SCHEDULE 7A

Form of Agreement - Long Form Call-Off Contract

Call-Off Contract Number: ENG Task 235 – West London Orbital Grip 2 Feasibility Study

Framework Lot: A2 Multi-disciplinary Rail Services

Outline Agreement: 4600008314

THIS AGREEMENT is made the 20th day of March 2023

BETWEEN:

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

(2) **Mott Macdonald Limited**, a company registered in England and Wales (Company Registration Number 01243967) whose registered office is at Mott Macdonald House, 8-10 Sydenham Road, Surrey, CR0 2EE **("*the Consultant*").**

WHEREAS:

(A) 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").**

(B) The Employer wishes to have provided Engineering Consultancy Services for West London Orbital Grip 2 Feasibility Study as provided under Employer's Scope of Works – Attachment 1 ("the Services").

(C) The *Employer* has accepted a tender by the *Consultant* for the design of the *services* and correction of Defects therein in accordance with the *conditions of contract* (in the form of the Long Form as set out in Schedule 2A of the Framework).

NOW IT IS AGREED THAT:

1. Terms and expressions defined in (or definitions referred to in) the *conditions of contract* have the same meanings herein.
2. The *Consultant* Provides the Services in accordance with the *conditions of contract*.
3. The *Employer* pays the *Consultant* the amount due in accordance with the *conditions of contract*.
4. The documents forming the contract are:
   - 4.1 this Form of Agreement duly executed by the Parties as a deed;
   - 4.2 the conditions of contract;

4.3 the attached Call-Off Contract Data Part 1;

4.4 the attached Call-Off Contract Data Part 2; and

4.5 the following documents:

- Employer's Scope of Works – Attachment 1;
- Schedule 1, 2A, 6A, 7A and 7C inclusive of the Framework Agreement.
- Consultant's Proposal – Attachment 2;
- Consultant's Pricing Schedule – Attachment 3
- Consultant's Baseline Programme – Attachment 4

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

5.1 First : This Form of Agreement;

5.2 Second : The conditions of contract;

5.3 Third : The Scope of Works (Attachment 1) and any other documents included in this contract.

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

6.1 the limitation period within which any claim may be brought by the *Employer* for breach of this Agreement by the *Consultant* is 12 years from the date of breach; and

6.2 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.

7. Special Conditions of Call-Off Contract:

7.1 Notwithstanding anything to the contrary in the Framework Agreement or any related document, the *Consultant* shall have no other responsibility than to provide the Services in accordance with the standard of care in clause 21.2 of Schedule 2A (Consolidated Conditions of Contract for NEC PSC).

IN WITNESS whereof 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]

CALL OFF CONTRACT DATA - PART ONE

Data provided by the *Employer*
Statements given in all contracts

1 General

- The *conditions of contract* are the core clauses as may be amended or supplemented by the clauses for Main Option A Fixed Price and Secondary Options X10, X11, X18, each as may be amended or supplemented by TfL, as attached to the Transport for London Professional Services Framework Agreement.
- The *Employer* is

  Name: Transport for London (TfL)

  Address: 5 Endeavour Square, London, E20 1JN
- The *Employer's Agent* is

  Name/Title: [redacted]

  E-mail: [redacted]
- The authority of the *Employer's Agent* is as set out in Option X10.
- The *Services* are for the provision of Engineering Consultancy Services as described in the *Employer's* Scope of Works - Attachment 1.
- The *language of this contract* is English.
- The *law of the contract* is the law of England and Wales.
- The *period for reply* is 2 weeks.
- The *period for retention* is 12 years following Completion or earlier termination.
- The *tribunal* is the courts of England and Wales
- The following matters will be included in the Risk Register: As detailed in the *Employers* Scope of Works - Attachment 1.

2 The Parties' main responsibilities

- The *Employer* provides access to the following persons, places and things

  access to: access date:
  will be provided as relevant at contract commencement or shortly thereafter as shall be agreed between parties during initial kick off meeting.

3 Time

- The *starting date* of the services is W/C 27th March 2023 (Contract Commencement).
- The *Consultant* submits revised programmes at intervals no longer than those instructed by the *Employer's Agent*.

4 Quality

- The quality policy statement and quality plan are provided within 2 weeks of the Contract Date.
- The *defects date* is 52 weeks after Completion of the whole of the *services*.

5 Payment

- The *assessment interval* (payment cycle) is 4 weeks in arrears.
- The *currency of this contract* is pounds Sterling (£).
- The *interest rate* is 2% per annum above the base rate of the Bank of England.

8 Indemnity, insurance and liability

- The amounts of insurance and the periods for which the *Consultant* maintains insurance are:

Event	**cover**	**Period following Completion of the whole of the *services* or earlier termination**
Liability of the *Consultant* for claims made against him arising out of his failure to use the degree of reasonable skill, care and diligence normally used by competent professionals experienced in providing services similar to the *services* in connection with works of a similar size, scope and complexity to the Works (professional indemnity insurance)	[redacted] **or as stated below** . . . . . for each and every claim and in the aggregate per annum	12 Years

Liability for death of or bodily injury to a person (not an employee of the *Consultant*) or loss of or damage to property resulting from an action or failure to take action by the *Consultant*	[redacted] **or as stated below** . . . . . . in respect of each claim, without limit to the number of claims [with financial loss extension cover]	12 Years
Liability for death of or bodily injury to employees of the *Consultant* arising out of and in the course of their employment in connection with this contract.	[redacted] **or as stated below** . . . . . . in respect of each claim, without limit to the number of claims	12 Years

- The *Consultant's* total liability to the *Employer* for all matters arising under or in connection with this contract, other than the excluded matters above, is [redacted]

9 Optional statements

- **If the *Employer* has decided the *completion date* for the whole of the *services:***

  The *completion date* (contract duration) is 31st March 2024.

  The Call-Off Contract may be extended for further 3 months. However any extensions will be at the *Employer's* own discretion and subject to appointed *Consultants'* satisfactory performance, ongoing requirement and funding availability. This will be confirmed and mutually agreed in writing.

- Notice period in accordance with Clause 90.3 of the Long Form Conditions of Contract: 30 days.

CALL OFF CONTRACT DATA - PART TWO

Data provided by the *Consultant*
Statements given in all contracts

1 General

• The Consultant is:

Name:..Mott MacDonald Limited . . .. . .

Address:..Mott MacDonald House, 8-10 Sydenham Road, Croydon, CRO 2EE.

• *Consultant's* Proposal:

Consultant's Proposal sets out the technical approach for achieving the objectives for this Project - See Attachment 2.

• The key persons are:

(1) Name: . . [redacted] . . . . . .
Project Role: [redacted] . . . . . .
Email: . . [redacted] . . . . . .

(2) Name: . . [redacted] . . . . . .
Project Role: . [redacted] . . . . . .
Email: . . [redacted] . . . . . .

(3) Name: . . . [redacted] . . . . . .
Project Role: . [redacted] . . .
Email: . . [redacted] . . . . . .

• The following matters will be included in the Risk Register: Refer to Consultant's Proposal for Assumptions Log.

2 Optional statements

• **Delivery Programme**

The programme identified by the Consultant is included in Attachment 4 - Consultant's Baseline Programme.

• **Charges**

Option A – Fixed Price with activity schedule

The contract spend is capped at [redacted] (excluding VAT). Any variation to this will be carried out in writing via the appropriate Change Control activities and in accordance with the terms of the Framework Agreement.

See Attachment 3 - Consultant's Pricing Schedule for the activity schedule and breakdown of costs.

All Day Rates (including discounted rates) shall remain fixed throughout the lifespan of this Call-Off Contract for the contracted baseline deliverables included in the Consultant's proposal in Appendix 2 including any variations thereto.

Any new or additional resources brought in throughout the lifespan of this Call-Off Contract shall be charges as per the day rates proposed for the respective Grades.

All Day Rates is based on 8 hours per day and is inclusive of travel and subsistence charges, no other costs will be borne by Transport for London.

- **Issue of invoices:**

Consultant to send VOWD's (Value of Work Done) to the *Employer's* Agent/Contract Manager on a 4 weekly basis clearly showing the activities carried out for this Project.

Once the Employer verifies the VOWD, Consultant will issue the invoice and payment will be made accordingly.

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, London, SE10 1AJ

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

Attachment 1
Employer's Scope of Works

Transport for London

Scope of Works

GRIP 2 - **West London Orbital Programme**

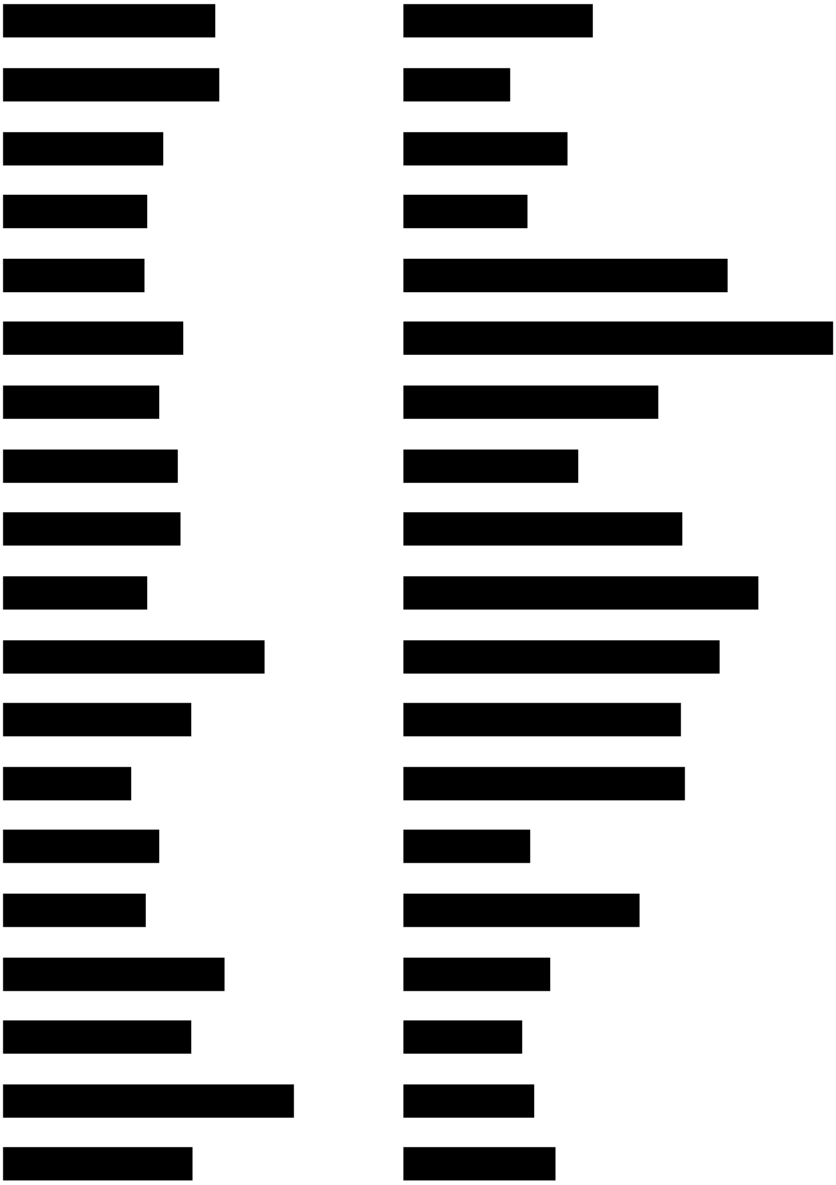
Version: A06

Date: October 2022

Transport for London

14 Pier Walk, North Greenwich, London, SE10 0ES

[redacted]



1. Introduction

1.1. Objective of this commission

Transport for London (TfL) in partnership with the West London Alliance (WLA)[1], is seeking support to deliver engineering design services for specific elements of the West London Orbital (WLO), a new orbital London Overground service, as proposed by the Mayor's Transport Strategy (MTS) (Proposal 88).

This work will be undertaken alongside further timetable assessment by Network Rail to assess the feasibility of various service specifications. The timetable assessment will seek to increase confidence in the proposed service level of up to 6 trains per hour that can be provided, including the assessment of infrastructure improvements already identified, particularly at Acton Wells Junction. This commission will inform decisions about the best way forward having regard to technical feasibility, cost and potential benefits. Other workstreams will also be undertaken alongside this commission, including demand forecasting of service options, continued work on the funding strategy and development of the business case for the scheme.

The primary aim of this commission is to develop all remaining elements of the WLO project to inform the scope and reach a successful conclusion to GRIP 2. Key activities include:

- Developing options for new platforms and interchange facilities at existing or under construction stations at Brent Cross West and Hounslow;
- Developing options for a turnback siding at Hounslow and turnback infrastructure in the Lionel Road/Kew Bridge area;
- Developing a range of options for new stations at Harlesden, Lionel Road, Old Oak Common Lane and Colindale;
- Developing options for doubling the tracks at Old Kew Junction;
- Providing line of route design options for the WLO route to cover the disciplines of signalling and level crossings; and
- Developing options for rolling stock, depot and stabling to serve the WLO, including consideration of extending the electrification on the route against alternative means of powering the rolling stock.
- Consideration of environmental / sustainability issues

Throughout the scheme development process covered by this commission, the need for operational resilience for WLO and other affected rail services (both passenger and freight) must be actively considered in the development of options.

[1] The West London Alliance is a sub-regional partnership representing the boroughs of Barnet, Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon and Hounslow. TfL and the West London Alliance are jointly funding work on development of the West London Orbital project.

1.2. Document overview

This document is the GRIP 2 Scope which outlines the requirements for the management of the design and associated activities for this contract.

1.3. Document format

Although this document forms part of the Scope and the requirements of the contract some additional information is provided to supplement the requirements.

For ease of identification all requirements within this document will be shown in boxes as below.

Unique ID:	This is a requirement. The term 'shall' indicates that compliance of this requirement is mandatory.

2. Programme overview

2.1. Scheme objectives and description

TfL and the WLA are proposing a new public transport scheme to connect growth areas in west London known as the West London Orbital. A Strategic Outline Business Case (SOBC) developed for the WLO programme provides evidence that the scheme merits public sector investment. One option for the WLO is contained in Proposal 88 of the Mayor's Transport Strategy (MTS)[2]:

"The Mayor, through TfL, the West London Alliance boroughs and Network Rail, will work towards the delivery of a new London Overground 'West London Orbital' line connecting Hounslow with Cricklewood and Hendon via Old Oak, Neasden and Brent Cross."

The four objectives developed for the WLO scheme are:

Objective A – orbital transport connectivity

Enhance orbital public transport connectivity to and between major trip attractors in west and north west London (e.g. town centres and Opportunity Areas at Old Oak/Park Royal, Burnt Oak/Colindale, Brent Cross/Cricklewood and the Great West Corridor) to support mode shift towards active, efficient and sustainable modes of transport, and west and north west London's continued economic growth and competitiveness.

Objective B – new homes and jobs

Enable and optimise the delivery of new homes and jobs in west and north west London in line with the principles of 'Good Growth'.

Objective C – public transport capacity

[2] Mayor of London, Mayor's Transport Strategy (2018)

Enhance public transport capacity in west and north west London to relieve pressure on existing corridors and ensure the resilience of the public transport network as population and the economy grows.

Objective D – wider economic, environmental and social benefits

Reduce social, economic and spatial inequalities and widen access to jobs, town centres and local amenities, enhance local environmental quality and help tackle the causes and consequences of climate change.

The scheme has reached the development stage where a short list of options which have the strongest case for meeting the objectives of the scheme has been identified (programme stage A2 of TfL's Pathway project development process[3]). All of the short-listed options are heavy rail proposals that are similar to the MTS proposal that presents the WLO as a heavy rail scheme consisting of a central core between South Acton and Neasden with two branch options at either end:

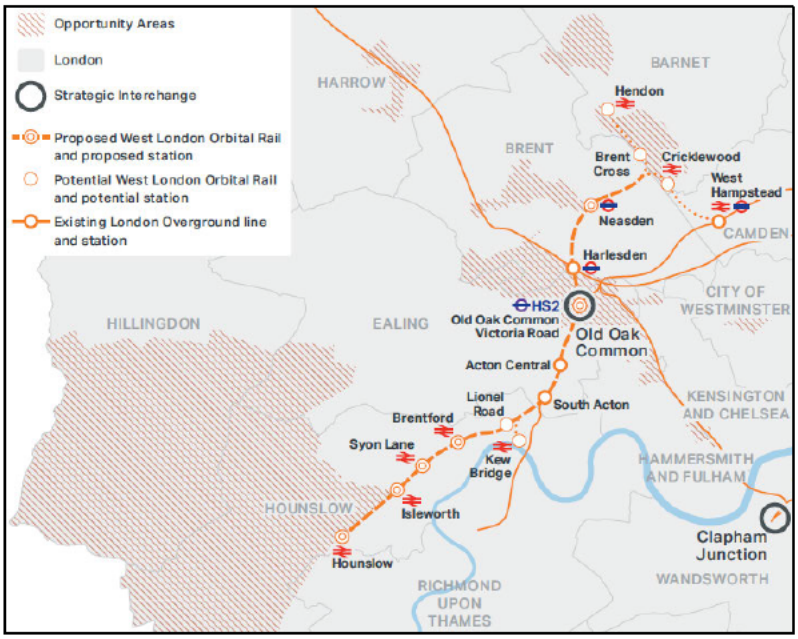
- to Hendon and West Hampstead Thameslink at the north eastern end; and
- to Hounslow and Kew Bridge at the south western end.

Since the MTS proposal was developed, timetable assessment work has been undertaken which has identified that a service level greater than 4 trains per hour (tph) cannot realistically be accommodated between Acton Wells Junction and South Acton. A branch to Kew Bridge for regular passenger services is therefore no longer proposed, although this commission includes the development of options to turn back services in the Lionel Road / Kew Bridge area in the event of planned or unplanned disruption on the route to Hounslow.

A route map of the WLO scheme presented in the MTS can be seen below in Figure 1. The existing infrastructure and services operating on the various rail lines that the WLO would utilise, which constrain the overall level of service that can be provided, are shown in Figure 2.

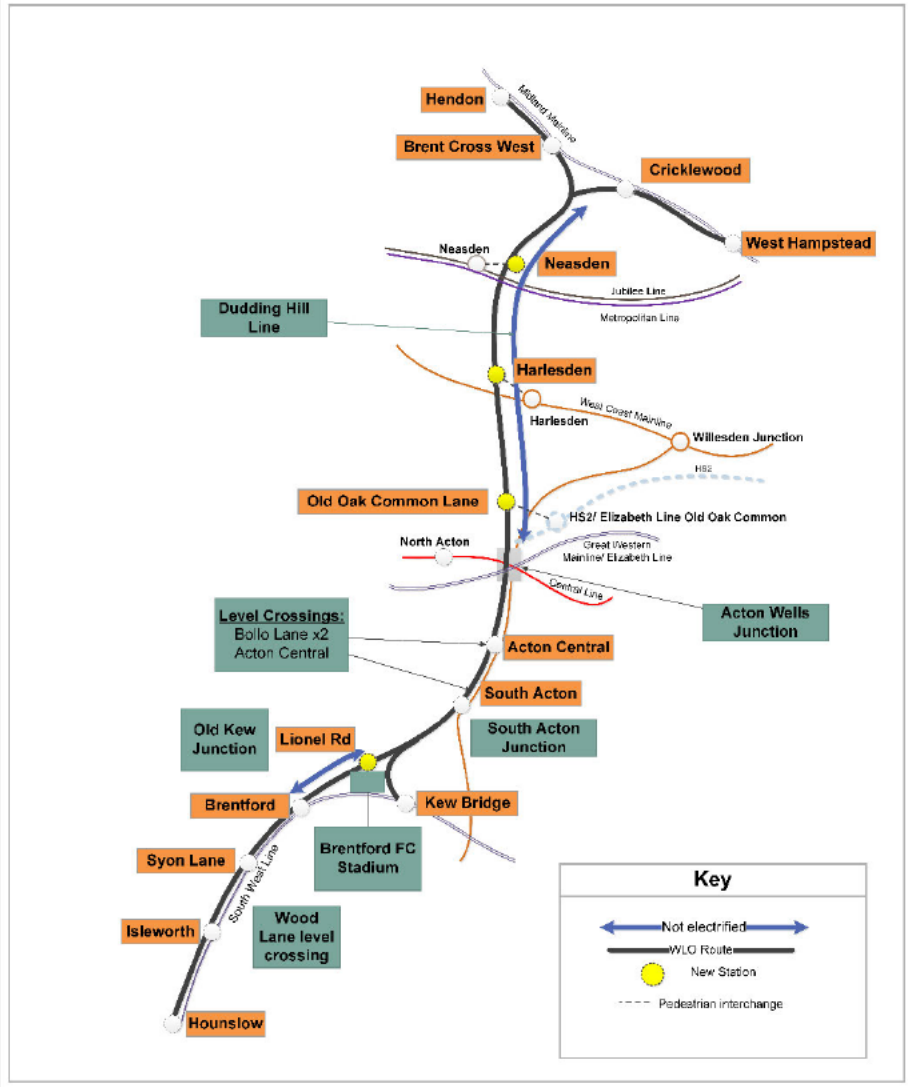
[3] TfL, Pathway Manual – Delivering Projects and Programmes in Transport for London (2020)

Figure 1: WLO scheme as presented in the MTS



Source: Mayor of London, Mayor's Transport Strategy (2018)

Figure 2: WLO direct and indirect route interfaces



2.2. Work completed to date

The most recent commission entailed the completion of GRIP 2 feasibility work at a number of discrete locations on the WLO route, which were considered the highest risk areas in terms of engineering complexity and cost. The scope and key outputs are further outlined in section 2.2.1 below. Alongside this engineering study, a timetabling assessment was commissioned for Network Rail to assess the viability of a WLO service. The basis and outcomes of this timetabling study are outlined in section 2.2.2 below.

Prior to this GRIP 2 work, limited pre-feasibility work had been undertaken for some of the locations and relevant previous studies are described below.

The relevant outputs from all of these studies are also included in the Appendices.

2.2.1. GRIP 2 Initial Feasibility Study (2021)

An initial GRIP 2 study was commissioned and completed by Atkins, which focused on the engineering feasibility and cost at a number of the more complex locations on the WLO

route. The primary aim of the commission was to develop some of the more complex elements to inform the scope of the WLO scheme and the cost estimate, and to help validate the feasibility of the service specification testing by Network Rail.

The commission assessed options for:

- Increasing capacity at Acton Wells Junction;
- New platforms and interchange facilities at the existing stations of Cricklewood, Hendon and West Hampstead Thameslink; and
- New stations at Neasden and Old Oak Common Lane

Following several optioneering workshops, where options were assessed against pre-agreed assessment criteria, a number of viable options were selected for further design development. Cost estimates were produced for each viable option.

This work enabled TfL to confirm that there were feasible design options for some of the more complex locations. It also allowed TfL to refine its wider cost estimates for the WLO project, which had previously primarily been based on pre-feasibility work undertaken by WSP in 2017. This helped to re-confirm that the scheme was still financially viable, offered good value for money and provided a strong basis for securing additional funding to progress the whole scheme to a GRIP 2 level of design.

The output from the commission is provided in Appendix C.

2.2.2. Network Rail Timetabling Assessment (2021)

The Network Rail (NR) timetabling work sought to test a WLO 6tph service consisting of:

- 2tph Hounslow to Hendon
- 2tph Hounslow to West Hampstead Thameslink
- 2tph Old Oak Common Lane (OOCL) to Hendon

This test assumed that only a 4tph WLO services would pass through the critically constrained Acton Wells Junction to South Acton section. This test also assumed that a turnback facility would be provided at OOCL.

The test was assessed under three scenarios of a standard off-peak hour, a morning peak hour and an off-peak high freight hour. In the case of the standard off-peak hour and morning peak hour the WLO service could be accommodated with only minor re-timetabling of other services. In the case of the off-peak high freight hour, additional upgrades would be needed in the Acton Wells Junction area that could include grade separation or potentially less significant infrastructure solutions such as additional tracks that worked in combination with an easing of planning rules through improvements to the signalling system between Acton Wells Junction and South Acton.

Further details on the timetabling tests and the outputs can be found in Appendix D.

2.2.3. TfL WLO Strategic Outline Business Case (2021)

Relevant extracts from the latest WLO business case are included in the Appendix. This provides a full overview of the WLO programme, including the strategic need and objectives of the scheme in more detail and a summary of the current estimated costs.

2.2.4. WSP WLO pre-feasibility assessment, on behalf of WLA (2017)

This work reviewed conceptual design information provided by the Employer and made recommendations on the assumed infrastructure requirements at existing stations, for new stations and rail infrastructure / systems upgrades required. These are outlined in the relevant sub-sections of Section 3 below.

The output from this study is contained in the Appendix.

2.2.5. TfL key locations study (2020)

The Employer has undertaken some initial pre-feasibility assessment for key locations on the WLO with the High risk and key locations. Options have been developed at seven different locations on the WLO route. Of particular relevance for this commission is the initial option development work considered at Hounslow station and in the Kew Bridge / Lionel Road area.

The relevant sections from this study are contained in Appendix W.

2.2.6. Network Rail timetable analysis (2020)

This timetable assessment by Network Rail concluded that an 8tph end to end service would not be possible without infrastructure interventions at key pinch points along the route, such as Acton Wells Junction, and a 6tph end to end service is also likely to be difficult to achieve without significant journey time compromises and performance impacts.

The final report from this timetable assessment is contained in Appendix D.

2.2.7. WSP Lionel Road feasibility study, on behalf of LB Hounslow (2020)

LB Hounslow commissioned WSP to examine potential options for a station at Lionel Road, to support discussions with developers of adjacent sites and inform safeguarding of land for a potential station. This study identified three potential station entrance locations and also set out key risks and design considerations that should be explored in any future studies.

The final feasibility report and option drawings are contained in Appendix U.

2.3. Interfacing work

2.3.1. TfL line of route track assessment

TfL will be undertaking a line of route track assessment to identify any additional track replacement needed, on top of the Acton Wells Junction and track work associated with future WLO stations. This shall look to address the necessary renewal of any track assets with a modern equivalent. No designs or options are to be produced.

2.3.2. Network Rail Level Crossing Risk Assessments

Network Rail will provide initial level crossing risk assessments of the four impacted level crossings of Bollo Lane (two crossings), Churchfield Road (Acton Central) and Wood Lane

based on the future WLO train service being implemented. The Consultant will be required to utilise this information in considering options for any required upgrade or closures needed to enable the WLO service to safely run.

2.3.3. Network Rail North London Line (NLL) re-signalling and re-control

The Network Rail NLL re-signalling and re-control project scope includes for the re-lock of Dudding Hill Junction, Neasden Junction & Acton Canal Wharf mechanical interlockings, preferably as Computer Based Interlockings, to facilitate transfer of control to Romford ROC. The project also covers the life extension of life expired lineside signalling assets at South Tottenham and Richmond. As part of this separate project, TfL is seeking for NR to address any signalling changes required for the proposed future WLO stations at OOCL, Harlesden and Neasden. However, at present the NR project is on hold and subject to funding confirmation to enable it to proceed into GRIP 4. It is anticipated that delivery will be in CP7 (2024-2029).

2.3.4. Further Network Rail timetable analysis

Following the conclusions of the previous GRIP 2 commission by Atkins, Network Rail will be undertaking further timetable analysis of the previously tested 6tph service in addition to considering a 6tph service to and from Hendon only (i.e. with no WLO services on the branch to West Hampstead Thameslink). The further assessment will test the impact of feasible and affordable infrastructure interventions identified for Acton Wells Junction. Scenarios involving improved planning headways through a combination of re-signalling and closure of level crossings shall also be assessed.

At the conclusion of this workstream, a robust assumption for a core WLO service will be established to inform future design development.

2.3.5. Network Rail Traction Power Modelling

Network Rail will be undertaking traction power modelling for the two proposed WLO timetable services to identify what additional traction power infrastructure would be required to support battery powered or electric multiple units rolling stock to operate. The output of this work will be provided to the Consultant in November 2023 and will need to be utilised to compare the electrification and rolling stock options. This information is expected to come in after the main scope within this GRIP 2 Scope has been completed by the Consultant so any work off the back of the NR power modelling output may require a later standalone exercise to produce / update the applicable deliverables.

2.4. Client Requirements

The Client Requirements for the WLO programme are contained within the Client Requirements Document (CRD) which can be found in Appendix A. The Consultant shall complete all requirements within this Scope, including appendices, while adhering to the overall programme Client Requirements too.

2.5. Objective and key outputs of this commission

The overall objective of this commission is to complete the GRIP 2 feasibility for the entirety of the WLO project to identify feasible infrastructure interventions that would be necessary

to achieve an end to end WLO service of 4tph, with a potential additional 2tph between Hendon (or Colindale) and Old Oak Common Lane. The outputs of the commission will not re-assess any of the previous GRIP 2 work undertaken, but will enable all elements of the project to be brought up to the same level of design development and provide a more refined and detailed cost estimate for all elements of the project. Some elements of this commission that are route-wide will need to make use of the previous GRIP 2 work but it is not expected that any new designs or options for the areas previously studied will need to be developed.

The works associated with this commission have been split into six work packages (WPs) as follows:

- Line of route signalling;
- Line of route level crossings;
- Track doubling at Old Kew Junction;
- Potential rolling stock, depot and stabling to serve the WLO;
- New WLO platforms / turnback sidings at existing stations;
- New WLO stations and new platforms at proposed interchange stations.

The key outputs associated with this commission are as follows:

- Delivery of a single multi-disciplinary feasibility assessment / report for all WPs to confirm infrastructure options that can facilitate a WLO 6tph service;
- Delivery of initial layout options for new WLO stations at Colindale, Harlesden and Lionel Road to enable determination of initial station space requirements and integration with adjacent land uses;
- Delivery of initial layout options for new WLO platforms at the station currently under construction at Brent Cross West to enable determination of initial station space requirements and integration with adjacent land uses;
- Delivery of initial layout options for a new WLO turnback siding at the existing station of Hounslow and within the Lionel Road / Kew Bridge area to enable determination of initial space requirements and integration with adjacent land uses;
- Delivery of initial layout options for new WLO sidings and train maintenance facilities to enable the development of the rolling stock strategy for the WLO scheme and determination of initial space requirements and integration with adjacent land uses;
- Delivery of initial design for electrification of the whole WLO route in the event that the rolling stock strategy determines that fully electric traction is the preferred solution;
- Delivery of initial layout options for the doubling of the tracks at Old Kew Junction to enable determination of initial space requirements and integration with adjacent land uses;
- Identification of any temporary or permanent third-party land impacts associated with all options presented by the Consultant as part of this commission;
- A record of assumptions, risks and opportunities associated with all options presented as part of this commission to enable the Employer to undertake further consideration and management of these moving forward;
- Cost estimates for each of the selected feasible options for each WP

3. Deliverables

The Master Deliverables List (MDL) can be found in Appendix B. This shall form the basis of the Consultant's scope of works.

WLO-WI-001.	The Consultant shall complete the deliverables listed in the Master Deliverables List appended to this Scope document.

It may be that to fulfil the requirements within this Scope and appended documents, additional documentation is required to be produced that is not listed in the Master Deliverables list and this is assumed priced by the successful bidder.

WLO-WI-002.	The Consultant shall complete all requirements within this Scope.
WLO-WI-003.	The Consultant shall complete any additional documents as required by Standards not listed in this Scope (and appended documents) or on the Master Deliverables List in order to complete the requirements.

Should the Consultant believe that deliverables listed in the Master Deliverables List are not required to achieve the key outputs to complete GRIP 2, this shall be clarified through consultation with the Employer during the tender period.

4. Technical Requirements

This section describes the technical requirements for this commission.

4.1. Optioneering approach

The Consultant shall develop a number of initial options for each of the discrete items outlined in section 4 of this scope. From an initial assessment of options, the Consultant shall refine the number of options through a series of workshops to enable two to three viable options to be selected for further refinement. A full cost estimate in line with the requirements in section 6 of this scope shall only be required for the final shortlisted options up to a maximum of two options per item in section 4.

4.2. Existing stations

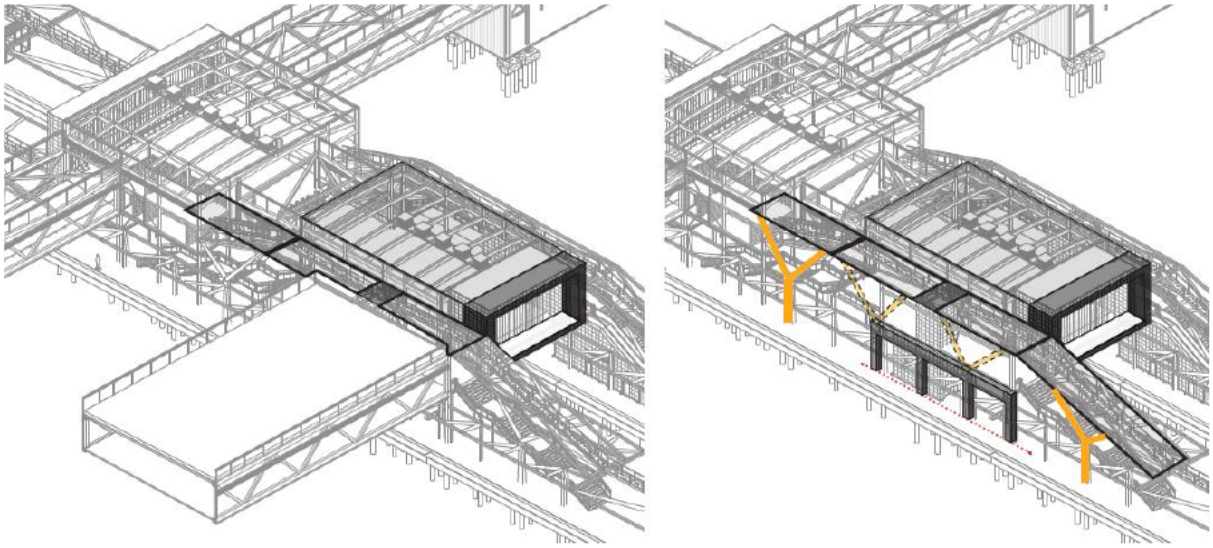
4.2.1. Brent Cross West WLO Platforms

Supporting the delivery of the wider Brent Cross area's regeneration masterplan, the WLO would serve the new Brent Cross West rail station, which is currently under construction as a new station on the Thameslink route, located on the Midland Main Line. Passive provision for WLO platforms is provided for as part of the new station's current blueprint. The WLO platforms would be on the western side of the station to make use of the current Dudding Hill freight lines at this location. These platforms would be connected to the new platforms at Brent Cross West for Thameslink by a new footbridge.

The new Brent Cross West station is due for completion in late 2022, and the passive provision for a future connection to WLO platforms, is shown in Figure 4 below.

Figure 3: Aerial view of the future location for Brent Cross West station, looking north, showing potential location of WLO platforms

Figure 4: Passive provision made for future connection from main Brent Cross West concourse to WLO platforms



For this commission:

WLO-WI-004.	The Consultant shall develop a minimum of four initial options for two new platforms that can accommodate trains of up to 5-car length and could enable the range of WLO train frequencies being considered to stop at Brent Cross West station.
WLO-WI-005.	The platform options presented by the Consultant shall consider all relevant railway system infrastructure required to enable the train service proposition.

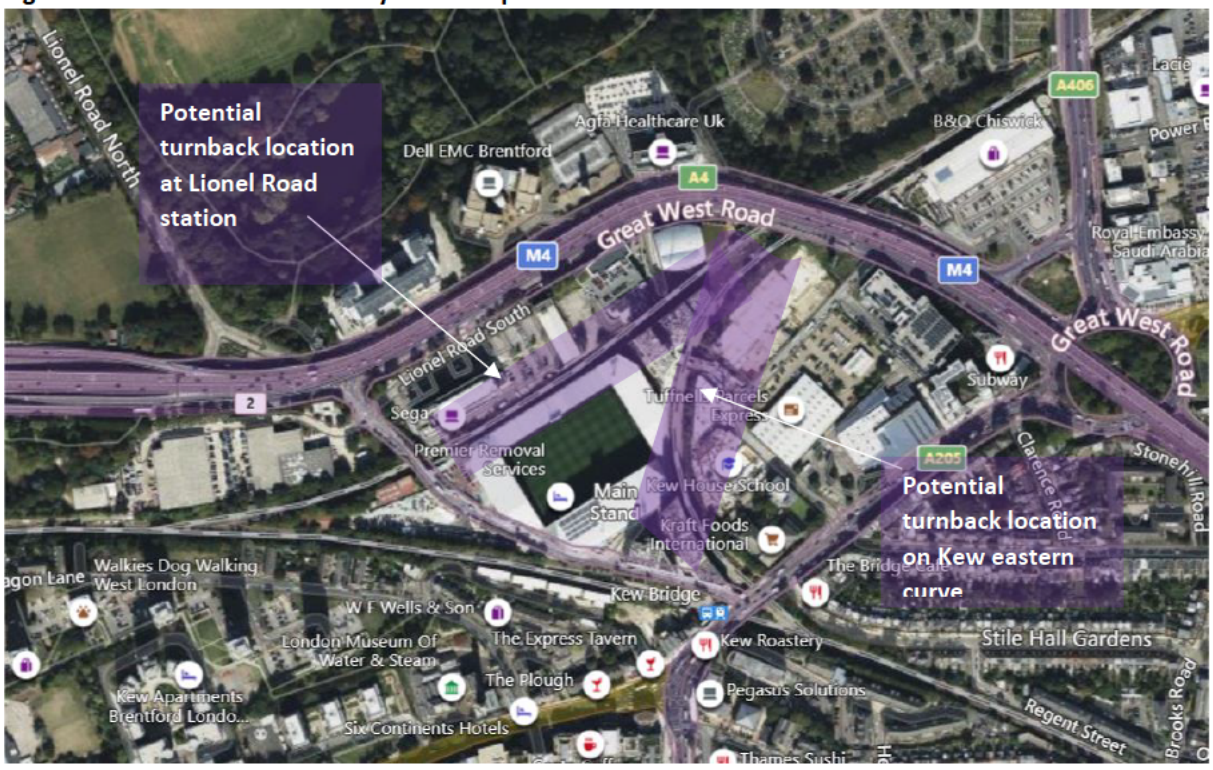
WLO-WI-006.	The Consultant shall advise on the viability of a two platform configuration from both a train service and infrastructure perspective. This is to allow for any relevant early discounting of non-viable options during or at the end of this commission.
WLO-WI-007.	Proposed platform design options shall consider: • How the new WLO platform(s) are to be accessed from the Brent Cross West Thameslink station infrastructure; • How a fully accessible interchange between the new WLO platform(s) with existing platforms will be provided.

For this commission any further assessment of the existing station infrastructure such as new station entrances and concourse areas are excluded.

4.2.2. Kew Bridge / Lionel Road area Turnback

While WLO services will be restricted to 4tph south of Old Oak Common Lane station, TfL requires the Consultant to consider what options are available to enable trains to be turned back in the area of Kew Bridge and Lionel Road in the event of planned or unplanned disruption on the Hounslow Loop.

Figure 5: Aerial view of the railway lines and potential locations of a turnback for WLO trains



For this commission:

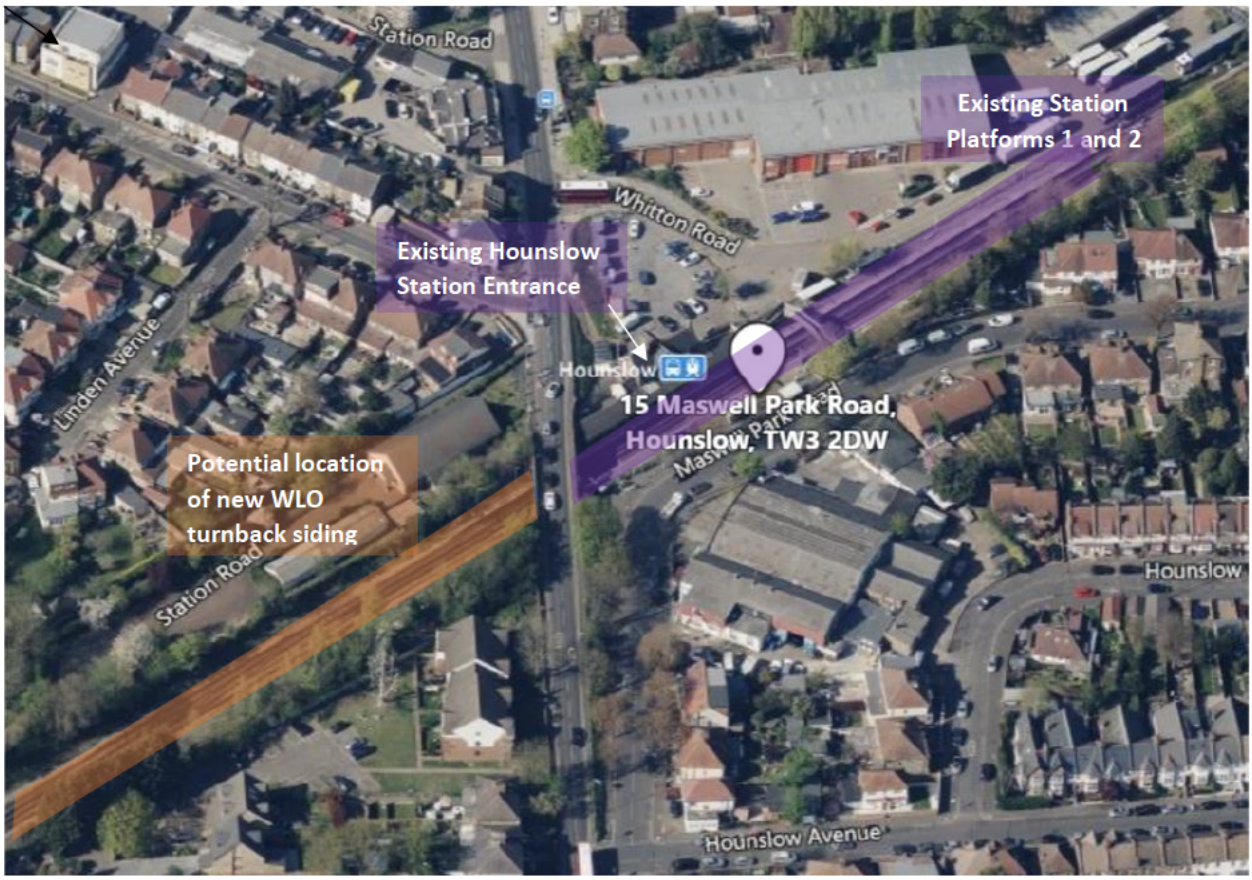
WLO-WI-008.	The Consultant shall develop a minimum of four options for turnback infrastructure that can accommodate trains of up to 5-car length which would enable WLO services to stop and turnback in the Kew Bridge / Lionel Road area.
WLO-WI-009.	The turnback options presented by the Consultant shall consider all relevant railway system infrastructure required to enable the train service proposition.
WLO-WI-010.	The Consultant shall advise on the viability and rationale of any option from both a train service and infrastructure perspective. This is to allow for any relevant early discounting of non-viable options during or at the end of this commission.

4.2.3. Hounslow WLO turnback siding

Hounslow is proposed to be served by WLO services and would act as the southern terminus station for the service. Hounslow is an existing two platform station on the Up/Down Hounslow Loop line. The ticket hall entrance is on the northern side of the station and provides access to the London-bound platform.

Network Rail timetable assessment to date has concluded that there would be insufficient space in the timetable to accommodate turnaround of WLO services on the running lines. While constructing a new bay platform to turn back trains, this would have a substantial impact on adjacent land and therefore a turnback siding is necessary to turnaround WLO trains, out of passenger service. With this arrangement, WLO services would terminate and discharge passengers in the existing platform 2, run out of service into the turnback siding and return to enter back into service, boarding passengers in the existing platform 1. For operational flexibility reasons, it would be beneficial for the turnback siding to be connected to the Hounslow Loop tracks at both its eastern and western ends. This would help facilitate the movement of empty stock via the route via Whitton and Richmond towards central London.

Figure 6: Aerial view of Hounslow station, looking north, showing potential location of a WLO turnback siding



For this commission:

WLO-WI-011.	The Consultant shall develop a minimum of three options for a turnback siding that can accommodate trains of up to 5-car length which would enable WLO

	services to stop and turnback at Hounslow station, including some options that include the ability for the siding to be accessed from both the east and west ends.
WLO-WI-012.	The siding options presented by the Consultant shall consider all relevant railway system infrastructure required to enable the train service proposition.
WLO-WI-013.	The Consultant shall advise on the viability and rationale of any option from both a train service and infrastructure perspective. This is to allow for any relevant early discounting of non-viable options during or at the end of this commission.

For this commission any further assessment of the existing station infrastructure such as new station entrances and concourse areas are excluded.

4.3. New stations

Four potential new stations are proposed as part of the MTS WLO proposal. This commission requires the Consultant to assess three of these, Colindale, Harlesden and Lionel Road. The stations should be designed to the standards required for the London Overground network. Substantive architectural input is not required at this stage of option development.

4.3.1. Colindale New WLO Station

Colindale has been identified as a potential additional station and alternative terminus, instead of turning back trains at Hendon, on the north western branch of the WLO. This is not part of the MTS proposal but has been included as a short-listed option in TfL's strategic option selection review due to the potential benefits of directly serving the additional Colindale and Burnt Oak Opportunity Area, which has the potential for 7,000 new homes. No pre-feasibility work has been undertaken to date, however a potential location for a station has been assumed in strategic public transport modelling. The proposed location is on the Midland freight line with a station entrance on Aerodrome Road, shown below in Figure 7. To provide a station here, a spur would be required off the freight lines from a point south of where the freight lines join the slow lines. One or two turnback platforms would need to be provided between the Midland Main Line fast and slow lines, using the existing space between the tracks, with an entrance onto Aerodrome Road. This would impact on businesses situated in this location.

Figure 7: Proposed location for potential Colindale WLO station

For this commission:

WLO-WI-014.	The Consultant shall develop a minimum of two options for a new WLO station at Colindale that can accommodate trains of up to 5-car length.
WLO-WI-015.	The Consultant shall undertake initial pedestrian flow calculations based on forecasted station demand to be provided by the Employer.
WLO-WI-016.	The pedestrian flow calculations shall be used to develop a minimum of four initial layout options for the station to enable determination of initial space requirements with relevant space provision for the station.
WLO-WI-017.	The initial focus of the assessment shall be on entrance, concourse (paid and unpaid), platforms and gateline areas only.

The Employer currently assumes that other station elements can be contained within the existing railway corridor.

WLO-WI-018.	The Consultant shall advise if any further station elements will require assessment to meet the required outcome.

The interface of the new station with its immediate external environment shall also be considered as part of this commission.

WLO-WI-019.	The initial layout options shall: • Integrate with the Colindale Area Action Plan and draft local plan

4.3.2. Harlesden New WLO Station

A new station at Harlesden on the Dudding Hill line is part of the WLO MTS proposal and would be located in the London Borough of Brent. The new station would be integral to the re-opening of the northern stretch of line from Old Oak to West Hampstead/Hendon serving the existing community and areas of planned growth.