Transport for London

SCHEDULE 7B

Form of Agreement – Short Form Call-Off Contract

Call-Off Contract Number:	**ENG Task 276 - Traffic Signals Modernisation Programme 2023/24**
Framework Lot:	**D5 – Traffic Control Engineering**
Outline Agreement:	**4600008087**

THIS AGREEMENT is made the .31st..... day of ….August…..…..... 2023

BETWEEN:

(1) **Transport for London (TfL), ("the *Employer"*** which expression shall include its successors in title and assigns); and

(2) **AECOM Ltd,** *a company registered in England and Wales (Company Registration Number* 01846493*) whose registered office is at* Aldgate Tower, 2 Leman St, London E1 8FA **("*the Consultant*")**

WHEREAS:

This Agreement is made pursuant to a framework agreement between the Parties relating to the provision of **TfL PSF2 94203 - Engineering Consultancy Services dated 4th January 2021** ("the Framework Agreement"). The *Employer* wishes to have provided Consultancy Services as contained in Table 3**.** The *Employer* has accepted a proposal (Table 4) by the *Consultant* for the Services in accordance with the Short Form Conditions of Contract (as defined in the Framework Agreement).

NOW IT IS AGREED THAT:

Terms and expressions defined in (or definitions referred to in) the short form conditions of contract have the same meanings herein. The *Consultant* provides the Services in accordance with the Short Form Conditions of Contract, Tables, Schedules and Attachments. The *Employer* pays the *Consultan*t the amount due in accordance with the Short Form Conditions of Contract. The documents forming this Call-Off Contract are:

This Form of Agreement duly executed by the Parties;
Short Form Conditions of Contract;
Table 3, Table 4 and Table 5;
The Attachments;
The Schedules.

Where there is any discrepancy or conflict within or between the documents forming the contract the order of priority shall be as follows:

First	:	This Form of Agreement;
Second	:	Table 5;
Third	:	Table 3;
Fourth	:	The Schedules;
Fifth	:	Short Form Conditions of Contract;
Sixth	:	Table 4.

1. Notwithstanding the manner of execution of this Agreement it is agreed that:

1.1 the limitation period within which any claim may be brought by the *Employer* for breach of this Agreement by the *Consultant* is 6 years from the date of breach; and

1.2 the *Consultant* agrees not to raise in defence of any such claim a shorter limitation period whether pursuant to the Limitation Act 1980 (as the same may be amended or re-enacted from time to time) or otherwise.

This Agreement has been signed for and on behalf of the *Employer* and the *Consultant* the day and year written above.

Signed by
for and on behalf of
the Consultant

[redacted]

Signed by
for and on behalf of
the Employer

[redacted]

Table 3, *Employer's* Requirement:

See Appendix 1 – Scope of Works as provided at tender stage. Appointment of a Consultant to undertake the design and commissioning (Local Acceptance Testing - LAT) of 110 signal schemes (75 crossings, 35 junctions) that form part of the TfL Traffic Signal Modernisation Programme for 2023/24 on behalf of TfL Engineering & Asset Strategy (EAS).

Table 4, *Consultant's* Proposal:

See Appendix 2 – Consultant's Proposal. Full submission as provided at tender stage.
Charges: Pricing Option: A – Fixed Priced The total cost of the services is fixed at [redacted] and shall not exceed this amount. The Day Rates shall remain fixed for the life of this Call-Off Contract, including any contract extensions. TfL will not reimburse any additional costs for time, input, resource or other without prior written consent from TfL's Employing manager. See Appendix 3 – Pricing Schedule for full breakdown of costs. Full submission as provided at tender stage.

Table 5, Contract Particulars:

Contract Number: **ENG Task 276 - Traffic Signals Modernisation Programme 2023/24**
The Contract Commencement Date is: 01/09/2023 The Service Commencement Date is: 01/09/2023 The Call-Off Term is: 18 months. Contract shall terminate 31/03/2025 The Call-Off Contract may be extended for a further 6 months, however any extensions will be at the *Employer's* own discretion and subject to the appointed *Consultants'* satisfactory performance, ongoing requirement and funding availability. This will be confirmed and mutually agreed in writing.

In accordance with Clause 7.1 of the Short Form Conditions of Contract, the *Employer's* Contract Manager is:

[redacted]

In accordance with Clause 7.1 of the Short Form Conditions of Contract, the *Employer's* Procurement Manager is:

[redacted]

Transport for London

In accordance with Clause 8.5 of the Short Form Conditions of Contract, the Consultant's Key Persons are:

[redacted]

Notice period in accordance with Clause 25.4 of the Short Form Conditions of Contract (termination without cause): 30 days

Payment Period: (see Clauses 5.1 and 5.4 of Short Form Conditions of Contract)

Clause 5.1 - The invoice period shall be 4-weekly in arrears.

Clause 5.4 - Payment will be made within 30 days of receipt of invoices.

Consultant **must** send invoices via email, in pdf format, to: Invoices@tfl.gov.uk

Invoices should be addressed to:

Transport for London
Accounts Payable
P.O. Box 45276
14 Pier Walk, SE10 1AJ

All invoices must have TfL Contract Reference Number, SAP Purchase Order number, TfL Contact name, a separate calculation of VAT and a brief description of the Services provided.

APPENDIX 1

EMPLOYER'S REQUIREMENT

Appendix 1 – Scope of Works

ENG Task 276 - Traffic Signals Modernisation Programme 2023/24

Technical Brief

The consultant is required to undertake the design and commissioning (Local Acceptance Testing - LAT) of 110 signal schemes (75 crossings, 35 junctions) that form part of the TfL Traffic Signal Modernisation Programme for 2023/24 on behalf of TfL Engineering & Asset Strategy (EAS).

The overall programme design tasks are required to be completed, including EAS assurance by 31st March 2024. Following contract award, the consultant will be expected to submit the designs in batches of approximately 6-7 per week to meet this deadline.

The LATs will be programmed in for the Financial Year 2024/25. While a specific programme for these is currently unavailable, the project team will endeavour to provide a periodic look ahead to ensure sufficient time is allowed for the planning of commissioning resources.

A list of the signal schemes included within this programme can be found in **Appendix A1** attached to this brief.

The tasks required to undertake the above brief are shown below:

General:

- Design information (other than approved drawings) including relevant correspondence and logging of design decisions, should be stored in the relevant Executive Summary folder on TfL's servers.
- Approved drawings must be supplied to the [redacted] for upload at the time of approval.
- For Stage 2 design checks and specification audits the consultant will be expected to adhere to TfLs Lean Review Process, which seeks to obtain approval for the checks and audits within one working day of submission. TfL's Stage 2 design check and specification audit process is specified in **Appendix B**.
- Consultant attendance will be required at weekly project update meetings with EAS during the design phase.

Site Survey:

Each site is to be visited initially and survey work to be undertaken. The survey work must include:

- Completion of the Stage 1 section of the Traffic Signal Safety & Quality Check List 1 & 2, as per the process outlined in SQA-0646.

- Measurements of the existing layout, as far as it is being retained, to support the design, including, but not limited to crossing widths, stop line to stud distances and ACSL depths.

- Photos of all site approaches relevant to the design proposals, for all road users.

- Where existing equipment is in situ, photos of the inside of the traffic signal controller, inside of the PJL (if present) and controller side panel (if provided). Internal and external photographs of the ESP.

- Any other photos relevant to site specific issues noted at the survey.

- Completion of Risk Assessments and Hazard Register – see below for TfL form references.

Design Process:
Following this initial site assessment, the following actions shall be taken (where applicable):

- Summarise Stage 1 visit findings and supply report to the EAS project lead and other parties as directed by the project manager.

- Discuss new ducting requirements with the relevant Quality Officer contact, as advised by project manager.

- If required, attend duct-proving meeting with the civils contractor and with TfL Quality Officer (if applicable) and receive red line drawing for ducting requirements.

- Request new proposed (PRO) drawing number/title from TfL's Drawing Office [redacted].

- Work up the PRO drawing based on the client's design / requirements. The design shall conform to the SQA-0640 series of documents and SQA-0651. The PRO drawing should conform to TfL's drawing layer requirements and be saved in AutoCAD 2013 format or earlier.

- Any existing departures from standards above should be detailed and communicated to the corresponding Highway Authority by the consultant using TfLs template letter (to be provided to the successful consultant).
    - Where this leads to the site reverting to the current SLD or significant redesign of the site is required, this design work will be undertaken by EAS and the consultant should cease work on that particular site.
    - Where further minor design iterations are required between the current SLD and the proposal by the consultant, this will be undertaken by the consultant.
    - The EAS Project Lead can be considered the relevant contact for the TLRN. Any civil changes required are to be detailed in the SQA-8702.

- For junctions:
    - complete part A for the SQA-8448 form, in partnership with the relevant Network Performance Delivery (NPD) contact advised by project manager. This process is outlined in SQA-0447.
        - This may sometimes require the production of a skeleton Linsig model and agreement of contingency stages to be included in the proposed method of control.

- For crossings:
    - complete the SQA-8696 form setting outcrossing type, timings, mode of operation/control, working in partnership with the NPD contact advised by the project manager.

- Ensure that the design is checked and approved in line with SQA-0646. Initial request for the checks and their subsequent resubmission following addressed comments should be submitted at:

[redacted]

- The design pack for Stage 2 Traffic Signal Safety & Quality Check should consist of the following:
    - Commentary and correspondence relating to departures from standards or site specific design considerations, constraints or difficulties – and associated photographs.
    - Draft PRO drawing in .dwg format
    - SQA-8189 – Stage 1 and 2 Traffic Signal Safety & Quality Check List
    - SQA-8700 – Design Hazard Register
    - SQA-8701 – Design Risk Assessment
    - SQA-8448 – Junction Traffic Signal Design Sheet - Part A completed (Junctions only)
    - SQA-8696 – Proposed Crossing Timing Sheet (Crossings only)
    - SQA-8702 – Engineering Supplementary information
    - SQA-8695 – LAT Attendance Requirement Assessment

Following the approval of the Stage 2 Traffic Signal Safety & Quality Check:

- Supply the signed off PRO (in PDF & DWG format) and SQA forms to the TfL project manager

- For junctions, supply the signed off PRO and SQA-8448 form the NPD contact for their completion of Part B, cc'ing the email to the project manager. Continue to liaise with NPD contact to resolve any queries around phasing, staging, timings, etc.

Following the approval of the SQA-8448 form with Part B:

- Write a controller specification in the Site & Fault Management Database (SFM)/Maximo incorporating the timings and staging and other details agreed within the SQA-8448 and the new approved drawing number.

- Ensure the controller specification is audited as per the process outlined in SQA-0646 and submit for review to:

[redacted]

Following the audit and approval of the controller specification:

- Supply the approved controller specification in PDF format to the TfL project manager

- Respond to any configuration queries/issues raised by the configurator.

Commissioning Process:
The signal contactor will provide at least one week notice for the Local Assurance Testing (LAT). Attend site on date provided to commission/assure traffic signal installation ensuring that all necessary safety checks are carried out. The following documents are to be completed during the LAT:

- SQA-8704 - ATS LAT Checklist
- SQA-8190 – Stage 3 Traffic Signals Safety & Quality Check List

If LAT is unsuccessful, report reason to the project manager to ensure issue is rectified. Re-attend site for LAT once issue has been resolved.

Report any snagging to the project manager. If necessary, reattend site following completion of snagging.

Notify the Project Manager and the EAS Project Lead of any timing changes that have made during the LAT that may result in a new controller configuration being required.

Following a successful LAT:

- Send completed SQA-8704 and SQA-8190 to the project manager in PDF format.

Financial Assessment

The consultant is required to provide a total cost to undertake the above design tasks and attend a single LAT at each site to undertake the necessary checks and complete the required documentation. The consultant should assume that all sites will be commissioned during normal office hours. The total cost is to be comprised of:

a) Cost per junction for:
b) Design
c) LAT

2. Cost per pedestrian crossing for
    a) Design
    b) LAT

The consultant should also provide an additional cost per site:

- To undertake a LAT out of office hours, either during the night, on a weekend or public holiday.
- To undertake a second LAT where the first LAT has not been successful due to incomplete third party works, incorrect signal installation or incorrect configuration
- To provide an additional PROM where changes are made during commissioning
- To undertake minor redesigns where the Highway Authority are unable to bring the site up to standard

The financial assessment will be undertaken on a total price for:

- 35 x complete junction schemes
- 75 x complete crossing schemes
- 3 x 2nd LATs
- 3 x out of hours LATs
- 3 x second PROM
- 3 x Minor redesign

The consultant is required to submit CVs for their staff who will undertake each commissioning demonstrating their suitability, for approval by EAS prior to the commencement of the contract.

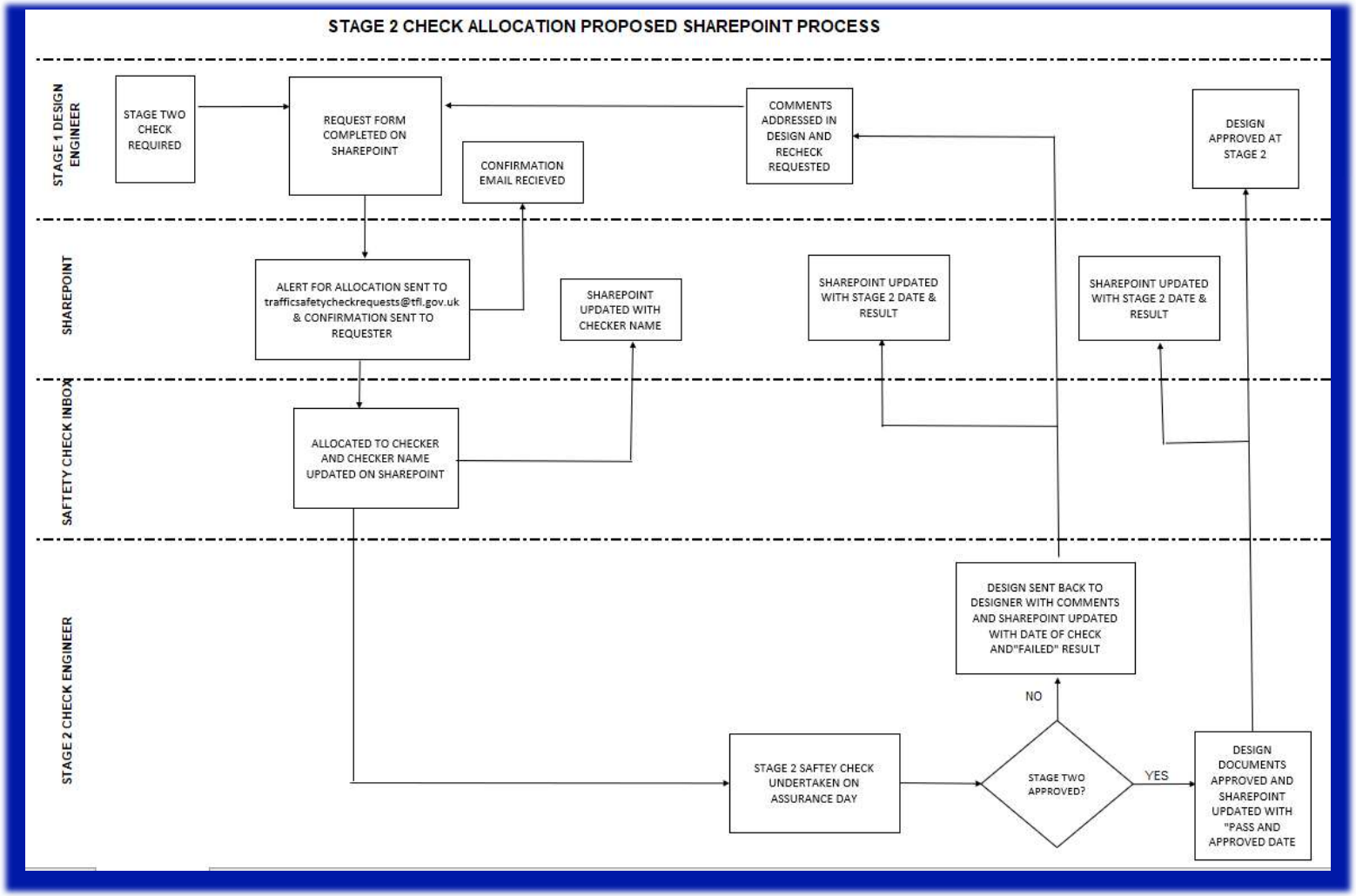
As part of the invoicing process, the consultant will be required to specify, in each submitted invoice, the appropriate amount billed to each individual scheme WBS code shown in Appendix A.

July 2023

Transport for London

Appendix A1 – Modernisation Site List

Appendix B – Stage 2 Design Check and Specification Audit Process



APPENDIX 2

CONSULTANT'S PROPOSAL

AECOM

Traffic Signals Modernisation Programme 2023/24

ENG Task 276

AECOM Tender Submission

Transport for London

4th August 2023

Delivering a better world

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Question 1

Understanding and Methodology

Detail your understanding of this requirement and your proposed methodology to carry out all the deliverables

Proposed Delivery Methodology

AECOM's Traffic Signal Team has significant experience working alongside TfL on previous projects in numerous locations, complexities and different types of traffic signal installations. These previous relationships ensure AECOM is uniquely placed to support the TfL Engineering and Asset Strategy team (E&AS) with the delivery of these 100 varied traffic control installations. We have strength in depth with a number of staff members who have previously carried out designs and commissioning of junctions and pedestrian crossings on behalf of TfL. There is a strong local team but also wider support from the AECOM Traffic Signal Group (ATSG) which is made up of over 20 Traffic Signal Engineers.

AECOM was awarded for the third year running the accolade of being the world's most trusted infrastructure consulting firms (Fortune Magazine, 2023) and embed our certifications in the ISO standards (9001 - Quality, 14001 -Environment and 45001 - Health and Safety) into a single, globally adopted Project Delivery System (PDS). Aligned to PRINCE2 methodology, the PDS delivers consistent, right first time, service delivery

AECOM has substantial experience of providing support on schemes with challenging timescales and ensuring delivery to price, quality and programme. Our proposed project team has been specifically chosen due to their innate knowledge of your requirements and expectations, which enables them to hit the ground running and ensure the required programme timescales are met. It is this local knowledge that has allowed us to provide a price and programme that is tailored for this particular work stream as the work requested is already understood in terms of the challenges to deliver the design packages within a short time frame available. AECOM has taken account of all your needs this year and our resources have been aligned to deliver all of your commissions. AECOM will deliver what we promise.

Our team have experience of carrying out both design and commissioning works for TfL previously. Dave Chiu, who will have overall responsibility for the technical delivery of this programme has experience from having been embedded within TfL Engineering & Asset Strategy (E&AS) for over 10 years under previous secondments meaning that we fully understand the 'TfL' way. This working arrangement has created good relationships not only with TfL's E&AS and Network Performance Delivery (NPD) departments but also with TfL signal contractors. Having produced numerous traffic signal designs, controller specifications and bus priority configurations our team is well placed to identify and mitigate any issues during the design and commissioning stages.

We not only bring our knowledge of TfL, but our teams have also carried out design and commissioning works on behalf of local authorities all over the UK. This provides you with a team that has experience working with a variety of Traffic Signal controllers and equipment where we are happy to transfer this knowledge if you wish.

Added value - Our team has previous experience with the application of the LEAN process on TfL schemes, this included the 21st Century Comms programme of works and TfL's Modernisation 2022-23 programme of works. The LEAN process enables work programmes to be completed in a more efficient manner than standard working practices. The application of the LEAN process for this programme of works is essential in ensuring the works are completed within the timeframe expected. It will also help identify any beneficial improvements to the design process

We are able to deliver fully the tender specification as outlined below.

Task 1 - Project Meetings & Reporting

The project will commence with an inception ('Healthy Start') meeting w/c 11th September 2023 to ensure all parties understand the requirements of the project and that the project is set up on the right footing, with the right resourcing, documents and controls in place to drive high quality and performance from the outset, delivering success to the client. AECOM's assigned project manager, Mark Stapley, will attend regular meetings with TfL's assigned project manager, as agreed during the Healthy Start meeting, and provide regular updates on the programme of works. The AECOM team will be available at all times if needed to discuss any issues that arise.

We will ensure that the TfL PM is entirely happy with the process, by offering open feedback opportunities throughout the duration of the project and, if as clients, you have ideas for added value and we can incorporate them then we will do so – we are here to provide customer satisfaction for our clients and ideas can come from all.

Task 2 Desktop Study & Junction Reviews

Prior to carrying out the Stage 1 audit on site a desktop study will be carried out. Using Site & Fault Management Database (SFM)/Maximo to access existing data.

- Review Ducting Survey and contact Quality Officer to arrange meeting.
- Access Sig/Cad and review Site Layout Drawing (SLD)
- Request PRO drawing numbers for all sites from drawing office
- Timing sheet to be checked for any RAM changes to the timings on site
- Create folder on executive summary for all sites based on TfL E&AS folder structure, to store site survey and design information.

Task 3 Site Visits

AECOM H&S forms will be completed and approved for all sites to be visited to ensure that our excellent Health and Safety record is maintained but also that we do not compromise your own record. Suitable PPE will be issued to team. Stage 1 audit to be carried out, in accordance with SQ-0646, completing form SQA-8189.

- Check existing documentation is all present and accurately represents the layout and equipment on site. Check for existing faults and hazards register.
- Take measurements of Junction elements such as crossing widths, ACSL depths and stop line to stud distances.
- Photographs of all approaches and signal equipment on site, this will also include the inside of the controller, inside of Post Joint Large (PJL), if present, and internal, external photographs of the Electrical Supply Pillar (ESP)
- Check lane markings and other relevant road markings noting any departures.
- Complete Stage 1 SQA8189, SQA-8700 Design Hazard Register and SQA-8701 Design Risk Assessment.
- Record RAM sheet changes and review latest entries in fault logbook.

Task 4 Review Site Data & Departure from Standards

Upon completion of the site visits, AECOM's engineer will upload all data electronically to the individual Executive summary project folders on TfL's system. We will summarise the findings of the Stage 1 audits and produce a report for the TfL project

lead and other parties, suggesting improvements for pole locations and Magnetometers. Any existing departures from standards will be detailed and communicated to the corresponding Highway authority using TfL's template letter highlighting any physical changes and / or changes that fall outside of the current scope of works.

Task 5 Ducting Review

Review duct survey report supplied by TfL and arrange a meeting with TfL Quality Officer (QO) to discuss requirements for new chambers and ducts as required.

Task 6 Liaison with Network Performance

For Junction designs, prior to completing the SQA-8448, Network Performance Delivery (NPD) will be consulted to confirm any changes to the method of control. The early engagement with NPD will ensure agreed method of control can be added to the PRO drawing and part A of SQA-8448. A skeleton LinSig model will also be produced. The SQA-8448 will be completed as per the process outlined in SQA-0447. For crossings completed SQA-8696 mode of operation control to be advised by NPD.

Task 7 Design Drawings

A proposed drawing (PRO) and will be produced to TfL's design/requirements using the requested drawing number, this design will conform to the SQA-0640 and SQA-0651 series of documents. Proposed drawing will conform to TfL's layering requirements and will be saved in Auto CAD 2013 format or earlier.

Task 8 Produce Design Pack for Submission

The following to be completed as part of design packs which will be submitted via TfL's SharePoint site once complete and ready for Stage 2 checks:

- Commentary and correspondence and TfL's template letter, relating to departures from standards or site-specific design considerations, constraints or difficulties – and associated photographs.
- Draft PRO drawing in .dwg format 2013
- SQA-8189 – Stage 1 and 2 Traffic safety & Quality Check List
- SQA-8700 – Design Hazard Register
- SQA-8701 – Design Risk Assessment
- SQA-8448- Junction Traffic Signal Design Sheet – Part A completed
- SQA-8696- Proposed Crossing Timing Sheet (crossings only)
- SQA-8702 – Engineering Supplementary information
- SQA-8695 – LAT Attendance Requirement Assessment
- SQA-8704 – ATS LAT Checklist
- Skeleton Linsig model

Task 9 Queries from Assurance

AECOM understand that Stage 2 audit checks will adhere to TfLs Lean Review Process which seeks to obtain approval within one working day of submission.

Task 10 NPD completion of SQA-8448-Part B

On approval of SQA-8448 Part A, we will issue the following to NPD:

- Signed off PRO drawing (PDF& DWG format) or SLD drawing
- SQA-8448 Part A approved

- Skeleton Linsig

We will continue to liaise with NPD to resolve any queries relating to phasing, stage, timings, BP, and any other queries relating to Part B.

Task 11 Produce Controller Specification & iBus configuration

Once the SQA-8448 has been approved by NPD and TfL Engineering the controller specification will be produced on the (SFM)/Maximo ready to submit for audit. If required, an iBus configuration/VDP will be requested.

Task 12 Following the Audit and Approval of the Design pack

Following the approval of the design pack the following will be issued to TfL PM - signed off PRO drawing (in PDF & DWG format), approved controller specification in PDF format (where applicable) and SQA forms to project manager, also saved in handover folder. We will respond to any configuration queries raised by the configurator and / or TfL configuration assurance process

Task 13 Attend Commissioning of Junctions & Pedestrian Crossings

Complete AECOM H&S forms for site attendance.

- SQA-8704 ATS LAT Checklist.
- SQA-8109 - Stage 3 Traffic Signal Safety & Quality Check List.
- Completed SQA-8704 and SQA-8109 to be sent to project manager in PDF format within one week of successfully completed LAT.
- If LAT is unsuccessful, the reason for failure will be reported to the project manager. Report snagging to the TfL project manager.

Quality Assurance

To achieve TfL's high expectations of quality, our design team will ensure all design work complies with the relevant SQA documentation. All design work will also be subject AECOM's internal Checking, Verification and Approval (CVA) process.

Our commissioning team, work in accordance with TfL TES-303: Local Acceptance Testing for Traffic Signal Assets and UTC commissioning (where required). Our commissioning team are experienced with this process and have been assessed by TfL on site for undertaking commissioning's on TfL's behalf. All team members, not approved by TfL will be approved before they carry out a commissioning.

All of AECOMs traffic signal engineers are registered to the National Highway Sector Scheme 8 (NHSS8) and are Electrical Certification Scheme (ECS) card holders. AECOM have advanced experience in NHSS8 / ECS and able to offer TfL additional services in the form of advice and assistance regarding the registration process.

AECOM's knowledge and experience in applying TfL's methodology throughout the design and commissioning stages can be demonstrated through their recent commission on TfL's 2022/23 Modernisation programme of works.

AECOM have yet again proved to be a highly experienced and professional consultancy. Communication, quality and delivery have been above expectations throughout the delivery of this programme.

James Pinder | TfL E&AS Project Lead

Question 2

Programme & Risk Register

Provide a team organogram and a detailed programme identifying:

- **Activity / Deliverables**
- **Resource / Grade of Resource**
- **Effort Days - including explanation of the days allocated to each activity / deliverable**
- **Timescales**
- **Risk Register detailing key risks and assumptions highlighted with mitigations.**

Activity and Deliverables

A full list of deliverables for each stage can been seen in the table below

Deliverable	Concept Design Stage	Detailed Design Stage	Commissioning Stage
SQA-8189 Stage 1 and 2 Traffic Safety & Quality Check List	✓		
SQA-8700 Design Hazard Register	✓		
SQA-8701 Design Risk Assessment	✓		
SQA-8448 Junction Traffic Signal Design Sheet **SQA-8696** Timing Sheet crossings	✓		
SQA-8702 Engineering Supplementary Information	✓		
SQA-8695 LAT Attendance Requirement Assessment	✓		
PRO Drawing (in .dwg format 2013)	✓	✓	✓
LinSig Model (Skeleton) Junctions	✓	✓	
Traffic Signal Controller Specification (SFM / Maximo) Junction		✓	
iBus Configuration (If required)		✓	
SQA-8704 ATS LAT Checklist		✓	✓
SQA-8190 Stage 3 Traffic Signal Safety & Quality Check list			✓

Resource and Grades

Our proposed project team can be seen in the organogram below

The proposed team have previous experience with both the design and commissioning of TfL sites. In addition to the proposed project team, AECOM has further resources available to provide resilience and adapt to the needs of the programme through our wider UK team of 20+ experienced traffic signal engineers.

Effort Days (Total days required by grade for each task within the programme)

Activity	Project Role	Effort Days	Rationale
Project Management inc Meetings & Reporting	Project Manager	13.5	Carry out PM duties inc attending project meetings, and provide regular reports on progress
	Technical Lead	10	
Desktop Reviews	Technical Lead	5	A review of all existing data inc know faults, temporary timing changes, ducting and hazards
	Designers	37.5	
Site Visits	Technical Lead	5	Visit 100 sites, including preparation and processing of collected data
	Designers	65	
Production of a Tranche of Concept Design Packs	Technical Lead	0.6	Produce Concept Design packs for 6/7 sites. Review ducting with QO. A total of 16 Tranches of Concept Design packs will be produced.
	Senior Designer	3.5	
	Designers	5	
Produce one Tranche of Detailed Design Packs	Technical Lead	0.6	Produce Detailed Design packs for 6/7 sites. A total of 16 Tranches of Detailed Design packs will be produced.
	Senior Designer	3.2	
	Designers	4.2	
Commissioning of Sites & Close Down	Project Manager	1.5	Carry out commissioning's and complete SQA-8704 & SQA-8190
	Technical Lead	4	
	Senior Designer	18.75	
	Designers	90	

Timescales

It is understood that the design stage shall be completed no later than **31/03/2024** with the commissioning stage to follow (exact dates to be confirmed.) A full proposed project programme can be found in **Appendix A** which will meet these dates.

Risk Identification & Management

AECOM have undertaken a review of the risks associated with this project, please refer to **Appendix B** for our initial project Risk Register which will be discussed further at the Healthy Start meeting. The risk register will be maintained as a live register and reviewed at regular intervals throughout the project, with any changes highlighted for the TfL Project Manager's attention and discussion.

Question 3

Quality of Resource

For the Proposed resource/s supply:

- **A synopsis of their role and the expertise and added value they would bring to the project**
- **Resource's availability for the duration of the contract**
- **CV detailing relevant experience, qualifications.**

Proposed Resource

CVs for all of the following proposed resources can be found in Appendix C.

[redacted] is our proposed Project Manager and will ensure all deliverables are produced to the highest quality and comply with the required TfL standards. In addition, he will provide additional project support for the team and will bring resilience to the Project lead role, if required. With 29 years' experience in design, installation, maintenance, commissioning and management of transport signal systems and their implementation on behalf of various clients including Transport for London (TfL) National Highways, Local Authorities, and private developers. Mark was Project lead for AECOM's involvement in TfL's 21C project and Corridor Improvement Programme (CIP) of works and is AECOM's UK lead for Traffic Signal Engineering

[redacted] currently holds the position of Compliance Manager for AECOM's registration to National Highways Sector Scheme 8 (NHSS8) and the Electrical Registration Scheme (ECS). He ensures that a programme of continuous improvement and training is embedded into the national team to maintain AECOM's quality standards.

Though [redacted] has commitments on other projects and potential commitments on upcoming projects, such as TfL RAR 23/24, we can confirm he will be fully available to fulfil his duties, as Project Manager, as this has been considered when planning for this project.

[redacted] is our Technical Lead, who has an over 15 years working with TfL, including completing several secondments within TfL, during which he worked on several Bus Priority & RARR schemes. He has considerable knowledge of TfLs design and assurance processes. He has comprehensive knowledge of applicable DfT and local standards. He has full understanding of TfL's SQA documentation sharing his knowledge with the entire team.

[redacted] experience as Project Lead on TfL's Modernisation programme 22/23 has allowed him to become familiar with TfL's Lean Process for Stage 2 audits, which seeks to obtain approval for the checks and audits within one working day of submission David also has experience using E&AS design process for departures from standards.

[redacted] extensive experience of TfL work programmes over the past 15 years, has allowed David to get a clear understanding of the 'TfL way' of working and share this with the wider project team.

[redacted] will be fully committed to this project with further potential commitment to upcoming TfL projects, such as TfL RARR 23/24, however we can confirm he will be fully available to fulfil his duties, as technical lead, as this has been considered when planning for this project.

[redacted] will be the Senior Designer for this project. He will be providing design checking and support for junior team members during the design stages, as well as producing the SQA-8448 documentation & LinSig modelling as required during

concept design stage. He will also produce the Traffic Signal Controller specifications as required during the Detailed design stage.

As a highly experienced engineer, with over 30 years' experience, Graham has previously managed the TfL call/cancel project 2021 delivering 60 sites comprising of 36 crossings and 24 junctions to be designed and assured over a 3-month period. He has also been involved with the Corridor Improvement programme 2018-2021 comprising of 36 junction improvements for buses and pedestrians.

[redacted] has most recently been involved with the Modernisation programme 2022/23, providing support and completing SQA forms, departure from standards letters, LinSigs for submission and answering queries as required under TfL Lean process. This has enabled him to build up good relationships with TfL E&AC and NPD.

[redacted] will be fully committed to this project and we can confirm he will be fully available to fulfil his duties, as Senior Designer, as this has been considered when planning for this project.

[redacted]

[redacted] will be a Senior Designer for this project he will be producing SQA-8448 documentation & LinSig modelling during the concept design stage, answering queries relating to SQA-8448 and stage 2 audits.

As a highly experienced engineer, with over 35 years of experience, [redacted] has worked on various TfL programme of works, including the 21C programme, CIP and Modernisation programme. He also has a good understanding of the TfL SQA-process and will also provide support to junior team members. He is conversant with all the industry standards including TSM6, TSRGD, DMRB as well as local guidance. Martyn is also an advanced user in LinSig and will provide modelling support to the team.

[redacted] has extensive experience delivering projects within challenging timescales, he will share this experience with the team to ensure all deliverables will be up to standard and on time.

AECOM can confirm [redacted] will be available for the full duration of the contract. Consideration has been given to upcoming works which has been considered and will not affect [redacted] ability to fulfil his role as Senior Designer.

[redacted]

Beckie will be a designer on this project assisting with the initial desk top surveys and carrying out site visits for data collection purposes. She has over 5 years of experience of traffic signal design. This includes working for a Local Authority (Derbyshire County Council) in addition to AECOM.

Beckie has a good understanding of the collection of important data from site for design purposes. She is also NHSS8 / HERS registered and is competent to access and interrogate traffic signal controllers. Beckie's skill set also includes the ability to produce traffic signal design drawings using AutoCAD and write ITS1827s (Traffic

Signal Controller Specifications). She has knowledge on adaptive control systems such as UTC / SCOOT & MOVA.

[redacted] has gained recent experience with Bus Priority systems through her work on the Birmingham SPRINT project (CIHT National Infrastructure Project of the Year 2023) designing several Bus Priority routes across the West Midlands area.

[redacted] will be fully committed to this project with further potential commitment to upcoming TfL projects, such as TfL RARR 23/24, however we can confirm she will be fully available to fulfil her duties, as designer, as this has been considered when planning for this project.

[redacted]

[redacted] will be a designer who will be assisting with producing design SAQ documentation and LinSig modelling.

He has over 4 years of experience of traffic modelling and data analysis, mostly with Transport for London working with the Network Performance Delivery (NPD) section. He possesses a strong understanding of SCOOT and UTC systems and how to analyse this data for design usage. His experience allows him to identify the key challenges and risks early in the process and minimise their impact by working collaboratively with TfL and stakeholders. During his time working in the NPD team, he carried out numerous signal timing reviews as part of the Route Analysis Recommendation Report. He also has significant experience reviewing SQA 8448's for Engineering on behalf of NPD.

[redacted] experience working with NPD gives him a great understanding of 'TfL's way of working' in regard to NPD requirements which he will share with the wider project team.

[redacted] will be fully committed to this project with further potential commitment to upcoming TfL projects, such as TfL RARR 23/24, however we can confirm he will be fully available to fulfil his duties, as designer, as this has been considered when planning for this project.

[redacted] – [redacted]

[redacted] will be assisting with the initial desk top surveys and carrying out site visits for data collection. He will also be carrying out commissioning's and closing down files.

[redacted] has over 7 years of experience on TfL projects, most recently the TfL modernisation works programme 2022/23, he carried out many of the site visits completing SQA-8189 Stage 1 audits and producing proposed drawings. He has also worked on other TfL projects, such as previous RARR works programmes, which has given him the experience to carry out site visits, complete Stage 1 audit forms and attending LAT assurance on site completing LAT SQA-8701 and stage 3 audit forms.

[redacted] has a very good understanding of TfL's LAT process with experience of successfully completing over 50 commissioning's on behalf of TfL. He is currently approved by TfL E&AS to carry out commissioning's on behalf of TfL.

[redacted] will be fully committed to this project with further potential commitment to upcoming TfL projects, such as TfL RARR 23/24, however we can confirm he will be fully available to fulfil his duties, as designer, as this has been considered when planning for this project.

Question 4

Relevant Experience

Detail 3 relevant experiences you have successfully completed in providing similar services

Relevant Experience

Modernisation Programme of Works 2022 - 2023 (& 2014 – 2018)

AECOM's St. Albans signal team have been involved with TfL modernisation programme on a number of occasions. During the period of 2014-2018 we successfully designed, assured, project managed, commissioned and closed down over 100 junctions on behalf of TfL. These sites were procured through the London Highways Alliance contract as part of the Conway/AECOM joint venture.

More recently, AECOM were awarded 40 junction modifications via the Professional Services Framework. This was awarded in December 2022 and commenced on 12th December 2022. The 40 sites needed to be designed and assured by 29th March 2023. AECOM has substantial experience providing support on schemes with challenging timescales and ensuring delivery to price, quality and programme. Our project team delivered the designs, in line with the agreed programme and budget, including E&AS assurance of the Stage2 designs and E&AS assurance of the controller specifications. AECOM engineers attended sites to carry out Stage 1 audits completing SQA-8189 and surveying existing equipment and road markings on site. Any departures from standard were noted and highlighted in SQA-8189. During the design process NPD changes added to SQA-8448 and all relevant SQA forms saved to Executive Summary. New proposed (PRO) drawings were produced based on the required design with ducting details added following Quality Officer discussions. Completed SQA forms and PRO drawing were submitted for Stage 2 assurance.

To ensure the works were successfully delivered, to the TfL programme, AECOM agreed to submit 5 junction designs per week, submit 5 SQA-8448's to Network Performance Delivery (NPD) and submit 5 controller specifications to E&AS for assurance.

As instructed by TfL E&AS Project Lead, any existing departures from standard were detailed and communicated to the relevant Highway authority. This included a letter and drawing highlighting the proposed changes required to mitigate the departure.

AECOM adhered to the TfL Lean Review Process which seeks to obtain approval for the checks and audits within one working day of submission. To achieve this, AECOM relied upon our excellent working relationship with TfL E&AS and NPD and an excellent knowledge and experience of TfL's SQA forms and auditing process.

The commissioning of these 40 junctions are to be programmed for 2023/24.

> AECOM have yet again proved to be a highly experienced and professional consultancy. Communication, quality and delivery have been above expectations throughout the delivery of this programme.
>
> James Pinder | TfL E&AS Project Lead

The team who delivered this project will be form part of the proposed team for the RARR works, bring their knowledge & experience of delivering projects with tight deadlines.

Route Analysis Recommendation Report (RARR) 2018-2021

TfL Network Performance Delivery identified a number of junctions that could benefit from changes to the method of control to improve facilities for buses and pedestrians. These included upgrading junctions to SCOOT UTC, kerbside detection for

call/cancel, addition of bus priority, upgrading existing iBus to include differential priority and method of control changes.

AECOM were allocated a total of 20 sites which required site visits to carry out Stage 1 audits and where required siting of Scoot magnetometers, access points and repeaters to ensure good line of site. Proposed drawings were produced for all sites as well as relevant SQA forms including SQA-8189, SQA-8448 and skeleton LinSigs if required. Any departures from standard were highlighted to the project manager and highlighted in the Stage 1Audit. During the design process AECOM worked closely with E&AS and NPD with regards to updating iBUS, Scoot detector locations, method of control and cableless linking plans as required.

Design packs were submitted to E&AS for Stage 2 audit, once approved SQA-8448 and LinSig submitted to NPD. Controller specification would be completed following approval of SQA-8448. iBus configuration updated if required. Relevant forms were then uploaded on to TfL Workflow and submitted to the TfL signal contractor.
AECOM attended commissioning's completing the Local acceptance test SQA-8704, Stage 3 audit and if required UTC commissioning with NPD. All relevant forms associated with commissioning and close down were uploaded onto TfL Workflow and Executive Summary. TfL project manager was informed and close down forms submitted. All 20 sites were successfully delivered within the required time and budget

Carriageway Improvement Programme (CIP) (2020-2021)

AECOM were awarded 60 sites that required the addition of on-crossing detection for call/ cancel operation. The 60 sites were made up of 36 pedestrian crossings and 24 junctions. To ensure the deadline for the completion of this project, AECOM successfully submitted 10 pedestrian crossing designs a week followed by 5 junctions a week for assurance with E&AS. AECOM engineers attended site to carry out Stage 1 audits completing SQA-8189 forms, noting any departures from standards, highlighting any errors in the Site Layout Drawing (SLD), and ensuring the proposed location of the detection would be correctly sited away from obstructions. A proposed (PRO) drawing was produced showing the on-crossing detection. Design packs would be submitted to E&AS for Stage 2 assurance. To ensure TfL programme was maintained, AECOM adhered to the Lean process and answered queries within one working day during the audit process.

For the junctions, NPD were consulted during the design process to confirm any changes they may require, ensuring the submission of the SQA-8448 forms and proposed drawings included any method of control changes. Following approval of SQA-8448 Part B, 5 controller specifications were completed and then submitted per week for audit. On completion of the detailed design these were uploaded onto TfL Workflow and project manager informed.

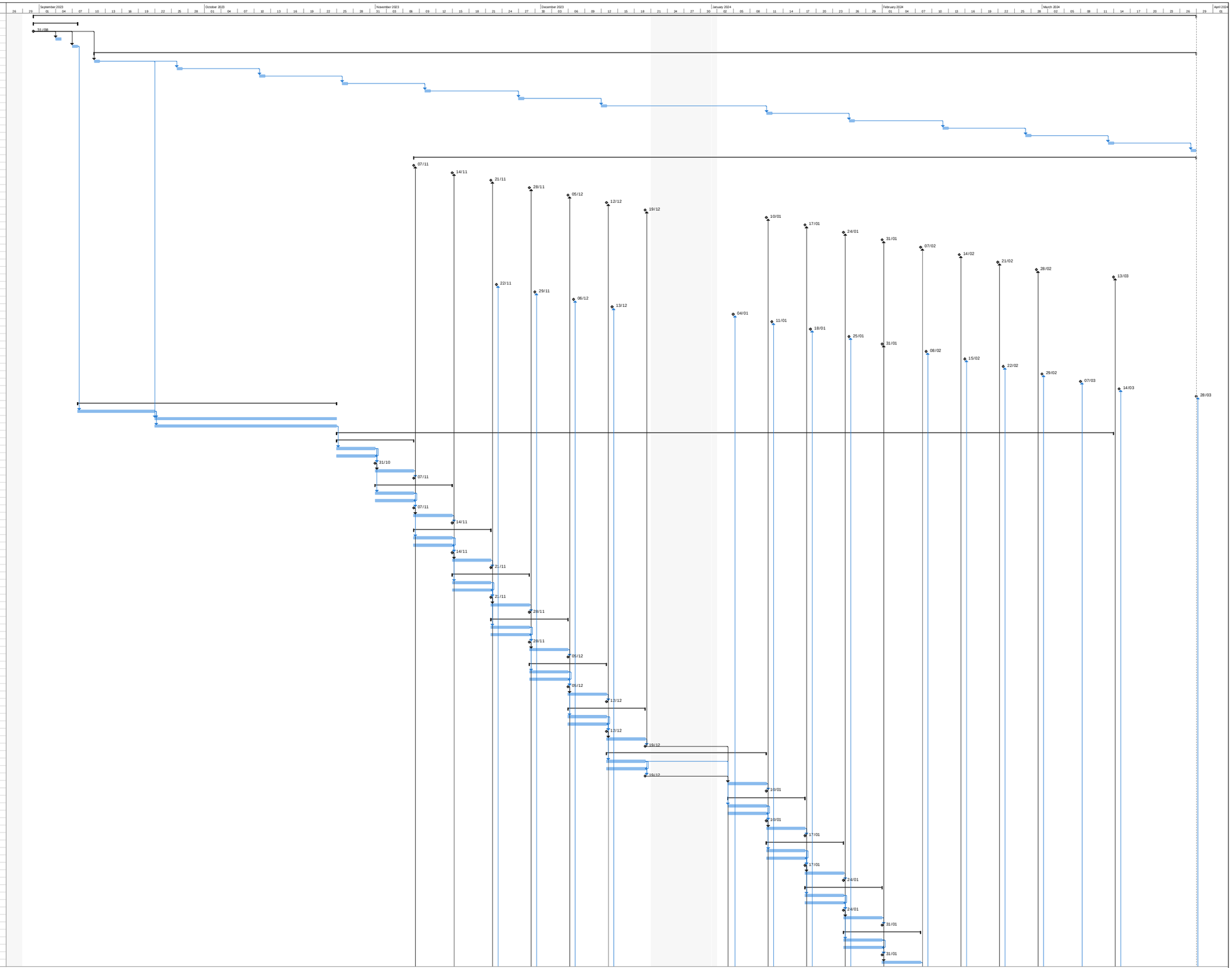
Following confirmation by the signal company of commissioning dates, our team of engineers attended all 60 commissioning's, liaising with the signal company and NPD if UTC was required. All necessary documentation was completed, SQA-8704 LAT, Stage 3 audit and photographing new equipment on site. Upon successful commissioning the paperwork was uploaded to the executive summary and closed down. TfL project manager was informed and close down form submitted. All 60 sites were successfully delivered within the required time and budget

Conflicts of Interest

AECOM are currently not aware of any conflicts of interest, however, if AECOM do become aware of any such conflicts of interests, we shall notify the TfL Project Manager immediately.

Appendix A – Programme

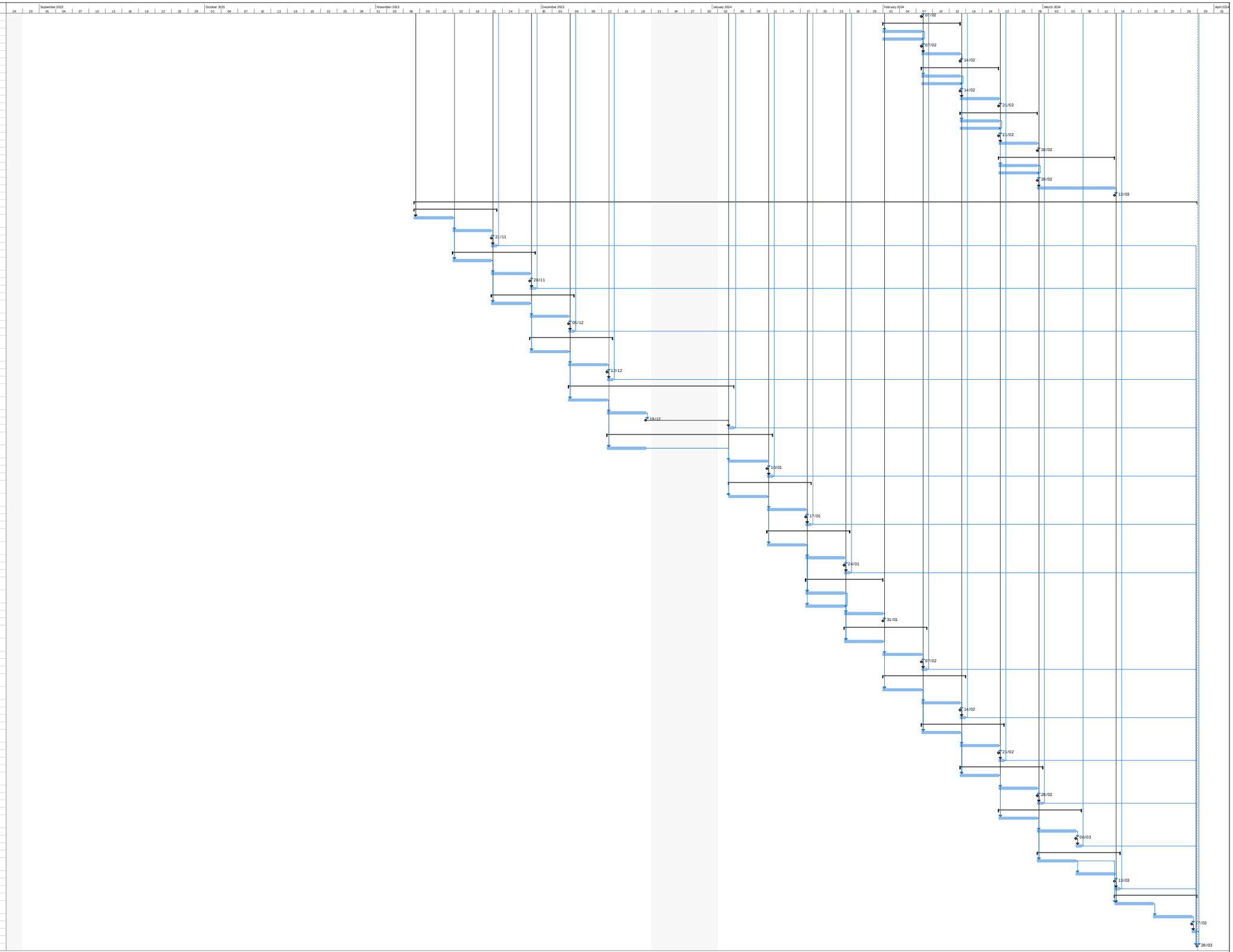
ID	Task Mode	Task Name	Duration	Start	Finish
1		TFL MODS 2023-24 Programme	140 days	Thu 31/08/23	Thu 28/03/24
2		Contract	6 days	Thu 31/08/23	Thu 07/09/23
3		Contract Award	0 days	Thu 31/08/23	Thu 31/08/23
4		Contract Sign Off	1 day	Mon 04/09/23	Mon 04/09/23
5		Receive Data Access from TfL	1 day	Thu 07/09/23	Thu 07/09/23
6		Meetings	133 days	Mon 11/09/23	Thu 28/03/24
7		Inception Meeting & Brief Team	1 day	Mon 11/09/23	Mon 11/09/23
8		Project Progress Meeting 1	1 day	Tue 26/09/23	Tue 26/09/23
9		Project Progress Meeting 2	1 day	Wed 11/10/23	Wed 11/10/23
10		Project Progress Meeting 3	1 day	Thu 26/10/23	Thu 26/10/23
11		Project Progress Meeting 4	1 day	Fri 10/11/23	Fri 10/11/23
12		Project Progress Meeting 5	1 day	Mon 27/11/23	Mon 27/11/23
13		Project Progress Meeting 6	1 day	Tue 12/12/23	Tue 12/12/23
14		Project Progress Meeting 7	1 day	Thu 11/01/24	Thu 11/01/24
15		Project Progress Meeting 8	1 day	Fri 26/01/24	Fri 26/01/24
16		Project Progress Meeting 9	1 day	Mon 12/02/24	Mon 12/02/24
17		Project Progress Meeting 10	1 day	Tue 27/02/24	Tue 27/02/24
18		Project Progress Meeting 11	1 day	Wed 13/03/24	Wed 13/03/24
19		Project Progress Meeting 12	1 day	Thu 28/03/24	Thu 28/03/24
20		Milestone Dates	91 days	Tue 07/11/23	Thu 28/03/24
21		Concept Design Complete Tranche 1	0 days	Tue 07/11/23	Tue 07/11/23
22		Concept Design Complete Tranche 2	0 days	Tue 14/11/23	Tue 14/11/23
23		Concept Design Complete Tranche 3	0 days	Tue 21/11/23	Tue 21/11/23
24		Concept Design Complete Tranche 4	0 days	Tue 28/11/23	Tue 28/11/23
25		Concept Design Complete Tranche 5	0 days	Tue 05/12/23	Tue 05/12/23
26		Concept Design Complete Tranche 6	0 days	Tue 12/12/23	Tue 12/12/23
27		Concept Design Complete Tranche 7	0 days	Tue 19/12/23	Tue 19/12/23
28		Concept Design Complete Tranche 8	0 days	Wed 10/01/24	Wed 10/01/24
29		Concept Design Complete Tranche 9	0 days	Wed 17/01/24	Wed 17/01/24
30		Concept Design Complete Tranche 10	0 days	Wed 24/01/24	Wed 24/01/24
31		Concept Design Complete Tranche 11	0 days	Wed 31/01/24	Wed 31/01/24
32		Concept Design Complete Tranche 12	0 days	Wed 07/02/24	Wed 07/02/24
33		Concept Design Complete Tranche 13	0 days	Wed 14/02/24	Wed 14/02/24
34		Concept Design Complete Tranche 14	0 days	Wed 21/02/24	Wed 21/02/24
35		Concept Design Complete Tranche 15	0 days	Wed 28/02/24	Wed 28/02/24
36		Concept Design Complete Tranche 16	0 days	Wed 13/03/24	Wed 13/03/24
37		Detail Design Complete Tranche 1	0 days	Wed 22/11/23	Wed 22/11/23
38		Detail Design Complete Tranche 2	0 days	Wed 29/11/23	Wed 29/11/23
39		Detail Design Complete Tranche 3	0 days	Wed 06/12/23	Wed 06/12/23
40		Detail Design Complete Tranche 4	0 days	Wed 13/12/23	Wed 13/12/23
41		Detail Design Complete Tranche 5	0 days	Thu 04/01/24	Thu 04/01/24
42		Detail Design Complete Tranche 6	0 days	Thu 11/01/24	Thu 11/01/24
43		Detail Design Complete Tranche 7	0 days	Thu 18/01/24	Thu 18/01/24
44		Detail Design Complete Tranche 8	0 days	Thu 25/01/24	Thu 25/01/24
45		Detail Design Complete Tranche 9	0 days	Wed 31/01/24	Wed 31/01/24
46		Detail Design Complete Tranche 10	0 days	Thu 08/02/24	Thu 08/02/24
47		Detail Design Complete Tranche 11	0 days	Thu 15/02/24	Thu 15/02/24
48		Detail Design Complete Tranche 12	0 days	Thu 22/02/24	Thu 22/02/24
49		Detail Design Complete Tranche 13	0 days	Thu 29/02/24	Thu 29/02/24
50		Detail Design Complete Tranche 14	0 days	Thu 07/03/24	Thu 07/03/24
51		Detail Design Complete Tranche 15	0 days	Thu 14/03/24	Thu 14/03/24
52		Detail Design Complete Tranche 16	0 days	Thu 28/03/24	Thu 28/03/24
53		Reviews & Sites Visits	33 days	Fri 08/09/23	Tue 24/10/23
54		Desktop review	10 days	Fri 08/09/23	Thu 21/09/23
55		Request Drg Nos.	23 days	Fri 22/09/23	Tue 24/10/23
56		Site visits	23 days	Fri 22/09/23	Tue 24/10/23
57		Concept Design	90 days	Wed 25/10/23	Wed 13/03/24
58		Tranche 1 - Concept Design (6/7 Design Packs)	10 days	Wed 25/10/23	Tue 07/11/23
59		Produce PRO Drawings	5 days	Wed 25/10/23	Tue 31/10/23
60		Produce SQA Documentation	5 days	Wed 25/10/23	Tue 31/10/23
61		Submit Tranche 1 for Audit	0 days	Tue 31/10/23	Tue 31/10/23
62		TFL Carry Out Audit	5 days	Wed 01/11/23	Tue 07/11/23
63		Concept Design Tranche 1 Complete	0 days	Tue 07/11/23	Tue 07/11/23
64		Tranche 2 - Concept Design (6/7 Design Packs)	10 days	Wed 01/11/23	Tue 14/11/23
65		Produce PRO Drawings	5 days	Wed 01/11/23	Tue 07/11/23
66		Produce SQA Documentation	5 days	Wed 01/11/23	Tue 07/11/23
67		Submit Tranche 2 for Audit	0 days	Tue 07/11/23	Tue 07/11/23
68		TFL Carry Out Audit	5 days	Wed 08/11/23	Tue 14/11/23
69		Concept Design Tranche 2 Complete	0 days	Tue 14/11/23	Tue 14/11/23
70		Tranche 3 - Concept Design (6/7 Design Packs)	10 days	Wed 08/11/23	Tue 21/11/23
71		Produce PRO Drawings	5 days	Wed 08/11/23	Tue 14/11/23
72		Produce SQA Documentation	5 days	Wed 08/11/23	Tue 14/11/23
73		Submit Tranche 3 for Audit	0 days	Tue 14/11/23	Tue 14/11/23
74		TFL Carry Out Audit	5 days	Wed 15/11/23	Tue 21/11/23
75		Concept Design Tranche 3 Complete	0 days	Tue 21/11/23	Tue 21/11/23
76		Tranche 4 - Concept Design (6/7 Design Packs)	10 days	Wed 15/11/23	Tue 28/11/23
77		Produce PRO Drawings	5 days	Wed 15/11/23	Tue 21/11/23
78		Produce SQA Documentation	5 days	Wed 15/11/23	Tue 21/11/23
79		Submit Tranche 4 for Audit	0 days	Tue 21/11/23	Tue 21/11/23
80		TFL Carry Out Audit	5 days	Wed 22/11/23	Tue 28/11/23
81		Concept Design Tranche 4 Complete	0 days	Tue 28/11/23	Tue 28/11/23
82		Tranche 5 - Concept Design (6/7 Design Packs)	10 days	Wed 22/11/23	Tue 05/12/23
83		Produce PRO Drawings	5 days	Wed 22/11/23	Tue 28/11/23
84		Produce SQA Documentation	5 days	Wed 22/11/23	Tue 28/11/23
85		Submit Tranche 5 for Audit	0 days	Tue 28/11/23	Tue 28/11/23
86		TFL Carry Out Audit	5 days	Wed 29/11/23	Tue 05/12/23
87		Concept Design Tranche 5 Complete	0 days	Tue 05/12/23	Tue 05/12/23
88		Tranche 6 - Concept Design (6/7 Design Packs)	10 days	Wed 29/11/23	Tue 12/12/23
89		Produce PRO Drawings	5 days	Wed 29/11/23	Tue 05/12/23
90		Produce SQA Documentation	5 days	Wed 29/11/23	Tue 05/12/23
91		Submit Tranche 6 for Audit	0 days	Tue 05/12/23	Tue 05/12/23
92		TFL Carry Out Audit	5 days	Wed 06/12/23	Tue 12/12/23
93		Concept Design Tranche 6 Complete	0 days	Tue 12/12/23	Tue 12/12/23
94		Tranche 7 - Concept Design (6/7 Design Packs)	10 days	Wed 06/12/23	Tue 19/12/23
95		Produce PRO Drawings	5 days	Wed 06/12/23	Tue 12/12/23
96		Produce SQA Documentation	5 days	Wed 06/12/23	Tue 12/12/23
97		Submit Tranche 7 for Audit	0 days	Tue 12/12/23	Tue 12/12/23
98		TFL Carry Out Audit	5 days	Wed 13/12/23	Tue 19/12/23
99		Concept Design Tranche 7 Complete	0 days	Tue 19/12/23	Tue 19/12/23
100		Tranche 8 - Concept Design (6/7 Design Packs)	10 days	Wed 13/12/23	Wed 10/01/24
101		Produce PRO Drawings	5 days	Wed 13/12/23	Tue 19/12/23
102		Produce SQA Documentation	5 days	Wed 13/12/23	Tue 19/12/23
103		Submit Tranche 8 for Audit	0 days	Tue 19/12/23	Tue 19/12/23
104		TFL Carry Out Audit	5 days	Thu 04/01/24	Wed 10/01/24
105		Concept Design Tranche 7 Complete	0 days	Wed 10/01/24	Wed 10/01/24
106		Tranche 9 - Concept Design (6/7 Design Packs)	10 days	Thu 04/01/24	Wed 17/01/24
107		Produce PRO Drawings	5 days	Thu 04/01/24	Wed 10/01/24
108		Produce SQA Documentation	5 days	Thu 04/01/24	Wed 10/01/24
109		Submit Tranche 9 for Audit	0 days	Wed 10/01/24	Wed 10/01/24
110		TFL Carry Out Audit	5 days	Thu 11/01/24	Wed 17/01/24
111		Concept Design Tranche 9 Complete	0 days	Wed 17/01/24	Wed 17/01/24
112		Tranche 10 - Concept Design (6/7 Design Packs)	10 days	Thu 11/01/24	Wed 24/01/24
113		Produce PRO Drawings	5 days	Thu 11/01/24	Wed 17/01/24
114		Produce SQA Documentation	5 days	Thu 11/01/24	Wed 17/01/24
115		Submit Tranche 10 for Audit	0 days	Wed 17/01/24	Wed 17/01/24
116		TFL Carry Out Audit	5 days	Thu 18/01/24	Wed 24/01/24
117		Concept Design Tranche 10 Complete	0 days	Wed 24/01/24	Wed 24/01/24
118		Tranche 11 - Concept Design (6/7 Design Packs)	10 days	Thu 18/01/24	Wed 31/01/24
119		Produce PRO Drawings	5 days	Thu 18/01/24	Wed 24/01/24
120		Produce SQA Documentation	5 days	Thu 18/01/24	Wed 24/01/24
121		Submit Tranche 11 for Audit	0 days	Wed 24/01/24	Wed 24/01/24
122		TFL Carry Out Audit	5 days	Thu 25/01/24	Wed 31/01/24
123		Concept Design Tranche 11 Complete	0 days	Wed 31/01/24	Wed 31/01/24
124		Tranche 12 - Concept Design (6/7 Design Packs)	10 days	Thu 25/01/24	Wed 07/02/24
125		Produce PRO Drawings	5 days	Thu 25/01/24	Wed 31/01/24
126		Produce SQA Documentation	5 days	Thu 25/01/24	Wed 31/01/24
127		Submit Tranche 12 for Audit	0 days	Wed 31/01/24	Wed 31/01/24
128		TFL Carry Out Audit	5 days	Thu 01/02/24	Wed 07/02/24



Project: TfL Modernisation Pro
Date: Thu 03/08/23

Task · Split · Milestone · Summary · Project Summary · Inactive Task · Inactive Milestone · Inactive Summary · Manual Task · Duration-only · Manual Summary Rollup · Manual Summary · Start-only · Finish-only · External Tasks · External Milestone · Deadline · Progress · Manual Progress

ID	Task Mode	Task Name	Duration	Start	Finish
129		Concept Design Tranche 12 Complete	0 days	Wed 07/02/24	Wed 07/02/24
130		Tranche 13 - Concept Design (6/7 Design Packs	10 days	Thu 01/02/24	Wed 14/02/24
131		Produce PRO Drawings	5 days	Thu 01/02/24	Wed 07/02/24
132		Produce SQA Documentation	5 days	Thu 01/02/24	Wed 07/02/24
133		Submit Tranche 13 for Audit	0 days	Wed 07/02/24	Wed 07/02/24
134		TFL Carry Out Audit	5 days	Thu 08/02/24	Wed 14/02/24
135		Concept Design Tranche 13 Complete	0 days	Wed 14/02/24	Wed 14/02/24
136		Tranche 14 - Concept Design (6/7 Design Packs	10 days	Thu 08/02/24	Wed 21/02/24
137		Produce PRO Drawings	5 days	Thu 08/02/24	Wed 14/02/24
138		Produce SQA Documentation	5 days	Thu 08/02/24	Wed 14/02/24
139		Submit Tranche 14 for Audit	0 days	Wed 14/02/24	Wed 14/02/24
140		TFL Carry Out Audit	5 days	Thu 15/02/24	Wed 21/02/24
141		Concept Design Tranche 14 Complete	0 days	Wed 21/02/24	Wed 21/02/24
142		Tranche 15 - Concept Design (6/7 Design Packs	10 days	Thu 15/02/24	Wed 28/02/24
143		Produce PRO Drawings	5 days	Thu 15/02/24	Wed 21/02/24
144		Produce SQA Documentation	5 days	Thu 15/02/24	Wed 21/02/24
145		Submit Tranche 15 for Audit	0 days	Wed 21/02/24	Wed 21/02/24
146		TFL Carry Out Audit	5 days	Thu 22/02/24	Wed 28/02/24
147		Concept Design Tranche 15 Complete	0 days	Wed 28/02/24	Wed 28/02/24
148		Tranche 16 - Concept Design (6/7 Design Packs	15 days	Thu 22/02/24	Wed 13/03/24
149		Produce PRO Drawings	5 days	Thu 22/02/24	Wed 28/02/24
150		Produce SQA Documentation	5 days	Thu 22/02/24	Wed 28/02/24
151		Submit Tranche 16 for Audit	0 days	Wed 28/02/24	Wed 28/02/24
152		TFL Carry Out Audit	10 days	Thu 29/02/24	Wed 13/03/24
153		Concept Design Tranche 16 Complete	0 days	Wed 13/03/24	Wed 13/03/24
154		Detailed Design	91 days	Wed 08/11/23	Thu 28/03/24
155		Tranche 1 - Detailed Design (6/7 Design Packs)	11 days	Wed 08/11/23	Wed 22/ 11/23
156		Produce Stage 2 Design packs inc Controller Specifications	5 days	Wed 08/11/23	Tue 14/11/23
157		TfL Carry Out Stage 2 Audit	5 days	Wed 15/11/23	Tue 21/11/23
158		TFL Stage 2 Audit Complete	0 days	Tue 21/11/23	Tue 21/11/23
159		Submission of Tranche 1 Designs to PPD	1 day	Wed 22/11/23	Wed 22/11/23
160		Tranche 2 - Detailed Design (6/7 Design Packs)	11 days	Wed 15/11/23	Wed 29/ 11/23
161		Produce Stage 2 Design packs inc Controller Specifications	5 days	Wed 15/11/23	Tue 21/11/23
162		TfL Carry Out Stage 2 Audit	5 days	Wed 22/11/23	Tue 28/11/23
163		TFL Stage 2 Audit Complete	0 days	Tue 28/11/23	Tue 28/11/23
164		Submission of Tranche 2 Designs to PPD	1 day	Wed 29/11/23	Wed 29/11/23
165		Tranche 3 - Detailed Design (6/7 Design Packs)	11 days	Wed 22/11/23	Wed 06/ 12/23
166		Produce Stage 2 Design packs inc Controller Specifications	5 days	Wed 22/11/23	Tue 28/11/23
167		TfL Carry Out Stage 2 Audit	5 days	Wed 29/11/23	Tue 05/12/23
168		TFL Stage 2 Audit Complete	0 days	Tue 05/12/23	Tue 05/12/23
169		Submission of Tranche 3 Designs to PPD	1 day	Wed 06/12/23	Wed 06/12/23
170		Tranche 4 - Detailed Design (6/7 Design Packs)	11 days	Wed 29/11/23	Wed 13/ 12/23
171		Produce Stage 2 Design packs inc Controller Specifications	5 days	Wed 29/11/23	Tue 05/12/23
172		TfL Carry Out Stage 2 Audit	5 days	Wed 06/12/23	Tue 12/12/23
173		TFL Stage 2 Audit Complete	0 days	Tue 12/12/23	Tue 12/12/23
174		Submission of Tranche 4 Designs to PPD	1 day	Wed 13/12/23	Wed 13/12/23
175		Tranche 5 - Detailed Design (6/7 Design Packs)	11 days	Wed 06/12/23	Thu 04/01/24
176		Produce Stage 2 Design packs inc Controller Specifications	5 days	Wed 06/12/23	Tue 12/12/23
177		TfL Carry Out Stage 2 Audit	5 days	Wed 13/12/23	Tue 19/12/23
178		TFL Stage 2 Audit Complete	0 days	Tue 19/12/23	Tue 19/12/23
179		Submission of Tranche 5 Designs to PPD	1 day	Thu 04/01/24	Thu 04/01/24
180		Tranche 6 - Detailed Design (6/7 Design Packs)	11 days	Wed 13/12/23	Thu 11/01/24
181		Produce Stage 2 Design packs inc Controller Specifications	5 days	Wed 13/12/23	Tue 19/12/23
182		TfL Carry Out Stage 2 Audit	5 days	Thu 04/01/24	Wed 10/01/24
183		TFL Stage 2 Audit Complete	0 days	Wed 10/01/24	Wed 10/01/24
184		Submission of Tranche 6 Designs to PPD	1 day	Thu 11/01/24	Thu 11/01/24
185		Tranche 7 - Detailed Design (6/7 Design Packs)	11 days	Thu 04/01/24	Thu 18/01/24
186		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 04/01/24	Wed 10/01/24
187		TfL Carry Out Stage 2 Audit	5 days	Thu 11/01/24	Wed 17/01/24
188		TFL Stage 2 Audit Complete	0 days	Wed 17/01/24	Wed 17/01/24
189		Submission of Tranche 7 Designs to PPD	1 day	Thu 18/01/24	Thu 18/01/24
190		Tranche 8 - Detailed Design (6/7 Design Packs)	11 days	Thu 11/01/24	Thu 25/01/24
191		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 11/01/24	Wed 17/01/24
192		TfL Carry Out Stage 2 Audit	5 days	Thu 18/01/24	Wed 24/01/24
193		TFL Stage 2 Audit Complete	0 days	Wed 24/01/24	Wed 24/01/24
194		Submission of Tranche 8 Designs to PPD	1 day	Thu 25/01/24	Thu 25/01/24
195		Tranche 9 - Detailed Design (6/7 Design Packs)	10 days	Thu 18/01/24	Wed 31/ 01/24
196		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 18/01/24	Wed 24/01/24
197		TfL Carry Out Stage 2 Audit	5 days	Thu 18/01/24	Wed 24/01/24
198		TFL Stage 2 Audit Complete	5 days	Thu 25/01/24	Wed 31/01/24
199		Submission of Tranche 9 Designs to PPD	0 days	Wed 31/01/24	Wed 31/01/24
200		Tranche 10 - Detailed Design (6/7 Design Packs)	11 days	Thu 25/01/24	Thu 08/02/24
201		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 25/01/24	Wed 31/01/24
202		TfL Carry Out Stage 2 Audit	5 days	Thu 01/02/24	Wed 07/02/24
203		TFL Stage 2 Audit Complete	0 days	Wed 07/02/24	Wed 07/02/24
204		Submission of Tranche 10 Designs to PPD	1 day	Thu 08/02/24	Thu 08/02/24
205		Tranche 11 - Detailed Design (6/7 Design Packs)	11 days	Thu 01/02/24	Thu 15/02/24
206		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 01/02/24	Wed 07/02/24
207		TfL Carry Out Stage 2 Audit	5 days	Thu 08/02/24	Wed 14/02/24
208		TFL Stage 2 Audit Complete	0 days	Wed 14/02/24	Wed 14/02/24
209		Submission of Tranche 11 Designs to PPD	1 day	Thu 15/02/24	Thu 15/02/24
210		Tranche 12 - Detailed Design (6/7 Design Packs	11 days	Thu 08/02/24	Thu 22/02/24
211		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 08/02/24	Wed 14/02/24
212		TfL Carry Out Stage 2 Audit	5 days	Thu 15/02/24	Wed 21/02/24
213		TFL Stage 2 Audit Complete	0 days	Wed 21/02/24	Wed 21/02/24
214		Submission of Tranche 12 Designs to PPD	1 day	Thu 22/02/24	Thu 22/02/24
215		Tranche 13 - Detailed Design (6/7 Design Packs	11 days	Thu 15/02/24	Thu 29/02/24
216		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 15/02/24	Wed 21/02/24
217		TfL Carry Out Stage 2 Audit	5 days	Thu 22/02/24	Wed 28/02/24
218		TFL Stage 2 Audit Complete	0 days	Wed 28/02/24	Wed 28/02/24
219		Submission of Tranche 13 Designs to PPD	1 day	Thu 29/02/24	Thu 29/02/24
220		Tranche 14 - Detailed Design (6/7 Design Packs	11 days	Thu 22/02/24	Thu 07/03/24
221		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 22/02/24	Wed 28/02/24
222		TfL Carry Out Stage 2 Audit	5 days	Thu 29/02/24	Wed 06/03/24
223		TFL Stage 2 Audit Complete	0 days	Wed 06/03/24	Wed 06/03/24
224		Submission of Tranche 14 Designs to PPD	1 day	Thu 07/03/24	Thu 07/03/24
225		Tranche 15 - Detailed Design (6/7 Design Packs	11 days	Thu 29/02/24	Thu 14/03/24
226		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 29/02/24	Wed 06/03/24
227		TfL Carry Out Stage 2 Audit	5 days	Thu 07/03/24	Wed 13/03/24
228		TFL Stage 2 Audit Complete	0 days	Wed 13/03/24	Wed 13/03/24
229		Submission of Tranche 15 Designs to PPD	1 day	Thu 14/03/24	Thu 14/03/24
230		Tranche 16 - Detailed Design (6/7 Design Packs	11 days	Thu 14/03/24	Thu 28/03/24
231		Produce Stage 2 Design packs inc Controller Specifications	5 days	Thu 14/03/24	Wed 20/03/24
232		TfL Carry Out Stage 2 Audit	5 days	Thu 21/03/24	Wed 27/03/24
233		TFL Stage 2 Audit Complete	0 days	Wed 27/03/24	Wed 27/03/24
234		Submission of Tranche 16 Designs to PPD	1 day	Thu 28/03/24	Thu 28/03/24
235					
236		Design of 110 MODS Sites Complete	0 days	Thu 28/03/24	Thu 28/03/24



Project: TfL Modernisation Pro
Date: Thu 03/08/23

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

Appendix B – Risk Assessment

Project Risk Register

Project	TFL - Task 276 Traffic Signal Modernisation Programme 2022/23	Project Number: TBC

Ref.	Assumptions	Risk (description)	Likelihood	Project Impact	Risk Level	Mitigation measures	Owner	Adjusted Likelihood Impact	Adjusted Project Impact	Adjusted Risk
1		**Traffic Signal Works**								
1.1	Access to TfL system and software (SFM / Maximo, SIG/CAD/ Executive Summary) will be provided, following the commencement of the contract, by 07/09/2023.	Delay to start of project due to a lack of access to TfL systems	M	H	H	TfL to ensure access to relevant system is available from start of project.	TFL	L	H	M
1.2	The delivery of 6/7 sites per a week will be required to meet expected programme	Delivery dates not met due to tight programme / deadlines	M	H	H	AECOM to use additional staff to ensure programme is met if programme slippage occurs. The application of the LEAN process is recommended.	AECOM / TFL	L	M	M
1.3	Other than for commissioning's, there is no approval required from TfL for the use of any additional staff, not mentioned in this tender, to ensure the deliverable dates are met.	Delay in delivery of design packages due to loss of resource	M	M	M	AECOM have large pool of suitable staff that can be made available if selected project staff are off sick / on holiday.	AECOM	L	M	L
1.4	TfL shall supply AECOM with sufficient access to any information that may affect the completion of the site visits	Unable to complete site visits as per programme due to third party issues	M	M	M	Any currently known site success issues will be accounted for during the planning of the site visits and any new site access issues will be reported to TFL immediately and agree the re-programming of site visit(s)	AECOM/TFL	L	M	L
1.5	All site visits will be carried out during the early stages of the project (September) to avoid carrying out site visits during winter months	Site work delayed due to Inclement weather	M	M	M	Check weather forecast prior to site visits / commissioning's, allow for additional days in programme for inclement weather	AECOM	L	M	L
1.6	TfL shall complete assurance audits within 5 days of submission (based on dates in agreed programme)	Delay in delivery of design packages due to design audits not being completed as per programme	M	M	M	AECOM to ensure communication with auditors is prompt and clear, if no resolution is achieved in reasonable time then delays to be highlighted to TfL project manager.	AECOM/TFL	L	M	L
1.7	All persons attending site will need to be sufficiently competent. Those carrying out commissioning's are to be approved by TfL Assest team beforehand.	Injury or damage to property due to non-competent persons accessing Highway Electrical Equipment	M	H	H	AECOM to ensure only NHSS8 / HERS registered personnel carry out site visits / commissioning's	AECOM	L	M	M

Risk Matrix

			Project Impact		
			Minor	Moderate	Major
	Likelihood	Likely	Medium	High	High
		Possible	Low	Medium	High
		Unlikely	Low	Low	Medium

Appendix C – CV's

APPENDIX 3

PRICING SCHEDULE

PRICING SCHEDULE

Tender/Project Title: ENG Task 276 - Traffic Signal Modernisation Programme 2023/24

Framework Agreement: TfL PSFW2 94203 - Engineering Consultancy Services

Lot: D5 – Traffic Control Engineering

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