

# Agenda

## Meeting: Programmes and Investment Committee

**Date: Friday 11 December 2020**

**Time: 10.00am**

**Place: Microsoft Teams**

### Members

Prof Greg Clark CBE (Chair)  
Dr Nelson Ogunshakin OBE (Vice-Chair)  
Heidi Alexander  
Mark Phillips

Dr Nina Skorupska CBE  
Dr Lynn Sloman  
Ben Story

### Special Government Representative

Clare Moriarty DCB

Copies of the papers and any attachments are available on [tfl.gov.uk How We Are Governed](https://www.tfl.gov.uk/How-We-Are-Governed).

To maintain social distancing in the current circumstances, the meeting will be held by videoconference or teleconference. The meeting remains open to the public, except for where exempt information is being discussed as noted on the agenda, as it will be webcast live on the [TfL YouTube channel](#).

A guide for the press and public on attending and reporting meetings of local government bodies, including the use of film, photography, social media and other means is available on [www.london.gov.uk/sites/default/files/Openness-in-Meetings.pdf](https://www.london.gov.uk/sites/default/files/Openness-in-Meetings.pdf).

### Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: Jamie Mordue, Senior Committee Officer; Tel: 020 7983 5537; email: [v\\_JamieMordue@tfl.gov.uk](mailto:v_JamieMordue@tfl.gov.uk).

For media enquiries please contact the TfL Press Office; telephone: 0343 222 4141; email: [PressOffice@tfl.gov.uk](mailto:PressOffice@tfl.gov.uk)

Howard Carter, General Counsel  
Thursday 3 December 2020

**Agenda  
Programmes and Investment Committee  
Friday 11 December 2020**

**1 Apologies for Absence and Chair's Announcements**

**2 Declarations of Interests**

General Counsel

**Members are reminded that any interests in a matter under discussion must be declared at the start of the meeting, or at the commencement of the item of business.**

**Members must not take part in any discussion or decision on such a matter and, depending on the nature of the interest, may be asked to leave the room during the discussion.**

**3 Minutes of the Meeting of the Committee held on 16 October 2020  
(Pages 1 - 12)**

General Counsel

**The Committee is asked to approve the minutes of the meeting of the Committee held on 16 October 2020 and authorise the Chair to sign them.**

**4 Matters Arising and Actions List (Pages 13 - 18)**

General Counsel

**The Committee is asked to note the updated actions list.**

**5 Use of Delegated Authority (Pages 19 - 38)**

General Counsel

**The Committee is asked to note the paper.**

**6 Investment Programme Report - Quarter 2 2020/21** (Pages 39 - 82)

Director Major Projects and Managing Directors London Underground and Surface Transport

**The Committee is asked to note the paper.**

**7 Independent Investment Programme Advisory Group - Quarterly Report** (Pages 83 - 86)

Director of Risk and Assurance

**The Committee is asked to note the Independent Investment Programme Advisory Group's Quarterly Report and the Management Responses.**

**8 TfL Project Assurance Update** (Pages 87 - 90)

General Counsel

**The Committee is asked to note the paper.**

**9 Emergency Services Network and 4G Pilot Projects** (Pages 91 - 94)

Chief Technology Officer and Customer Experience

**The Committee is asked to note the paper and approve authority.**

**10 Connect: System Upgrade Projects** (Pages 95 - 102)

Chief Technology Officer and Director Customer Experience

**The Committee is asked to note the paper and approve authorities.**

**11 London Underground Fleet Heavy Overhaul Programme** (Pages 103 - 110)

Managing Director London Underground and TfL Engineering

**The Committee is asked to note the paper and approve authority.**

**12 London Underground Signalling and Controls Programme** (Pages 111 - 120)

Managing Director London Underground and TfL Engineering

**The Committee is asked to note the paper and approve authority.**

**13 Docklands Light Railway - Housing Infrastructure Funding** (Pages 121 - 130)

Director Investment Delivery Planning

**The Committee is asked to note the paper and approve authority.**

**14 Barking Riverside Extension** (Pages 131 - 136)

Director Major Projects

**The Committee is asked to note the paper and approve authority.**

**15 Air Quality and Environment** (Pages 137 - 152)

Managing Director Surface Transport

**The Committee is asked to note the paper and approve authority.**

**16 Cycle Hire Modernisation** (Pages 153 - 156)

Managing Director Surface Transport

**The Committee is asked to note the paper and approve authorities.**

**17 Enterprise Risk Update - Delivery of TfL Key Projects and Programmes (ER8)** (Pages 157 - 158)

Director Major Projects

**The Committee is asked to note the paper and supplementary information in Part 2 of the agenda.**



**18 Healthy Streets Programme, H2 2020/21** (Pages 159 - 170)

Director of Investment Delivery Planning

**The Committee is asked to note the paper.**

**19 Bakerloo Line Upgrade and Extension Update** (Pages 171 - 190)

Director City Planning

**The Committee is asked to note the paper.**

**20 Members' Suggestions for Future Discussion Items** (Pages 191 - 198)

General Counsel

**The Committee is asked to note the forward programme and is invited to raise any suggestions for future discussion items for the forward programme and for informal briefings.**

**21 Any Other Business the Chair Considers Urgent**

**The Chair will state the reason for urgency of any item taken.**

**22 Date of Next Meeting**

Wednesday 3 March 2021 at 10.00am

**23 Exclusion of the Press and Public**

**The Committee is recommended to agree to exclude the press and public from the meeting, in accordance with paragraph 3 of Schedule 12A to the Local Government Act 1972 (as amended), in order to consider the following items of business.**

**24 Investment Programme Report - Quarter 2 2020/21** (Pages 199 - 206)

**Exempt supplementary information relating to the item on Part 1 of the agenda.**

- 25 Independent Investment Programme Advisory Group - Quarterly Report** (Pages 207 - 214)  
Exempt supplementary information relating to the item on Part 1 of the agenda.
- 26 TfL Project Assurance Update** (Pages 215 - 216)  
Exempt supplementary information relating to the item on Part 1 of the agenda.
- 27 Emergency Services Network and 4G Pilot Projects** (Pages 217 - 222)  
Exempt supplementary information relating to the item on Part 1 of the agenda.
- 28 Connect: System Upgrade Projects** (Pages 223 - 230)  
Exempt supplementary information relating to the item on Part 1 of the agenda.
- 29 Docklands Light Railway - Housing Infrastructure Funding** (Pages 231 - 252)  
Exempt supplementary information relating to the item on Part 1 of the agenda.
- 30 Barking Riverside Extension** (Pages 253 - 260)  
Exempt supplementary information relating to the item on Part 1 of the agenda.
- 31 Cycle Hire Modernisation** (Pages 261 - 272)  
Exempt supplementary information relating to the item on Part 1 of the agenda.
- 32 Enterprise Risk Update - Delivery of TfL Key Projects and Programmes (ER8)** (Pages 273 - 280)  
Exempt supplementary information relating to the item on Part 1 of the agenda.

## Transport for London

### Minutes of the Programmes and Investment Committee

**Teams Virtual Meeting**  
**10.00am, Friday 16 October 2020**

#### **Members**

Professor Greg Clark CBE (Chair)  
Dr Nelson Ogunshakin OBE (Vice-Chair)  
Mark Phillips  
Dr Nina Skorupska CBE  
Dr Lynn Sloman  
Ben Story

#### **Government Special Representative**

Clare Moriarty DCB

#### **Executive Committee**

Howard Carter	General Counsel
Stuart Harvey	Director of Major Projects
Shashi Verma	Chief Technology Officer and Director of Customer Experience

#### **Staff**

Alexandra Batey	Director of Investment Delivery Planning
Tanya Coff	Divisional Finance Director, London Underground
Patrick Doig	Divisional Finance Director, Surface Transport
Mike Hardaker	Network Extension Director
Lorraine Humphrey	Head of TfL Project Assurance
Rob Niven	Head of Investment Delivery Planning, London Underground Major Projects
Jonathan Patrick	Chief Procurement Officer
David Rowe	Head of Investment Delivery Planning, Surface Transport Major Projects
Clive Walker	Director of Risk and Assurance
Shamus Kenny	Head of Secretariat
Jamie Mordue	Senior Committee Officer, Secretariat

#### **Independent Investment Programme Advisory Group (IIPAG) Attendance**

Alison Munro	Chair, IIPAG
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#### **40/10/20 Apologies for Absence and Chair's Announcements**

The Chair welcomed everyone to the meeting including Clare Moriarty DCB, who had been confirmed as the Government Special Representative to the Committee.

Apologies for absence were received from Heidi Alexander. Andy Byford, Commissioner, Simon Kilonback, Chief Finance Officer, Andy Lord, Managing Director London Underground and TfL Engineering, and Gareth Powell, Managing Director Surface Transport, were also unable to attend the meeting.

The Chair noted that the meeting would not discuss financial negotiations with Government and that the items on the agenda did not prejudice the outcome of those negotiations.

TfL's meetings now fell within the Flexibility of Local Authority Meetings Regulations 2020. The meeting was being broadcast live on YouTube, except for the discussion of the information on Part 2 of the agenda, which was exempt from publication.

To reflect TfL's focus on safety, the Chair invited Members to raise any safety issues within the remit of the Committee at the start of the item or under Matters Arising. Any other safety issues could be discussed with the General Counsel or an appropriate member of the Executive Committee after the meeting.

### **41/10/20 Declarations of Interests**

Howard Carter introduced the item. Members' declarations of interests were published on [tfl.gov.uk](http://tfl.gov.uk) and were up to date.

### **42/10/20 Minutes of the Meeting of the Committee held on 20 July 2020**

**The Committee approved the minutes of the meeting held on 20 July 2020 as a correct record. The minutes would be provided to the Chair for signature at a future date.**

### **43/10/20 Matters Arising and Actions List**

Howard Carter introduced the paper, which set out progress against actions agreed at previous meetings of the Committee.

**The Committee noted the actions list.**

### **44/10/20 Use of Delegated Authority**

Howard Carter introduced the paper, which provided an update on the use of delegated authority by the Committee, through the use of Chair's Action or of Procurement Authority and Programme and Project Authority, in respect of matters within the Committee's remit, granted by the Commissioner and the Chief Finance Officer.

Since the last meeting of the Committee, there had been no decisions taken by Chair's Action.

The Chief Finance Officer had approved five uses of Procurement Authority relating to: Grange Hill to Chigwell stabilisation works; additional functionality for the new DLR rolling stock; saloon refurbishment design for the Bakerloo, Central and

Waterloo & City lines fleets; and two approvals for the supply of components for fleet overhaul and other programme maintenance.

There had been no Mayoral Directions to TfL within the Committee's remit.

**The Committee noted the paper.**

## **45/10/20 Investment Programme Report – Quarter 1 2020/21**

Stuart Harvey introduced the paper, which set out the progress and performance in Quarter 1, 2020/21 of a range of projects that will deliver world-class transport services to London. The time range for the report had been extended from 1 April to 1 August 2020.

All major projects had restarted after the Safe Stop and good levels of progress had been made. The Four Lines Modernisation Programme remained the most impacted programme, owing to the geographical size and reliance on operational colleagues.

Covid-19 had delayed the design of Piccadilly line trains by three to four months but progress was being made and infrastructure works had been realigned to optimise the spend.

The site compound had been established at Silvertown and extensive ground and riverbed surveys had been carried out, prior to tunnelling.

Good progress had been made on the main frame and canopy of the station on the Barking Riverside Extension project. The final piling work had been completed, which removed a risk to the project, and it was now moving into a rail systems stage.

Alexandra Batey told the Committee that, on the London Underground (LU) Stations Enhancements Programme, the projects that had been Safe Stopped had now restarted. The Knightsbridge station shell and station were ready for fit out. Construction works were progressing well at Tottenham Hale station. A start on site milestone was met at West Ham station, to redevelop the land adjacent to the Jubilee line.

A further five stations had been made step-free, which brought the total number of stations on the network with step-free access to 80; Cockfosters station was the latest station to have step-free facilities.

Progress had been made in many areas on the LU Renewals Programme, but the focus was now on critical assets. There had been 1,218m of rail replacement works completed on the Piccadilly line to Heathrow and 101m on the Tramlink at Love Lane.

With regard to power renewal works, the first projects were completed, including replacing substation emergency battery systems, power generation fire control systems and Central line traction power protection systems. Others were in the delivery phase including depot traction isolation replacement and high voltage

network switchgear. Around 40 per cent of the planned works in 2021 had been rephased.

Four engineering wagons had been manufactured in China and delivered to Derby for inspection, as part of the LU Rolling Stock Programme. On LU signalling, the commissioning of the Piccadilly line signalling control systems had been finalised.

In September 2020, construction works in relation to the Healthy Streets Programme had been paused; twenty schemes had been safely stopped on site and temporary traffic management barriers or signals had been installed to ensure safety.

Works on the Old Street Roundabout and the Highbury Corner Gyratory continued throughout the period, where other schemes had been safely stopped. The works on site at Highbury Corner had been substantially completed. The intention was to have additional traffic stages to ease any impact upon the completion date at Old Street.

The London Streetspace Plan covered several schemes, including: strategic corridors for walking and cycling and the bus network; supporting town centres for pedestrian spacing; and Low Traffic Neighbourhoods. In May 2020, £55m had been allocated to the Programme, with £45m allocated for borough led schemes. There had been substantial delivery across London, with close collaboration with boroughs and partners. There had been 60km of new and upgraded cycle track installed, 22,000sqkm of highway space had been reallocated to pedestrians and 86km of bus lanes converted to 24/7 operation.

In response to the coronavirus pandemic, the Congestion Charge, Low Emission Zone (LEZ) and Ultra Low Emission Zone Schemes were suspended between 23 March and 18 May 2020. In addition, the new LEZ standards and charges, and enforcement of the Direct Vision Standard have been postponed from October 2020 until March 2021. In June 2020, TfL implemented changes to the charge value, charging hours and days for the Congestion Charge, as required as a condition for financial support from the Government, as set out by the Mayor on 15 May 2020.

Whilst the focus for the Surface Transport Asset Programme would be on critical asset renewal, some notable works had progressed well, such as the fire systems upgrade works at Victoria Coach Station.

Safe Stops had been implemented on most schemes under the Public Transport Programme, however progress had been made at White Hart Lane on the urban realm and station buildings. TfL had entered into a Grant Determination Agreement with the Ministry of Housing, Communities and Local Government and the GLA to deliver infrastructure improvements that support housing growth along part of the London Overground.

Members welcomed the amount of work that had been achieved in the difficult period.

The Committee asked whether there were any new opportunities to maximise possession planning and cost, given the reduced demand. TfL would explore where efficiencies could be found and come back with further plans in due course.

Members noted that some milestones either had no RAG status (in grey in the report) or had been changed, which was appropriate given the current financial Covid-19 circumstances. This made it harder to gain an overall picture of the progress of Programmes. The milestones in this report were set against the last budget and the next report would show a stronger correlation between the RAG statuses and the Covid-19 impact; some RAG milestones that were shown in green for this report may turn amber. A deep dive on the major projects had been completed and similar deep dives for LU and Surface Transport were planned. The work that TfL had undertaken on its Long-Term Capital Plan would allow a more strategic view of how the Investment Programme aligned with the long term strategy.

It was important that the smaller scale, pan-London Programmes, such as Accessibility and Healthy Streets, that had been paused had the same impetus to restart, especially given their importance to the Mayor. The Accessibility and Healthy Streets Programmes did remain priorities for TfL, however the breadth of the schemes that could be implemented did depend on future funding arrangements. TfL had done work to leverage TfL and third-party funding in the future to continue with work on accessibility and the schemes under Healthy Streets had been prioritised against safety data to determine which would be restarted first.

**The Committee noted the paper and exempt supplementary information on Part 2 of the agenda.**

## **46/10/20 Independent Investment Programme Advisory Group Quarterly Report**

Lorraine Humphrey introduced the paper and the supplementary information on Part 2 of the agenda. The paper provided an update on the work undertaken by the Independent Investment Programme Advisory Group (IIPAG) since the last meeting of the Committee on 20 July 2020.

The contracts for members of IIPAG had been extended for a further year, with the option to extend for an additional year if necessary. The Committee thanked IIPAG for the quality and diligence of their assurance work.

Alison Munro told the Committee that the period between meetings had been busy for IIPAG, which looked at several sub programmes and targeted reviews, in addition to being involved with the deep dive of Major Projects.

IIPAG had also made progress on several cross-cutting pieces of work, such as value for money, TfL standards and Commercial Development. TfL was making good progress in some areas but there was still some way to go in others. It was recognised that time was needed to make changes and some progress had been made prior to Covid-19.

Work would soon begin on a cross-cutting review of the Projects Management Office and on how asset condition was forecast, to feed into decisions on renewals.

The Committee asked if work was planned on the methodology for how TfL best determined the value for money of certain programmes and projects, which did not necessarily fit into the traditional model of determining value for money, such as accounting for the effects on climate change. It was suggested that, while there was a lot of guidance available, IIPAG could focus on where and how this could be applied consistently across TfL projects. For example, while there was a process for changing standards within TfL, this could be improved to ensure that better value for money was delivered through the change.

Members asked that consideration be given to what a value for money culture would look like within TfL and how papers submitted to the Committee could provide value for money comparisons between programmes and projects. Alison Munro told the Committee that the strong culture of delivery and the focus on finance needed to also be applied to value for money.

Members stated that it was important to ensure that innovation, change and technological advancements are factored into value for money assessments. TfL had reached out to several organisations across industry, including the Department for Transport.

TfL was an active member of several international benchmarking organisations. The latest IIPAG review found that TfL's international benchmarking was good, had an appropriately focussed approach and good at adopting lessons learned. Where appropriate, papers would include relevant benchmarking information.

**The Committee noted the report and the exempt supplementary information on Part 2 of the agenda.**

## **47/10/20 TfL Project Assurance Update**

Lorraine Humphrey introduced the paper and the supplementary information on Part 2 of the agenda, which provided an update on project assurance work undertaken between 27 June and 19 September 2020.

The Project Assurance team now was operating with a nearly full complement of staff, with two vacancies filled and only one member of staff on part time furlough.

There were 41 overdue recommendations from IIPAG and 117 from TfL Project Assurance and this was the area of focus now that staff were returning to work and programmes were restarting.

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda.**

## **48/10/20 London Underground Technology Programme**

Alexandra Batey introduced the paper, which requested the creation of a new London Underground (LU) Technology Programme to streamline existing technology project governance within LU and support a strategic and integrated approach to the



utilisation of technology across the LU estate. Previously technology programmes were included across other programmes. The request was not for additional authorities but aggregated existing authorities into a new programme.

Members discussed the importance of TfL not being wholly reliant on consultants or third parties in relation to technology. The Committee was told that TfL had a strong process to determine whether something was made by TfL or commissioned from a third party; TfL often made its own technological solutions if it addressed a number of issues for TfL. The market for the skills required to develop technology solutions for TfL meant it was necessary to contract specialists, though TfL did directly employ more technology specialists than similar organisations.

The request to establish a LU Technology Programme, alongside the Surface Technology and Technology & Data Programmes, made sense at the present time, in terms of the financial status and governance. TfL was still determining whether a single programme would be appropriate and achievable.

The price of technology, which was roughly half of what it was five years ago, was the primary driver that allowed TfL to realise costs savings across a number of technology focussed programmes and projects.

**The Committee noted the paper and:**

- 1 approved the creation of a new programme for London Underground Technology; and**
- 2 approved the transfer of the relevant Programme and Project Authorities to the London Underground Technology Programme from other programmes as set out in Appendix 3 of the paper, giving a total Programme and Project Authority of £94.7m.**

## **49/10/20 Surface Technology Programme 2020/21**

Alexandra Batey introduced the paper and supplementary information on Part 2 of the agenda, which provided an update on the Surface Technology Programme and requested Programme and Project Authority for delivery. Over 80 per cent of the authority supported the renewals of existing systems and under 20 per cent supported new systems in priority areas.

The primary successes of the Programme, since the last submission to the Committee, were:

- (a) Roads Technology: the first versions of core Surface Intelligent Transport Systems were deployed into operation in September 2020, which created the base from which to develop enhancements including multi-modal management of the road network;
- (b) Compliance, Enforcement and Safety Technology: body worn video cameras were delivered to over 200 front line colleagues in August 2020, with footage used to support prosecutions; and

- (c) Public Transport Technology: an enhanced system for bus service planning was delivered in August 2020, allowing bus service planners to consider options for service changes in a few hours (previous systems took a few days) using a wider pool of data sources.

There had been underspend on the Programme, owing to delays attributable to Covid-19, challenges with supplier performance and changes to contracts.

TfL Project Assurance welcomed the progress that had been made.

**The Committee noted the paper and the exempt supplementary information on Part 2 of the agenda and:**

- 1 approved Programme and Project Authority of £20.3m for the Surface Technology Programme for the Financial Year 2020/21; and**
- 2 noted that Procurement Authority for the various initiatives in this paper would be sought at officer level in accordance with Standing Orders.**

## **50/10/20 Docklands Light Railway – Rolling Stock Replacement Programme and Housing Infrastructure Funding**

Stuart Harvey introduced the paper and supplementary information on Part 2 of the agenda, which updated the Committee on the progress of the Docklands Light Railway (DLR) Rolling Stock Replacement Programme and on negotiations with the Ministry of Housing, Communities and Local Government (MHCLG) regarding the Housing Infrastructure Fund (HIF) award.

TfL was purchasing 43 new walk-through, air conditioned trains, of which 33 were replacements. The Programme also included work on signalling, power and depot work.

Good progress had been made, despite the pause in the Programme owing to the Covid-19 and the shutting down of the CAF factory in Spain; there was expected to be a three-month delay on the delivery of the trains, although TfL was working to recover lost time. The signalling contract had been signed with Thales for the vehicle onboard computer and depot signalling work. The depot work had been re-sequenced to ensure that the impact of Covid-19 was mitigated and to extract greater value for money.

The Programme involved work on trains, the signalling and on the depot. To ensure good systems integration, TfL continued to liaise with the operator, KeolisAmey Docklands, to ensure that the requirements were understood.

In 2018, the Greater London Authority had successfully bid for part of the government's HIF and £291m had been allocated to the DLR HIF Bid Programme. Alexandra Batey told the Committee that the Programme comprised four key elements:

- (a) an additional 14 DLR Trains (to be procured under the manufacture and supply agreement, pursuant to an existing option to purchase more trains);
- (b) expansion of the Beckton DLR Depot, including the purchase of new land to the south of the existing site;
- (c) a new DLR Station at Thameside West; and
- (d) enabling works at Poplar depot to unlock an oversite development opportunity for new housing and a connecting bridge to Canary Wharf.

Under the grant development agreement, the HIF funding was contingent on satisfying certain pre-conditions, which were linked to TfL's wider finances, and TfL was required to spend all funding by March 2024.

Members welcomed the progress that had been made.

**The Committee noted the papers and the exempt supplementary information on Part 2 of the agenda.**

## **51/10/20 London Underground Major Stations Programme**

Stuart Harvey introduced the paper and supplementary information on Part 2 of the agenda, which provided an update on the progress of the London Underground (LU) Major Stations Programme and requested additional Procurement Authority for the Bank Station Capacity Upgrade (BSCU).

The Programme covered all large station schemes: Tottenham Court Road, Bond Street, Victoria and Bank Bloomberg had all been completed; Camden and Holborn were on pause; and Elephant and Castle was in the initial stages of development.

At Bank station the tunnelling had been completed, the new platform and running tunnel had begun construction and the Cannon Street entrance had begun to take shape. The project was now entering the rail systems phase, with mechanical electrical fit out progressing.

The additional Authority requested for the BSCU was a transfer of savings made elsewhere within the Major Stations Programme. Members welcomed the savings made, which enabled the Programme to stay within its funding envelope. They noted that the cost increases in the BSCU were primarily down to the impacts of Covid-19 and contract challenges.

**The Committee noted the paper and the supplementary paper on Part 2 of the agenda and approved additional Procurement Authority for Bank Station Capacity Upgrade, as detailed in the paper on Part 2 of the agenda.**

## 52/10/20 HS2 Update

Alexandra Batey introduced the paper, which updated the Committee on the status of the High Speed 2 (HS2) Programme and sought authority to expand the list of TfL officers with delegated authority to sign agreements on behalf of TfL.

TfL had multiple interests in the HS2 Programme and had a key role in design assurance, asset protection, construction coordination and stakeholder management. Responsibility for delivery within TfL was transferred to the Major Projects Directorate in July 2019, following a recommendation for a programme management approach by the Independent Investment Programme Advisory Group in 2018. TfL staff were working on the Programme in sponsorship, project management delivery, engineering, communications, commercial, planning and other support functions.

The current design proposals at Euston station incorporated several aspects relating to TfL, including: a new relocated traction power substation and ventilation shaft; new pedestrian links between Euston and Euston Square stations; a new bus station; enhanced pedestrian crossings and wider footpaths; innovative cycle hubs; and improved streets in the surrounding area.

At Old Oak Common (OOC), TfL's was working with HS2 on its designs, particularly the Asset Protection Agreement (PPA); the PPA required HS2 Limited to indemnify TfL for all costs, losses and expenses including compensation for bus delays and London Underground closures. Further protective undertakings in relation to the technical aspects of the project had also been secured.

The HS2 Programme had not suffered any material delay or setback due to Covid-19, with teams working successfully through remote working.

The Oakervee review included key recommendations that affected London:

- (a) there was a need for a single plan for the overall Euston project. A Senior Responsible Officer (SRO) Study with the Department for Transport (DfT) as client should explore the efficiency of a future Euston station including options to simplify the approach to the station;
- (b) one organisation should bring together all the stakeholders and be responsible for the overall development and governance of the Euston project. Given the complexity of the Euston project, this organisation should not be HS2 Limited; and
- (c) OOC should act as a Temporary Terminus until Euston station can be delivered (dependant on SRO Study, likely to be for two-to-five years).

The DfT had instructed HS2 Limited to investigate an alternative design that assumed a reduced number of HS2 platforms and smaller station footprint. The SRO Study workstream undertook a rapid high-level feasibility review over a 12-week period in summer 2020. Stakeholders that provided input into the study included TfL, Network Rail, Lendlease and the London Borough of Camden. A decision in principle on the design options was expected by DfT in the autumn.

A new 'Euston Partnership Board' had been established, with TfL's Director of City Planning in attendance. This was set-up to improve the integration and governance of the three main projects at Euston (HS2, Oversite development and Redevelopment of Euston Conventional Station).

TfL had undertaken modelling to assess the viability of OOC being used as a temporary terminus. There were several key issues that need to be understood and these would be assessed in the coming months.

The Committee requested a briefing on the risks that TfL faced, in the event that either Euston or OOC HS2 terminals were not operational when HS2 opens.

**[Action: Alexandra Batey]**

Members requested that future updates to the Committee provided a risk analysis, including clarification of which organisations were responsible for each risk.

**[Action: Alexandra Batey]**

**The Committee noted the paper and authorised TfL officers to agree and execute documents as set out in this paper.**

## **53/10/20 Northern Line Extension Update**

Stuart Harvey introduced the paper and supplementary information on Part 2 of the agenda, which provided an update on the progress of the Northern Line Extension (NLE).

The Programme had restarted after a Safe Stop and was operating at above 80 per cent of productivity. In the last 12 months, progress had been made against the following key milestones: the first completed part of the Battersea Power Station station box had been handed over to the developer; signalling software connecting the NLE to the rest of the Northern line at Kennington was successfully commissioned; the permanent electricity supply to Battersea Power Station and Nine Elms stations was successfully switched on; and the installation of the traction power supply was completed.

The Committee noted that the electricity supply to the trackside conductor rail was 640v, not 22kv; the substation would receive the 22kv.

The Programme was expected to move into an "engineer's railway" in December 2020 and trial running was planned for summer 2021.

Members welcomed the steady progress that had been made in the Programme.

**The Committee noted the paper and exempt supplementary information on Part 2 of the agenda.**

## **54/10/20 Members' Suggestions for Future Discussion Items**

Howard Carter introduced the item and the Committee's updated forward plan.

**The Committee noted the forward plan.**

**55/10/20 Any Other Business the Chair Considers Urgent**

There was no other urgent business.

**56/10/20 Date of Next Meeting**

The next scheduled meeting of the Committee would be held on Friday 11 December 2020 10.00m.

**57/10/20 Exclusion of the Press and Public**

The Committee agreed to exclude the press and public from the meeting, in accordance with paragraph 3 of Schedule 12A to the Local Government Act 1972 (as amended), when it considered the exempt information in relation to the items on: Investment Programme Report – Quarter 1 2020/21; Independent Investment Programme Advisory Group Quarterly Report; TfL Project Assurance Update; Surface Technology Programme 2020/21; Docklands Light Railway – Rolling Stock Replacement Programme and Housing Infrastructure Funding; London Underground Major Stations Programme; and Northern Line Extension Update.

The meeting closed at 12.32pm.

Chair: \_\_\_\_\_

Date: \_\_\_\_\_

## Programmes and Investment Committee



**Date:** 16 October 2020

**Item:** Matters Arising and Actions List

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### **This paper will be considered in public**

#### **1 Summary**

1.1 This paper informs the Committee of progress against actions agreed at previous meetings.

#### **2 Recommendation**

2.1 **The Committee is asked to note the Actions List.**

#### **List of appendices to this report:**

Appendix 1: Actions List

#### **List of Background Papers:**

Minutes of previous meetings of the Programmes and Investment Committee.

Contact Officer: Howard Carter, General Counsel  
Email: [HowardCarter@tfl.gov.uk](mailto:HowardCarter@tfl.gov.uk)

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## Programmes and Investment Committee Action List (reported to the meeting on 11 December 2020)

### Actions from the meeting of the Programmes and Investment Committee held on 16 October 2020

Minute No.	Description	Action By	Target Date	Status note
52/10/20 (1)	<b>HS2 Update: HS2 terminals readiness</b> The Committee requested a briefing on the risks that TfL faced, in the event that either Euston or Old Oak Common HS2 terminals were not operational when HS2 opens.	Alexandra Batey	March 2021	Included on Forward Plan
52/10/20 (2)	<b>HS2 Update: risks</b> Members requested that future updates to the Committee provided a risk analysis, including clarification of which organisation were responsible for each risk.	Alexandra Batey	May 2021	Included on Forward Plan

### Actions from previous meetings of the Committee

Minute No.	Description	Action By	Target Date	Status note
36/07/20 (1)	<b>Members' Suggestions for Future Discussion Items: Investment Programme</b> The Chair requested that additional informal briefings be provided, in light of the impact of Covid-19 on the Investment Programme, to discuss future agenda items.	Secretariat	Ongoing	Secretariat will confirm dates with Members and staff.
05/03/20	<b>Elizabeth Line Operational Readiness and Crossrail Update: Bombardier takeover</b> A note would be provided to the Committee on the implication of the takeover of Bombardier.	Howard Smith	December 2020	A note is being prepared and will be shared with Members once complete.

Minute No.	Description	Action By	Target Date	Status note
07/03/20	<p><b>Investment Programme Report – Quarter 3 2019/20: Fiveways</b></p> <p>Work was ongoing to update the business case for Fiveways Corner in Croydon and to ensure the project remained aligned with the latest developments within the Croydon Growth Zone ... an update paper be given on developments around the scheme and how it aligned with the Mayor's Transport Strategy.</p>	Alexandra Batey	-	As set out in the July 2020 revised budget, the Fiveways Corner project has been deferred. Work on transport infrastructure needed to support the Croydon Growth Zone is ongoing and expected to conclude by the end of the financial year.
07/03/20	<p><b>Investment Programme Report – Quarter 3 2019/20: Rotherhithe Tunnel</b></p> <p>Members asked that a paper on the Rotherhithe Tunnel be provided to a future meeting.</p>	Gareth Powell	-	Included on Forward Plan
11/03/20	<p><b>Crossrail 2</b></p> <p>Members requested that, following the spending review, a briefing be given on the implications for CR2 and the carbon model for the project.</p>	Michèle Dix	-	Included on Forward Plan
15/03/20	<p><b>Surface Transport Asset Renewals Programme</b></p> <p>Delivery and budget would be kept under review but as many projects were safety critical they would need to be prioritised. Members would be provided with an update on the Programme at a future meeting of the Committee.</p>	Alexandra Batey	-	Included on Forward Plan
17/03/20 (3)	<p><b>Member Suggestions for Future Discussion Items: Four lines modernisation</b></p> <p>Once the new programme for Four Lines Modernisation had been established, a briefing or update paper would be provided to the Committee.</p>	Stuart Harvey	-	Included on Forward Plan

Minute No.	Description	Action By	Target Date	Status note
83/12/19	<b>Air Quality Programme: Plans beyond 2021</b> A briefing was requested on what was in the pipeline beyond 2021, TfL's further ambitions and the strategy to achieve them.	Alex Williams/Gareth Powell	March 2021	Included on Forward Plan
25/05/18	<b>London Underground Legacy Signalling and Information: Use of innovative technology</b> The Committee requested a future discussion on the use of innovative technology for signalling upgrade works, such as 5G.	Andy Lord	-	Included on Forward Plan

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## Programmes and Investment Committee



**Date:** 11 December 2020

**Item:** Use of Delegated Authority

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### This paper will be considered in public

## 1 Summary

- 1.1 This is a standing item on the agenda to inform the Committee of any use of delegated authority by the Committee, through Chair's Action or of Procurement Authority and Programme and Project Authority (in respect of matters within the Committee's remit) granted by the Commissioner and the Chief Finance Officer in accordance with delegated authorities under TfL's Standing Orders since the last meeting of the Committee. The paper also provides information on Mayoral Directions to TfL within the Committee's remit.
- 1.2 Since the last meeting of the Committee on 16 October 2020, there has been:
- (a) one decision taken by Chair's Action;
  - (b) no Mayoral Directions within the Committee's remit;
  - (c) no approvals by the Chief Finance Officer; and
  - (d) three approvals by the Commissioner, who approved Procurement Authority for the Four Lines Modernisation (4LM) programme partner, infrastructure works on London Overground, and air and braking system components and related services for the S8 fleet.
- 1.3 A similar report is submitted to the Finance Committee in respect of the use of Chair's Action and of Procurement Authority and Land Authority granted by the Commissioner and the Chief Finance Officer in respect of matters within the Finance Committee's remit, together with relevant Mayoral Directions.

## 2 Recommendation

- 2.1 **The Committee is asked to note the paper.**

## 3 Use of authority delegated by the Board

- 3.1 There has been no use of authority delegated by the Board since the meeting on 16 October 2020.

## 4 Use of Chair's Action

- 4.1 Under Standing Order 114, in situations of urgency, the Board delegates to each of the Chair and the Chairs of any Committee or Panel the exercise of any functions of TfL on its behalf, including the appointment of Members to Committees and Panels. Any use of Chair's Action is reported to the next ordinary meeting.

- 4.2 There has been one use of Chair's Action since the meeting of the Committee on 16 October 2020, relating to the delivery and remobilisation of key elements of the Healthy Streets Programme.

### **Healthy Streets Programme, H2 2020/21**

- 4.3 The Committee considered a paper that summarised delivery to date through the London Streetspace Programme (part of the Healthy Streets Programme) and restart of priority schemes in the Healthy Streets Programme in Quarter 1 and Quarter 2 of 2020/21 (to 17 October 2020, referred to as H1). The paper also summarised planned delivery through the Programmes in Quarter 3 and Quarter 4 of 2020/21 (to 31 March 2021, referred to as H2).
- 4.4 On 17 November 2020, following consultation with Committee Members, the Chair exercised Chair's Action to approve an additional £75.0m Programme and Project Authority for the delivery and remobilisation of key elements of the Healthy Streets Programme. Additional information was provided to the Committee in response to issues raised.
- 4.5 The use of Chair's Action was considered appropriate as additional Programme and Project Authority was urgently needed to enable delivery of the Healthy Streets priorities in H2 outside the planned meeting cycle.
- 4.6 Further information is included in the Chair's Action paper attached at Appendix 2. A paper elsewhere on the agenda for this meeting provides greater detail on planned delivery in H2 and outcomes of the Integrated Assurance Review for the Healthy Streets Programme.

## **5 Programme and Project Authority Approvals**

- 5.1 To enable an appropriate level of governance, processes are in place for the authorisation, control and reporting of projects.
- 5.2 Programme and Project Authority will normally be granted by the Committee for all programmes and projects as part of the defined Sub-Programmes within the overall Investment Programme. Where individual programmes or projects have a value in excess of £50m and have not already received full approval as part of a Sub-Programme, requests will be submitted to the Committee for consideration. Those programmes and projects with an estimated final cost of £50m or below, which have been approved by the Commissioner or the Chief Finance Officer, will be reported to subsequent meetings of the Committee. As the Committee receives and approves more Sub-Programmes, the number of individual approvals at project level will diminish.
- 5.3 Where the main contract has not yet been awarded, the Financial Authority and Estimated Final Cost may not be stated because they are commercially confidential.
- 5.4 The Committee will also be informed of the implementation of any applicable Direction from the Mayor relating to TfL's Programmes and Projects. There is nothing to report for this meeting.

## **Approvals by the Commissioner**

- 5.5 Since the last meeting of the Committee, the Commissioner has not approved any Programme and Project Authority requests within the Committee's remit.

## **Approvals by the Chief Finance Officer**

- 5.6 Since the last meeting of the Committee, the Chief Finance Officer has not approved any Programme and Project Authority requests within the Committee's remit.

## **6 Procurement Approvals**

### **Approvals by the Commissioner**

- 6.1 Since the last meeting of the Committee, the Commissioner has approved three Procurement Authority requests in respect of matters within the Committee's remit, relating to the 4LM programme partner, infrastructure works on London Overground, and air and braking system components and related services for the S8 fleet.

### **Approvals by the Chief Finance Officer**

- 6.2 Since the last meeting of the Committee, the Chief Finance Officer has not approved any Procurement Authority request in respect of matters within the Committee's remit.

## **7 Mayoral Directions to TfL**

- 7.1 The Greater London Authority Act 1999 (as amended), permits the Mayor to issue to TfL general directions as to the manner in which TfL is to exercise its functions or specific directions as to the exercise of its functions (or not to exercise a power specified in the direction). Directions are also often made in relation to the implementation of matters in respect of which the Mayor delegates statutory powers to TfL.
- 7.2 The Mayor makes Mayoral Directions through Mayoral Decisions. Papers for Mayoral Directions set out the financial and other implications. If those implications change over time, that will be reported to the GLA.
- 7.3 All Mayoral Decisions are issued in writing, with the information that is not exempt from publication included on the GLA's Decisions Database on its website: <https://www.london.gov.uk/about-us/governance-and-spending/good-governance/decisions?order=DESC>.
- 7.4 Mayoral Directions fall into three broad categories: those addressing technical issues relating to statutory powers; those related to commercial development activities; and those related to projects and programmes. Mayoral Directions relating to TfL are reported to the Board's Committees for discussion as soon as possible after they are received by TfL or published. Regular reports will list the relevant Directions for as long as they are applicable.

- 7.5 Annually the Audit and Assurance Committee considers the list as part of its consideration of the annual audit plan to ensure that appropriate audit resource is applied to assurance on TfL's work in implementing Mayoral Directions. This will also be kept under review at each quarterly meeting of that Committee.
- 7.6 A summary of current Mayoral Directions to TfL is maintained on the "How we are governed" page on our website, with links to the relevant Mayoral Decisions: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/how-we-are-governed>. That page will be updated as and when further Directions are made.
- 7.7 Mayoral Directions to TfL related to projects and programmes are reported to this Committee.
- 7.8 Since the last meeting of the Committee, no Mayoral Directions to TfL within the Committee's remit have been published.

**List of appendices to this report:**

Appendix 1: Summary of Procurement Authorities approved by the Commissioner

Appendix 2: Chair's Action paper for the Healthy Streets Programme, H2 2020/21

**List of Background Papers:**

None

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**Appendix 1: Summary of Procurement Authorities approved by the Commissioner**

<b>Approval Date</b>	<b>Contract/Project Name</b>	<b>Value (£m)</b>	<b>Approver</b>
12/10/2020	4LM Programme Support Partner	37.4	Commissioner
20/10/2020	London Overground infrastructure works	92.6	Commissioner
02/11/2020	Air and braking system components and related services for the S8 fleet	50.9	Commissioner

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**Programmes and Investment Committee  
Chair's Action**



**Issued: 12 November 2020**

**Title: Healthy Streets Programme, H2 2020/21**

**This paper will be published with the next agenda**

**1 Summary**

<b>Healthy Streets Programme</b>			
Existing Financial Authority for 2019/20 to 2023/24	Existing Programme and Project Authority for 2019/20 to 2023/24	Additional Authority Requested for 2019/20 to 2023/24	Total Programme and Project Authority Requested for 2019/20 to 2023/24
£1,164.5m	£390.1m	£75.0m	£465.1m

- 1.1 This paper requests an additional £75.0m Programme and Project Authority for the delivery and remobilisation of key elements of the Healthy Streets Programme.
- 1.2 The focus of the paper is to:
- (a) provide a summary of delivery to date through the London Streetspace Programme (which is part of the Healthy Streets Programme) and restart of priority schemes in the Healthy Streets Programme in Quarter 1 and Quarter 2 of 2020/21 (to 17 October 2020, referred to as H1);
  - (b) summarise planned delivery through the London Streetspace and Healthy Streets Programmes in Quarter 3 and Quarter 4 of 2020/21 (to 31 March 2021, referred to as H2); and
  - (c) request additional Programme and Project Authority for the Healthy Streets Programme based on TfL's revised budget for the period 18 October 2020 to 31 March 2021 as set out in the paper.
- 1.3 The use of Chair's Action by the Chair of the Programmes and Investment Committee is considered appropriate as additional Programme and Project Authority is urgently needed to enable delivery of the Healthy Streets priorities in H2 outside the planned meeting cycle.
- 1.4 The members of the Committee are asked to consider the proposal and provide Greg Clark, as Chair, with their views on or before 12 noon on 17 November

2020. The contents of this paper and the exercise of Chair's Action will be reported to the next meeting of the Committee.

- 1.5 An addendum paper will be presented to the Committee in December 2020 to provide greater detail on planned delivery in H2 and outcomes of the Integrated Assurance Review for the Healthy Streets Programme.

## **2 Recommendations**

- 2.1 The Chair of the Programmes and Investment Committee, in consultation with available Members, is asked to note the paper and:**

- (a) approve an additional £75.0m of Programme and Project Authority, giving a total Programme and Project Authority of £465.1m, for the delivery and remobilisation of key elements of the Healthy Streets Programme, comprising:**
- i. an additional £58.9m for the Healthy Streets Programme, giving £75.0m to deliver projects as described in this paper in the remainder of the current financial year;**
  - ii. subject to confirmation of a further allocation from the Department for Transport's Emergency Active Travel Fund, a further £20.0m to deliver projects as described in this paper in the remainder of the current financial; and**
  - iii. a reduction of £3.9m against Programme and Project Authority previously granted, reflecting reduced spend in H1 2020/21 and reprofiling of Old Street Roundabout into future years to complete construction; and**
- (b) note that Procurement Authority in respect of various elements of the Healthy Streets Programme will be sought at officer level in accordance with Standing Orders.**

## **3 Summary of LSP and Healthy Streets delivery in H1 2020/21**

### **Background to the London Streetspace Programme (LSP)**

- 3.1 The LSP was launched in May 2020 to help deliver London's 'Restart and Recovery' coronavirus pandemic response plans. At that time, it was in line with government guidance discouraging all but essential journeys and supporting public health through social distancing and active travel modes. It also reduced pressure on the public transport network to enable capacity for key worker journeys. These pressures remain and the LSP continues to be reactive to public health priorities especially in light of the recent government announcement regarding restrictions across England until at least 2 December 2020.
- 3.2 As part of the government funding and financing package provided on 14 May 2020, £55m was allocated to promoting walking and cycling across London, including new segregated cycle lanes, closure of roads to through traffic, and pavement extensions. This funding was specifically for delivery in H1 2020/21 only.

- 3.3 On 20 July 2020, the Committee approved Programme and Project Authority of £97.6m for H1 to deliver the LSP through TfL and borough-led schemes, restart priority schemes in the Healthy Streets Programme, and to continue construction of safety improvements at Old Street Roundabout.
- 3.4 A further government funding and financing package was provided on 31 October 2020 which includes £75m to continue the delivery of Healthy Streets and active travel programmes. This includes funding for London boroughs and the urgent delivery and operation of a temporary walking and cycle ferry as a replacement crossing for local communities affected by the closure of Hammersmith Bridge. TfL is awaiting an announcement on the bid for an additional £20m through the Department for Transport (DfT) Emergency Active Travel Fund Tranche 2 (EATF T2) to deliver borough-led walking and cycling schemes. All funding is specifically for delivery in H2 2020/21, with the potential to carry forward EATF T2 funding to 2021/22 under discussion with the DfT, given the late mobilisation of projects associated with this funding.

### **London Streetspace Programme H1 delivery**

- 3.5 The LSP covers projects on both the Transport for London Road Network (TLRN) and borough road network and focused on delivering reallocation of road space for social distancing, delivery of strategic cycle routes and enhanced bus lanes, and low traffic neighbourhoods.

3.6 Rapid progress has been made on delivering LSP schemes across London by TfL and the boroughs. Headline LSP delivery at the end of H1 was:

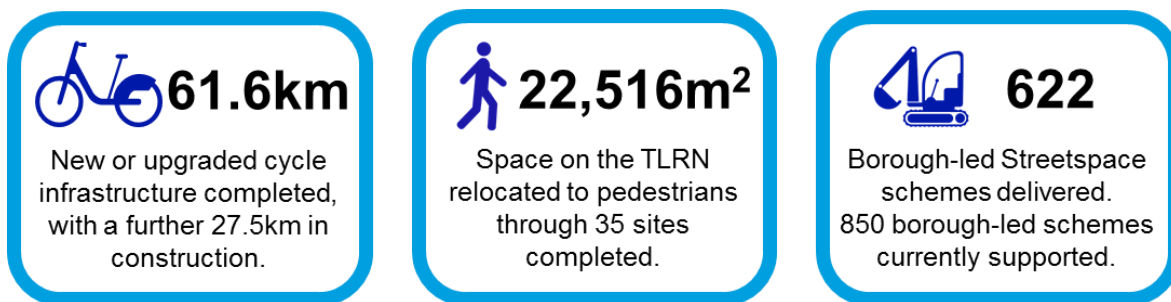


Figure 1: Low Traffic Neighbourhood scheme in London Borough of Ealing



Figure 2: Temporary cycle tracks on Balham High Road which forms part of CS7 between Colliers Wood and Balham.

3.7 Appendix 1 presents the LSP H1 dashboard for TfL and borough-led schemes. Table 1 details progress towards the LSP scorecard targets for H1 2020/21. All H1 scorecard targets have been met in partnership with the London boroughs.

Workstream	Measure	Standard target	Commentary
Strategic Cycling	Streetspace Programme – improved cycling infrastructure (km)	57km total	<b>Target met:</b> 61.6km completed with 27.5km in construction*
Social Distancing	Streetspace Programme – highway reallocation to pedestrians (sq. m)	22,000	<b>Target met:</b> 22,516 sq. m delivered
Signals	Time saved by pedestrians at traffic lights (hours per day)	170	<b>Target met:</b> 187 hours additional green man crossing time each day

\* Target is combined delivery of TfL and borough-led workstreams. Borough-led schemes have over-delivered which has balanced delivery challenges on the TLRN. LSP dashboard in Appendix 1 provides a further breakdown.

Table 1: LSP H1 2020/21 Scorecard Measures and Targets

- 3.8 In addition, TfL has delivered an extension to the operating hours of 86km of bus lanes on the TLRN to operate 24 hours a day, seven days a week to support bus journey times and reliability.
- 3.9 Within Central London, the Bishopsgate corridor scheme launched on 31 August 2020 (the scheme is subject to legal challenge which is ongoing), the London Bridge scheme launched on 16 September 2020, and temporary measures along The Cut launched on 19 October 2020 in collaboration with the London Boroughs of Lambeth and Southwark (with some construction activities ongoing to support the implemented modal filter).
- 3.10 Many of the Central London projects are on borough highway and are therefore subject to borough level decision-making processes. As a result, some decision making that has slowed or halted progress on particular corridors is not within TfL's control. Three other Central London Corridors schemes remain in design and will be delivered in the second half of 2020/21 subject to funding and stakeholder support.
- 3.11 Other corridors have been paused to enable consideration of wider network impacts, interactions with other proposed schemes or due to a lack of stakeholder support. TfL will continue to engage stakeholders on these schemes to determine where progress can be made. This will include revisiting the central London strategy to capture all of the benefits that are being delivered off the main corridor routes. Given the need to cater for some strategic movement on the central London corridors, this wider viewpoint is likely to capture a more holistic picture of change delivered.

## Healthy Streets Programme restart H1 delivery

- 3.12 There has been good progress made across Healthy Streets schemes restarted in H1 2020/21. These schemes were critical or high priority in terms of completion. Table 2 provides headline updates on delivery progress during H1.

Scheme/activity	H1 2020/21 delivery commentary
<b>Old Street Roundabout</b>	On-site construction continues at pace. A revised programme has been agreed due to changes in project scope and meeting coronavirus safe working requirements. Progress remains on track with this programme.
<b>Restart construction of substantially complete schemes</b>	<p><b>We achieved construction completion of eight Healthy Streets Local Schemes against a target of ten:</b></p> <p>(a) Completion of eight safety, walking and cycling schemes at A13 East India Dock Road/Canton Street; Britannia Junction; Clapham Road/Union Road; Edith Grove; Philip Lane; Brompton Road/Brompton Square; Dukes Road/Euston Road, and A406 Madeley Road.</p> <p>(b) Substantial completion of two safety schemes at Camberwell Town Centre and Edgware Road Corridor (but will require H2 funding to complete).</p> <p><b>Cycleways delivery:</b></p> <p>(c) Completion of three schemes – Cycleway 4 Section 1 (Tooley Street to Rotherhithe Roundabout); Cycleway 9 Kew Junction; and Cycleway 34 Section 1.</p> <p><b>Highbury Corner fully complete:</b></p> <p>(d) Scheme completed to target following installation of hostile vehicle mitigation measures.</p>
<b>Restart design and delivery of high priority Healthy Streets pipeline schemes</b>	<p><b>Healthy Streets Schemes:</b></p> <p>(a) Detailed designs completed as planned for Peckham Town Centre and Lavender Hill, to respond to coroner’s recommendations following fatalities at these locations. Construction planned for these two schemes in H2.</p> <p><b>Safety Schemes:</b></p> <p>(b) Strong progress made on 24 high priority safety schemes at various stages of design.</p> <p>(c) Safety improvements at the A23 Brixton Hill: New Road to Jebb Avenue have completed detailed design, with construction planned in H2.</p> <p><b>Transformational Schemes:</b></p> <p>(d) Restarted work to undertake strategic modelling and develop the business case for Gallows Corner, Wandsworth Town Centre, Lombard Roundabout and Waggoners/Henlys Roundabouts to secure DfT Major Road Network funding.</p>
<b>Bus Priority</b>	A new Bus Task Force has stood up in H1, with additional resources to develop an ambitious pipeline of future bus priority projects focused on reducing bus journey times and increasing patronage. To date, reviews of 27 high priority bus corridors have completed and progressed to the initial design stage.



Scheme/activity	H1 2020/21 delivery commentary
<b>Safety – lower speed limits</b>	Despite the pause in business as usual activity, work has been underway to embed lower speed limits into LSP schemes. A 20mph speed limit was introduced on A4202 Park Lane, Westminster and A400 Hampstead Road, Camden.

**Table 2: Headline Healthy Streets delivery in H1 2020/21**

### **Monitoring and Benefits Management**

- 3.13 An LSP monitoring plan for TLRN and borough schemes is in place and data is being collected to track scheme outcomes and help assess the viability of schemes being made permanent, subject to appropriate consultation, impact assessment and compliance with statutory process. For TfL-led schemes, this will consider a number of factors including alignment with bus, cycle, pedestrian and freight networks; safety; network impacts; and overlaps with existing proposals for Healthy Streets schemes. In-depth assessment of Low Traffic Neighbourhoods (LTN) using resident perception surveys are being undertaken across a sample of LTN schemes to provide a more local and granular picture of LTNs. Further details and outcomes from LSP scheme monitoring will be presented to the meeting of the Committee in December 2020.

## **4 Proposed delivery in H2 2020/21**

- 4.1 In H2, we will consider whether to develop temporary LSP schemes into permanent schemes on the TLRN with more details to be provided in the addendum paper to the Committee in December 2020.
- 4.2 In addition, we will continue implementing temporary LSP schemes where needed as a response to the coronavirus pandemic, with the final temporary schemes planned to be introduced by March 2021. These will focus on strategic cycle routes and LTNs.
- 4.3 Borough LSP funding is contingent on a further contribution from the DfT Emergency Active Travel Fund Tranche 2 (EATF T2) and will enable delivery of c.100 LTN schemes and c.40 Strategic Cycle Routes by the end of 2020/21.
- 4.4 All schemes included in the EATF T2 bid to the DfT were prioritised based on alignment to multiple datasets (such as potential for mode shift, collision patterns, and levels of deprivation), network and bus impacts, TfL’s Strategic Cycling Analysis and an assessment of scheme complexity and public support.
- 4.5 As well as continuing Healthy Streets schemes restarted in H1, we will remobilise further high-priority, locally supported schemes that were paused in March 2020 – specifically, projects which align to the following criteria:
- (a) statutory requirements or safety improvements on the road network (e.g. lowering speed limits);
  - (b) protection of TfL’s revenue (e.g. Bus Priority); and
  - (c) contractually committed or third party funded activity.

4.6 Key lessons from LSP delivery will be carried forward into the full H2 programme, including a focus on the use of lighter touch materials where possible, to reduce costs and increase the pace of delivery. Further details on lessons learnt outputs – and what they mean for H2 – will be provided in the December addendum paper.

4.7 The planned scope of H2 delivery is set out in Table 3 below, with further detail on outcomes to be provided to the Committee at its meeting in December 2020:

<b>Programme</b>	<b>Description</b>	<b>H2 £m</b>
LIP Corridors	Core borough funding to restart Local Implementation Plan schemes that align with the Mayor’s Transport Strategy and, where applicable, provide greater certainty on borough staff resourcing for the remainder of 2020/21.	25.1
Borough Programmes	To restart schemes within the following borough programmes: (a) Liveable Neighbourhoods; (b) LIP Major Schemes (complete detailed design at Beam Parkway, and start construction subject to GLA funding availability); and (c) Crossrail Complementary Measures (programme parameters subject to Crossrail pace of delivery).	8.5
Bus Priority (Borough)	As well as delivering some quick-win Bus Priority schemes in H2, the key focus will be on building up an ambitious pipeline of 27 high priority bus corridor schemes for delivery in 2021 and beyond.	5.3
<b>Borough sub-total</b>		<b>38.9</b>
<b>Programme</b>	<b>Description</b>	<b>H2 £m</b>
Old Street	To continue construction of safety improvements at Old Street Roundabout.	12.5
Healthy Streets schemes (incl. Hammersmith Ferry <sup>1</sup> )	To deliver high priority schemes that align with the following objectives: (a) Contribution to safety and Vision Zero (i.e. Lowering Speed Limits); (b) Contribution to fares recovery; (c) Third party funding or prospect for securing third party funding (i.e. Major Road Network schemes); and (d) Contribution to other strategic objectives including delivering the cycle network, school travel planning, healthy streets officers and e-scooters.	32.8
Bus Priority (TLRN)	See above – delivery of quick-win bus priority schemes in H2 and pipeline of 27 high priority bus corridor schemes for delivery in 2021 and beyond.	4.2
LSP TfL-led	Continue design and delivery of temporary strategic cycle routes using some upgraded materials, monitoring of impacts to inform decisions about conversion to permanency. Start planning for conversion of schemes from temporary to permanent. (Subject to monitoring outputs and stakeholder engagement, appropriate consultation, impact assessment and compliance with statutory process)	10.0

<b>TfL sub-total</b>		<b>59.5</b>
Over-programming	The over-programming approach to Healthy Streets ensures that we are working on more projects than we have funding for, based on historic knowledge of programme slippage in the past – for example, due to stakeholder intervention. This approach will help us achieve delivery against the £75m budget.	-23.4
<b>Total (excluding DfT EATF T2)</b>		<b>75.0</b>
LSP Borough-led – funded from DfT EATF T2 <sup>2</sup>	Delivery of c.100 Low Traffic Neighbourhood schemes and c.40 Strategic Cycle Routes by the end of 2020/21.	20.0
<b>Total requested for H2 2020-21</b>		<b>95.0</b>

1. H2 budget for Hammersmith Ferry based on high-level cost estimate of circa £2m and includes an appropriate allowance for risk.
2. Should the EATF allocation from DfT be less than £20m, budgets will be rebalanced across TfL LSP and Borough LSP, to ensure a proportional distribution of funding.

**Table 3: Proposed H2 Healthy Streets delivery**

## 5 Legal and Equalities Implications

- 5.1 LSP schemes have generally been delivered under Temporary Traffic Orders which apply for 18 months from scheme implementation. Proposals for H2 2020/21 take into account the potential for some temporary LSP schemes to be made permanent. TfL has developed a monitoring framework for identified schemes that may be considered suitable to be made permanent, subject to further public engagement, appropriate consultation and compliance with statutory processes. In addition, TfL will provide guidance to boroughs on monitoring to support any proposals for the conversion of borough LSP schemes to permanent schemes.
- 5.2 Section 149 of the Equality Act 2010 (the Public Sector Equality Duty) provides that, in the exercise of their functions, public authorities must have due regard to the need to:
  - (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;
  - (b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and
  - (c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.
- 5.3 In delivering schemes, TfL will comply with the Public Sector Equality Duty and Equality Impact Assessments will be undertaken and actioned upon for all TfL-delivered schemes. In addition, TfL will comply with Section 17 of the Crime and Disorder Act 1998 and will consider how to reduce the risk of crime, including acts of terrorism, in their plans, projects and activities.

- 5.4 Where funding is allocated to boroughs for LSP delivery, TfL has published LSP guidance which sets out requirements for projects that form part of the programme, including highlighting boroughs' own duty to comply with the Equality Act 2010 and Section 17 of the Crime and Disorder Act 1998.
- 5.5 TfL is working with the London boroughs to provide support and manage ongoing stakeholder engagement with the emergency services to help resolve issues identified through LSP H1 delivery, particularly around Low Traffic Neighbourhoods. TfL is additionally identifying lessons learnt from H1 process and delivery to take forward into H2. Further details on risk management and lessons learnt will be provided to the Committee at its meeting in December 2020.

## 6 Financial Implications

### Healthy Streets Programme and Project Authority

- 6.1 The Committee is asked to agree the Healthy Streets Programme and Project Authority total from £390.1m to £465.1m up to the end of financial year 2023/24 as detailed in Table 4. The total authority includes £172.0m of project work in 2020/21 and a further £29.7m in 2021/22 and £18.9m in 2022/23 for the Old Street Roundabout scheme.

£m	Description	Prior years actuals	20/21	21/22	22/23	23/24	Total 2019/20 to 2023/24
<b>Financial Authority based on budget and business plan</b>		<b>244.5</b>	<b>230.0</b>	<b>230.0</b>	<b>230.0</b>	<b>230.0</b>	<b>1,164.5</b>
<b>Programme &amp; Project Authority</b>	<b>Existing Authority</b>	<b>244.5</b>	<b>97.6</b>	<b>28.0</b>	<b>20.0</b>	<b>-</b>	<b>390.1</b>
	Transfers to other portfolios	-	-	-	-	-	-
	<b>Restated total</b>	<b>244.5</b>	<b>97.6</b>	<b>28.0</b>	<b>20.0</b>	<b>-</b>	<b>390.1</b>
	This request	-	74.4	1.7	(1.1)	-	75.0
	<b>Programme and Project Authority</b>	<b>244.5</b>	<b>172.0</b>	<b>29.7</b>	<b>18.9</b>	<b>-</b>	<b>465.1</b>

**Table 4: Healthy Streets Programme and Project Authority to 2023/24**

## 2020/21 Authority for Healthy Streets

- 6.2 The total Programme and Project Authority requested for 2020/21 is £172.0m as set out in Table 5. This reflects reduced spend in H1 and the additional authority requested for H2.

	H1 £m	H2 £m	Total £m
Current Programme and Project Authority (July 2020 PIC)	81.5	16.1	<b>97.6</b>
Authority requested (November 2020 PIC)	77.0	95.0	<b>172.0</b>
<b>Increase / (Decrease)</b>	<b>(4.5)</b>	<b>78.9</b>	<b>74.4</b>

**Table 5: Requested Programme and Project Authority for 2020/21**

- 6.3 Table 6 provides a summary breakdown of the £95.0m Programme and Project Authority requested in H2 of 2020/21 as referred to in the paper. This includes over-programming (averaged across programmes).
- 6.4 TfL takes an over-programming approach to the development of Healthy Streets projects, based on known past performance and likely risks. This ensures that a sufficient number of schemes are in development to achieve the planned spend profile, allowing for slippage. Should the programme perform better than expected, lower priority projects will be deferred to ensure the overall H2 spend remains within the agreed Programme and Project Authority.
- 6.5 In addition, in relation to the EATF T2 funding, TfL will continue to liaise with DfT regarding the potential for funding flexibility between borough and TfL-led programmes to ensure delivery in H2 can be maximised across London.

Type	H2 Programme and Project Authority requested £m
Local Implementation plans (LIP)	25.1
Borough Programmes (including Liveable Neighbourhoods, LIP Major Schemes and Crossrail Complementary Measures)	8.5
Borough bus priority	5.3
<b>Borough funding sub-total</b>	<b>38.9</b>
TfL Healthy Streets schemes	32.8
Old Street Roundabout	12.5
TLRN bus priority	4.2
LSP TfL-led schemes	10.0
<b>TfL funding sub-total</b>	<b>59.5</b>
Over-programming	(23.4)
<b>Total (excluding DfT EATF T2)</b>	<b>75.0</b>
LSP borough-led schemes (funded from DfT EATF T2)	20.0
<b>Total requested for H2 2020/21</b>	<b>95.0</b>

**Table 6: Summary breakdown of additional Programme and Project Authority requested**

## 7 Assurance

- 7.1 An update on governance, processes and delivery was presented to TfL Project Assurance and representatives from TfL's Independent Investment Programme Advisory Group (IIPAG) on 15 September 2020. An overview and explanation of proposed LSP and Healthy Streets Programme delivery in H2 2020/21 was also provided.
- 7.2 A further assurance review is underway – involving external experts – focusing on performance, processes, delivery and value for money. The initial recommendations were received on 2 November 2020 and are under review by the project team. No critical issues were identified and the external experts noted that: *“The trade-offs of competing/conflicting stakeholders’ priorities or strategic imperatives is being well managed through established TfL forums (such as the Road Space Performance Group) and processes (such as regular and planned scheme monitoring and lessons learnt). This is true for major Borough schemes (which also go to Road Space Performance Group) resulting in a good level of coherence and integration of those schemes in the TfL Planning process.”*
- 7.3 The full detail from this recent assurance review, along with TfL's response, will be provided to the meeting of the Committee in December 2020.

**List of appendices to this report:**

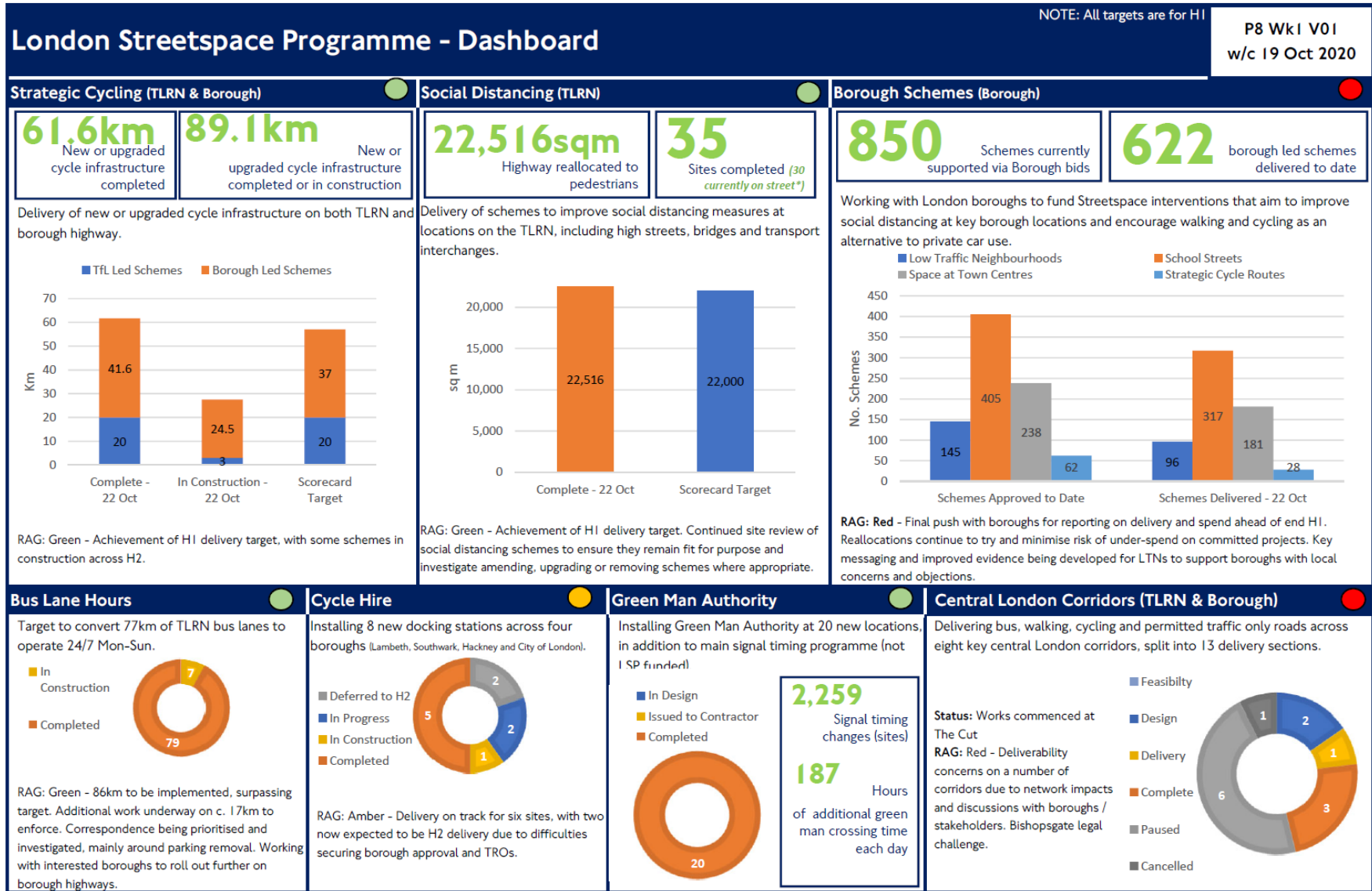
Appendix 1: London Streetspace Programme H1 Dashboard

**List of Background Papers:**

None

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# Appendix 1: London Streetspace Programme H1 Dashboard





## Programmes and Investment Committee



**Date:** 11 December 2020

**Item:** Investment Programme Report – Quarter 2, 2020/21

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 The Investment Programme Report describes the progress and performance in Quarter 2, 2020/21 of a range of projects that will deliver world-class transport services to London.
- 1.2 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the report and the exempt supplementary information on Part 2 of the agenda.**

#### **List of appendices to this report:**

Appendix 1: Investment Programme Report Quarter 2, 2020/21

Exempt supplemental information is contained in a paper on Part 2 of the agenda

#### **List of Background Papers:**

None

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**Transport for London**

**Investment Programme Report**

**Quarter 2 2020/21**

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# Introduction

This report provides an update on a range of projects that will create world-class transport services in London. This report covers Quarter 2 2020/21 (26 July 2020-17 October 2020).

The quarterly investment programme report gives a progress update on the major projects and sub-programmes that seek authority each year (unless extraordinary approvals are needed) to the Programmes and Investment Committee.

For each major project or programme, the financial and milestone data represents the position at the end of the quarter, and we include commentary for key achievements and progress made. The report also contains, as far as possible, updates on notable progress made after the end of the quarter.

For a programme or project with a defined start and end, we include when it is planned to be substantially complete and being used by customers. Works that are delivered in a prioritised sequence, such as road resurfacing or track renewal, are referred to as 'annual' as they are controlled and measured within each financial year. This report only includes progress on committed projects and programmes.

Financial records of spend to date, authority and Estimated Final Costs (EFC) represent the entire duration of each separate project or programme, except where stated in the date range. Where authority is significantly lower than EFC, it has been given for the current stage of works and further authority will be sought when appropriate.

To ensure continued transparency, the EFC for projects is based on the current risk profile and opportunity realisation at the time of publication. As a result, it could fluctuate every quarter, but this does not automatically mean there is an increase in spend authority.

Owing to the coronavirus pandemic there is an unprecedented impact on our projects and programmes. As such, we are unable to accurately assess the full impact on all our EFCs but many have a revised budget.

We also include cumulative EFC movements for savings and efficiencies that have been embedded since our 2018 Business Plan, while protecting safety, services and reliability. Numbers in brackets represent an EFC increase and numbers without brackets represent an EFC decrease. Commentary is provided for cumulative movements greater than £2m.

This report does not contain commercially sensitive information and therefore some EFCs and authorities are marked with an asterisk until the main contract has been awarded. On schemes where there is commercial confidentiality, the EFC, authority and spend to date may also be withheld.

All financial figures are gross and may not appear to align with costs detailed in the TfL Budget, which are net of any third-party funding.

The strategic milestones for the first half of 2020/21 – the key milestones listed in the TfL Budget – are detailed on page 40.

Our investment programme is delivered by the following areas of the business and the report structure reflects this.

### **Major projects**

This is responsible for our largest and most complex projects. It comprises line upgrades, such as the Piccadilly line upgrades and the Four Line Modernisation, network extensions, and major station upgrades, which are covered on pages six to 15.

### **London Underground**

This comprises stations, accessibility, track renewals, power, cooling and energy, rolling stock, and signalling and control, which are covered in pages 16 to 21.

### **Surface transport**

This comprises Healthy Streets, air quality, public transport and asset investment. These are covered in pages 22 to 33.

### **Other**

This comprises technology and data, TfL Growth Fund and the Elizabeth line (including Crossrail), which are covered in pages 33 to 39.

### **The impact of coronavirus**

In March, to help fight the spread of coronavirus, the Government and the Mayor gave clear instructions for people to stop travelling unless it was absolutely essential to do so. For this reason, we brought all our construction projects, including Crossrail, to a temporary Safe Stop unless they needed to continue for operational safety reasons. We continued with essential maintenance of the transport network.

This was done to ensure the safety of our construction and project teams, and to help reduce the number of people using public transport. It was vital that the transport network was only used for essential journeys.

When work restarted on site, each project had a full review of the working practices, together with submissions from the supply chain on how they would manage their site and their workforce in accordance with social distancing guidelines. These were then reviewed by construction managers, with work only restarting once this had been completed.

# Major Projects

## Line upgrades

### Four Lines Modernisation

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2023/24	4952	5412	5397	(58)	445

Given the impact of the coronavirus pandemic on our finances, we have conducted a review of ongoing projects to see where costs can be reduced while still delivering vital improvements to the transport network. In September 2020, we reviewed the Four Lines Modernisation programme to assess and challenge both cost and schedule. Following this review, the western branches of the District line will not be re-signalled as part of this programme. This means sections of the District line south of Fulham Broadway and west of Barons Court will remain under the existing signalling.

While this change will mean journey times in these sections will remain unchanged, we can still increase frequencies to up to 16 trains per hour, as originally planned. We will continue to assess whether we can convert this signalling in the future. The other elements of the project will progress as planned.

Across the wider programme, the combined effect of the coronavirus pandemic, changes to scope and ongoing challenges have resulted in an EFC increase. The revised Budget was based on anticipated savings through a combination of reduced contractors' costs and supporting our works with an associated schedule reduction. Since the Budget was set, a number of pressures have emerged mainly relating to Safe Stop commercial impacts, ongoing negotiations with the main signalling supplier and provision for works to consolidate the new signalling boundaries. We are working closely with the main works contractor and anticipate the outcome of our discussions to be ready for the Quarter 3 Investment Programme Report.

We have introduced 192 new trains and installed new signalling on parts of the Circle and Metropolitan lines.



In June, work restarted in phases with coronavirus-compliant processes. This enabled dynamic train testing, signalling installation works and depot construction activities to be done, with all post-coronavirus Safe Stop targets being met. Despite the challenges, such as training operational staff under current circumstances, the programme remains on track for the post-restart target of March 2021, when we will migrate the signalling between Euston Square, Monument and Stepney Green.

The delays from the pandemic and the complexity of re-planning works around future events, is expected to lead to an extension of the programme, and it is anticipated that the estimated final cost will increase to reflect this delay. The re-planning and revised cost estimate will be complete by quarter three.

### Railway Systems Enhancements (formerly World Class Capacity)

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2023/24	133	245	192	(11)	59

The EFC includes the latest supplier estimate for Jubilee line optimisation, which remains uncommitted. In light of the cost increase, the delivery approach is being reviewed further.

While some of the works are standalone, many projects in this area are essential to other programmes, including Jubilee line upgrades and the Northern Line Extension, as well as reconfiguring the Northern line at Bank.

To enable the new capacity works, we have completed speed improvement and track works to the Northern line and continue to focus on power enhancements, including an upgrade to the signalling software on the Northern line. We have also commissioned a new wheel lathe at Morden Depot, a new coupling transformer at Stockwell and a new wheel lathe at Stratford Market Depot.

## DLR Rolling Stock and Systems Integration

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2024/25	65	603	603	0	538

The contract for supplying the next generation of DLR trains by Construcciones y Auxiliar de Ferrocarriles has started, with final designs almost complete. The manufacture of jigs and fixtures for the train bogies and car bodies has started. A life-sized mock-up of the train has been delivered to the UK, and we have had several stakeholder and customer reviews. The final design for the Thales signalling has been accepted by the project team.

Coronavirus has caused a three-period impact on train manufacture. We have revised the depot delivery strategy, with the southern sidings works being deferred to 2022/23. This will protect the programme critical path and enable the northern sidings work to meet the revised programme. The depot works have also been delayed by one period because of the recent financial uncertainty. This will not delay the delivery of the replacement trains but will reduce the float to the acceptable limit.

## Piccadilly Line Upgrade – rolling stock (formerly Deep Tube Upgrade Programme)

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2026/27	214	3294	2911	26	2696

We recently reviewed all Major Projects work, which has led to this reduction in EFC. We did this to ensure stage 1 approved costs are clearly aligned with deliverables. We transferred £18m in programme management and integration resource costs to the signalling stage of the programme. The rolling stock risk was reduced by £8m following the review as the detailed design nears completion.

We have made good progress in the design for the new Piccadilly line trains. We collaborated closely with train supplier, Siemens, and have a plan to minimise the impacts

of coronavirus on the design programme. We remain on target to complete the final design in March 2021.

The key contract for the supply of One-Person Operation (OPO) CCTV systems was awarded in September to Panasonic. This is a safety critical system that provides the train operator with CCTV images of the platform so that they know it is safe to depart. The project is now moving into the design phase as planned.

We continue to collaborate closely with our partners on three demonstrator projects to create innovative solutions in support of the Piccadilly Line Upgrade that will drive down costs, while also improving safety and sustainability. This includes a new platform cooling solution that will help manage the temperature on the platforms and scalable offsite-constructed equipment rooms, which are cheaper, more sustainable and safer to install. Contracts have been prepared and works have started so we are ready for the benefits in late 2021.

We have also prepared the next stage of the key contract procurement, with a Supplier Pre-Qualification Questionnaire being issued for the upgrades to the London Underground high-voltage power network. This was issued in September with responses received in early November. We can now engage with the suppliers who have expressed and qualified, while also preparing the Invitation to Tender documents for release in the New Year. This work is necessary to support the increased number of trains and enhanced train performance.

## Network extensions

### Northern Line Extension

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2021/22	983	1,260	1,118	12	135

The EFC reflects a recent review of all Major Projects, which assessed and challenged both cost and schedule. The EFC movement includes an updated risk view on the full known impacts of the coronavirus pandemic and related issues.

The Northern Line Extension is a twin-tunnelled extension from Kennington to a new terminus at Battersea Power Station, via a new station at Nine Elms. This will be a catalyst for the regeneration of the Vauxhall Nine Elms Battersea Opportunity Area. The extension is expected to be completed in autumn 2021.

We continue to make good progress across all our work sites. The primary civils and structural works are complete and fit-out of the two new stations and two new head houses continues.

On 25 October, we successfully completed high voltage energisation to the switch rooms, enabling us to start commissioning key systems and dynamic systems testing later this year.

The Northern line train cab simulators have been upgraded to include the extension ahead of programme, which will enable train operators to familiarise themselves with the route, in preparation for trial operations.

We continue to work with Thales to upgrade the design of signalling software, which are the key enablers for operating trains on the new line extension and service being available.

### Silvertown Tunnel

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2024/25	4	180	202	(24)	198

The EFC reflects the recent review of all Major Projects, which assessed and challenged both cost and schedule. The EFC includes an update on the full known impacts of the coronavirus pandemic and related issues, as well as estimate increases for user charging implementation and systems integration.

The tunnel will connect Silvertown and the Greenwich Peninsula, which are areas subject to significant planned redevelopment in the coming years. The new twin-bore tunnel, within the extended Ultra Low Emission Zone (ULEZ), will effectively eliminate congestion and improve air quality, with no increase in carbon emissions. It will also provide a transformative new cross-river bus network for east London, with plans for up to 37 buses per hour in each direction, all of which are expected to be zero emission from launch.

We have handed over a section of land in the south at Edmund Halley Way to Riverlinx and we are now in possession of the Brewsters site. We have started the mobilisation works to prepare the Greenwich site for the start of excavation and construction.

We have carried out intrusive and non-intrusive surveys to complete the utilities mapping and have had productive engagement with the utility companies. We have completed the ground investigation pumping tests on the Greenwich side and the pavement surveys continue along the Tunnel Avenue bus lane. We are doing unexploded ordnance surveys in the Greenwich and Silvertown work areas before the major works start.

Our procurement planning for the tunnel boring machine design is progressing, along with the methodology for its launch and procurement for the segmental lining of the tunnel tubes.

### Barking Riverside Extension

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2022/23	198	287	327	(12)	129

We recently reviewed all work across Major Projects and the EFC reflects this. We assessed and challenged both cost and schedule. The EFC includes an update on the full impacts of the coronavirus pandemic and related issues.

The increase in EFC is driven by the impact of the Safe Stop and inclusion of coronavirus risks, mainly relating to prolongation associated with securing Network Rail possessions and coronavirus control measures. The EFC remains under close review and we continue to collaborate with the main works contractor to review all options to mitigate cost increases and minimise risks.

The EFC exceeds Programme and Project Authority and this will be addressed through our governance by December 2020.

We are delivering a new rail link to serve the 10,800 new homes planned for the Barking Riverside development area. We will build a spur on the London Overground east of Barking, to extend the Gospel Oak to Barking service to a new station at Barking Riverside. The extension is around 4.5km from Barking station. It includes modifications to

the existing Network Rail infrastructure and new lines running on a viaduct of around 1.5km. A four-carriage London Overground service running at 15-minute intervals is planned.

We have completed the Thames Water sludge main diversion at Pier 14, which enabled the piling works to be completed in this area. In October, we completed all the piling activities, 1,195 piles, which was a key milestone for the project. We also installed 265 beams at the south viaduct beam and poured 18 concrete decks, and the parapet installation is nearly complete. Works are ongoing at Piers 13 and 14 on the north viaduct and we continue with the installation deck spans and pouring of the concrete decks.

The new station structure can be seen from street level, with all the steelwork and external blockwork complete. We continue to install the cladding and glazing. We have completed the internal blockwork to create areas for retail units, cycle storage and operation equipment.

We continue to work on the rail systems during weekends, and have completed permanent way, overhead line equipment, signalling and telecoms activities through the summer and autumn.

Some uncertainties remain, which mean the estimated service start date is now forecast for autumn 2022. The team is working through the detail to give greater programme confidence.

### Bank Station Upgrade

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2021/22	542	656	702	0	160

We recently reviewed all work across Major Projects and the EFC reflects this. We assessed and challenged both cost and schedule. The EFC includes an update on the full impacts of the coronavirus pandemic and related issues. An authority increase was also approved at the October Programmes and Investment Committee meeting.

The EFC remains stable since we set our Revised Budget. We continue to review risk mitigations each period, along with opportunities to reduce the EFC. We continue to collaborate with the main works contractor to identify and realise potential savings and mitigate the impact of the coronavirus pandemic.

We are boosting capacity at Bank station by 40 per cent. This includes creating a new Northern line tunnel, platform and circulation spaces, a new entrance on Cannon Street, the introduction of step-free access to the Northern line, additional interchange between the DLR platforms and two new moving walkways between the Central and Northern lines.

We have various safety measures in place following the coronavirus pandemic and the team continues to plan and prepare for the risk of an outbreak on the site. Face coverings are mandatory while in transit between work locations, in line with guidance from the Construction Leadership Council.

All tunnelling excavation works are now complete, apart from the two ‘tie-ins’ between the new and existing Northern line southbound running tunnels, which will be excavated during the Bank blockade. This marks a major milestone since tunnelling began in 2017. Good progress is being made on the remaining civil works, which are due to be completed late January but with a stretch target of the end of 2020.

The project is now well into the fitout phase. We have installed the ductwork for the mechanical ventilation system throughout most of the new Cannon Street entrance building. Framework for new cladding finishes and new bespoke integrated service booms are being installed in new and existing parts of the station. New cable management systems are also going in throughout the new Cannon Street entrance, as well as within the newly completed service boom frames. We have also started to install a new fire suppression system. The overall project is due for completion in 2022.

### Elephant & Castle

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2029/30	3	*	*	*	*

\*This information is withheld for reasons of commercial sensitivity.

A new station entrance and ticket hall for the Northern line was part-funded by the Mayor’s Strategic Infrastructure Fund. This will be provided as part of a private sector re-development of the Elephant and Castle Shopping Centre, significantly increasing station capacity. The developer will construct a new station box as part of its scheme. We will fit-out the ticket hall, create step-free access and build tunnels connecting the ticket hall to

the existing Northern line platforms. Future interchange with the Bakerloo line will be safeguarded within the design and construction of the new station box.

We have completed our concept design and work is ongoing to integrate the design and construction requirements within the wider development. Engagement with the developer is focused on negotiating the Development Agreement and Section 106 (Supplementary) agreement. Subject to confirmation of funding and pending agreement of terms and conditions, we anticipate entering into these agreements in spring 2021. Surveys and detailed design will follow with prioritised enabling works delivered in 2021/22. Tunnelling works will start once the station box has been handed over by the developer in 2024.

The developer has achieved vacant possession of the existing centre and ‘soft’ demolition has begun ahead of substantial demolition.

## High Speed 2

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2027/28	14	11	78	1	65

This project is fully refundable by HS2 Limited and the scope of works is dependent on third-party requirements. The new EFC is based on more detailed analysis of the scope and impacts of the works as we understand them at the current time.

High Speed 2 (HS2) is a new high-speed railway connecting London to the West Midlands and the North of England. Our work consists of assuring the design and delivery of new assets, infrastructure and operational facilities at Euston and Old Oak Common and protecting our operational networks and services.

HS2 Limited’s construction activity has continued across all sites in London under COVID-19 secure conditions. This includes the completion of enabling works and the start of piling for the station box at Old Oak Common, site clearance and mobilisation at Euston, including preparatory works for the new London Underground substation and ventilation building, and utilities diversions along the Hampstead Road. Discussions are also under way for the enabling works for the new interim taxi rank at Euston station.

We continue to provide input into the Department for Transport-led study on Euston, following publication of the Oakervee Review earlier this year. The study is seeking the



most effective way to deliver HS2 at Euston, recognising design requirements and constraints from all stakeholders.

Joint management processes between ourselves and HS2 Limited have been published and shared with the supply chain. These ensure ways of working between HS2 and us recognise and respect each partner's interests and objectives, while complying with the relevant agreements.

# London Underground

## Stations

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2022/23	183	535	1131	0	948

As the gateway to London Underground, our 270 stations are a key part of the customer experience. They must be able to safely accommodate current and future passenger demand and provide efficient and pleasant journeys for all customers. We must manage and improve our station assets to maintain reliable access to the network.

Several station enhancements are taking place alongside commercial development opportunities to generate new income streams for us, while securing alternative third-party funding sources for station delivery.

As part of our In-Station Retail Programme, we have completed the shell and core works associated with the new units at Shepherd's Bush, King's Cross St Pancras and Bond Street and have nearly completed work at Liverpool Street, North Greenwich and Oxford Circus. Work continues on a nine-unit development at Canary Wharf, which is on target for completion by March 2021. This is combined with 13 stations that currently sit within our retain pipeline, which are all passing through the feasibility and concept design stages.

There are several key deliverables for this area, including:

### Knightsbridge

The design and build contract for the fit out of the new Hooper's Court and Brompton Road entrance was let in August 2020 and the design is progressing well. The build contract for the fit out of the lower passageways is due to be let in late 2020.

### Colindale

Work began on the detailed design of the capacity enhancement and step-free access project in September. The ticket hall layout has been finalised following consultation with local staff and union representatives. Discussions are taking place with the London Borough of Barnet and geotechnical investigation works began in October 2020. Subject to approval to start construction, the step-free access and ticket hall work is forecast to be complete in spring 2023.

## **Tottenham Hale**

There has been good progress and the foundations and steelwork of the final phase are now complete. Roofing has also begun. Glazing and cladding works are due to start shortly and should be substantially complete by March 2021.

## **West Ham**

Works have begun on the TwelveTrees Park development with our partner Berkeley Homes, which is delivering around 4,000 new homes and associated transport infrastructure, including a new London Underground station entrance. Enabling works adjacent to the Jubilee line eastbound track are ongoing to prepare the area for piling, which is due to start in 2021.

## **Paddington**

We are working with Great Western Developments to construct a new entrance to the Bakerloo line, with an enlarged ticket hall and step-free access to the platforms as part of its redevelopment of adjacent buildings. In October 2020, we completed the enabling phase of the project by opening a new emergency escape staircase, which has enabled the permanent closing of the Network Rail entrance to the ticket hall. Works can now proceed on the full demolition of the old ticket hall to make way for the new station and lift shaft construction.

## **Walthamstow Central**

Work restarted in summer 2020 with the project team supporting the concept design to take into account the development around the station. This is targeted to be complete by March 2021. The overall project includes a new station entrance, a new large lift, two additional escalators and a secondary means of escape with fire fighter access.

## **South Kensington**

We have completed procurement for the early ticket hall enabling works, which will complete in late 2020. We continue to explore options for the capacity upgrade and step-free access. Replacement of the escalators serving the Piccadilly line is due to start by March 2021.

## Accessibility

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2023/24	85	176	175	0	90

We are making 12 stations step free through the London Underground Accessibility Programme. Since 2018 we have delivered step-free access at Newbury Park, Buckhurst Hill, South Woodford, Mill Hill East and Cockfosters. Works at the remaining seven stations are at an advanced stage and are due to complete by the end of 2021. At Amersham, Debden, Osterley and Ickenham, main works are largely complete and lift installations are progressing. At Wimbledon Park, Harrow-on-the-Hill and Sudbury Hill, main works have started with the installation of lift towers, brick work and system upgrades to prepare for the lift installation.

Three further projects at Hanger Lane, Burnt Oak and Northolt are currently paused pending a further review, following the financial considerations of the coronavirus pandemic.

All the completion dates have been impacted by coronavirus, with a 12-week Safe Stop initiative on all our construction sites, productivity reductions on site owing to altered working practices, and impacts on our supply chain.

## Track renewals

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
Annual	23	73	81	0	58

This remains on schedule, improving the reliability and safety of the railway. In Quarter 2, we started five ballasted track renewal sites, renewed 0.6km of deep Tube track, 0.4km of flat bottom conversion and re-rail and started work on two drainage sites.

The tender documentation for replacing our track recording vehicle, which records and monitors the alignment and condition of the track, is undergoing final review before engaging with the market.

We have let a contract for the stabilisation of the cutting between Grange Hill and Chigwell. The works will stabilise the cutting slope for the next 100 years or more and the risk to the operational railway will be eliminated.

## Power, cooling and energy

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2023/24	58	90	88	0	30

We installed 598 roof-mounted solar photovoltaic modules (solar panels) on the new train modification unit in Acton Depot last quarter. The new solar panel system has been designed to meet a target of 152,075 kWh/year renewable energy generation, which will save 58.2 tons of CO2 a year and provide clean renewable energy for many years to come. The project is targeting completion in the first half of 2021/22.

As part of Four Lines Modernisation works across the London Underground network, existing substations are being upgraded to accommodate the associated increase in power loads. The upgrades create more heat within several substations, which, if left untreated, could affect equipment and, in extreme cases, train service. We had nearly installed all main construction works at Shepherd's Bush substation in April 2020, before the Safe Stop of all construction sites. Work started at Earl's Court substation in early August 2020, with Victoria substation, Notting Hill Gate and Shepherd's Bush to follow. This package of work is due to be completed by the end of March 2021. A tender for the final package of works has been undertaken. Contract award is forecast for early December 2020, with a view to start on site in late January 2021 and aims to complete the package in mid/late 2021.

## Rolling stock

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2023/24	251	525	972	0	721

We have improved the Bakerloo line fleet to ensure continued reliability and started three-car prototyping at the Acton works depot. On the Jubilee line, all 63 trains have been refurbished to comply with rail vehicle accessibility regulations and are back in service. The Central Line Improvement Programme is progressing, with the train management system being tested and first AC power traction unit being installed on a prototype train. Following a detailed review of the programme, the business case and benefits are still positive and there is a greater understanding of the systems integration required and the associated timescales. The delivery approach has been revised to create a realistic delivery plan with longer timescales, which was endorsed at senior level.

We continue to work with our supply chain to enable the improvement programme on the full fleet. A full set of lifting jacks are now on site in Acton, and these will be quality checked before the train modification unit becoming available. This recently achieved several key milestones, with the completion of the civil construction works along with the start of the fit-out, which gathers pace throughout the remainder of the year.

The mechanised renewals vehicle will improve the way track is renewed in the deep Tube sections of the Bakerloo, Central, Jubilee, Northern, Piccadilly and Victoria lines. The three allocated wagons have been fully refurbished and returned to Ruislip Depot. Design of the ancillary equipment is progressing well. Fitment of the track renewal equipment will begin shortly.

Four of the seven pre-production engineering wagons manufactured by CRRC in China have reached the UK following a two-month journey by sea. These wagons will be tested off network before being joined by the remaining three pre-production wagons on our network in early 2021 for infrastructure testing. Once these wagons have been fully tested and approved, the remaining 66 wagons will be built and shipped.

The two Kirow cranes are now approved for use within Ruislip Depot, supporting lifting and loading operations and are already adding benefit. The introduction of these cranes delivers safety and productivity benefits to the engineering operations in Ruislip Depot. Operator and maintainer training for these cranes is ongoing.

Early market engagement for replacement battery locomotives has started and responses are due back in November. This project will look to enhance the existing engineering fleet to ensure they remain operational while a replacement fleet is considered.

## Signalling and control

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2023/24	94	145	180	0	86

We continue to improve the operational safety and remove non-compliant systems across several projects. We have replaced the control centre UPS systems at Allsop Place and Highgate Control Centres. Lighting has been converted from fluorescent to LED at eight stations and escalator electrical isolators have been replaced at 23 locations. We have upgraded the air conditioning and building management systems at Neasden Control Centre and replaced platform tactiles at Acton Town. The fire detection control panels at Greenwich power control centre have been replaced, as have the battery charger systems at Manor House and Croxley Hall substations.

Work has started to replace communications equipment across key stations, including King's Cross St Pancras and the Jubilee line extension stations.

We have installed and commissioned One-Person Operated (OPO) cameras at a further 11 platforms to provide safer access to and from the trains.

We have completed the detailed designs for the project that will replace the system-wide power control system to improve safety and reliability, enabling manufacture of hardware and software development to begin.

We have progressed works to provide signalling improvements across the Bakerloo and Central lines. We have completed a control room refresh for the Waterloo & City line, which will, although not currently in operation, improve reliability when it reopens.

# Surface Transport

## Healthy Streets

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against Business Plan 2019 (£m)
2020/21 - 2024/25	61	146	1097	54

Authority is currently £146m for the period 2020/21 to 2024/25, based on the latest paper to the Programmes and Investment Committee from July 2020. The current authority covers the delivery of the Streetspace for London programme and restart of projects following Safe Stop. The spend authority also includes the transformation of Old Street Roundabout.

Following the end of Quarter 2, a further £75m authority was granted in November to deliver Healthy Streets and active travel programmes in the second half of the year.

The estimated five-year gross expenditure shows a reduction of £54m in 2020/21 against the Business Plan. This reflects reduced forecast spend in the second half of the year to align with Government funding. Future year forecasts remain in line with the Business Plan.

The 2020/21 forecast currently reflects £95m in the second half of the year, with £75m coming from our recent Government funding agreement and £20m from the Active Travel Funding. We will continue to safely deliver active travel programmes and support the plans of the London boroughs through the Local Implementation Plan process.

## Highbury Corner

The protective security measures were installed in September 2020 and all the remaining snagging and defect work was completed in late October. This scheme has now substantially improved the safety and amenity for pedestrians and cyclists moving through this busy junction.



## **Old Street Roundabout**

Construction work restarted in June following the Safe Stop process and works are progressing well on both the highway elements and in the station concourse. We successfully completed the interim traffic switch in late October 2020, ahead of the main traffic switch, which remains on track for January 2021. The scheme will substantially improve safety for pedestrians and cyclists at this major junction.

## **Cycleway 4**

Work on the section between Tooley Street and Rotherhithe Roundabout was completed as planned on 11 September and the route is now in operation. The remainder of the route is being considered under the Streetspace for London programme.

## **Cycleway 9**

Work on the Kew Bridge junction was completed as planned on 3 September. The remainder of the route is being built under the Streetspace for London programme and works began on 16 September.

## **Safer Junctions**

Schemes are now complete at Camberwell town centre, Clapham Road/Union Road and Edgware Road/George Street. The Edgware Road corridor and Kingsland Road/Balls Pond Road schemes have been prioritised for construction in the second half of the financial year.

## **Streetspace for London programme**

We are working with the London boroughs to rapidly deliver a series of temporary interventions in response to the coronavirus pandemic. We now have confirmation of funding from the Department for Transport for the second half of the financial year. The statutory guidance for delivering these schemes was updated in mid-November to introduce additional consultation requirements compared with the previous guidance issued at the start of the pandemic. This will impact the rate of delivery, budget and forecast compared to the first half of the year.

The programme is designed to enable more people to walk and cycle, improve the efficiency of buses, while enabling more space for social distancing. It encompasses a range of measures, and we have exceeded two milestone targets of 57km of new and improved temporary cycle facilities and 22,000sqm of additional space for pedestrians at crowded spaces on our roads. All activity is being delivered at pace, using temporary measures and traffic orders.

By mid-October, we had delivered:

- 61.6km of new and improved cycling facilities on the borough's and our roads, with a further 27km in progress

- 22,000sqm of extra space at 35 sites on our roads, with all sites now under review for any necessary amendments
- 79km of 24/7 bus lanes on our roads and 7km in construction
- six new cycle hire docking stations
- 20 sites with Green Man Authority and traffic signal timings reviewed at more than 2,200 sites
- 619 borough schemes, including 322 school streets, 181 projects adding space for social distancing at crowded sites, and 88 Low Traffic Neighbourhoods

We have also installed bus gates at Bishopsgate/Gracechurch Street to limit through traffic to bus and cycles only between Monday and Friday, 7am to 7pm, with access maintained to and from side streets. Early monitoring suggests that the project is delivering a two-minute saving on bus journey times.

## Air quality

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against Business Plan 2019 (£m)
2020/21 - 2024/25	68	250	614	-196

Our current level of authority is lower than our five-year forecast because we only have authority until 2021/22 for our major programmes.

We forecast an increase in expenditure of £196m from the 2019 Business Plan, mainly due to broadened scope for bus electrification. We plan to deliver a zero-emission bus fleet by enabling appropriate power supply at bus garages for overnight charging, costing £130m for grid to gate and £48m for enhancing bus charging options.

As a response to the coronavirus pandemic, we swiftly made temporary changes to the Congestion Charge, including extended operational hours, which enabled us to reduce costs by working innovatively. The future re-let of our contract for Road User Charging is also included in this programme forecast.

### ULEZ expansion

We are developing a new cloud platform to deal with the increased data volumes generated from the larger zone, which is well under way, as is work to ensure the existing systems will operate correctly in the new cloud environment.

The installation of enforcement cameras has progressed, with more than 700 site surveys completed, and 150 cameras installed. The new Siemens camera data processing system is nearly complete. All boundary signage initial site surveys have been completed.

A new phase of scheme marketing activities began on 5 October, with advertising in a variety of mediums. The ULEZ expansion is still due to launch in October 2021.

### **Low Emission Zone and Direct Vision Standard**

On 28 September, we confirmed that the stricter emissions standards for heavy goods vehicles through the Low Emission Zone (LEZ) and enforcement of the Direct Vision Standard (DVS) would start in March 2021, a delay of more than four months from the original launch, owing to the pandemic. The introduction of the new LEZ standards will be accompanied by a grace period for any vehicle owner that has booked but is awaiting the fitting of emissions abatement equipment. The testing of the required systems and web changes have progressed on schedule.

Delivering the LEZ, DVS and ULEZ expansion to the current launch dates remains feasible through ongoing remote working methods for all but the camera and signage site-based works, which continue with appropriate social distancing and safety measures in place.

### **Vehicle scrappage and support schemes**

The scrappage schemes were rolled out to support the introduction of the ULEZ and the tightened LEZ emission standards. The schemes have been very successful, partly due to a policy decision in January 2020 to increase grant payment up to £7,000 for scrapping a light vehicle that doesn't meet the ULEZ standards, plus a £2,500 contribution towards running costs (including insurance) of a replacement fully electric vehicle. We have also been running a ULEZ Car and Motorcycle Scrappage Scheme (UCMSS) since October 2019 for those on low incomes or with disabilities. This has removed more than 2,700 vehicles so far, with owners receiving £1,000 for motorbikes and £2,000 for cars. Owing to an unprecedented demand and a limited budget, we agreed with the Mayor to suspend the scheme to van owners on 28 August 2020. The scheme remains open for charities to scrap minibuses, given their vital work during the coronavirus pandemic. The van scrappage scheme ran for 18 months and committed enough support to take 5,000 polluting vehicles off London's roads.

We also created a heavy vehicle grant scheme, which was launched on 28 September 2020. Owing to high demand, the scheme was suspended after two weeks of operation, with limited funds rapidly allocated.

### **Rapid charging**

We have now installed 270 rapid charge points and, despite some delays related to the pandemic, are still aiming to meet our original target of 300 points by December 2020. Site-based works are continuing with appropriate social distancing and safety measures in place. Work continues on new hub sites at Baynard House in the City of London and Glass

Yard in Greenwich. Charge point installation work at the Baynard House hub is now complete with final commissioning to be done once the City of London enabling works in the building are complete.

### Greener fleet

Currently, more than 8,890 buses meet Euro VI compliance or better, which is around 97 per cent of the core bus fleet. There were production and supply chain issues globally owing to the pandemic, which has resulted in the late delivery of some new buses and retrofits. However, we are working with bus operators and retrofit suppliers to accelerate delivery where possible, with the overall aim for the core fleet, excluding the additional temporary school buses, to fully meet the Euro VI standard by the end of 2020. This means the core bus fleet will be fully compliant with the new LEZ standards, which will now be introduced in March 2021. Our Dial-a-Ride operation has taken delivery of 94 of its 166 new Euro VI vehicles to help it comply with the forthcoming expansion of the ULEZ.

### Mayor’s air quality programme

On 3 October, the Greater London Authority (GLA) published a report on the air quality improvements delivered since 2016. We have been instrumental in delivering the achievements the report highlights. From 2016 to 2019, the number of Londoners living in areas exceeding the legal limit for nitrogen dioxide fell from more than two million to 119,000, and the number of state primary and secondary schools in areas exceeding the legal limit for nitrogen dioxide fell from 455 to 14.

### Asset investment

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against Business Plan 2019 (£m)
2020/21 - 2024/25	41	303	1009	-245

The programme has a project and programme approval until 2021/22, so is only part funded in this five-year window.

Following the development of our 25-year capital plan for surface assets, we have created a robust plan of renewals, which has increased our expenditure by £245m over five years. The change in gross expenditure reflects the revised view of the necessary renewals required to maintain assets to ensure safety and reliability across our network. This is

crucial, as the impact of coronavirus has effectively extended the two-year pause on proactive renewals by a further four months.

We must invest in our assets to avoid degradation and loss of service. The full closure of Hammersmith Bridge is a reminder of the impact of historic under-investment. In the second half of the year, we have set aside £4m to contribute to the repairs to the bridge. As agreed with the Hammersmith Bridge Taskforce, the first priorities are to remove the pedestal casings and blast clean the pedestals to reveal the extent of the cracking, as well as to complete the detailed design for the emergency stabilisation works. We have now instructed our contractor to proceed with these works, which are due to start soon. We are supporting the Hammersmith Bridge Taskforce in identifying how the remaining stages of work should be funded.

The increased investment is across all asset classes, including £135m for our Major Asset Renewal Programme, which is delivering schemes such as the renewal of Rotherhithe Tunnel and the A40 Westway, £50m for other crucial highways infrastructure, £20m for bus assets, including the renewal of our historic Kingston Road bus station. Following the findings of the London Bridge inquest, we are installing protective measures on several bridges across London at a cost of £35m, to reduce the likelihood and impact of vehicle attacks on pedestrians.

The Asset Capital Programme of minor works restarted over the summer in a controlled way to accommodate new safe working practices. This meant carriageway resurfacing works were restarted, with 37,000sqm completed by mid-October. Similarly, smaller bridge refurbishment works were restarted at Colney Hatch and Danson Road, as well as refurbishment works at various bus stations. The programme to replace bus stops and shelters also restarted, with 135 units being replaced in the first half of the year and traffic signal upgraded at six locations across the city on our roads and at eight locations on borough roads. Finally, 80 lighting columns were replaced along the A2 during the summer.

We completed the upgrade of fire systems at Victoria Coach Station in October, in accordance with the London Fire Brigade's enforcement notice. At Vauxhall Bridge, the project to replace the waterproofing and expansion joints to the deck has progressed to plan, with half of the bridge completed by mid-October. The works are on track to complete by early December.

Design work is also progressing to plan on the bridge expansion joint scheme on the A40 Westway and the protective security measures programme to install permanent measures along the central London river bridges. The major project to upgrade fire systems to the Rotherhithe Tunnel is progressing through the outline design phase as scheduled and feasibility works have begun on the Blackwall Tunnel systems and Brent Cross structures.

## Public transport

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against Business Plan 2019 (£m)
2020/21 - 2024/25	30	121	754	-221

This programme is forecasting an increase in gross expenditure of £221m from the 2019 Business Plan.

The programme is strongly supporting the delivery of new infrastructure and housing in London as part of the Housing Infrastructure Fund and Access For All schemes over the next five years. These schemes include DLR station upgrades (£50m), which will regenerate a former industrial area around Royal Docks, and a scope of works along the London Overground in east London to unlock around 14,000 new homes by increasing the frequency of trains (£85m).

We continue to develop plans for rail devolution, which would bring Great Northern Inners services from Moorgate to Hertford North/Welwyn Garden City/Stevenage into us from September 2022 at low cost. This would increase our expenditure by £32m against the 2019 Business Plan.

In July 2020, we paused the Rotherhithe to Canary Wharf ferry crossing, which has reduced expenditure in this programme by £69m. The crossing would be an entirely new service for us, requiring significant capital investment as well as ongoing operational funding. Given the lack of funding sources available, there is currently no viable funding package for its full delivery and operation, so it was decided to pause the programme. The crossing would enable better cross-river journeys in the area and would relieve pressure on existing transport connections and support sustainable growth, so we will consider this again in the future.

Following the development of our 25-year capital plan across our transport modes, we have developed a robust plan of renewals that will ensure network performance and reliability. This has increased cost across all modes by £125m against the 2019 Business Plan.

## **London Overground**

On the East London Line Enhancement Programme, a Housing Infrastructure Grant Determination Agreement has now been signed between us, the Ministry of Housing, Communities and Local Government and the GLA to deliver infrastructure improvements that support housing growth along part of the London Overground. Work has started on early designs for the station, but further operational assessments, designs and costs will need to be considered before a decision is made on whether we can proceed.

Works have largely finished on site at White Hart Lane, West Hampstead and Crossrail stations, providing increased station capacity and step-free access. Minor snagging works are progressing while we work through the handover and closeout process.

We have successfully replaced the integrated station management system to programme and on budget. The new system provides significantly enhanced customer information, while improving further passenger safety and security at stations.

London Overground is also in the final stages of migrating to the new asset management information system, Maximo, which is aligned with our corporate asset management approach.

A variety of route way infrastructure renewals have resumed after the Safe Stop and are on programme for completion by the end of the financial year to further improve resilience on this critical section of London Overground infrastructure.

New Class 710 trains are now operating between Gospel Oak and Barking, Watford Junction and Euston line, and on West Anglia routes out of London Liverpool Street. These new British-built electric trains have replaced the oldest rolling stock operating on the London Overground, meaning customers now receive a more reliable service as well as interconnected walk-through carriages, free Wi-Fi, real-time information screens, USB charging points, air-conditioning and more wheelchair spaces. The existing Class 315 trains, which were around 40 years old have now been retired from service.

A further 11 Class 710 trains will be delivered by early 2021. These will be used on the Barking Riverside Extension, as operational spares and provide additional capacity to meet forecasted growth on the London Overground network.

## **DLR**

The DLR team and our contractors were brought back from furlough in Quarter 2 as projects restarted through a phased approach. Adequate provisions were considered to mitigate against the impact of coronavirus before works could restart.

Key designs were approved and works restarted on the signalling upgrades of the Vehicle Control Centre borders and the installation of signalling hardware.

There was a successful tender for the replacement of the east route ring main and we are now able to appointment a Principal Contractor. Associated power projects have been sent out to tender.

We completed works at Custom House and the new mezzanine was opened, improving access to the ExCeL and providing a new interchange with Crossrail. This station is the main access to NHS Nightingale Hospital London, and as such critical to the movement of key workers.

In Quarter 2, we also completed the swingnose crossing at Bow Church, rerailing at All Saints and Limehouse Curves, replacement of structural expansion joints at Limehouse and Devons Road, purpose built track access on the north section of the system, conversion of the lighting at Poplar Station to LED, upgrading the high-voltage power systems at Poplar and the continuing modernisation of the conductor rail at both depots.

The opening weeks of Quarter 2 also saw several tenders being sent out for works, which had previously been paused. We continue to make good progress and expect all tenders for this financial year to be either contractually appointed or out to market.

The GLA-funded Royal Docks Stations Programme continued, with concept designs submitted for Royal Victoria and Beckton Park. The programme is on track to complete concept design and enter the construction phase for the first two stations in 2021.

## **London Trams**

As part of our commitment to make the tram network safer following the tragedy at Sandilands in 2016, we have now addressed the recommendations from the Rail Accident Investigation Branch. The physical prevention of over-speeding through an automatic braking system has now been introduced across the full fleet.

Our renewals programme continues across seven asset groups, including fleet, power, civils, systems and permanent way infrastructure. We completed work on the Reeves Corner Phase 1 and Love Lane track renewals during planned closures in August and September. We also completed re-railing works at Wandle Park and Beckenham Junction, contract award and design started on the Stadler Equipment Overhaul project for the addition of blind-spot CCTV cameras, and good progress was made on the CR4000 Cab Cooling project, with 15 out of 23 systems now commissioned.

## **Santander Cycles**

A programme of works has started to modernise, electrify and expand the cycle hire system. This involves upgrading the back-office payment system, introducing e-bikes to the fleet and expanding the scheme to areas of potential growth.

We have completed a design study for the back-office payment system, which was carried out by Cubic and we have completed a feasibility study for the e-bike choice, which was carried out by Serco.



The next steps are to progress through robust internal assurance processes before starting the implementation in January 2021.

### London River Services

Following the decision to bring the maintenance and operation of the Woolwich Ferry in house, notice has now been served to terminate the existing contract on 31 December 2020. We continue to engage with existing staff and the unions as we work towards improving the organisational structure and service operation, as well as planning essential maintenance and training over the holiday period.

The new operation will focus on resolving engineering issues outside of operational hours, closer relationships with suppliers and more control over costs and staff rostering. We are also improving local wayfinding, branding, customer information and staff customer service training.

### Surface technology

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against Business Plan 2019 (£m)
2020/21 - 2024/25	8	20	304	-150

Surface technology spend authority has been updated to authorise spend to 2020/21 only. The Programme and Project Authority is therefore below the five-year gross expenditure as the programme is only part authorised.

The three areas of focus are compliance and enforcement, safety and public transport, and sponsored services.

The new scope of the programme since the 2019 Business Plan is around £80m, including improving bus stations and operational colleagues' safety and security through technology, and additional deployable enforcement cameras to increase compliance on our network. We have identified several technology refreshes to operationally critical systems.

Several schemes costing around £20m were delayed from 2019/20 to 2020/21, which include our Surface Intelligent Transport System programme and the modernisation of our cycle hire scheme technology.

Following the development of our 25-year capital plan for Surface Technology, we have developed a robust plan of renewals that will ensure our systems are supported through a renewal cycle. It will fully identify the end-to-end system landscape of our complex systems and we are confident we have an appropriate level of funding to ensure systems continuity. This has increased our gross expenditure by £50m against our 2019 Business Plan.

### **Surface Intelligent Transport Systems**

We are leading the way in delivering innovative new road traffic management systems to make journeys by walking, cycling and on buses, as well as essential emergency services and freight trips, as efficient as possible. Delivery of elements of the Surface Intelligent Transport System (SITS) programme where we have contractual commitments has continued despite the pandemic, with development teams able to work remotely. In August, we completed formal witness testing of the current phase of RTO system development. In September, we deployed the first release of our Common Operational View Incident Management System into live operation in the Network Management Control Centre. Work on the predictive element of SITS remains paused.

### **Operational safety and compliance**

We are consolidating our approach so we can support a more versatile compliance, policing and on-street services operation. This will help people feel safe, supporting reliable journeys and generating efficiency savings.

This area includes procuring systems and services to support our licensing of taxi and private hire vehicles, drivers and operators. We have continued the procurement process to secure a supplier for this operationally critical system, with minimal impact from the pandemic. In early November, we entered the final stage of the tender process, with the project on track to award the contract in spring 2021.

This area also includes proposals to introduce body worn video cameras for more front-line colleagues. Following successful site surveys, we rolled out cameras to six further sites in late August: Seven Sisters, Tottenham Hale and Kings Cross St Pancras Underground stations, Victoria and Hammersmith bus stations, and Compliance, Policing and On-Street Services officers. These cameras have already been used to capture footage of incidents of aggressive behaviour towards front-line colleagues, which help our people feel safer.

Work is also continuing to procure deployable enforcement cameras. We have used the insights gained in an early market engagement exercise in the summer to inform our procurement strategy, detailed requirements and contract schedules. This exercise has provided valuable insights into the market preparedness to deliver following coronavirus and broader capabilities of cameras.

## **Public transport technology**

We are maintaining and developing technology to operate our public transport networks and improve customer experience. This includes upgrading the technology systems that underpin the bus network, such as the iBus system, which provides real-time information on bus locations. It also includes replacing the booking and scheduling system for Dial-a-Ride, which will enable us to book and deliver trips more efficiently. In October 2020, we commenced the tender process for this system, issuing a Supplier Selection Questionnaire.

## Other

### Technology and data

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2021/22	151	275	283	(8)	132

### Payments

Passenger Validators are located at stations and tram stops where there are no gates so customers can touch in and out as required. Many are open to the elements and encased in metal to make them weatherproof but extreme hot has caused some to overheat and shut down. This summer, we painted 40 passenger validators with heat-resistant paint, which resulted in no hot weather shut-downs being reported this summer.

On 1 August 2019, we introduced an annual revalidation fee for new applicants to our 60+ scheme to ensure they continue to be eligible. This year, on the first annual renewal, we successfully implemented the process through which cardholders can revalidate their entitlement. Cardholders are contacted automatically on the anniversary of their card being issued and are given six weeks to revalidate their eligibility, after which their card will be cancelled if they do not.

On 4 September, we updated ITSO smartcard system to ensure smartcards issued by train operating companies outside London could continue to be validated and accepted. Funded by the Department for Transport, this critical update was sent to 20,000 devices across the rail and bus network in London. It was delivered ahead of the expected schedule with no disruption to the services provided.

### Content and Collaboration and Evergreen programme

The Evergreen Programme is aimed at renewing more than 80 per cent of our desktop PCs and moving all users to Windows 10/Office 365. By mid-October 2020, 32,644 of 32,700 users had been moved and 44,247 of 44,323 e-mail boxes were migrated to Exchange Online, providing a richer user experience with access from any device at any location. Livelink is a key enterprise document management tool, largely used for engineering documentation. The current version is being upgraded to run under Windows 10 and is set to be completed in November 2020.

Microsoft SharePoint is one of our main departmental file sharing applications, which needed to be migrated to SharePoint Online. To date, all SharePoint 2007 sites, 235 SharePoint 2010 and 832 SharePoint 2013 sites have been migrated to SharePoint Online. Only the six most complicated 2010 sites remain that require customised development, which is currently under way.

### **Data centre rationalisation and cloud migration**

We continue to refresh hosting activities to ensure the underlying infrastructure is available and meeting performance required, which hosts business and technical services.

### **Networks**

We continue to deliver infrastructure to support the Home Office's national Emergency Service Network communications system. In our tunnels, we are focusing on testing the leaky feeder cable with 200km, around half, tested to date. We have completed about 45 per cent of the required station cabling works, up from 40 per cent, at 65 stations, previously 59. We have managed coronavirus-related inefficiencies since remobilisation in July but the risk of delays due to increased infection rates remains.

### **Technical refresh and technical service operation**

The new service desk solution, which captures, manages and reports on our incidents and requests has been fully embedded into day-to-day activity and is delivering the expected improvements. More generally, multiple programs have been implemented to deliver and support changing and remote working technical needs for front-line and office-based colleagues.

### **Enterprise resource planning**

The SAP Hosting project continues to deliver on schedule and within budget with the full migration of our SAP service used to run our finance, HR and procurement processes onto the Amazon Public Cloud to be completed in January 2021. Initial tests are very positive. This project removes significant infrastructure redundancy risk to our estate.

### **Data analytics**

We have continued to work on our journeys and demand offering, publishing reports on our public-facing website. This includes using data from our ticketing system to provide an overall picture of how customers are travelling across our Tube and bus networks. The reports show indications of travel on our network rather than an absolute measure of passenger numbers.

## Growth Fund

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2029/30	0	261	261	(6)	261

This programme is dedicated to the third pillar of the Mayor’s Transport Strategy on using transport to unlock new jobs and homes. The programme allocates funding to support multi-modal and cross-portfolio transport schemes where a specific transport constraint is holding back economic and residential development and supports regeneration opportunities in some of London’s key growth areas. The Growth Fund currently contributes to around 12 transport schemes that will support more than 55,000 new homes and around 41,000 new jobs. Our investment in these projects has been supported by financial contributions from developers, as well as other funding partners, including the GLA.

Our revised Budget classifies all Growth Fund schemes as fully meeting the Mayoral objectives but ‘contingent on additional funding’. This means that, although all Growth Fund projects already have a strong commitment and a significant degree of third-party funding has been secured for their delivery, a further commitment by Government or other sources is needed to complete the funding package for them.

We will continue to review the programme, considering the recent funding agreement with Government and, where necessary, identifying other funding streams to progress the projects. We are working closely with the GLA, Central Government and other partners to discuss further third-party funding for Growth Fund schemes.

## Elizabeth line

### Liverpool Street

Work is needed to accommodate the full-length Elizabeth line trains at Liverpool Street station and a project is under way to lengthen platforms 16 and 17. Stage one of the works are due to be completed in a 10-day blockade over Christmas. All required designs have been submitted to Network Rail and are on track for approval in line with the programme.

## On-network stations improvement programme

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2021/22	92	94	95	0	3

The on-network station improvement programme has continued despite the impact of coronavirus. On the step-free projects work has continued remotely. At Maryland, Manor Park and Seven Kings stations, handover paperwork is 90 per cent complete and ready for submission before final handover to Rail for London Infrastructure. This had hoped to be completed in October but has slipped due to staff being furloughed. The final work is now due on 4 December 2020.

The step-free works at Hanwell, Iver, Langley and Taplow stations are nearly complete, with site meetings for handover held and final paperwork completed and signed by relevant parties. This has been submitted to Network Rail, the future asset owner, for review and approval, which is expected in December 2020.

MTR's station refurbishment programme has continued with works at Hanwell and Langley due to be completed by the end of 2020. MTR's work at Langley will deliver two new gate lines, an accessible ticket window, refurbished toilets and new customer information screens. At Hanwell, similar benefits will also be delivered but with colours and materials carefully selected to match the Grade II-listed station building. In 2021, MTR will start work on a new station building at Burnham and refurbishment of the ticket office and station building at Taplow – the latter complementing our step-free works that were completed in December 2019.

## Rolling stock

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2024/25	997	1,149	1,006	0	29

We are introducing the new Elizabeth line train fleet in phases and have built a depot to provide train maintenance facilities.

## Central operating section

Post completion of a construction blockade, which involves suspending dynamic testing to complete infrastructure works, and testing of a new lineside signalling software version with Class 345 trains began in the central section in September. This will continue through to December 2020.

## Reading and Heathrow

In Quarter 2, nine-car Class 345 services to Heathrow, using the European ETCS signalling system, stepped up to two trains per hour. Seven-car trains continued to operate on services to Reading, pending delivery of new software configuration to improve nine-car fleet reliability in Quarter 3.

## Stratford to Shenfield

Seven-car Class 345 trains continue to operate on this service and will continue to do so until Stage 4a is introduced in H1 2021/22 when they will be replaced with nine-car Class 345 trains.

From 14 September 2020, TfL Rail services between Paddington and Heathrow have been operated entirely by the Class 345 Elizabeth line trains. The units inherited from the previous Heathrow Connect service have been withdrawn with customers benefiting from longer and more spacious trains, with full air conditioning and modern customer information.

## Crossrail

Forecast completion year	Spend to date (£m)	Programme and Project Authority (£m)	EFC (£m)	EFC movement post plan (£m)	Cost to Go (£m)
2022/23	*	17.6	*	*	*

\*This information is withheld for reasons of commercial sensitivity.

On 1 October 2020, the responsibility for the Crossrail project moved to sit directly with TfL. This is to ensure decision making is seamless and fully aligned during the critical final phases of the programme, as the operational testing is done, and the remaining parts of the railway are completed and transferred to our operational teams.



Crossrail continues to work on a plan to drive the project to completion and the initial proposal indicates the central section of the Elizabeth line opening during the first half of 2022. The proposal is not a confirmed opening window and remains subject to review and validation.

Health and safety remain our top priority and overall performance is kept under constant scrutiny, especially now that a consistent number of operatives have remobilised to site after the coronavirus Safe Stop.

The routeway construction blockade has been successfully completed, with a high level of productivity achieved and a major programme of works delivered across 42km of the central section routeway by the supply chain. The blockade achieved 96 per cent productivity against plan and the tunnels are now in a physical position to support trial running.

## 2020/21 Strategic Milestone performance

Our 2020/21 strategic milestones for the projects or programmes covered in this report are listed below. The RAG status indicates delivery forecast against the current plan date in line with this key:

■ On time or early     
 ■ 1-89 days late     
 ■ 90+ days late

Commentary is provided on milestones that are forecast to be delivered more than 90 days late. These milestones also indicate the history of forecast date movements by showing the RAG status and variance (the number of days difference) between the plan date and the forecast date at each quarter end. Programme impact and mitigations are also detailed.

Milestone description	Plan date	Actual/ forecast date	Status
<b>Major Projects</b>			
<b>Four Lines Modernisation <span style="color: green;">■</span></b>			
Completion of foundation for train maintenance access platform at Neasden Depot	26 August 2020	16 July 2020	Complete <span style="color: green;">■</span>
<b>Piccadilly Line Upgrade programme <span style="color: green;">■</span></b>			
One-person operation CCTV (design and build) approved by TfL for contract award	14 July 2020	14 July 2020	Complete <span style="color: green;">■</span>
<b>Network extensions</b>			
<b>Northern Line Extension <span style="color: green;">■</span></b>			
Completion of 22kv installation, necessary for providing full traction power for the new extension to Battersea	1 September 2020	1 September 2020	Complete <span style="color: green;">■</span>
<b>Silvertown Tunnel <span style="color: green;">■</span></b>			
Completion of pump test boreholes and all geotechnical surveys for the north site of the Silvertown Tunnel	15 September 2020	24 August 2020	Complete <span style="color: green;">■</span>

Milestone description	Plan date	Actual/ forecast date	Status
<b>Barking Riverside Extension</b> ■			
Completion of Thames Water works to divert sludge main at Pier 14	23 July 2020	12 August 20	Complete ■

Cadent Gas site attendance delays. Traffic management delay on the first day of the works and slower progress due to safety restriction measures.

<b>Major stations</b> ■			
Bank station - Completion of the tunnel primary lining for the new DLR triple escalator	1 September 2020	5 September 2020	Complete ■

Concept Design was prepared using generic loading information. It was subsequently established that specific bollard loading information would be required to confirm the structural element of the concept design. As the bollards are patented products, a commercial arrangement with the manufacturer is required to obtain the necessary information. This has taken a number of months to progress, but the arrangement is now in place. The loading information will now be assessed by our engineers to confirm the preferred design.

<b>London Underground</b>			
<b>Stations renewals and enhancements</b> ■			
Track Renewal – 52-hour possession on the Piccadilly line to re-rail track between Heathrow Terminals 1,2 & 3 and Hatton Cross on the eastbound tunnel	6 July 2020	6 July 2020	Complete ■
Stations - Restart of construction activities at twelve sites (Amersham, Harrow-on-the-Hill, Osterley, Cockfosters, Mill Hill East, Debden, Ickenham, Wimbledon Park, Tottenham Hale, Acton Train Maintenance Shed, Bromley-by-Bow and Finsbury Park)	31 July 2020	29 July 2020	Complete ■

<b>Air quality</b> ■			
Congestion Charge changes go live	22 June 2020	18 June 2020	Complete ■
<b>Assets</b> ■			
Victoria Coach Station infrastructure: Complete Fire System works on site	17 October 2020	22 September 2020	Complete ■
<b>Public transport</b> ■			
Reeves Corner: Embedded rail track renewal. Section 1 complete	14 September 2020	31 August 2020	Complete ■

## Programmes and Investment Committee



Date: 11 December 2020

Item: Independent Investment Programme Advisory Group  
Quarterly Report

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### This paper will be considered in public

#### 1 Summary

- 1.1. This paper presents the Independent Investment Programme Advisory Group (IIPAG) Quarterly Report for November 2020. It describes the work undertaken since the last report presented to the Committee on 16 October 2020.
- 1.2. A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### 2 Recommendations

- 2.1 **The Committee is asked to note the Independent Investment Programme Advisory Group's quarterly report, the management response set out below and the exempt supplementary information on Part 2 of the agenda.**

#### 3 IIPAG Quarterly Report

- 3.1 Under its Terms of Reference, IIPAG is required to produce quarterly reports of its advice on strategic and systemic issues, logs of progress on actions and recommendations and the effectiveness of the first and second lines of project and programme assurance. IIPAG's Quarterly Report for November 2020 is included as Appendix 1 to this paper.

#### 4 Management Response to IIPAG Quarterly Report

- 4.1 In their report, IIPAG note the deep-dive reviews undertaken by the Major Projects Directorate and expressed a view that similar deep dive reviews would be valuable in TfL's other Directorates. We are currently in the process of planning further deep dive reviews into projects and programmes across TfL that are either considered to be high risk or will have significant financial investment in them in the next 18 months or so.

**List of appendices to this report:**

Appendix 1: Independent Investment Programme Advisory Group - Quarterly Report  
November 2020

A paper containing exempt supplemental information is included on Part 2 of the agenda

**List of Background Papers:**

None

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## Independent Investment Programme Advisory Group – Quarterly Report November 2020

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**This paper will be considered in public**

### 1. Introduction

- 1.1. This report to the Committee covers the period from late September to November 2020. It describes IIPAG's activities in this period. There are no new strategic recommendations for this period.

### 2. IIPAG activity

- 2.1. At the time of writing we are engaged in a number of sub-programme and project reviews for the December Committee meeting or TfL executive governance, including:

#### 2.2. Programmes

- Healthy Streets
- Air Quality and Environment
- Four Lines Modernisation (4LM)
- Major Stations
- Barking Riverside Extension

#### 2.3. Targeted Reviews

- Emergency Services Network
- Central line Programme Lift
- Old Street Roundabout
- Elephant and Castle
- LU Technology
- LU Fleet Heavy Overhaul Programme

- 2.4. At this stage of the reviews we are unable to comment on any common strategic issues arising, but will give this consideration once the reviews are all complete.

- 2.5. The accompanying paper from TfL Project Assurance describes management progress in implementing IIPAG's recommendations.

### 3. Cross-cutting work

- 3.1. In late September we were asked to assure a deep-dive review undertaken by Major Projects Directorate (MPD) of the expected final cost and completion date for all their major projects. This included consideration of the impacts of COVID-19, and reviews of key assumptions, risks and opportunities, including commercial issues. It presented a range of possible outcomes. We were impressed with the work that MPD had undertaken, and we considered the deep dive to be a very valuable exercise. We have been involved in discussions about how such reviews will be taken forward in MPD. We believe a similar deep-dive approach would be valuable in TfL's other Directorates.

3.2. We are currently finalising our review of Procurement and Supply Chain (previously referred to as 'Commercial Transformation'). We are also currently undertaking the fieldwork for our review of the TfL Programme Management Office.

**List of appendices to this report:**

None

**List of background papers:**

None

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## Programmes and Investment Committee

Date: 11 December 2020

Item: TfL Project Assurance Update



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### This paper will be considered in public

## 1 Summary

- 1.1 This paper provides an update on the project assurance work undertaken during period 7 and period 8 of 2020/21. A total of 17 reviews were undertaken, consisting of seven programme and 10 project assurance reviews.
- 1.2 These reviews gave rise to a total of 73 recommendations being made, of which five were considered to be critical issues. Critical issues are those which the TfL Project Assurance team or the Independent Investment Programme Advisory Group (IIPAG) believe should be addressed before projects proceed to the next stage.
- 1.3 Key findings from the reviews undertaken are:
  - (a) not all projects have identified full funding for the proposed works, so are currently not affordable;
  - (b) there is a need to consistently put in place robust risk management; and
  - (c) there are challenges around ensuring the required commercial capability and resources are available to support programmes.
- 1.4 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

## 2 Recommendation

- 2.1 **The Committee is asked to note the paper and the exempt supplementary information on Part 2 of the agenda.**

## 3 Background

- 3.1 The TfL Project Assurance update provides the Committee with a summary of the assurance activity completed by TfL's second line assurance, provided by TfL's Project Assurance team, and third line assurance, provided by IIPAG.

## 4 Summary of Project Assurance Activity

- 4.1 Seven programme reviews were undertaken during period 7 and period 8 of 2020/21, with IIPAG involved in six of these reviews. In the same time frame, 10 project assurance reviews were undertaken, with IIPAG involved in five of these.

- 4.2 From the reviews undertaken, a total of 62 recommendations were made by TfL Project Assurance. These consisted of 57 general recommendations and five critical issues. All general recommendations and critical issues have been agreed with the respective project teams.
- 4.3 Appendix 1 shows the five critical issues and the actions being taken to address them.
- 4.4 From the assurance reviews undertaken, IIPAG made 11 general recommendations, with all of these agreed with the respective project teams. IIPAG made no critical recommendations.
- 4.5 The following graphs show the number of open recommendations, the number which are overdue, and the number of recommendations closed in the time period shown. Of the overdue recommendations only 1 is a critical issue, this having been raised by TfL Project Assurance with there being no overdue IIPAG critical issues.

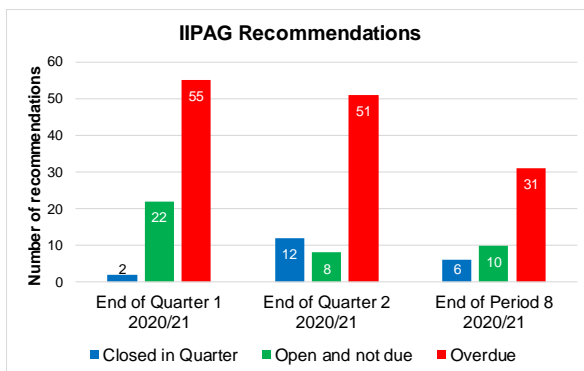


Figure 1: IIPAG Recommendations

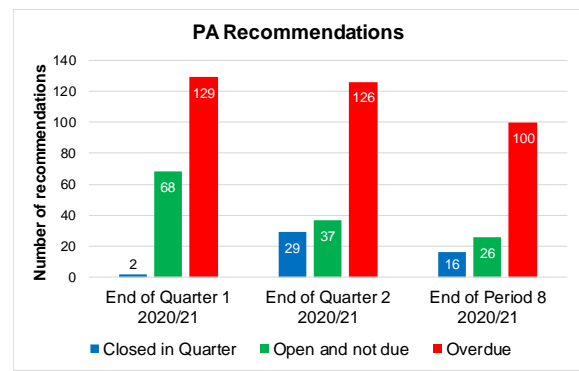


Figure 2: Project Assurance Recommendations

- 4.6 Recommendations relating to projects that are currently paused, due to the impacts of the coronavirus pandemic on the investment programme, have not been included in the above data. Should these projects resume then revised recommendation action dates will be agreed and included in data reported to subsequent Committee meetings.

**List of appendices to this paper:**

Appendix 1: Overview of Critical Issues

A paper containing exempt supplemental information is included on Part 2 of the agenda

**List of background papers:**

None

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## Appendix 1: Overview of Critical Recommendations

Shown below are the critical issues which have been raised and agreed with the respective project teams.

Project: LU Fleet Central Line Programme Lift		
Raised by	Critical Issue	Management Response
Project Assurance	A balancing risk figure should not be used to hold the Estimated Final Cost (EFC). The EFC should be unconstrained to reflect scope, delivery schedule and risk allocation to suit the current lifecycle stage.	The project is in the early stage of the lifecycle and the project team is working to mature the EFC. This includes a series of risk and opportunities workshops and continual assessment and exploration of synergies with the Central Line Improvement Programme. The next authority request for Central Line Programme Lift is forecast for Spring 2021 which will predominantly (but not fully) be labour focused. At this point the EFC will be better known and the balancing figure will be removed.
Project: Crossrail Complementary Measures		
Raised by	Critical Issue	Management Response
Project Assurance	Action to be taken to close the funding gap which falls in 2021/22 and consideration should be given to reduce scope to fit within existing financial authority.	The internal paper shows that the programme has slipped. Due to deliverability limitations in 2020-21 planned slippage means further funding will be requested in 2021-22 to deliver committed projects and allocations to the Boroughs. This will be submitted as a budget request for financial year 2021-22 and will be subject to review as part of the budget setting process and will go through normal governance. Additionally, scope reduction will be an option, if required.
Project: LU Signalling & Control		
Raised by	Critical Issue	Management Response
Project Assurance	Jubilee and Northern lines project must develop a business case including option analysis, and a robust cost estimate prior to drawdown of authority.	This project is in the early stages (i.e. pre-gate 1) of the project lifecycle. Accordingly, we are developing a business case in support of the future authority drawdown. It is expected that this will take place in Quarter 1 of 2021/22. The scope of the drawdown is planned to include feasibility work and replacement of a number of obsolete systems that have been identified as needing replacement in line with the asset strategy.

**Project: Barking Riverside Extension**

<b>Raised by</b>	<b>Critical Issue</b>	<b>Management Response</b>
Project Assurance	The required Financial Authority to cover the funding gap must be in place before drawdown of requested increase in Programme and Project Authority, as the scheme is currently unaffordable.	The Financial Authority forms part of the approval request to the Programmes and Investment Committee on 11 December 2020.
Project Assurance	The commercial team is critically under-resourced and must be urgently supplemented in order to protect the teams' wellbeing and to protect TfL's commercial position.	Updated commercial resource plan has been agreed to supplement existing team. Additional resource will be subject to headcount approval. In addition, a review of existing team capability in supporting complex change events is underway, in order to identify any needs to up skill within the existing team.

**Date:** 11 December 2020

**Item:** Emergency Services Network and 4G Pilot Projects

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**This paper will be considered in public**

## 1 Summary

1.1 The purpose of this paper is to:

- (a) provide an update on the progress of the Home Office funded Emergency Service Network (ESN) project and the work we plan to undertake in 2021/22;
- (b) provide an update on the 4G Pilot and related enabling works to accelerate the subsequent delivery of commercial Public Cellular Network (PCN) services by the planned commercial telecoms Concessionaire; and
- (c) request the necessary additional Programme and Project Authority to deliver further ESN works.

1.2 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

## 2 Recommendations

**2.1 The Committee is asked to note the paper and the supplemental information on Part 2 of the agenda and to approve Programme and Project Authority, as set out in the paper on Part 2 of the agenda, for a further extension of the ESN Phase 1 infrastructure installation works (subject to full grant funding from the Home Office being agreed for that additional scope) to the end of 2021/22.**

## 3 Background

### Emergency Service Network

3.1 The Government created the national Emergency Services Mobile Communications Programme (ESMCP) to replace the Airwave service (used by UK emergency services) with an alternative solution based on a commercial 4G network provided by EE. We have been working with the ESMCP since 2015 to extend the ESN service into the below ground areas of our estate through the implementation of new 4G infrastructure (that can also support commercial PCN services). At its appearance at the Public Accounts Committee on 10 September 2020, the Home Office confirmed that it is aiming to complete transition to the new ESN service by 2024 and decommission the Airwave service by 2025.

- 3.2 On 18 December 2019, we updated the Committee on the progress of the ESN project and obtained approval for an extension of the existing ESN Phase 1 infrastructure installation works through 2020/21, subject to full grant funding from the Home Office. Following the Committee's approval, we agreed a Grant Agreement adjustment with the Home Office for full funding for the works.

#### **4G Pilot and PCN Enabling Works**

- 3.3 At the same meeting, on 18 December 2019, the Committee approved a second phase of our 4G Pilot to cover the western section of the Jubilee line subject to the successful launch of the 4G Pilot on the eastern section of the line.
- 3.4 In addition, the Committee approved the installation of additional enabling infrastructure to support the acceleration of commercial PCN services on the Underground. These works are of a similar nature to those station and tunnels works being undertaken under our ESN project.

### **4 Activity since December 2019**

#### **Emergency Service Network and PCN Enabling works**

- 4.1 As of November 2020, the ESN project has installed 380km of fibre cable and 395km of leaky feeder (of which 280km is fixed into its final position and 200km tested) within the 411km of in-scope tunnels. We have completed, or are currently undertaking, enabling works in 69 stations (out of 127 stations) and undertaking design works for a further 30 stations. A second leaky feeder is being installed on the Victoria and Jubilee lines to support future commercial PCN services.
- 4.2 In response to the coronavirus pandemic, all ESN and PCN construction works were halted in March 2020, in accordance with TfL's safe stop instruction (although design work was able to continue remotely). Survey work restarted in June and construction works resumed in July, with the number of site teams returning to their pre-pandemic levels in September 2020. Following remobilisation, site working under the Public Health England safe distancing guidelines was initially less efficient than prior working practices, however we were able to eliminate these inefficiencies by November 2020 and productivity is now back to pre-pandemic levels.
- 4.3 The impact of this delay and the subsequent delivery inefficiencies has had a schedule and cost impact. We expect these works will now be delivered by July 2021 (instead of end-December 2020) and the revised date and costs have been agreed with the Home Office.
- 4.4 We have also continued to work with the Home Office and Emergency Services users to build confidence in the solution being installed on the Underground and we are facilitating user testing of the ESN service on the Jubilee line 4G Pilot infrastructure.

#### **4G Pilot of PCN Services**

- 4.5 We successfully launched the 4G Pilot of PCN services on the eastern section of the Jubilee line on schedule in March 2020. The 4G Pilot launched with all four UK mobile operators and has been received positively by both our customers and staff alike. We have maintained the service since launch though public use has been lower than planned due to the pandemic-related drop in ridership.

- 4.6 We have completed the design work for a second phase of the 4G Pilot (covering the western section of the Jubilee line) but have decided not to proceed to full implementation at this time due to wider financial constraints.

## **5 Delivery in 2021/22**

### **Emergency Service Network**

- 5.1 We have agreed, in principle, with the Home Office further funding to:
- (a) complete the works that the Committee approved in December 2019, but which were subsequently delayed as a result of the construction safe stop; and
  - (b) undertake additional enabling installation works (brought forward into the current ESN Phase 1 scope in order to de-risk delivery of ESN pending award of the proposed commercial telecoms Concession Agreement).

### **PCN Enabling Works**

- 5.2 We will deliver the PCN enabling works that have been delayed as a result of the construction safe stop, as well as the additional enabling works identified by the 4G Pilot second phase design work. This will accelerate the future extension of commercial PCN services on the Jubilee line by the planned commercial telecoms Concessionaire.

### **List of Appendices:**

A paper containing exempt supplemental information is included on Part 2 of the agenda

### **List of Background Papers:**

Independent Investment Programme Advisory Group Report

TfL Project Assurance Reports

Management response to IIPAG and TfL Project Assurance Reports

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## Programmes and Investment Committee



Date: 11 December 2020

Item: **Connect: System Upgrade Projects**

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**This paper will be considered in public**

### 1 Summary

- 1.1 The purpose of this paper is to update the Committee on the status of the Connect programme, provide an overview of the Connect strategy and seek approval for further investments to support necessary upgrades to the Connect radio and telecommunications system.
- 1.2 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the financial or business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

### 2 Recommendations

- 2.1 **The Committee is asked to note the paper and the supplementary information on Part 2 of the agenda and:**
- (a) **approve additional Programme and Project Authority of £67.9m (giving a total of authority of £238.4m) to deliver the Connect Upgrade Project;**
  - (b) **grant additional Procurement Authority of £59.8m (giving a total authority of £277.0m) to deliver the Connect Upgrade Project;**
  - (c) **note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and provision will, therefore, need to be made for those commitments in future Business Plans and Budgets.**

### 3 Background

- 3.1 The Connect system provides operationally critical radio and data connections between London Underground (LU) control centres, stations, train drivers and station staff and other links for a range of railway applications together with the provision of radio services for the police and emergency services.
- 3.1 The Connect system was developed, built and operated under the Connect Private Finance Initiative Contract (the Connect PFI). This PFI expired on 21 November 2019.

- 3.2 In July 2018, the Finance Committee approved entering into a new contract with Thales Transport and Security Limited (Thales) to secure the continued maintenance and ongoing availability and stability of the Connect system on expiry of the Connect PFI (the Connect Contract).
- 3.3 The Connect Contract is for an initial four-year term to 21 November 2023 with the option for LU to extend for a further three years to 21 November 2026.
- 3.4 The Connect Contract includes both a “Base Scope” (which we are contractually obliged to purchase) and an “Extended Scope” (for which we have the option to purchase or not):
- (a) the Base Scope includes full support and continuity of all Connect services for the initial term to 21 November 2023, the capital works required to upgrade the radio system and a number of asset refresh projects which together will ensure the useful life of all Connect system assets until at least 2023; and
  - (b) the Extended Scope covers optional capital works (Upgrade Projects) that will deliver the longer-term upgrade roadmap and ensure the Connect system is supported to at least 2026, but in completing these works the system will be on a roadmap that allows it to continue into the 2030s.
- 3.5 The Finance Committee’s approval to enter into the Connect Contract was in respect of the Base Scope only, on the basis that LU seek further approvals for exercising the option to implement any elements of the Extended Scope.
- 3.6 The Base Scope is currently progressing well and is on-track to deliver the hardware and software upgrades necessary for Connect support up to November 2023. Approximately £19m has been spent to date, primarily on upgrading the core radio hardware and supporting software.
- 3.7 If we do not complete the Extended Scope capital works by November 2023, support for the operationally critical Connect system will become increasingly limited, increasing the likelihood of a major service impacting issue occurring. To complete the Extended Scope capital works by November 2023, we need to be ready to proceed from late April 2021.

## **4 Connect Strategy**

- 4.1 The decision on whether to proceed with the Extended Scope (and accordingly have a Connect system that is fully supported to at least 2026) was intentionally deferred until this year so that we could better understand the strategic direction for the Connect services (specifically radio) and therefore whether the Connect system needed to continue beyond 2023 and, if so, what upgrades would be necessary.
- 4.2 During late 2019 and early 2020 a technology roadmap was developed to determine whether we should opt for an alternative system or invest further in the Connect system through the Extended Scope.

- 4.3 Key considerations included whether we could continue operating with Connect's current Terrestrial Trunked Radio (TETRA) technology, by either doing nothing (i.e. sweating the assets and reducing support) or by continuing to invest in upgrading the existing system. Both options required an assessment of how long TETRA would need to operate. Another consideration was the availability and readiness of alternative technologies suitable to replace TETRA.

#### **Alternative Technologies**

- 4.4 At present, the only viable alternative technology option is the Future Railway Mobile Communication System (FRMCS), a new standard which is currently under development. While this would provide improved functionality, it would require the complete replacement of the current Connect system (as opposed to an upgrade) and is therefore significantly more complex and costly.
- 4.5 Additionally, an 'industry ready' (standards agreed, hardware and software designed, manufactured and readily available, and all relevant safety and user testing completed successfully) version of FRMCS will not be available until 2025 at the very earliest.
- 4.6 In the unlikely scenario that FRMCS is available for deployment from 2025, we would then have to design our solution, procure it, install it (replace all train-borne, hand portable and control centre radio equipment), commission it (including parallel running) and undertake a phased switch over. To complete this in a safe and controlled manner will conservatively take five years. Therefore, the very earliest possible date to replace the current TETRA system with an FRMCS solution would be 2030.
- 4.7 This option would require us to operate the operationally critical Connect system with reduced support for three years and no support for at least four years. It would also require significant capital investment in system development and migration. For these reasons this option was discounted.

#### **Continuing Connect TETRA System: Do Nothing**

- 4.8 The original equipment manufacturer of the current TETRA system (Motorola) will only provide full support to November 2023 and thereafter with limited support to 2026. Therefore, to address the 'do-nothing' option for TETRA we needed to consider whether we can run TETRA with limited support beyond 2023 to 2026 and with no support to at least 2030.
- 4.9 Limited support would remove software patching, bug fixes, security patching, operating system patching and system expansion (i.e. any future network project expansions akin to the Northern Line Extension would not have TETRA). If we proceed with no support, we will also lose restoration services (i.e. the supplier returning the service to us after repair and recovery from an incident), hardware repairs and technical support. This option was discounted based on the risk it would introduce to the safe operation of Underground services.

## Continuing Connect TETRA System: Upgrade Projects

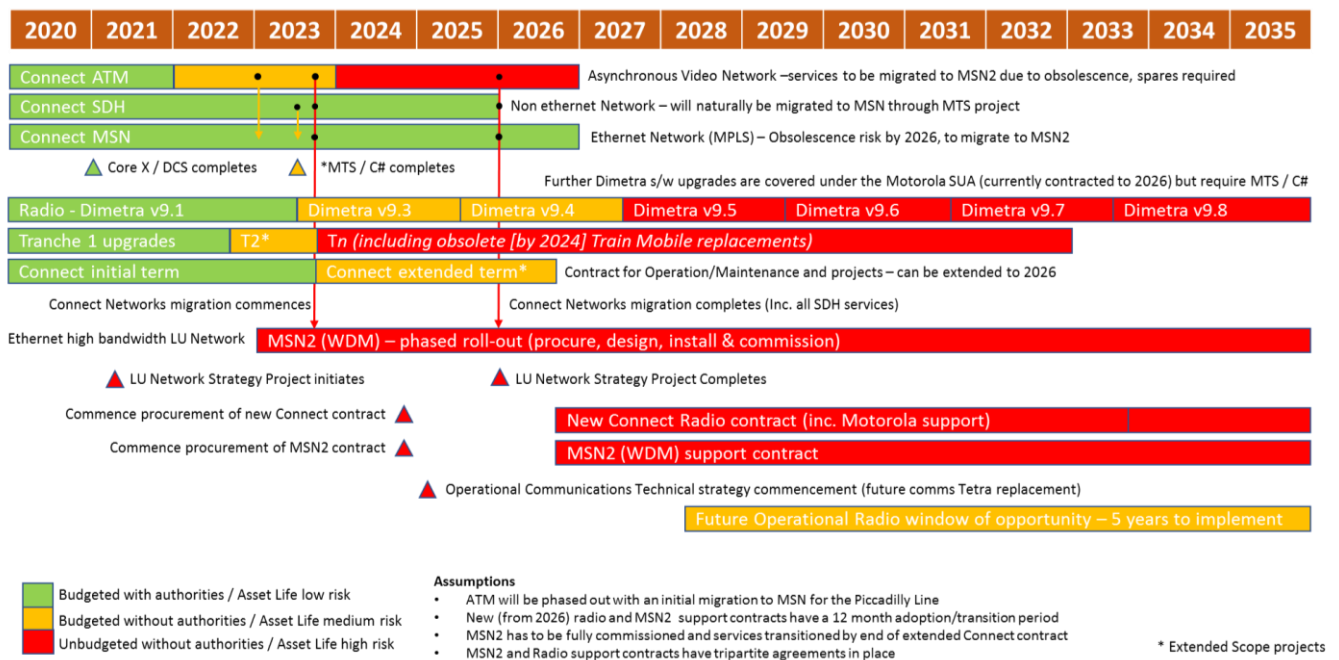
4.10 To prepare the system for up to 15 further years of operation, further investments (as outlined in section 5) are required to ensure a system that complies with the Motorola architecture and creates the opportunity for core software and hardware upgrades (included within the service user agreement with Motorola) to be undertaken. This would put us on a support roadmap that would enable the system to be operable into the 2030's, thereby maximising the benefit realised from our historical investment in the Connect system.

### Recommended Option

4.11 Having considered the options, we have concluded that the current TETRA system is required until at least 2030 and therefore requires further investment via the Extended Scope. This conclusion is supported by an independent assessment delivered by PA Consulting.

4.12 The future Connect strategy is outlined in Figure 1.

**Figure 1: Connect support strategy**



4.13 The strategy has been determined in consultation with the LU business strategy team and the Technology and Data technical strategy team to ensure that it does not conflict with other strategies and aligns with future proposals to consolidate, re-use and expand services to meet current and future operational needs.

4.14 We are now seeking £67.9m Programme and Project Authority and £59.8m Procurement Authority to allow us to commence the required Upgrade Projects set out in the Extended Scope and as outlined in section 5 below. We are not, at this stage, seeking to extend the current Connect Contract beyond the initial four-year term, as it is our intention to complete the Upgrade Projects prior to expiry of the initial term of the contract. Any extension to the Connect Contract will be

subject to a further request with a clear rationale as to why this is the optimal approach for TfL.

- 4.15 There may be the need for further updates to the other assets and infrastructure over the next 15 years, these will be identified through the asset management regime, with any further investment being sought through business planning and future approval requests.

## **5 Connect Upgrade Projects**

- 5.1 The proposed Upgrade Projects cover capital works that will deliver the longer-term upgrade roadmap and ensure Connect support to at least 2026.

- 5.2 The Connect Upgrade Projects comprise:

- (a) the replacement of our base station hardware (MTS Upgrade) across 293 sites over a period of two and a half years; and
- (b) a further upgrade to the Connect radio system's software (to Dimetra v9.3); and
- (c) asset refresh projects to ensure all assets have a useful life to at least 2026.

A full breakdown of these projects is provided in Appendix 1 (Technical Summary of Upgrade Projects).

- 5.3 The Connect Contract contains a general description of each of the Upgrade Projects, pricing and a mechanism for developing and agreeing the detail of each Upgrade Project and prices based on pre-agreed rates and a detailed financial model and record of assumptions.
- 5.4 If the Upgrade Projects are not initiated Thales may claim service performance relief and claim incremental costs for providing the Connect services.

## **6 Assurance**

- 6.1 TfL Project Assurance has conducted an Integrated Assurance Review on the Extended Scope in October 2020.
- 6.2 Following this review, a number of general recommendations were made and management responses agreed. No critical issues were identified.

## **7 Next Steps**

- 7.1 Once approved we will initiate the necessary contract variations to initiate the Upgrade Projects described in this paper.

### **List of Appendices to this paper:**

Appendix 1: Technical Summary of Upgrade Projects

A paper containing exempt supplemental information is included on Part 2 of the agenda

**List of Background Papers:**

TfL Project Assurance Reports

Management response to TfL Project Assurance Reports

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## **Appendix 1: Technical Summary of Upgrade Projects**

### **MTS Upgrade Project – Connect and Airwave**

The radio base units currently used by the Connect System are known as EBTS and are in some cases nearly 20 years old. These units are no longer manufactured and are due to be obsolete by 2023 through a lack of available spares, and they are not supported beyond the latest version of the Motorola TETRA system.

- (a) A programme has been developed that will replace all of the existing EBTS units with a newer base station known as MTS, and undertake remedial works on their Uninterruptible Power Supplies. This will take place across 293 London Underground sites over a period of two and a half years and requires intrusive works to be undertaken within a variety of challenging environments.
- (b) The new Airwave Agreement between LU and Airwave Solutions Limited (signed in March 2020) allows for the Airwave (the emergency services radio system provided by LU using the Connect infrastructure) related assets to be upgraded at the same time, to enable LU to continue to provide the required level of service under the Airwave Agreement. The cost of the upgrade of the Airwave related assets, and any other incremental costs to LU, are borne by Airwave Solutions Limited, however this cost needs to be included within our request for approvals.

### **Radio user interface software update**

- (a) The current version of the radio system software is deployed on a platform written in a language called Delphi. This language is no longer considered mainstream and requires specialist skills that are becoming rare and increasingly expensive.
- (b) Additionally, the platform has several interdependencies with other software necessary to run the system. To maintain support for these products and the upgrades that will be undertaken as part of the Motorola service agreement, the software cannot be maintained on the Delphi platform beyond 2023.
- (c) To enable continued support beyond 2023, the interface platform needs to be transitioned from Delphi to a C# language environment. This work will be undertaken in two phases.
- (d) Phase 1 of this software update project was included in the approvals received in July 2018. Approval is now sought in relation to Phase 2 of this software update project to ensure that it can be fully delivered by 2023.

### **Other upgrade projects**

To ensure the system is supportable until at least 2026, several other projects have been identified that require a range of new spares, surveys of equipment and remedial works and asset replacements. These projects are included within the approvals sought.

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## Programmes and Investment Committee



Date: 11 December 2020

Title: London Underground Fleet Heavy Overhaul Programme

This paper will be considered in public

## 1 Summary

Table 1: Programme and Project Authority request up to and including 2026/27

Existing Financial Authority (£m)	EFC (£m)	Existing Programme and Project Authority (£m)	Additional Authority Requested (£m)	Total Authority (£m)
579.2	579.2	240.7	157.3	398.0

- 1.1 This paper covers the London Underground (LU) Fleet Heavy Overhaul (FHO) Programme (the Programme). This paper is the second submission to the Committee. The requested authority is the minimum additional authority required to continue this multi-year, in-flight essential maintenance programme.
- 1.2 This paper:
- (a) provides an update on the Programme since the previous submission;
  - (b) summarises planned delivery to the next submission in December 2021; and
  - (c) provides assurance to the Committee in terms of delivery and in setting up robust arrangements for future years.

## 2 Recommendations

- 2.1 The Committee is asked to note the paper and:
- (a) **approve additional Programme and Project Authority of £157.3m (outturn including risk, bringing total Programme and Project authority to £398.0m, to progress mandatory overhaul works on the passenger fleet within the Fleet Heavy Overhaul Programme; and**
  - (b) **note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets.**

### 3 Background

- 3.1 The Programme delivers large scale heavy maintenance activities on LU's existing fleet of passenger rolling stock and rail adhesion trains (RATs)<sup>1</sup>. These activities are over and above day-to-day maintenance tasks and require each train to be removed from service for several days or weeks. These activities include but are not limited to:
- (a) Programme Lift: This predominately involves overhaul of suspension, wheelsets, motors and brake systems;
  - (b) Heavy Overhaul: This includes everything in programme lift, but also auxiliary equipment plus heating and ventilation systems;
  - (c) Door Overhaul: Overhaul of equipment and components associated with the door system; and
  - (d) Other activities where more efficient to deliver when the train is out of service; these are referred to within this paper as life extension work.
- 3.2 This Programme support the Mayor's Transport Strategy (MTS) objective of 'providing a good public transport experience' and contributes to the aim within the MTS for 80 per cent of trips in London to be made on foot, by cycle or using public transport by 2041. This Programme also supports LU's priorities for 'Safety and Reliability', 'Customer', 'People' and 'Affordability'.

### 4 Impact due to Covid-19

- 4.1 TfL brought nearly all project sites to a temporary safe stop, in line with Government guidance, to limit the spread of the coronavirus pandemic. Construction activity was paused between 24 March 2020 and 26 May 2020, aside for limited specifically approved activities needed to keep the worksites in a safe condition.
- 4.2 This Programme was not stopped as it delivers operational safety and supported LU in providing a public transport service to key workers. The Programme has continued within social distancing and enhanced staff welfare adjustments. This work included but was not limited to extra hand sanitisation capability, face masks and additional personal protective equipment (PPE).

### 5 Delivery Progress since last submission

- 5.1 The **Victoria line programme lift** has completed 29 of the 47 eight car trains (as of October 2020) and is on schedule to complete the full fleet by the end of the financial year.
- 5.2 The **Bakerloo line fleet** is the oldest on the network and consists of 36 seven-car trains. It requires an intensive, on-going maintenance regime due to its near 50-year age, completing a programme lift cycle approximately every 15 months.

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<sup>1</sup> RATs are essential for maintaining rail adhesion levels, preventing wheel damage and maintaining safe braking during the autumn and early winter seasons when wet and/or leaf fall prevail.

- 5.3 The **Piccadilly line fleet** consists of 86 six-car trains introduced in the 1970s which are due to be replaced by new trains by 2027. Current life extension activities including bogies, couplers and braking systems all requiring the train to be lifted are on schedule to be completed in Spring 2021. However, material supply delays due to COVID-19 have hampered replacement of floor coverings for Rail Vehicle Accessibility Regulation<sup>[2]</sup> (RVAR) compliance. Door overhauls are also behind schedule as the work takes place at the same time. Replacement of saloon seat covers is on-time, with around a third of the fleet complete. All scope is scheduled to complete in 2024, well in advance of the RVAR exemption expiry date in 2026.
- 5.4 The **Metropolitan line fleet** has started (November 2020) its first programme lift on the 58 eight-car trains.



**Figure 1: Metropolitan line fleet bogies being prepared for programme lift**

- 5.5 Procurement of materials has started for the **Jubilee line fleet** to support the programme lift of the 63 seven car trains beginning in Summer 2021. Separately, procurement of long lead materials for the programme lift of the 133 seven car trains on the **District, Circle and Hammersmith & City lines**, planned to start in April 2023 has commenced.
- 5.6 Two **Central line RATs** operate on the Central line during the autumn. An overhaul of one of these RATs has been completed allowing it to operate during autumn 2020. The second RAT will be overhauled in early 2021. The **Metropolitan line** RAT will be due its overhaul towards the end of 2021/22.

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<sup>[2]</sup> The Rail Vehicle Accessibility Regulations (RVAR) came into force on 6 April 2010. These regulations dictate modifications to both trains and infrastructure that must be in place to provide improved accessibility and functionality for customers with disabilities.



**Figure 2: Overhaul of a Central line RAT**

## **6 Key deliverables for the Programme**

- 6.1 Table 2 presents the projects and associated financial impact as well as deliverables to December 2021. The work delivered by these projects are standard heavy maintenance activities. The large cost of these interventions is driven by the size of the fleets. For example, the Victoria line programme lift, door overhaul and other minor overhauls is £188k per car (including materials, labour, project management and risk), however over the whole fleet of 376 cars, the total EFC becomes £70.8m.
- 6.2 Value for money is achieved through detailed scope development and procurement efficiencies. The scope is developed using failure data and undertaking condition assessments to minimise scope. Once the material requirements are understood, the Programme will review opportunities to combine procurements across other fleets and day to day maintenance requirements to leverage economies of scale. The Programme also looks for delivery efficiencies within the depots and works closely with the Railway Engineering Workshop (REW) to drive down cost.

**Table 2: Summary of the FHO Programme (£m) to 2026/27**

<b>Project and Key Delivery to December 2021</b>	<b>Financial Authority</b>	<b>Estimated Final Cost</b>	<b>Existing Programme and Project Authority</b>	<b>This Authority Request</b>	<b>Future Authority Requests</b>
<b>Jubilee line fleet:</b> <ul style="list-style-type: none"> <li>• Programme Lift: Complete the first four trains</li> <li>• Door Overhaul: Confirm scope and begin development of a detailed estimate*</li> </ul>	150.4	150.4	64.5	56.9	29.0
<b>District, Circle and Hammersmith &amp; City line fleets:</b> <ul style="list-style-type: none"> <li>• Commence overhaul activities for the components that cannot be extended as part of the optimisation process.</li> <li>• Place all S8/S7 combined orders</li> <li>• Commence procurement process for S7 specific orders</li> <li>• Commence procurement of long lead gangways and couplers materials*</li> </ul>	139.8	139.8	25.5	50.8	63.5
<b>Victoria line:</b> <ul style="list-style-type: none"> <li>• Programme Lift: Complete Programme Lift for final 14 trains, and undertake catch back activities</li> <li>• Couplers overhaul: Start couplers overhaul, planned to start in Autumn 2021, expected to have completed up to 10 trains by Dec 2021.</li> </ul>	70.8	70.8	46.0	16.9	7.9
<b>Bakerloo line:</b> <ul style="list-style-type: none"> <li>• Programme Lift: Completed on 11 trains</li> <li>• Heavy Overhaul: Completed on three trains</li> </ul>	56.0	56.0	12.2	6.6	37.2
<b>Metropolitan line fleet:</b> <ul style="list-style-type: none"> <li>• Programme Lift: Completion of Programme Lift on 24 trains</li> <li>• Door Overhauls: Confirm scope and begin development of detailed estimate*</li> </ul>	90.3	90.3	36.2	24.6	29.5
<b>Piccadilly line:</b> <ul style="list-style-type: none"> <li>• Complete life extension on 13 trains (based on continued lifting)</li> <li>• Complete Door Overhauls on 26 trains</li> <li>• Overhaul traction motor control equipment on 13 trains (on completion of mobilisation)</li> <li>• Replace floor covering on 26 trains with RVAR compliant vinyl materials</li> <li>• Replace passenger saloon seats on 40 trains</li> </ul>	68.0	68.0	54.3	-	13.7
<b>RATs:</b> <ul style="list-style-type: none"> <li>• Complete overhaul of the second Central line RAT.</li> <li>• Begin to develop scope for the Metropolitan line RAT*.</li> </ul>	3.9	3.9	2.0	1.5	0.4
<b>Totals</b>	<b>579.2</b>	<b>579.2</b>	<b>240.7</b>	<b>157.3</b>	<b>181.2</b>

\* New multi-year Programme and Project Authority required as part of the essential maintenance requirements to keep these trains safe and reliable for passenger service.

## 7 Equalities Implications

- 7.1 This Programme will be delivered in accordance with the Equality Act 2010. As projects progress through feasibility and design, consideration will be given to the need for an Equality Impact Assessment.

## 8 Financial Implications

- 8.1 Table 3 shows the financial impact of the Programme by year. All cost figures include risk and inflation; these figures show the plan up to 2026/27. This includes the minimum additional authority required to continue this multi-year, in-flight essential maintenance programme. This brings the total Programme and Project authority to £398.0m.
- 8.2 The financial impact is shown up to 2026/27. This is to include multi-year projects requiring commercial commitments for the combined procurement of materials for the 192 trains on the Metropolitan, District, Circle and Hammersmith & City lines.
- 8.3 This Financial Authority is captured in the proposed two year Budget for 2021/2022 and 2022/23 (which will also become the Business Plan for those years) to be approved by the Board on 9 December 2020.

**Table 3: FHO Programme Financial Implications to 2026/27**

Costs and Funding (£m)	Prior Years	2020/21	2021/22	2022/23 to 2026/27	Total
Cost (Outturn)					
Existing Programme and Project Authority	33.5	45.1	59.2	102.9	240.7
This Authority Request	-	1.7	39.6	116.0	157.3
Future Authority Requests	-	-	-	181.2	181.2
Financial Authority	33.5	46.9	98.8	400.0	579.2
Programme EFC	33.5	46.9	98.8	400.0	579.2

## 9 Challenges, Opportunities and Lessons Learnt

- 9.1 **Challenges:** In the short to medium term, the coronavirus pandemic is likely to impact staff and the supply chain to the Programme. This will ultimately effect delivery and have financial impacts in a cash constrained environment. The pandemic has had an impact on the Victoria line programme lift which has resulted in an EFC increase of £1.6m and a delay of three months.
- 9.2 **Challenges:** Our passenger fleets are unique to London Underground, which can restrict the opportunity to competitively tender some components. The Programme is actively looking for opportunities with alternative equipment manufacturers where possible. This will further contribute to our commitment to taking value for money opportunities by allowing TfL to engage at an early opportunity with the wider supply chain.

9.3 **Opportunity:** The Programme has taken the opportunity to combine procurement of materials across the passenger fleets to reduce unit rates. Since 2019 the Programme has achieved £11m in efficiencies. If the Programme did not take advantage of combining its procurements, or decided to place shorter term contracts, efficiencies would be lost, and the overall cost of the Programme would increase.

9.4 **Lessons Learnt:** Following the delivery of heavy overhauls on the passenger fleet, it has been identified that these projects need to initiate three years before delivery of the first train. This is to allow for condition assessments and to allow enough time for procurement activities and governance as some long lead items require 18 months following contract award. This is lesson is being applied to the Jubilee line door overhaul which is part of the Programme and Project Authority within this paper.

## 10 Assurance

10.1 TfL Project Assurance and the Independent Investment Programme Advisory Group (IIPAG) undertook an assurance review of the Programme in October 2020. No critical issues were identified.

### List of appendices to this report:

None

### List of Background Papers:

TfL Project Assurance Reports

Management response to TfL Project Assurance Report

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Date: 11 December 2020

Item: London Underground Signalling and Controls Programme

This paper will be considered in public

## 1 Summary

*Existing Financial Authority	Estimated Final Cost (EFC)	Existing Programme and Project Authority	Additional Authority Requested	Total Programme and Project Authority
£215.2m	£215.8	£196.1m	£16.2m	£212.3m
* Financial Authority is based on the draft Mayor's Budget and draft 2020 Business Plan which are subject to approval.				

**Table 1: Programme and Project Authority request up to and including 2024/25**

- 1.1 This paper provides an update on progress since the last submission to the Committee and requests an additional £16.2m Programme and Project Authority request for the London Underground (LU) Renewals and Enhancements (R&E) Signalling and Controls (S&C) Programme (the Programme). This request brings the total Programme and Project Authority to £212.3m and enables the Programme to continue delivery consistent with the S&C Asset Strategy.
- 1.2 This paper is an update to the March 2020 submission which has now established cost certainty for the Central line control system life extension project.

## 2 Recommendations

2.1 The Committee is asked to note the paper and:

- (a) approve the following additional Programme and Project Authority of £16.2m giving a total Programme and Project Authority of £212.3m (figures in outturn including risk); and
- (b) note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets.

### 3 Background

- 3.1 Signalling and control systems are essential for the safe and efficient operation of train services. Some of LU's current signalling and control systems date to the early 1960s, are now obsolete and are increasingly difficult to maintain. This Programme was originally established to extend the life of current systems and contain the obsolescence risk. These were planned to be short term measures until system upgrades took place under the Four Lines Modernisation (4LM) Programme and the Deep Tube Upgrade Programme (DTUP).
- 3.2 The Four Lines Modernisation (4LM) Programme is currently replacing signalling and control systems on most of the District, Metropolitan, Hammersmith and City and Circle lines with a single, standardised system. This will be progressively commissioned with full benefits realised of faster journeys and up to 32tph (trains per hour) in Central London by 2023.
- 3.3 The signalling and control systems on the Piccadilly, Central, Waterloo and City and Bakerloo lines were planned to be replaced as part of DTUP. However, TfL's financial challenges in recent years have resulted in this upgrade programme being scaled back. There are currently no funded plans to undertake upgrades to the signalling and control systems on these lines. This means that life extension and where necessary, incremental upgrades of parts of these systems now form the basis of the emerging strategy.
- 3.4 The Victoria, Jubilee and Northern line signalling and control systems are relatively modern. There are no significant investment interventions planned as these lines have been upgraded in recent years. However, these systems are computer based and as a direct result, system obsolescence requires active management, particularly on the Jubilee and Northern lines. TfL is currently managing this obsolescence in conjunction with ensuring these systems can be maintained and operated throughout the lifecycle.
- 3.5 The Programme supports the Mayor's Transport Strategy (MTS) objective of 'providing a good public transport experience' and contributes to the aim within the MTS for 80 per cent of trips in London to be made on foot, by cycle or using public transport by 2041. The Programme also supports LU's priorities for 'Safety and Reliability', 'Customer', 'People' and 'Affordability'.
- 3.6 During Summer 2020 progress has been made on the 25-year Long Term Capital Plan (LTCP) and signalling asset strategy which outline a shift towards incremental S&C upgrades. The current strategy is focused on LU and covers both legacy and modern computer-based signalling systems. It is intended to develop a TfL-network wide strategy to consider all rail-based systems such as Docklands Light Railway (DLR), the London Trams network and Elizabeth line in the future. This will ensure that commonalities in the signalling systems and supply chain are fully considered in future upgrade and investment.

## **4 Impact on the Programme due to the coronavirus pandemic**

- 4.1 TfL brought all project sites to a temporary safe stop, in line with Government guidance, to limit the spread of the coronavirus pandemic, with construction activity paused between 24 March 2020 and 26 May 2020, aside for limited specifically approved activities needed to keep the worksites in a safe condition.
- 4.2 Additionally, some staff were placed on furlough leave which impacted project progress. As it was not site-based, work continued developing the concept design for the Central line life extension projects (Signalling and Control) where it was prudent.
- 4.3 Since projects restarted on-site, they have all been subject to continued safety measures including but not limited to social distancing, extra hand sanitisation capability, face masks and additional personal protective equipment (PPE).

## **5 Delivery Progress**

- 5.1 Since March 2020, the progress of this programme has been impacted by the pandemic. Updates and status of the individual projects are detailed in the sections below:

### **Piccadilly line Interim Control Upgrade (PICU)**

- 5.2 The PICU system which provides control system management of the Piccadilly Line has now been in full operation at its new control centre for over a year now without any significant failures. Electrical issues with the lift in the control room were rectified in late March this year. This has made the control centre a fully accessible facility with level access provided to all areas of the building. The project was due to complete snagging of other building issues and a final software update. However, these activities have been delayed over the summer due to access restrictions and will be now be completed by the end of the financial year.

### **Central line S&C life extension**

- 5.3 The current system has not undergone any significant upgrade since its commissioning in the early 1990's. Site surveys for a new, modern fibre optic communications link has been slowed by access restrictions and single-person teams being utilised to conform with social distancing. In other areas of the project, cost certainty has matured. This is an outcome from the completion of the control system concept design and value engineering exercises with the contractor. These activities are important enablers to support more significant life extension work required on this system in the future.

### **Bakerloo line S&C life extension**

- 5.4 New computer servers at the control facility have allowed control system function testing to commence. These functions have been re-written in a modern computer code to allow them to operate on the new hardware. The outcome of this work is to provide greater resilience to the system. Testing of the functions has been slowed by access restrictions to the control room, however, it is not expected to have an impact in the overall programme duration.

- 5.5 The trial of light emitting diode (LED) signal lamps within the depot at Stonebridge Park has been delayed but a more efficient method of installing the new fixtures has been developed. This involves using a screw-pile to mount the signal post which will speed up installation and reduce disruption within the depot. These more efficient construction techniques will be further rolled out in later schemes.

### **Control and Information life extension**

- 5.6 To manage obsolescence and cyber security risk, the computer servers on the Waterloo & City line control system have been upgraded with both new hardware and software. Advantage has been taken of the enforced line suspension to test and commission the system in a reduced timeframe. This would not have been possible whilst a full service was running under normal operation. The outcome of this work is that control of the line remains secure and reliable when service resumes.
- 5.7 For the Central line Customer Information System (CIS), 11 of the 14 new computer servers have been installed in equipment rooms across the line. The commissioning of these assets has been delayed as a result of access restrictions, with 18 of the planned 36 station equipment migrations having taken place. These works have been re-scheduled to complete before the end of the financial year.

### **Northern and Jubilee lines S&C obsolescence management**

- 5.8 For these lines, a review of 'Transmission Based Train Control' (TBTC) components and production of an obsolescence management plan for a future authority request was planned. The project has been able to move ahead with scoping the works and obtaining estimates to allow this project to commence design next financial year.

### **Asset Condition Works / Piccadilly line signalling life extension**

- 5.9 Although at a reduced rate since March 2020, progress has been made installing safety covers to exposed electrical contacts within trackside signalling boxes across the network, helping to protect our staff.
- 5.10 Replacement of track capacitors containing the hazardous material PCB (Polychlorinated Biphenyl), has been delayed owing to the pandemic and shutdown of the manufacturer's premises over lockdown. The opportunity to review the number and type of capacitors needed for the 4LM signalling descope areas, which would have been removed as part of the upgrade, has been taken. This is additional unplanned work for the renewals programme. However, we remain on schedule to ensure that we meet our commitment to the Environment Agency to remove all PCBs across LU before the end of 2023.

### **Northumberland Park Depot (NPD) Control System Upgrade**

- 5.11 The 1960's equipment which enables train movements within the only depot on the Victoria line is obsolete and failure rates are increasing. The project will deliver new equipment and relocate the existing Train Movements Room by 2024/25.
- 5.12 Replacement of point detection (PD) equipment with modern equivalents (required by the new control system) has been slowed by the safe-stop process and



## **6 Key deliverables for the Programme in 2021**

- 6.1 The Signalling and Control Programme comprises of the following projects outlined in Table 2 (all figures include risk and inflation up to 2024/25). Financial Authority is captured in the proposed two year Budget for 2021/2022 and 2022/23 (which will also become the Business Plan for those years) to be approved by the Board on 9 December.
- 6.2 The Central line life extension project now extends to 2028/29 which is outside the 2024/25 horizon of Table 2. The full EFC and Financial Authority of this project is included in the table as this project is currently in flight. It is expected that the incremental upgrade programme will span the life of the 25 year LTCP and will be developed accordingly. The EFC included in the table only reflects the one year early works stage. The programme will commence in 2021/22 and a more mature request and EFC will be developed as works continue.
- 6.3 The signalling programme delivers value for money by extending the life of the assets within the funding available. The programme delivers modern equivalent replacement assets to reduce obsolescence and maintain reliability and safety, whilst ensuring that the most economically advantageous options are progressed.

**Table 2: Summary of the LU R&E Signalling and Control Programme (£m) to 2024/25**

Description / Key Deliverables	Financial Authority	Estimated Final Cost	Existing Programme and Project Authority	This Request	Future Requests
<b>Central line S&amp;C life extension. *</b> Contract award and start of detailed design   Complete correlation surveys at all 49 stations   Training materials and manuals agreed and training maintenance commences	90.4	90.4	82.4	8.0	-
<b>Northumberland Park depot S&amp;C upgrades.</b> Completion of point detection equipment replacement   Contract award for design and installation phases	18.5	19.9	19.0	-	0.9
<b>Bakerloo line S&amp;C life extension #</b> Integrated testing of the control system hardware and software complete   Decommissioning of old control system and transfer to Bletchley Park museum   Completion of LED signal lamp replacement	10.5	8.8	22.0	-	-
<b>Northern and Jubilee lines S&amp;C obsolescence management</b> Feasibility study and concept design of train detection equipment and Train Operator Display hardware   Large Data Transfer system upgrade   Commence concept design for Northern line control asset replacement	26.0	26.0	3.7	6.3	16
<b>Piccadilly line signalling life extension / Asset Condition Works</b> Completion of electrical cover installation   4LM PCB surveys complete   Contract award replacement capacitors	7.1	8.2	8.2	-	-
<b>Control and Information life extension</b> Completion of CIS upgrade on Central line	2.1	2.1	2.1	-	-
<b>Ongoing projects: Sub Total</b>	<b>154.6</b>	<b>155.4</b>	<b>137.4</b>	<b>14.3</b>	<b>16.9</b>
<b>Incremental upgrade (early work) *</b> Start of concept design works on Bakerloo and Central line systems	1.9	1.9*	-	1.9	-
<b>New Projects: Sub Total</b>	<b>1.9</b>	<b>1.9*</b>	<b>-</b>	<b>1.9</b>	<b>-</b>
<b>Point machine conversion</b> This project has completed and closed	9.4	9.4	9.4	-	-
<b>Piccadilly line Interim Control Upgrade (PICU)</b> Snagging works within the building   Final software build to be installed	49.3	49.1	49.3	-	-
<b>Closing projects: Sub Total</b>	<b>58.7</b>	<b>58.5</b>	<b>58.7</b>	<b>-</b>	<b>-</b>
<b>Programme Total to 2024/25*</b>	<b>215.2</b>	<b>215.8</b>	<b>196.1</b>	<b>16.2</b>	<b>16.9</b>

# The future scope of the Bakerloo line signalling life extension has been incorporated into incremental upgrade, reflecting the reduction in EFC against project authority

\* Refer to paragraph 6.2

## 7 Financial Implications

- 7.1 In March 2020, the Committee approved £10.2m of Financial Authority and £47.9m of Programme and Project Authority, taking the total of both authorities to £196.1m until 2024/25.
- 7.2 A summary to 2024/25 by financial year is shown in Table 3. This Financial Authority is captured in the proposed two year Budget for 2021/2022 and 2022/23 (which will also become the Business Plan for those years) to be approved by the Board on 9 December.
- 7.3 The table includes the financial authority, EFC and future requests for the incremental signalling programme up to 2024/25 and this will continue in line with the LTCP. These numbers will be refined though 2021/22 before the next annual submission.
- 7.4 This is the minimum additional authority required to continue this multi-year, in-flight essential renewals programme. This brings the total Programme and Project authority to £212.3m.

**Table 3: Signals and Controls Programme Business Plan to 2024/25**

Costs and Funding (£m Outturn)	Prior Years	2020/21	2021/22	2022/23	2023/24	2024/25	Total
Existing Programme and Project Authority #	87.0	48.6	27.7	22.8	9.1	0.9	196.1
This Authority Request	-	-	8.2	3.8	4.2	-	16.2
Future Authority Requests # ↵	-	-	-	41.7	63.1	75.6	180.4
Financial Authority ↵	87.0	6.6	35.1	68.3	76.4	76.5	349.9
Programme EFC ↵	86.8	6.6	35.9*	68.3	76.4	76.5	350.5

Financial Authority is based on the proposed Budget and Business Plan to be considered by the Board on 9 December.

# The phasing of Programme and Project Authority and future requests will be amended in line with the newly phased spend after the 2020 Business Plan is authorised

\*The delta in Financial Authority and EFC will be managed within the Signalling programme within the financial year.

↵ Refer to paragraph 7.2



## **8 Challenges and Opportunities**

### **Challenges**

- 8.1 Several of LU's Signalling and Control systems are nearing life expiry or are suffering from significant obsolescence issues. Investment within this asset area will need to be increased over the coming years. Sustained long term investment is crucial to ensure that the systems remain safe and reliable into the future.
- 8.2 It is important that we ensure long term relationships with the supply chain for each of the S&C systems. Whilst we have support in the early years, it is essential that they continue to be engaged throughout the life of the assets and systems. It would be increasingly difficult to maintain and upgrade these systems without the support and cooperation from our suppliers.
- 8.3 Computer based technology is becoming obsolete in shorter and shorter timeframes. The evolution of the systems, their hardware and software will become increasingly important rather than the traditional reliance of 'big bang' upgrades of the older type of electro-mechanical Signalling and Control systems. Although the benefits delivered are smaller for these upgrades, they become essential to maintain the systems in daily operation.
- 8.4 The 4LM project has been partly descoped and rephased meaning that some assets will continue to operate longer than expected. This may mean that further interventions may be required in the coming years to ensure safety and reliability. The scope and level of any such investment will be capable of being assessed in the next year.

### **Opportunities**

- 8.5 A new strategy for signalling and control replacement has been aligned to the LU drive for a 25-year long term capital plan. The signalling strategy has been re-reviewed in line with known best practice of other metros. This has led the way for incremental longer-term upgrades rather than short, large scale full line upgrades. This is expected to have longer term cost benefits, and these will be evaluated in the early stages of investment. Once incremental projects are established, an appropriate deliver strategy will be developed for each line.
- 8.6 The PICU system was an example of increased internal design, delivery and installation involvement at lower whole life cost than provided by external suppliers. The system uses a number of commercial off the shelf (COTS) products and will be maintained over the life of the system using internal resource. However, each LU line has unique signalling and control system characteristics which present different challenges to maintain over the asset life cycle.

## **9 Equality Implications (EQIA)**

- 9.1 The Programme will be delivered in accordance with the Equality Act 2010. As projects progress through feasibility and design, consideration will be given to the need for an Equality Impact Assessment.

## 10 Assurance

10.1 TfL Project Assurance undertook a review of the Programme in November 2020. This identified four recommendations, one of which was classified as critical. A management response has been prepared and has since been accepted by the Assurance team.

### List of appendices to this paper:

None

### List of background papers:

TfL Project Assurance Reports

Management response to TfL Project Assurance Report

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## Programmes and Investment Committee



**Date:** 11 December 2020

**Title:** Docklands Light Railway - Housing Infrastructure Funding

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### This paper will be considered in public

## 1 Summary

- 1.1 The purpose of this paper is to request unbudgeted Financial Authority and Programme and Project Authority to enter into a grant determination agreement (GDA) with the GLA and the Ministry of Housing, Communities and Local Government (MHCLG), to receive £281m from the Housing Infrastructure Fund (HIF), and to deliver the following scope:
- (a) to purchase up to 14 additional Docklands Light Railway (DLR) trains;
  - (b) expand Beckton DLR depot and acquire the land to facilitate that expansion; and
  - (c) contribute to the cost of enabling works at Poplar DLR depot.
- 1.2 The Programme and Project Authority request is for the full amount of HIF funding. If approved, the authorities for the Poplar development will be transferred to the Commercial Development Investment Programme.
- 1.3 Together, the above enhancements will unlock up to 12,000 new homes.
- 1.4 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. This information is exempt by virtue of paragraphs 3 and 5 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to business affairs of TfL and legally privileged advice. Any discussion must take place after the press and public have been excluded from this meeting.

## 2 Recommendations

- 2.1 **The Committee is asked to note the contents of this paper and the exempt supplemental information in the paper on Part 2 of the agenda and:**
- (a) **approve unbudgeted Financial Authority and Programme and Project Authority of £281m for TfL to enter into a grant determination agreement (GDA) with the GLA and the Ministry of Housing, Communities and Local Government to receive funds from the Housing Infrastructure Fund (HIF) and its subsequent expenditure to:**
    - (i) **purchase up to 14 additional DLR trains and procure supporting services in respect of the automatic train control system for the additional trains;**

- (ii) **procure the expansion of the Beckton DLR depot and for DLR or TfL (as applicable) to acquire the land required to facilitate that expansion; and**
  - (iii) **contribute to the cost of enabling works at DLR Poplar depot required to facilitate a wider TfL Commercial Development scheme, delivering up to 1,740 new homes in the area; and**
- (b) **note that Procurement Authority for the automatic train control system supporting services, expansion of the Beckton DLR depot, the enabling works at DLR Poplar depot and other matters will be sought in accordance with Standing Orders; and**
- (c) **note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets.**

### **3 DLR HIF Scope and Agreement**

- 3.1 As initially reported to the Committee in December 2018, the GLA, working with TfL, submitted a successful bid to MHCLG to receive £291m of HIF funding to support housing growth along the DLR network. The successful bid created a significant opportunity to build on the DLR Rolling Stock Replacement Programme (RSRP) and provide up to 14 additional DLR trains, as well as extending the Beckton depot for stabling and maintenance purposes and the purchase of associated land. This funding would also enable works to support a new development at Poplar depot and a contribution to a new station at Thameside Wharf. The £10m contribution to the new station at Thameside Wharf has now been removed from the HIF scope.
- 3.2 On 16 October 2020, a further update was provided to the Committee summarising the good progress being made on the DLR RSRP despite the impacts of the coronavirus pandemic. It was also reported that TfL was unable to enter into a GDA with MHCLG for HIF funding at that time due to the need for greater clarity on the financial support available from Government. Further negotiations also needed to take place with MHCLG on the terms of the GDA. The Committee were therefore advised that TfL would return to seek approval to enter into the GDA at the earliest opportunity if agreement can be reached and the financial position improved.
- 3.3 TfL's short-term financial situation has since become clearer and the terms of the GDA have largely been agreed, so it is now recommended that TfL enters into the GDA. Further details of the key terms of the GDA are described in the paper on Part 2 of the agenda.
- 3.4 If TfL is unable to enter into the GDA at this time it will not be able to deliver the required depot expansion by June 2026 to receive the additional 14 HIF-funded trains within the existing cost estimate.

- 3.5 While TfL will need to accept some risk to deliver the remaining DLR HIF scope, these risks are considered manageable in comparison to the housing and capacity benefits that the additional scope will deliver. Crucially, this includes the relatively new risks that the coronavirus pandemic has introduced; causing short-term uncertainty over ridership on the network, although all indications to date suggest that the business cases for both RSRP and DLR HIF remain strong with positive benefits, even if the short-term falls in demand are extended over a longer period.
- 3.6 An Internal Assurance Review (IAR) and IIPAG review of the HIF opportunity first took place on 6 April 2020, which resulted in four specific HIF recommendations, of which none were deemed critical. A further session was held on 1 September 2020, which resulted in one additional recommendation specific to assessing coronavirus pandemic impacts.
- 3.7 In the 2018 Autumn Budget, the Chancellor of the Exchequer announced that the GLA had been successful in bidding for part of the government's £5bn Housing Infrastructure Fund, with £291m allocated to the DLR's Accelerated Growth Programme (now called DLR HIF bid). All parties recognise the benefits of the bid, and have continued to negotiate to reach final agreement, despite external pressures including the coronavirus pandemic and the 2019 general election, however entry into the GDA has been delayed as a result.
- 3.8 The GDA, if approved, is expected to be signed in December 2020 by MHCLG, TfL and the GLA. The GLA and TfL also intend to enter into a memorandum of understanding, at the same time as the GDA is entered into, setting out how the parties will work together in respect of the delivery of their respective obligations under the GDA, and the GDA requires that TfL 'draws down' all HIF money by March 2024, achieving delivery milestones both before and after this date. Another condition of the GDA is TfL's commitment to fund the base order of 43 trains on the DLR RSRP. It is important to MHCLG that the HIF trains provide additional capacity (over the base order) to support the additional expected housing outputs forecasted in the bid.

## **4 DLR HIF Scope**

- 4.1 Until October 2020, the scope of DLR HIF funded matters (DLR HIF Scope) comprised four elements:
- (a) additional 14 DLR Trains and supporting services for the automatic train control system for those trains;
  - (b) expansion of the Beckton DLR Depot;
  - (c) new DLR Station at Thameside West (Thames Wharf); and
  - (d) enabling works at Poplar.
- 4.2 In October 2020, it was agreed by all parties that Thames Wharf station should be removed from the DLR HIF Scope due to programming risks arising because of the interaction with the construction of the Silvertown Tunnel. All forecasted housing outputs and financial contributions associated with this element of the DLR HIF Scope have now been removed. The strategic case for the DLR HIF

focuses on the housing it enables in-line with the Mayor's Transport Strategy (MTS) and London Plan, being a flagship example of 'good growth'. The DLR HIF Scope is one of the largest single contributions that TfL can make to delivering the New Homes and Jobs objectives of the MTS by supporting or enabling the delivery of up to 12,000 homes in total - including up to up to 1,740 homes by TfL at Poplar.

- 4.3 In addition, by providing increases to new train capacity and frequency, particularly on the fast-growing routes to Stratford, the DLR HIF Scope will also make a strong contribution to the Good Public Transport Experience theme of the MTS. It will make orbital travel much easier and will target Stratford and Lewisham as strategic interchanges.
- 4.4 The benefit cost ratio (BCR) for the DLR HIF Scope, as determined by the bid business case, was 4.4:1, representing very good value for money. This BCR, and that of the RSRP, are being reviewed considering the coronavirus pandemic, but all indications are that both remain positive.

#### **HIF Element No 1: Additional DLR Trains**

- 4.5 Up to 14 additional DLR trains will be delivered, (57 in total; 14 added to the RSRP base order of 43). The HIF trains will add a further 33 per cent to the total DLR peak capacity above the base order (resulting in an overall 67 per cent uplift in capacity). This will be achieved by:
- (a) upgrading the remaining two-car Stratford to Canary Wharf trains to new full-length trains;
  - (b) extending this service past Canary Wharf to Lewisham; as a result, 30 trains per hour (tph) will run between Lewisham and Canary Wharf (currently 22.5 tph);
  - (c) increased services from Canary Wharf to both Stratford and Bank; and
  - (d) doubling the frequency of the Woolwich Arsenal to Stratford International service from 7.5tph to 15tph. This will provide a 22.5tph total service between Woolwich Arsenal and Canning Town.

#### **HIF Element No 2: Expansion of the Beckton DLR Depot**

- 4.6 To accommodate the additional HIF-funded DLR trains, the Beckton DLR depot will be expanded. The expanded depot will also enable trains to be temporarily relocated out of the Poplar DLR depot to facilitate a new housing development opportunity.
- 4.7 The acquisition of land adjacent to the existing Beckton DLR depot, where the new sidings will be constructed, is a fundamental element of this expansion. Environmental mitigations are a key consideration in the re-redevelopment of the depot. We have already undertaken an environmental habitat survey to help inform design decisions and are carrying out ground site investigations on the proposed land acquisition area to assess contamination levels ahead of purchase. Commercial information concerning the DLR HIF land acquisition is provided in the paper on Part 2 of the agenda.

### **HIF Element No 3: Enabling Works at Poplar**

- 4.8 The final element of the DLR HIF Scope is a contribution to enabling works at DLR Poplar, directly unlocking the 'airspace' for development potential. This will facilitate a wider TfL Commercial Development over-site development scheme, to deliver approximately 1,750 new homes in the area.
- 4.9 Works will comprise of a reconfigured Poplar DLR station and depot with a deck over the station, and a pedestrian link bridge over Aspen Way towards Canary Wharf.
- 4.10 There is provision in the GDA for removing the enabling works at Poplar from the DLR HIF Scope if it cannot be demonstrated that the development continues to be viable.

## **5 Finance and the effects of the Coronavirus Pandemic**

- 5.1 Under the GDA, TfL will have access to up to £281m (£261m for the core DLR projects and a £20m contribution for enabling works for the Poplar housing development) from MHCLG between December 2020 and March 2024 towards the delivery of the DLR HIF Scope.
- 5.2 This Financial Authority is captured in the proposed two year Budget for 2021/2022 and 2022/23 (which will also become the Business Plan for those years) to be approved by the Board on 9 December 2020.
- 5.3 From an operating cost perspective, the business case is being revisited to test the sensitivity of the pre-coronavirus pandemic assumptions against the emerging realities of the "new normal" (including passengers having a lower tolerance for overcrowding and people working from home or more flexibly). A sensitivity test on the basis that demand only recovers to 80 per cent of previous future forecasts is being used.
- 5.4 Early results from this sensitivity test, together with the cost risks that TfL has considered to deliver the DLR HIF Scope and further financial details are contained in the paper of Part 2 of the agenda.

## **6 Delivery and Commercial**

- 6.1 TfL and the GLA have completed the MHCLG due diligence process in parallel with the negotiations on the GDA, ensuring compliance with the conditions set out in the GDA are achievable. The GLA, as the upper tier authority who submitted the DLR HIF bid, is expected to enter into the GDA with MHCLG as the 'Grant Recipient' and then provide the DLR HIF funding to TfL.
- 6.2 The previous delays to the GDA now mean that any further delays will make it a challenge for the project team to meet the programme and deliver the extended Beckton site by the time that the new trains arrive. The existing cost estimate assumes a programme that integrates (and generally follows) works on the DLR RSRP site modifications. If the GDA is not entered into at this time, a revised programme (and cost estimate) would be required to achieve the March 2024 spend deadline and delivery of an extended depot by June 2026.

- 6.3 If Financial Authority and Programme and Project Authority is approved, the HIF-funded trains will be added to the end of the existing DLR RSRP base order of 43 trains with Construcciones y Auxiliar de Ferrocarriles S.A. (CAF); making the order 57 trains in total. Key milestones for the RSRP and HIF integrated programme are shown in Table 2.

<b>Key Milestone</b>	<b>Target Date</b>	<b>Draft Forecast Date</b>
Detailed Train Design Phase Complete	9 Nov 2020	9 Nov 2020 (complete)
Provisional Acceptance First Train into Passenger Service	Dec 2023	Feb 2024 (includes impact of 4-month coronavirus pandemic delay)
Provisional Acceptance Tenth Train into Passenger Services	July 2024	Sep 2024
Provisional Acceptance Forty Third Train into Passenger Service	June 2026	Feb 2026
Provisional Acceptance Fifty Seventh Train into Passenger Service	Jan 2027	Sep 2026

**Table 2: Inclusion of HIF trains into RSRP rolling stock milestones**

- 6.4 The Manufacture and Supply Agreement with CAF contains provisions for TfL to exercise an option to add the HIF trains to the base order at a fixed price (subject to exchange rate fluctuations).
- 6.5 Procurement Authority required for the DLR HIF Scope will be requested from the Committee for the HIF-funded trains and otherwise in accordance with Standing Orders as and when required. Procurement Authority is expected to be requested to exercise the HIF-funded train option with CAF in summer 2021. This paper includes the Land Authority required (via the Programme and Project Authority request) to finalise negotiations with the land-owner of the proposed Beckton depot expansion site. The high-level procurement strategy for the delivery of DLR HIF Scope can be seen in Table 3 below.



<b>DLR HIF Scope</b>	<b>Procurement Strategy</b>
Additional DLR Trains	DLR has the option to purchase additional trains under its Manufacture and Supply Agreement with CAF.  DLR will vary its existing contract with Thales Canada Inc. and Thales Transport and Security Ltd for the automatic train control system support services for the additional trains.
Expansion of the Beckton DLR Depot	TfL is in negotiation with National Grid in respect of acquisition of a piece of land adjacent to the DLR Beckton site. Details are covered in the paper on Part 2 of the agenda.  Significant consultation, market sounding, and lessons learnt have been undertaken and considered in respect of construction. It is likely that a separate design-then-build strategy will be applied to the depot expansion, all works will be competitively tendered.
Enabling Works at Poplar	The exact procurement arrangements for the depot enabling works are still being considered by TfL's Commercial Development team - in discussions with neighbouring landowners - to maximise the potential of the Poplar development.

**Table 3: HIF projects Procurement Strategies**

### **HIF Dependencies**

- 6.6 Progress on the DLR RSRP is a key dependency to achievement of the HIF milestones as set out in the GDA. Further dependencies to ensure successful delivery are described in the paper on Part 2 of the agenda.
- 6.7 The success of the Poplar development will undoubtedly be influenced by the discussions with neighbouring landowners to assess the viability of potential joint developments.

### **Key Risks**

- 6.8 The main risk to both the RSRP and HIF programmes is the continuing uncertainty of the long-term funding available to TfL to deliver both projects. To address this challenge, if the Committee grants the relevant authorities for this project, MHCLG and TfL/GLA have agreed to enter into the GDA on the condition that confirmation must be provided of TfL's 'financial certainty' prior to any significant expenditure on the programme.
- 6.9 The key delivery risks associated with the DLR HIF Scope are focused on managing the dependencies noted in paragraphs 5.6 and 5.7 – to ensure that delivery of the DLR HIF Scope is achievable – and maintaining cost certainty. The project will provide an update the Committee on these matters by 31 July 2021. Further details on this and the financial certainty concept are provided in the paper on Part 2 of the agenda.

## **7 Equalities Implications**

- 7.1 The new train stock will be an improvement on the existing train design. On-board audio and visual information will be better than existing. In addition to wheelchair spaces, trains will have multi-use areas which will accommodate pushchairs and bicycles.
- 7.2 As with the current DLR fleet, train-to-platform access will be compliant with the Rail Vehicle Accessibility (Non-Interoperable Rail System) Regulations 2020.
- 7.3 An Equality Impact Assessment has been undertaken for the new DLR rolling stock and there were no adverse comments. The other workstreams of the DLR HIF Scope are in the early stages of the project lifecycle. As they progress through the feasibility and design, Equality Impact Assessments will be undertaken.

## **8 Assurance**

- 8.1 In April 2020, an IAR was carried out (with Independent Investment Programme Advisory Group in attendance for final review) considering both progress on the DLR RSRP and the HIF programme. Seven recommendations were made and accepted by the project team of which none were deemed critical and four were related to HIF.
- 8.2 Recommendations focused on ensuring that the RSRP and HIF programmes are fully integrated, risks are well managed and key future decisions and timelines around HIF are set out and clearly understood. The DLR Project Team, like many others in TfL, has had to deal with a reduction in staffing due to Furlough and so some actions have not been completed by their original forecasted dates. However, importantly, actions relating to the timescales and decisions required for HIF have been closed out and the key risks of entering the GDA been assessed and managed.
- 8.3 On 1 September, a follow-up review of progress was carried out on both programmes. Only one further recommendation was made at this stage (accepted by the Project Team) concerning assessment of the recent changes in TfL demand on the business case. The IAR and IIPAG findings, along with the project team's management response, are set out in more detail in the paper on Part 2 of the agenda.

### **List of appendices to this report:**

A paper containing exempt supplemental information is included on Part 2 of the agenda.

### **List of Background Papers:**

Independent Investment Programme Advisory Group Report

TfL Project Assurance Reports

Management response to IIPAG and TfL Project Assurance Reports

Papers submitted to the meeting of the Committee on 16 October 2020

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## Programmes and Investment Committee



**Date:** 11 December 2020

**Title:** Barking Riverside Extension

**This paper will be considered in public**

### 1 Summary

<b>Barking Riverside Extension</b>				
Existing Financial Authority	EFC	Existing Programme and Project Authority	Additional Authority Requested	Total Authority
£285.4m	In the paper on Part 2 of the agenda	£294.5m	In the paper on Part 2 of the agenda	In the paper on Part 2 of the agenda

- 1.1 This paper provides an update on the progress for the Barking Riverside Extension (BRE) project, following the re-start of the project in June 2020, after the 'safe stop' of the project in March 2020 due to the coronavirus pandemic and the completion of conflicting utility diversion works. The project will deliver a 4.5km extension of the electrified London Overground Gospel Oak to Barking line by Autumn-2022(latest forecast still being validated), from its current terminus at Barking to a new station in Barking Riverside. The four-train per hour service will support 4,000 homes currently being built at Barking Riverside and directly unlock a further 6,800 homes.
- 1.2 Construction progress is visible and productivity on site is back up to pre-pandemic levels, but the delays to the project mean other delivery uncertainties (particularly in respect of rebooking Network Rail (NR) infrastructure possessions) require further work before confidence levels on the programme and final costs can be improved.
- 1.3 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

## **2 Recommendations**

### **2.1 The Committee is asked to:**

- (i) note the paper and the exempt supplementary information contained in the paper on Part 2 of the agenda; and**
- (ii) approve additional unbudgeted Financial Authority, Programme and Project Authority and Procurement Authority, up to the amounts in the paper on Part 2 of the agenda; and**
- (iii) note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **3 Background**

- 3.1 At the meeting on 16 October 2018, the Committee delegated authority to the Chair of the Committee to grant: Financial Authority (£294.5m); Programme and Project Authority (£294.5m at p80 level of risk – an 80 per cent probability that the costs would not be exceeded); and Procurement Authority (£227.6m) to enable the award of the Main Works Contract (MWC) for the BRE project. These authorities were subsequently granted by the Chair of the Committee on 11 December 2018.
- 3.2 In December 2018, following an increase in third party funding and the approval of the 2018 TfL Business Plan, the Chair of the Committee granted Programme and Project Authority of £294.5m (at p80 risk) and Procurement Authority of £227.6m, enabling the award of the MWC to Morgan Sindall and Volker Fitzpatrick acting as a joint venture. Levels of Financial Authority have varied since December 2018 due to multiple TfL Business Planning and annual budgeting cycles and is currently £285.4m.

## **4 Project Update and Challenges**

- 4.1 In the second update to the Committee in December 2019, while the Estimated Final Cost for BRE (EFC) remained at £287m, we reported that challenges existed on piling activities due to the discovery of previously uncharted utilities. The subsequent result was that major diversions of Thames Water sewage pipes and redesigns of viaduct piers (avoiding other utilities) were required to complete the piling; which seriously eroded the project's remaining risk provisions.
- 4.2 On 27 March 2020, in line with all other TfL construction projects, a site 'Safe Stop' took place due to the coronavirus pandemic. This safe stop activity paused all on-site work whilst continuing, where possible, activities that were not site dependent. The BRE project underwent a 'Safe Start' in June, progressively phasing activities back in and respecting safe working measures.
- 4.3 Productivity levels have now returned to normal and progress on site continues to be visible; all pile caps, pier walls and deck spans on the southern viaduct have

now been completed and the glazing on the completed station superstructure is about to commence (see figures 1-4 showing the visible recent progress on site):



**Figure 1: Barking Riverside Station, October 2020**



**Figure 2: Southern Viaduct nearing completion, October 2020**





**Figure 3: New Span Over Existing Network Rail Infrastructure, August 2020**



**Figure 4: Viaduct Nearing Completion Heading into Barking Riverside, November 2020**

- 4.4 One of the most significant impacts of the coronavirus pandemic on the BRE programme was the cancellation of a prolonged closure of the Network Rail mainline over Easter 2020 required for signalling works. There are only certain points in this year when this type of work is feasible in significant blocks; Christmas 2020 has now been agreed by all parties as the next available date. This prolongs the programme by approximately six months and a suite of other line closures throughout 2021, to finalise the signalling staging change plans for



BRE, now need agreement from NR and the train and freight operating companies using the mainline.

- 4.5 A change in the signalling interface (the delay of migration from Upminster to Romford control centres – the control centre where the new BRE track extension will be signal controlled from) was announced by NR in late 2018. Risk provision was made for its inclusion, as TfL was unable to fully assess its impact at the time. Detailed designs by NR have now revealed that the risk provision made is insufficient and that it also impacts on the programme (up to a maximum of an additional three months), but this requires further assessment and final agreement.
- 4.6 Further work is also required to re-plan the testing and transition activities (including an NR timetable change) associated with the revised BRE programme dates. In December 2018, it was expected that the new station at Barking Riverside would be open for December 2021. The latest programme forecasts that it will now be Autumn 2022 (the forecast ranges from July 2022-December 2022), but assumptions around this forecast still need to be validated and the full impacts of programme changes assessed.

## **5 Economic Case**

- 5.1 The business case for the BRE has always been based upon the housing, local growth and regeneration that the scheme unlocks – at the beginning of the project it was the largest brownfield site regeneration in Europe – rather than the pure transport benefits that it delivers.
- 5.2 The benefits of the scheme are still intact but are delayed. No more than 4000 homes on the development can be occupied before the station is open and the revised station is still on track to deliver by this ‘deadline’ (building construction on site has also faced a slow down for multiple reasons) and the opening will unlock a planning condition which will allow a further 6,800 homes to be built. It should be noted that house sales (and therefore future build) can only be strengthened by BRE opening at the earliest opportunity.
- 5.3 The scheme has always been forecasted to run at a negative operating cost at its commencement and so operating costs are not impacted by a delayed entry into service. The latest increases in the EFC are significant in the short term (particularly in light of TfL’s wider financial position), but only have a marginal effect on the respective Benefits to Cost Ratios (BCR’s) of the scheme. The transport-only BCR remains poor value for money, reducing slightly from 0.03:1 – 0.02:1. But, once wider impacts are considered for the scheme – in line with DfT guidance, including land value uplifts and the wider economic impacts that BRE would have on productivity through enabling firms to access a wider pool of labour – the adjusted BCR reduction from 2.14:1 – 1.92:1, still represents a medium/ high value for money rating.

## **6 Financial Implications and Additional Authorities**

- 6.1 As noted in paragraph 3.1, Programme and Project Authority and Financial Authority of £294.5m was granted in December 2018 for BRE which now requires an increase, along with Procurement Authority for the Main Works contract. Progress to date against previous Authorities are described in the paper on Part 2 of the Agenda.
- 6.2 This Financial Authority is captured in the proposed two year Budget for 2021/2022 and 2022/23 (which will also become the Business Plan for those years) to be approved by the Board on 9 December.
- 6.3 The level of risk and uncertainty levels attached to the programme remain high at this moment. Once new plans for the NR infrastructure possessions and signalling interface change have been agreed, the project will report to the Committee again in March 2021.

## **7 Assurance**

- 7.1 The project team has carried out a deep dive review of the EFC to test the robustness of the autumn 2022 programme forecast. An internal assurance and IIPAG assurance review took place in October and November 2020, primarily focused on the recent cost increases and the project's operational readiness planning. The resulting recommendations and actions by the project team are described in the paper on Part 2 of the Agenda.

### **List of appendices to this report:**

A paper containing exempt supplemental information is included on Part 2 of the agenda

### **List of Background Papers:**

Independent Investment Programme Advisory Group Report

TfL Project Assurance Reports

Management response to IIPAG and TfL Project Assurance Reports

Papers submitted to the meeting on 16 October 2018

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## Programmes and Investment Committee



Date: 11 December 2020

Title: Air Quality and Environment

This paper will be considered in public

### 1 Summary

Air Quality and Environment Programme				
Existing Financial Authority 2017/18-2022/23	EFC 2017/18-2024/25	Existing Programme and Project Authority	Additional Authority Requested up to 2022/23	Total Authority 2017/18 – 2022/23
£564.9m	£762.9m	£440.3m	£16.8m	£457.1m

- 1.1 This paper is the fourth submission of the Surface Transport, Air Quality and Environment (AQE) Programme to the Committee, detailing the request for additional Programme and Project Authority covering the period of 2020/21 to 2022/23
- 1.2 The focus of this paper is to:
- (a) provide an update on the AQE Programme’s success in delivering projects from the previous submission to the Committee in December 2019;
  - (b) request £16.8m of additional Programme and Project Authority for the planned delivery from December 2020 to up to 2022/23; and
  - (c) set out the transfer of six new projects into the AQE Programme; Air Quality Systems contract re-let, Grid to Gate, Bus Opportunity Charging, Electrifying the fleet, Waste Heat and Private Wire projects.

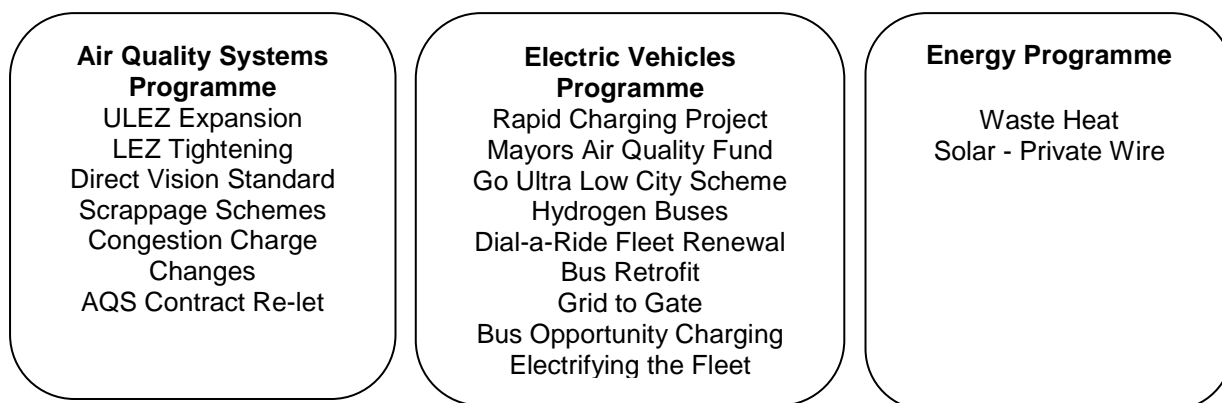
### 2 Recommendations

#### 2.1 The Committee is asked to note the paper and:

- (a) approve additional Programme and Project Authority of £16.8m to support the delivery of the Air Quality and Environment Programme for the period of 2020/21 to 2022/23;
- (b) note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets.

### 3 Background of Air Quality and Environment Programme

- 3.1 In 2019, the Committee approved a total of £100.6m additional Programme and Project Authority. In July 2020 the Committee approved further Procurement Authority for the Air Quality Systems programme, allowing these schemes to continue until 2025/26.
- 3.2 The Taxi Delicensing (£42m) and Zero Emission Capable Taxis (£27m) being transferred from AQE Programme, including the Programme and Project Authority. This reduces the Programme and Project Authority for AQE Programme from £510m to £457.1m.
- 3.3 Predicted spend in 2021/22 is £93.9m of which £15m is third party funding. This paper requests approval for the additional Programme and Project Authority of £16.8m, to bring the total Programme and Project Authority for the AQE Programme to £457.1m.
- 3.4 Air pollution is one of the most significant challenges facing London; affecting lung development in children and increasing the risk of strokes and heart and lung disease.
- 3.5 The AQE Programme has been shown to be an integral component to achieve a green recovery. The evidence of improved air quality from initiatives such as the central Ultra Low Emission Zone (ULEZ) is a testament to the value of the portfolio, as well as serving to underline the relevance of the outcomes achieved in the context of a climate emergency and global pandemic.
- 3.6 Further schemes are therefore required to improve air quality and reduce carbon emissions and achieve clear targets set out in the Mayor's Transport Strategy.
- 3.7 The AQE Programme comprises of three programmes, as shown below.



**Figure 1: Programmes within the AQE Programme**

- 3.8 The new programme called Energy programme will seek to reduce carbon emissions and is ultimately contributing towards the target of achieving zero-carbon rail by 2030. This will be achieved by a Waste Heat project which looks to use explore options for heat capture and Private Wire which looks to source zero-carbon energy from other landowners to build solar power generation facilities There would be a direct connection to TfL.

- 3.9 The bus electrification schemes within the Electric Vehicle programme include Grid to Gate and Bus Opportunity Charging and are new projects at an early stage of the project lifecycle. Grid to Gate is a £163m programme to upgrade the power connections to the national power network at 76 bus garages. It looks to start delivering the grant scheme next financial year. Opportunity Charging is a project to trial charging at bus stands for longer bus routes. Both these schemes enable a zero-emission bus fleet by 2037 and an acceleration of this target to 2030.
- 3.10 Additionally, the new project for Electrification of the Fleet forms part of the commitments as agreed with Greater London Authority (GLA) to meet the MTS ambition of:
- (a) all cars in support fleets must be zero emission capable by 2025;
  - (b) all new cars and vans (less than 3.5 ton), including response vehicles, must be zero emission capable from 2025; and
  - (c) all heavy vehicles (greater than 3.5 ton) must be fossil fuel-free from 2030.
- 3.11 We continue to work on the development of the overall strategy for TfL fleet electrification project. Optioneering has been conducted on proposed delivery methods and timeframes and is being agreed between TfL and Greater London Authority.
- 3.12 The AQS Contract Re-let looks to consider options beyond 2026 in terms of current system and service operation contracts for the Air Quality Systems Programme. This project is in the early lifecycle stages and will form part of the future investment in AQE Programme.
- 3.13 Future schemes beyond 2021/22 would include further schemes contributing towards improved air quality and the MTS ambitions.

### **Coronavirus pandemic impact**

- 3.14 In response to the coronavirus pandemic TfL temporarily suspended its Air Quality Systems schemes including the Congestion Charge (CC), Low Emission Zone (LEZ) and the central ULEZ between 23 March 2020 and 18 May 2020. The enforcement of the Heavy Goods Vehicle Direct Vision Standard (DVS) and the tightening of LEZ standards were also postponed from 16 October 2020 to 1 March 2021, to allow those affected more time to prepare.
- 3.15 Furthermore, the introduction of temporary changes (increasing daily charge and extending hours of operation) to the CC on 22 June 2020 was delivered collaboratively and at short notice.

- 3.16 The TfL Rapid Charging project, Mayors Air Quality Fund (MAQF), Go Ultra Low City Scheme (GULCS), Hydrogen Buses, Bus Retrofit and Dial-a-Ride schemes were all brought to a safe stop and paused for several weeks. Despite this delay the projects remain on target with the Rapid Charging project predicted to complete by March 2021 and MAQF by March 2022. To allow boroughs more time, the deadline to deliver the GULCS programme has been extended from December 2020 to March 2021.



**Figure 2: Rapid Charger at Taxi Rank**

- 3.17 The coronavirus pandemic has had a financial impact on several projects. We are requesting boroughs to provide TfL with estimated costs of work to date/estimated spend for 2020/21 from GULCS and MAQF as we estimate some minor delays in spend.
- 3.18 Furthermore, due to the pandemic, the delayed launch of DVS enforcement and LEZ tightening has been delivered in an integrated manner and it has cost approximately £750,000. However, the overall budgets for both projects have reduced due to a lower risk exposure.

## **4 AQE Sub-Programme Performance**

### **Financial Performance**

- 4.1 There has been a number of changes throughout 2020/21 in terms of financial performance of projects which are detailed in the following sections:

### **Successful Grant Uptake**

- 4.2 The Van and Charity Minibus Scrappage scheme saw a large surge in applications during June, July and August 2020 and was therefore suspended. The Heavy Vehicle grant scheme was also suspended due to large volume of applications in October 2020. We are continuing to progress through applications in line with our agreed processes.

## Temporary Congestion Charge Changes

- 4.3 The implementation costs associated with the temporary changes to the congestion charging scheme in June 2020 was under budget at £3m. Proposals for any of the temporary changes to be made permanent will be subject to appropriate public and stakeholder engagement, consultation, impact assessment and compliance with statutory processes before any decisions are made. It is anticipated that the associated costs of any such consultation and engagement activities would be approximately £1m.

## Financial Opportunities

- 4.4 The Dial-a-Ride fleet renewal project has also been affected by the coronavirus pandemic, with current ridership at 20-30 per cent of normal levels and not expected to rise significantly this financial year. A review of the fleet has concluded that 256 Euro VI vehicles will be sufficient to operate the service. This provides a saving of £4.6m.



**Figure 3: Euro VI Dial-a-Ride Vehicles**

- 4.5 There are short term financial savings associated with TfL's electrification of the fleet, due to a recommendation to start replacing vehicles from 2022/23.
- 4.6 The Rapid Charging project received a proportion of the revenue raised from the scheme (£130,000 between 2017 and April 2020). Further revenue will be received over time.
- 4.7 The GLA has contributed £344,000 to the scrappage schemes which will help more people scrap or retrofit their vehicle.

## Key Project Achievements

- 4.8 The AQE Programme has been successful in its delivery to date and, despite the pandemic, has continued to achieve key milestones over the past 12 months. Key achievements from the Programme can be seen below.

Project	Achievements since December 2019
Congestion Charge Changes	<ul style="list-style-type: none"> <li>Delivered large temporary changes within five weeks (except on-street signage work) in June 2020.</li> </ul>
ULEZ Expansion 2021	<ul style="list-style-type: none"> <li>Detailed design complete including the design of cloud platform to enable migration of back-office systems to cloud.</li> <li>Delivery of boundary cameras has started. On track to meet 470 by 31 March 2021.</li> </ul>
LEZ Tightening	<ul style="list-style-type: none"> <li>Core development of back-office system has been completed and continual testing runs are in progress.</li> <li>Joint marketing campaign with DVS began in October 2020.</li> </ul>
Scrappage Schemes	<ul style="list-style-type: none"> <li>Over 2,600 vehicles scrapped as part of Van and Minibus scheme.</li> <li>Heavy Vehicle grant scheme launched, providing grants of £15,000, resulting in over 130 vehicles scrapped.</li> <li>The Car and Motorcycle Scrappage Scheme had 2,700 vehicles scrapped.</li> <li>Injection of £344k has been provided by GLA to scrappage.</li> </ul>
Air Quality Systems Re-Let	<ul style="list-style-type: none"> <li>New scheme to consider options beyond 2026 in terms of current system and service operation contracts for Air Quality Systems.</li> </ul>
Rapid Charging Project	<ul style="list-style-type: none"> <li>As of early November, 276 rapid chargers have been installed including the first hub site at Stratford International Station.</li> <li>On target to achieve 300 rapid chargers by December 2020.</li> </ul>
Go Ultra Low City Scheme (GULCS)	<ul style="list-style-type: none"> <li>Installed more than 2,000 residential charging points.</li> <li>A joint £2.1m bid by the Boroughs was submitted to the Office of Low Emission Vehicles to deliver 720 chargers.</li> </ul>
Dial-a-Ride Fleet Renewal	<ul style="list-style-type: none"> <li>200 ULEZ compliant vehicles delivered, ahead of schedule.</li> </ul>
Bus Retrofit	<ul style="list-style-type: none"> <li>Over 3,950 buses retrofitted to meet Euro VI standards.</li> </ul>
Hydrogen Buses	<ul style="list-style-type: none"> <li>First Hydrogen Fuel Cell Bus delivered in November 2020.</li> </ul>

**Table 2: Achievements between Dec 19 - Dec 20**

## 5 Key AQE Programme Deliverables in 2021/22

- 5.1 Key policy activities associated with AQE Programme can be found in Appendix 1. A list of project deliverables and associated Programme and Project Authority changes can be found in Appendix 2.



## 6 Challenges and Opportunities

- 6.1 As well as the coronavirus pandemic, there have been some further challenges which are highlighted below, as well as some opportunities.

### ULEZ Expansion

- 6.2 As part of the ULEZ Expansion Project, we are taking the opportunity to utilise existing poles or place signs and cameras on the same pole, where possible, to minimise street clutter. This helps reduce cost and maintenance and improve the pedestrian environment.



Figure 4: Example ULEZ sign to be put on existing signage poles

### DVS

- 6.3 A challenge has been ensuring all people entering London with a Heavy Goods Vehicle will have a permit by March 2021. To date, approximately 39,000 permits (single and multi-vehicle permits) have been issued and it is predicted a significant number more need to be applied for. Marketing activities relaunched in October 2020 to raise awareness of the scheme across a variety of communication channels.

## 7 Equalities Implications

- 7.1 The AQE Programme will be delivered in accordance with the Equality Act 2010. Equality Impact Assessments (EqIAs) and/or Integrated Impact Assessment (IIA) are considered on all strategies, policies, business plans, change programmes or projects, having regard to our obligations under the public sector equality duty in section 149 throughout the delivery of the AQE Programme. Possible effects on people with protected characteristics in respect of any adverse effects, will be considered, acted upon where appropriate and recorded.

## **Legal Implications**

- 7.2 All schemes proposed in this AQE Programme aid the Mayor's and TfL's duty to bring about compliance with legal limit value for pollutants such as NO<sub>2</sub> as soon as possible. Nearly all the projects within the AQE Programme contribute to reducing pollutants and improving air quality.

### **Privacy and General Data Protection Regulation (GDPR)**

- 7.3 All relevant public bodies (including TfL) are under a legal duty to protect personal information and to ensure compliance with General Data Protection Regulation (GDPR) and associated data protection legislation. A range of robust policies, processes and technical measures are in place to control and safeguard access to, the use of, personal information associated with all Air Quality schemes.
- 7.4 Data Protection Impact Assessments (DPIA) have been completed for relevant schemes. The DPIA helps ensure the operational decisions made have been considered in terms of data protection, understand data security concerns, and identify/implement mitigations for any privacy and data security risks. The DPIA will involve the Information Commissioner's Office (ICO) and the Metropolitan Police Service.

## 8 Financial Implications

- 8.1 The AQE Programme comprises of the projects outlined in the Table in Appendix 2. This Financial Authority is captured in the proposed two year Budget for 2021/2022 and 2022/23 (which will also become the Business Plan for those years) to be approved by the TfL Board on 9 December 2020.

Activity Areas	Current Financial Authority £m	Current P&PA Authority £m	Additional Proposed P&PA Authority £m	Authority Request (£m)								
				2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2017/18 to 2024/25
Air Quality Systems	390	282	9	29	32	48	101	81	0	0	0	291
AQE Electric Vehicles	231	173	26	15	38	41	55	39	11	0	0	199
AQE Energy	3	1	2	0	0	0	0	0	2	0	0	3
Value Engineering	-60	-16	-19	0	0	0	-8	-25	-2	0	0	-35
<b>TOTAL</b>	<b>565</b>	<b>440</b>	<b>17</b>	<b>43</b>	<b>70</b>	<b>89</b>	<b>148</b>	<b>95</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>457</b>

\*Financial Authority – Budget and Business Plan to be approved by the Board on 9 December 2020

**Table 3: Constituent activity areas and Programme and Project Authority requested from Programme and Investment Committee**

- 8.2 One of the main projects for which we are seeking Programme and Project Authority for is Grid to Gate at £26.7m of which £3.4m is third party funding. This project is at an early stage, the EFC is currently c.£163m up to FY 2025/26, this estimate will be refined though 2021/22 before the next annual submission. The Authority is being requested at Programme level and will be drawn-down as Project Authority using formal project governance. The full funding of this project will be subject to future government settlement agreement and any subsequent prioritisation of the TfL Investment Programme.
- 8.3 Projects within the AQS Programme (ULEZ Expansion, LEZ and DVS) have been managed as a programme due to the similar nature of the schemes. This has released savings due to assurance of the fixed price from Capita and assurance on risk being effectively mitigated. Therefore requesting £7.7m Programme and Project Authority for ULEZ Expansion will not go beyond the total Financial Authority granted for the project.
- 8.4 We are also seeking Programme and Project Authority for the Air Quality Systems re-let at £15.2m for 2021/22. This will look to review the current system and service operations contracts associated with the Air Quality System Programme. This will then lead into any necessary decision making regarding the shape of the procurement. This project is at an early stage and the EFC will be refined though

2021/22 before the next annual submission. The full funding for this project will be subject to future government settlement agreement and any subsequent prioritisation of the TfL Investment Programme.

- 8.5 Regarding Bus Opportunity Charging, it is important to seek the full £8.5m Programme and Project Authority over two financial years (2021/22 and 2022/23) due to delivery timescales.
- 8.6 Total savings of £35m have been identified in the AQE Programme to date between 2017/18 and 2024/25. This is due to value engineering activities and over-programming. If the full value engineering savings are not realised, then 2020/21 and 2021/22 priorities will be reviewed and projects deferred, de-scoped or stopped, as appropriate.
- 8.7 There is currently cost pressure associated with the AQE Programme between 2017/18 to 2024/25 of £198m. This is mainly due to new projects/ programmes such as Grid to Gate Programme, Bus Opportunity Charging Trial (if it becomes successful) and the AQS Re-Let coming into the AQE Programme. Work is underway identifying third party funding to cover part of this shortfall. Further prioritisation work and phasing will be considered throughout the development of schemes such as Bus Opportunity Charging. Subject to future government settlement agreement and any subsequent prioritisation of the TfL Investment Programme.

## **9 Assurance**

- 9.1 An Integrated Assurance Review (IAR) on the AQE Programme was carried out in November 2020 by the TfL Assurance Team and the Independent investment Programme Advisory Group. No critical issues were identified for the programme.
- 9.2 The Integrated Assurance Plan was updated in November 2020 and sets out the reviews for projects within the AQE Programme for the next 12 months.

### **List of appendices to this report:**

Appendix 1: AQE policy updates

Appendix 2: Programme and Project Authority changes, key deliverables and cost and funding breakdown to 2024/25

### **List of Background Papers:**

Independent Investment Programme Advisory Group Report

TfL Project Assurance Reports

Management response to IIPAG and TfL Project Assurance Reports

Papers submitted to the December 2019 meeting of the Committee

LEZ Tightening, DVS, ULEX and Van Scrappage Equality Impact Assessments

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## **Appendix 1: AQE Policy Update**

### **Key Policy Updates**

#### **Congestion Charge Temporary Changes**

In May 2020, in response to the coronavirus pandemic and in accordance with the terms of the Government funding agreement, TfL urgently brought forward proposals to temporarily widen the scope and level of the Congestion Charge. On 22 June 2020, following approval by the Mayor these temporary changes came into effect. The daily charge was increased to £15 and the hours of operation were extended to 07:00-22:00, seven days a week (except Christmas Day).

#### **LEZ Tightening and DVS enforcement launch**

In April 2020, the Mayor asked TfL to delay the enforcement of the DVS, HGV Safety Permit Scheme and the introduction of tightened LEZ emission standards for at least four months to allow the freight industry to focus on its core operations during the coronavirus pandemic. Following a review of the impact of the pandemic on the supply of new vehicles and retrofitting equipment and on the economic recovery of affected vehicle owners from the pandemic, in September 2020, a launch date of 1 March 2021 was confirmed for both schemes.

#### **Scrappage Scheme policy changes**

The scrappage schemes were introduced to support the introduction of the ULEZ and tightened LEZ standards. The schemes have been very successful, in part due to a policy decision in January 2020 to increase the payment level for the Van and Minibus Scrappage Scheme from £3,500 to £7,000. Therefore, due to an unprecedented demand and a limited budget, TfL suspended the Van and Minibus Scrappage Scheme to van owners on 28 August 2020. The scheme remains open for charities to scrap minibuses, given their vital work during the pandemic. The van scrappage scheme ran for 18 months and committed enough support to take 5,000 polluting vehicles off London's roads.

TfL also created a heavy vehicle grant scheme which was launched on 28 September 2020. The scheme had a limited budget which was clearly communicated from the outset. Demand was high, and the scheme was only able to operate for two weeks as the funds were rapidly exhausted and it was therefore necessary to suspend the scheme.

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## Appendix 2: Programme and Project Authority (P&PA) changes and key deliverables

	Project	Key Deliverables	Current P&PA £m	Additional Proposed P&PA £m 2020/21-2022/23	2020/21 Proposed P&PA £m	2021/22 Proposed P&PA £m	2022/23 Proposed P&PA £m	Total P&PA Proposed £m 2020/21-2022/23
Air Quality Systems	<b>ULEZ Expansion</b>	Go live in October 2021	128.6	7.7		7.7		136.3
	<b>LEZ Tightening</b>	Go Live in March 2021	16.5	(5.1)		(5.1)		11.4
	<b>Strategic Options</b>	Digital Webchat Go live	1.0	1.3	1.3			2.3
	<b>DVS</b>	Enforcement Go Live in March 2021	14.3	(0.8)	(0.8)			13.5
	<b>Camera Refresh</b>	Included in ULEZ Expansion	7.3	(7.3)		(7.3)		0
	<b>Van Scrappage</b>	To make grant payments to eligible applicants held in queue	23.0	14.8	14.8			37.8
	<b>Car and Motorcycle Scrappage</b>	All grants to be released	25.0	(14.7)	(14.7)			10.3
	<b>Congestion Charge Changes</b>	If any changes are to be made permanent, public consultation is needed	0.0	4.0	3.0	1.0		4.0
	<b>Air Quality Systems Re-Let</b>	To begin the process of understanding the re-let of the Air Quality Systems in line with contract expiration from Capita and Siemens.	0.0	15.2		15.2		15.2

<b>Electric Vehicles</b>	<b>Dial-a-Ride Fleet Renewal</b>	256 Dial-a-Ride vehicles completed by October 21	24.9	(4.7)	(4.7)			20.2
	<b>Mayors Air Quality Fund</b>	Completion of year 2 of the third and final round.	11.4	1.0		1.0		12.4
	<b>Bus Retrofit</b>	All retrofit work completed in 2020/21.	88.7	(5.6)	(5.6)			83.1
	<b>Project</b>	<b>Key Deliverables</b>	<b>Current P&amp;PA £m</b>	<b>Additional Proposed P&amp;PA £m</b>	<b>2020/21 Proposed P&amp;PA £m</b>	<b>2021/22 Proposed P&amp;PA £m</b>	<b>2022/23 Proposed P&amp;PA £m</b>	<b>Total P&amp;PA Proposed £m 2020/21-2022/23</b>
	<b>Hydrogen Buses</b>	Hydrogen refuelling station to complete by March 21.	16.0	(0.1)	(0.1)			15.9
	<b>Grid to Gate Programme</b>	Completion of 17 garages and 29 in other delivery stages.	0.0	26.7	3.4	23.3		26.7
	<b>Rapid Charging Infrastructure</b>	Completion of 300 rapid chargers by December 20	17.2	0.0				17.2
	<b>Go Ultra Low City</b>	Completion of 2150 residential chargers by March 21	10.5	(0.3)	(0.3)			10.2
	<b>Bus Opportunity Charging</b>	Detailed design to complete	0.0	8.5	0.1	1.5	6.9	8.5
	<b>Energy Programme</b>	<b>Electrifying the fleet / Waste Heat/ Private Wire</b>	Further feasibility work	0.9	1.7			1.7



	<b>Other</b>	Schemes already delivered or dropped.	70.7	(6.0)				64.7
<b>Value Engineering / Over-programming</b>			(15.7)	(19.5)	(1.1)	(17.7)	(0.6)	(35.2)
<b>Total</b>			<b>440.3</b>	<b>16.8</b>	<b>(4.8)</b>	<b>19.6</b>	<b>8.0</b>	<b>457.1</b>

<b>Air Quality &amp; Environment Portfolio</b>										
<b>Gross Costs Rounded to £m</b>		<b>2017/18</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>	<b>2021/22</b>	<b>2022/23</b>	<b>2023/24</b>	<b>2024/25</b>	<b>TOTAL</b>
<b>Portfolio Total - Latest Outturn</b>		43.3	69.8	89.4	145.2	93.9	86.0	103.2	132.1	<b>762.9</b>
	TfL element	37.7	59.3	74.6	106.5	78.9	83.8	102.2	132.1	<b>675.1</b>
	Third party funding	5.5	10.5	14.8	38.7	15.0	2.2	1.0	0.0	<b>87.8</b>
<b>Financial Authority *</b>		43.3	69.8	89.4	148.5	127.9	86.0	0.0	0.0	<b>564.9</b>
	TfL element	37.7	59.3	74.6	109.8	112.9	83.8			<b>478.0</b>
	Third party funding	5.5	10.5	14.8	38.7	15.0	2.2			<b>86.8</b>
<b>Gross Surplus / (Shortfall) v Financial</b>		0.0	0.0	0.0	3.3	34.0	0.0	-103.2	-132.1	<b>-198.0</b>
<b>Project Authority</b>	<b>Total Request</b>	43.3	69.8	89.4	148.2	95.2	10.6	0.4	0.1	<b>457.1</b>
	Approved Authority	43.6	91.6	124.4	159.5	75.5	12.2	3.2		<b>510.0</b>
Transferred out since December 2019	ZEC Taxi & Delicensing grant	-0.4	-21.8	-14.4	-13.4	-6.6	-6.6	-6.5	0.0	<b>-69.7</b>
	New Request	0.0	0.0	-20.6	2.1	26.3	5.1	3.8	0.1	<b>16.8</b>
<b>Future Authority Requests</b>		0.0	0.0	0.0	0.0	-1.3	75.3	102.7	132.0	<b>308.8</b>

## Programmes and Investment Committee



**Date:** 11 December 2020

**Title:** Cycle Hire Modernisation

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 The purpose of this paper is to request Financial Authority and Programme and Project Authority for the values set out in the paper on Part 2 of the agenda, to modernise the Cycle Hire Scheme over Financial Years (FY) 2021/22 to 2022/23.
- 1.2 Cycle Hire modernisation is part of the Surface Technology Programme. In October 2020, the Committee approved Programme and Project Authority of £20.3m for the Surface Technology Programme to cover the financial year 2020/21. Further approval is required as this request includes spend commitments in financial years 2021/22 and 2022/23.
- 1.3 Supplementary information is included in the paper on Part 2 of the agenda. This information is exempt and is therefore not for publication to the public or press by virtue of paragraphs 3 and 5 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to business affairs of TfL and legally privileged advice. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendations**

- 2.1 **The Committee, is asked to note the paper and the supplementary information in the paper on Part 2 of the agenda, and:**
  - (a) **approve Financial Authority and Programme and Project Authority of the values set out in the paper on Part 2 of the agenda to modernise the Cycle Hire Scheme as described in this paper; and**
  - (b) **approve an increase in the Programme and Project Authority for the Surface Technology Programme in October 2020 by the values set out in the paper on Part 2 of the agenda; and**
  - (c) **note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision will, therefore, need to be made for those commitments in future Business Plans and Budgets.**

### 3 Background

- 3.1 The London Cycle Hire Scheme (LCHS), also known as Santander Cycles, was introduced in 2010. Since its introduction, Santander Cycles has delivered over 97 million trips, with infrastructure covering 800 sites and 14,000 bikes across London. The scheme is a key contributor to the Mayor's Transport Strategy (MTS) 'Active' outcome and can continue to encourage more cycling by introducing new products and services.



**Figure 1: Santander Cycles**

- 3.2 LCHS assets have not generally been refreshed since 2010. Both on-street assets, like bikes and terminals, and back office systems used to handle payments and store customer information, are approaching the end of their design life. In particular, the back-office system has not kept pace with key developments in the technology sphere which are now required to operate a viable cycle hire business over a decade after its introduction.
- 3.3 LCHS also operates in an increasingly competitive micro-mobility market across London. Despite looming obsolescence of key systems, it has kept pace with dockless operators and enjoys the backing of corporate sponsor Santander.

### 4 Business Case

#### Strategic Context

- 4.1 Santander Cycles has adopted a vision to modernise, to keep pace with changing market conditions. Cycling has been a priority since the coronavirus outbreak, as a socially distanced transport mode, with Santander Cycles experiencing record hires and breaking numerous personal records as illustrated in Figure 2. If cycling is to be promoted as one of the first-choice modes in the long term, it will be increasingly important to ensure the scheme is accessible and appealing to all.



**Figure 2: Santander Cycles May 2020 Achievements**

- 4.2 Santander Cycles aims to support TfL's financial objectives as a self-sufficient TfL transport mode. The scheme has seen a significant uplift in revenue for 2020 due to usage during the coronavirus pandemic and this, combined with improvements, could increase usage and generate additional revenue.
- 4.3 Santander Cycles needs to adapt to the latest applicable regulations. The current set-up poses financial and technical challenges to meeting the requirements of these regulations.

### **Objectives and Scope**

- 4.4 The modernisation initiatives aim to broaden and increase Santander Cycles usage, drive revenue, ensure operating costs deliver value for money and adapt to the requirements of the latest applicable regulations.
- 4.5 The modernisation proposal will improve the customer offering through measures to ensure Santander Cycles benefits from the latest market functionality for bicycle sharing systems, including an upgraded back office solution with the ability to offer flexible fare models. The detailed scope of these proposals is set out in the paper on Part 2 of the agenda.

### **Benefits and Value**

- 4.6 The proposal will deliver a range of quantified and non-quantified benefits. The economic appraisal, with consideration of the capital investment, operational impacts and revenue impacts is set out in the paper on Part 2 of the agenda.
- 4.7 Non-quantified benefits include:
- (a) **compliance:** the proposal will ensure Santander Cycles stays up to date with the latest regulatory and payment card industry requirements to the benefit of customers and TfL;

- (b) **increased cycling in underrepresented groups:** the enhanced customer offering aims to appeal to a broad range of customers, including those who may not currently choose to cycle. This may also result in mode switch from less sustainable modes of travel; and
- (c) **customer satisfaction:** the enhanced customer offering is expected to improve customer experience through new products and simplified features.

## 5 Delivery Approach

- 5.1 Programme management is provided by the TfL Rail and Sponsored Services Delivery Team. TfL Technology and Data (T&D) are providing project management and support for the technical elements of the programme, such as the back-office system upgrade.
- 5.2 The proposals will be delivered through existing contracts in place for the operation of Santander Cycles. The paper on Part 2 of the agenda sets out further detail on this approach.
- 5.3 Risks are captured at both programme and project level through the appropriate risk registers. A risk manager has been assigned to the Programme to support the capture and management of risks.
- 5.4 The delivery milestones are under discussion with delivery suppliers. A phased delivery of key scope items is expected from Spring 2022.

## 6 Legal and Equalities Implications

- 6.1 Legally privileged advice on the proposal is included in the paper on Part 2 of the agenda.
- 6.2 Equality Impact Assessments (EqIAs) have been produced to assess the impacts of the proposals with consideration to the Public Sector Equality Duty set out in section 149 of the Equality Act 2010. This is a continuing duty and the EqIAs will be updated as the proposals are developed. The initial findings of the EqIAs are summarised in the paper on Part of the agenda.

## 7 Assurance

- 7.1 TfL Assurance led an Integrated Assurance Review (IAR) on the Modernise and Electrify Projects in November 2020. The IAR did not identify any critical issues.

### List of appendices to this report:

A paper containing exempt supplemental information is included on Part 2 of the agenda

### List of Background Papers:

TfL Project Assurance Reports

Management response to IIPAG and TfL Project Assurance Reports

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## Programmes and Investment Committee



**Date:** 11 December 2020

**Item:** Enterprise Risk Update – Delivery of TfL Key Investment Programmes (ER8)

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**This paper will be considered in public**

### **1 Summary**

- 1.1 As part of TfL's risk management process, the Programme and Investment Committee oversees the "Delivery of TfL key investment programmes" (Enterprise Risk 8). This update includes programmes and projects across TfL under the following areas: Major Projects Directorate, Surface Transport, London Underground, Commercial Development, City Planning and Investment Delivery Planning.
- 1.2 This paper provides an update on how TfL manages the risk across its Capital delivery.
- 1.3 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

### **2 Recommendation**

- 2.1 **The Committee is asked to note the paper and the exempt supplemental information provided on Part 2 of the agenda.**

#### **List of appendices to this report:**

A paper containing exempt supplemental information is included on Part 2 of the agenda.

#### **List of Background Papers:**

None

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## Programmes and Investment Committee



**Date:** 11 December 2020

**Title:** Healthy Streets Programme, H2 2020/21

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### **This paper will be considered in public**

## **1 Summary**

- 1.1. This paper follows the use of Chair's Action on 17 November 2020 for an additional £75.0m of Programme and Project Authority for the continued delivery and remobilisation of the Healthy Streets Programme (including the London Streetspace Programme - LSP), giving a total of £465.1m Programme and Project Authority.
- 1.2. The focus of the paper is to:
- (a) update on the status of the DfT Emergency Active Travel Tranche 2 funding;
  - (b) update on monitoring and outcomes from H1 (Quarters 1 and 2 of 2020/21);
  - (c) provide detail of planned delivery and target outcomes for H2 (Quarters 3 and 4 of 2020/21);
  - (d) update on lessons learnt; and
  - (e) summarise the outputs from the Integrated Assurance Review undertaken for the Healthy Streets Programme (including LSP) and Old Street Roundabout.

## **2 Recommendation**

- 2.1 The Committee is asked to note the paper.**

## **3 Update on DfT Emergency Active Travel Fund Tranche 2 funding**

- 3.1 On 13 November 2020, TfL received confirmation on its bid for an additional £20.0m through the Department for Transport (DfT) Emergency Active Travel Fund Tranche 2 (EATF T2) to deliver borough-led walking and cycling schemes.
- 3.2 The £20.0m DfT EATF Tranche 2 funding has been allocated to LSP borough-led schemes and the DfT have indicated that they do not require total spend by the end of the financial year, while still wanting delivery as soon as is practicable. The approximate split of the original bid-for programme is around £13m for strategic cycling with the remaining allocation largely for Low Traffic Neighbourhoods (LTNs) and School Streets.

3.3 The delivery of the LSP programme in H1 was successful, however, there are a number of changes in expectations from the DfT as well as learning from delivery in H1 which justify a review of which projects are still desired by, and deliverable within, the timelines set by the DfT. It may well be that this alters the balance of what is delivered by the programme. There is also a significant interaction with the LSP borough programme in H1, with some projects that require funding to complete them.

## 4 Update on LSP monitoring and outcomes for H1

4.1 As set out in the Chair's Action paper of 12 November 2020, an LSP monitoring plan for TfL and borough-led schemes is in place and data is being collected to track scheme outcomes and help assess the viability of schemes being made permanent, subject to appropriate consultation, impact assessment and compliance with statutory process. For TfL-led schemes, this will consider a number of factors including alignment with bus, cycle, pedestrian and freight networks; safety; network impacts; and overlaps with existing Healthy Streets proposals.

4.2 Well-established surveys and tools are being used to monitor wider trends across London and we are continuing to assess the overall impact of London Streetspace schemes. Emerging conclusions will be published in the Travel in London Report 13 in December 2020. This report will be followed by a more comprehensive assessment in Spring 2021, following the collection of additional monitoring data.



**Figure 1: 19 Low Traffic Neighbourhoods were delivered across 18 boroughs (left) and 305 school streets across 23 boroughs (right)**

### Low Traffic Neighbourhoods

4.3 London wide surveys exploring public opinions of LTNs have shown support ranging from 42 per cent (GLA poll in September 2020) to 52 per cent (Redfield & Wilton Strategies survey, 2020) and opposition ranging from 30 per cent (GLA poll) to 19 per cent (Redfield & Winton). In addition, assessment of LTNs using resident perception surveys are being undertaken by TfL across a sample of LTN schemes to provide a more local and granular picture of LTNs. The first of these, in south London, found 56 per cent of people wanted to keep the scheme, against

38 per cent who wanted to remove it<sup>1</sup>. In summary, all three of the surveys on LTNs demonstrate that support outweighs opposition.

### **Pedestrian Social Distancing Schemes**

- 4.4 A review of the pedestrian social distancing schemes implemented during H1 is underway for projects on both the borough and TfL highway. The review assesses:
- (a) expected benefits and observed usage by pedestrians;
  - (b) safety impacts of the measures;
  - (c) scheme impacts on cycling access and usability (e.g. where carriageways have been narrowed); and
  - (d) impacts on congestion and bus services.
- 4.5 All TfL highway schemes have been reviewed, and as a result 11 sites have been fully or partially removed and four sites are due to have barriers replaced with temporary pavement build outs to increase permeability for pedestrians.
- 4.6 TfL has written to the London Boroughs sharing the methodology used for TfL-led sites asking them to undertake similar reviews on their schemes, providing feedback on actions taken.



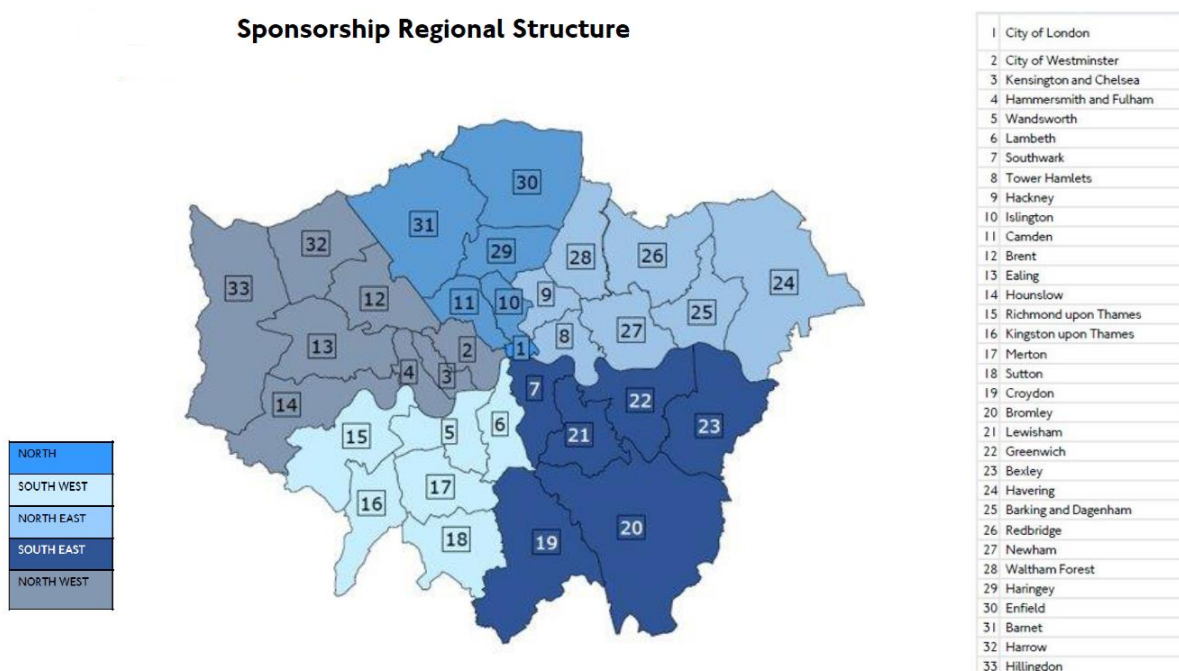
**Figure 2: Children play on a quiet road following local LSP measures**

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<sup>1</sup> Data from Railton Road Pilot LTN Survey. Online population sampled: local residents who live inside and outside the LTN area. Sample size: 349 respondents.

## 5 Detail on planned delivery and target outcomes in H2 2020/21

- 5.1 While there has been significant delivery so far against the long-term goals set out in the Mayor’s Transport Strategy (MTS), further activity across the Capital is required to meet these objectives. TfL has been gathering evidence and analysing the latest data to understand which roads are important for which modes. We now have a good understanding of where it is strategically important for us to invest in bus, walking, cycling and freight networks on London’s roads and are able to generate priority schemes that rejuvenate town centres, while addressing high road danger and poor air quality.
- 5.2 Using this geographical London-wide information for the various modes, we are now shifting to an area-based, multi-modal approach to planning; supported by an area-based structure for Healthy Streets delivery to ensure investment is planned holistically across five geographical areas. A significant level of work undertaken in H2 will be to move these schemes forward from outcome definition, to ensure they are ready for design and delivery in 2021/22 and beyond.



**Figure 3: Healthy Streets Geographic Delivery Areas**

- 5.3 In addition, a new Bus Taskforce was launched in September 2020, bringing together teams from across TfL to provide renewed focus and priority on addressing declining bus speeds and patronage. The Bus Priority Programme (BPP), a previously annualised programme funding schemes to deliver improved bus journey times has been integrated into this Taskforce combining workstreams on the TLRN, the Borough road network and the Central London Bus Grid (a network of corridors in central London identified as critical to the bus network and identified for specific improvements to bus journey times).

5.4 Key priorities for the Bus Taskforce include:

- (a) continuing and accelerating the delivery of existing BPP schemes;
- (b) establishing a new pipeline of schemes to deliver bus journey time improvements; and
- (c) supporting the transition towards multi-modal scheme development and area-based investment, ensuring bus objectives are understood, captured and realised.

### **Healthy Streets Programme H2 Delivery Overview**

- 5.5 The programme of Healthy Streets and LSP activity in H2 continues to focus on supporting a green and sustainable recovery that stems modal shift to private vehicle, while continuing to deliver complementary MTS objectives to reduce road danger, encourage modal shift to walking, cycling and public transport, and to improve the speed and reliability of the bus network.
- 5.6 The primary aim of the LSP is to make it easier and safer for people to maintain social distancing in response to the pandemic by allowing people to walk, cycle or scoot more often which has the added benefit of keeping London's air as clean as possible to protect everyone's health and tackle the climate emergency.
- 5.7 Many of the temporary LSP schemes have the potential to contribute to the long-term aims of the MTS and in H2 we will be working with the boroughs to assess whether any of the temporary projects should, subject further public engagement, appropriate consultation and compliance with statutory processes, be converted to permanent schemes.
- 5.8 Encouraging more Londoners to travel actively will be an important part of London's recovery from the pandemic. In addition to the London Streetspace Programme, we are restarting some key Healthy Streets programmes, including:
- (a) **Safe speeds** - we will continue our programme to lower speed limits on our roads, to reduce the probability and severity of road traffic collisions;
  - (b) **Safe streets** - we will use the latest collision data to identify high risk locations for targeted safety improvements, and continue to deliver changes to dangerous junctions to protect vulnerable road users;
  - (c) **Growing our cycle network** - building on the rapid rollout of cycle routes and cycle parking through the LSP and we will restart the delivery of permanent cycle network;
  - (d) **Transforming places** - we will continue to transform areas around some of London's busiest junctions to make them safer, healthier and more pleasant places to be;
  - (e) **Residential neighbourhoods** - we will work with boroughs to deliver and monitor Low Traffic Neighbourhoods and School Streets, and restart the Liveable Neighbourhood programme;



- (f) **Local Implementation Plan funding** - for borough schemes, continuing schools engagement and cycle training; and
- (g) **An ambitious programme of work to improve bus speeds** - continuing the development of the bus network to ensure it becomes a viable sustainable alternative to private car travel.

5.9 Table 1 sets out the planned spend against delivery areas for the Healthy Streets Programme.

<b>Programme</b>	<b>Description</b>	<b>H2 £m</b>
LIP Corridors	Core borough funding to restart Local Implementation Plan schemes that align with the Mayor's Transport Strategy and, where applicable, provide greater certainty on borough staff resourcing for the remainder of 2020/21.	25.1
Borough Programmes	To restart schemes within the following borough programmes: (a) Liveable Neighbourhoods; (b) LIP Major Schemes (complete detailed design at Beam Parkway, and start construction subject to GLA funding availability); and (c) Crossrail Complementary Measures (programme parameters subject to Crossrail pace of delivery).	8.5
Bus Priority (Borough)	As well as delivering some quick-win Bus Priority schemes in H2, the key focus will be on building up an ambitious pipeline of 27 high priority bus corridor schemes for delivery in 2021 and beyond.	5.3
<b>Borough sub-total</b>		<b>38.9</b>
<b>Programme</b>	<b>Description</b>	<b>H2 £m</b>
Old Street	To continue construction of safety improvements at Old Street Roundabout.	12.5
Healthy Streets schemes (incl. Hammersmith Ferry)	To deliver high priority schemes that align with the following objectives: (a) Contribution to safety and Vision Zero (i.e. Lowering Speed Limits); (b) Contribution to fares recovery; (c) Third party funding or prospect for securing third party funding (i.e. Major Road Network schemes); and (d) Contribution to other strategic objectives including delivering the cycle network, school travel planning, healthy streets officers and e-scooters.	32.8
Bus Priority (TLRN)	See above – delivery of quick-win bus priority schemes in H2 and pipeline of 27 high priority bus corridor schemes for delivery in 2021 and beyond.	4.2

<b>Programme</b>	<b>Description</b>	<b>H2 £m</b>
LSP TfL-led	Continue design and delivery of temporary strategic cycle routes using some upgraded materials, monitoring of impacts to inform decisions about conversion to permanency. Start planning for conversion of schemes from temporary to permanent. (Subject to monitoring outputs and stakeholder engagement, appropriate consultation, impact assessment and compliance with statutory process)	10.0
<b>TfL sub-total</b>		<b>59.5</b>
Over-programming <sup>2</sup>	The over-programming approach to Healthy Streets ensures that we are working on more projects than we have funding for, based on historic knowledge of programme slippage in the past – for example, due to stakeholder intervention. This approach will help us achieve delivery against the £75m budget.	-23.4
<b>Total (excluding DfT EATF T2)</b>		<b>75.0</b>
LSP Borough-led – funded from DfT EATF T2	Delivery of Low Traffic Neighbourhood schemes, School Streets and Strategic Cycle Routes.	20.0
<b>Total requested for H2 2020-21</b>		<b>95.0</b>

**Table 1: Planned spend against delivery areas for the Healthy Streets Programme**

<sup>2</sup> Over-programming is used to ensure that the H2 delivery meets our targets (see also budget breakdown included in the Chair's Action. If progress is better than expected, we will reduce the pace of delivery to ensure we stay within the overall budget envelope.

## Target outcomes

- 5.10 Based on the proposed H2 programme, Table 2 sets out the proposed target measures, covering both TfL and borough-led delivery. This will be reviewed and reported on a periodic basis.

Workstream	Measure	H2 Target
Strategic Cycling	Improved cycling infrastructure (km)	30km
Bus Journey Times	Bus Journey Time Savings delivered (hours)	12 hours
TLRN Safer Streets	Construction underway (number)	5
Pedestrian Crossings on TLRN	New or improved signalised pedestrian crossings delivered (number)	14
Liveable Neighbourhoods	Liveable Neighbourhoods completed (number)	1

**Table 2: H2 2020/21 Target Measures**

## 6 Lessons Learnt and Risk

- 6.1 A number of lessons learnt during H1 will be taken forward into H2 including:
- (a) engagement with the Emergency Services (ES) will continue to be strengthened, including setting up regular strategic meetings with the ES and boroughs alongside an action plan. Lessons learnt from designs, responding to feedback from the Emergency Services, are already being communicated with the boroughs;
  - (b) agile management of change control including switching funds between schemes or toward new schemes, to achieve delivery milestones and maximise benefits;
  - (c) work with London Technical Advisory Group (LoTAG) to achieve consensus with boroughs on key topics such as Low Traffic Neighbourhood (LTN) design, Equality Impact Assessments (EqlAs), public engagement; and
  - (d) extended deadline on EATF Tranche 1 (£2.0m to TfL) to spend or commit by end of the calendar year to enable seamless delivery between Tranche 1 and Tranche 2 (rather than a stop-start approach).
- 6.2 Based on our experience delivering schemes both on the TLRN (Transport for London Road Network) and in collaboration with the London boroughs as well as lessons learnt from delivery within H1 and timeframe for H2 delivery, a number of risks to delivery within H2 have been identified together with mitigations as set out in table 3 below.



Risk / Lesson Learnt	Mitigation / Application to H2
<p>H1 programme scope delivered was different to original proposals - delivery was strong but required flexibility, regular reporting and agile governance between TfL and the boroughs</p>	<p>Approach to be taken forward into H2, including regular review of projects in scope to ensure deliverability / benefits are managed within the timeframe / budget constraints of H2.</p>
<p>New DfT requirements around engagement, consultation and monitoring for EATF Tranche 2 £20m funding impacting deliverability within H2 timeframe</p>	<p>TfL is negotiating with the DfT to extend the 'spent/committed' by date beyond the financial year end as well as making it clear that boroughs will need financial commitment to consult, develop and deliver.</p>
<p>Cumulative impacts of delivering multiple temporary projects at the same time – this required detailed multi-modal assessment, regular reporting (including at Road Space Performance Review Group (RSPRG), decision notes, network monitoring and escalation where relevant</p>	<ul style="list-style-type: none"> <li>• Assessment of schemes within H2 programme has taken a similar multi-modal approach. RSPRG to be continued in H2 including escalation and monitoring of operational impacts where necessary</li> <li>• Monitoring of feedback from public and stakeholders to be used to inform decisions making for projects</li> </ul>
<p>While the majority of projects in H1 were delivered successfully, issues around public and political acceptability / support for some projects (including LTNs) impacted scheme delivery / feedback</p>	<ul style="list-style-type: none"> <li>• The updated government guidance and appropriate consultation before any schemes are made permanent may help to address some of these issues along with learning from strengthened liaison with the emergency services and amended designs</li> <li>• Wider use of public opinion surveys to form part of H2 programme with continued monitoring and review of schemes to assess longer term outcomes following this initial 'spike' in feedback</li> </ul>
<p>The timeframe for removal or permanency of temporary schemes will extend beyond the H2 budget / timeframe, requiring future planning / budget to deliver</p>	<ul style="list-style-type: none"> <li>• While some planning can be undertaken within H2, it is inevitable that work will extend beyond H2, for TfL and the boroughs</li> <li>• Planning around removal / permanency of schemes should look beyond the H2 timeframe and feed into future Business Planning discussions</li> <li>• Given uncertainty around funding, this may need to come from LIP allocations in future</li> </ul>

**Table 3: Risks / Mitigations for H2 delivery**

## **7 Legal Implications**

- 7.1 LSP schemes have generally been delivered under Temporary Traffic Orders which apply for 18 months from scheme implementation. Proposals for H2 2020/21 take into account the potential for some temporary LSP schemes to be made permanent. Any proposals for temporary schemes to be made permanent will be subject to appropriate public and stakeholder engagement, appropriate and meaningful consultation and compliance with statutory processes before any decisions are made. TfL has developed a monitoring framework for identified schemes that may be considered suitable to be made permanent, subject to further public engagement, appropriate consultation and compliance with statutory processes. In addition, TfL will provide guidance to boroughs on monitoring to support any proposals for the conversion of borough LSP schemes to permanent schemes.

## **8 Equalities Implications**

- 8.1 Section 149 of the Equality Act 2010 (the Public Sector Equality Duty) provides that, in the exercise of their functions, public authorities must have due regard to the need to:
- (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;
  - (b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and
  - (c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.
- 8.2 In delivering schemes, TfL will comply with the Public Sector Equality Duty and Equality Impact Assessments will be undertaken and acted upon for all TfL delivered schemes. In addition, TfL will comply with Section 17 of the Crime and Disorder Act 1998 and will consider how to reduce the risk of crime, including acts of terrorism, in their plans, projects and activities.
- 8.3 The Licensed Taxi Drivers' Association and the United Trade Action Group Limited have brought a challenge by way of judicial review to the making by TfL of a traffic order which is designed to temporarily free up space for buses, cyclists and pedestrians on Bishopsgate in London as an emergency measure in response to the coronavirus pandemic. The issuing by TfL of streetscape guidance to Boroughs is also challenged. A hearing took place on 25 and 26 November and judgment has been reserved.

## 9 Integrated Assurance Review

### Healthy Streets Programme

- 9.1 TfL Project Assurance, along with representatives from TfL's Independent Investment Programme Advisory Group (IIPAG) conducted an Integrated Assurance Review (IAR) on the programme between 20 October and 11 November 2020. The focus of the review was on progress against MTS 2041 targets, prioritisation of existing and new projects for H2, programme management, and an evidence-based review of delivery performance, especially on the H1 Streetspace programme.
- 9.2 TfL Project Assurance identified no critical issues and made three secondary recommendations. IIPAG made a further three recommendations. The external experts noted in their final report that: "The trade-offs of competing/conflicting stakeholders' priorities or strategic imperatives is being well managed through established TfL forums (such as the Road Space Performance Group) and processes (such as regular and planned scheme monitoring, and lessons learnt). This is true for major Borough schemes (which also go to Road Space Performance Group) resulting in a good level of coherence and integration of those schemes in the TfL Planning process."

### Old Street Roundabout

- 9.3 A separate IAR was undertaken by TfL Project Assurance and IIPAG on the Old Street Roundabout project between 21 October and 9 November 2020. The focus of the review was on the maturity of the scope, risk management, schedule and cost estimate along with a review of the business case, change control, cost history and new contract performance.
- 9.4 TfL Project Assurance identified no critical issues and made four secondary recommendations. IIPAG made a further three recommendations.

#### List of appendices to this report:

None

#### List of Background Papers:

Independent Investment Programme Advisory Group Report (Healthy Streets and Old Steet Roundabout)

TfL Project Assurance Reports (Healthy Streets and Old Steet Roundabout)

Management response to IIPAG and TfL Project Assurance Reports (Healthy Streets and Old Steet Roundabout)

Chair's Action 12 November 2020 Healthy Streets Programme, H2 2020/21 submission

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## Programmes and Investment Committee



Date: 11 December 2020

Item: Bakerloo Line Upgrade and Extension Update

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### This paper will be considered in public

#### 1 Summary

- 1.1 The purpose of this paper is to update the committee on the progress of the Bakerloo Line Upgrade & Extension (BLUE) Programme, and to request endorsement of our plans to seek Statutory Safeguarding directions from the Secretary of State for Transport for the proposed route of the extension to Lewisham. Costs to TfL in securing Statutory Safeguarding Directions are included in the FY2020/21 TfL Revised Budget.

#### 2 Recommendations

- 2.1 **The Committee is asked to note the paper and endorse the Programme's plans to seek Statutory Safeguarding directions for the route to Lewisham.**

#### 3 Background

- 3.1 The BLUE Programme is a combined programme of work that could be delivered in phases: the upgrade of the existing line; the extension from Elephant & Castle to Lewisham; and the possible conversion of the Network Rail-operated Hayes line south of Lewisham for London Underground operation.
- 3.2 The essential introduction of brand-new rolling stock as the first step of an upgrade to the Bakerloo line will provide a step-change in service, taking LU's oldest and ailing fleet off the tracks and giving our customer's a modern and reliable service. New rolling stock is a prerequisite to an extension owing to the requirement for additional trains to serve an extended route, which would need to be compatible with the trains on the rest of the line.
- 3.3 The proposed c.9km extension of the line from Elephant & Castle to Lewisham is expected to support delivery of around 47,500 new homes and 16,000 jobs, as well as increasing accessibility to existing homes and jobs across south and south east London.
- 3.4 Throughout 2019/20 the BLUE programme has continued to undertake project development activities including refining design options, development of robust cost estimates and carrying out site specific surveys. We have also conducted a public consultation and having due regard to responses to that consultation; worked with local authorities and other programme stakeholders including landowners to develop the route and engaged with the DfT to discuss safeguarding the route to Lewisham through Statutory Safeguarding Directions.

- 3.5 In addition, in July 2019, TfL approved £15m of Financial Authority to progress an integrated Northern and Bakerloo line ticket hall at Elephant & Castle. Works to enable the integrated ticket hall are required to be delivered at the same time as the construction of the planned new Northern line ticket hall and this was strongly supported in the autumn 2019 public consultation on our plans for the Bakerloo line extension. Funding for this is made up of £7.5m from the TfL Growth Fund and £7.5m of funding from the London Borough of Southwark. The London Borough of Southwark contribution was approved by their Cabinet in January 2020. Whilst currently under development, space-proofing for the inclusion of the future Bakerloo line represents a potential saving to the BLUE Programme, which is being developed and delivered by the Major Stations Programme.
- 3.6 In October 2020 TfL published its prospectus for the Comprehensive Spending Review, outlining our investment priorities to get London and the UK moving again. While being realistic about what is affordable in the wake of the coronavirus pandemic, this prospectus highlighted rolling stock replacement for the Bakerloo line as a priority and emphasised the importance of safeguarding the Bakerloo line extension in the immediate term to ensure that the programme could support London's long term growth in the future.

## **4 Public Consultation**

- 4.1 In autumn 2019 we ran our third public consultation on the Bakerloo Line extension project, receiving over 8,700 responses. The consultation presented: detailed plans for an integrated ticket hall (Northern and Bakerloo lines) at Elephant & Castle; the principal and secondary worksite locations along the route to Lewisham; and the proposed tunnel alignment from Lambeth North to Lewisham. We also asked whether respondents support a further extension from Lewisham to Hayes and Beckenham Junction (via the existing Network Rail lines). Our proposed option for the principal worksite was at New Cross Gate.
- 4.2 Responses to the consultation demonstrated a high level of overall support for the extension of the Bakerloo line. No major issues were raised on tunnel alignment and while the proposed worksites were a matter of concern for some landowners (including Sainsbury's, who own the preferred principal worksite location at New Cross Gate), the worksite proposals were supported by other stakeholders, including the London Boroughs of Southwark and Lewisham who expressed their support for the New Cross Gate site.
- 4.3 The factual Consultation Report and our Response to Issues Raised report were published in November 2020 with the support of the GLA and the London Boroughs of Lewisham and Southwark, as well as other stakeholders. These reports set out an analysis of the consideration of consultation responses and can be found [here](#).<sup>1</sup>
- 4.4 Following the consultation, and having considered the responses to it, we have been able to confirm all of the major elements for the proposed extension to Lewisham, and as a result, the proposals that were consulted on in 2019 now form the basis of the request for Statutory Safeguarding directions. The directions would apply to the route of the extension as far as Lewisham and would be valid

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<sup>1</sup> <https://consultations.tfl.gov.uk/tube/bakerloo-extension/?cid=bakerloo-extension>

regardless of whether the extension terminated at Lewisham or was extended further. As we have consulted on all elements of the extension that are proposed to form part of the Statutory Safeguarding directions a further consultation is not required to support the Safeguarding process.

## **5 Recent Progress**

- 5.1 In response to the pandemic and its impact on TfL's finances, we revised the BLUE programme to reduce expenditure this financial year. As a result, we have scaled back our activities to focus on responding to the public consultation and publishing the associated factual Consultation Report and our Response to Issues Raised report, reviewing the cost of the BLUE Programme and securing greater cost certainty, confirming the case for the scheme, investigating potential funding sources and crucially safeguarding the route to Lewisham.
- 5.2 From our ongoing work reviewing the scheme cost, we believe that we could deliver an extension as far as Lewisham in line with the scheme we consulted on last year for under £5bn (2020 prices). This does not include work to upgrade the existing line, but does include the introduction of additional new rolling stock for the extension (assuming the Bakerloo line option in the contract with Siemens Mobility Limited for new deep tube trains is exercised) and provides modest service frequency enhancements. It would not preclude a further extension beyond Lewisham to Hayes and Beckenham Junction.
- 5.3 We have commenced work to develop the Strategic Outline Business Case (SOBC) for the scheme. Alongside the planned Statutory Safeguarding Directions, the SOBC will help to reinforce the case for the scheme, as well as highlight the importance of all elements of BLUE to London's recovery and growth. This work is underway and is due to be completed by May 2021.
- 5.4 As outlined in our October 2020 prospectus for the Comprehensive Spending Review, upgrading the existing Bakerloo line through the replacement of rolling stock remains a core priority owing to the advanced age and declining condition of the fleet. This is being considered as part of wider asset renewal strategy for the business and could take place independently on the extension. Subject to the outcome of this work, we will take a further paper to a future Committee meeting in 2021.

## **6 Engagement with DfT on Safeguarding**

- 6.1 Statutory Safeguarding directions are critical to protect the proposed route for the extension to Lewisham from conflicting development or development which would impede its delivery. The directions would enable us to protect key sites along the route, thereby avoiding significant increases in costs. The BLUE scheme design, whilst avoiding any residential land take, does require the use of a number of commercial properties along the route, either for infrastructure such as stations or shafts, or for construction, many of which may be or are prospects for development. In anticipation of the extension, several of these potential developments are liable to commence before TfL is able to begin the construction of the extension to Lewisham.

- 6.2 With safeguarding directions in place TfL will be in a much better position to protect these sites from conflicting development and will be able to ensure that any development that takes place is cognisant of a future extension. Moreover, were the extension to be precluded by conflicting development, the thousands of new jobs and homes that are reliant upon it would be lost, stymying London's future growth and development.
- 6.3 The BLUE team have been engaging with the DfT to progress the safeguarding process. We have been working with them to enable directions to be made this financial year. Discussions have been positive and the final decision on whether to grant Safeguarding Directions sits with the Secretary of State for Transport.
- 6.4 Costs to TfL in securing Statutory Safeguarding Directions are estimated to be £45k and are included in the TfL Revised Budget for FY 2020/21.

## **7 Assurance**

- 7.1 The BLUE scheme underwent an assurance review in March 2020 with a number of recommendations made. The project will undergo a Pathway Gate A2 review in early 2021. TfL Assurance have confirmed that no further review is required for the progression of Statutory Safeguarding and that responses to their recommendations will be reviewed in due course.

### **List of appendices to this report:**

Appendix 1: Consulted route & safeguarding plans

### **List of Background Papers:**

None

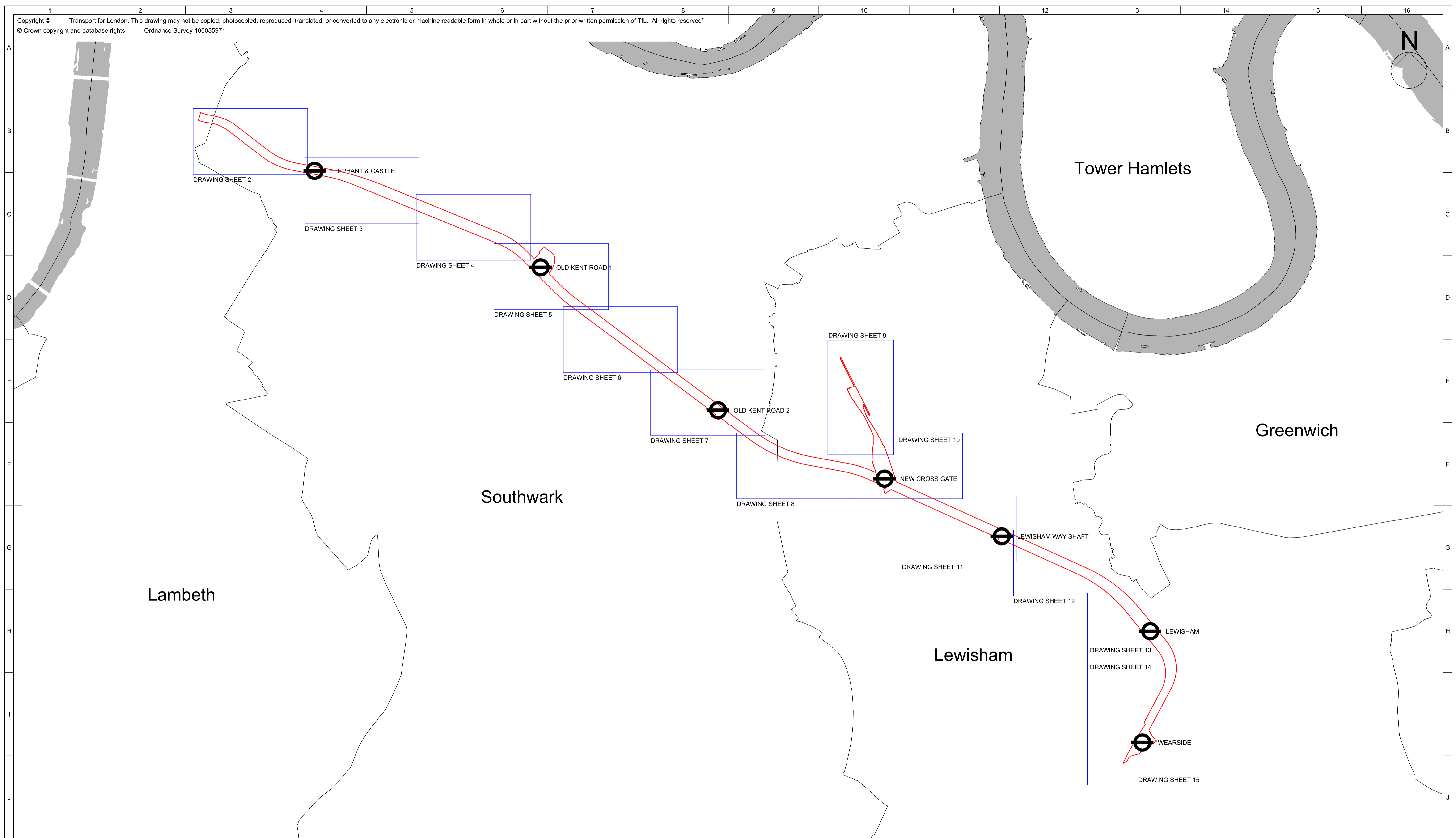
Contact Officer: Alex Williams, Director of City Planning  
Email: [AlexWilliams@tfl.gov.uk](mailto:AlexWilliams@tfl.gov.uk)



## Appendix 1: Consulted Route



Full consultation materials are available at:  
<https://consultations.tfl.gov.uk/tube/bakerloo-extension/>



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Key plan

Notes:

- SURFACE SITE
- LIMIT OF LAND SUBJECT TO SAFEGUARDING

SCALE AT A1 1:12500

TFL RESTRICTED

Rev	Date	Purpose / Description	T. Drawn	T. Checked	T. Approved	P. Approved	Authorised
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Project	RUNNING TUNNELS
Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
Asset Classification	GEOGRAPHIC BOUNDARIES
Lifecycle	
Suitability	S0 WORK IN PROGRESS

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		SAFEGUARDING LIMITS
		KEY PLAN
		SHEET 1 OF 15
		Drawing Number
		BUE4100-TFL-BOU-B001-DRG-GL-00001
Rev.	P01.1	





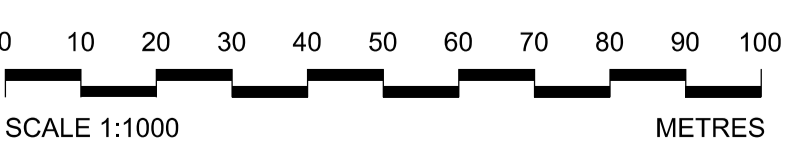




Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



TFL RESTRICTED

Rev	Date	Purpose / Description	T. Checked	T. Approved	P. Approved	Authorised
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Project	RUNNING TUNNELS
Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
Asset Classification	GEOGRAPHIC BOUNDARIES
Lifecycle	WORK IN PROGRESS
Suitability	S0

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Rev.	P01.1



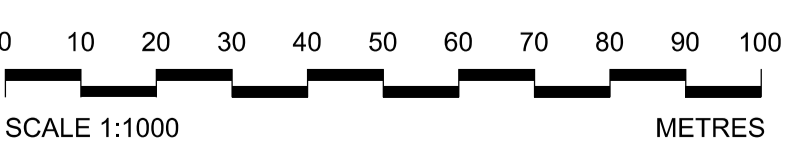




Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



TFL RESTRICTED

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S0		WORK IN PROGRESS				

Project	RUNNING TUNNELS
Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
Asset Classification	GEOGRAPHIC BOUNDARIES
Lifecycle	
Suitability	S0

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BAKERLOO LINE EXTENSION	
SAFEGUARDING LIMITS	
SHEET 4 OF 15	
	
Drawing Number	Rev.
BUE4100-TFL-BOU-B001-DRG-GL-00004	P01.1



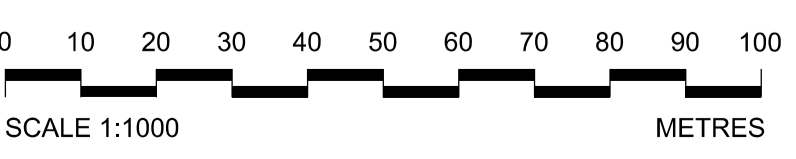


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Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



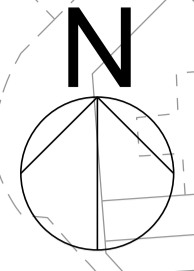
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Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
Asset Classification	GEOGRAPHIC BOUNDARIES
Lifecycle	WORK IN PROGRESS
Suitability	S0

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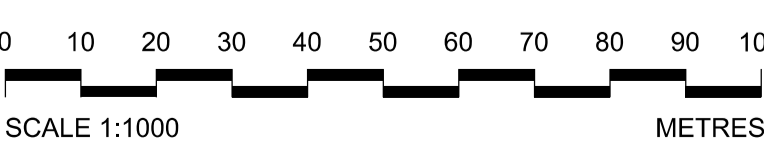




Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



TFL RESTRICTED

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Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
Asset Classification	GEOGRAPHIC BOUNDARIES
Lifecycle	
Suitability	S0 WORK IN PROGRESS

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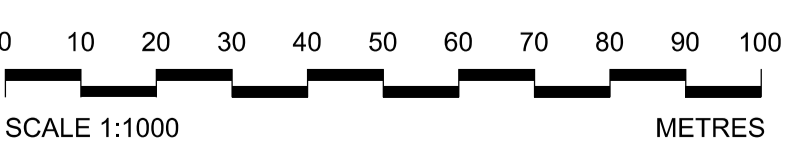




Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



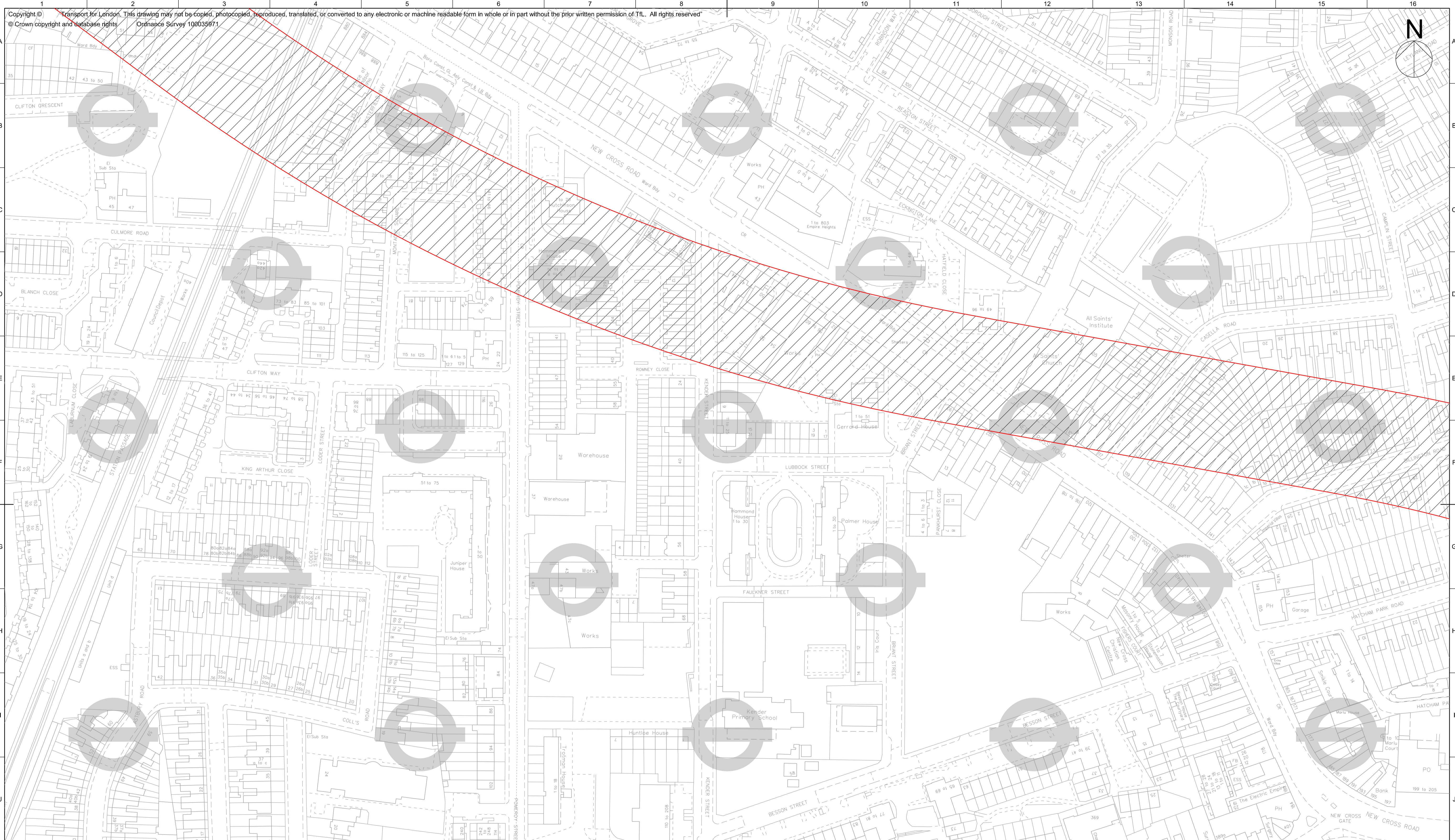
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Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
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Lifecycle	
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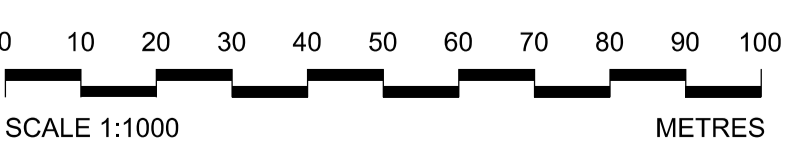




Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



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S0		WORK IN PROGRESS				

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Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
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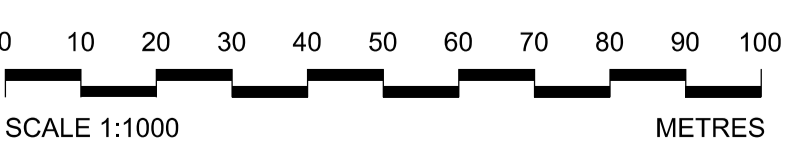




Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



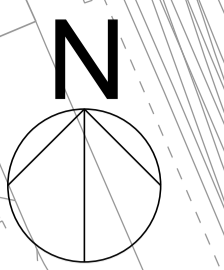
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Originator	TRANSPORT FOR LONDON
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Asset Classification	GEOGRAPHIC BOUNDARIES
Lifecycle	
Suitability	S0

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Drawing Number	BUE4100-TFL-BOU-B001-DRG-GL-00009	Rev.
		P01.1





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**Key plan**

— LIMIT OF LAND SUBJECT TO SAFEGUARDING

▨ AREA OF SUBSURFACE INTEREST

■ AREA OF SURFACE INTEREST

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**Notes:**

— LIMIT OF LAND SUBJECT TO SAFEGUARDING

▨ AREA OF SUBSURFACE INTEREST

■ AREA OF SURFACE INTEREST

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<b>Project</b>	RUNNING TUNNELS
<b>Originator</b>	TRANSPORT FOR LONDON
<b>Location</b>	GENERAL FOR BAKERLOO LINE
<b>Asset Classification</b>	GEOGRAPHIC BOUNDARIES
<b>Lifecycle</b>	WORK IN PROGRESS
<b>Suitability</b>	S0

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<b>Rev.</b>	P01.1



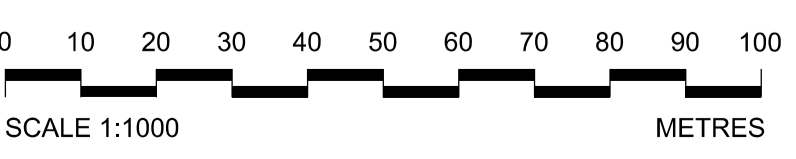


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Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



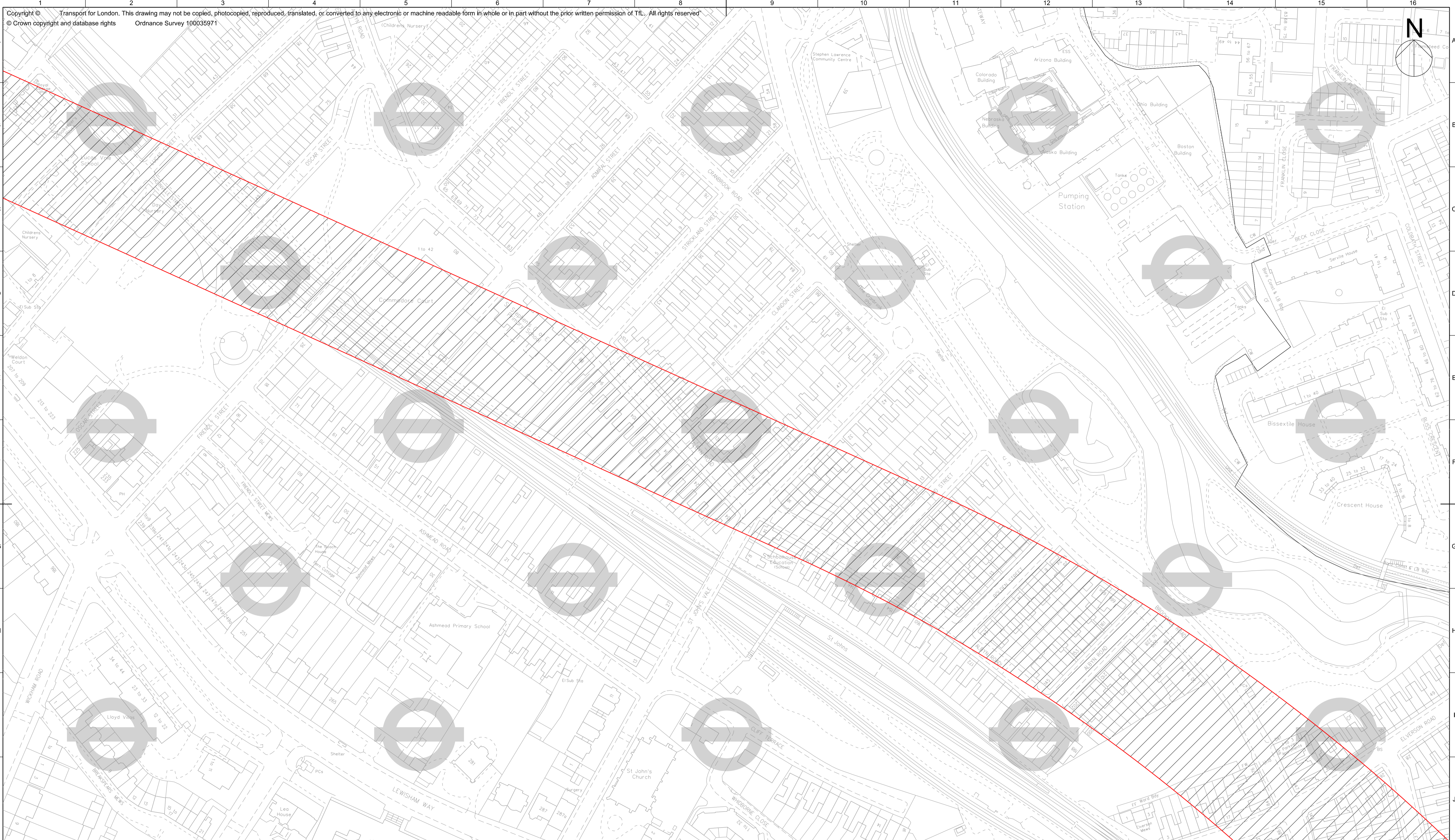
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Lifecycle	
Suitability	S0
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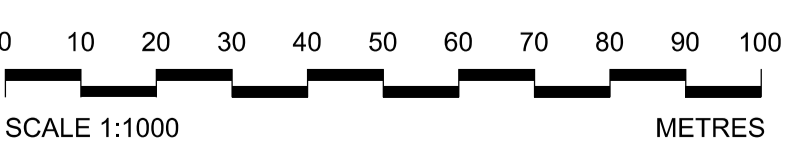




Key plan

Notes:

- LIMIT OF LAND SUBJECT TO SAFEGUARDING
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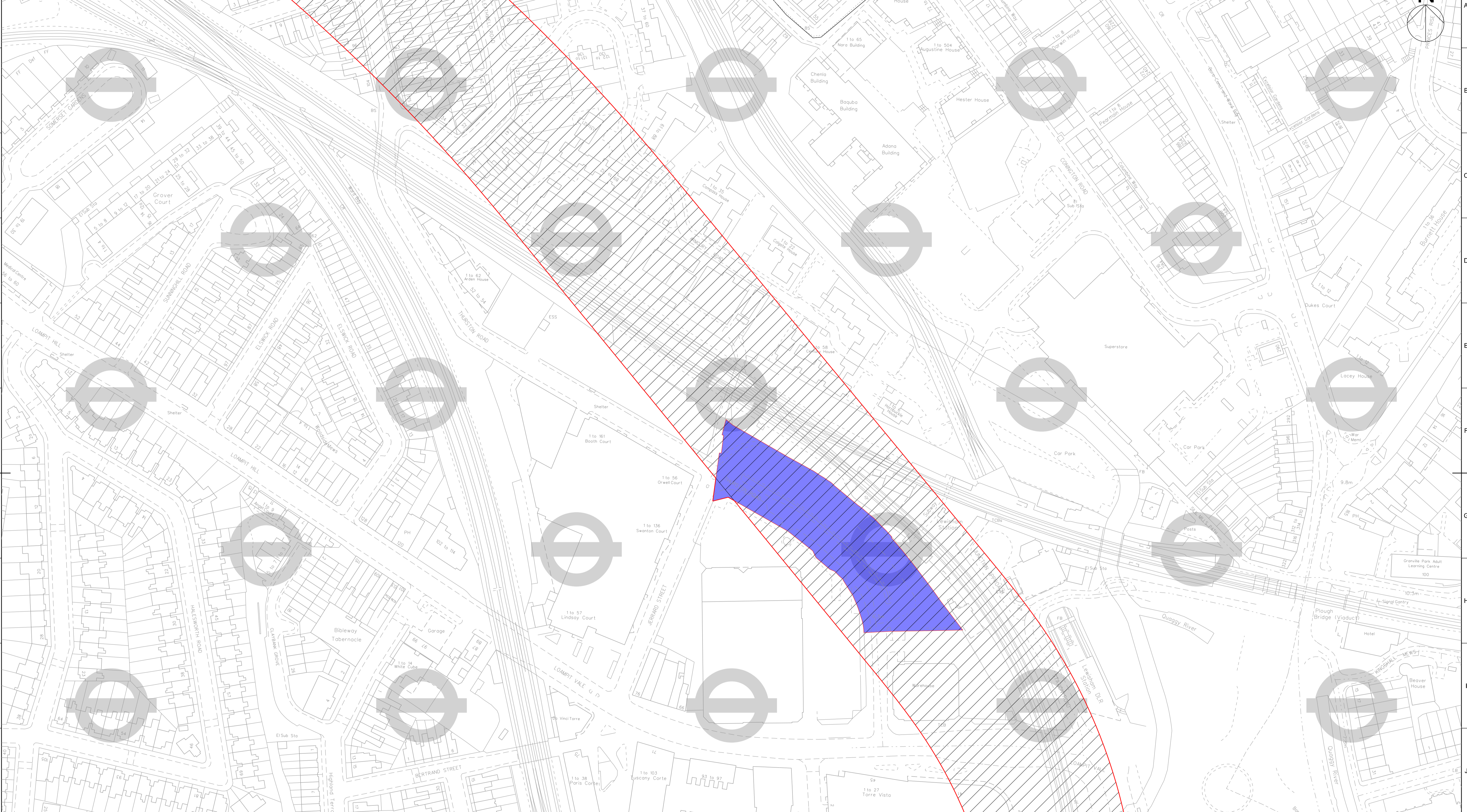
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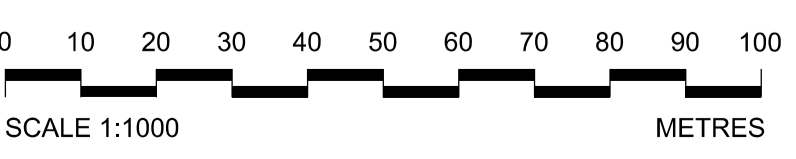




Key plan

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- AREA OF SUBSURFACE INTEREST
- AREA OF SURFACE INTEREST



TFL RESTRICTED

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Originator	TRANSPORT FOR LONDON
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Lifecycle	
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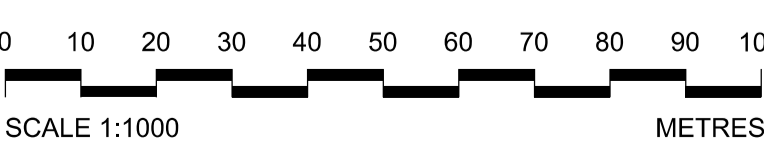




Key plan

Notes:

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- AREA OF SURFACE INTEREST



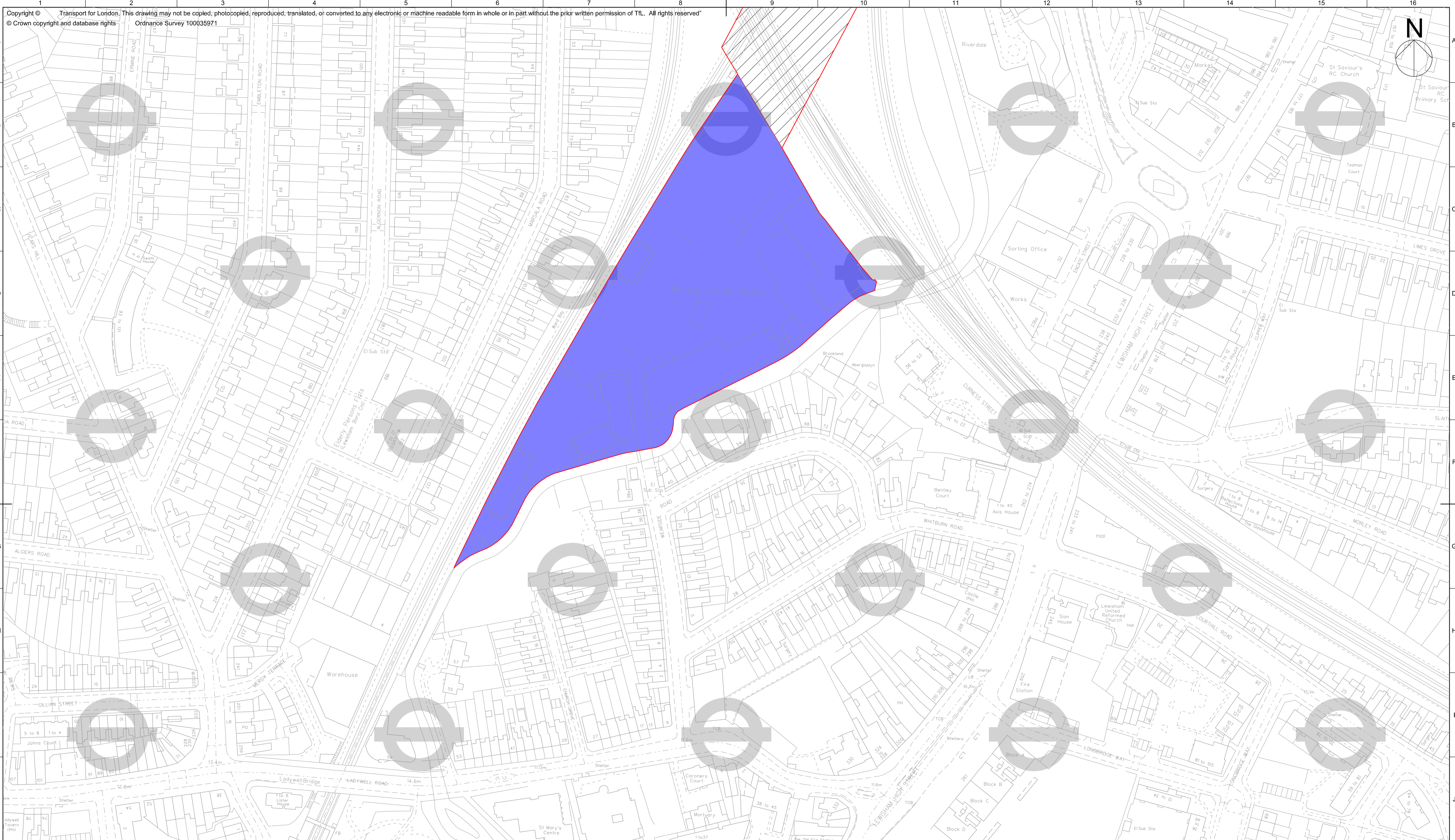
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Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
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Lifecycle	
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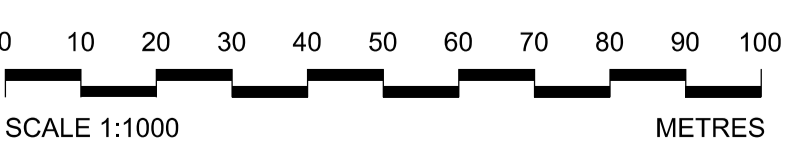




Key plan

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- LIMIT OF LAND SUBJECT TO SAFEGUARDING
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- AREA OF SURFACE INTEREST



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S0		WORK IN PROGRESS				

Project	RUNNING TUNNELS
Originator	TRANSPORT FOR LONDON
Location	GENERAL FOR BAKERLOO LINE
Asset Classification	GEOGRAPHIC BOUNDARIES
Lifecycle	
Suitability	S0

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	SHEET 15 OF 15
Drawing Number	BUE4100-TFL-BOU-B001-DRG-GL-00015
Rev.	P01.1



## Programmes and Investment Committee



**Date:** 16 October 2020

**Item:** Members' Suggestions for Future Discussion Items

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### **This paper will be considered in public**

#### **1 Summary**

- 1.1 This paper presents the current forward programme for the Committee and explains how this is put together. Members are invited to suggest additional future discussion items for the forward programme. Members are also invited to suggest items for future informal briefings.

#### **2 Recommendation**

- 2.1 **The Committee is asked to note the forward programme and is invited to raise any suggestions for future discussion items for the forward programme and for informal briefings.**

#### **3 Forward Programme Development**

- 3.1 The Board and its Committees and Panels have forward programmes. The content of the programme arise from a number of sources:
- (a) Standing items for each meeting: Minutes; Matters Arising and Actions List; and any regular quarterly or periodic reports. For this Committee these are the quarterly Investment Programme Report and the regular report on the Crossrail project.
  - (b) Programmes and Projects at a level requiring Committee approval. These include the annual review of the 20 sub-programmes in the Investment Programme and other approvals sought following advice from the operating businesses.
  - (c) Items requested by Members: The Deputy Chair of TfL and the Chairs of all of the Committees and Panels will regularly review the forward programme and may suggest items. Other items will arise out of actions from previous meetings (including meetings of the Board or other Committees and Panels) and any issues suggested under this agenda item.

#### **4 Current Programme**

- 4.1 The current programme is attached as Appendix 1. Like all plans, it is a snapshot in time and items may be added, removed or deferred to a later date.
- 4.2 Owing to the current circumstances, it is likely that a revised plan will be developed later in 2020.

**List of appendices to this report:**

Appendix 1: Programmes and Investment Committee Forward Planner 2020/21

**List of Background Papers:**

None

Contact Officer: Howard Carter, General Counsel

Email: [HowardCarter@tfl.gov.uk](mailto:HowardCarter@tfl.gov.uk)

## Programmes and Investment Committee Forward Planner 2020/21 and 2021/22

**Membership:** Prof Greg Clark CBE (Chair), Dr Nelson Ogunshakin OBE (Vice Chair), Heidi Alexander, Mark Phillips, Dr Nina Skorupska CBE, Dr Lynn Sloman and Ben Story

Abbreviations: Managing Director (MD), Customer, Communication and Technology (CCT), London Underground (LU), Surface Transport (ST), CFO (Chief Finance Officer) and D (Director)

<b>3 March 2021</b>		
Use of Delegated Authority	General Counsel	Standing item
Quarterly Programmes and Investment Report	MD LU and TfL Engineering, MD ST and D Major Projects	To note high-level progress update against the 20 grouped Investment Programme and Major Project items and any specific approvals required in relation to programmes not on the deep-dive list for that meeting.
IIPAG Quarterly Report (appendix on Second line Assurance Activities)	Project Assurance	Standing item
TfL Project Assurance	Project Assurance	Standing item
LU Enhancements	MD LU	Annual approval
LU Renewals	MD LU	Annual approval
LU Fleet	MD LU	Update and approval
Lifts and Escalators	D Major Projects	Update and approval
Innovation Update	D Transport Innovation	Annual update
Four Lines Modernisation	D Major Projects	Annual Update
Healthy Streets	MD ST	Update and approval
Technology and Data Programme	CTO	Update and approval

Surface Technology	MD ST / D Major Projects	Update and approval
Elephant and Castle	D Major Projects	Update and approval
Barking Riverside Extension	D Major Projects	Update and approval
Surface Assets	MD ST	Update and approval

<b>May 2021 (tbc)</b>		
Use of Delegated Authority	General Counsel	Standing item
Quarterly Programmes and Investment Report	MD LU and TfL Engineering, MD ST and D Major Projects	To note high-level progress update against the 20 grouped Investment Programme and Major Project items and any specific approvals required in relation to programmes not on the deep-dive list for that meeting.
IIPAG Quarterly Report (appendix on Second line Assurance Activities)	Project Assurance	Standing item
TfL Project Assurance	Project Assurance	Standing item
HS2 Update	D Major Projects	Update
Piccadilly Line Upgrade HV	D Major Projects	Update and approval



<b>July 2021 (tbc)</b>		
Use of Delegated Authority	General Counsel	Standing item
Quarterly Programmes and Investment Report	MD LU and TfL Engineering, MD ST and D Major Projects	To note high-level progress update against the 20 grouped Investment Programme and Major Project items and any specific approvals required in relation to programmes not on the deep-dive list for that meeting.
IIPAG Quarterly Report (appendix on Second line Assurance Activities)	Project Assurance	Standing item
TfL Project Assurance	Project Assurance	Standing item
Public Transport	MD ST	Update and approval

<b>October 2021 (tbc)</b>		
Use of Delegated Authority	General Counsel	Standing item
Quarterly Programmes and Investment Report	MD LU and TfL Engineering, MD ST and D Major Projects	To note high-level progress update against the 20 grouped Investment Programme and Major Project items and any specific approvals required in relation to programmes not on the deep-dive list for that meeting.
IIPAG Quarterly Report (appendix on Second line Assurance Activities)	Project Assurance	Standing item
TfL Project Assurance	Project Assurance	Standing item
LU Track and Drainage	MD LU	Update and approval

<b>December 2021 (tbc)</b>		
Use of Delegated Authority	General Counsel	Standing item
Quarterly Programmes and Investment Report	MD LU and TfL Engineering, MD ST and D Major Projects	To note high-level progress update against the 20 grouped Investment Programme and Major Project items and any specific approvals required in relation to programmes not on the deep-dive list for that meeting.
IIPAG Quarterly Report (appendix on Second line Assurance Activities)	Project Assurance	Standing item
TfL Project Assurance	Project Assurance	Standing item

#### **Regular items:**

- Use of delegated authority by Chair, Commissioner and CFO.
- Quarterly Monitoring Report – to include:
  - high-level progress update against the 20 grouped Investment Programme and Major Project items;
  - specific approvals required in relation to programmes not on the deep-dive list for that meeting;
  - identification of programmes about to issue tenders so Members can input;
- Second Line Assurance Activities
- IIPAG Quarterly Report
- 4/5 deep dive papers each meeting from the rolling programme of Investment Programme / Major Project items. Papers to seek annual approval for the programme.
- Crossrail 2 – updates and authorities (if kept separate from the Major Project list).
- Innovation update (December)

#### **Items to be scheduled:**

- London Overground future planning
- Rotherhithe Tunnel
- Fiveways Corner in Croydon
- Surface Transport Assets
- Innovative Technology in Signalling

**Future items for Committee or Board:**

- How TfL investment programme is effected by:
  - Potential rail devolution
  - HS2
  - Heathrow expansion
  - Oxford Street pedestrianisation
  - Football stadiums/events