**Engineering Department**

PORT AUTHORITY NY NJ
AIR LAND RAIL SEA

# Project Delivery – Roles and Responsibilities

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# ENGINEERING PROJECT DELIVERY

## 1.0 ROLES

The roles listed herein are limited to those directly involved with the project delivery process in the Engineering Department (ED) and only those from other departments with which ED employees directly interface. These roles are inherently complementary where all involved are committed to achieving common Port Authority of New York & New Jersey goals including, but not limited to, timely delivery of quality professional services within scope and budget.

### 1.1 ENGINEERING ARCHITECTURE/DESIGN DIVISION (EADD)

Engineering Architecture/Design provides engineering and architectural design services in conformance with applicable codes, guidelines, regulations, and Port Authority technical standards to deliver the Capital and Operating Programs to ED's client departments.

The roles and responsibilities of staff within the EADD are as follows:

- **Eng. Department Information Security Officer (DISO**) – The Engineering DISO is responsible for oversight and compliance monitoring of information security procedures and policies, for departmental operations. The DISO also develops and submits the departmental PIPP manual to the CISO for final approval, provides periodic reports to the CISO, and assists the SIM's and ASIM's with security related issues.
- **Assistant Engineering Department Information Security Officer (Asst. DISO) -** The Assistant DISO will provides the necessary guidance and direction to their Engineering staff on security categorization, authorized access to protected information and ensuring compliance with the Handbook and PIPP manual. The Asst. DISO reports security related information and issues to the DISO and assists the SIM's and ASIM's with security related issues.
- **Engineering Security Information Manager (SIM)** Engineering SIMs are responsible for coordinating the implementation and daily oversight of the Port Authority's Information Security Policy and Engineering Department PIPP manual. The SIM assists the ASIM with identifying and categorizing protected information and provides reports to the DISO and Asst. DISOs, as required.
- **Functional Chief/Assistant Chief** - Immediate supervisor of the Principal Engineer/Architect. Ensures quality of effort and helps resolve inter- and intra-disciplinary issues and ensures all projects meet discipline staff costs and required schedules.
- **Principal Engineer/Architect** - Immediate supervisor of Lead Engineer/Architect (LE/A) and/or Task Leader (TL). Ensures quality of effort according to established standards and processes. Interfaces with line departments and Engineer of Projects and helps develop project scope/schedule, resolve inter- and intra- disciplinary issues to ensure that projects meet their staff costs and schedules.
- **Lead Engineer/Architect (LE/A)** - The LE/A is assigned to a project by the Principal Engineer/Architect. The LE/A coordinates the design effort for all ED divisions through Pre-Stage I, Stages I, II, and III and assists with the alternate delivery methods. The LE/A oversees the overall development and technical coordination for the design of the project to maintain it within schedule and budget, and to assure that all aspects of design are in conformance with the Project Delivery Manual. The LE/A manages efforts of consultants and participates in their procurement process. During Stage IV, the LE/A supports the

construction effort lead by the Resident Engineer (RE). The LE/A is the immediate supervisor of his/her own discipline TL .and when required, the LEA onboards and manages the Consultant firm's design team.

- **Engineer/Architect Task Leader (TL)** - Prepares the discipline task card and executes or manages the execution of his/her individual discipline's effort within the approved scope, schedule, and budget. The discipline TL must coordinate with and support the project team, including consultants.
- **Functional Staff/Consultants** - Prepares deliverables at the direction of the Task Leader and LE/A according to established design standards.
- **Contract Engineer (CE)** - Responsible for generating the contract book based on contract requirements developed in consultation with the LE/A and Project Manager (PM). The CE coordinates responses to the bidders' questions during the bid period and prepares addenda as required to clarify and correct the documents.
- **Assistant Chief Contract Engineer** - Assigns CEs as requested for projects in Stage III of the project delivery lifecycle. Reviews the contract book and provides guidance during design development and the bid period. Assists in resolution of issues as required.

## 1.2 ENGINEERING OPERATIONS DIVISION (EOD)

Engineering Operations is a multi-faceted division that partners with all areas of the Engineering Department with a focus to the Department's overall operation. The division is comprised of the following functional units within this document:

### 1.2.1 ESTIMATING AND VALUE ENGINEERING

The Estimating and Value Engineering Unit is responsible for the review and approval of Construction Cost estimates, Life Cycle Cost Analysis, management of the Value Engineering program and for the preparation and administration of the Property Breakdown & Retirement reports used for Asset Management.

The roles and responsibilities of staff within the Estimating and Value Engineering Unit are as follows:

- **Assistant Chief/Chief Estimator** - Manages the Estimating Unit and ensures consistent estimating procedures and guidelines for ED. Investigates and recommends estimating tools and software. Monitors estimating performance of ED and acts as a resource for the Port Authority of New York & New Jersey in all estimating matters.
- **Estimator/Sr. Estimator** - Reviews all construction cost estimates at each project stage, including review of construction addenda and other contract changes. Monitors trends in costs and maintains database of current unit prices. Acts as a resource for all designers in need of estimating assistance.
- **Asset Classification Estimator** - Responsible for the calculation and valuation of existing Port Authority capital facilities. Reviews capital construction projects regarding construction component lifespan and participates as part of the Comptroller's Office as well as Line Department teams to develop reports that describe construction costs for work in place. Assists in the development of ongoing changes in the way capital construction projects are completed and documented. Assists the Engineering Department in developing revisions to effective life spans of assets and estimates the construction cost of assets by asset class.
- **Value Engineering (VE) Manager** - Reviews capital construction projects, reviews Life Cycle Cost Analysis cooperatively undertaken with the Project Management Office (PMO) and the Planning and Regional Development Department's Economists. Participates as part of the design team in all project stages and challenges/advises on multiple design

specialties with potential alternate solutions, with the intent to reduce construction costs while meeting design standards and regulatory compliance. Organizes and participates in formal Value Engineering studies undertaken with outside specialty consultants. Leads informal Value Engineering studies undertaken with in-house PA staff and selected outside experts.

### 1.2.2 PROJECT CONTROLS & VIRTUAL DESIGN AND CONSTRUCTION

The Port Authority's Engineering Project Controls Division is responsible for expanding Virtual Design and Construction (VDC) and Scheduling practices across the full project lifecycle, including Design-bid-build and Design-build delivery, to increase quality, efficiency, and productivity.

The roles and responsibilities of staff within the VDC and Scheduling Unit are as follows:

- **Chief Scheduler** - Manages the Virtual Design and Construction Unit as well as the Scheduling Unit. Provides overall technical direction to meet the goals of the Engineering Operations Division (EOD). Ensures associated standards and procedures are consistent with the goals of the EOD.
- **Assistant Chief Scheduler** - Responsible for managing the development and review of all construction schedules at each project stage including design, small projects, and alternate delivery methods. Provides technical input to designers and Construction Management Division (CMD) schedulers as required. Leads the implementation of scheduling procedures and standards in coordination with the Chief Scheduler.
- **CMD Schedulers** - Provide scheduling support to the engineering construction field staff. Review the baseline schedule submissions from contractors for conformance with specification requirements and provide recommendation to Resident Engineer for approval. Review the monthly updates of the baseline schedule for progress and conformance with specification requirements. Provide an analysis of the forecasted completion milestones. Evaluate and comment on the validity of time impact analyses. Maintain all scheduling files for the project in the CMD P6 database. Provide input to ED, when requested, on construction schedules completed as part of the design deliverables.
- **BIM/CAD Manager** - Implements and supports BIM/CAD within ED. Responsible for the management of all Engineering and Facility Information repositories including structured and unstructured data produced, maintained and/or enhanced by Engineering processes for CAD/BIM and Asset Management.
- **CAD Coordinator** - Provides day-to-day support for Autodesk and approved add-on applications used by ED staff including creating CAD specific content. Monitors adherence to the CAD Standards Manual and delivery of contract sets for electronic review and electronic bid distribution.
- **BIM Coordinator** – Provides day-to-day support for Autodesk and approved add-on applications used by ED staff. Person designated to each disciple to coordinate all BIM related responsibilities. Responsibilities include creating specific BIM Content, run discipline specific clash detection and responsible for saving files in the correct folders.

### 1.2.3 ALTERNATIVE PROJECT DELIVERY/DESIGN-BUILD

The Alternative Project Delivery/ Design-build Unit supports the department and the agency in evaluating the risks and merits of each alternative method and assists in choosing the delivery model that is the best fit in meeting the project goals, schedules, and needs. Alternative project delivery methods ranging from design-build, construction manager at risk (CMAR), public-private-partnership (3P), lease/tenant construction, turnkey and traditional design-bid-build are considered as part of this assessment. For

projects that pursue alternative delivery, this unit's expert team provides an array of owner rep services to ensure practical and creative solutions that promote project efficiency and mitigate risks.

The roles and responsibilities of staff within the Alternative Project Delivery/Design-Build Unit are as follows:

- **Program Director** - Manages the Alternative Project Delivery/Design-Build Unit. Ensures consistent DB procedures and guidelines for ED. Monitors Alternative Project Delivery/DB performance of ED and acts as a resource for the Port Authority of New York & New Jersey in Alternative Delivery/DB matters.
- **Senior Design-Build Program Manager** – Oversees the portfolio of Alternative Delivery/DB projects and directly manages the Design-Build Project Managers. Responsible for overall engineering program management, oversight of the procurement and contract development in addition to ensuring overall contract compliance post award
- **Design-Build Project Manager** - Provides day-to-day coordination for all engineering deliverables required as part of the Design-Build project contract development, coordination, and support of DB procurement in addition to overall assurance of design and construction compliance to the DB contract post award.

### 1.2.4 ENGINEERING DOCUMENT CONTROL

- **Senior Engineering Document Coordinator** - Senior Engineering Document Coordinator assists Manager, Document Control with the overall administration of the unit, helps organize unit work, and provides guidance to the Engineering Document Coordinators. The Senior Engineering Document Coordinator uses an in-depth technical knowledge of the engineering document management function and related software to assist in the administration of unit's work and lead the Engineering Document Coordinators in their duties. Maintains and administers project construction contracts t in the designated engineering document management system . .Handles new user accounts, provides training, and address malfunctioning issues. Prepares preconstruction packages. Assists REOs, contractors, PMs, Design Division with all engineering documentation inquires.
- **Engineering Document Coordinator** - the Engineering Document Coordinator (EDC) performs technical, administrative support duties involving the receipt, recording, processing, distribution, tracking, revision, generation, response, of construction submittals and related documents. Tracks submitted documents from receipt to final disposition. Maintains accurate and up-to-date logs. Coordinates the review process with technical/engineering staff and follows-up when necessary, utilizing standard document control procedures, protocols, and guidelines to facilitate accurate and timely submittal distribution. Provides information and assistance to design engineers, resident engineers, contractors, and others for document/submittal inquiries. Maintains orderly file system within predefined project file structure and recordkeeping to ensure ease and reliability of submittal document retrieval. Archives project submittal documentation.
- **Manager, Document Control** - provides overall administration of the unit, implementation of departmental policies and procedures with the overall goal to improve processes and meet performance objectives and timely project completion. Serves as liaison between the CMD, Engineering Senior Staff, Design Division, Project Management, Engineering Materials Division, and Office of Continuous Improvement (OCI). Provides guidance to project management, design engineers, resident engineers, and contractors on all construction documentation protocols.

### 1.2.5 ENGINEERING CONTENT, INFORMATION, AND COMPLIANCE UNIT

- ❒ **Manager, Information and Regulatory Management -** Responsible for the management of staff establishing, developing, implementing, and delivering security, information management, and content management programs supporting all divisions of the Engineering Department. Responsibilities include taking the lead to establish vision and leadership in implementing, monitoring, and enforcing Agency policies and standards related to Security and Records Management. Department Compliance Officer (DCO), as defined in the Port Authority's Records Management Program Guidelines. Manage the operations of the Engineering Department's Electronic Document Center and Engineering Records Center. Responsibilities include managing system applications, operational processes, and lifecycle regulatory management related to document and records management.

#### 1.2.5.1 ELECTRONIC DOCUMENT CENTER (EDOC)

- ❒ **Supervisor of Engineering Information** - Responsible for all aspects of the functional area of the Electronic Document Center, including but not limited to: overseeing operational processes, planning and conducting work that will require judgment in independent evaluation, selection and adaption/modification of standard methods, techniques, procedures, and criteria; devising and defining new solutions to problems encountered within work; effectively managing Engineering information and retrieval.
- ❒ **EDoC Operations Data Management Specialist -** Develop status information in the form of graphic reports, maintaining database integrity, identifying change management and delivery solutions within the operation, collaborate with stakeholders to identify categories and attributes for new document types, and serve as the subject matter expert for information and data management systems.
- ❒ **EDoC/Engineering Information Management Engineer** - Responsible for Administering all incoming Engineering Requests including acquiring, compiling, and distributing engineering information. Research and retrieve Engineering information in support of project research, design RFP's, reference drawings, available drawings, as-constructed conditions, litigation, Freedom of Information inquiries, acquisitions, and studies as requested by Engineering staff, Authority Departments, Consultant/Contractor, and other entities.
- ❒ **EDoC/Engineering Information Data Steward -** Provide support services to the Engineering Department regarding all active and legacy design/construction projects and Tenant Alteration Application (TAA) submissions. Utilizing the ECM System - Opentext Livelink, transfer posted documents and drawings from the Chief Engineer's Office (MA/MJ, Award Letters) and other Line Departments (As-Built TAA's), into the electronic document management database.

#### 1.2.5.2 CONTENT MANAGEMENT – ACCESS CONTROL

- ❒ **Content Management Access Controls Specialist -** Responsible for the creation and implementation of the Engineering department's collaborative websites using an enterprise content management system in accordance with agency and department policies and protocols. Responsibilities include granting timely user access, preparing usage and audit reports, providing technical user support, creating websites and structures, scheduling scope meetings and conducting training.

**1.2.5.3** SECURITY MANAGEMENT

- ❒ **Security Information Specialist -** Responsible for the Department's compliance with the Agency's Security Handbook by providing oversight of access to Engineering information, including collaborating with the Department Information Security Officer and Security Information Managers to conduct security reviews of documents, tracking security incidents, maintaining the central repository of all Engineering NDAs and security training for Engineering staff and contractor/consultants.

**1.2.5.4** ENGINEERING DEPARTMENT RECORD CENTER

- ❒ **Departmental Compliance Officer (DCO) -** Responsible for management of the overall departmental records program, including the accuracy of records classification, compliance with policies and procedures and overseeing the management of records that are moving to long-term storage or moving forward for destruction. Additionally, the DCO is responsible for ensuring that an appropriate business assessment is conducted for any policy or business issues that may impact departmental records eligible for destruction under the established schedule.
- ❒ **Departmental Records Coordinator (DRC)** - Responsible for administering the general activities associated with the accurate classification and retention of records to ensure that all records are maintained in accordance with established records guidelines. Responsibilities include accurately classifying and entering records into the HPRM System, creation of labels and folders for records, oversight for local files, records retrieval, properly boxing, labeling, and shipping of all records to be sent for off-site storage, and generating appropriate forms and reports (i.e., PA 283 Records Destruction Certificate, PA 2061A Records Inventory and Control Card, monthly activity reports) in support of established records management policy and guidelines.
- ❒ **Principal Records Management Specialist** - Responsible for receiving, processing, storing, retrieving, and destruction of all archived Engineering Department documents and drawings in accordance with the Port Authority of New York & New Jersey retention policy.

## 1.3 ENGINEERING PROJECT DELIVERY DIVISION (EPD)

Engineering Project Delivery (EPD) division supports the Agency in the efficient delivery of its Capital and Operating plan. EPD is responsible for the oversight of the Engineering portfolio of projects within the respective Line Departments. The EPD division works closely with Line Departments to finalize scope, sets project schedules and budgets, tracks delivery of projects to ensure adherence to Capital Plan baseline, leads Agency State-of-Good-Repair prioritization efforts, support development of associated board authorizations and Capital Planning Oversight Committee (CPOC) Gate review documents, and supports lessons learned efforts.

The roles and responsibilities of staff within the EPD are as follows:

- ❒ **Chief and Deputy Chief of Engineering Project Delivery** - The Chief and Deputy Chief function as the Engineering Department's primary point-of-contact with the Line Department Program Director and provides oversight of the delivery of engineering projects that support the Agency's Capital Plan and the Agency's Major Maintenance Program (AMMP). The Chief and Deputy Chief manage the development of multi-divisional budgets and schedules and coordinate project risk assessments as well as Engineering procurement related efforts. Responsibilities also include leading engineering efforts related to Capital Plan prioritization and CPOC (Capital Planning Oversight Committee), facilitating communication between engineering project staff throughout the design and construction phases and ensuring

effective reporting on portfolio progress is provided to PMO, Chief Engineer and key stakeholders (including Line Departments), as well as developing and recommending effective strategies to jointly manage programs with the Line Departments and PMO.

- ❒ **Senior Engineer of Projects (Sr. EOP)** - The Sr. EOP leads Engineering project delivery and liaises between Line Department, Design, Construction, Estimating, QAD, Contracts, and other associated agency stakeholders. The Sr. EOP supervises the Engineer of Projects (EOP) associated to their respective Line Department portfolio/ projects and supports Engineering staff in the development of comprehensive programs/projects that align with the Agency's objectives, budgets, key policies, executive issues and Capital and Operating plans. Responsibilities of the Sr. EOP include liaising with the Functional Chiefs and Principals in the Engineering Department to assisting with the Capital Plan Development by coordinating with Design, Construction and the Line Departments on work plans, project prioritization and the assessment of project feasibility and deliverability. The Sr. EOP works with Line Departments and Engineering to identify and develop project scope and develop project schedules and budgets to meet the business requirements, whilst coordinating with Line Department, Procurement, Law, Estimating and other departments to mitigate project schedule risk. The Sr. EOP provides support to Chief Engineer's Office and Line Department in preparation of project documents for project progression through CPOC and Board Authorization meetings and provides senior level representation with PMO, Capital Planning, and the Line Departments on issues related to the Capital Plan and develops strategies to support the success of the program/project plans and manage change and re-prioritization of projects as required. In addition, the Sr. EOP also reviews program/project reports from Management and Budget Department (MBD), Capital Planning, and the PMO and prepares Engineering Department status reports, as well as provides direction on the procedures, standards and guidelines to establish consistent work plans, budgets, business rules and project development for the successful delivery of Engineering projects.
- ❒ **Engineer of Projects (EOP)** - The EOP documents the agreed scope/schedule/budget between the Line Department and Engineering ensuring the project is properly scoped and monitors the project throughout its lifecycle to deliver to plan, time and budget while accounting for all technical considerations raised by the LDPM and Engineering. The EOP coordinates with the Line Department and Engineering project team on scope modifications and ensures budgets and schedules are modified accordingly. The EOP holds regular project milestone meetings with the project team at all project stages and facilitates the hand-off of projects between stages to confirm proper transition with designated stakeholders (i.e. Design, Contract Engineer, Chief Estimator, and Resident Engineer) and that all Stage deliverables are accounted for. Responsibilities of the EOP also include the preparation of publicly advertised Request for Proposals (RFPs), establishing schedule agreement between LDPMs and Engineering, determining a baseline schedule for use by schedulers and tracking project expenditures. In addition, the EOP provides assistance as needed in the preparation of Board Documentation for his/her assigned projects, elevates unresolved issues, works on Board Reauthorizations/Capital Plan offsets and ensures project schedules and budgets are properly accounted for in the Agency's Capital and AMMP plans, as well as in associated Board Authorizations.

## 1.4 ENTERPRISE ASSET MANAGEMENT OFFICE (EAMO)

The purpose of the Enterprise Asset Management (EAM) Program is to coordinate and synchronize asset management activities across facilities and to improve and standardize asset management practices across the organization. The Enterprise Asset Management Office (EAMO) is responsible for Program Oversight as well as centralized coordination and support, standard development, data governance, and promulgation

of best practices related to Asset Management. The EAM Program enables facilities to manage its assets throughout their entire life cycle.

The EAMO works with ED, the Line Department and project stakeholders to (1) identify the assets created and decommissioned or otherwise affected by a capital project and (2) ensure all relevant asset data is turned over in a way that enables the facility to report on its maintenance and operations functions in line with Agency standards, as well as support subsequent decision making processes.

The roles and responsibilities of staff within EAMO are as follows:

- **Assistant Director** – Establishes vision, mission and goals of the EAM Program. Aligns ongoing development of the EAM Program with internal processes and external best practices.
- **Senior Program Managers** –Responsible for the development and updating of asset data standards and processes used Agency-wide. Ensures Agency-wide standardization and outcomes are achieved. Responsible for ensuring all new assets are included in the EAM Program and added to Agency standards.
- **Engineering Asset Manager** – Establishes and leads the integration of the EAM Program with the Capital Planning and Execution Program. Updates and implements processes applicable for newly completed capital projects the (Contractor) to the facility operator. Collaborates with the various Engineering Department divisions to ensure the deliverables to support asset life cycle management are delivered. Coordinates with Cost Estimating and Fixed Assets group (Comptroller's Office) to ensure asset replacement cost information is provided according to Agency standards.
- **Program Manager, System Monitoring, Data Quality Control, and Data Uploads** – Coordinates with Engineer of Projects (Engineering Project Lead) and Line Departments to ensure Contractors have the appropriate templates to provide asset data in line with Agency standards, throughout the project life cycle, from project initiation to closeout.
- **EAMO Line Department Asset Manager (AM)** – Coordinates with the Line Department Business Asset Manager to ensure asset turnover processes are followed for successful provision of information throughout the project life cycle.
- **Line Department Business Asset Manager (LD BAM)** – Serves as the key liaison between the facilities, Line Department, and EAMO. Responsible for the successful provision of asset data throughout the project life cycle.

## 1.5 CONSTRUCTION MANAGEMENT DIVISION (CMD)

The Construction Management Division (CMD) dedicates construction and contract management expertise to provide assurance that construction contracts are completed in accordance with contract specifications, budgets, and schedules in a safe and secure manner. Coordinates multiple contracts within the Port Authority Line Department facilities to minimize operational impacts that may compromise customer service.

The roles and responsibilities of staff within the CMD are as follows:

- **Eng. Department Information Security Officer (DISO**) – The Engineering DISO is responsible for oversight and compliance monitoring of information security procedures and policies, for departmental operations. The DISO also develops and submits the departmental PIPP manual to the CISO for final approval, provides periodic reports to the CISO, and assists the SIM's and ASIM's with security related issues.

- **Assistant Engineering Department Information Security Officer (Asst. DISO) -** The Assistant DISO will provides the necessary guidance and direction to their Engineering staff on security categorization, authorized access to protected information and ensuring compliance with the Handbook and PIPP manual. The Asst. DISO reports security related information and issues to the DISO and assists the SIM's and ASIM's with security related issues.
- **Engineering Security Information Manager (SIM)** Engineering SIMs are responsible for coordinating the implementation and daily oversight of the Port Authority's Information Security Policy and Engineering Department PIPP manual. The SIM assists the ASIM with identifying and categorizing protected information and provides reports to the DISO and Asst. DISOs, as required.
- **Chief of Construction** – Responsible for the management of CMD.
- **Chief of Aviation Construction/Deputy Chief of Construction** – Assists the Chief of Construction in the management of CMD. Also is responsible for oversight of all programs, projects and contracts at all PA's airports.
- **Senior/Engineer of Construction (Sr. EOD/EOC)** - The Engineer of Construction is a representative of the Chief Engineer and the Chief of Construction. A Senior/Engineer of Construction is assigned for each Facility and/or Major Redevelopment Program and this determination is made by the Chief of Construction. The Senior/Engineer of Construction is a licensed professional who is responsible to sign a conformance report for all construction performed in order for QAD to recommend occupancy.
- **Senior/Resident Engineer (Sr. RE/RE)**- Leads the construction effort for all ED divisions during Stage IV. The Sr. RE is the primary contact person with the Line Department. He/she oversees the construction schedule and the overall ED budget with the assistance of the Lead Engineer/Architect (LE/A). The Resident Engineer's Office (REO) performs all code required inspections and monitors the contractor's activities to ensure the required equipment, material, and methods of construction are in compliance with the contract drawings and specifications. He/she records the progress of the construction contractor and submits progress reports. Approves Stage IV access to the project website.
- **Office Engineer (OE)** - Reports to the RE and manages all contract administration functions.
- **Engineer/Inspector** - Any representative of the RE acting within the scope of his/her vested authority.
- **Change Order Administrative Control Desk** - Processes, files and distributes all Change Orders from a central location at the CMD Main Office. Performs internal controls for assuring proper authorizing signatures of same.

### 1.5.1 MATERIALS ENGINEERING UNIT (MEU)

The MEU performs Sampling, Inspection and Testing of Construction Materials, Environmental Testing and Hazardous Waste Handling, Geotechnical Testing and Inspection, Metallurgical Inspection and Testing, and the performance of Structural, Civil and Metallurgical Condition Surveys. MEU also participates in the Development of Contract Documents assuring the appropriate use of Construction Materials, Maintaining and Developing Standard Specifications and Reviewing Contractor Submittals.

The roles and responsibilities of staff within the Materials Engineering Unit are as follows:

- **Chief of Materials Engineering** - -. Manages quality acceptance inspections and testing of materials used in Port Authority construction. Certifies work is performed in accordance

with the contract documents. Ensures that quality materials meeting the intent of designs are specified in technical specifications. Provides materials related expertise for the Engineering Department.

- **Supervising Engineer, Contract Support** - Supervises the MEU Task Leaders. Oversees the review of contract drawings and technical specifications in Stages I-III and the review and response to contractor submittals and RFI's during Stage IV. Researches construction materials to address durability concerns and provides material alternative solutions. Prepares the MEU budget and troubleshoots problems encountered in the field.
- **Supervising Engineer, Inspection and Physical Testing** - Supervises the field and laboratory personnel performing daily sampling, inspection, and testing of construction materials, including cast-in-place and precast Portland cement concrete, bituminous concrete, and asphalt binders. Assigns staff to perform condition surveys.
- **Supervising Engineer, Geotechnical** – Supervisor of field and laboratory testing including borings, monitor wells, soil and aggregate testing, consolidation testing, soil compaction and field instrumentation.
- **Supervising Engineer, Metallurgical** – Supervises welding and bolting inspectors, and nondestructive testing of welds both at PA facilities and at fabrication shops. Manages metallurgical testing consultant.
- **Supervising Engineer, Chemical/Environmental Testing Services** - Supervises the collection and testing of samples acquired from various environmental matrices in support of remedial activities, permit requirements, hazardous and non-hazardous waste characterization, and contamination identification/delineation. Performs chemical analysis on various construction materials for contract compliance.
- **Task Leader** - The day-to-day point of contact for a particular scope of work for all contract stages. Prepares the proposal outlining the MEU budget. Represents MEU at kick-off and proposal meetings. Performs contract reviews and coordinates condition surveys performed by MEU. May perform focused condition assessments of elements to determine present conditions. Monitors MEU expenditures for all stages of work and contract submittal response times.
- **Office Engineer** - Assigns technicians and inspectors to job sites or remote locations to perform sampling, inspection and/or testing of construction materials in Stage IV. Point of contact for RE when requesting inspection services.
- **Engineer/Inspector/Technician** - Reports directly to the Supervising Engineer or a superior and performs sampling, testing, and inspection of construction materials to verify conformance with contract requirements and performs condition surveys.

### 1.5.2 CENTRAL SURVEY GROUP (CSG)

Responsible for surveying and mapping activities at Port Authority of New York & New Jersey facilities for planning, design, construction, dredging, and property acquisition.

The roles and responsibilities of staff within the Central Survey Group are as follows:

- **Supervisor, CSG** - Manages the daily activities of the unit including topographic, construction, hydrographic, boundary, photogrammetric, structural deformation surveys, subsurface utility mapping, and associated CAD staff. Point of contact from CSG for the LE/A.

- ❒ **CAD Supervisor** - Supervises staff that create survey drawings/tabulations such as topographic, boundary, accident investigation, data reports, volume quantities, and subsurface utility databases.
- ❒ **CAD/Survey Technician** - Develops survey-related engineering drawings in accordance with the CAD Standards Manual. Archives drawings and provides support for field crews in data collection, point management, and computations.
- ❒ **Survey Crew Chief** - Directly responsible for the collection of survey data through the use of surveying instruments and data collectors.
- ❒ **Facility Survey Supervisor** - Supervises the daily surveying activities at Port Authority of New York & New Jersey facilities.
- ❒ **Subsurface Utility Manager** - Supervises the subsurface utility mapping programs at Port Authority of New York & New Jersey facilities. Coordinates New York and New Jersey "one-call" utility notifications.
- ❒ **Project Manager** - Prepares technical specifications for surveys, assigns staff, prepares task estimates, performs quality controls, and maintains schedules. Supervises both Port Authority of New York & New Jersey and consultant staff.

### 1.5.3 CONTRACT ADMINISTRATION UNIT

- ❒ **Senior Engineer of Construction for Administration and Office Personnel** - Processes contractor payment applications, Post Award Contract Changes (PACCs), net cost conversion and letter agreements, requests for increases in authorization and subcontractor approval requests; provides assistance for reports and construction claims analysis; monitors the Port Authority of New York & New Jersey Small Business Enterprises (SBE) Program; conforms change orders; administers the Majority, Minority and Federally Funded agreements and their associated supplemental staff; and maintains a contractor/subcontractor database, alert list, and WinTrak software.

### 1.5.4 ENVIRONMENTAL FIELD OPERATIONS

- ❒ **Manager Environmental Field Operations and Field Supervisors** - Provide services to Resident Engineer and design for site assessment to verify materials for Asbestos, Lead, PCBs (Polychlorinated biphenyls) and Universal Wastes, as well as provide other services, such as Soil Erosion and Sediment Control measures and inspections. Maintain database of Asbestos and Lead information. Review Contractor submittals for abatement specification conformance, for engineering contracts and tenant projects. Oversight of abatement activities for regulatory compliance. Supervise consultant staff. Manage consultant agreements, process invoices. Assist facility for operations and maintenance activities. Summarize Hazardous Waste classification, laboratory reports and execute Waste shipping manifests.

### 1.5.5 DIVERSITY AND CONTRACT COMPLIANCE

- ❒ **Compliance Manager** - Responsible for tracking and monitoring of the Agency's diversity and contract compliance mandates for the Engineering Department through the following tasks: Working with Line Department and Office of Diversity and Inclusion(OD&I) to formulate policies related to the Agency's MWSDBE Programs; review MWDBE contract analyses for subcontracting goal requirements; manage the PA's Mentor-Protégé Program and SBE (formerly MWSBE) Set-Aside Program; collect and analyze compliance reports regarding MWDBE participation and utilization requirements for all active and closed contracts to identify trends and forecast; assist with Agency audit proceedings related to

Civil Rights/Title VI Compliance; participate in MWSDBE outreach events in collaboration with OD&I to maximize and improve MWSDBE performance and capacity.

- ❒ **Contract Specialist** – Performs comparative analysis of all SAR submission for contractor's compliance of PA's Good Faith Effort requirements; monitors approved MWDBE Participation Plans against utilization and payments to subcontractors; conducts periodic compliance reviews/reports as required for all stakeholders, field offices and various D.O.T. agencies; reviews all contract closeout documents for compliance and administrative clearance; manages the implementation and maintenance of the B2GNow and LCP tracker (Payroll) Compliance systems; maintain database of construction qualified firms for Set Asides contracts; manage Engineering's Alert List in coordination with Office of Inspection General.

### 1.5.6 EXTERNAL PARTIES

- ❒ **Contractor** - The firm with which the Port Authority of New York & New Jersey has entered into a Construction contract. Also, called the General Contractor (GC) or the prime contractor.
- ❒ **Subcontractor** - Anyone who performs work at or about the construction site, directly or indirectly, for or on behalf of the contractor (and whether or not in privity of contract with the contractor) and shall not include vendors or suppliers (those that only provide furnishing of materials, plant, or equipment).
- ❒ **Vendor/Supplier** - Any person who furnishes merely his/her own personal labor, his/her own services, or who performs work that consists only of the operation of construction equipment of which he/she is the lessor.

## 1.6 QUALITY ASSURANCE DIVISION (QAD)

The Quality Assurance Division provides building department services; conducts periodic inspections, reports on the condition of all existing buildings and structures, and provides repair recommendations; performs quality assurance audits of the construction supervision performed by Engineering, Line Departments, and tenants at Port Authority facilities, issues Permits to Occupy/Use (PTO) at all Port Authority facilities, and issues Certificates of Completion for Port Authority contracts; reviews and approves contract documents for construction by tenants and Line Departments for conformance to applicable codes and Port Authority technical standards.

The roles and responsibilities of staff within the Quality Assurance Division are as follows

- ❒ **Assistant Chief Engineer/Quality Assurance** – Manages QAD.

### 1.6.1 DESIGN STANDARDS UNIT (DSU)

- ❒ **Manager, DSU** - Ensures established guidelines and procedures for audits are followed.
- ❒ **Principal Architect** - Point of contact with EADD for QAD's audit function. Supervises the audit process and provides EADD a compiled list of comments on non-compliance, if any.
- ❒ **Technical Staff** - Audits the design documents for his/her related discipline and provides comments to ensure design is code compliant.

### 1.6.2 CONSTRUCTION STANDARDS UNIT (CSU)

- ❒ **Manager, CSU** - Issues Temporary Permits to Occupy or Use (TPTO) on an as-needed basis when requested by the facility. Issues a Permit to Occupy or Use and a Certificate of Completion for the Chief Engineer's signature.

- ❒ **Supervising Engineer** - Ensures that the vertical transportation systems, boilers, refrigeration systems, and fire protection systems are capable of operating as designed before occupancy or use. Also ensures that all work has been completed in accordance with the approved deign documents for the issuance of a Permit to Occupy or Use and a Certificate of Completion for every project.
- ❒ **Senior Engineer for CSU/QAD** - Attends acceptance inspections on all Port Authority of New York & New Jersey contracts to perform construction audits. Audits field records and prepares a report to recommend a Permit to Occupy or Use and a Certificate of Completion for every Port Authority of New York & New Jersey contract.

### 1.6.3 STRUCTURAL INTEGRITY UNIT (SIU)

- ❒ **Manager, SIU** - Responsible for all activities, authoritative decisions and recommendations that affect the function of the Structural Integrity Unit including all management responsibilities, budgets, staffing, response to Immediate Actions and the execution of the Condition Survey Program. Serves as a liaison to other Engineering Department Divisions, Facilities, Line Departments, and outside agencies.
- ❒ **Project Manager** - Develops the Condition Survey Program including cyclical schedule and costs. Procures consultant services and manages consultant through condition survey project completion. Directs Task Leaders. Assures Immediate Actions are resolved.
- ❒ **Task Leader** - Performs field audits of consultants performing condition surveys of structures. Completes a quality control review of the Consultant's condition survey report submittal and coordinates comments with the Project Manager to finalize the condition survey report with repair recommendations for all deficiencies found and categorizes deficiencies as priority, safety or routine recommendations.

## 1.7 LINE DEPARTMENT

The Line Department comprises of several department functions and act as the Project Sponsors for all their respective projects and ensure that they are in alignment with the Agency's overall mission, vision and goals. With respect to Project Delivery, the various roles within the Line Departments comprise of the following:

- ❒ **Program Director** - Responsible for the delivery of all assigned projects for a specific program.
- ❒ **Program Manager** - Responsible for the delivery of multiple projects within a specific area/program or facility.
- ❒ **Project Manager (PM) -** Administers overall project controls and project delivery. He/she interfaces with the facility, ED, other departments, and external stakeholders. The PM is responsible for ensuring all relevant permits and approvals necessary to legally begin construction are obtained
- ❒ **Project Control Specialist (PCS)** - Enters projects, updates project information including schedule, and issues reports from Primavera software per PM's request.
- ❒ **Line Department Planning Representative (LDPR)** - Along with the Program Manager, initiates projects. LDPR/Facility staff may attend kick-off meeting to explain need and origin of project, as well as intended functional scope.

# 2.0 RESPONSIBILITIES

## 2.1 INITIATION AND PLANNING

A. All projects for the Engineering Department (ED) are to be initiated through the Engineering Project Delivery Division (EPD) which serves as a liaison between Engineering and the Line Department (LD). The Line Department will work with the respective Sr. EOPs and EOPs to initiate design projects for advancement, as well the lead design disciplines and other Engineering groups. The Line Department should consider state of good repair (SGR) and Asset Improvements (AI) recommendations made by ED.

B. The PMs and Facilities use the Quality Assurance Division's (QAD) SIU periodic and immediate inspection reports on conditions of all existing structures with recommendations for remedial repairs to initiate some projects. SIU can authorize the use of the "Immediate Repairs Contractor" to alleviate immediate or operational sensitive problems.

C. The Construction Management Division's (CMD) Environmental Field Operations Unit, in cooperation with the Materials Engineering Unit (MEU), conducts surveys and site assessments for lead, asbestos, contaminated soil, and other hazardous materials. The results from the assessments are used by PM and Facility to initiate some projects.

D. The Line Department provides a list of projects for the upcoming year (updated every quarter) to the ED for resource planning. Charge codes and Project Identification (PID) numbers are also provided to the appropriate EOP at the start of each project. This list is also provided to the VDC's CAD Support Group to create and keep folder structures up to date on the ED's CAD server.

E. The EOP validates charge code provided by LD to ensure Engineering can charge to it and there is sufficient funding.

F. The Line Departments are responsible for Pre-Stage I planning. Line Departments may, at their option, retain ED for planning studies, Pre-Stage I efforts, and functional scope development. This request is to be made through EPD.

G. The Line Department provides a project initiation document outlining the overall functional scope, list of Asset Data Specification (ADS) asset classes <future link>, schedule, and budget information to the EOPs. EOP coordinates amongst the Engineering team to ensure scope, schedule, and budget are accurately documented for realistic delivery, as well as verify Engineering deliverables.

H. The Engineering Department is responsible for identifying the ADS asset classes, the security elements, and/or concerns during the project planning and design process.

I. The Engineering Department supports the Project Managers in preparing Capital Planning and Oversight Committee (CPOC) and Board materials for projects required to go through Gate I or II review and Board Authorization.

## 2.2 DESIGN IMPLEMENTATION

A. The Engineering Architecture/Design Division (EADD) decides whether designs will be performed in-house or by outside consultants or a combination of both. For large multidiscipline RFPs, the Line Department will be involved in the selection process including membership on the selection panel.

B. The LD PM is responsible for coordination with risk assessments, coordination with Law if needed, and with OEM, for project related needs

C. The EOP prepares engineering project proposals among engineering staff, including the Line Departments to ensure that projects are properly scoped, budgeted, and scheduled to account for technical consideration raised by EADD, CMD, RSD, LD PM, and EAMO.

D. The EOP leads the overall coordination of the ED project team including QAD, MEU, CMD, EAMO and EADD, as needed for the preparation of design products.

E. LE/A, assigned by EADD, leads the Engineering design services (Pre-Stage I through Stage III) for the Port Authority of New York & New coordinates the design work of the various disciplines/technical units, with EAMO on the ADS asset classes.

1. Typically, the LE/A is chosen from the project's dominant design discipline by consensus among the Principals. E.g., architects for buildings, civil engineers for highways, etc.

F. LE/A coordinates the preparation of the Pre-Stage I, Stage I, II, and III construction cost estimates using the standard Excel template, including replacement cost for various ADS asset classes, with EADD, the Line Department PM, and the Chief Estimator.

G. The EOP ensures that work is done within scope and schedule, ensure consistent tracking and monitoring of project expenditures staff.

H. Typically, the LE/A will be chosen from the project's dominant design discipline by consensus among the Principals, (e.g., architects for buildings, civil engineers for highways, etc.).

I. The EOP will coordinate the preparation of the Stage I, II, and III construction cost estimates including replacement cost for various ADS asset classes with EADD, the Line Department PM, and the Chief Estimator. The Line Department PM identifies sources of soft costs if not already included in the estimate. The Estimator reviews estimates with individual discipline leaders, the LE/A, and the Line Department PM and provides comment to revise and/or obtains the Chief Estimator's signature for the estimates. The LE/A and Line Department PM also sign the comprehensive construction cost estimates for Stages I, II, and III. The Estimating Unit gives all estimates to the EOP for final review and transmission to the Line Department.

J. The LE/A is responsible for the compilation and submission of milestone deliverables to the Line Department PM and design team, as well as, ensuring that they are posted electronically.

K. The CMD Environmental Field Operations Unit, in cooperation with MEU, provides assistance to the Environmental TL and LE/A for contract review and/or preparation of

design criteria and specification for regulatory compliance regarding asbestos, lead-containing paint, other hazardous building materials noise quality and air quality criteria.

L. The LE/A or T/L coordinates with the Project Manager to identify permit requirements and ensure the applicable environmental and traffic permit requirements, if any are addressed.

M. The Contracts Unit coordinates with and provides support to the design team. The Contracts Unit also coordinates with other departments, such as the Line Department, EAMO, Law, Procurement, Treasury (Risk Management), and Real Estate (Small Business Programs) for receipt of input during contract development. The Line Department and EAMO are copied on correspondence between the Contracts Unit and other departments.

N. The DSU of QAD audits design documents prepared by EADD and its consultants for code compliance. Any code variance or engineered solutions to establish code equivalencies, if required, is to be justified by EADD, concurred by QAD, and approved by the Chief Engineer. QAD is responsible to obtain concurrence from the New York City (NYC) Department of Buildings (DOB) for any code variance in projects in NYC.

O. EDoC will provide electronic document scanning, storage, archiving, and retrieval support services to ED. EDoC team will also provide project website development services to support the electronic exchange of documents and drawings.

P. The VDC Unit's BIM/CAD Support Group archives contract drawings and BIM models at all milestones and manages the electronic review process. Drawings are made available to EDoC so that EDoC can begin the electronic review process, as required. It should be noted that the electronic review of milestone submissions is typically started by the LE/A.

## 2.3 CONSTRUCTION IMPLEMENTATION

A. The RE is the lead professional during construction and is the primary contact person for the Line Department during Stage IV. EADD and MEU will provide Stage IV support, including submittal reviews, answering Requests for Information (RFIs), site visits, etc. The Engineering Document Coordinator will serve as a primary point of contact for all submittals, tracking, processing, recording on behalf of the project.

B. The LE/A for design is the primary contact for the RE and will assist the EOC with design issues in Stage IV in addition to identify appropriate individuals to receive distribution materials.

C. The LE/A confirms that the SIM review has been conducted for all Project Stages.

D. The EOP will prepare and monitor the staff budget for all engineering divisions during Stages IV and track project hard/ soft cost expenditures.

E. The CSU of QAD, LD, and EAMO performs construction audits and attends acceptance inspections and tests on new construction projects to enable CSU to issue a PTO and a Certificate of Completion on every Port Authority of New York & New Jersey contract. CSU also attends code-required inspections and tests for completed systems to ensure the equipment is capable of operating as designed before occupancy or use. The CSU also issues Temporary Permits, upon facility request, when work is substantially completed.

F. The CMD Environmental Field Operations Unit, in coordination with the MEU and Engineering Estimating Unit (EEU), performs testing, inspections, and coordination to comply with applicable environmental regulations. The unit administers call-in consultant agreements and maintains a database of applicable documents.