-250 drawings** will be required to define the scope of work outlined in the RFP. For cost estimating purposes, it is assumed that approximately **100 drawings** will require incorporation of “as-built” modifications for record purposes. Three (3) mylar sets and one (1) set on disc or CD ROM of “As-Built” Contract Drawings will be provided.

Subtask 6.7 - Design Support As-Directed

The AECOM Team will provide design support services during the construction period as directed to facilitate construction activities or to achieve cost savings. An allowance of 1000 hours, to be used at the sole discretion of NJ TRANSIT, has been included. No time will be charged against this task unless explicitly authorized to do so by NJ TRANSIT.



8

Team Organization / Resource Allocation





08 Team Organization / Resource Allocation

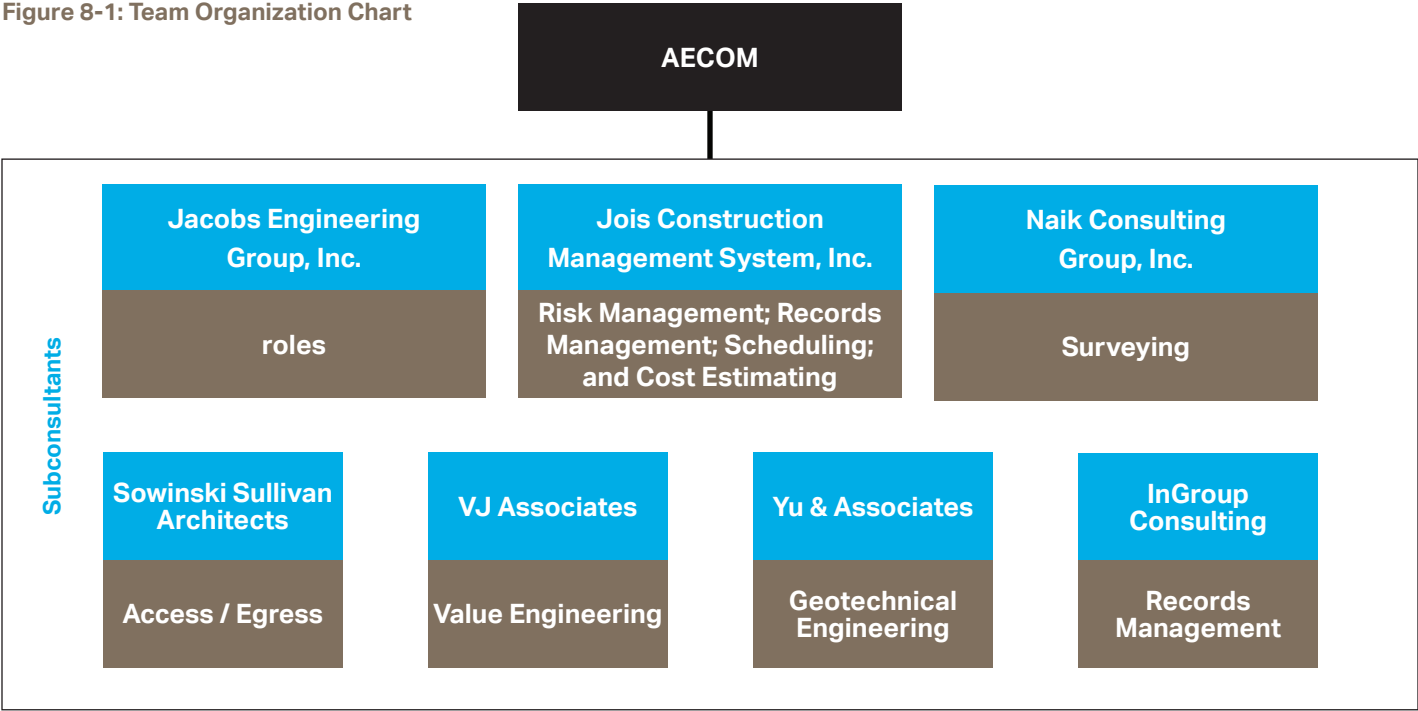
Our team is ideally suited to be NJ TRANSIT’s consultant for this assignment. The team has at its disposal outstanding technical resources with the capability to deal with all expected and unexpected issues related to this project.

TEAM ORGANIZATION AND STAFFING

With thoughtful consideration of the challenges of this project, we have formed a team of industry leaders and experienced DBEs. Being able to work together as a cohesive team is also important; to this end, we selected firms that AECOM has

successfully worked with on past successful projects and that can make a meaningful contribution the NJ TRANSIT Long Slip Fill and Rail Enhancement Project’s ultimate success. A Team Organization Chart showing the reporting and contractual relationships of all firms included as Figure 8-1.

Figure 8-1: Team Organization Chart



AECOM will lead the team and provide overall project oversight, thought leadership, and best in class innovations. Our team is strengthened by the involvement of a group of local and experienced firms.



PROJECT ORGANIZATION

The success of the NJ TRANSIT Long Slip Fill and Rail Enhancement Project, will require an experienced team of seasoned rail, structural, civil, and transportation professionals who have successfully provided these exact services on similar projects, using proven project management methods. This includes members of our team like John Fiore, PE (Program Coordinator), who has been involved in the development of the Long Slip Canal Project for 17 years, going back to 1999 when the Hudson-Bergen Light Rail Transit System engineering team was designing the Hoboken Terminal route segment over Long Slip. Our team organization focuses on a dedicated core management group who will lead and work efficiently within the team.

No complex project can succeed without clear goals, thorough planning, and decisive leadership. We can achieve this with a properly prepared and well executed Management Plan, which AECOM considers an essential element of a successful project.

Leading our team is our Project Manager, **Edward Hrinewski, STS**, who is ideally suited for this leading role. He has more than 40 years of experience with transit projects. He spent more than 12 years working on the Hudson-Bergen Light Rail Transit System, and understands the needs and requirements of work specific to NJ TRANSIT. Mr. Hrinewski works closely with NJ TRANSIT and the area — and is well respected by NJ TRANSIT.

He will lead the team with his extensive experience, applying lessons learned and balancing resources, and by developing innovative and cost-efficient solutions. He will provide a single point of contact to NJ TRANSIT and be responsible for the coordination between disciplines, serve as liaison to all parties implementing this project, and direct the execution of work during the life of the contract. Mr. Hrinewski will have a direct line of communication between Officer-in-Charge **Julie D'Orazio, PE**, Program Coordinator **John Fiore, PE**, and the Pier Review specialists.

Mr. Hrinewski will have the authority to act on behalf of the AECOM team; assign resources; adjust staffing; and manage all aspects of design, construction assistance, and engineering support. He will work full-time in the core project office and manage day-to-day operations. He will have the full backing and support from AECOM's local, regional, and national offices depending on the need. Officer-in-Charge Julie D'Orazio's primary responsibility is to see that Mr. Hrinewski and NJ TRANSIT have access to the resources needed to successfully deliver this project. We also have a team of senior advisors who are available to the team for high level planning and project strategy.

Mr. Hrinewski will monitor the direct reports to him and coordinate daily with our Design Manager and discipline leads on the project's progress. The discipline leaders for the individual disciplines will manage the work efforts of his or her staff, and the individual task deliverables for all scope items.

Figure 8-2 lists our key staff and their primary responsibilities. Our Project Organization Chart, presented as Figure 8-3, illustrates all other project positions and reporting relationships that comprise the project's organizational structure.



PROJECT MANAGEMENT

AECOM'S management approach for the NJTRANSIT Long Slip Fill and Rail Enhancement Project, has been developed after successfully completing multiple similar assignments with NJ TRANSIT, as well as with other governmental and public agencies in the tri-state area and beyond. It is an approach based on teamwork, clear communications, and responsiveness.

Projects such as this, require a broad range of in-house skills, specialty subcontractors and swift timely completion of tasks. They require effective communication and coordination among the team members and the client, as well as interface with other local, state, and federal agencies that may have a particular interest. At AECOM, we have developed a proven management approach that allows us to coordinated and complete tasks on time and within budget.

Our team will use a variety of management techniques to monitor progress on this assignment and achieve project objectives. Project management techniques that will be utilized include:

- Development of a Project Management Plan (PMP) that identifies the scope, stakeholders, responsible AECOM leads, schedule, quality system, procedures, and communication and reporting. The PMP will be subject to review and audit by the railroads. All responsible leads will be required to sign-off on having received and understood the requirements of the PMP.
- Develop and maintain a risk register of key project risks along with mitigation measures.
- Utilize project checklists to adherence to approved project procedures and provide for auditing.
- Conduct regular in-house coordination meetings of key project personnel to review the progress of each task and ensure proper coordination.
- Conduct interdisciplinary team meetings and peer-reviews as necessary to monitor progress and coordinate engineering disciplines.
- Implement appropriate **project management software** to schedule and record, retain and retrieve project documentation.

At the outset of the project, we will establish the necessary management activities required during the course of the project. These activities include:

- **Develop** the PMP, attain railroad approval and implement the plan throughout the project
- **Work** with the Quality Manager to develop and implement the Quality System. Define the quality system in a Quality Plan distributed to all key staff of the project.
- **Monitor** progress in terms of earned value throughout the course of the project
- **Ensure** adherence to document control procedures and the approved quality measures
- **Provide** periodic reporting to NJ TRANSIT
- **Document** meeting discussions in minutes, particularly those items relevant to the execution of the work and direction from the railroad. Provide timely notification to the railroad of direction received that is believed to be inconsistent with the scope of work and project objectives.
- **Provide** a single informed point of contact with NJ TRANSIT
- **Assist** NJ TRANSIT project personnel in conveying project progress and issues to the railroad stakeholders

We will provide general administrative tasks to facilitate project management and communication among project participants.

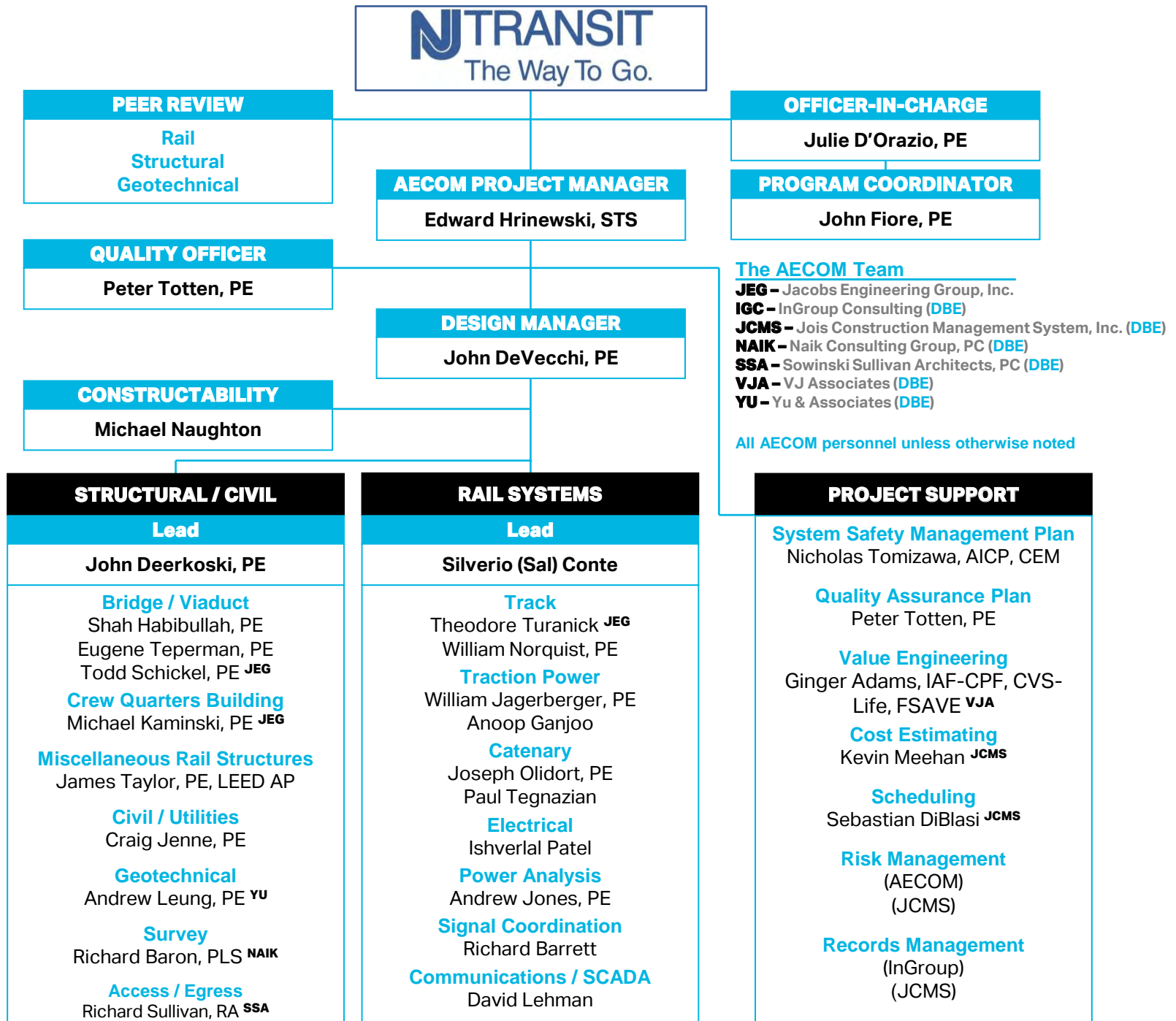
ORGANIZATION CHART

Our Organization Chart for this project follows on the next page.

MATRIX PERSON-HOURS

AECOM has undertaken a comprehensive assessment of the Long Slip Fill and Rail Enhancement Project staffing needs and hours based on our proposed schedule, scope of services, specific tasks, and our extensive knowledge of the project and the project site.

The personnel for this project will be tapped from AECOM's vast resources and complemented by a group of professionals from our subconsultants. Our person-hours follow the organization chart.



Person-Hours

NJ TRANSIT Resilience Program

TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

COST AND FEE RECAP

FIRM: AECOM

(Prime Consultant Name)

	DESCRIPTION	PERSON HOURS	SALARY	OVERHEAD	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Firm 1	AECOM	29,321						
Firm 2								
Firm 3								
Firm 4	InGroup	4,256						
Firm 5								
Firm 6								
Firm 7								
Firm 8	Naik Consultants, Inc.	1,224						
Firm 9	Jois Construction Management System, Inc. (JCMS)	4,220						
Firm 10	Yu & Associates, Inc. (Yu)	1,360						
Firm 11	Jacobs	8,545						
Firm 12	SSA	76						
Firm 13	VJA	980						
TOTALS		49,982						

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

COST AND FEE RECAP BY FIRM/TASK

FIRM: AECOM

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 120.00%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1	Project Management	2,960						
	Task 2	Risk Management	120						
	Task 3	System Safety Management Plan (SSMP)	96						
Phase IA: Conceptual Design			0						
	Task 4.1	Pedestal Pit	144						
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	20						
	Task 4.3	Update Design Criteria	36						
	Task 4.4	Track Design	632						
	Task 4.5	Civil Design	1,000						
	Task 4.6	Bridges, Building & Structures	1,766						
	Task 4.7	Traction Power/Electrical Design	1,596						
	Task 4.8	Signal System Design	80						
	Task 4.9	Cost and Schedule	0						
	Task 4.10	Supplemental Survey	184						
	Task 4.11	Utility Relocation Preliminary Estimates	356						
	Task 4.12	Geotechnical Investigations	0						
	Task 4.13	Environmental	240						
	Task 4.14	Optional Pedestal Pit	0						
	Task 4.15	Value Engineering	152						
	Task 4.16	As-Directed Preliminary Design	1,500						
Phase II: Preparation of Final Plans, Specifications, and Estimates			0						
	Task 5.1	Design Development (60% Design)	5,993						
	Task 5.2	Final Design (90% Complete Documents)	4,026						
	Task 5.3	Final Design (100% Complete Documents)	1,720						
	Task 5.4	Peer Review	400						
	Task 5.5	Interagency Coordination - Final Design	500						
	Task 5.6	As-Directed Final Design	1,000						
	Task 5.7	Construction Bid Package	80						
Phase III: Construction Support Services			0						
	Task 6.1	Response to Questions	780						
	Task 6.2	Change Order Preparation/Evaluation	572						
	Task 6.3	Shop Drawing Review and Material Approvals	2,292						
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	184						
	Task 6.5	Final Inspection/Project Inspection	88						
	Task 6.6	As-Built Drawings	304						
	Task 6.7	Design Support - As Directed	500						
Grand Total			29321						

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

COST AND FEE RECAP BY FIRM/TASK

FIRM: **JACOBS**

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 120.00%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1	Project Management							
	Task 2	Risk Management							
	Task 3	System Safety Management Plan (SSMP)							
Phase IA: Conceptual Design									
	Task 4.1	Pedestal Pit	404						
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	104						
	Task 4.3	Update Design Criteria							
	Task 4.4	Track Design	80						
	Task 4.5	Civil Design							
	Task 4.6	Bridges, Building & Structures	1,822						
	Task 4.7	Traction Power/Electrical Design							
	Task 4.8	Signal System Design							
	Task 4.9	Cost and Schedule							
	Task 4.10	Supplemental Survey							
	Task 4.11	Utility Relocation Preliminary Estimates							
	Task 4.12	Geotechnical Investigations							
	Task 4.13	Environmental							
	Task 4.14	Optional Pedestal Pit	886						
	Task 4.15	Value Engineering							
	Task 4.16	As-Directed Preliminary Design							
Phase II: Preparation of Final Plans, Specifications, and Estimates									
	Task 5.1	Design Development (60% Design)	1,460						
	Task 5.2	Final Design (90% Complete Documents)	1,306						
	Task 5.3	Final Design (100% Complete Documents)	1,371						
	Task 5.4	Peer Review	88						
	Task 5.5	Interagency Coordination - Final Design							
	Task 5.6	As-Directed Final Design							
	Task 5.7	Construction Bid Package	32						
Phase III: Construction Support Services									
	Task 6.1	Response to Questions	160						
	Task 6.2	Change Order Preparation/Evaluation							
	Task 6.3	Shop Drawing Review and Material Approvals	640						
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	40						
	Task 6.5	Final Inspection/Project Inspection	56						
	Task 6.6	As-Built Drawings	96						
	Task 6.7	Design Support - As Directed							
Grand Total			8545						

NJ TRANSIT Resilience Program

TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

COST AND FEE RECAP BY FIRM/TASK

FIRM: Naik

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 163,00%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1	Project Management							
	Task 2	Risk Management							
	Task 3	System Safety Management Plan (SSMP)							
Phase IA: Conceptual Design									
	Task 4.1	Pedestal Pit							
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design							
	Task 4.3	Update Design Criteria							
	Task 4.4	Track Design							
	Task 4.5	Civil Design							
	Task 4.6	Bridges, Building & Structures							
	Task 4.7	Traction Power/Electrical Design							
	Task 4.8	Signal System Design							
	Task 4.9	Cost and Schedule							
	Task 4.10	Supplemental Survey	1,224						
	Task 4.11	Utility Relocation Preliminary Estimates							
	Task 4.12	Geotechnical Investigations							
	Task 4.13	Environmental							
	Task 4.14	Optional Pedestal Pit							
	Task 4.15	Value Engineering							
	Task 4.16	As-Directed Preliminary Design							
Phase II: Preparation of Final Plans, Specifications, and Estimates									
	Task 5.1	Design Development (60% Design)	0						
	Task 5.2	Final Design (90% Complete Documents)	0						
	Task 5.3	Final Design (100% Complete Documents)	0						
	Task 5.4	Peer Review							
	Task 5.5	Interagency Coordination - Final Design							
	Task 5.6	As-Directed Final Design							
	Task 5.7	Construction Bid Package							
Phase III: Construction Support Services									
	Task 6.1	Response to Questions							
	Task 6.2	Change Order Preparation/Evaluation							
	Task 6.3	Shop Drawing Review and Material Approvals							
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion							
	Task 6.5	Final Inspection/Project Inspection							
	Task 6.6	As-Built Drawings							
	Task 6.7	Design Support - As Directed							
Grand Total			1224						

T08 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

FIRM: InGroup, Inc. (ING)1 of 1

T08 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

FIRM: Jois Construction Management System, Inc. (JCMS)

5/19/2016

NJ TRANSIT Resilience Program

TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

COST AND FEE RECAP BY FIRM/TASK

FIRM: SSA

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 168.00%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1	Project Management	0						
	Task 2	Risk Management	0						
	Task 3	System Safety Management Plan (SSMP)	0						
Phase IA: Conceptual Design			0						
	Task 4.1	Pedestal Pit	0						
Phase IB: Preliminary Design			0						
	Task 4.2	Preliminary Design	60						
	Task 4.3	Update Design Criteria							
	Task 4.4	Track Design							
	Task 4.5	Civil Design							
	Task 4.6	Bridges, Building & Structures							
	Task 4.7	Traction Power/Electrical Design							
	Task 4.8	Signal System Design							
	Task 4.9	Cost and Schedule							
	Task 4.10	Supplemental Survey							
	Task 4.11	Utility Relocation Preliminary Estimates							
	Task 4.12	Geotechnical Investigations							
	Task 4.13	Environmental							
	Task 4.14	Optional Pedestal Pit							
	Task 4.15	Value Engineering							
	Task 4.16	As-Directed Preliminary Design							
Phase II: Preparation of Final Plans, Specifications, and Estimates									
	Task 5.1	Design Development (60% Design)							
	Task 5.2	Final Design (90% Complete Documents)							
	Task 5.3	Final Design (100% Complete Documents)							
	Task 5.4	Peer Review	16						
	Task 5.5	Interagency Coordination - Final Design							
	Task 5.6	As-Directed Final Design							
	Task 5.7	Construction Bid Package							
Phase III: Construction Support Services									
	Task 6.1	Response to Questions							
	Task 6.2	Change Order Preparation/Evaluation							
	Task 6.3	Shop Drawing Review and Material Approvals							
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion							
	Task 6.5	Final Inspection/Project Inspection							
	Task 6.6	As-Built Drawings							
	Task 6.7	Design Support - As Directed							
Grand Total			76						

T08 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

FIRM: VJA

5/19/2016

NJ TRANSIT Resilience Program

TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

COST AND FEE RECAP BY FIRM/TASK

FIRM: Yu & Associates, Inc. (Yu)

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 168.00%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1	Project Management	0						
	Task 2	Risk Management	0						
	Task 3	System Safety Management Plan (SSMP)	0						
Phase IA: Conceptual Design			0						
	Task 4.1	Pedestal Pit	0						
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	0						
	Task 4.3	Update Design Criteria	0						
	Task 4.4	Track Design	0						
	Task 4.5	Civil Design	0						
	Task 4.6	Bridges, Building & Structures	0						
	Task 4.7	Traction Power/Electrical Design	0						
	Task 4.8	Signal System Design	0						
	Task 4.9	Cost and Schedule	0						
	Task 4.10	Supplemental Survey	0						
	Task 4.11	Utility Relocation Preliminary Estimates	0						
	Task 4.12	Geotechnical Investigations	938						
	Task 4.13	Environmental	0						
	Task 4.14	Optional Pedestal Pit	0						
	Task 4.15	Value Engineering	0						
	Task 4.16	As-Directed Preliminary Design	0						
Phase II: Preparation of Final Plans, Specifications, and Estimates			0						
	Task 5.1	Design Development (60% Design)	102						
	Task 5.2	Final Design (90% Complete Documents)	52						
	Task 5.3	Final Design (100% Complete Documents)	76						
	Task 5.4	Peer Review	0						
	Task 5.5	Interagency Coordination - Final Design	0						
	Task 5.6	As-Directed Final Design	0						
	Task 5.7	Construction Bid Package	0						
Phase III: Construction Support Services			0						
	Task 6.1	Response to Questions	0						
	Task 6.2	Change Order Preparation/Evaluation	0						
	Task 6.3	Shop Drawing Review and Material Approvals	192						
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	0						
	Task 6.5	Final Inspection/Project Inspection	0						
	Task 6.6	As-Built Drawings	0						
	Task 6.7	Design Support - As Directed	0						
Grand Total			1360						

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 1

FIRM: AECOM

Project Management

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	160		
Staff 2	Sr. Consultant	680		
Staff 3	Project Manager	960		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	720		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical	440		
TOTAL ESTIMATED HOURS		2,960		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (Graphics/presentation support)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 1

FIRM: InGroup, Inc. (ING)

Project Management

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	200		
Staff 2	Outreach Coordinator I			
Staff 3	Outreach Coordinator II			
Staff 4	Graphics/Web Outreach Associate			
Staff 5	Outreach Support Admin			
Staff 6	TBD			
Staff 7	Records Technician	4056		
TOTAL ESTIMATED HOURS		4256		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 125.00 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$0.00
Postage/Shipping/Messenger Service	\$0.00
Local Travel	\$0.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 1
Project Management

FIRM: Jois Construction Management
System, Inc. (JCMS)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Chief Cost Estimator			
Staff 3	Sr. Cost Estimator			
Staff 4	Sr. Scheduling Engineer	120		
Staff 5	Cost Estimator			
Staff 6	Scheduling Engineer	640		
Staff 7	Technical Support			
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
TOTAL ESTIMATED HOURS		760		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.22 % OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (Records mgmt software allocation)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 2

FIRM: AECOM

Risk Management

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager	120		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		120		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (Workshop support / catering)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 2
Risk Management

FIRM: Jois Construction Management
System, Inc. (JCMS)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Chief Cost Estimator			
Staff 3	Sr. Cost Estimator	400		
Staff 4	Sr. Scheduling Engineer	400		
Staff 5	Cost Estimator	240		
Staff 6	Scheduling Engineer	240		
Staff 7	Technical Support			
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
TOTAL ESTIMATED HOURS		1280		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.22 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 3

FIRM: AECOM

System Safety Management Plan (SSMP)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	8		
Staff 2	Sr. Consultant	40		
Staff 3	Project Manager	40		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		96		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.1

FIRM: AECOM

Pedestal Pit

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	8		
Staff 3	Project Manager	24		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan	96		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	16		
Staff 12	Intern/Clerical			
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)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.1

FIRM: JACOBS

Pedestal Pit

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	24		
Staff 3	Project Manager	28		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	96		
Staff 7	Principal Eng/Plan	120		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	72		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	64		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		404		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.2

FIRM: AECOM

Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager	4		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan	16		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		20		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.2

FIRM: JACOBS

Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager			
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	64		
Staff 7	Principal Eng/Plan	40		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
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)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.2

FIRM: SSA

Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	24		
Staff 3	Project Manager	12		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	16		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	8		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
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)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.3

FIRM: AECOM

Update Design Criteria

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager	4		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	32		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		36		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.4

FIRM: AECOM

Track Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	48		
Staff 3	Project Manager	24		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	200		
Staff 7	Principal Eng/Plan	160		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	200		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		632		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.4

FIRM: JACOBS

Track Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	80		
Staff 3	Project Manager			
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
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)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.5

FIRM: AECOM

Civil Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	96		
Staff 3	Project Manager	72		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	224		
Staff 7	Principal Eng/Plan	200		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	400		
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		1,000		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.6

FIRM: AECOM

Bridges, Building & Structures

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	82		
Staff 3	Project Manager	186		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	118		
Staff 7	Principal Eng/Plan	442		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	450		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	488		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,766		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.6

FIRM: JACOBS

Bridges, Building & Structures

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	50		
Staff 3	Project Manager	175		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	214		
Staff 7	Principal Eng/Plan	573		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	445		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	365		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,822		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.7

FIRM: AECOM

Traction Power/Electrical Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	116		
Staff 3	Project Manager	80		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	400		
Staff 7	Principal Eng/Plan	600		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	400		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,596		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.8

FIRM: AECOM

Signal System Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	80		
Staff 3	Project Manager			
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
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)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.9

FIRM:

Jois Construction Management
System, Inc. (JCMS)

Cost and Schedule

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Chief Cost Estimator	40		
Staff 3	Sr. Cost Estimator	120		
Staff 4	Sr. Scheduling Engineer	16		
Staff 5	Cost Estimator	320		
Staff 6	Scheduling Engineer	88		
Staff 7	Technical Support	40		
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
TOTAL ESTIMATED HOURS		624		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.22 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.10

FIRM: AECOM

Supplemental Survey

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	40		
Staff 3	Project Manager	8		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	64		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	24		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	40		
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		184		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assis

Task 4.10

FIRM: Naik

Supplemental Survey

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	24		
Staff 2	Design Team Leader	80		
Staff 3	Supervising Engineer	320		
Staff 4	Principal Engineer	240		
Staff 5	Sr. Engineer	200		
Staff 6	Field Staff			
Staff 7	CAD Tech	360		
TOTAL ESTIMATED HOURS		1224		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 163.00 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.11

FIRM: AECOM

Utility Relocation Preliminary Estimates

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	80		
Staff 3	Project Manager	28		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	128		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	120		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		356		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (VE Team support / catering)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.11

FIRM:

Jois Construction Management
System, Inc. (JCMS)

Utility Relocation Preliminary Estimates

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Chief Cost Estimator	16		
Staff 3	Sr. Cost Estimator	32		
Staff 4	Sr. Scheduling Engineer			
Staff 5	Cost Estimator	68		
Staff 6	Scheduling Engineer			
Staff 7	Technical Support	8		
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
TOTAL ESTIMATED HOURS		124		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.22 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction
Assistance Services

Task 4.12

FIRM: Yu & Associates, Inc. (Yu)

Geotechnical Investigations

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	38		
Staff 2	Senior Consultant	72		
Staff 3	Design/Planning Team Leader			
Staff 4	Project Specialist			
Staff 5	Supervising Eng/Arch/Plan	228		
Staff 6	Principal Eng/Arch/Plan	224		
Staff 7	Senior Eng/Arch/Plan			
Staff 8	Eng/Arch/Plan	280		
Staff 9	CAD Tech	96		
Staff 10	Admin			
TOTAL ESTIMATED HOURS		938		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 168.00 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.13

FIRM: AECOM

Environmental

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	32		
Staff 3	Project Manager	24		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	80		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	104		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		240		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous (VE Team support / catering)	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.14

FIRM: JACOBS

Optional Pedestal Pit

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	32		
Staff 3	Project Manager	32		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	72		
Staff 7	Principal Eng/Plan	250		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	250		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	250		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		886		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.15

FIRM: AECOM

Value Engineering

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	48		
Staff 3	Project Manager	56		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	48		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		152		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (VE Team support / catering)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.15

FIRM: VJA

Value Engineering

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	260		
Staff 3	Project Manager	160		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	240		
Staff 7	Principal Eng/Plan	240		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	80		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		980		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (VE Team support / catering)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 4.16

FIRM: AECOM

As-Directed Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	120		
Staff 3	Project Manager	80		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	320		
Staff 7	Principal Eng/Plan	320		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	180		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	480		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,500		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (VE Team support / catering)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.1

FIRM: AECOM

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	368		
Staff 3	Project Manager	202		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	1,321		
Staff 7	Principal Eng/Plan	1,566		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	776		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	1752		
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		5,993		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.1

FIRM: JACOBS

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	59		
Staff 3	Project Manager	64		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	208		
Staff 7	Principal Eng/Plan	443		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	363		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	323		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,460		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
T08 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.1

FIRM:

Jois Construction Management
System, Inc. (JCMS)

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Chief Cost Estimator	48		
Staff 3	Sr. Cost Estimator	120		
Staff 4	Sr. Scheduling Engineer	16		
Staff 5	Cost Estimator	260		
Staff 6	Scheduling Engineer	88		
Staff 7	Technical Support	64		
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
TOTAL ESTIMATED HOURS		596		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.22 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.1

FIRM: Yu & Associates, Inc. (Yu)

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	6		
Staff 2	Senior Consultant	16		
Staff 3	Design/Planning Team Leader			
Staff 4	Project Specialist			
Staff 5	Supervising Eng/Arch/Plan	40		
Staff 6	Principal Eng/Arch/Plan	40		
Staff 7	Senior Eng/Arch/Plan			
Staff 8	Eng/Arch/Plan			
Staff 9	CAD Tech			
Staff 10	Admin			
TOTAL ESTIMATED HOURS		102		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 168.00 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.2

FIRM: AECOM

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	240		
Staff 3	Project Manager	186		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	800		
Staff 7	Principal Eng/Plan	800		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	400		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	1600		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		4,026		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
T08 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.2

FIRM: JACOBS

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	91		
Staff 3	Project Manager	68		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	164		
Staff 7	Principal Eng/Plan	421		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	301		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	261		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,306		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.2

FIRM: Jois Construction Management
System, Inc. (JCMS)

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Chief Cost Estimator	48		
Staff 3	Sr. Cost Estimator	80		
Staff 4	Sr. Scheduling Engineer	16		
Staff 5	Cost Estimator	180		
Staff 6	Scheduling Engineer	88		
Staff 7	Technical Support	48		
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
TOTAL ESTIMATED HOURS		460		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.22 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.2

FIRM: Yu & Associates, Inc. (Yu)

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	4		
Staff 2	Senior Consultant	8		
Staff 3	Design/Planning Team Leader			
Staff 4	Project Specialist			
Staff 5	Supervising Eng/Arch/Plan	24		
Staff 6	Principal Eng/Arch/Plan	16		
Staff 7	Senior Eng/Arch/Plan			
Staff 8	Eng/Arch/Plan			
Staff 9	CAD Tech			
Staff 10	Admin			
TOTAL ESTIMATED HOURS		52		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 168.00 % OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.3

FIRM: AECOM

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	160		
Staff 3	Project Manager	80		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	400		
Staff 7	Principal Eng/Plan	400		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	200		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	480		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,720		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.3

FIRM: JACOBS

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	53		
Staff 3	Project Manager	63		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	157		
Staff 7	Principal Eng/Plan	406		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	358		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	334		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,371		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.3

FIRM:

Jois Construction Management
System, Inc. (JCMS)

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Chief Cost Estimator	24		
Staff 3	Sr. Cost Estimator	40		
Staff 4	Sr. Scheduling Engineer	8		
Staff 5	Cost Estimator	100		
Staff 6	Scheduling Engineer	32		
Staff 7	Technical Support	16		
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
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)		
OVERHEAD @ 120.22 % OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.3

FIRM: Yu & Associates, Inc. (Yu)

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	4		
Staff 2	Senior Consultant	16		
Staff 3	Design/Planning Team Leader			
Staff 4	Project Specialist			
Staff 5	Supervising Eng/Arch/Plan	36		
Staff 6	Principal Eng/Arch/Plan	20		
Staff 7	Senior Eng/Arch/Plan			
Staff 8	Eng/Arch/Plan			
Staff 9	CAD Tech			
Staff 10	Admin			
TOTAL ESTIMATED HOURS		76		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 168.00 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.4

FIRM: AECOM

Peer Review

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	136		
Staff 3	Project Manager	16		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	200		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	40		
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		400		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (Review team support / catering)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.4

FIRM: JACOBS

Peer Review

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	40		
Staff 3	Project Manager	8		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	40		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		88		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	\$ 20,415.59

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.4

FIRM: SSA

Peer Review

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	16		
Staff 3	Project Manager			
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		16		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (Review team support / catering)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
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Task 5.5

FIRM: AECOM

Interagency Coordination - Final Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	80		
Staff 3	Project Manager	40		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	120		
Staff 7	Principal Eng/Plan	100		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	80		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	80		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		500		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 120.00% OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (Presentation graphics)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.6

FIRM: AECOM

As-Directed Final Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	120		
Staff 3	Project Manager	40		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	240		
Staff 7	Principal Eng/Plan	240		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	80		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	280		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		1,000		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.7

FIRM: AECOM

Construction Bid Package

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager	32		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan	32		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	16		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
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)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.7

FIRM: JACOBS

Construction Bid Package

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	8		
Staff 3	Project Manager	8		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan	8		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	8		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		32		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
T08 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 5.7

FIRM: Jois Construction Management
System, Inc. (JCMS)

Construction Bid Package

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Chief Cost Estimator			
Staff 3	Sr. Cost Estimator	24		
Staff 4	Sr. Scheduling Engineer			
Staff 5	Cost Estimator	32		
Staff 6	Scheduling Engineer			
Staff 7	Technical Support			
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
TOTAL ESTIMATED HOURS		56		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.22 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.1

FIRM: AECOM

Response to Questions

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	104		
Staff 3	Project Manager	60		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	264		
Staff 7	Principal Eng/Plan	240		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	104		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		780		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.1

FIRM: JACOBS

Response to Questions

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	40		
Staff 3	Project Manager			
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	120		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		160		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.2

FIRM: AECOM

Change Order Preparation/Evaluation

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	64		
Staff 3	Project Manager	100		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	200		
Staff 7	Principal Eng/Plan	120		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	88		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		572		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.2

FIRM:

Jois Construction Management
System, Inc. (JCMS)

Change Order Preparation/Evaluation

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Chief Cost Estimator			
Staff 3	Sr. Cost Estimator	100		
Staff 4	Sr. Scheduling Engineer			
Staff 5	Cost Estimator			
Staff 6	Scheduling Engineer			
Staff 7	Technical Support			
Staff 8	TBD			
Staff 9	TBD			
Staff 10	TBD			
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)	
OVERHEAD @ 120.22 % OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.3

FIRM: AECOM

Shop Drawing Review and Material Approvals

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	88		
Staff 3	Project Manager	208		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	480		
Staff 7	Principal Eng/Plan	1,324		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	160		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	32		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		2,292		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.3

FIRM: JACOBS

Shop Drawing Review and Material Approvals

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	80		
Staff 3	Project Manager	80		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	400		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	80		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		640		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.3

FIRM: Yu & Associates, Inc. (Yu)

Shop Drawing Review and Material Approvals

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	8		
Staff 2	Senior Consultant	16		
Staff 3	Design/Planning Team Leader			
Staff 4	Project Specialist			
Staff 5	Supervising Eng/Arch/Plan	64		
Staff 6	Principal Eng/Arch/Plan	104		
Staff 7	Senior Eng/Arch/Plan			
Staff 8	Eng/Arch/Plan			
Staff 9	CAD Tech			
Staff 10	Admin			
TOTAL ESTIMATED HOURS		192		

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

TOTAL SALARY (BARE COST)		
OVERHEAD @ 168.00 % OF BARE COST		
SUBTOTAL -- SALARY + OVERHEAD		
FIXED FEE @ 10% OF BARE COST + OVERHEAD		
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction		
Postage/Shipping/Messenger Service		
Local Travel		
Overnight Travel (Travel, Car Rental, Hotel & Meals)		
Miscellaneous (Subcontracted instrumentation installation)		
TOTAL DIRECT EXPENSES		
TOTAL THIS TASK		

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.4

FIRM: AECOM

Punchlist Inspection/Development & Cert of Subst. Completion

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	32		
Staff 3	Project Manager	16		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	72		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	56		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		184		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.4

FIRM: JACOBS

Punchlist Inspection/Development & Cert of Subst. Completion

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager	16		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	24		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
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)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.5

FIRM:AECOM

Final Inspection/Project Inspection

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	16		
Staff 3	Project Manager	8		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	40		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	16		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical	8		
TOTAL ESTIMATED HOURS		88		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.5

FIRM: JACOBS

Final Inspection/Project Inspection

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	40		
Staff 3	Project Manager	16		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech			
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		56		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and Construction Assistance Services

Task 6.6

FIRM: AECOM

As-Built Drawings

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager	24		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan			
Staff 7	Principal Eng/Plan	40		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	240		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		304		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.6

FIRM: JACOBS

As-Built Drawings

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant			
Staff 3	Project Manager			
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	16		
Staff 7	Principal Eng/Plan			
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner			
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	80		
Staff 12	Intern/Clerical			
TOTAL ESTIMATED HOURS		96		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

NJ TRANSIT Resilience Program
TO8 - Long Slip Canal Fill and Rail Enhancement Project Final Design, Engineering and
Construction Assistance Services

Task 6.7

FIRM: AECOM

Design Support - As Directed

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal			
Staff 2	Sr. Consultant	64		
Staff 3	Project Manager	40		
Staff 4	Design/Planning Team Leader			
Staff 5	Project Specialist			
Staff 6	Supervising Eng/Plan	100		
Staff 7	Principal Eng/Plan	80		
Staff 8	Sr. Eng/Plan			
Staff 9	Engineer/Planner	80		
Staff 10	Field Survey Staff			
Staff 11	CADD Tech	120		
Staff 12	Intern/Clerical	16		
TOTAL ESTIMATED HOURS		500		

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

TOTAL SALARY (BARE COST)	
OVERHEAD @ 120.00% OF BARE COST	
SUBTOTAL -- SALARY + OVERHEAD	
FIXED FEE @ 10% OF BARE COST + OVERHEAD	
DIRECT EXPENSES (itemized)	
Production - Reproduction	
Postage/Shipping/Messenger Service	
Local Travel	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	
Miscellaneous	
TOTAL DIRECT EXPENSES	
TOTAL THIS TASK	

9

Quality Assurance Plan





09 Quality Assurance Plan

AECOM offers NJ TRANSIT a proven quality management system (QMS) that is certified to the internationally recognized ISO 9001:2008 standard, yet is sufficiently flexible to address the specific requirements of the project. Quality management is central to our project management approach, and our project team includes individuals assigned to specific quality roles under our system. The general components of AECOM's approach to project quality management, and the parties responsible for them, are depicted below as Figure 9-1.



Quality is an attitude, a culture, and a way of life at AECOM. It is part of everything we do, every day. It is inherent in the way we plan, do, check and act to produce the work we perform for our clients, both internal and external (Figure 9-2 next page.)

INITIATING QUALITY

To deliver quality, it is important that we understand our client's needs, expectations and requirements. That is why the delivery of quality starts well before the project begins with well-documented pre-contract communications.

Also prior to beginning work, AECOM assigns project-level technical staff to perform, monitor, check, review and deliver our work. AECOM confirms that the assigned before the project begins. AECOM's QMS emphasizes our need to understand our clients' needs. Once that is accomplished through well-documented pre-contract communications, we mobilize production and manage quality.

AECOM's executive leadership engages all AECOM employees in the quality process. Through consistent application of the QMS, AECOM's ability to generate mutual benefits is enhanced,

which enhances our clients' ability to create value for their end users.

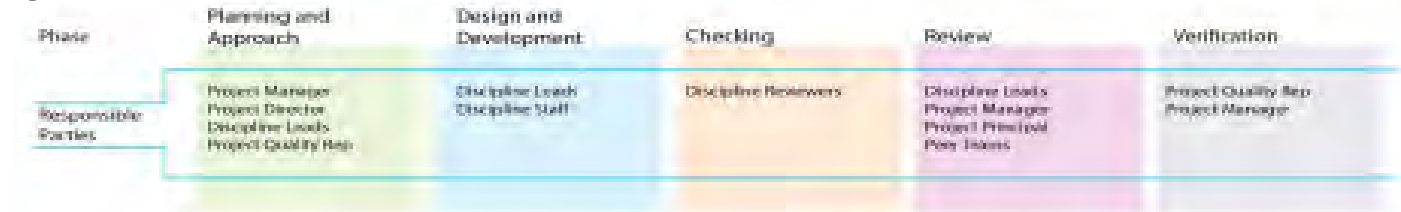
AECOM's QMS is controlled through a designated Office of Quality, which is part of our Corporate Services group. These organizational resources are assigned and coordinated to assess, instruct, implement, monitor and improve QMS processes. At the operations level, AECOM assigns project-level technical staff to perform, monitor, check, review and deliver our work. AECOM confirms that the assigned staff members are proficient in these functions, first by hiring technically-qualified individuals, and second, through on-going formal and informal training.

PRODUCING QUALITY

With the staff, technology and resources in place and the talent assembled, our customized team assigned to the project begins its work. Their mission is to achieve project objectives while completing the project in accordance with the specified standards of quality. AECOM's approach to delivering quality is represented in Figure 3.

Quality assurance is a core value of this team, and our commitment to quality is an ongoing process where we regularly enhance the program to allow us to achieve the high standards of quality demanded by our clients.

Figure 9-1





Well-planned and executed projects achieve successful outcomes. Our earliest project activities include the development of a Project Work Plan (PWP) that spells out the scope, schedule, budget, technical criteria, assignments and other details. This PWP is shared with the project team to assure a common understanding of what needs to be done and how to do it.

The PWP is an integral part of our QMS. It includes quality-related details such as identifying tasks and documents to be reviewed, a schedule for reviews, who does the reviews, and the budget for these activities. Each team member has specific responsibilities, which will be communicated during a project kick-off meeting and monitored during the project.

AECOM's Project Managers are ultimately responsible and accountable for the quality of work delivered to our clients. But they are not alone. Each team member has a role and a responsibility for quality. This starts with a clear expectation that individuals must self-check their own work — an all-too-often overlooked and understated component of the quality process.

In addition, several key staff positions provide direct assistance to the Project Manager as defined in our QMS procedures.

As work proceeds, each phase is supported with a series of quality-related activities that help confirm the project is on track and build quality into the work as it is developed. During preliminary work, this activity determines that:

- Client needs are understood
- Budget and schedule constraints are clear
- Design concepts and project approach are presented clearly and concisely
- Appropriate coordination occurs among disciplines

As the work proceeds from the conceptual level toward the final deliverable, quality activities include:

CONFIRMING QUALITY

Formal quality checking and review are key functions of the AECOM QMS. These procedures focus primarily on technical correctness and completeness of the work at each stage of delivery. Important quality checking and review roles are assigned to qualified individuals at the start of every project and listed in the Project Work Plan. As each delivery stage approaches, this team is mobilized by the Project Manager to carry out the responsibilities assigned, including:

Checking and Review of Calculations: All calculations are checked. This includes not only the obvious mathematics/arithmetic check, but also a check for the appropriateness of methodology, selection and validation of software, use of standards and codes, and general approach. A two-level review by a discipline reviewer and a discipline manager is recorded using a checklist format.

Checking and Review of Drawings: Drawings are reviewed within each discipline to confirm the correctness of the design layout, dimensions, details and other features. On multi-discipline projects, potential interferences, conflicts and other interface issues are identified and resolved through the inter-discipline review. Again, a two-level review is accomplished and documented with a standard checklist and form.

Checking and Review of Specifications: Specifications that complement drawings are prepared and reviewed from a content perspective by a discipline reviewer and discipline manager. In addition, a specifications coordinator reviews all specifications for the project to assure uniformity, consistency and compliance with the prescribed format. This review is documented with a specifications checklist.

Figure 9-2





Checking and Review of Studies/Reports: When the project deliverable is a study or report, a review format specific to that type of deliverable is used. The report is subject to a content review by a discipline reviewer, as well as the discipline manager. Reports are then subject to an overall review for quality by the Project Manager. Like the other components, these reviews are documented on a specific checklist-style form.

DELIVERING QUALITY

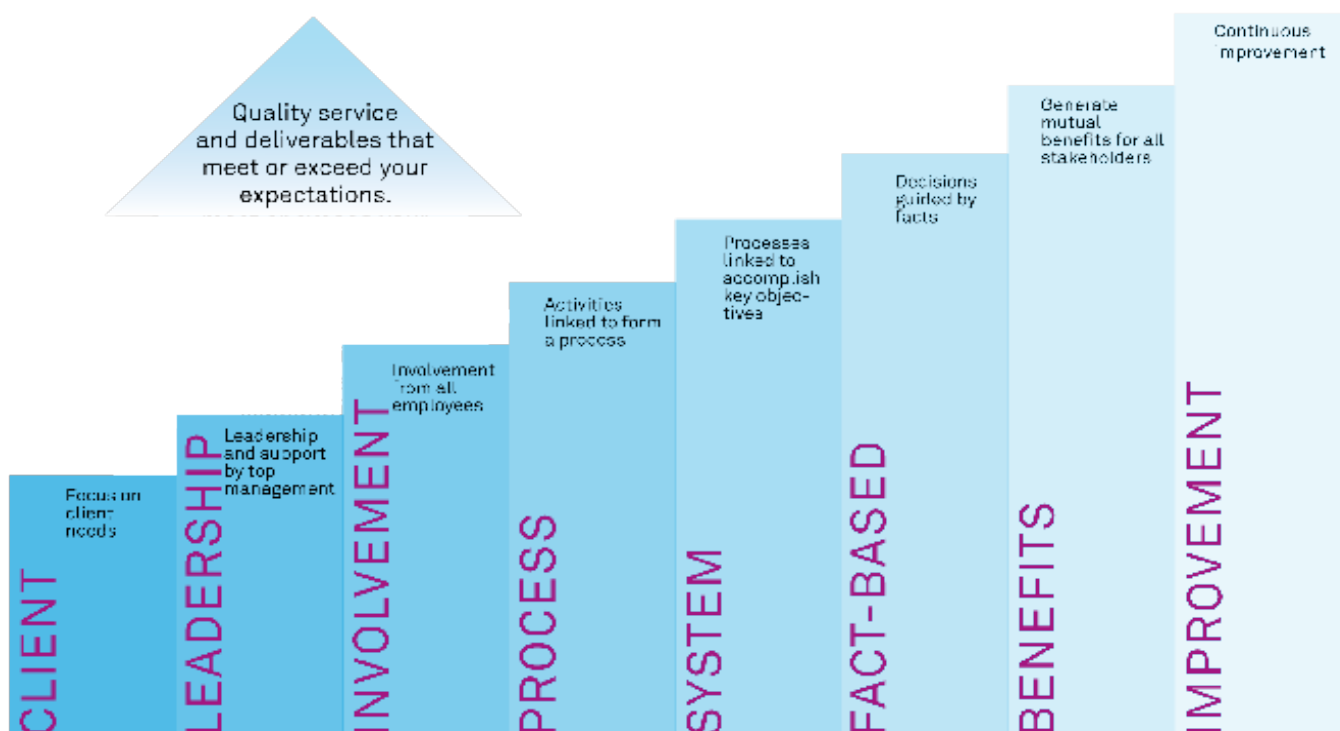
All deliverables undergo a final verification check before they are submitted. An independent reviewer evaluates the deliverables for completeness and consistency, adherence to quality requirements, and resolution of comments. The reviewer then signs a Deliverable Release form and transmits it to our project manager, who is then responsible for the final overlook, approval, and submittal. This final independent evaluation assesses the submittal's state of readiness, without diminishing the project manager's accountability for the quality of the work being released. As a check-and-balance activity, this review pairing helps AECOM consistently deliver quality and value to our clients.

IMPROVING QUALITY

While this action completes the delivery cycle, it does not complete the quality cycle. A key component of ISO 9001 and the AECOM quality program is a focus on continual improvement. We learn from our experiences and apply those lessons to our work going forward. This is done through a formal process of corrective and preventive actions, as specified in our quality system documents. We strive to make each project better than the one before, and to improve our system to make our output stronger and more efficiently produced. The cycle of achieving quality never ends, and is an ongoing, iterative process that embodies AECOM's focus on client satisfaction as a core value.

PERSONNEL QUALIFICATIONS

AECOM's Quality Management Team members have the qualifications and experience to execute their responsibilities on the Project. The Quality Management Plan will define the necessary qualifications for technical staff detailed checkers, reviewers, and design leadership. Roles and assignments will only be given to personnel that meet or exceed the required qualifications.





Typical titles and experience for the project personnel include:

Project Manager (PM). The project manager role is consistent throughout the AECOM organization. In terms of QMS, the project manager has the responsibility for the quality of the work delivered to the client. In terms of checking and verification, the PM will:

- Schedule and monitor quality review activities
- Sign off on all deliverables on the Deliverable Release Record (DRR)
- Be sure that any output of Project Approach Review activity has been provided to the project team for incorporation into the project work and then verified through the checking and verification process

Originator. The originator initially develops the work product. Some input and/or guidance may be provided by others. In terms of checking and verification, originators are responsible for:

- Performing a self-check before submitting their work product for checking by others
- Working with reviewers to address and resolve comments, questions and/or necessary corrections to their work product

Discipline Lead. This role refers to the individual who has overall responsibility for the work product for a specific discipline, technical field, or practice area on a project. Discipline Leads may also carry functional or organizational titles such as technical practice leaders, department head/manager/chief, discipline manager, squad leader, studio manager, group chief, or other similar designations. In terms of checking and verification, Discipline Leads are responsible for signing the Deliverable Release Record and verifying that:

- The work was prepared by qualified staff in accordance with generally accepted professional practice
- The work was checked by qualified staff who did not produce the original work
- The resulting review comments and any outstanding comments from previous reviews have been satisfactorily resolved
- Calculations have been checked including those prepared using technical software tools such as Microsoft Excel (with macros or equations), MathCAD, and other programs, by means of a secondary method (i.e., line-by-line manual check, alternate calculation, independent calculations)
- Microsoft Excel spreadsheets with macros, internally embedded equations, and other programming logic can be validated by performing a line-by-line check of the

Phase	Planning and Approach	Design and Development	Checking	Review	Verification
Responsible Parties	Project Manager Project Principal Discipline Leads	Discipline Lead Discipline Staff	Discipline Reviewers	Discipline Leads Project Manager Project Principal Peer Teams	Independent Quality Reviewer Project Manager
Activity	Establishment of: _ Codes & Standards _ Design Methodology _ Software Validation _ Deliverable Format _ Project Limits _ Scope of Work _ QC/QA Team _ QC/QA Scheduling _ Technical Approach	Preparation of: _ Calculations _ Drawings _ Reports _ Plans/Exhibits _ Quantities _ Specifications _ Cost Estimates _ Schedules	Detailed Check of: _ Calculations _ Drawings _ Reports _ Plans/Exhibits _ Quantities _ Specifications _ Cost Estimates _ Schedules _ Discipline Interfaces	Senior Level Review of: _ Discipline Deliverables _ Level of Completeness _ Constructability _ Change Order Potential _ Claim Potential	Verification of: _ Adherence to QC Processes _ QC Documentation _ Compliance with contract _ Readiness to release
Output/Record	Project Work Plan Project Kickoff Meeting	Work Products Self-checking	Work Product Mark-ups Comment Resolution Review Checklist	Comment Resolution QC Review Checklist	Deliverable Release Record



equations, macros, and other logic and then lock the spreadsheet and complete the software validation process, so the spreadsheet does not require the line-by-line rigor for each use

- When applicable, interdisciplinary reviews have been completed and comments resolved
- The work complies with the scope and regulatory or statutory requirements
- The work product is suitable for delivery to the client

Although it is ideal to have separate individuals serve as originator, discipline reviewer and discipline lead, this is not always practical. Therefore, it is permissible, but not preferred, that the Discipline Lead also is the originator or the discipline reviewer, but not both.

Interdiscipline Reviewer (where applicable). This role is in play on projects that involve multiple disciplines. The interdiscipline reviewer is responsible for checking for potential conflicts, interferences, gaps or other inconsistencies between their discipline's work and that of other involved disciplines – a critical step in the review process.

There are different ways to accomplish interdisciplinary reviews. Most desirably, interdisciplinary reviews are conducted jointly among the involved disciplines during a combined review meeting, using a complete set of plans or other documents comprising the deliverable. It is up to the project manager to work with the discipline leads and establish a process that works best for the project team and organization involved.

To effectively provide this review, the interdiscipline reviewer should be familiar with their discipline's work. As such, it is permissible for the interdiscipline reviewer to also be a discipline reviewer or discipline lead. The review is recorded by the discipline lead on the DRR form.

Discipline Reviewer. Discipline reviewers are qualified by education and experience to serve in the reviewer role, and may be licensed professionals depending on the discipline, the nature of the work product, and local professional regulation requirements. Discipline reviewers must have very limited, if any, involvement in the production of the work product, so as to preserve their independence and unbiased review position.

Independent Peer Reviewer (where applicable). This role is not utilized on all projects. Project deliverables may be subject to an independent peer review (IPR) for any number of reasons, including:

- Client requirement
- Reviewing or regulatory agency requirement
- Risk mitigation strategy
- Project manager or project director preference

When an IPR is required, the role is filled by individuals outside of the normal project quality review team and process. The use of an IPR will be specified in the project plan and the completion of an IPR documented in a separate section on the DRR form. An IPR is conducted over and above the normal checking and verification and does not replace the discipline review and discipline lead review and signoff.

Project Quality Representative (PQR). This role is filled by staff authorized by the Regional Quality Manager. Authorization is granted by RQMs based on qualifications and completion of PQR training. The PQR role in checking and verification is to confirm that the quality review process has been completed satisfactorily and to sign the DRR form. In doing so, the PQR will review the completed forms and other records to make sure that all fields have been completed, boxes appropriately checked, and that all required signatures and dates have been added. The PQR, in general, can perform their duties by examining the completed forms and/or mark-up sets or check prints only. However, the PQR may examine supporting documentation and the deliverable as necessary to confirm the completion and suitability of the quality review process.

10

Schedule



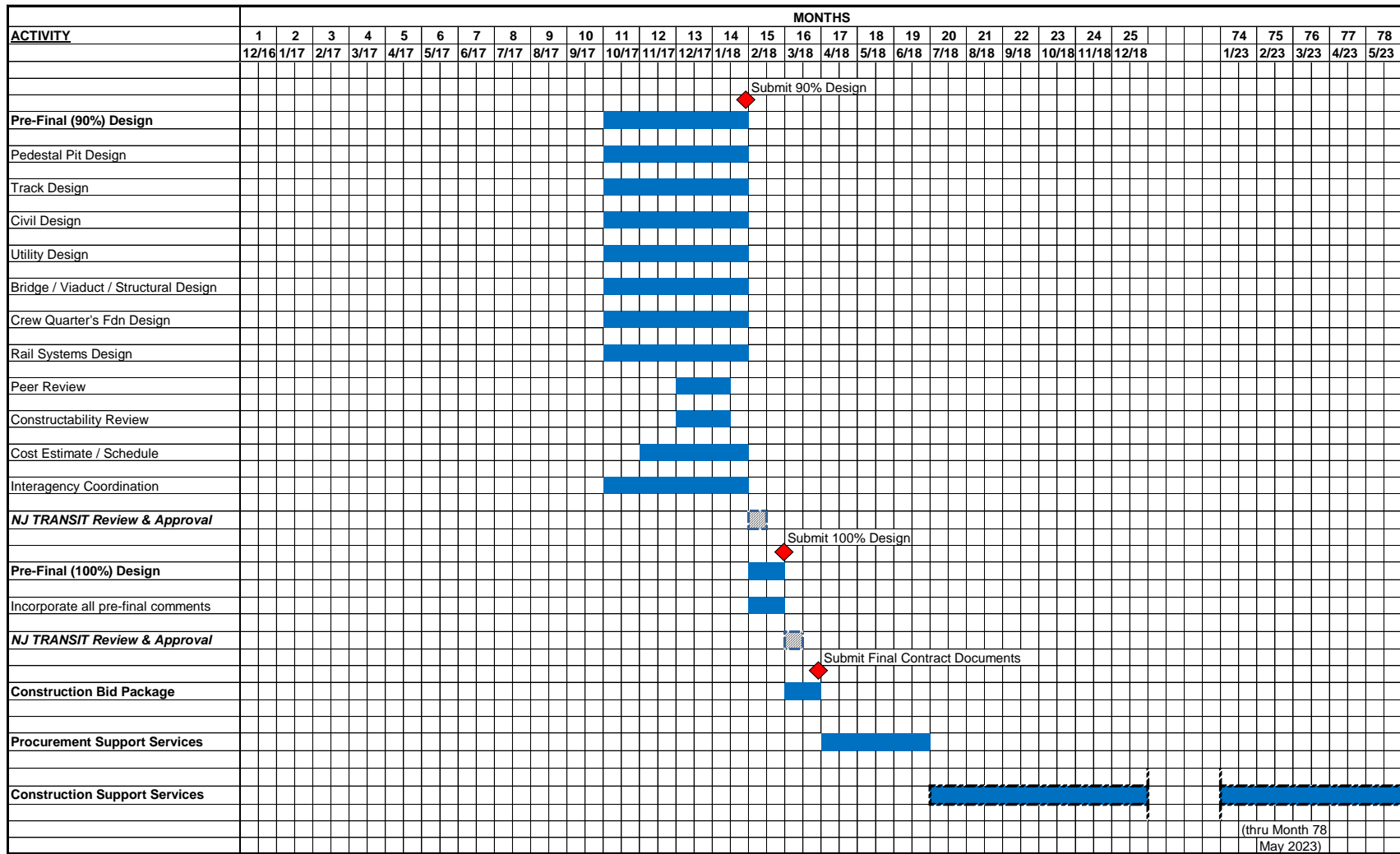


10 Schedule

In this section we have included a preliminary project schedule consistent with the completion of all tasks identified in the RFP.

We have studied the project in great detail, also in consideration of our extensive knowledge of this project, the project site, and NJ TRANSIT as a respected client, and we have developed the attached Proposed Design Schedule.

LONG SLIP FILL AND RAIL ENHANCEMENT PROJECT
PROPOSED DESIGN SCHEDULE



About AECOM

AECOM is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A *Fortune* 500 firm, AECOM had revenue of approximately \$18 billion during fiscal year 2015. See how we deliver what others can only imagine at aecom.com and @AECOM.

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212 629 4249 fax

January 31, 2017

NJ TRANSIT Corporation
Procurement Department, 6th Floor
One Penn Plaza East
Newark, New Jersey 07105-2246
Attn: Taishida S. Chapman - Principal Contracts Specialist

Re: **Revised Cost Proposal**
RFP No. 16-006 – Rail, Track and Station Engineering and Construction Assistance Services for the
Long Slip Fill and Rail Enhancement Project - Revised Scope of Work

Dear Ms. Chapman:

Enclosed please find our revised Cost Proposal for Design and Engineering Services associated with the Long Slip Fill and Rail Enhancement Project.

Our cost proposal, initially submitted on August 19, 2016, has been revised to incorporate responses associated with the following reference documents:

1. NJ TRANSIT comments and direction provided at our negotiation meeting of September 29, 2016
2. NJ TRANSIT comments included in an email dated November 10, 2016 from Taishida Chapman (NJT) to Julie D'Orazio (AECOM) and clarifications provided at a meeting on November 29, 2016
3. Request for Proposal No. 16-006, Revised Scope of Work No. 3 dated December 23, 2016

Based on your direction (Ref. 1, 3), we have deleted Construction Support Services (Task 6) from our proposal. It is our understanding that a separate cost proposal will be solicited following the completion of Phase 2 engineering services followed by a separate negotiation and Board approval. Accordingly, our revised proposal is based on an overall duration of 24 months. This comprises 16 months of engineering and design through bid package preparation and 8 months of procurement support services only.

We have also incorporated modifications reflecting current and audited overhead rate for our team member JCMS, Inc.

AECOM's revised Cost Proposal for Task 1 through Task 5 is now valued at \$8,424,519.80 representing 50,586 Work hours for AECOM and its subcontractors. AECOM's revised Proposal encompasses DBE participation forecasted at 23.1 %, exceeding the RFP requirement.

The following Attachment summarizes our responses to the scope modifications or clarifications requested in the reference documents for Tasks 1 through 5.

AECOM looks forward to NJ Transit review and acceptance of this revised Cost Proposal and is prepared to discuss any questions or clarifications.

Sincerely,

AECOM

Julie D'Orazio, PE

Senior Vice President, Officer-in-Charge

DRAFT RESPONSE TO LONG SLIP RFP REVISED SCOPE OF WORK

Attachment

Task 1 – Project Management

Task 1 proposed hours shown in the attached cost proposal were revised in accordance with the revised Task 1, subtasks 1.01 to 1.06, per reference 3.

The work hours were reviewed and adjusted since the original proposal submission to be in line with the current scope and durations discussed with NJT. That is 16 months thru the Design effort and bid package prep. Overall, the total hours for Task 1 are now at 8,672 hours versus 7,976 hours in the original submission a delta of 8%. The basis of the hours are discussed below.

Throughout Task 1, PM hours have been forecasted to provide the required level of management input and control to the generation of initial documents and the proactive oversight and direction of monthly technical progress and financial forecasts.

DBE Subcontractor hours of 1680 hours for JCMS and 3200 hours for InGroup represent the majority of the TASK 1 hours.

Subtask 1.01. Project Management Plan - AECOM personnel have been budgeted for, as indicated in the Cost proposal backup.

Subtask 1.02. Project Controls was evaluated in accordance with the scope elements and respective deliverables required for Payment procedures, Project Schedule control and reporting and Progress reporting per Request for Cost proposal, reference 3, AECOM staff has been forecasted to generate and manage the monthly progress reports and the related invoicing documents as part of subtask 1.02. As part of the Project Control subtask 1.02, JCMS personnel under AECOM guidance, will generate the Baseline project cost control and schedule documents. This effort includes the draft baseline schedule, NJT review and final baseline issue for the project. This activity for JCMS is budgeted at 400 hours. Then for the monthly project control update and status report generation, 80 hours per month for 16 months is allocated.

Subtask 1.03. Records Management Control is to be performed by InGroup, as previously submitted. Per the revised scope description, one dedicated staff person is budgeted at 160 hours/month for the 16 months of the Design/Bid prep period. Then for the NJT forecasted procurement period of 8 months, one staff person at half time has been budgeted.

Subtask 1.04. Quality management is staffed to provide the key QM functions as required by the revised RFP. This includes the generation of the project PQMP as a draft and Final issue. Quality Management provides for monthly review and signoff of design progress. Overall approach is to insure consistent control, enforcement and application of Quality practices by AECOM and its team members including periodic internal and NJT audits throughout the project duration.

Subtask 1.05. Design Control includes the development of the Design Control Plan consistent with the Quality Plan and the generation of monthly status of Design documents and deliverables. The status of AECOM and its subcontract team members efforts will be tracked thru a Contract Document log. Design status is integrated into the Project Schedule and its updates and reflected in the monthly Progress reporting output.

DRAFT RESPONSE TO LONG SLIP RFP REVISED SCOPE OF WORK

Sub task 1.06. Meetings scope has been evaluated on the basis of a high degree of coordination and transparency with NJ Transit management, NJT rail operations, the FTA, as well as a number of third part entities such as PATH, Utilities, City agencies, etc. The budget has been developed to cover the PM attendance at the average rate of four meetings/month (2 project/2 external 3rd party) plus an additional six kickoff/quarterly review type meetings. An allocation for essential staff time for anticipated meeting attendance/support is included.

Task 2 – Risk Management

AECOM has reviewed the modified scope and deliverables for Task 2 Risk Management and recognizes the need for aligning the risk management task with the NJT Resilience Program (NJTRP) PMP and NJTRP Risk Management Plan. The overall Risk Management Task elements and actions have been reviewed particularly the need to continually monitor risks and develop appropriate action plans in response in new developments.

As was initially proposed, AECOM sub JCMS, is providing the staff hours to execute this Task and their proposed hours have been maintained. However, we have evaluated the need to provide 128 technical personnel hours to integrate the design unction with the risk discussion. There is a minor 20 hour increase to the PM allotment.

Task 3 – System Safety Management

In accordance with the requirement of the RFP, AECOM has reviewed its budget for the System Safety effort. The forecast hours in the revised Cost proposal are to address the generation of a draft and Final SSMP. The basis of the hours is 160 hours for preparation of a SSMP draft. A budget of 80 hours is allocated to review NJ Transit and State Safety Oversight comments and generate a Final SSMP by our System Safety specialist. Time is allotted for 20 hours PM support and 40 hours clerical support. In view of the critical importance of the Project SSMP this is a warranted adjustment from the original proposed budget.

Task 4.1 – Concept Review and Pedestal Pit

The AECOM Team has re-evaluated the scope of work associated with the conceptual design of the pedestal pit (Subtask 4.1b) and modified the cost proposal to reflect the range of interdisciplinary technical issues that will require consideration. It is also understood that this effort will require frequent coordination with future users of this facility.

Task 4.1c – Head End – Wayside Power

The AECOM Team has modified the cost proposal to add the new scope of work defined in Reference 3. The revised proposal includes preparation of a concept plan, feasibility report, load estimate and preliminary cost estimate to provide wayside power to six (6) wayside power panels equally spaced along the proposed tracks adjacent to the platform areas. A similar plan and estimate will be performed considering nine (9) power panels for greater access. It is assumed that the appropriate Henderson Street Substation electrical drawings, load data and associated documentation will be provided to support determination of available power and performance of the load analysis.

DRAFT RESPONSE TO LONG SLIP RFP REVISED SCOPE OF WORK

Preliminary design is not forecasted in Task 4. It is assumed that Preliminary design if authorized is meant to be covered by the increase in Task 4.16, As Directed Preliminary Design. Likewise Task 5 elements have not been allocated any time for Wayside Power Design Scope.

Task 4.3 – Update Design Criteria

The AECOM Team has re-evaluated the scope of work associated with an update of the project design criteria. In consideration of the fact that a portion of the project scope will be designed by NJ TRANSIT and a greater effort will be required to address and coordinate project design criteria, a nominal adjustment of the cost proposal has been included.

Task 4.4 – Track Design

The AECOM Team has modified the cost proposal to include the following changes to the track scope of work noted in References 2 and 3:

- Remove/convert the existing double slip switch (105AB) to a simple turnout and delete the segment of track to the east between Track No. 122 and No. 6 Main
- Add a new #15 turnout on Track No. 119 and connect to Track No. 4 Main with a simple curve
- Replace existing Turnout No. 41 with a simple curve
- Modify the existing profile of Track No. 4 Main in the vicinity of the Grove St. Bridge to facilitate installation of the new double slip switch for the Long Slip lead tracks
- Relocate the existing #10 crossover (11A/11B) between Track No. 119 and No. 4 Main from its current location west of Hoboken Ave. to a new location east of Hoboken Ave. and west of the proposed Long Slip lead tracks. The reconstructed/relocated crossover would utilize a pair of #15 turnouts.

It should be noted that the modifications to the cost proposal in Task 4.4 (30% design) and in the subsequent Task 5 project milestones (60%, 90%, 100% design) includes only track design and engineering associated with the proposed alignment modifications and the addition of new special trackwork but does not include modifications to existing yard structures, catenary, signals or other related infrastructure.

Task 4.5 – Civil Design

The AECOM Team has modified the cost proposal to clarify the civil design scope of work based on References 2 and 3. It is our understanding that NJ TRANSIT will design the Crew Quarters Building. Based on that design, the AECOM Team will provide grading and drainage design and details to integrate that facility with adjacent site features to the east up to the existing HBLR Bridge. The AECOM Team will also design and detail the passenger and maintenance access from an interface point at the face of the Crew Quarters Building to the existing pavement northeast of the site. The modified cost proposal includes an allowance for coordination of the interfaces between the AECOM and NJ TRANSIT Teams.

Task 4.6 – Bridges and Structures

The AECOM Team has modified the cost proposal to clarify the structural design scope and incorporate the additional scope of work based on Reference 3. The additional scope in this Task includes the preliminary design of an emergency egress element at the western end of each passenger platform and

DRAFT RESPONSE TO LONG SLIP RFP REVISED SCOPE OF WORK

the preliminary design of a connecting tunnel beneath the Long Slip tracks to permit evacuation to the north and south from the platform area. The design includes an egress analysis based on the conceptual study done as part of Phase 1 as well as preliminary architectural finishing plans for access from the tunnels to a walkway beneath the elevated HBLR viaduct to 18th St. The design will also address tunnel lighting and drainage considerations. In addition, the revised proposal includes an allowance for coordination of the interfaces between the AECOM and NJ TRANSIT scope of work in the vicinity of the station platform egress elements.

Note: Egress Tunnel Design scope at west end of Platforms

AECOM has requested its DBE subcontractor SSA, to do an initial review of the entire scope and design cost for the Platform Egress Tunnel element .SSA's estimate for preliminary design is incorporated into this Task 4.6 estimate in the revised cost proposal.

However budget estimates for the design Tasks, Task 5.1 60%, Task 5.2 90% and Task 5.3 100% have not been included in AECOM's revised cost submittal. At this time, the concepts and feasibility study have not progressed to warrant firm scoping or design estimates. NJT did not include design scope, beyond preliminary design, in the revised Cost Proposal request.

Task 4.8 – Signal Systems

Signal System design for the new facility and modifications required in the existing facility due to track changes remain the responsibility of NJT.AECOM recognizes the need for coordination of the NJT Signal system with its scope of design and the budget hours for this task have been increased.

Task 4.10 – Supplemental Survey

The AECOM Team has evaluated the cost proposal to clarify the supplemental survey scope of work to be performed by its sub NAIK, based on the original proposal and has incorporated additional survey scope to support the design modifications requested by the reference documents within the existing budget.

Task 4.14 – Optional Pedestal Pit

The AECOM Team has re-evaluated the scope of work associated with the preliminary design of the pedestal pit and modified the cost proposal to reflect the complexity of the technical issues that will require consideration as discussed under Subtask 4.1b. Should this option be selected by NJ TRANSIT, it is understood that there will be significant coordination with internal NJT stakeholders as well as the NJT design unit developing the station platform designs.

Task 4.16 – As-Directed

In accordance with the requirements of Reference 3, the AECOM cost proposal has been revised to include an allowance of 2000 hours for as-directed work to be used at the sole discretion of NJ TRANSIT.

Task 5.1 – Design Development (60% Documents)

The AECOM Team has modified the cost proposal for this task to include advancing the additional and modified scope of work included under the Task 4 items to 60% completion.

DRAFT RESPONSE TO LONG SLIP RFP REVISED SCOPE OF WORK

Task 5.1.1 - Optional Pedestal Pit (60% Documents)

The AECOM Team has modified the cost proposal for this task to include advancing the modified scope of work included under the Task 4.1b to 60% completion.

Task 5.2– Final Design (90% Documents)

The AECOM Team has modified the cost proposal for this task to include advancing the additional and modified scope of work included under the Task 4 items to 90% completion.

Task 5.2.1- Optional Pedestal Pit (90% Documents)

The AECOM Team has modified the cost proposal for this task to include advancing the modified scope of work included under the Task 4.1b to 90% completion.

Task 5.3 – Final Design (100% Documents)

The AECOM Team has modified the cost proposal for this task to include advancing the additional and modified scope of work included under the Task 4 items to 100% completion.

Task 5.3.1 - Optional Pedestal Pit (100% Documents)

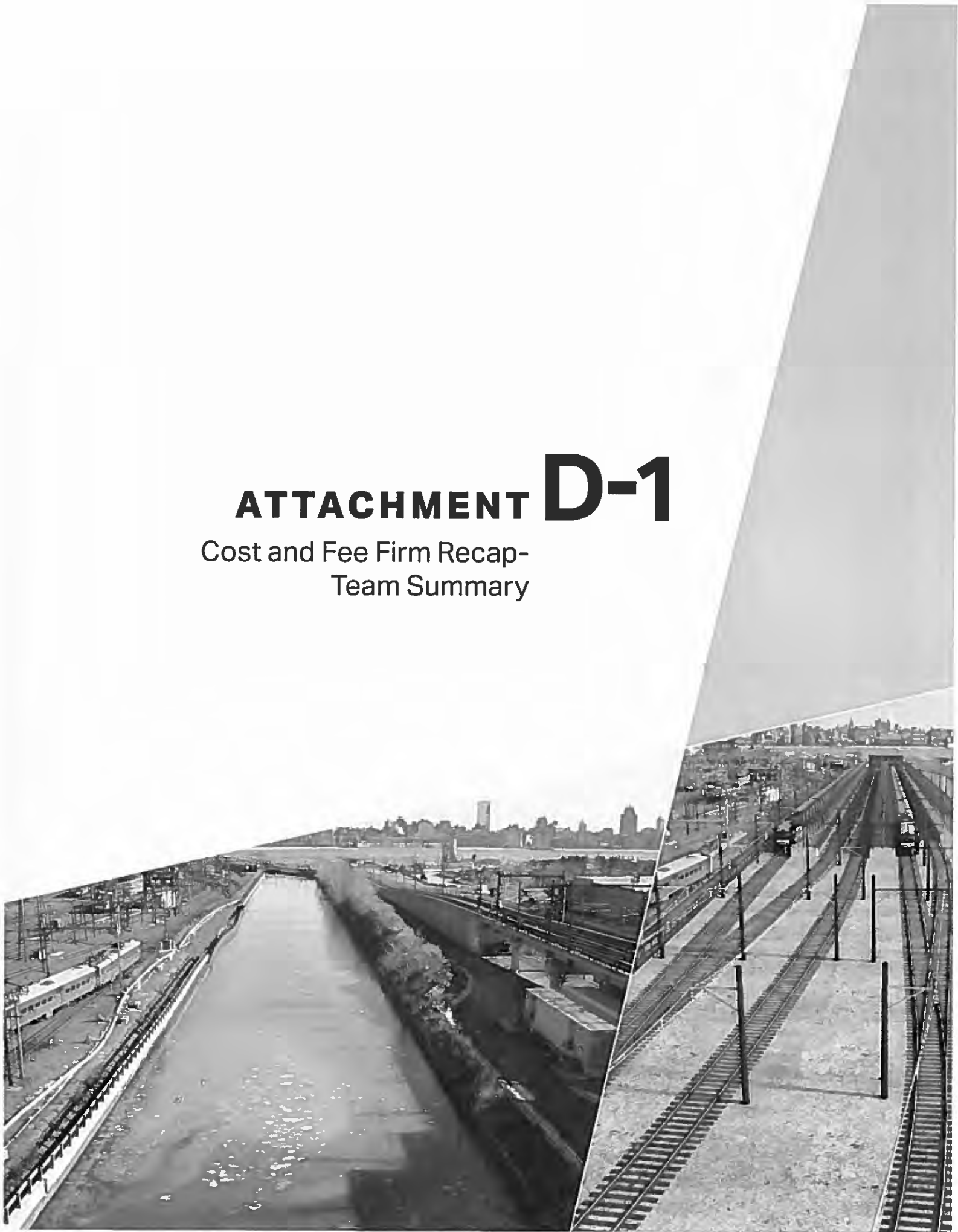
The AECOM Team has modified the cost proposal for this task to include advancing the modified scope of work included under the Task 4.1b to 100% completion.

Task 5.7

The AECOM Team has modified the cost proposal for this task to reflect the project complexity that will require extensive coordination with project stakeholders and multiple design teams to define contract provisions, prepare and assemble comprehensive bid documents and provide a range of preconstruction support services during the procurement support period. These services will include preparation of responses to prospective bidder requests for information, preparation of bid addenda, development of conformed contract drawings and specifications and coordination of technical issues associated with adjacent construction project interfaces.

ATTACHMENT D-1

Cost and Fee Firm Recap-
Team Summary



NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP

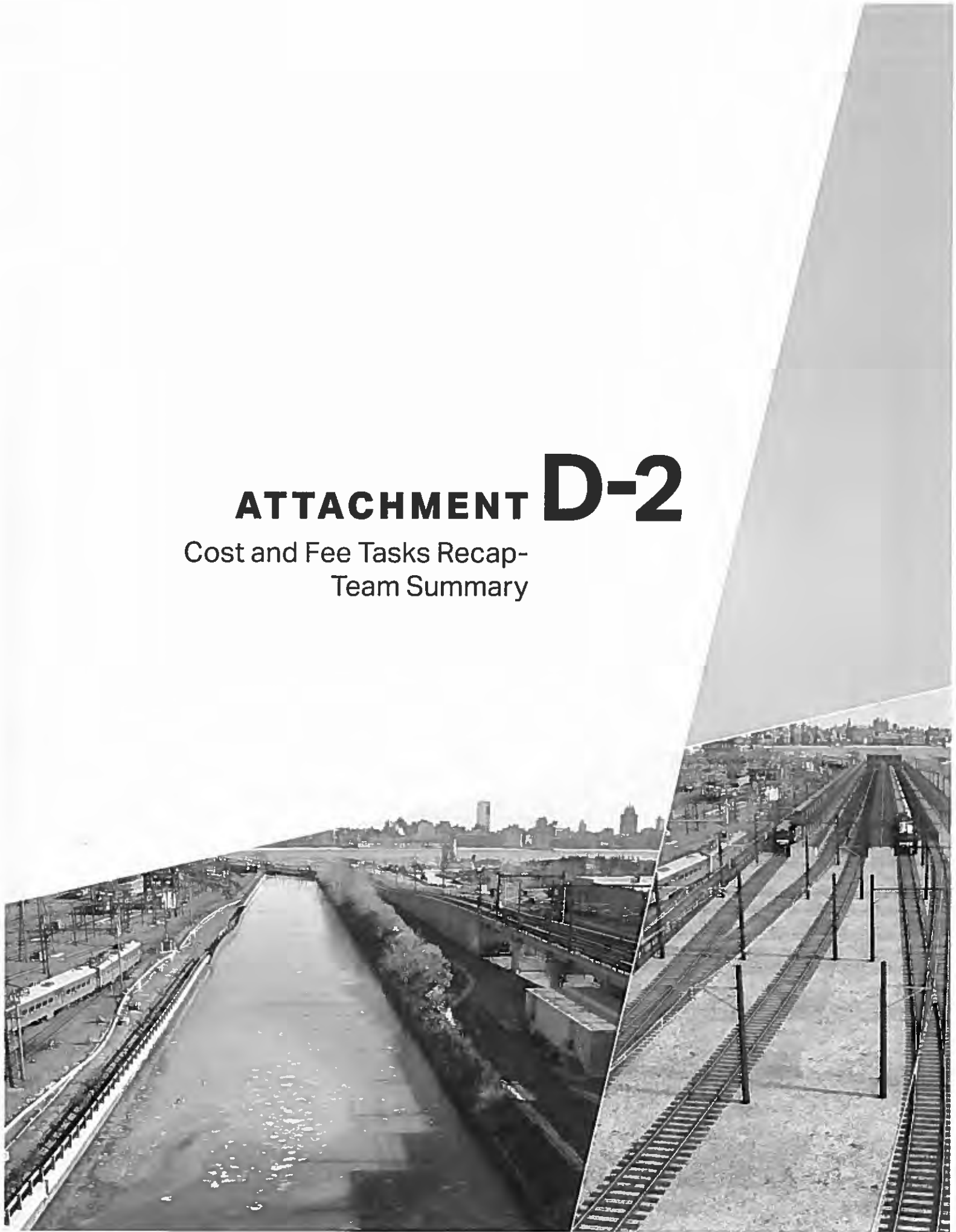
FIRM: AECOM

(Prime Consultant Name)

	DESCRIPTION	PERSON HOURS	SALARY	OVERHEAD	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Firm 1	AECOM	28,160	\$ 1,890,006.74	\$ 2,629,755.38	\$ 4,519,762.12	\$ 451,976.21	\$ 38,200.00	\$ 5,009,938.33
Firm 2								
Firm 3								
Firm 4	InGroup	3,200	\$ 124,242.50	\$ 225,375.89	\$ 349,618.38	\$ 34,961.84	\$ 1,000.00	\$ 385,580.22
Firm 5								
Firm 6								
Firm 7								
Firm 8	Naik Consultants, Inc.	2,124	\$ 109,957.40	\$ 145,451.65	\$ 255,409.05	\$ 25,540.90	\$ 2,600.00	\$ 283,549.95
Firm 9	Jois Construction Management System, Inc. (JCMS)	5,330	\$ 311,022.84	\$ 365,576.25	\$ 676,599.09	\$ 67,659.91	\$ 5,214.37	\$ 749,473.36
Firm 10	Yu & Associates, Inc. (Yu)	1,168	\$ 57,489.63	\$ 96,582.58	\$ 154,072.21	\$ 15,407.22	\$ 90,242.00	\$ 259,721.43
Firm 11	Jacobs	8,840	\$ 622,012.03	\$ 688,007.51	\$ 1,310,019.54	\$ 131,001.95	\$ 27,000.00	\$ 1,468,021.50
Firm 12	SSA	784	\$ 40,624.03	\$ 53,623.73	\$ 94,247.76	\$ 9,424.78	\$ 2,300.00	\$ 105,972.54
Firm 13	VJA	980	\$ 68,424.40	\$ 77,086.93	\$ 145,511.33	\$ 14,551.13	\$ 2,200.00	\$ 162,262.46
TOTALS		50,586	\$ 3,223,779.58	\$ 4,281,459.91	\$ 7,505,239.48	\$ 750,523.95	\$ 168,756.37	\$ 8,424,519.80

ATTACHMENT D-2

Cost and Fee Tasks Recap-
Team Summary



**NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering**

COST AND FEE RECAP BY FIRM/TASK

FIRM: AECOM

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 139.14%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1.01	Project Management Plan	168	\$ 15,915.20	\$ 22,144.41	\$ 38,059.61	\$ 3,805.96	\$ 1,200.00	\$ 43,065.57
	Task 1.02	Project Control	1,654	\$ 144,617.20	\$ 201,220.37	\$ 345,837.57	\$ 34,583.76	\$ 2,000.00	\$ 382,421.33
	Task 1.03	Records Management Control System	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 1.04	Quality Management	668	\$ 59,211.04	\$ 82,386.24	\$ 141,597.28	\$ 14,159.73	\$ 800.00	\$ 156,557.01
	Task 1.05	Design Control	456	\$ 36,458.80	\$ 50,728.77	\$ 87,187.57	\$ 8,718.76	\$ 800.00	\$ 96,706.33
	Task 1.06	Project Meetings	846	\$ 76,246.80	\$ 106,089.80	\$ 182,336.60	\$ 18,233.66	\$ 6,000.00	\$ 206,570.26
	Task 2	Risk Management	268	\$ 26,958.40	\$ 37,509.92	\$ 64,468.32	\$ 6,446.83	\$ 3,000.00	\$ 73,915.15
	Task 3	System Safety Management Plan (SSMP)	300	\$ 27,851.60	\$ 38,752.72	\$ 66,604.32	\$ 6,660.43	\$ 500.00	\$ 73,764.75
Phase IA: Conceptual Design			0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 4.1	Design Review / Pedestal Pit / Wayside Power	452	\$ 34,560.00	\$ 48,086.78	\$ 82,646.78	\$ 8,264.68	\$ 1,000.00	\$ 91,911.46
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	200	\$ 14,208.00	\$ 19,769.01	\$ 33,977.01	\$ 3,397.70	\$ 400.00	\$ 37,774.71
	Task 4.3	Update Design Criteria	72	\$ 4,408.00	\$ 6,133.29	\$ 10,541.29	\$ 1,054.13	\$ 200.00	\$ 11,795.42
	Task 4.4	Track Design	1,161	\$ 72,316.00	\$ 100,620.48	\$ 172,936.48	\$ 17,293.65	\$ 1,000.00	\$ 191,230.13
	Task 4.5	Civil Design	1,160	\$ 72,088.00	\$ 100,303.24	\$ 172,391.24	\$ 17,239.12	\$ 500.00	\$ 190,130.37
	Task 4.6	Bridges, Building & Structures	1,700	\$ 94,916.00	\$ 132,066.12	\$ 226,982.12	\$ 22,698.21	\$ 500.00	\$ 250,180.33
	Task 4.7	Traction Power/Electrical Design	1,596	\$ 101,360.00	\$ 141,032.30	\$ 242,392.30	\$ 24,239.23	\$ 800.00	\$ 267,431.53
	Task 4.8	Signal Systems	184	\$ 18,400.00	\$ 25,601.76	\$ 44,001.76	\$ 4,400.18	\$ -	\$ 48,401.94
	Task 4.9	Cost and Schedule	40	\$ 4,480.00	\$ 6,233.47	\$ 10,713.47	\$ 1,071.35	\$ -	\$ 11,784.82
	Task 4.10	Supplemental Survey	184	\$ 12,256.00	\$ 17,053.00	\$ 29,309.00	\$ 2,930.90	\$ 500.00	\$ 32,739.90
	Task 4.11	Utility Relocation Preliminary Estimates	356	\$ 25,136.00	\$ 34,974.23	\$ 60,110.23	\$ 6,011.02	\$ 500.00	\$ 66,621.25
	Task 4.12	Geotechnical Investigations	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 4.13	Environmental	240	\$ 15,856.00	\$ 22,062.04	\$ 37,918.04	\$ 3,791.80	\$ 1,200.00	\$ 42,909.84
	Task 4.14	Optional Pedestal Pit	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 4.15	Value Engineering	152	\$ 14,432.00	\$ 20,080.68	\$ 34,512.68	\$ 3,451.27	\$ 3,000.00	\$ 40,963.95
	Task 4.16	As-Directed Preliminary Design	2,000	\$ 116,268.00	\$ 161,775.30	\$ 278,043.30	\$ 27,804.33	\$ 400.00	\$ 306,247.62
Phase II: Preparation of Final Plans, Specifications, and Estimates			0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 5.1	Design Development (60% Design)	5,487	\$ 350,642.90	\$ 487,884.53	\$ 838,527.43	\$ 83,852.74	\$ 2,500.00	\$ 924,880.17
	Task 5.1.1	Optional Pedestal Pit (60%)							
	Task 5.2	Final Design (90% Complete Documents)	4,316	\$ 255,975.60	\$ 356,164.45	\$ 612,140.05	\$ 61,214.00	\$ 2,000.00	\$ 675,354.05
	Task 5.2.1	Optional Pedestal Pit (90%)							
	Task 5.3	Final Design (100% Complete Documents)	1,920	\$ 120,180.40	\$ 167,219.01	\$ 287,399.41	\$ 28,739.94	\$ 2,200.00	\$ 318,339.35
	Task 5.3.1	Optional Pedestal Pit (100%)							
	Task 5.4	Peer Review	400	\$ 32,251.36	\$ 44,874.54	\$ 77,125.90	\$ 7,712.59	\$ 2,400.00	\$ 87,238.49
	Task 5.5	Interagency Coordination - Final Design	500	\$ 34,443.20	\$ 47,924.27	\$ 82,367.47	\$ 8,236.75	\$ 1,200.00	\$ 91,804.22
	Task 5.6	As-Directed Final Design	1,000	\$ 64,519.20	\$ 89,772.01	\$ 154,291.21	\$ 15,429.12	\$ 800.00	\$ 170,520.34
	Task 5.7	Construction Bid Package	680	\$ 44,051.04	\$ 61,292.62	\$ 105,343.66	\$ 10,534.37	\$ 2,800.00	\$ 118,678.02
Phase III: Construction Support Services (NOT IN SCOPE)			0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.1	Response to Questions	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.2	Change Order Preparation/Evaluation	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.3	Shop Drawing Review and Material Approvals	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.5	Final Inspection/Project Inspection	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.6	As-Built Drawings	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.7	Design Support - As Directed	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Grand Total			28160	\$ 1,890,006.74	\$ 2,629,755.38	\$ 4,519,762.12	\$ 451,976.21	\$ 38,200.00	\$ 5,009,938.33

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP BY FIRM/TASK

FIRM: InGroup, Inc. (ING)

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 181.40%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1.01	Project Management Plan	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.02	Project Control	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.03	Records Management Control System	3,200	\$ 124,242.50	\$ 225,375.89	\$ 349,618.38	\$ 34,961.84	\$ 1,000.00	\$ 385,580.22
	Task 1.04	Quality Management	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.05	Design Control	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.06	Project Meetings	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 2	Risk Management	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 3	System Safety Management Plan (SSMP)	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase IA: Conceptual Design									
	Task 4.1	Design Review / Pedestal Pit / Wayside Power	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.3	Update Design Criteria	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.4	Track Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.5	Civil Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.6	Bridges, Building & Structures	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.7	Traction Power/Electrical Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.8	Signal System Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.9	Cost and Schedule	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.10	Supplemental Survey	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.11	Utility Relocation Preliminary Estimates	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.12	Geotechnical Investigations	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.13	Environmental	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.14	Optional Pedestal Pit	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.15	Value Engineering	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.16	As-Directed Preliminary Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase II: Preparation of Final Plans, Specifications, and Estimates									
	Task 5.1	Design Development (60% Design)	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.1.1	Optional Pedestal Pit (60%)							
	Task 5.2	Final Design (90% Complete Documents)	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.2.1	Optional Pedestal Pit (90%)							
	Task 5.3	Final Design (100% Complete Documents)	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.3.1	Optional Pedestal Pit (100%)							
	Task 5.4	Peer Review	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.5	Interagency Coordination - Final Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.6	As-Directed Final Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.7	Construction Bid Package	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase III: Construction Support Services (NOT IN SCOPE)									
	Task 6.1	Response to Questions	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.2	Change Order Preparation/Evaluation	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.3	Shop Drawing Review and Material Approvals	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.5	Final Inspection/Project Inspection	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.6	As-Built Drawings	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.7	Design Support - As Directed	0	\$ -	\$ -	\$ -	\$ -		\$ -
Grand Total									
			3200	\$ 124,242.50	\$ 225,375.89	\$ 349,618.38	\$ 34,961.84	\$ 1,000.00	\$ 385,580.22

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP BY FIRM/TASK

FIRM: Jols Construction Management System, Inc. (JCMS)

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 122.39%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1.01	Project Management Plan	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.02	Project Control	1,680	\$ 98,698.60	\$ 116,010.33	\$ 214,708.93	\$ 21,470.89	\$ 1,700.00	\$ 237,879.83
	Task 1.03	Records Management Control System	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.04	Quality Management	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.05	Design Control	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 1.06	Project Meetings	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 2	Risk Management	1,280	\$ 75,597.20	\$ 88,856.95	\$ 164,454.15	\$ 16,445.41	\$ 1,000.00	\$ 181,899.56
	Task 3	System Safety Management Plan (SSMP)		\$ -	\$ -				\$ -
Phase IA: Conceptual Design				\$ -	\$ -				\$ -
	Task 4.1	Design Review / Pedestal Pit / Wayside Power		\$ -	\$ -				\$ -
Phase IB: Preliminary Design				\$ -	\$ -				\$ -
	Task 4.2	Preliminary Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.3	Update Design Criteria		\$ -	\$ -				\$ -
	Task 4.4	Track Design		\$ -	\$ -				\$ -
	Task 4.5	Civil Design		\$ -	\$ -				\$ -
	Task 4.6	Bridges, Building & Structures		\$ -	\$ -				\$ -
	Task 4.7	Traction Power/Electrical Design		\$ -	\$ -				\$ -
	Task 4.8	Signal Systems		\$ -	\$ -				\$ -
	Task 4.9	Cost and Schedule	624	\$ 34,392.00	\$ 40,424.36	\$ 74,816.36	\$ 7,481.64	\$ 1,000.00	\$ 83,297.99
	Task 4.10	Supplemental Survey	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.11	Utility Relocation Preliminary Estimates	124	\$ 7,196.00	\$ 8,458.18	\$ 15,654.18	\$ 1,565.42	\$ 500.00	\$ 17,719.60
	Task 4.12	Geotechnical Investigations		\$ -	\$ -				\$ -
	Task 4.13	Environmental		\$ -	\$ -				\$ -
	Task 4.14	Optional Pedestal Pit		\$ -	\$ -				\$ -
	Task 4.15	Value Engineering		\$ -	\$ -				\$ -
	Task 4.16	As-Directed Preliminary Design		\$ -	\$ -				\$ -
Phase II: Preparation of Final Plans, Specifications, and Estimates				\$ -	\$ -				\$ -
	Task 5.1	Design Development (60% Design)	596	\$ 33,804.60	\$ 39,733.93	\$ 73,538.53	\$ 7,353.85	\$ 200.00	\$ 81,092.38
	Task 5.1.1	Optional Pedestal Pit (60%)							
	Task 5.2	Final Design (90% Complete Documents)	460	\$ 26,322.68	\$ 30,939.68	\$ 57,262.36	\$ 5,726.24	\$ 200.00	\$ 63,188.59
	Task 5.2.1	Optional Pedestal Pit (90%)							
	Task 5.3	Final Design (100% Complete Documents)	220	\$ 12,776.12	\$ 15,017.05	\$ 27,793.17	\$ 2,779.32	\$ 300.00	\$ 30,872.49
	Task 5.3.1	Optional Pedestal Pit (100%)							
	Task 5.4	Peer Review		\$ -	\$ -				\$ -
	Task 5.5	Interagency Coordination - Final Design		\$ -	\$ -				\$ -
	Task 5.6	As-Directed Final Design		\$ -	\$ -				\$ -
	Task 5.7	Construction Bid Package	346	\$ 22,235.64	\$ 26,135.77	\$ 48,371.41	\$ 4,837.14	\$ 314.37	\$ 53,522.92
Phase III: Construction Support Services (NOT IN SCOPE)				\$ -	\$ -				\$ -
	Task 6.1	Response to Questions		\$ -	\$ -				\$ -
	Task 6.2	Change Order Preparation/Evaluation	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.3	Shop Drawing Review and Material Approvals		\$ -	\$ -				\$ -
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion		\$ -	\$ -				\$ -
	Task 6.5	Final Inspection/Project Inspection		\$ -	\$ -				\$ -
	Task 6.6	As-Built Drawings		\$ -	\$ -				\$ -
	Task 6.7	Design Support - As Directed		\$ -	\$ -				\$ -
				\$ -	\$ -				\$ -
				\$ -	\$ -				\$ -
Grand Total			5330	\$ 311,022.84	\$ 365,576.25	\$ 676,599.09	\$ 67,659.91	\$ 5,214.37	\$ 749,473.36

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP BY FIRM/TASK

FIRM: Yu & Associates, Inc. (YU)

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 168.00%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1.01	Project Management Plan							
	Task 1.02	Project Control							
	Task 1.03	Records Management Control System							
	Task 1.04	Quality Management							
	Task 1.05	Design Control							
	Task 1.06	Project Meetings							
	Task 2	Risk Management	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 3	System Safety Management Plan (SSMP)	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase IA: Conceptual Design			0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.1	Design Review / Pedestal Pit / Wayside Power	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.3	Update Design Criteria	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.4	Track Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.5	Civil Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.6	Bridges, Building & Structures	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.7	Traction Power/Electrical Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.8	Signal System Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.9	Cost and Schedule	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.10	Supplemental Survey	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.11	Utility Relocation Preliminary Estimates	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.12	Geotechnical Investigations	938	\$ 49,926.90	\$ 73,797.19	\$ 117,724.09	\$ 11,772.41	\$ 88,542.00	\$ 218,038.50
	Task 4.13	Environmental	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.14	Optional Pedestal Pit	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.15	Value Engineering	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 4.16	As-Directed Preliminary Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase II: Preparation of Final Plans, Specifications, and Estimates			0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.1	Design Development (60% Design)	102	\$ 5,884.95	\$ 9,886.71	\$ 15,771.66	\$ 1,577.17	\$ 700.00	\$ 18,048.82
	Task 5.1.1	Optional Pedestal Pit (60%)							
	Task 5.2	Final Design (90% Complete Documents)	52	\$ 3,098.03	\$ 5,204.70	\$ 8,302.73	\$ 830.27	\$ 700.00	\$ 9,833.00
	Task 5.2.1	Optional Pedestal Pit (90%)							
	Task 5.3	Final Design (100% Complete Documents)	76	\$ 4,579.75	\$ 7,693.98	\$ 12,273.73	\$ 1,227.37	\$ 300.00	\$ 13,801.11
	Task 5.3.1	Optional Pedestal Pit (100%)							
	Task 5.4	Peer Review	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.5	Interagency Coordination - Final Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.6	As-Directed Final Design	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 5.7	Construction Bid Package	0	\$ -	\$ -	\$ -	\$ -		\$ -
Phase III: Construction Support Services (NOT IN SCOPE)			0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.1	Response to Questions	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.2	Change Order Preparation/Evaluation	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.3	Shop Drawing Review and Material Approvals	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.5	Final Inspection/Project Inspection	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.6	As-Built Drawings	0	\$ -	\$ -	\$ -	\$ -		\$ -
	Task 6.7	Design Support - As Directed	0	\$ -	\$ -	\$ -	\$ -		\$ -
Grand Total			1168	\$ 57,489.63	\$ 96,582.58	\$ 154,072.21	\$ 15,407.22	\$ 90,242.00	\$ 259,721.43

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP BY FIRM/TASK

FIRM: **JACOBS**

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 110.61%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1.01	Project Management Plan							
	Task 1.02	Project Control							
	Task 1.03	Records Management Control System							
	Task 1.04	Quality Management							
	Task 1.05	Design Control							
	Task 1.06	Project Meetings							
	Task 2	Risk Management							
	Task 3	System Safety Management Plan (SSMP)							
Phase IA: Conceptual Design			0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 4.1	Design Review / Pedestal Pit / Wayside Power	606	\$ 45,442.98	\$ 50,264.48	\$ 95,707.46	\$ 9,570.75	\$ 2,000.00	\$ 107,278.21
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	104	\$ 8,760.00	\$ 9,689.44	\$ 18,449.44	\$ 1,844.94	\$ 1,000.00	\$ 21,294.38
	Task 4.3	Update Design Criteria							\$ -
	Task 4.4	Track Design	120	\$ 15,309.60	\$ 16,933.95	\$ 32,243.55	\$ 3,224.35	\$ 500.00	\$ 35,967.90
	Task 4.5	Civil Design							\$ -
	Task 4.6	Bridges, Building & Structures	1,822	\$ 126,772.75	\$ 140,223.34	\$ 266,996.09	\$ 26,699.61	\$ 1,800.00	\$ 295,495.70
	Task 4.7	Traction Power/Electrical Design							\$ -
	Task 4.8	Signal System Design							\$ -
	Task 4.9	Cost and Schedule							\$ -
	Task 4.10	Supplemental Survey							\$ -
	Task 4.11	Utility Relocation Preliminary Estimates							\$ -
	Task 4.12	Geotechnical Investigations							\$ -
	Task 4.13	Environmental							\$ -
	Task 4.14	Optional Pedestal Pit	1,169	\$ 72,995.54	\$ 80,740.37	\$ 153,735.91	\$ 15,373.59	\$ 2,500.00	\$ 171,609.50
	Task 4.15	Value Engineering							\$ -
	Task 4.16	As-Directed Preliminary Design							\$ -
Phase II: Preparation of Final Plans, Specifications, and Estimates									\$ -
	Task 5.1	Design Development (60% Design)	794	\$ 57,836.87	\$ 63,973.36	\$ 121,810.23	\$ 12,181.02	\$ 5,000.00	\$ 138,991.25
	Task 5.1.1	Optional Pedestal Pit (60%)	936	\$ 61,304.24	\$ 67,808.62	\$ 129,112.86	\$ 12,911.29	\$ 5,000.00	\$ 147,024.15
	Task 5.2	Final Design (90% Complete Documents)	862	\$ 65,491.62	\$ 72,440.28	\$ 137,931.91	\$ 13,793.19	\$ 1,500.00	\$ 153,225.10
	Task 5.2.1	Optional Pedestal Pit (90%)	666	\$ 43,392.99	\$ 47,996.99	\$ 91,389.98	\$ 9,139.00	\$ 1,500.00	\$ 102,028.98
	Task 5.3	Final Design (100% Complete Documents)	1,155	\$ 78,881.37	\$ 87,250.68	\$ 166,132.04	\$ 16,613.20	\$ 2,500.00	\$ 185,245.25
	Task 5.3.1	Optional Pedestal Pit (100%)	454	\$ 29,713.14	\$ 32,865.71	\$ 62,578.85	\$ 6,257.88	\$ 2,500.00	\$ 71,336.73
	Task 5.4	Peer Review	88	\$ 9,986.47	\$ 11,046.03	\$ 21,032.50	\$ 2,103.25	\$ 1,200.00	\$ 24,335.75
	Task 5.5	Interagency Coordination - Final Design							\$ -
	Task 5.6	As-Directed Final Design							\$ -
	Task 5.7	Construction Bid Package	64	\$ 6,124.46	\$ 6,774.27	\$ 12,898.73	\$ 1,289.87	\$ -	\$ 14,188.60
Phase III: Construction Support Services (NOT IN SCOPE)				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.1	Response to Questions	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.2	Change Order Preparation/Evaluation							\$ -
	Task 6.3	Shop Drawing Review and Material Approvals	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.5	Final Inspection/Project Inspection	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.6	As-Built Drawings	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 6.7	Design Support - As Directed							\$ -
Grand Total			8840	\$ 622,012.03	\$ 688,007.51	\$1,310,019.54	\$131,001.95	\$ 27,000.00	\$ 1,468,021.50

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP BY FIRM/TASK

FIRM: SSA

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 132.00%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1.01	Project Management Plan							\$ -
	Task 1.02	Project Control							\$ -
	Task 1.03	Records Management Control System							\$ -
	Task 1.04	Quality Management							\$ -
	Task 1.05	Design Control							\$ -
	Task 1.06	Project Meetings							\$ -
	Task 2	Risk Management							\$ -
	Task 3	System Safety Management Plan (SSMP)							\$ -
Phase IA: Conceptual Design									\$ -
	Task 4.1	Design Review / Pedestal Pit / Wayside Power							\$ -
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design	60	\$ 4,173.60	\$ 5,509.15	\$ 9,682.75	\$ 968.28	\$ 500.00	\$ 11,151.03
	Task 4.3	Update Design Criteria							\$ -
	Task 4.4	Track Design							\$ -
	Task 4.5	Civil Design							\$ -
	Task 4.6	Bridges, Building & Structures	688	\$ 33,009.04	\$ 43,571.93	\$ 76,580.97	\$ 7,658.10	\$ 1,500.00	\$ 85,739.07
	Task 4.7	Traction Power/Electrical Design							\$ -
	Task 4.8	Signal System Design							\$ -
	Task 4.9	Cost and Schedule							\$ -
	Task 4.10	Supplemental Survey							\$ -
	Task 4.11	Utility Relocation Preliminary Estimates							\$ -
	Task 4.12	Geotechnical Investigations							\$ -
	Task 4.13	Environmental							\$ -
	Task 4.14	Optional Pedestal Pit							\$ -
	Task 4.15	Value Engineering							\$ -
	Task 4.16	As-Directed Preliminary Design							\$ -
Phase II: Preparation of Final Plans, Specifications, and Estimates									
	Task 5.1	Design Development (60% Design)	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 5.1.1	Optional Pedestal Pit (60%)							\$ -
	Task 5.2	Final Design (90% Complete Documents)	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 5.2.1	Optional Pedestal Pit (90%)							\$ -
	Task 5.3	Final Design (100% Complete Documents)	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	Task 5.3.1	Optional Pedestal Pit (100%)							\$ -
	Task 5.4	Peer Review	36	\$ 3,441.39	\$ 4,542.64	\$ 7,984.04	\$ 798.40	\$ 300.00	\$ 9,082.44
	Task 5.5	Interagency Coordination - Final Design							\$ -
	Task 5.6	As-Directed Final Design							\$ -
	Task 5.7	Construction Bid Package							\$ -
Phase III: Construction Support Services (NOT IN SCOPE)									
	Task 6.1	Response to Questions							\$ -
	Task 6.2	Change Order Preparation/Evaluation							\$ -
	Task 6.3	Shop Drawing Review and Material Approvals							\$ -
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion							\$ -
	Task 6.5	Final Inspection/Project Inspection							\$ -
	Task 6.6	As-Built Drawings							\$ -
	Task 6.7	Design Support - As Directed							\$ -
Grand Total			784	\$ 40,624.03	\$ 53,623.73	\$ 94,247.76	\$ 9,424.78	\$ 2,300.00	\$ 105,972.54

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP BY FIRM/TASK

FIRM: **VIA**

Phase	No.	Task	PERSON HOURS	SALARY	OVERHEAD @ 112.66%	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements									
	Task 1.01	Project Management Plan							
	Task 1.02	Project Control							
	Task 1.03	Records Management Control System							
	Task 1.04	Quality Management							
	Task 1.05	Design Control							
	Task 1.06	Project Meetings							
	Task 2	Risk Management							\$ -
	Task 3	System Safety Management Plan (SSMP)							\$ -
Phase IA: Conceptual Design									\$ -
	Task 4.1	Design Review / Pedestal Pit / Wayside Power							\$ -
Phase IB: Preliminary Design									
	Task 4.2	Preliminary Design							\$ -
	Task 4.3	Update Design Criteria							\$ -
	Task 4.4	Track Design							\$ -
	Task 4.5	Civil Design							\$ -
	Task 4.6	Bridges, Building & Structures							\$ -
	Task 4.7	Traction Power/Electrical Design							\$ -
	Task 4.8	Signal System Design							\$ -
	Task 4.9	Cost and Schedule							\$ -
	Task 4.10	Supplemental Survey							\$ -
	Task 4.11	Utility Relocation Preliminary Estimates							\$ -
	Task 4.12	Geotechnical Investigations							\$ -
	Task 4.13	Environmental							\$ -
	Task 4.14	Optional Pedestal Pit							\$ -
	Task 4.15	Value Engineering	980	\$ 68,424.40	\$ 77,086.93	\$ 145,511.33	\$ 14,551.13	\$ 2,200.00	\$ 162,262.46
	Task 4.16	As-Directed Preliminary Design							\$ -
Phase II: Preparation of Final Plans, Specifications, and Estimates									\$ -
	Task 5.1	Design Development (60% Design)							\$ -
	Task 5.1.1	Optional Pedestal Pit (60%)							\$ -
	Task 5.2	Final Design (90% Complete Documents)							\$ -
	Task 5.2.1	Optional Pedestal Pit (90%)							\$ -
	Task 5.3	Final Design (100% Complete Documents)							\$ -
	Task 5.3.1	Optional Pedestal Pit (100%)							\$ -
	Task 5.4	Peer Review							\$ -
	Task 5.5	Interagency Coordination - Final Design							\$ -
	Task 5.6	As-Directed Final Design							\$ -
	Task 5.7	Construction Bid Package							\$ -
Phase III: Construction Support Services (NOT IN SCOPE)									\$ -
	Task 6.1	Response to Questions							\$ -
	Task 6.2	Change Order Preparation/Evaluation							\$ -
	Task 6.3	Shop Drawing Review and Material Approvals							\$ -
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion							\$ -
	Task 6.5	Final Inspection/Project Inspection							\$ -
	Task 6.6	As-Built Drawings							\$ -
	Task 6.7	Design Support - As Directed							\$ -
Grand Total			980	\$ 68,424.40	\$ 77,086.93	\$ 145,511.33	\$ 14,551.13	\$ 2,200.00	\$ 162,262.46

ATTACHMENT D-3

Cost and Fee Tasks
Recap by Firm



NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

COST AND FEE RECAP - TEAM SUMMARY

ATTACHMENT D-3

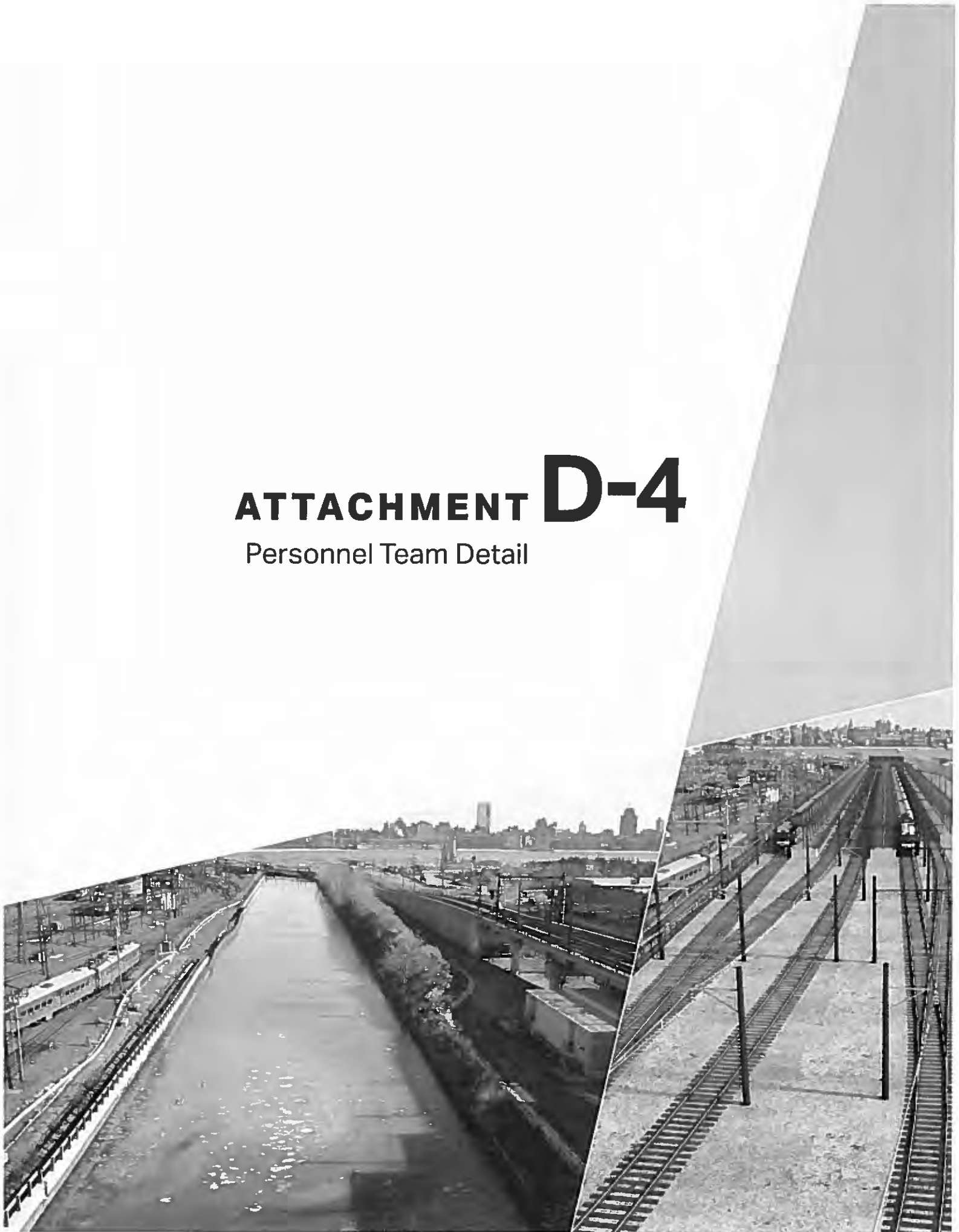
FIRM: AECOM

(Please Consult Notes)

	DESCRIPTION	PERSON HOURS	SALARY	OVERHEAD	SUBTOTAL	FIXED FEE @ 10%	DIRECT EXPENSES	TOTAL COST
Project Requirements								
Task 1.01	Project Management Plan	168	\$ 15,915.20	\$ 22,144.41	\$ 38,059.61	\$ 3,805.96	\$ 1,200.00	\$ 43,065.57
Task 1.02	Project Control	3,334	\$ 243,315.80	\$ 317,230.71	\$ 560,546.51	\$ 56,054.65	\$ 3,700.00	\$ 620,301.16
Task 1.03	Records Management Control System	3,200	\$ 124,242.50	\$ 225,375.89	\$ 349,618.38	\$ 34,961.84	\$ 1,000.00	\$ 385,580.22
Task 1.04	Quality Management	668	\$ 59,211.04	\$ 82,386.24	\$ 141,597.28	\$ 14,159.73	\$ 800.00	\$ 156,557.01
Task 1.05	Design Control	456	\$ 36,458.80	\$ 50,728.77	\$ 87,187.57	\$ 8,718.76	\$ 800.00	\$ 96,706.33
Task 1.06	Project Meetings	846	\$ 76,246.80	\$ 106,089.80	\$ 182,336.60	\$ 18,233.66	\$ 6,000.00	\$ 206,570.26
		8672	\$ 555,390.14	\$ 803,955.82	\$ 1,359,345.95	\$ 135,934.60	\$ 13,500.00	\$ 1,508,780.55
Task 2	Risk Management	1,548	\$ 102,555.60	\$ 126,366.87	\$ 228,922.47	\$ 22,892.25	\$ 4,000.00	\$ 255,814.71
Task 3	System Safety Management Plan (SSMP)	300	\$ 27,851.60	\$ 38,752.72	\$ 66,604.32	\$ 6,660.43	\$ 500.00	\$ 73,764.75
Phase IA: Conceptual Design								
Task 4.1	Design Review / Pedestal Pit / Wayside Power	1,058	\$ 80,002.98	\$ 98,351.26	\$ 178,354.24	\$ 17,835.42	\$ 3,000.00	\$ 199,189.67
Phase IB: Preliminary Design								
Task 4.2	Preliminary Design	364	\$ 27,141.60	\$ 34,967.60	\$ 62,109.20	\$ 6,210.92	\$ 1,900.00	\$ 70,220.12
Task 4.3	Update Design Criteria	72	\$ 4,408.00	\$ 6,133.29	\$ 10,541.29	\$ 1,054.13	\$ 200.00	\$ 11,795.42
Task 4.4	Track Design	1,281	\$ 87,625.60	\$ 117,554.43	\$ 205,180.03	\$ 20,518.00	\$ 1,500.00	\$ 227,198.03
Task 4.5	Civil Design	1,160	\$ 72,088.00	\$ 100,303.24	\$ 172,391.24	\$ 17,239.12	\$ 500.00	\$ 190,130.37
Task 4.6	Bridges, Building & Structures	4,210	\$ 254,697.79	\$ 315,861.39	\$ 570,559.18	\$ 57,055.92	\$ 3,800.00	\$ 631,415.10
Task 4.7	Traction Power/Electrical Design	1,596	\$ 101,360.00	\$ 141,032.30	\$ 242,392.30	\$ 24,239.23	\$ 800.00	\$ 267,431.53
Task 4.8	Signal Systems	184	\$ 18,400.00	\$ 25,601.76	\$ 44,001.76	\$ 4,400.18	\$ -	\$ 48,401.94
Task 4.9	Cost and Schedule	664	\$ 38,872.00	\$ 46,657.83	\$ 85,529.83	\$ 8,552.98	\$ 1,000.00	\$ 95,082.81
Task 4.10	Supplemental Survey	1,408	\$ 83,835.60	\$ 111,738.49	\$ 195,574.09	\$ 19,557.41	\$ 2,100.00	\$ 217,231.50
Task 4.11	Utility Relocation Preliminary Estimates	480	\$ 32,332.00	\$ 43,432.41	\$ 75,764.41	\$ 7,576.44	\$ 1,000.00	\$ 84,340.85
Task 4.12	Geotechnical Investigations	938	\$ 43,926.90	\$ 73,797.19	\$ 117,724.09	\$ 11,772.41	\$ 88,542.00	\$ 218,038.50
Task 4.13	Environmental	240	\$ 15,856.00	\$ 22,062.04	\$ 37,918.04	\$ 3,791.80	\$ 1,200.00	\$ 42,909.84
Task 4.14	Optional Pedestal Pit	1,169	\$ 72,995.54	\$ 80,740.37	\$ 153,735.91	\$ 15,373.59	\$ 2,500.00	\$ 171,609.50
Task 4.15	Value Engineering	1,132	\$ 82,856.40	\$ 97,167.61	\$ 180,024.01	\$ 18,002.40	\$ 5,200.00	\$ 203,226.42
Task 4.16	As Directed Preliminary Design	2,000	\$ 116,268.00	\$ 161,775.30	\$ 278,043.30	\$ 27,804.33	\$ 400.00	\$ 306,247.63
		17,956	\$ 1,132,666.41	\$ 1,477,176.51	\$ 2,609,842.92	\$ 260,984.28	\$ 113,642.00	\$ 2,984,469.22
Phase II: Preparation of Final Plans, Specifications, and Estimates								
Task 5.1	Design Development (60% Design)	7,879	\$ 486,547.12	\$ 652,244.68	\$ 1,138,791.8	\$ 113,879.18	\$ 9,400.00	\$ 1,262,070.98
Task	Optional Pedestal Pit (60%)	936	\$ 61,304.24	\$ 67,808.62	\$ 129,112.86	\$ 12,911.29	\$ 5,000.00	\$ 147,024.15
Task 5.2	Final Design (90% Complete Documents)	5,690	\$ 350,887.94	\$ 464,749.11	\$ 815,637.05	\$ 81,563.7	\$ 4,400.00	\$ 901,600.75
Task	Optional Pedestal Pit (90%)	666	\$ 43,392.99	\$ 47,996.99	\$ 91,389.98	\$ 9,139	\$ 1,500.00	\$ 102,028.98
Task 5.3	Final Design (100% Complete Documents)	3,371	\$ 216,417.64	\$ 277,180.72	\$ 493,598.36	\$ 49,359.84	\$ 5,300.00	\$ 548,258.19
Task	Optional Pedestal Pit (100%)	454	\$ 29,713.14	\$ 32,865.71	\$ 62,578.85	\$ 6,257.88	\$ 2,500.00	\$ 71,336.73
Task 5.4	Peer Review	524	\$ 45,679.22	\$ 60,463.22	\$ 106,142.44	\$ 10,614.24	\$ 3,900.00	\$ 120,656.68
Task 5.5	Interagency Coordination - Final Design	500	\$ 34,443.20	\$ 47,924.27	\$ 82,367.47	\$ 8,236.75	\$ 1,200.00	\$ 91,804.22
Task 5.6	As-Directed Final Design	1,000	\$ 64,519.20	\$ 89,772.01	\$ 154,291.21	\$ 15,429.12	\$ 800.00	\$ 170,520.34
Task 5.7	Construction Bid Package	1,090	\$ 72,411.14	\$ 94,202.66	\$ 166,613.8	\$ 16,661.38	\$ 3,114.37	\$ 186,389.55
		22,110	\$ 1,405,315.83	\$ 1,835,207.99	\$ 3,240,523.82	\$ 324,052.38	\$ 37,114.37	\$ 3,601,690.57
Phase III: Construction Support Services (NOT IN SCOPE)								
Task 6.1	Response to Questions	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Task 6.2	Change Order Preparation/Evaluation	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Task 6.3	Shop Drawing Review and Material Approvals	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Task 6.5	Final Inspection/Project Inspection	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Task 6.6	As-Built Drawings	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Task 6.7	Design Support - As Directed	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
		50,586	\$ 3,223,779.58	\$ 4,281,459.91	\$ 7,505,239.48	\$ 750,523.94	\$ 168,756.37	\$ 8,424,519.80
TOTALS		50,586	\$ 3,223,779.58	\$ 4,281,459.91	\$ 7,505,239.48	\$ 750,523.95	\$ 168,756.37	\$ 8,424,519.80

ATTACHMENT D-4

Personnel Team Detail



NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 1.01

FIRM: AECOM

Project Management Plan

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	16	\$ 111.65	\$ 1,786.40
Staff 2	Sr. Consultant	40	\$ 101.50	\$ 4,060.00
Staff 3	Project Manager	80	\$ 113.68	\$ 9,094.40
Staff 4	Design/Planning Team Leader		\$ 84.87	\$ -
Staff 5	Project Specialist		\$ 106.09	\$ -
Staff 6	Supervising Eng/Plan		\$ 74.26	\$ -
Staff 7	Principal Eng/Plan		\$ 63.65	\$ -
Staff 8	Sr. Eng/Plan		\$ 53.05	\$ -
Staff 9	Engineer/Planner		\$ 42.44	\$ -
Staff 10	Field Survey Staff		\$ 31.83	\$ -
Staff 11	CADD Tech		\$ 44.56	\$ -
Staff 12	Intern/Clerical	32	\$ 30.45	\$ 974.40
TOTAL ESTIMATED HOURS		168		

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

TOTAL SALARY (BARE COST)			\$ 15,915.20
OVERHEAD @ 139.14% OF BARE COST			\$ 22,144.41
SUBTOTAL -- SALARY + OVERHEAD			\$ 38,059.61
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 3,805.96
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$800.00		
Postage/Shipping/Messenger Service	\$200.00		
Local Travel	\$200.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 1,200.00
TOTAL THIS TASK			\$ 43,065.57

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 1.02

FIRM: AECOM

Project Control

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	64	\$ 111.65	\$ 7,145.60
Staff 2	Sr. Consultant	240	\$ 101.50	\$ 24,360.00
Staff 3	Project Manager	670	\$ 113.68	\$ 76,165.60
Staff 4	Design/Planning Team Leader		\$ 81.20	\$ -
Staff 5	Project Specialist		\$ 101.50	\$ -
Staff 6	Supervising Eng/Plan	400	\$ 71.05	\$ 28,420.00
Staff 7	Principal Eng/Plan		\$ 63.65	\$ -
Staff 8	Sr. Eng/Plan		\$ 53.05	\$ -
Staff 9	Engineer/Planner		\$ 42.44	\$ -
Staff 10	Field Survey Staff		\$ 31.83	\$ -
Staff 11	CADD Tech		\$ 44.56	\$ -
Staff 12	Intern/Clerical	280	\$ 30.45	\$ 8,526.00
TOTAL ESTIMATED HOURS		1,654		

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

TOTAL SALARY (BARE COST)			\$ 144,617.20
OVERHEAD @ 139.14% OF BARE COST			\$ 201,220.37
SUBTOTAL -- SALARY + OVERHEAD			\$ 345,837.57
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 34,583.76
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$1,000.00		
Postage/Shipping/Messenger Service	\$500.00		
Local Travel	\$500.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES	\$ 2,000.00		
TOTAL THIS TASK			\$ 382,421.33

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 1.02

FIRM: Jois Construction Management
System, Inc. (JCMS)

Project Control

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	80	\$ 83.23	\$ 6,658.40
Staff 2	Chief Cost Estimator	120	\$ 85.26	\$ 10,231.20
Staff 3	Sr. Cost Estimator		\$ 70.02	\$ -
Staff 4	Sr. Scheduling Engineer	640	\$ 59.89	\$ 38,326.40
Staff 5	Cost Estimator		\$ 54.11	\$ -
Staff 6	Scheduling Engineer	840	\$ 51.77	\$ 43,482.60
Staff 7	Technical Support		\$ 36.07	\$ -
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
TOTAL ESTIMATED HOURS		1680		

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

TOTAL SALARY (BARE COST)		\$98,698.60
OVERHEAD @ 117.54 % OF BARE COST		\$116,010.33
SUBTOTAL -- SALARY + OVERHEAD		\$ 214,708.93
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 21,470.89
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$500.00	
Postage/Shipping/Messenger Service	\$200.00	
Local Travel	\$1,000.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$1,700.00
TOTAL THIS TASK		\$237,879.83

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 1.03

FIRM: InGroup, Inc. (ING)

Records Management Control System

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	320	\$ 52.27	\$ 16,727.20
Staff 2	Outreach Coordinator I		\$ 19.57	\$ -
Staff 3	Outreach Coordinator II		\$ 17.00	\$ -
Staff 4	Graphics/Web Outreach Associate		\$ 22.04	\$ -
Staff 5	Outreach Support Admin		\$ 14.00	\$ -
Staff 6	TBD		\$ -	\$ -
Staff 7	Records Technician	2880	\$ 37.33	\$ 107,515.30
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
TOTAL ESTIMATED HOURS		3200		

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

TOTAL SALARY (BARE COST)			\$124,242.50
OVERHEAD @ 181.40 % OF BARE COST			\$225,375.89
SUBTOTAL -- SALARY + OVERHEAD			\$ 349,618.38
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 34,961.84
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$400.00		
Postage/Shipping/Messenger Service	\$100.00		
Local Travel	\$500.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$1,000.00
TOTAL THIS TASK			\$385,580.22

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 1.04

FIRM: AECOM

Quality Management

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	72	\$ 111.65	\$ 8,038.80
Staff 2	Sr. Consultant	268	\$ 101.50	\$ 27,202.00
Staff 3	Project Manager	168	\$ 113.68	\$ 19,098.24
Staff 4	Design/Planning Team Leader		\$ 84.87	\$ -
Staff 5	Project Specialist		\$ 106.09	\$ -
Staff 6	Supervising Eng/Plan		\$ 74.26	\$ -
Staff 7	Principal Eng/Plan		\$ 63.65	\$ -
Staff 8	Sr. Eng/Plan		\$ 53.05	\$ -
Staff 9	Engineer/Planner		\$ 42.44	\$ -
Staff 10	Field Survey Staff		\$ 31.83	\$ -
Staff 11	CADD Tech		\$ 44.56	\$ -
Staff 12	Intern/Clerical	160	\$ 30.45	\$ 4,872.00
TOTAL ESTIMATED HOURS		668		

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

TOTAL SALARY (BARE COST)			\$ 59,211.04
OVERHEAD @ 139.14% OF BARE COST			\$ 82,386.24
SUBTOTAL -- SALARY + OVERHEAD			\$ 141,597.28
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 14,159.73
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$400.00		
Postage/Shipping/Messenger Service	\$200.00		
Local Travel	\$200.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES		\$ 800.00	
TOTAL THIS TASK			\$ 156,557.01

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 1.05

FIRM: AECOM

Design Control

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	32	\$ 111.65	\$ 3,572.80
Staff 2	Sr. Consultant	120	\$ 101.50	\$ 12,180.00
Staff 3	Project Manager	40	\$ 113.68	\$ 4,547.20
Staff 4	Design/Planning Team Leader		\$ 84.87	\$ -
Staff 5	Project Specialist		\$ 106.09	\$ -
Staff 6	Supervising Eng/Plan	200	\$ 71.05	\$ 14,210.00
Staff 7	Principal Eng/Plan		\$ 63.65	\$ -
Staff 8	Sr. Eng/Plan		\$ 53.05	\$ -
Staff 9	Engineer/Planner		\$ 42.44	\$ -
Staff 10	Field Survey Staff		\$ 31.83	\$ -
Staff 11	CADD Tech		\$ 44.56	\$ -
Staff 12	Intern/Clerical	64	\$ 30.45	\$ 1,948.80
TOTAL ESTIMATED HOURS		456		

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

TOTAL SALARY (BARE COST)		\$ 36,458.80
OVERHEAD @ 139.14% OF BARE COST		\$ 50,728.77
SUBTOTAL -- SALARY + OVERHEAD		\$ 87,187.57
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 8,718.76
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$400.00	
Postage/Shipping/Messenger Service	\$200.00	
Local Travel	\$200.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 800.00
TOTAL THIS TASK		\$ 96,706.33

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 1.06

FIRM: AECOM

Project Meetings

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	16	\$ 111.65	\$ 1,786.40
Staff 2	Sr. Consultant	120	\$ 101.50	\$ 12,180.00
Staff 3	Project Manager	430	\$ 113.68	\$ 48,882.40
Staff 4	Design/Planning Team Leader		\$ 84.87	\$ -
Staff 5	Project Specialist		\$ 106.09	\$ -
Staff 6	Supervising Eng/Plan	120	\$ 71.05	\$ 8,526.00
Staff 7	Principal Eng/Plan		\$ 63.65	\$ -
Staff 8	Sr. Eng/Plan		\$ 53.05	\$ -
Staff 9	Engineer/Planner		\$ 42.44	\$ -
Staff 10	Field Survey Staff		\$ 31.83	\$ -
Staff 11	CADD Tech		\$ 44.56	\$ -
Staff 12	Intern/Clerical	160	\$ 30.45	\$ 4,872.00
TOTAL ESTIMATED HOURS		846		

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

TOTAL SALARY (BARE COST)			\$ 76,246.80
OVERHEAD @ 139.14% OF BARE COST			\$ 106,089.80
SUBTOTAL -- SALARY + OVERHEAD			\$ 182,336.60
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 18,233.66
DIRECT EXPENSES (itemized)		\$	
Production - Reproduction		\$2,000.00	
Postage/Shipping/Messenger Service		\$500.00	
Local Travel		\$2,000.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)		\$0.00	
Miscellaneous (Graphics/presentation support)		\$1,500.00	
TOTAL DIRECT EXPENSES			\$ 6,000.00
TOTAL THIS TASK			\$ 206,570.26

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 2

FIRM: AECOM

Risk Management

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 116.70	\$ -
Staff 2	Sr. Consultant	64	\$ 101.50	\$ 6,496.00
Staff 3	Project Manager	140	\$ 113.68	\$ 15,915.20
Staff 4	Design/Planning Team Leader		\$ 84.87	\$ -
Staff 5	Project Specialist		\$ 106.09	\$ -
Staff 6	Supervising Eng/Plan	64	\$ 71.05	\$ 4,547.20
Staff 7	Principal Eng/Plan		\$ 63.65	\$ -
Staff 8	Sr. Eng/Plan		\$ 53.05	\$ -
Staff 9	Engineer/Planner		\$ 42.44	\$ -
Staff 10	Field Survey Staff		\$ 31.83	\$ -
Staff 11	CADD Tech		\$ 44.56	\$ -
Staff 12	Intern/Clerical		\$ 31.83	\$ -
TOTAL ESTIMATED HOURS		268		

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

TOTAL SALARY (BARE COST)			\$ 26,958.40
OVERHEAD @ 139.14% OF BARE COST			\$ 37,509.92
SUBTOTAL -- SALARY + OVERHEAD			\$ 64,468.32
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 6,446.83
DIRECT EXPENSES (itemized)		\$	
Production - Reproduction		\$800.00	
Postage/Shipping/Messenger Service		\$400.00	
Local Travel		\$800.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)		\$0.00	
Miscellaneous (Workshop support / catering)		\$1,000.00	
TOTAL DIRECT EXPENSES			\$ 3,000.00
TOTAL THIS TASK			\$ 73,915.15

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 2

**FIRM: Jois Construction Management
System, Inc. (JCMS)**

Risk Management

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 82.00	\$ -
Staff 2	Chief Cost Estimator		\$ 89.12	\$ -
Staff 3	Sr. Cost Estimator	400	\$ 66.99	\$ 26,796.00
Staff 4	Sr. Scheduling Engineer	400	\$ 59.89	\$ 23,954.00
Staff 5	Cost Estimator	240	\$ 51.77	\$ 12,423.60
Staff 6	Scheduling Engineer	240	\$ 51.77	\$ 12,423.60
Staff 7	Technical Support		\$ 36.07	\$ -
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
TOTAL ESTIMATED HOURS		1280		

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

TOTAL SALARY (BARE COST)		\$75,597.20
OVERHEAD @ 117.54 % OF BARE COST		\$88,856.95
SUBTOTAL -- SALARY + OVERHEAD		\$ 164,454.15
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 16,445.41
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$200.00	
Postage/Shipping/Messenger Service	\$0.00	
Local Travel	\$800.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$1,000.00
TOTAL THIS TASK		\$181,899.56

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 3

FIRM: AECOM

System Safety Management Plan (SSMP)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 116.70	\$ -
Staff 2	Sr. Consultant	240	\$ 101.50	\$ 24,360.00
Staff 3	Project Manager	20	\$ 113.68	\$ 2,273.60
Staff 4	Design/Planning Team Leader		\$ 84.87	\$ -
Staff 5	Project Specialist		\$ 106.09	\$ -
Staff 6	Supervising Eng/Plan		\$ 74.26	\$ -
Staff 7	Principal Eng/Plan		\$ 63.65	\$ -
Staff 8	Sr. Eng/Plan		\$ 53.05	\$ -
Staff 9	Engineer/Planner		\$ 42.44	\$ -
Staff 10	Field Survey Staff		\$ 31.83	\$ -
Staff 11	CADD Tech		\$ 44.56	\$ -
Staff 12	Intern/Clerical	40	\$ 30.45	\$ 1,218.00
TOTAL ESTIMATED HOURS		300		

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

TOTAL SALARY (BARE COST)			\$ 27,851.60
OVERHEAD @ 139.14% OF BARE COST			\$ 38,752.72
SUBTOTAL -- SALARY + OVERHEAD			\$ 66,604.32
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 6,660.43
DIRECT EXPENSES (itemized)		\$	
Production - Reproduction		\$200.00	
Postage/Shipping/Messenger Service		\$100.00	
Local Travel		\$200.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)		\$0.00	
Miscellaneous		\$0.00	
TOTAL DIRECT EXPENSES			\$ 500.00
TOTAL THIS TASK			\$ 73,764.75

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.1

FIRM: AECOM

Design Review / Pedestal Pit / Wayside Power

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	8	\$ 100.00	\$ 800.00
Staff 3	Project Manager	24	\$ 112.00	\$ 2,688.00
Staff 4	Design/Planning Team Leader	308	\$ 80.00	\$ 24,640.00
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan		\$ 70.00	\$ -
Staff 7	Principal Eng/Plan	96	\$ 60.00	\$ 5,760.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	16	\$ 42.00	\$ 672.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		452		

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

TOTAL SALARY (BARE COST)	\$ 34,560.00
OVERHEAD @ 139.14% OF BARE COST	\$ 48,086.78
SUBTOTAL -- SALARY + OVERHEAD	\$ 82,646.78
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 8,264.68
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$500.00
Postage/Shipping/Messenger Service	\$200.00
Local Travel	\$300.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ 1,000.00
TOTAL THIS TASK	\$ 91,911.46

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.1

FIRM: JACOBS

Design Review / Pedestal Pit / Wayside Power

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	36	\$ 127.58	\$ 4,592.88
Staff 3	Project Manager	42	\$ 124.05	\$ 5,210.10
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	144	\$ 90.00	\$ 12,960.00
Staff 7	Principal Eng/Plan	180	\$ 75.00	\$ 13,500.00
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	108	\$ 45.00	\$ 4,860.00
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech	96	\$ 45.00	\$ 4,320.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		606		

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

TOTAL SALARY (BARE COST)		\$ 45,442.98
OVERHEAD @ 110.61% OF BARE COST		\$ 50,264.48
SUBTOTAL -- SALARY + OVERHEAD		\$ 95,707.46
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 9,570.75
DIRECT EXPENSES (itemized)		\$
Production - Reproduction	\$1,200.00	
Postage/Shipping/Messenger Service	\$300.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 2,000.00
TOTAL THIS TASK		\$ 107,278.21

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.2

FIRM: AECOM

Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	40	\$ 100.00	\$ 4,000.00
Staff 3	Project Manager	4	\$ 112.00	\$ 448.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	40	\$ 70.00	\$ 2,800.00
Staff 7	Principal Eng/Plan	116	\$ 60.00	\$ 6,960.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech		\$ 42.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		200		

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

TOTAL SALARY (BARE COST)		\$ 14,208.00
OVERHEAD @ 139.14% OF BARE COST		\$ 19,769.01
SUBTOTAL -- SALARY + OVERHEAD		\$ 33,977.01
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 3,397.70
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$300.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$0.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 400.00
TOTAL THIS TASK		\$ 37,774.71

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.2

FIRM: JACOBS

Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant		\$ 127.58	\$ -
Staff 3	Project Manager		\$ 124.05	\$ -
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	64	\$ 90.00	\$ 5,760.00
Staff 7	Principal Eng/Plan	40	\$ 75.00	\$ 3,000.00
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner		\$ 45.00	\$ -
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech		\$ 45.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
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)	\$ 8,760.00
OVERHEAD @ 110.61% OF BARE COST	\$ 9,689.44
SUBTOTAL – SALARY + OVERHEAD	\$ 18,449.44
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 1,844.94
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$500.00
Postage/Shipping/Messenger Service	\$200.00
Local Travel	\$300.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ 1,000.00
TOTAL THIS TASK	\$ 21,294.38

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.2

FIRM: SSA

Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	24	\$ 92.81	\$ 2,227.44
Staff 3	Project Manager		\$ 72.10	\$ -
Staff 4	Design/Planning Team Leader	12	\$ 72.10	\$ 865.20
Staff 5	Project Specialist		\$ -	\$ -
Staff 6	Supervising Eng/Plan	16	\$ 51.81	\$ 828.96
Staff 7	Principal Eng/Plan		\$ 48.00	\$ -
Staff 8	Sr. Eng/Plan		\$ -	\$ -
Staff 9	Engineer/Planner	8	\$ 31.50	\$ 252.00
Staff 10	Field Survey Staff		\$ 27.32	\$ -
Staff 11	CADD Tech		\$ -	\$ -
Staff 12	Intern/Clerical		\$ -	\$ -
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)		\$ 4,173.60
OVERHEAD @ 132.00% OF BARE COST		\$ 5,509.15
SUBTOTAL -- SALARY + OVERHEAD		\$ 9,682.75
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 968.28
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$200.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$200.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 500.00
TOTAL THIS TASK		\$ 11,151.03

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.3

FIRM: AECOM

Update Design Criteria

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant		\$ 100.00	\$ -
Staff 3	Project Manager	4	\$ 112.00	\$ 448.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	48	\$ 70.00	\$ 3,360.00
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech		\$ 42.00	\$ -
Staff 12	Intern/Clerical	20	\$ 30.00	\$ 600.00
TOTAL ESTIMATED HOURS		72		

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

TOTAL SALARY (BARE COST)		\$ 4,408.00
OVERHEAD @ 139.14% OF BARE COST		\$ 6,133.29
SUBTOTAL -- SALARY + OVERHEAD		\$ 10,541.29
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 1,054.13
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$100.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$0.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 200.00
TOTAL THIS TASK		\$ 11,795.42

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.4

FIRM: AECOM

Track Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	104	\$ 100.00	\$ 10,400.00
Staff 3	Project Manager	32	\$ 112.00	\$ 3,584.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	306	\$ 70.00	\$ 21,420.00
Staff 7	Principal Eng/Plan	373	\$ 60.00	\$ 22,380.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	346	\$ 42.00	\$ 14,532.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		1,161		

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

TOTAL SALARY (BARE COST)			\$ 72,316.00
OVERHEAD @ 139.14% OF BARE COST			\$ 100,620.48
SUBTOTAL -- SALARY + OVERHEAD			\$ 172,936.48
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 17,293.65
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$500.00		
Postage/Shipping/Messenger Service	\$200.00		
Local Travel	\$300.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 1,000.00
TOTAL THIS TASK			\$ 191,230.13

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.4

FIRM: JACOBS

Track Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	120	\$ 127.58	\$ 15,309.60
Staff 3	Project Manager		\$ 124.05	\$ -
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan		\$ 90.00	\$ -
Staff 7	Principal Eng/Plan		\$ 75.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner		\$ 45.00	\$ -
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech		\$ 45.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		120		

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

TOTAL SALARY (BARE COST)		\$ 15,309.60
OVERHEAD @ 110.61% OF BARE COST		\$ 16,933.95
SUBTOTAL -- SALARY + OVERHEAD		\$ 32,243.55
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 3,224.35
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$200.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$200.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 500.00
TOTAL THIS TASK		\$ 35,967.90

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.5

FIRM: AECOM

Civil Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	105	\$ 100.00	\$ 10,500.00
Staff 3	Project Manager	78	\$ 112.00	\$ 8,736.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	244	\$ 70.00	\$ 17,080.00
Staff 7	Principal Eng/Plan	285	\$ 60.00	\$ 17,100.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	436	\$ 42.00	\$ 18,312.00
Staff 12	Intern/Clerical	12	\$ 30.00	\$ 360.00
TOTAL ESTIMATED HOURS		1,160		

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

TOTAL SALARY (BARE COST)	\$ 72,088.00
OVERHEAD @ 139.14% OF BARE COST	\$ 100,303.24
SUBTOTAL -- SALARY + OVERHEAD	\$ 172,391.24
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 17,239.12
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$300.00
Postage/Shipping/Messenger Service	\$100.00
Local Travel	\$100.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ 500.00
TOTAL THIS TASK	\$ 190,130.37

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.6

FIRM: AECOM

Bridges, Building & Structures

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	82	\$ 100.00	\$ 8,200.00
Staff 3	Project Manager	120	\$ 112.00	\$ 13,440.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	118	\$ 70.00	\$ 8,260.00
Staff 7	Principal Eng/Plan	442	\$ 60.00	\$ 26,520.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner	450	\$ 40.00	\$ 18,000.00
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	488	\$ 42.00	\$ 20,496.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		1,700		

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

TOTAL SALARY (BARE COST)		\$ 94,916.00
OVERHEAD @ 139.14% OF BARE COST		\$ 132,066.12
SUBTOTAL -- SALARY + OVERHEAD		\$ 226,982.12
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 22,698.21
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$300.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$100.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 500.00
TOTAL THIS TASK		\$ 250,180.33

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.6

FIRM: JACOBS

Bridges, Building & Structures

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	50	\$ 127.58	\$ 6,379.00
Staff 3	Project Manager	175	\$ 124.05	\$ 21,708.75
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	214	\$ 90.00	\$ 19,260.00
Staff 7	Principal Eng/Plan	573	\$ 75.00	\$ 42,975.00
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	445	\$ 45.00	\$ 20,025.00
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech	365	\$ 45.00	\$ 16,425.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		1,822		

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

TOTAL SALARY (BARE COST)		\$ 126,772.75
OVERHEAD @ 110.61% OF BARE COST		\$ 140,223.34
SUBTOTAL -- SALARY + OVERHEAD		\$ 266,996.09
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 26,699.61
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$1,000.00	
Postage/Shipping/Messenger Service	\$200.00	
Local Travel	\$600.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 1,800.00
TOTAL THIS TASK		\$ 295,495.70

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.6

FIRM: SSA

Bridges, Building & Structures

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	64	\$ 92.81	\$ 5,939.84
Staff 3	Project Manager	92	\$ 72.10	\$ 6,633.20
Staff 4	Design/Planning Team Leader		\$ 72.10	\$ -
Staff 5	Project Specialist		\$ -	\$ -
Staff 6	Supervising Eng/Plan	80	\$ 51.81	\$ 4,144.80
Staff 7	Principal Eng/Plan	132	\$ 48.00	\$ 6,336.00
Staff 8	Sr. Eng/Plan		\$ -	\$ -
Staff 9	Engineer/Planner	80	\$ 31.50	\$ 2,520.00
Staff 10	Field Survey Staff		\$ 27.32	\$ -
Staff 11	CADD Tech	240	\$ 30.98	\$ 7,435.20
Staff 12	Intern/Clerical		\$ -	\$ -
TOTAL ESTIMATED HOURS		688		

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

TOTAL SALARY (BARE COST)		\$ 33,009.04
OVERHEAD @ 132.00% OF BARE COST		\$ 43,571.93
SUBTOTAL -- SALARY + OVERHEAD		\$ 76,580.97
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 7,658.10
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$600.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$800.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 1,500.00
TOTAL THIS TASK		\$ 85,739.07

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.7

FIRM: AECOM

Traction Power/Electrical Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	116	\$ 100.00	\$ 11,600.00
Staff 3	Project Manager	80	\$ 112.00	\$ 8,960.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	400	\$ 70.00	\$ 28,000.00
Staff 7	Principal Eng/Plan	600	\$ 60.00	\$ 36,000.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	400	\$ 42.00	\$ 16,800.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		1,596		

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

TOTAL SALARY (BARE COST)			\$ 101,360.00
OVERHEAD @ 139.14% OF BARE COST			\$ 141,032.30
SUBTOTAL -- SALARY + OVERHEAD			\$ 242,392.30
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 24,239.23
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$400.00		
Postage/Shipping/Messenger Service	\$100.00		
Local Travel	\$300.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous			
TOTAL DIRECT EXPENSES			\$ 800.00
TOTAL THIS TASK			\$ 267,431.53

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.8

FIRM: AECOM

Signal Systems

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	184	\$ 100.00	\$ 18,400.00
Staff 3	Project Manager		\$ 112.00	\$ -
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan		\$ 70.00	\$ -
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech		\$ 42.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		184		

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

TOTAL SALARY (BARE COST)	\$ 18,400.00
OVERHEAD @ 139.14% OF BARE COST	\$ 25,601.76
SUBTOTAL -- SALARY + OVERHEAD	\$ 44,001.76
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 4,400.18
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$0.00
Postage/Shipping/Messenger Service	\$0.00
Local Travel	\$0.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ -
TOTAL THIS TASK	\$ 48,401.94

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.9

FIRM: AECOM

Cost and Schedule

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant		\$ 100.00	\$ -
Staff 3	Project Manager	40	\$ 112.00	\$ 4,480.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan		\$ 70.00	\$ -
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech		\$ 42.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
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)			\$ 4,480.00
OVERHEAD @ 139.14% OF BARE COST			\$ 6,233.47
SUBTOTAL -- SALARY + OVERHEAD			\$ 10,713.47
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 1,071.35
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$0.00		
Postage/Shipping/Messenger Service	\$0.00		
Local Travel	\$0.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ -
TOTAL THIS TASK			\$ 11,784.82

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.9
FIRM:

 Jois Construction Management
System, Inc. (JCMS)

Cost and Schedule

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 82.00	\$ -
Staff 2	Chief Cost Estimator	40	\$ 84.00	\$ 3,360.00
Staff 3	Sr. Cost Estimator	120	\$ 66.00	\$ 7,920.00
Staff 4	Sr. Scheduling Engineer	16	\$ 59.00	\$ 944.00
Staff 5	Cost Estimator	320	\$ 51.00	\$ 16,320.00
Staff 6	Scheduling Engineer	88	\$ 51.00	\$ 4,488.00
Staff 7	Technical Support	40	\$ 34.00	\$ 1,360.00
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
TOTAL ESTIMATED HOURS		624		

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

TOTAL SALARY (BARE COST)		\$34,392.00
OVERHEAD @ 117.54 % OF BARE COST		\$40,424.36
SUBTOTAL -- SALARY + OVERHEAD		\$ 74,816.36
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 7,481.64
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$400.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$1,000.00
TOTAL THIS TASK		\$83,297.99

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.10

FIRM: AECOM

Supplemental Survey

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	40	\$ 100.00	\$ 4,000.00
Staff 3	Project Manager	8	\$ 112.00	\$ 896.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	64	\$ 70.00	\$ 4,480.00
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner	24	\$ 40.00	\$ 960.00
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	40	\$ 42.00	\$ 1,680.00
Staff 12	Intern/Clerical	8	\$ 30.00	\$ 240.00
TOTAL ESTIMATED HOURS		184		

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

TOTAL SALARY (BARE COST)		\$ 12,256.00
OVERHEAD @ 139.14% OF BARE COST		\$ 17,053.00
SUBTOTAL -- SALARY + OVERHEAD		\$ 29,309.00
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 2,930.90
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$200.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$200.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous		
TOTAL DIRECT EXPENSES		\$ 500.00
TOTAL THIS TASK		\$ 32,739.90

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.10

FIRM: Naik

Supplemental Survey

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	24	\$ 90.00	\$ 2,160.00
Staff 2	Design Team Leader	80	\$ 73.36	\$ 5,868.80
Staff 3	Supervising Engineer	320	\$ 68.74	\$ 21,996.80
Staff 4	Principal Engineer	240	\$ 61.10	\$ 14,664.00
Staff 5	Sr. Engineer	200	\$ 59.93	\$ 11,986.00
Staff 6	Field Staff		\$ 30.75	\$ -
Staff 7	CAD Tech	360	\$ 41.40	\$ 14,904.00
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
TOTAL ESTIMATED HOURS		1224		

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

TOTAL SALARY (BARE COST)		\$71,579.60
OVERHEAD @ 132.28 % OF BARE COST		\$94,685.49
SUBTOTAL -- SALARY + OVERHEAD		\$ 166,265.09
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 16,626.51
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$500.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$1,000.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$1,600.00
TOTAL THIS TASK		\$184,491.60

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.11

FIRM: AECOM

Utility Relocation Preliminary Estimates

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	80	\$ 100.00	\$ 8,000.00
Staff 3	Project Manager	28	\$ 112.00	\$ 3,136.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	128	\$ 70.00	\$ 8,960.00
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	120	\$ 42.00	\$ 5,040.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		356		

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

TOTAL SALARY (BARE COST)			\$ 25,136.00
OVERHEAD @ 139.14% OF BARE COST			\$ 34,974.23
SUBTOTAL -- SALARY + OVERHEAD			\$ 60,110.23
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 6,011.02
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$200.00		
Postage/Shipping/Messenger Service	\$100.00		
Local Travel	\$200.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 500.00
TOTAL THIS TASK			\$ 66,621.25

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.11
FIRM:

 Jois Construction Management
System, Inc. (JCMS)

Utility Relocation Preliminary Estimates

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 82.00	\$ -
Staff 2	Chief Cost Estimator	16	\$ 84.00	\$ 1,344.00
Staff 3	Sr. Cost Estimator	32	\$ 66.00	\$ 2,112.00
Staff 4	Sr. Scheduling Engineer		\$ 59.00	\$ -
Staff 5	Cost Estimator	68	\$ 51.00	\$ 3,468.00
Staff 6	Scheduling Engineer		\$ 51.00	\$ -
Staff 7	Technical Support	8	\$ 34.00	\$ 272.00
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
TOTAL ESTIMATED HOURS		124		

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

TOTAL SALARY (BARE COST)			\$7,196.00
OVERHEAD @ 117.54 % OF BARE COST			\$8,458.18
SUBTOTAL -- SALARY + OVERHEAD			\$ 15,654.18
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 1,565.42
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$200.00		
Postage/Shipping/Messenger Service	\$100.00		
Local Travel	\$200.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$500.00
TOTAL THIS TASK			\$17,719.60

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.12

FIRM: Yu & Associates, Inc. (Yu)

Geotechnical Investigations

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	38	\$ 97.11	\$ 3,690.18
Staff 2	Senior Consultant	72	\$ 74.68	\$ 5,376.96
Staff 3	Design/Planning Team Leader		\$ -	\$ -
Staff 4	Project Specialist		\$ -	\$ -
Staff 5	Supervising Eng/Arch/Plan	228	\$ 55.94	\$ 12,754.32
Staff 6	Principal Eng/Arch/Plan	224	\$ 42.46	\$ 9,511.04
Staff 7	Senior Eng/Arch/Plan		\$ 42.46	\$ -
Staff 8	Eng/Arch/Plan	280	\$ 34.42	\$ 9,637.60
Staff 9	CAD Tech	96	\$ 30.80	\$ 2,956.80
Staff 10	Admin		\$ -	\$ -
TOTAL ESTIMATED HOURS		938		

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

TOTAL SALARY (BARE COST)		\$43,926.90
OVERHEAD @ 168.00 % OF BARE COST		\$73,797.19
SUBTOTAL -- SALARY + OVERHEAD		\$ 117,724.09
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 11,772.41
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$400.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$2,000.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous (Drilling Subcontractor)	\$86,042.00	
TOTAL DIRECT EXPENSES		\$88,542.00
TOTAL THIS TASK		\$218,038.50

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.13

FIRM: AECOM

Environmental

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	32	\$ 100.00	\$ 3,200.00
Staff 3	Project Manager	24	\$ 112.00	\$ 2,688.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	80	\$ 70.00	\$ 5,600.00
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	104	\$ 42.00	\$ 4,368.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		240		

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

TOTAL SALARY (BARE COST)		\$ 15,856.00
OVERHEAD @ 139.14% OF BARE COST		\$ 22,062.04
SUBTOTAL - SALARY + OVERHEAD		\$ 37,918.04
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 3,791.80
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$500.00	
Postage/Shipping/Messenger Service	\$200.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 1,200.00
TOTAL THIS TASK		\$ 42,909.84

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.14

FIRM: JACOBS

Optional Pedestal Pit

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	43	\$ 127.58	\$ 5,485.94
Staff 3	Project Manager	32	\$ 124.05	\$ 3,969.60
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	96	\$ 90.00	\$ 8,640.00
Staff 7	Principal Eng/Plan	333	\$ 75.00	\$ 24,975.00
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	333	\$ 45.00	\$ 14,985.00
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech	332	\$ 45.00	\$ 14,940.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		1,169		

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

TOTAL SALARY (BARE COST)		\$ 72,995.54
OVERHEAD @ 110.61% OF BARE COST		\$ 80,740.37
SUBTOTAL -- SALARY + OVERHEAD		\$ 153,735.91
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 15,373.59
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$1,000.00	
Postage/Shipping/Messenger Service	\$500.00	
Local Travel	\$1,000.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 2,500.00
TOTAL THIS TASK		\$ 171,609.50

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.15

FIRM: AECOM

Value Engineering

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	48	\$ 100.00	\$ 4,800.00
Staff 3	Project Manager	56	\$ 112.00	\$ 6,272.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	48	\$ 70.00	\$ 3,360.00
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech		\$ 42.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		152		

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

TOTAL SALARY (BARE COST)			\$ 14,432.00
OVERHEAD @ 139.14% OF BARE COST			\$ 20,080.68
SUBTOTAL -- SALARY + OVERHEAD			\$ 34,512.68
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 3,451.27
DIRECT EXPENSES (itemized)		\$	
Production - Reproduction		\$600.00	
Postage/Shipping/Messenger Service		\$200.00	
Local Travel		\$200.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)		\$0.00	
Miscellaneous (VE Team support / catering)		\$2,000.00	
TOTAL DIRECT EXPENSES			\$ 3,000.00
TOTAL THIS TASK			\$ 40,963.95

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.15

FIRM: VJA

Value Engineering

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	100	\$ 79.10	\$ 7,910.00
Staff 3	Project Manager	160	\$ 85.82	\$ 13,731.20
Staff 4	Design/Planning Team Leader	80	\$ 69.47	\$ 5,557.60
Staff 5	Project Specialist	80	\$ 97.84	\$ 7,827.20
Staff 6	Supervising Eng/Plan	240	\$ 85.51	\$ 20,522.40
Staff 7	Principal Eng/Plan	80	\$ 42.75	\$ 3,420.00
Staff 8	Sr. Eng/Plan	80	\$ 51.39	\$ 4,111.20
Staff 9	Engineer/Planner	80	\$ 35.97	\$ 2,877.60
Staff 10	Field Survey Staff	80	\$ 30.84	\$ 2,467.20
Staff 11	CADD Tech		\$ -	\$ -
Staff 12	Intern/Clerical		\$ -	\$ -
TOTAL ESTIMATED HOURS		980		

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

TOTAL SALARY (BARE COST)	\$ 68,424.40
OVERHEAD @ 112.66% OF BARE COST	\$ 77,086.93
SUBTOTAL -- SALARY + OVERHEAD	\$ 145,511.33
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 14,551.13
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$1,000.00
Postage/Shipping/Messenger Service	\$200.00
Local Travel	\$1,000.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ 2,200.00
TOTAL THIS TASK	\$ 162,262.46

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 4.16

FIRM: AECOM

As-Directed Preliminary Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	160	\$ 100.00	\$ 16,000.00
Staff 3	Project Manager	64	\$ 112.00	\$ 7,168.00
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	416	\$ 70.00	\$ 29,120.00
Staff 7	Principal Eng/Plan	415	\$ 60.00	\$ 24,900.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner	305	\$ 40.00	\$ 12,200.00
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	640	\$ 42.00	\$ 26,880.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		2,000		

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

TOTAL SALARY (BARE COST)			\$ 116,268.00
OVERHEAD @ 139.14% OF BARE COST			\$ 161,775.30
SUBTOTAL -- SALARY + OVERHEAD			\$ 278,043.30
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 27,804.33
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$200.00		
Postage/Shipping/Messenger Service	\$0.00		
Local Travel	\$200.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 400.00
TOTAL THIS TASK			\$ 306,247.62

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.1

FIRM: AECOM

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	376	\$ 103.00	\$ 38,728.00
Staff 3	Project Manager	352	\$ 115.36	\$ 40,606.72
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	1,321	\$ 72.10	\$ 95,244.10
Staff 7	Principal Eng/Plan	1,582	\$ 61.80	\$ 97,767.60
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner	920	\$ 41.20	\$ 37,904.00
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	928	\$ 43.26	\$ 40,145.28
Staff 12	Intern/Clerical	8	\$ 30.90	\$ 247.20
TOTAL ESTIMATED HOURS		5,487		

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

TOTAL SALARY (BARE COST)		\$ 350,642.90
OVERHEAD @ 139.14% OF BARE COST		\$ 487,884.53
SUBTOTAL – SALARY + OVERHEAD		\$ 838,527.43
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 83,852.74
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$1,000.00	
Postage/Shipping/Messenger Service	\$500.00	
Local Travel	\$1,000.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous		
TOTAL DIRECT EXPENSES		\$ 2,500.00
TOTAL THIS TASK		\$ 924,880.17

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.1

FIRM: JACOBS

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	35	\$ 131.41	\$ 4,599.26
Staff 3	Project Manager	40	\$ 127.77	\$ 5,110.86
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	148	\$ 92.70	\$ 13,719.60
Staff 7	Principal Eng/Plan	257	\$ 77.25	\$ 19,853.25
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	177	\$ 46.35	\$ 8,203.95
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech	137	\$ 46.35	\$ 6,349.95
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		794		

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

TOTAL SALARY (BARE COST)	\$ 57,836.87
OVERHEAD @ 110.61% OF BARE COST	\$ 63,973.36
SUBTOTAL -- SALARY + OVERHEAD	\$ 121,810.23
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 12,181.02
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$1,500.00
Postage/Shipping/Messenger Service	\$500.00
Local Travel	\$1,000.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$2,000.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ 5,000.00
TOTAL THIS TASK	\$ 138,991.25

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.1

FIRM: Naik

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 92.70	\$ -
Staff 2	Design Team Leader		\$ 75.56	\$ -
Staff 3	Supervising Engineer		\$ 70.80	\$ -
Staff 4	Principal Engineer		\$ 62.93	\$ -
Staff 5	Sr. Engineer		\$ 61.73	\$ -
Staff 6	Field Staff		\$ 31.67	\$ -
Staff 7	CAD Tech	900	\$ 42.64	\$ 38,377.80
			\$ -	\$ -
			\$ -	\$ -
			\$ -	\$ -
TOTAL ESTIMATED HOURS		900		

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

TOTAL SALARY (BARE COST)		\$38,377.80
OVERHEAD @ 163.00 % OF BARE COST		\$50,766.15
SUBTOTAL – SALARY + OVERHEAD		\$ 89,143.95
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 8,914.40
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$500.00	
Postage/Shipping/Messenger Service	\$0.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous		
TOTAL DIRECT EXPENSES		\$1,000.00
TOTAL THIS TASK		\$99,058.35

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.1.1

FIRM: JACOBS

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	36	\$ 131.41	\$ 4,730.67
Staff 3	Project Manager	36	\$ 127.77	\$ 4,599.77
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	84	\$ 92.70	\$ 7,786.80
Staff 7	Principal Eng/Plan	260	\$ 77.25	\$ 20,085.00
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	260	\$ 46.35	\$ 12,051.00
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech	260	\$ 46.35	\$ 12,051.00
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		936		

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

TOTAL SALARY (BARE COST)		\$ 61,304.24
OVERHEAD @ 110.61% OF BARE COST		\$ 67,808.62
SUBTOTAL -- SALARY + OVERHEAD		\$ 129,112.86
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 12,911.29
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$1,500.00	
Postage/Shipping/Messenger Service	\$500.00	
Local Travel	\$1,000.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$2,000.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 5,000.00
TOTAL THIS TASK		\$ 147,024.15

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.1
FIRM:

 Jois Construction Management
System, Inc. (JCMS)

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 82.00	\$ -
Staff 2	Chief Cost Estimator	48	\$ 86.52	\$ 4,152.96
Staff 3	Sr. Cost Estimator	120	\$ 67.98	\$ 8,157.60
Staff 4	Sr. Scheduling Engineer	16	\$ 60.77	\$ 972.32
Staff 5	Cost Estimator	260	\$ 52.53	\$ 13,657.80
Staff 6	Scheduling Engineer	88	\$ 52.53	\$ 4,622.64
Staff 7	Technical Support	64	\$ 35.02	\$ 2,241.28
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
TOTAL ESTIMATED HOURS		596		

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

TOTAL SALARY (BARE COST)		\$33,804.60
OVERHEAD @ 117.54 % OF BARE COST		\$39,733.93
SUBTOTAL -- SALARY + OVERHEAD		\$ 73,538.53
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 7,353.85
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$100.00	
Postage/Shipping/Messenger Service	\$0.00	
Local Travel	\$100.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$200.00
TOTAL THIS TASK		\$81,092.38

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.1

FIRM: Yu & Associates, Inc. (Yu)

Design Development (60% Design)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	6	\$ 100.02	\$ 600.14
Staff 2	Senior Consultant	16	\$ 76.92	\$ 1,230.73
Staff 3	Design/Planning Team Leader		\$ -	\$ -
Staff 4	Project Specialist		\$ -	\$ -
Staff 5	Supervising Eng/Arch/Plan	40	\$ 57.62	\$ 2,304.73
Staff 6	Principal Eng/Arch/Plan	40	\$ 43.73	\$ 1,749.35
Staff 7	Senior Eng/Arch/Plan		\$ 42.46	\$ -
Staff 8	Eng/Arch/Plan		\$ 34.42	\$ -
Staff 9	CAD Tech		\$ 30.80	\$ -
Staff 10	Admin		\$ -	\$ -
TOTAL ESTIMATED HOURS		102		

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

TOTAL SALARY (BARE COST)		\$5,884.95
OVERHEAD @ 168.00 % OF BARE COST		\$9,886.71
SUBTOTAL -- SALARY + OVERHEAD		\$ 15,771.66
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 1,577.17
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$100.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$700.00
TOTAL THIS TASK		\$18,048.82

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.2

FIRM: AECOM

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	244	\$ 103.00	\$ 25,132.00
Staff 3	Project Manager	208	\$ 115.36	\$ 23,994.88
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	884	\$ 72.10	\$ 63,736.40
Staff 7	Principal Eng/Plan	820	\$ 61.80	\$ 50,676.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner	488	\$ 41.20	\$ 20,105.60
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	1672	\$ 43.26	\$ 72,330.72
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		4,316		

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

TOTAL SALARY (BARE COST)			\$ 255,975.60
OVERHEAD @ 139.14% OF BARE COST			\$ 356,164.45
SUBTOTAL -- SALARY + OVERHEAD			\$ 612,140.05
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 61,214.00
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$1,200.00		
Postage/Shipping/Messenger Service	\$300.00		
Local Travel	\$500.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 2,000.00
TOTAL THIS TASK			\$ 675,354.05

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.2

FIRM: JACOBS

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	75	\$ 131.41	\$ 9,855.56
Staff 3	Project Manager	52	\$ 127.77	\$ 6,644.12
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	124	\$ 92.70	\$ 11,494.80
Staff 7	Principal Eng/Plan	297	\$ 77.25	\$ 22,943.25
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	177	\$ 46.35	\$ 8,203.95
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech	137	\$ 46.35	\$ 6,349.95
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		862		

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

TOTAL SALARY (BARE COST)		\$ 65,491.62
OVERHEAD @ 110.61% OF BARE COST		\$ 72,440.28
SUBTOTAL -- SALARY + OVERHEAD		\$ 137,931.91
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 13,793.19
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$800.00	
Postage/Shipping/Messenger Service	\$200.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 1,500.00
TOTAL THIS TASK		\$ 153,225.10

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.2.1

FIRM: JACOBS

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	24	\$ 131.41	\$ 3,153.78
Staff 3	Project Manager	24	\$ 127.77	\$ 3,066.52
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	60	\$ 92.70	\$ 5,562.00
Staff 7	Principal Eng/Plan	186	\$ 77.25	\$ 14,368.50
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	186	\$ 46.35	\$ 8,621.10
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech	186	\$ 46.35	\$ 8,621.10
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		666		

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

TOTAL SALARY (BARE COST)	\$ 43,392.99
OVERHEAD @ 110.61% OF BARE COST	\$ 47,996.99
SUBTOTAL -- SALARY + OVERHEAD	\$ 91,389.98
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 9,139.00
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$800.00
Postage/Shipping/Messenger Service	\$200.00
Local Travel	\$500.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ 1,500.00
TOTAL THIS TASK	\$ 102,028.98

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.2

FIRM: Jois Construction Management
System, Inc. (JCMS)

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 82.00	\$ -
Staff 2	Chief Cost Estimator	48	\$ 86.52	\$ 4,152.96
Staff 3	Sr. Cost Estimator	80	\$ 67.98	\$ 5,438.40
Staff 4	Sr. Scheduling Engineer	16	\$ 60.77	\$ 972.32
Staff 5	Cost Estimator	180	\$ 52.53	\$ 9,455.40
Staff 6	Scheduling Engineer	88	\$ 52.53	\$ 4,622.64
Staff 7	Technical Support	48	\$ 35.02	\$ 1,680.96
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
TOTAL ESTIMATED HOURS		460		

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

TOTAL SALARY (BARE COST)		\$26,322.68
OVERHEAD @ 117.54 % OF BARE COST		\$30,939.68
SUBTOTAL -- SALARY + OVERHEAD		\$ 57,262.36
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 5,726.24
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$100.00	
Postage/Shipping/Messenger Service	\$0.00	
Local Travel	\$100.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$200.00
TOTAL THIS TASK		\$63,188.59

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.2

FIRM: Yu & Associates, Inc. (Yu)

Final Design (90% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	4	\$ 100.02	\$ 400.09
Staff 2	Senior Consultant	8	\$ 76.92	\$ 615.36
Staff 3	Design/Planning Team Leader		\$ -	\$ -
Staff 4	Project Specialist		\$ -	\$ -
Staff 5	Supervising Eng/Arch/Plan	24	\$ 57.62	\$ 1,382.84
Staff 6	Principal Eng/Arch/Plan	16	\$ 43.73	\$ 699.74
Staff 7	Senior Eng/Arch/Plan		\$ 42.46	\$ -
Staff 8	Eng/Arch/Plan		\$ 34.42	\$ -
Staff 9	CAD Tech		\$ 30.80	\$ -
Staff 10	Admin		\$ -	\$ -
TOTAL ESTIMATED HOURS		52		

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

TOTAL SALARY (BARE COST)	\$3,098.03
OVERHEAD @ 168.00 % OF BARE COST	\$5,204.70
SUBTOTAL -- SALARY + OVERHEAD	\$ 8,302.73
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 830.27
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$100.00
Postage/Shipping/Messenger Service	\$100.00
Local Travel	\$500.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$700.00
TOTAL THIS TASK	\$9,833.00

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.3

FIRM: AECOM

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 113.30	\$ -
Staff 2	Sr. Consultant	164	\$ 103.00	\$ 16,892.00
Staff 3	Project Manager	96	\$ 115.36	\$ 11,074.56
Staff 4	Design/Planning Team Leader		\$ 82.40	\$ -
Staff 5	Project Specialist		\$ 103.00	\$ -
Staff 6	Supervising Eng/Plan	458	\$ 72.10	\$ 33,021.80
Staff 7	Principal Eng/Plan	416	\$ 61.80	\$ 25,708.80
Staff 8	Sr. Eng/Plan		\$ 51.50	\$ -
Staff 9	Engineer/Planner	252	\$ 41.20	\$ 10,382.40
Staff 10	Field Survey Staff		\$ 30.90	\$ -
Staff 11	CADD Tech	534	\$ 43.26	\$ 23,100.84
Staff 12	Intern/Clerical		\$ 30.90	\$ -
TOTAL ESTIMATED HOURS		1,920		

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

TOTAL SALARY (BARE COST)		\$ 120,180.40
OVERHEAD @ 139.14% OF BARE COST		\$ 167,219.01
SUBTOTAL -- SALARY + OVERHEAD		\$ 287,399.41
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 28,739.94
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$1,500.00	
Postage/Shipping/Messenger Service	\$500.00	
Local Travel	\$200.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 2,200.00
TOTAL THIS TASK		\$ 318,339.35

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.3

FIRM: JACOBS

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	45	\$ 131.41	\$ 5,913.33
Staff 3	Project Manager	55	\$ 127.77	\$ 7,027.43
Staff 4	Design/Planning Team Leader		\$ 103.00	\$ -
Staff 5	Project Specialist		\$ 103.00	\$ -
Staff 6	Supervising Eng/Plan	137	\$ 92.70	\$ 12,699.90
Staff 7	Principal Eng/Plan	346	\$ 77.25	\$ 26,728.50
Staff 8	Sr. Eng/Plan		\$ 66.95	\$ -
Staff 9	Engineer/Planner	298	\$ 46.35	\$ 13,812.30
Staff 10	Field Survey Staff		\$ 36.05	\$ -
Staff 11	CADD Tech	274	\$ 46.35	\$ 12,699.90
Staff 12	Intern/Clerical		\$ 30.90	\$ -
TOTAL ESTIMATED HOURS		1,155		

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

TOTAL SALARY (BARE COST)		\$ 78,881.37
OVERHEAD @ 110.61% OF BARE COST		\$ 87,250.68
SUBTOTAL -- SALARY + OVERHEAD		\$ 166,132.04
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 16,613.20
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$1,500.00	
Postage/Shipping/Messenger Service	\$500.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 2,500.00
TOTAL THIS TASK		\$ 185,245.25

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.3.1

FIRM: JACOBS

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	17	\$ 131.41	\$ 2,233.93
Staff 3	Project Manager	17	\$ 127.77	\$ 2,172.12
Staff 4	Design/Planning Team Leader		\$ 103.00	\$ -
Staff 5	Project Specialist		\$ 103.00	\$ -
Staff 6	Supervising Eng/Plan	42	\$ 92.70	\$ 3,893.40
Staff 7	Principal Eng/Plan	126	\$ 77.25	\$ 9,733.50
Staff 8	Sr. Eng/Plan		\$ 66.95	\$ -
Staff 9	Engineer/Planner	126	\$ 46.35	\$ 5,840.10
Staff 10	Field Survey Staff		\$ 36.05	\$ -
Staff 11	CADD Tech	126	\$ 46.35	\$ 5,840.10
Staff 12	Intern/Clerical		\$ 30.90	\$ -
TOTAL ESTIMATED HOURS		454		

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

TOTAL SALARY (BARE COST)		\$ 29,713.14
OVERHEAD @ 110.61% OF BARE COST		\$ 32,865.71
SUBTOTAL -- SALARY + OVERHEAD		\$ 62,578.85
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 6,257.88
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$1,500.00	
Postage/Shipping/Messenger Service	\$500.00	
Local Travel	\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$ 2,500.00
TOTAL THIS TASK		\$ 71,336.73

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.3
FIRM:

 Jois Construction Management
System, Inc. (JCMS)

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 84.46	\$ -
Staff 2	Chief Cost Estimator	24	\$ 86.52	\$ 2,076.48
Staff 3	Sr. Cost Estimator	40	\$ 67.98	\$ 2,719.20
Staff 4	Sr. Scheduling Engineer	8	\$ 60.77	\$ 486.16
Staff 5	Cost Estimator	100	\$ 52.53	\$ 5,253.00
Staff 6	Scheduling Engineer	32	\$ 52.53	\$ 1,680.96
Staff 7	Technical Support	16	\$ 35.02	\$ 560.32
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
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)		\$12,776.12
OVERHEAD @ 117.54 % OF BARE COST		\$15,017.05
SUBTOTAL -- SALARY + OVERHEAD		\$ 27,793.17
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 2,779.32
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$200.00	
Postage/Shipping/Messenger Service	\$0.00	
Local Travel	\$100.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$300.00
TOTAL THIS TASK		\$30,872.49

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.3

FIRM: Yu & Associates, Inc. (Yu)

Final Design (100% Complete Documents)

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	4	\$ 100.02	\$ 400.09
Staff 2	Senior Consultant	16	\$ 76.92	\$ 1,230.73
Staff 3	Design/Planning Team Leader		\$ -	\$ -
Staff 4	Project Specialist		\$ -	\$ -
Staff 5	Supervising Eng/Arch/Plan	36	\$ 57.62	\$ 2,074.26
Staff 6	Principal Eng/Arch/Plan	20	\$ 43.73	\$ 874.68
Staff 7	Senior Eng/Arch/Plan		\$ 43.73	\$ -
Staff 8	Eng/Arch/Plan		\$ 35.45	\$ -
Staff 9	CAD Tech		\$ 31.72	\$ -
Staff 10	Admin		\$ -	\$ -
TOTAL ESTIMATED HOURS		76		

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

TOTAL SALARY (BARE COST)		\$4,579.75
OVERHEAD @ 168.00 % OF BARE COST		\$7,693.98
SUBTOTAL -- SALARY + OVERHEAD		\$ 12,273.73
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 1,227.37
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$100.00	
Postage/Shipping/Messenger Service	\$100.00	
Local Travel	\$100.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$300.00
TOTAL THIS TASK		\$13,801.11

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.4

FIRM: AECOM

Peer Review

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	136	\$ 103.00	\$ 14,008.00
Staff 3	Project Manager	16	\$ 115.36	\$ 1,845.76
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	200	\$ 72.10	\$ 14,420.00
Staff 7	Principal Eng/Plan		\$ 60.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner		\$ 40.00	\$ -
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	40	\$ 43.26	\$ 1,730.40
Staff 12	Intern/Clerical	8	\$ 30.90	\$ 247.20
TOTAL ESTIMATED HOURS		400		

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

TOTAL SALARY (BARE COST)			\$ 32,251.36
OVERHEAD @ 139.14% OF BARE COST			\$ 44,874.54
SUBTOTAL -- SALARY + OVERHEAD			\$ 77,125.90
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 7,712.59
DIRECT EXPENSES (itemized)		\$	
Production - Reproduction		\$600.00	
Postage/Shipping/Messenger Service		\$100.00	
Local Travel		\$500.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)		\$0.00	
Miscellaneous (Review team support / catering)		\$1,200.00	
TOTAL DIRECT EXPENSES			\$ 2,400.00
TOTAL THIS TASK			\$ 87,238.49

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.4

FIRM: JACOBS

Peer Review

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	40	\$ 131.41	\$ 5,256.30
Staff 3	Project Manager	8	\$ 127.77	\$ 1,022.17
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	40	\$ 92.70	\$ 3,708.00
Staff 7	Principal Eng/Plan		\$ 75.00	\$ -
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner		\$ 45.00	\$ -
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech		\$ 45.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		88		

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

TOTAL SALARY (BARE COST)			\$ 9,986.47
OVERHEAD @ 110.61% OF BARE COST			\$ 11,046.03
SUBTOTAL -- SALARY + OVERHEAD			\$ 21,032.50
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 2,103.25
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$600.00		
Postage/Shipping/Messenger Service	\$100.00		
Local Travel	\$500.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 1,200.00
TOTAL THIS TASK			\$ 24,335.75

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.4

FIRM: SSA

Peer Review

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	36	\$ 95.59	\$ 3,441.39
Staff 3	Project Manager		\$ 72.10	\$ -
Staff 4	Design/Planning Team Leader		\$ -	\$ -
Staff 5	Project Specialist		\$ 51.81	\$ -
Staff 6	Supervising Eng/Plan		\$ 48.00	\$ -
Staff 7	Principal Eng/Plan		\$ 38.85	\$ -
Staff 8	Sr. Eng/Plan		\$ 31.50	\$ -
Staff 9	Engineer/Planner		\$ 30.98	\$ -
Staff 10	Field Survey Staff		\$ 27.32	\$ -
Staff 11	CADD Tech		\$ -	\$ -
Staff 12	Intern/Clerical		\$ -	\$ -
TOTAL ESTIMATED HOURS		36		

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

TOTAL SALARY (BARE COST)			\$ 3,441.39
OVERHEAD @ 132.00% OF BARE COST			\$ 4,542.64
SUBTOTAL -- SALARY + OVERHEAD			\$ 7,984.04
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 798.40
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$150.00		
Postage/Shipping/Messenger Service	\$50.00		
Local Travel	\$100.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous			
TOTAL DIRECT EXPENSES			\$ 300.00
TOTAL THIS TASK			\$ 9,082.44

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.5

FIRM: AECOM

Interagency Coordination - Final Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	80	\$ 103.00	\$ 8,240.00
Staff 3	Project Manager	40	\$ 115.36	\$ 4,614.40
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	120	\$ 72.10	\$ 8,652.00
Staff 7	Principal Eng/Plan	100	\$ 61.80	\$ 6,180.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner	80	\$ 41.20	\$ 3,296.00
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	80	\$ 43.26	\$ 3,460.80
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		500		

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

TOTAL SALARY (BARE COST)			\$ 34,443.20
OVERHEAD @ 139.14% OF BARE COST			\$ 47,924.27
SUBTOTAL -- SALARY + OVERHEAD			\$ 82,367.47
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 8,236.75
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$400.00		
Postage/Shipping/Messenger Service	\$100.00		
Local Travel	\$200.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous (Presentation graphics)	\$500.00		
TOTAL DIRECT EXPENSES			\$ 1,200.00
TOTAL THIS TASK			\$ 91,804.22

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.6

FIRM: AECOM

As-Directed Final Design

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 110.00	\$ -
Staff 2	Sr. Consultant	120	\$ 103.00	\$ 12,360.00
Staff 3	Project Manager	40	\$ 115.36	\$ 4,614.40
Staff 4	Design/Planning Team Leader		\$ 80.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan	240	\$ 72.10	\$ 17,304.00
Staff 7	Principal Eng/Plan	240	\$ 61.80	\$ 14,832.00
Staff 8	Sr. Eng/Plan		\$ 50.00	\$ -
Staff 9	Engineer/Planner	80	\$ 41.20	\$ 3,296.00
Staff 10	Field Survey Staff		\$ 30.00	\$ -
Staff 11	CADD Tech	280	\$ 43.26	\$ 12,112.80
Staff 12	Intern/Clerical		\$ 30.00	\$ -
TOTAL ESTIMATED HOURS		1,000		

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

TOTAL SALARY (BARE COST)			\$ 64,519.20
OVERHEAD @ 139.14% OF BARE COST			\$ 89,772.01
SUBTOTAL – SALARY + OVERHEAD			\$ 154,291.21
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 15,429.12
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$500.00		
Postage/Shipping/Messenger Service	\$100.00		
Local Travel	\$200.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 800.00
TOTAL THIS TASK			\$ 170,520.34

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.7

FIRM: AECOM

Construction Bid Package

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ 113.30	\$ -
Staff 2	Sr. Consultant	40	\$ 103.00	\$ 4,120.00
Staff 3	Project Manager	144	\$ 115.36	\$ 16,611.84
Staff 4	Design/Planning Team Leader		\$ 82.40	\$ -
Staff 5	Project Specialist		\$ 103.00	\$ -
Staff 6	Supervising Eng/Plan		\$ 72.10	\$ -
Staff 7	Principal Eng/Plan	120	\$ 61.80	\$ 7,416.00
Staff 8	Sr. Eng/Plan	120	\$ 51.50	\$ 6,180.00
Staff 9	Engineer/Planner	80	\$ 41.20	\$ 3,296.00
Staff 10	Field Survey Staff		\$ 30.90	\$ -
Staff 11	CADD Tech	80	\$ 43.26	\$ 3,460.80
Staff 12	Intern/Clerical	96	\$ 30.90	\$ 2,966.40
TOTAL ESTIMATED HOURS		680		

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

TOTAL SALARY (BARE COST)			\$ 44,051.04
OVERHEAD @ 139.14% OF BARE COST			\$ 61,292.62
SUBTOTAL -- SALARY + OVERHEAD			\$ 105,343.66
FIXED FEE @ 10% OF BARE COST + OVERHEAD			\$ 10,534.37
DIRECT EXPENSES (itemized)	\$		
Production - Reproduction	\$2,000.00		
Postage/Shipping/Messenger Service	\$500.00		
Local Travel	\$300.00		
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00		
Miscellaneous	\$0.00		
TOTAL DIRECT EXPENSES			\$ 2,800.00
TOTAL THIS TASK			\$ 118,678.02

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.7

FIRM: JACOBS

Construction Bid Package

TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal		\$ -	\$ -
Staff 2	Sr. Consultant	16	\$ 131.41	\$ 2,102.52
Staff 3	Project Manager	16	\$ 127.77	\$ 2,044.34
Staff 4	Design/Planning Team Leader		\$ 100.00	\$ -
Staff 5	Project Specialist		\$ 100.00	\$ -
Staff 6	Supervising Eng/Plan		\$ 90.00	\$ -
Staff 7	Principal Eng/Plan	16	\$ 77.25	\$ 1,236.00
Staff 8	Sr. Eng/Plan		\$ 65.00	\$ -
Staff 9	Engineer/Planner	16	\$ 46.35	\$ 741.60
Staff 10	Field Survey Staff		\$ 35.00	\$ -
Staff 11	CADD Tech		\$ 45.00	\$ -
Staff 12	Intern/Clerical		\$ 30.00	\$ -
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)	\$ 6,124.46
OVERHEAD @ 110.61% OF BARE COST	\$ 6,774.27
SUBTOTAL -- SALARY + OVERHEAD	\$ 12,898.73
FIXED FEE @ 10% OF BARE COST + OVERHEAD	\$ 1,289.87
DIRECT EXPENSES (itemized)	\$
Production - Reproduction	\$0.00
Postage/Shipping/Messenger Service	\$0.00
Local Travel	\$0.00
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00
Miscellaneous	\$0.00
TOTAL DIRECT EXPENSES	\$ -
TOTAL THIS TASK	\$ 14,188.60

NJ TRANSIT Resilience Program

Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering

Task 5.7

FIRM: Jois Construction Management
System, Inc. (JCMS)

Construction Bid Package

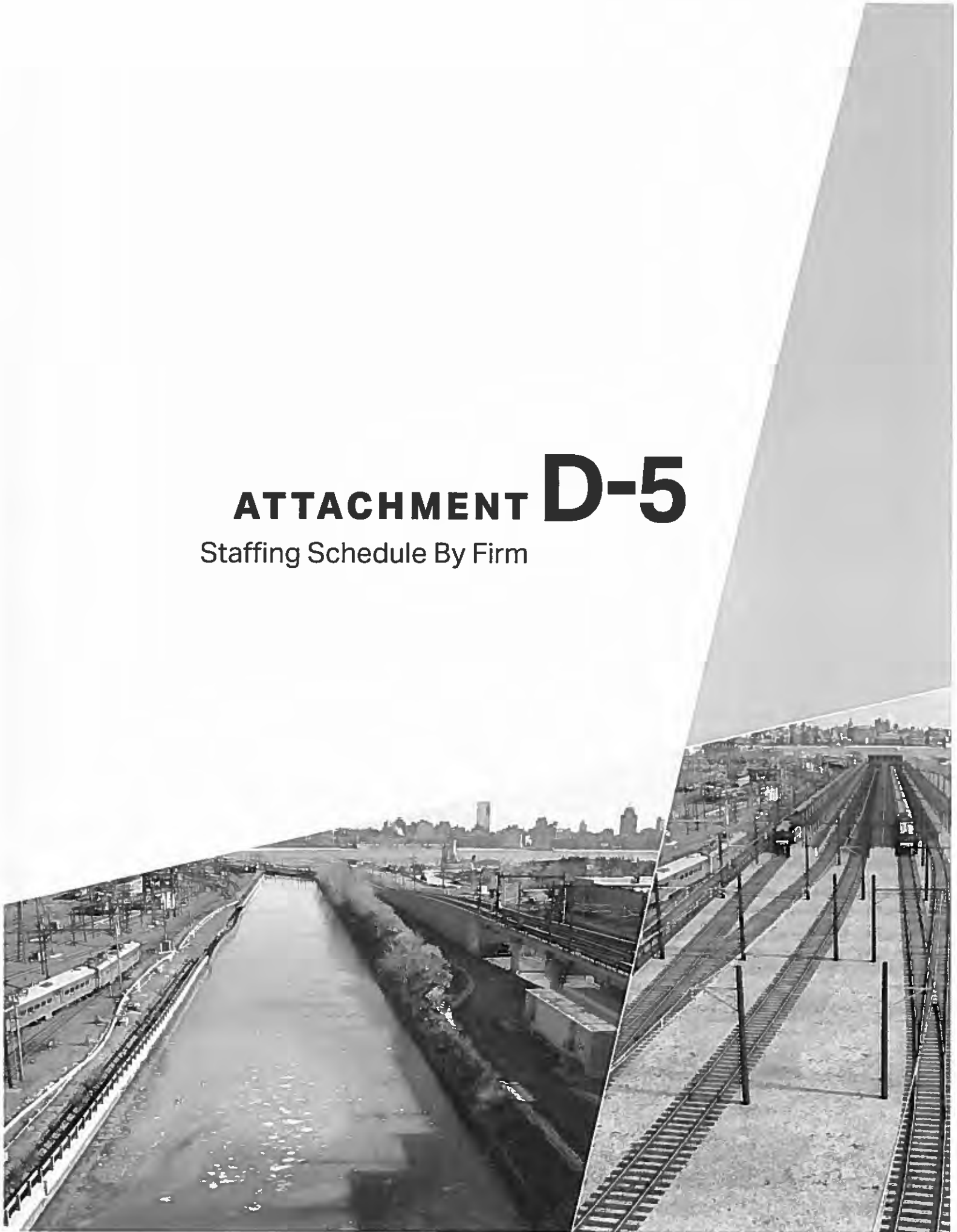
TECHNICAL STAFF				
STAFF PERSON/ CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	ESTIMATED HOURS	HOURLY RATE	TOTAL SALARY
Staff 1	Principal	10	\$ 84.46	\$ 844.60
Staff 2	Chief Cost Estimator	40	\$ 86.52	\$ 3,460.80
Staff 3	Sr. Cost Estimator	120	\$ 67.98	\$ 8,157.60
Staff 4	Sr. Scheduling Engineer	64	\$ 60.77	\$ 3,889.28
Staff 5	Cost Estimator	80	\$ 52.53	\$ 4,202.40
Staff 6	Scheduling Engineer	32	\$ 52.53	\$ 1,680.96
Staff 7	Technical Support		\$ 35.02	\$ -
Staff 8	TBD		\$ -	\$ -
Staff 9	TBD		\$ -	\$ -
Staff 10	TBD		\$ -	\$ -
TOTAL ESTIMATED HOURS		346		

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

TOTAL SALARY (BARE COST)		\$22,235.64
OVERHEAD @ 117.54 % OF BARE COST		\$26,135.77
SUBTOTAL -- SALARY + OVERHEAD		\$ 48,371.41
FIXED FEE @ 10% OF BARE COST + OVERHEAD		\$ 4,837.14
DIRECT EXPENSES (itemized)	\$	
Production - Reproduction	\$100.00	
Postage/Shipping/Messenger Service	\$114.37	
Local Travel	\$100.00	
Overnight Travel (Travel, Car Rental, Hotel & Meals)	\$0.00	
Miscellaneous	\$0.00	
TOTAL DIRECT EXPENSES		\$314.37
TOTAL THIS TASK		\$53,522.92

ATTACHMENT D-5

Staffing Schedule By Firm



NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
STAFFING SCHEDULE BY FIRM

FIRM **AECOM**

Phase	No.	Task	Principal	Sr. Consultant	Project Manager	Design Team Leader	Project Specialist	Supervising Eng	Principal Eng	Sr. Eng	Engineer	Field Survey Staff	CADD Tech	Intern/Clerical	Subtotal
Project Requirements															
	Task 1.01	Project Management Plan	16	40	80									32	168
	Task 1.02	Project Control	64	240	670			400						280	1,654
	Task 1.03	Records Management Control System													
	Task 1.04	Quality Management	72	268	168									160	668
	Task 1.05	Design Control	32	120	40			200						64	456
	Task 1.06	Project Meetings	16	120	430			120						160	846
	Task 2	Risk Management		64	140			64							268
	Task 3	System Safety Management Plan (SSMP)		240	20									40	300
Phase IA: Conceptual Design															
	Task 4.1	Design Review / Pedestal Pk / Wayside Power		8	24	308			96				16		452
Phase IB: Preliminary Design															
	Task 4.2	Preliminary Design		40	4			40	116						200
	Task 4.3	Update Design Criteria			4			48						20	72
	Task 4.4	Track Design		104	32			306	373				346		1,161
	Task 4.5	Civil Design		105	78			244	285					436	1,160
	Task 4.6	Bridges, Building & Structures		82	120			118	442		450			488	1,700
	Task 4.7	Traction Power/Electrical Design		116	80			400	600					400	1,596
	Task 4.8	Signal Systems		184											184
	Task 4.9	Cost and Schedule			40										40
	Task 4.10	Supplemental Survey		40	8			64			24			40	184
	Task 4.11	Utility Relocation Preliminary Estimates		80	28			128					120		356
	Task 4.12	Geotechnical Investigations													
	Task 4.13	Environmental		32	24			80					104		240
	Task 4.14	Optional Pedestal Pit													
	Task 4.15	Value Engineering		48	56			48							152
	Task 4.16	As-Directed Preliminary Design		160	64			416	415		305		640		2,000
Phase II: Preparation of Final Plans, Specifications, and Estimates															
	Task 5.1	Design Development (60% Design)		376	352			1,321	1,582		920		928	8	5,487
	Task 5.1.1	Optional Pedestal Pit (60%)													
	Task 5.2	Final Design (90% Complete Documents)		244	208			884	820		488		1,672		4,316
	Task 5.2.1	Optional Pedestal Pit (90%)													
	Task 5.3	Final Design (100% Complete Documents)		164	96			458	416		252		534		1,920
	Task 5.3.1	Optional Pedestal Pit (100%)													
	Task 5.4	Peer Review		136	16			200					40	8	400
	Task 5.5	Interagency Coordination - Final Design		80	40			120	100		80		80		500
	Task 5.6	As-Directed Final Design		120	40			240	240		80		280		1,000
	Task 5.7	Construction Bid Package		40	144				120	120	80		80	96	680
Phase III: Construction Support Services (NOT IN SCOPE)															
	Task 6.1	Response to Questions													
	Task 6.2	Change Order Preparation/Evaluation													
	Task 6.3	Shop Drawing Review and Material Approvals													
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion													
	Task 6.5	Final Inspection/Project Inspection													
	Task 6.6	As-Built Drawings													
	Task 6.7	Design Support - As Directed													
		TOTAL HOURS	200	3,251	3,006	308	0	5,899	5,605	120	2,679	0	6,204	888	28,160
		HOURLY RATES	\$ 111.65	\$ 101.57	\$ 113.87	\$ 80.00	N/A	\$ 71.29	\$ 61.05	\$ 51.50	\$ 40.85	N/A	\$ 42.73	\$ 30.49	
		TOTAL DIRECT LABOR	\$ 22,330	\$ 330,218	\$ 342,283	\$ 24,640	\$ -	\$ 420,522	\$ 342,200	\$ 6,180	\$ 109,440	\$ -	\$ 265,122	\$ 27,072	\$ 1,890,007
		INDIRECT LABOR COST (OVERHEAD @ 139.14%)	\$ 31,070	\$ 459,465	\$ 476,253	\$ 34,284	\$ -	\$ 585,114	\$ 476,138	\$ 8,599	\$ 152,275	\$ -	\$ 368,890	\$ 37,668	\$ 2,629,755
		TOTAL LABOR COST	\$ 53,400	\$ 789,683	\$ 818,536	\$ 58,924	\$ -	\$ 1,005,635	\$ 818,338	\$ 14,779	\$ 261,715	\$ -	\$ 634,012	\$ 64,740	\$ 4,519,762

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
STAFFING SCHEDULE BY FIRM

FIRM JACOBS

Phase	No.	Task	Principal	Sr. Consultant	Project Manager	Design Team Leader	Project Specialist	Supervising Eng	Principal Eng	Sr. Eng	Engineer	Field Survey Staff	CADD Tech	Intern/Clerical	Subtotal
Project Requirements															
	Task 1.01	Project Management Plan													
	Task 1.02	Project Control													
	Task 1.03	Records Management Control System													
	Task 1.04	Quality Management													
	Task 1.05	Design Control													
	Task 1.06	Project Meetings													
	Task 2	Risk Management													
	Task 3	System Safety Management Plan (SSMP)													
Phase IA: Conceptual Design															
	Task 4.1	Design Review / Pedestal Pit / Wayside Power		36	42			144	180		108		96		606
Phase IB: Preliminary Design															
	Task 4.2	Preliminary Design						64	40						104
	Task 4.3	Update Design Criteria													
	Task 4.4	Track Design		120											120
	Task 4.5	Civil Design													
	Task 4.6	Bridges, Building & Structures		50	175			214	573		445		365		1,822
	Task 4.7	Traction Power/Electrical Design													
	Task 4.8	Signal Systems													
	Task 4.9	Cost and Schedule													
	Task 4.10	Supplemental Survey													
	Task 4.11	Utility Relocation Preliminary Estimates													
	Task 4.12	Geotechnical Investigations													
	Task 4.13	Environmental													
	Task 4.14	Optional Pedestal Pit		43	32			96	333		333		332		1,169
	Task 4.15	Value Engineering													
	Task 4.16	As-Directed Preliminary Design													
Phase II: Preparation of Final Plans, Specifications, and Estimates															
	Task 5.1	Design Development (60% Design)		35	40			148	257		177		137		794
	Task 5.1.1	Optional Pedestal Pit (60%)		36	36			84	260		260		260		936
	Task 5.2	Final Design (90% Complete Documents)		75	52			124	297		177		137		862
	Task 5.2.1	Optional Pedestal Pit (90%)		24	24			60	186		186		186		666
	Task 5.3	Final Design (100% Complete Documents)		45	55			137	346		298		274		1,155
	Task 5.3.1	Optional Pedestal Pit (100%)		17	17			42	126		126		126		454
	Task 5.4	Peer Review		40	8			40							88
	Task 5.5	Interagency Coordination - Final Design													
	Task 5.6	As-Directed Final Design													
	Task 5.7	Construction Bid Package		16	16				16		16				64
Phase III: Construction Support Services (NOT IN SCOPE)															
	Task 6.1	Response to Questions													
	Task 6.2	Change Order Preparation/Evaluation													
	Task 6.3	Shop Drawing Review and Material Approvals													
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion													
	Task 6.5	Final Inspection/Project Inspection													
	Task 6.6	As-Built Drawings													
	Task 6.7	Design Support - As Directed													
		TOTAL HOURS		537	497			1,153	2,614		2,126		1,913		8,840
		HOURLY RATES	N/A	\$ 114.46	\$ 107.40	N/A	N/A	#REF!	#REF!	N/A	\$ 36.54	N/A	\$ 36.10	N/A	
		TOTAL DIRECT LABOR	\$ -	\$ 61,465	\$ 53,376	\$ -	\$ -	#REF!	#REF!	\$ -	\$ 77,692	\$ -	\$ 69,057	\$ -	#REF!
		INDIRECT LABOR COST(OVERHEAD@110.61%)	\$ -	\$ 67,987	\$ 59,039	\$ -	\$ -	#REF!	#REF!	\$ -	\$ 85,935	\$ -	\$ 76,384	\$ -	#REF!
		TOTAL LABOR COST	\$0	\$129,452	\$112,416	\$0	\$0	#REF!	#REF!	\$0	\$163,626	\$0	\$145,441	\$0	#REF!

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
STAFFING SCHEDULE BY FIRM

FIRM NAIK

Phase	No.	Task	Principal	Design Team Leader	Supervising Engineer	Principal Engineer	Sr. Engineer	Field Staff	CAD Tech	TBD	TBD	TBD	Subtotal
Project Requirements													
	Task 1.01	Project Management Plan											
	Task 1.02	Project Control											
	Task 1.03	Records Management Control System											
	Task 1.04	Quality Management											
	Task 1.05	Design Control											
	Task 1.06	Project Meetings											
	Task 2	Risk Management											
	Task 3	System Safety Management Plan (SSMP)											
Phase IA: Conceptual Design													
	Task 4.1	Design Review / Pedestal Pit / Wayside Power											
Phase IB: Preliminary Design													
	Task 4.2	Preliminary Design											
	Task 4.3	Update Design Criteria											
	Task 4.4	Track Design											
	Task 4.5	Civil Design											
	Task 4.6	Bridges, Building & Structures											
	Task 4.7	Traction Power/Electrical Design											
	Task 4.8	Signal Systems											
	Task 4.9	Cost and Schedule											
	Task 4.10	Supplemental Survey	24	80	320	240	200		360				1224
	Task 4.11	Utility Relocation Preliminary Estimates											
	Task 4.12	Geotechnical Investigations											
	Task 4.13	Environmental											
	Task 4.14	Optional Pedestal Pit											
	Task 4.15	Value Engineering											
	Task 4.16	As-Directed Preliminary Design											
Phase II: Preparation of Final Plans, Specifications, and Estimates													
	Task 5.1	Design Development (60% Design)							900				900
	Task 5.1.1	Optional Pedestal Pit (60%)											
	Task 5.2	Final Design (90% Complete Documents)											
	Task 5.2.1	Optional Pedestal Pit (90%)											
	Task 5.3	Final Design (100% Complete Documents)											
	Task 5.3.1	Optional Pedestal Pit (100%)											
	Task 5.4	Peer Review											
	Task 5.5	Interagency Coordination - Final Design											
	Task 5.6	As-Directed Final Design											
	Task 5.7	Construction Bld Package											
Phase III: Construction Support Services (NOT IN SCOPE)													
	Task 6.1	Response to Questions											
	Task 6.2	Change Order Preparation/Evaluation											
	Task 6.3	Shop Drawing Review and Material Approvals											
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion											
	Task 6.5	Final Inspection/Project Inspection											
	Task 6.6	As-Built Drawings											
	Task 6.7	Design Support - As Directed											
		TOTAL HOURS	24	80	320	240	200	0	1,260	0	0	0	2,124
		HOURLY RATES	\$ 90.00	\$ 73.36	\$ 68.74	\$ 61.30	\$ 59.93	N/A	\$ 42.29	N/A	N/A	N/A	
		TOTAL DIRECT LABOR	\$ 2,160	\$ 5,869	\$ 21,997	\$ 14,664	\$ 11,986	\$ -	\$ 53,282	\$ -	\$ -	\$ -	\$ 109,957
		INDIRECT LABOR COST(OVERHEAD@132.28%)	\$ 2,857	\$ 7,763	\$ 29,097	\$ 19,398	\$ 15,855	\$ -	\$ 70,481	\$ -	\$ -	\$ -	\$ 145,452
		TOTAL LABOR COST	\$5,017	\$13,632	\$51,094	\$34,062	\$27,841	\$0	\$123,763	\$0	\$0	\$0	\$255,409

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
STAFFING SCHEDULE BY FIRM

FIRM ING

Phase	No.	Task	Principal	Outreach Coordinator I	Outreach Coordinator II	Graphics/Web Outreach	Outreach Support Admin	TBD	Records Technician	TBD	TBD	TBD	Subtotal
Project Requirements													
	Task 1.01	Project Management Plan											
	Task 1.02	Project Control											
	Task 1.03	Records Management Control System	320						2,880				3,200
	Task 1.04	Quality Management											
	Task 1.05	Design Control											
	Task 1.06	Project Meetings											
	Task 2	Risk Management											
	Task 3	System Safety Management Plan (SSMP)											
Phase IA: Conceptual Design													
	Task 4.1	Design Review / Pedestal Pit / Wayside Power											
Phase IB: Preliminary Design													
	Task 4.2	Preliminary Design											
	Task 4.3	Update Design Criteria											
	Task 4.4	Track Design											
	Task 4.5	Civil Design											
	Task 4.6	Bridges, Building & Structures											
	Task 4.7	Traction Power/Electrical Design											
	Task 4.8	Signal Systems											
	Task 4.9	Cost and Schedule											
	Task 4.10	Supplemental Survey											
	Task 4.11	Utility Relocation Preliminary Estimates											
	Task 4.12	Geotechnical Investigations											
	Task 4.13	Environmental											
	Task 4.14	Optional Pedestal Pit											
	Task 4.15	Value Engineering											
	Task 4.16	As-Directed Preliminary Design											
Phase II: Preparation of Final Plans, Specifications, and Estimates													
	Task 5.1	Design Development (60% Design)											
	Task 5.1.1	Optional Pedestal Pit (60%)											
	Task 5.2	Final Design (90% Complete Documents)											
	Task 5.2.1	Optional Pedestal Pit (90%)											
	Task 5.3	Final Design (100% Complete Documents)											
	Task 5.3.1	Optional Pedestal Pit (100%)											
	Task 5.4	Peer Review											
	Task 5.5	Interagency Coordination - Final Design											
	Task 5.6	As-Directed Final Design											
	Task 5.7	Construction Bid Package											
Phase III: Construction Support Services (NOT IN SCOPE)													
	Task 6.1	Response to Questions											
	Task 6.2	Change Order Preparation/Evaluation											
	Task 6.3	Shop Drawing Review and Material Approvals											
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion											
	Task 6.5	Final Inspection/Project Inspection											
	Task 6.6	As-Built Drawings											
	Task 6.7	Design Support - As Directed											
		TOTAL HOURS	320	0	0	0	0	0	2,880	0	0	0	3,200
		HOURLY RATES	\$ 52.27	N/A	N/A	N/A	N/A	N/A	\$ 37.33	N/A	N/A	N/A	
		TOTAL DIRECT LABOR	\$ 16,727	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 107,515	\$ -	\$ -	\$ -	\$ 124,242
		INDIRECT LABOR COST(OVERHEAD@181.14%)	\$ 30,343	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 195,033	\$ -	\$ -	\$ -	\$ 225,376
		TOTAL LABOR COST	\$ 47,070	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 302,548	\$ -	\$ -	\$ -	\$ 349,618

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
STAFFING SCHEDULE BY FIRM

FIRM **ICMS**

Phase	No.	Task	Principal	Design Team Leader	Supervising Engineer	Principal Engineer	Sr. Engineer	Field Staff	CAD Tech	TBD	TBD	TBD	Subtotal
Project Requirements													
	Task 1.01	Project Management Plan											
	Task 1.02	Project Control	80	120		640		840					1,680
	Task 1.03	Records Management Control System											
	Task 1.04	Quality Management											
	Task 1.05	Design Control											
	Task 1.06	Project Meetings											
	Task 2	Risk Management			400	400	240	240					1,280
	Task 3	System Safety Management Plan (SSMP)											
Phase IA: Conceptual Design													
	Task 4.1	Design Review / Pedestal Pit / Wayside Power											
Phase IB: Preliminary Design													
	Task 4.2	Preliminary Design											
	Task 4.3	Update Design Criteria											
	Task 4.4	Track Design											
	Task 4.5	Civil Design											
	Task 4.6	Bridges, Building & Structures											
	Task 4.7	Traction Power/Electrical Design											
	Task 4.8	Signal Systems											
	Task 4.9	Cost and Schedule		40	120	16	320	88	40				624
	Task 4.10	Supplemental Survey											
	Task 4.11	Utility Relocation Preliminary Estimates		16	32		68		8				124
	Task 4.12	Geotechnical Investigations											
	Task 4.13	Environmental											
	Task 4.14	Optional Pedestal Pit											
	Task 4.15	Value Engineering											
	Task 4.16	As-Directed Preliminary Design											
Phase II: Preparation of Final Plans, Specifications, and Estimates													
	Task 5.1	Design Development (60% Design)		48	120	16	260	88	64				596
	Task 5.1.1	Optional Pedestal Pit (60%)											
	Task 5.2	Final Design (90% Complete Documents)		48	80	16	180	88	48				460
	Task 5.2.1	Optional Pedestal Pit (90%)											
	Task 5.3	Final Design (100% Complete Documents)		24	40	8	100	32	16				220
	Task 5.3.1	Optional Pedestal Pit (100%)											
	Task 5.4	Peer Review											
	Task 5.5	Interagency Coordination - Final Design											
	Task 5.6	As-Directed Final Design											
	Task 5.7	Construction Bid Package	10	40	120	64	80	32					346
Phase III: Construction Support Services (NOT IN SCOPE)													
	Task 6.1	Response to Questions											
	Task 6.2	Change Order Preparation/Evaluation											
	Task 6.3	Shop Drawing Review and Material Approvals											
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion											
	Task 6.5	Final Inspection/Project Inspection											
	Task 6.6	As-Built Drawings											
	Task 6.7	Design Support - As Directed											
		TOTAL HOURS	90	336	912	1,160	1,248	1,408	176	0	0	0	5,330
		HOURLY RATES	83.37 \$	86 \$	67 \$	60 \$	52 \$	52 \$	35 \$	N/A	N/A	N/A	
		TOTAL DIRECT LABOR	7,503 \$	28,778 \$	61,301 \$	69,544 \$	64,780 \$	73,001 \$	6,115 \$	- \$	- \$	- \$	311,023
		INDIRECT LABOR COST(OVERHEAD@122.39%)	8,819 \$	33,826 \$	72,053 \$	81,743 \$	76,143 \$	85,806 \$	7,187 \$	- \$	- \$	- \$	345,576
		TOTAL LABOR COST	16,322 \$	62,605 \$	133,354 \$	151,287 \$	140,923 \$	158,807 \$	13,302 \$	- \$	- \$	- \$	676,599

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
 STAFFING SCHEDULE BY FIRM

FIRM YU

Phase	No.	Task	Principal	Senior Consultant	Design Team Leader	Project Specialist	Supervising Eng	Principal Eng	Senior Eng	Eng	CAD Tech	Admin	Subtotal
Project Requirements													
	Task 1.01	Project Management Plan											
	Task 1.02	Project Control											
	Task 1.03	Records Management Control System											
	Task 1.04	Quality Management											
	Task 1.05	Design Control											
	Task 1.06	Project Meetings											
	Task 2	Risk Management											
	Task 3	System Safety Management Plan (SSMP)											
Phase IA: Conceptual Design													
	Task 4.1	Design Review / Pedestal Pit / Wayside Power											
Phase IB: Preliminary Design													
	Task 4.2	Preliminary Design											
	Task 4.3	Update Design Criteria											
	Task 4.4	Track Design											
	Task 4.5	Civil Design											
	Task 4.6	Bridges, Building & Structures											
	Task 4.7	Traction Power/Electrical Design											
	Task 4.8	Signal Systems											
	Task 4.9	Cost and Schedule											
	Task 4.10	Supplemental Survey											
	Task 4.11	Utility Relocation Preliminary Estimates											
	Task 4.12	Geotechnical Investigations	38	72			228	224		280	96		938
	Task 4.13	Environmental											
	Task 4.14	Optional Pedestal Pit											
	Task 4.15	Value Engineering											
	Task 4.16	As-Directed Preliminary Design											
Phase II: Preparation of Final Plans, Specifications, and Estimates													
	Task 5.1	Design Development (60% Design)	6	16			40	40					102
	Task 5.1.1	Optional Pedestal Pit (60%)											
	Task 5.2	Final Design (90% Complete Documents)	4	8			24	16					52
	Task 5.2.1	Optional Pedestal Pit (90%)											
	Task 5.3	Final Design (100% Complete Documents)	4	16			36	20					76
	Task 5.3.1	Optional Pedestal Pit (100%)											
	Task 5.4	Peer Review											
	Task 5.5	Interagency Coordination - Final Design											
	Task 5.6	As-Directed Final Design											
	Task 5.7	Construction Bid Package											
Phase III: Construction Support Services (NOT IN SCOPE)													
	Task 6.1	Response to Questions											
	Task 6.2	Change Order Preparation/Evaluation											
	Task 6.3	Shop Drawing Review and Material Approvals											
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion											
	Task 6.5	Final Inspection/Project Inspection											
	Task 6.6	As-Built Drawings											
	Task 6.7	Design Support - As Directed											
		TOTAL HOURS	52	112	0	0	328	300	0	280	96	0	1,168
		HOURLY RATES	\$ 97.89	\$ 75.48	N/A	N/A	\$ 56.45	\$ 42.78	N/A	\$ 34.42	\$ 30.80	N/A	
		TOTAL DIRECT LABOR	\$ 5,091	\$ 8,454	\$ -	\$ -	\$ 18,516	\$ 12,835	\$ -	\$ 9,638	\$ 2,957	\$ -	\$ 57,490
		INDIRECT LABOR COST(OVERHEAD@168.00%)	\$ 8,552	\$ 14,202	\$ -	\$ -	\$ 31,107	\$ 21,562	\$ -	\$ 16,191	\$ 4,967	\$ -	\$ 96,583
		TOTAL LABOR COST	\$ 13,643	\$ 22,656	\$ -	\$ -	\$ 49,623	\$ 34,397	\$ -	\$ 25,829	\$ 7,924	\$ -	\$ 154,073

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
 STAFFING SCHEDULE BY FIRM

FIRM **SSA**

Phase	No.	Task	Principal	Senior Consultant	Design Team Leader	Project Specialist	Supervising Eng	Principal Eng	Senior Eng	Engineer	CAD Tech	Admin	Subtotal
Project Requirements													
	Task 1.01	Project Management Plan											
	Task 1.02	Project Control											
	Task 1.03	Records Management Control System											
	Task 1.04	Quality Management											
	Task 1.05	Design Control											
	Task 1.06	Project Meetings											
	Task 2	Risk Management											
	Task 3	System Safety Management Plan (SSMP)											
Phase IA: Conceptual Design													
	Task 4.1	Design Review / Pedestal Pit / Wayside Power											
Phase IB: Preliminary Design													
	Task 4.2	Preliminary Design		24	12		16			8			60
	Task 4.3	Update Design Criteria											
	Task 4.4	Track Design											
	Task 4.5	Civil Design											
	Task 4.6	Bridges, Building & Structures		64	92		80	132		80	740		688
	Task 4.7	Traction Power/Electrical Design											
	Task 4.8	Signal Systems											
	Task 4.9	Cost and Schedule											
	Task 4.10	Supplemental Survey											
	Task 4.11	Utility Relocation Preliminary Estimates											
	Task 4.12	Geotechnical Investigations											
	Task 4.13	Environmental											
	Task 4.14	Optional Pedestal Pit											
	Task 4.15	Value Engineering											
	Task 4.16	As-Directed Preliminary Design											
Phase II: Preparation of Final Plans, Specifications, and Estimates													
	Task 5.1	Design Development (60% Design)											
	Task 5.1.1	Optional Pedestal Pit (60%)											
	Task 5.2	Final Design (90% Complete Documents)											
	Task 5.2.1	Optional Pedestal Pit (90%)											
	Task 5.3	Final Design (100% Complete Documents)											
	Task 5.3.1	Optional Pedestal Pit (100%)											
	Task 5.4	Peer Review		36									36
	Task 5.5	Interagency Coordination - Final Design											
	Task 5.6	As-Directed Final Design											
	Task 5.7	Construction Bid Package											
Phase III: Construction Support Services (NOT IN SCOPE)													
	Task 6.1	Response to Questions											
	Task 6.2	Change Order Preparation/Evaluation											
	Task 6.3	Shop Drawing Review and Material Approvals											
	Task 6.4	Punchlist Inspection/Development & Cert of Subst. Completion											
	Task 6.5	Final Inspection/Project Inspection											
	Task 6.6	As-Built Drawings											
	Task 6.7	Design Support - As Directed											
		TOTAL HOURS	0	124	104	0	96	132	0	88	240	0	784
		HOURLY RATES	N/A	\$ 93.62	\$ 72.10	N/A	\$ 51.81	\$ 48.00	N/A	\$ 31.50	\$ 30.98	N/A	
		TOTAL DIRECT LABOR	\$ -	\$ 11,609	\$ 7,498	\$ -	\$ 4,974	\$ 6,336	\$ -	\$ 2,772	\$ 7,435	\$ -	\$ 40,624
		INDIRECT LABOR COST(OVERHEAD@132.00%)	\$ -	\$ 15,323	\$ 9,898	\$ -	\$ 6,565	\$ 8,364	\$ -	\$ 3,659	\$ 9,814	\$ -	\$ 53,624
		TOTAL LABOR COST	\$ -	\$ 26,932	\$ 17,396	\$ -	\$ 11,539	\$ 14,700	\$ -	\$ 6,431	\$ 17,250	\$ -	\$ 94,248

NJ TRANSIT Resilience Program
Phase 2 - Long Slip Canal Fill and Rail Enhancement Project Final Design and Engineering
REQUEST FOR PROPOSAL NO. 16-006

ATTACHMENT D-5
STAFFING SCHEDULE BY FIRM

FIRM **VIA**

Task	Principal	Senior Consultant	Design Team Leader	Project Specialist	Supervising Eng/Arch/Plan	Principal Eng/Arch/Plan	Senior Eng/Arch/Plan	Eng/Arch/Plan	CAD Tech	Admin	Subtotal
Project Management Plan											
Project Control											
Records Management Control System											
Quality Management											
Design Control											
Project Meetings											
Risk Management											
System Safety Management Plan (SSMP)											
Design Review / Pedestal Pit / Wayside Power											
Preliminary Design											
Update Design Criteria											
Track Design											
Civil Design											
Bridges, Building & Structures											
Traction Power/Electrical Design											
Signal Systems											
Cost and Schedule											
Supplemental Survey											
Utility Relocation Preliminary Estimates											
Geotechnical Investigations											
Environmental											
Optional Pedestal Pit											
Value Engineering		100	80	80	160	240	80	80	80	80	980
As-Directed Preliminary Design											
s, Specifications, and Estimates											
Design Development (60% Design)											
Optional Pedestal Pit (60%)											
Final Design (90% Complete Documents)											
Optional Pedestal Pit (90%)											
Final Design (100% Complete Documents)											
Optional Pedestal Pit (100%)											
Peer Review											
Interagency Coordination - Final Design											
As-Directed Final Design											
Construction Bid Package											
Prices (NOT IN SCOPE)											
Response to Questions											
Change Order Preparation/Evaluation											
Shop Drawing Review and Material Approvals											
Punchlist Inspection/Development & Cert of Subst. Completion											
Final Inspection/Project Inspection											
As-Built Drawings											
Design Support - As Directed											
TOTAL HOURS	0	100	80	80	160	240	80	80	80	80	980
HOURLY RATES	N/A	\$ 79.10	\$ 69.47	\$ 97.84	\$ 85.82	\$ 85.51	\$ 42.75	\$ 51.39	\$ 35.97	\$ 30.84	
TOTAL DIRECT LABOR	-	\$ 7,910	\$ 5,558	\$ 7,827	\$ 13,731	\$ 20,522	\$ 3,420	\$ 4,111	\$ 2,878	\$ 2,467	\$ 68,424
INDIRECT LABOR COST(OVERHEAD@112.7%)	-	\$ 8,911	\$ 6,261	\$ 8,818	\$ 15,470	\$ 23,121	\$ 3,853	\$ 4,632	\$ 3,242	\$ 2,780	\$ 77,087
TOTAL LABOR COST	-	\$ 16,821	\$ 11,819	\$ 16,645	\$ 29,201	\$ 43,643	\$ 7,273	\$ 8,743	\$ 6,120	\$ 5,247	\$ 145,511