

Work Plan No B.54-02 Quality Assurance Support of BART Capital Projects

Scope:

The Senior Quality Assurance Engineer will be located at 2150 Webster Street, Oakland, California unless otherwise directed by the District. The Engineer will work full-time for 40 hours/week. The Senior Quality Assurance Engineer will report to BART's Senior Quality Manager or designee who is part of the Office of Infrastructure Delivery (OID) and reports up through the Innovation and Standards group. The scope of duties for which the Senior Quality Assurance Engineer will be responsible includes the following:

Task 1 – Performing Quality Assurance Oversight Activities on Assigned Capital Projects in Different Phases.

(Note: The anticipated activities do not include the review of financial data, costs, and invoices.)

The anticipated activities are:

- Monitor all project activities for adherence to the District's Quality Management System.
- Regularly evaluate the effectiveness of BART's Quality Management System and report opportunities for improvement as required.
- Provide quality program oversight of design consultants, contractors, fabricators, and suppliers to verify their compliance with previously reviewed and accepted quality programs as well as quality requirements detailed in CDRL's, Contract Documents (drawings and specifications), Testing Procedures, etc.
- Monitor implementation of the District's Design Quality Management Plan and Resident Engineer's Manual for Design, Bid, Build Construction & Procurement Contracts (RE Manual) across all participating divisions of BART including Infrastructure Delivery, and Operations.
- Review contract documents to verify quality requirements are included.
- Participate in project progress meetings as required and lead discussion of quality related item.

Additional duties may include helping with: (a) project schedule reviews, (b) CDRL or submittal reviews, (c) development of regular progress reports, (d) preparing for regular

meetings with project management and at the working group level in all phases of planning, engineering design or construction.

QUALITY ASSURANCE OVERSIGHT / REVIEW OF DESIGN:

Quality Assurance Oversight / Review shall be performed at conceptual design, preliminary design, and final design. Oversight / Review may also consist of reviewing and coordinating the finalization of the quality components of contract documents consisting of specifications and drawings. As required, the Senior Quality Assurance Engineer shall review, and monitor compliance to the Design Quality Management Plan (DQMP) and associated procedures and activity for the following:

- Design Control
- Design interfaces and design verification
- Software quality assurance and control
- Configuration control during design and construction related services
- Corrective and preventive action plan
- Maintaining of quality records
- Deliverables and document control
- Monitoring of design consultant quality program

QUALITY ASSURANCE OVERSIGHT / REVIEW OF PROCUREMENTS:

As required, the Senior Quality Assurance Engineer shall review, and monitor quality assurance and quality control details are included in all capital projects procurements. Requirements should be for and include the following:

- Prime contractors and their subcontractors, equipment manufacturers, vendors, and any lower tier subcontractors
- In-plant, on-site inspections of manufacturers / fabricators quality records
- Reviewing tests and monitoring compliance with contract specifications
- Control of O & M manuals, As-builts and configuration management
- Review of contract training requirements

QUALITY ASSURANCE OVERSIGHT / REVIEW OF CONSTRUCTION:

As required, the Senior Quality Assurance Engineer shall provide support for the following:

- Review and implement QA/QC requirements in contract specifications
- Review and approve the Contractors QA / QC program plan. (CQC Plan)
- Monitor implementation of approved CQC Plan by the Contractor & subcontractors
- Review, surveil and monitor contractor's inspection and test plan, incoming material inspection data, product identification and traceability, equipment calibration records, document control, records of non-conforming products and corrective/preventive action, sub-contractor records and internal audit reports
- Monitor project specific quality control measures and data records maintained by BART inspectors
- Monitor inspection oversight and co-ordinate with third party oversight (BART Quality Assurance, FTA/PMOC)
- Monitor testing, training, commissioning, and turnover
- Monitor recording and maintenance of as-built drawings, data, and quality records

QUALITY ASSURANCE OVERSIGHT / REVIEW OF START UP & COMMISSIONING:

As required, the Senior Quality Assurance Engineer shall monitor the quality assurance related to procurement, installation, testing, commissioning and turnover of the furnished equipment, operating systems, and support systems. They will monitor adherence and compliance with specified quality requirements which include, but are not limited to, the following:

- Review of specifications and critical interfaces
- Monitor conformance with procedures established per Systems Start Up Plan submittals
- Implement and monitor QA/QC program requirements throughout start up and commissioning
- Monitor recording and maintenance of as-built drawings, data, and quality records
- Monitor project specific quality control measures and data records maintained by BART inspectors

Task 2 – Conducting Quality Assurance Audits and Field Surveillances

Conducting Quality Audits and Quality Field Surveillances on BART Capital Projects in Design and Construction phases to monitor QA/QC compliance of the following:

(Note: There will be no review of financial data, costs, and invoices)

- Design Consultants, Contractors, and Suppliers to their own QA/QC programs in addition to compliance with the BART's Quality Management System.
- CM Team compliance with procedures detailed in the Resident Engineer's Manual for Design, Bid, Build Construction and Procurement Contracts
- BART Team compliance with procedures detailed in the Design Quality Management Plan
- Testing records and other data conducted by Contractors, Subcontractors and/or independent Inspection agencies
- Document Control policies and procedures

The other anticipated activities are:

- Assist in performing root cause analysis of the Quality issues
- Communicate the audit results, follow up on the audit findings, evaluate effectiveness of the corrective action requests and closing them
- Maintain the Audits and Corrective Actions Logs and keep the information up to date

Exclusions:

1. Review of financial data, cost, or invoices is not included in the scope of work for this work plan.
2. Projects and works performed by or in which AECOM was involved. This includes but is not limited to projects where AECOM was the Engineer of Record or Construction Manager, member of design team, or member of the Construction Management team.

Task 3 – Supporting Quality Assurance Training and Awareness Program

As required, the Senior Quality Assurance Engineer will assist in the establishment and maintenance of procedures for identifying training needs and provide quality training to all the personnel performing activities on capital projects across the District.

Prime: AECOM

Subconsultant	Amount
QEI	\$ 371,368

Total Work Plan Value: \$ 407,147