



STATEMENT OF QUALIFICATIONS AND THE EXPERIENCE SUMMARY OF SERVICES TO THE

Massachusetts Bay Transportation Authority



Stations &
Stops



Subway
Lines



Bus
Routes



Commuter
Rail Lines



Ferry
Routes



The
RIDE

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June 21, 2022

Submitted By

1. Our Firm & What We Do

Reliance Engineers LLC is a SDO certified MBE/DBE multi-disciplinary engineering services firm. Our current focus areas include:

- Bridge and Structural Engineering
- Geotechnical and Foundation Engineering
- Tunneling, Underground Construction and Support of Excavation (SOE) Design
- Design Review, Proof Checking, and Independent Design Check Services
- Review of Instrumentation and Monitoring During Construction
- Civil, Roadway and Site Engineering
- Value Engineering & Value Management Services
- Risk Identification, Risk Mitigation and Constructability Reviews
- Project Management Assistance
- Owner Representative Services
- Cost Estimating, Change Order & Claims Review and Project Controls
- CAD, Civil 3D and BIM Services

2. Our MBTA Work Experience

Since its founding in 2013, Reliance has been providing services to the MBTA on a considerable number of projects, and as a result we are very familiar with the MBTA's procedures as well as Design & Construction Specifications and Standards:

Our On-Going Services to the MBTA Include:

- MBTA Contract R17PS03, Quincy Bus Maintenance Facility Owner's Representative Services – Reliance and its team was recently selected by the MBTA for providing OR services for the new Quincy Bus maintenance Facility. Prime Consultant to the MBTA.
- MBTA Contract Z91PS32, Cost Estimating, Risk Analysis, Value Engineering and Change Order Review Services GEC – Reliance and its team was recently selected by the MBTA for providing Project Controls services to the MBTA and we are currently providing services to the MBTA on several Task Orders. Prime Consultant to the MBTA.
- MBTA Contract Z91PS31, Cost Estimating, Risk Analysis, Value Engineering and Change Order Review Services GEC – We are also part of Z91PS31 contract as a Subconsultant to PMA and at currently providing services on several Task Orders.
- MBTA Contract E22PS08 GLX Project Management Assistance – On-going services to the MBTA in Management of the GLX project during the execution phase as a subconsultant to Weston & Sampson. Our services include providing management and technical advisory services, design review, cost estimating and change order negotiation. In addition, we are also providing Design Oversight Services as part of the Design Professional Team (E22PS09) as a subconsultant to Arup.
- MBTA Contract AP90PS04 Station Accessibility Improvements GEC– On-going task-order services on the MBTA Broadway Station and Davis Station accessibility improvements constructability reviews as subconsultant to Kleinfelder.
- MBTA Contract Z92PS96 Owner's Representative (OR) GEC – On-going task-order services on Six-Bridge-Bundle (6BB) design-build project covering Bridge Engineering and Geotechnical Engineering as subconsultant to Patrick Engineering.
- MBTA Contract Z91PS20 Transit-Oriented Development GEC – On-going task-order services to the MBTA on TOD Projects. Current TOs include Geotechnical/Underground Design & Construction Phase Reviews as subconsultant to Michael Baker International.



Our MBTA Work Experience (Continued)

Our Completed Services to the MBTA:

Projects listed below are among the major projects / assignments where we have completed providing services to the MBTA to date –

- Contract Z91PS15 Cost Estimating & Project Controls GEC– As subconsultant to PMA, we completed Independent Cost Estimating (ICE) Services for the Blueline Aquarium Station Resiliency Improvement project and Courthouse Station Upgrades ICE and Constructability Review of the Symphony Hall Station Improvements Project.
- MBTA Contract Z92PS72 GEC Task Oder Services – As prime consultant to the MBTA, Reliance completed a total of four task orders including the design review and construction review of Micro-Tunnel Utility Crossing under the Redline Tunnel in Cambridge, MA and Phase 1 inspections of Coralville Pond and Nippon Street Spillway Dams.
- MBTA Contract Z92PS81 CM/PM GEC Services – GLX IPMT (Interim Project Management Team) tasked with reducing project costs. Reliance served as the Value-Manager during the cost reduction phase and continued assisting with the preparation of DB contract documents, advertisement, and contractor selection. Subconsultant to Weston & Sampson.
- MBTA Contract Z91PS16 Project Development GEC – We completed review of MBTA Greenline Reservoir to Riverside Signals Upgrade Package, Newton heights Station Upgrades, and are scheduled to providing services on the Blueline Wayfinding Improvements design package as subconsultant to PMA.
- Contract 541P501 Downtown Crossing Station Vertical Accessibility Improvements – Provided constructability and risk assessment review, engineering services in complex geotechnical engineering, civil engineering, permit assistance, and stakeholder coordination services as subconsultant to Kleinfelder.

In addition, our Principal Engineers have a long history of providing services to the MBTA during their former tenures with prior professional engagements. As a result, they have considerable knowledge of the existing MBTA's facilities and the general infrastructure.

The other Massachusetts projects where we have provided services include the City of Boston's Long Island Bridge Replacement Project. Reliance developed an accelerated bridge replacement methodology and then provided services during Bridge Demolition and Redesign Phases as a subconsultant to STV. We also provided ICE service to Mass DOT's I-490 / I-90 interchange project as a subconsultant to PMA.

Our other major projects to related to transportation, transit and rail projects include the Ontario Line Urban rail Project in Ontario, Canada where we are providing Tunneling, Geotechnical Engineering Services to the Metrolinx, Canada, as part of the Technical Advisory Team led by HDR and providing Geotechnical Advisory services on the Hampton Road Bridge Tunnel project as part of the Owner's Engineering Team led by WSP.

3. MBTA Sample Projects

The following pages provide project descriptions of several major project assignments we have completed or substantially completed to date for the MBTA.

MBTA Green-Line Extension Project (GLX), Boston, MA



MBTA's Green-Line Extension (GLX) Project consists of a 4.8-mile extension of the Green-Line light rail service along two branches. The project also includes a new maintenance facility, seven new stations, and modifications to existing infrastructure, relocation of utilities, and other facilities along the corridor.

Since the estimated construction cost estimates were significantly in excess of the \$2 billion GLX project budget, in 2016 the MBTA began a process of reviewing options for the next steps. The MBTA appointed an Interim Project Management Team (IPMT) to find ways to bring down the projected construction costs, while maintaining the rider services and functional aspects of the project. Reliance was part of the IPMT team and served as the Value Manager on the team. The IPMT provided analytical and managerial services on an expedited schedule from January 25, 2016, to June 30, 2016, and assessed the overall GLX Program scope and budget, developed and quantified potential re-scoping ideas. The IPMT proposed a revised GLX Program that reduced the project costs by over \$700 million, bringing the estimated costs close to the original budget. The IPMT also assisted the MBTA to re-procure the project as a Design-Build contract. Reliance was a key part of this team, providing assistance to the MBTA to re-advertise the Design-Build project.

We are currently participating in the MBTA's Program Management Group and assisting with overall management of the project including the design development process. Services include review of contractor design package submittals, invoices, review of cost and schedule trends, and assisting with processing of claims and contract change orders. We are also assisting with the design development process and coordinating with the project's Design Professional and the Design-Build team on the advancement of different packages involving all aspects of the GLX project.



Asset Types:	Road bridges, Rail bridges, Pedestrian bridges, Concrete bridges, and Steel bridges
Services Provided:	Structural Engineering, Geotechnical Engineering, Cost Estimating, Constructability Reviews, Design Change Order Reviews, Construction Change Order Reviews, and Project Management Assistance

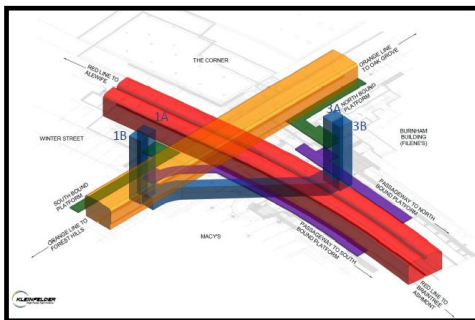
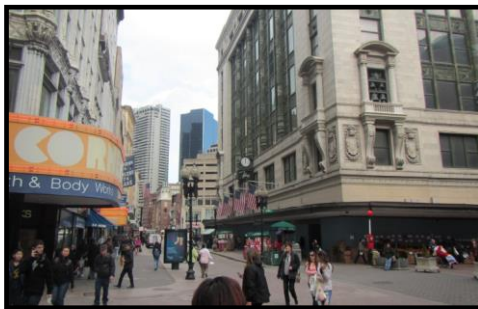
Relevance: GLX is a very large infrastructure project that involves many structures and facilities. Reliance has contributed to the project success while serving on the IPMT, through the final design, and now the construction phases of the project.

MBTA Downtown Crossing Station (DTX) Vertical Access Improvements, Boston, MA



MBTA, as part of the MBTA program to improve ADA accessibility for their stations, sought solutions for the Downtown Crossing Station (DTX). Kleinfelder, the prime-consultant responsible for implementing the accessibility upgrades at DTX engaged Reliance Engineering for participation in the development of an alternate station design concept for DTX. The original design concept was a four independent elevator scheme. However, site constraints and construction logistics led the team toward an alternative design that eliminated two elevator locations, doubled the number of elevators at the remaining two locations, and extended the elevators to a level below the Red Line where the two separate banks of elevators are interconnected via a pedestrian tunnel and provide subway riders transfer access between Red Line and Orange Line subways.

Reliance worked with Patrick Engineering and the prime consultant Kleinfelder in developing a revised design approach that significantly reduced project risks, and one that could be constructed with less impact to surface streets in the heavily trafficked area, mitigated disruption to existing utilities and the community, and provided better operational redundancy.



Asset Types: Pedestrian Tunnels, Below Ground Subway Station, Elevator Shafts, ADA Accessibility

Services Provided: Assistance with Development of Alternative Design Concepts, Constructability Review, Design Assistance and Review of Final Tunnel Design, Structural Design, Geotechnical Design, and instrumentation and monitoring. Assisted with Utility Relocation, Coordination and Permitting assistance with BWSC, and Stakeholder and Agency Coordination.

Relevance: Type of structure (underground stations), technical complexity, its location in the heart of the City of Boston, need for coordination with multiple agencies and the need for mitigation and monitoring of impacts to adjacent facilities. The project construction approach developed by the Consultant Team effectively mitigates and minimizes the construction impacts to traffic and other activity to the busy streets.

Design Review and Construction Review of Utility Crossing Under the MBTA Red Line Tunnel, Cambridge, MA



Reliance provided services to the MBTA as a Prime Consultant under Task Order GEC Contract No. Z92PS72. Three of the task orders under this contract related to MBTA's MRG License Request #15316 by the City of Cambridge for four new utility lines. The proposed utility lines were to cross the MBTA's 145-year-old historic Red-Line subway tunnel in the vicinity of 445 Massachusetts Avenue, Cambridge, MA. These new utility lines consisted of three 20" diameter HDPE storm-water force mains and one 16" diameter HDPE sanitary force main. Additionally, the City of Cambridge also needed to remove and replace an existing 12" water main, originally installed in 1871 embedded in the Red Line tunnel roof but constructed to be isolated from the tunnel structure.

Reliance was tasked by the MBTA to review the proposed scheme of running the new utility lines over the roof of the tunnel, locally cutting into the tunnel roof due to impacts on the tunnel identified during the design review process. Upon completion of our review that highlighted both the short-term and long-term impacts to the tunnel roof as well as the Mass Avenue Roadway above, through the discussions with the MBTA and the City of Cambridge on the alternatives, City proposed a revised design scheme of constructing a micro-tunnel under the Red Line tunnel.

This micro-tunnel resulted in minimal impact to the MBTA's historic Red Line tunnel and other existing utilities in the vicinity and well as eliminated long-term maintenance issues to the busy Mass Avenue roadway.

Reliance also reviewed the proposed instrumentation and monitoring scheme during construction within and outside of the tunnel as well as setting of the allowable movements. We continued to review the movement data during construction on behalf of the MBTA.



Asset Types:	Below Ground Subway Station, Subway Tunnels, Utilities and Utility Tunnels
Services Provided:	Constructability Review, Development of Alternative Designs, Micro-tunnel Design Recommendations, Review of Support of Excavation Design Calculations, Review of Construction Plans and Specifications, Review of Contractor Submittals, Review of Geotechnical Instrumentation and Monitoring Plan during construction.

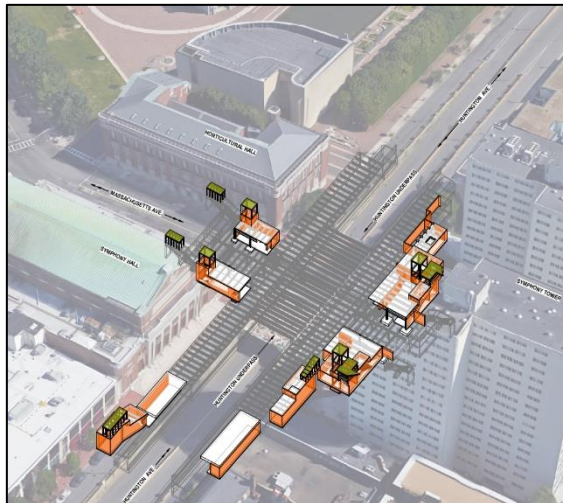
Relevance: Technical complexity, its location in the heart of the City of Cambridge, and infrastructure improvements. The project construction approach developed by the Reliance effectively mitigates and minimizes the construction impacts to existing MBTA tunnels/structures and utilities.

MBTA Cost Estimating & Scheduling GEC (Z91PS15), Boston, MA



Reliance provided Independent Cost Estimating (ICE) and Constructability Reviews for the MBTA through the MBTA GEC Contract Z91PA15 for Cost Estimating, Constructability and Schedule Review as subconsultant to PMA. Under this contract we completed the following task order services to the MBTA:

- Task 4 – MBTA Blueline Aquarium Station Flood Protection Resiliency: Reliance provided an independent cost estimate based on our review of 100% plans and specifications and participated in cost reconciliation meetings.
- Task 5 – MBTA Courthouse Station Groundwater Intrusion Project: Reliance provided an independent cost estimate based on our review of 75% plans and specifications and prepared a complete quantity-take-off using the 75% plans, prepared an independent cost estimating report (ICE), and completed a reconciliation workbook for use as a comparison between ICE and the original engineer's estimate, and participated in cost reconciliation meetings.
- Task 6 – MBTA Symphony Station Improvements Project: Reliance provided constructability review services based on 75% plans and specifications for the proposed improvements to the MBTA's Symphony Station. Our scope also included a review of the proposed utility relocation methodology, proposed support of excavation design and the construction schedule and the cost estimate developed by the design team. Reliance produced a constructability checklist, constructability review report and presented the findings to the MBTA and the design team.




- Task 8 – MBTA South Attleboro Station Improvements: Constructability, cost & schedule review based on the 75% plans, specifications.

Relevance: Cost estimating, constructability, and schedule review of MBTA capital projects.

4. Our Massachusetts Based Technical Team

While some of our technical resources are located outside of Massachusetts, the key personnel in the Boston and Massachusetts region leading the delivery of technical services to the MBTA include:



ANTHONY LANCELLOTTI, PE: Tony brings over 40 years of experience in all aspects of tunnel design and construction, from planning to preliminary engineering to final design through project completion. He has extensive experience in design-build, program management, and delivery of large infrastructure projects. In addition to being a specialist in the design of immersed tube and cut-and-cover tunnels, Tony has considerable expertise in project conceptualization, study of tunnel options and types; development of preliminary cost estimates and decision making based on cost efficiency; preparation of baseline designs; value engineering; direction of construction support services and technical and administrative management involved in the delivery of large-scale complex projects.

ELDON ABBOTT, PE: Eldon has over 50 years of professional experience covering a broad range of geotechnical engineering, tunneling, transit, marine facilities and large sub-terrain building facilities. Prior to joining Reliance, Eldon was a Vice President with Parsons Brinckerhoff. Over the course of his career, he has served as the Project Manager and/or Technical Director of many noteworthy projects including the Post Office Square Parking Garage and the Boston Harbor Effluent Outfall Tunnel which, upon completion, was the longest single-entry tunneled outfall in the world.

LUCY JEN, PHD, PE: With over 25 years of experience as a geotechnical engineer in Boston, Massachusetts, Lucy has worked on projects throughout New England and New York. Lucy's considerable experience encompasses all facets of geotechnical engineering, including interpretation of geotechnical laboratory and field tests, foundation engineering, field instrumentation, and numerical analyses. She is highly experienced in the design of deep excavations in soft clay, evaluation of excavation performance using numerical analyses, and evaluation of excavation progress based on field measurements.

MIKE SANGEORZAN, CCP: Mike brings over 15 years of experience in heavy civil construction cost estimating, planning, and scheduling and project delivery. Over the span of his career with construction firms such as Kiewit Infrastructure, he gained considerable experience on large public transportation projects, including design-bid-build, design-build, and CM/GC contracts. Mike has extensive experience with estimating, scheduling, project controls, and field management from both direct oversight of field crews as well as indirect supervision of field engineers and superintendents. Mike is currently serving as a cost estimator and claims reviewer, while assisting with schedule reviews, on MBTA's GLX project and is very familiar with cost estimating aspects of diverse components of this large MBTA projects.

PETER DONAHUE, PE, ENV SP: Peter has over 50 years' professional experience includes 33 years with critical management responsibilities on several major tunnel projects. Peter served as Design Manager and joint venture Deputy Program Manager for the multibillion-dollar Central Artery/Tunnel Project in Boston – one of the largest public works projects ever undertaken in the United States. He was the Project Manager of WSP's Owner's Representative Contract for the Port of Miami Tunnel. His prior experience focused on municipal and site development engineering ranging from large projects in heavy industries, such as the pulp and paper and petrochemical industries, to projects involving residential subdivisions and urban renewal work in major cities.

SENA KUMARASENA, PHD, PE: Sena brings over 35 years of experience bridge design including rail and movable bridges. He has been involved in all aspects of bridge design from planning, concept formulation, design development, rehabilitation, and construction management. Sena has implemented a number of innovative ideas in his design projects including exploitation of high strength and novel combinations of materials and the use of optimal structural systems for long-span bridges. Over the course of his career, Sena has served in senior technical capacities for many noteworthy projects including such projects in the Boston areas as the Zakim Signature Cable-Stayed Bridge, Storrow Drive Bridge, and provided Design-Review during construction and implemented the needed redesigns of critical components of the Chelsea Street Vertical Lift Bridge that he identified during his review, and led the efforts to implement the changes without impacting the cost and schedule of the project.



Appendix

Massachusetts DBE/MBE Certifications



Charles D. Baker, Governor
Karyn E. Polito, Lieutenant Governor
Jamey Tesler, Secretary & CEO

massDOT
Massachusetts Department of Transportation
DBE Certification Office | MassUCP

June 8, 2022

Mr. Sena Kumarasena
Reliance Engineers, LLC
30 Yarmouth Road
Wellesley, MA 02481

This letter serves as sole and exclusive proof of your firm's DBE certification

Dear Mr. Kumarasena:

Congratulations! The Massachusetts Unified Certification Program (MassUCP), is pleased to notify you that we have renewed your company as a disadvantaged business enterprise (DBE). Your company continues to be assigned **NAICS Code(s) 541330** with the certified business description of **ENGINEERING DESIGN & ENGINEERING CONSULTING SERVICES** and will remain listed in our certified business directory.

As a DBE, you must inform MassUCP in writing of any change in circumstances affecting your ability to meet size, disadvantaged status, ownership, control requirements or any material change in the information provided in your application form. Changes in management responsibility among members of a limited liability company are covered by this requirement. You must attach supporting documentation describing in detail the nature of such changes. The notice must take the form of an affidavit sworn to by the owners of the firm before a person who is authorized by state law to administer oaths or of an un-sworn declaration executed under penalty of perjury of the laws of the United States. You must provide the written notification within 30 days of the occurrence of the change. If you fail to make timely notification of such a change, you will be deemed to have failed to cooperate under 49 CFR 26.109(c).

To renew your firm's DBE certification and if it continues to meet the applicable criteria, on or before your firm's certification anniversary date of **June 20, 2023**, and each year thereafter, please send the MassUCP the following documents:

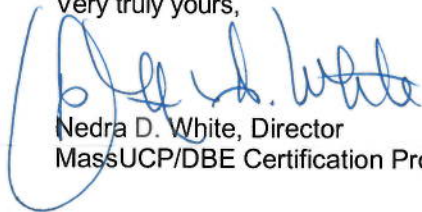
- (1) No Change Affidavit (**will be sent with reminder letter**)
- (2) A **signed** copy of your company's, and all of its affiliates', U.S. Tax Returns including all schedules and attachments for the year(s) indicated.
- (3) A **signed** copy of your personal tax returns for years(s) indicated.
- (4) If a sole proprietor, a **signed** copy of your Schedule C for year(s) indicated.
- (5) A **statement** of the **number only** of full and part-time employees (including owner) for each year indicated.

If you have changed your company name or address, please notify Ms. Nedra D. White, in writing on the company's letterhead in order to update your state vendor file.

MassUCP reserves the right to monitor, perform random spot checks, re-evaluate the firm or revoke the firm's certification if it no longer meets the certification criteria.

During the period of your certification, if you have further questions regarding annual review, please contact Ms. Nedra D. White, Director, MassUCP at (857) 368-8659.

Very truly yours,



Nedra D. White, Director
MassUCP/DBE Certification Program



OPERATIONAL SERVICES DIVISION
SUPPLIER DIVERSITY OFFICE

THE COMMONWEALTH OF MASSACHUSETTS
Executive Office for Administration and Finance
OPERATIONAL SERVICES DIVISION

One Ashburton Place, Suit 1017
Boston, MA 02108-1552
Charles D. Baker
Governor
Karyn E. Polito
Lieutenant Governor
Michael J. Heffernan
Secretary
Gary J. Lambert
Assistant Secretary for Operational Services Division

November 18, 2020

Mr. Sena Kumarasena
Reliance Engineers, LLC
30 Yarmouth Road
Wellesley, MA 02481

Dear Mr. Kumarasena:

Congratulations! Your firm has been renewed as a minority business enterprise (MBE) with the Supplier Diversity Office ('SDO') under the business description of **ENGINEERING DESIGN & ENGINEERING CONSULTING SERVICES** . Your firm will be listed in the SDO Certified Business Directory and the Massachusetts Central Register under this description. **This letter serves as the sole proof of your SDO certification.** Your designation as a MBE is valid for three (3) years unless revoked pursuant to 425 CMR 2.00.

Your firm's next renewal date is August 08, 2023. SDO will send written renewal notices to your business and/or e-mail address on file approximately thirty (30) business days prior to your firm's three (3) years certification anniversary. Additionally, every six (6) years, certified companies that wish to remain certified may undergo a substantive review which will require certain updated supporting documentation.

SDO also reserves the right to monitor your firm and to perform random spot checks to ensure the firm continues to meet the certification criteria. Your firm is required to notify the SDO in writing of any material changes. Examples include but are not limited to changes in its business description, as well as business phone number, fax number, business' physical location, webpage and e-mail addresses. Other reportable changes include business structure, ownership (the business is sold or transferred), control and outside employment. You also have a duty to report decertification and debarment notices from this or any other jurisdiction. Failure to abide by the continuing duty requirements shall constitute grounds for the firm's decertification.

We look forward to working with you and your firm to maximize its business opportunities. Should you have any questions, please feel free to contact us via email at wso@state.ma.us.

Sincerely,

A handwritten signature in blue ink that reads "William M. McAvoy". The signature is written in a cursive style and is set against a light yellow rectangular background.

William M. McAvoy
Deputy Assistant Secretary and
Chief Legal Counsel