

# Agenda

## Meeting: Programmes and Investment Committee

**Date:** Wednesday 3 March 2021

**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  
Tuesday 23 February 2021

**Agenda  
Programmes and Investment Committee  
Wednesday 3 March 2021**

**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 11 December 2020  
(Pages 1 - 18)**

General Counsel

**The Committee is asked to approve the minutes of the meeting of the Committee held on 11 December 2020 and authorise the Chair to sign them.**

**4 Matters Arising and Actions List (Pages 19 - 22)**

General Counsel

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

**5 Use of Delegated Authority (Pages 23 - 26)**

General Counsel

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

**6 Investment Programme Report - Quarter 3 2020/21 (Pages 27 - 66)**

Director Major Projects and Managing Directors London Underground and TfL  
Engineering and Surface Transport

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

**7 Independent Investment Programme Advisory Group Quarterly Report** (Pages 67 - 72)

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 73 - 74)

General Counsel

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

**9 London Underground Renewals Programme** (Pages 75 - 90)

Managing Director London Underground and TfL Engineering

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

**10 London Underground Fleet and Access Programmes** (Pages 91 - 102)

Managing Director London Underground and TfL Engineering

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

**11 Surface Transport Asset Renewals Programme** (Pages 103 - 132)

Managing Director Surface Transport

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

**12 Surface Technology Programme 2021/22 and 2022/23** (Pages 133 - 146)

Managing Director Surface Transport

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

**13 Technology and Data 2021/22 and 2022/23** (Pages 147 - 164)

Chief Technology Officer and Director Customer Experience

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

**14 Members' Suggestions for Future Discussion Items** (Pages 165 - 170)

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.**

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

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

**16 Date of Next Meeting**

Wednesday 19 May 2021 at 10.00am.

**17 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.**

**Agenda Part 2**

**Papers containing supplemental confidential or exempt information not included in the related item on Part 1 of the agenda.**

**18 Investment Programme Report - Quarter 3 2020/21** (Pages 171 - 174)

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

**19 Independent Investment Programme Advisory Group Quarterly Report** (Pages 175 - 180)

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

**20 TfL Project Assurance Update** (Pages 181 - 182)

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

**21 Surface Technology Programme 2021/22 and 2022/23** (Pages 183 - 188)

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

**22 Technology and Data 2021/22 and 2022/23** (Pages 189 - 192)

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

[page left intentionally blank]

# Agenda Item 3

## Transport for London

### Minutes of the Programmes and Investment Committee

**Teams Virtual Meeting**  
**10.00am, Friday 11 December 2020**

#### **Members**

Professor Greg Clark CBE (Chair) (present for all Part 1 discussions up to Minute 71/12/20 inclusive)  
Dr Nelson Ogunshakin OBE (Vice-Chair, in the Chair from Minute 72/12/20 and all discussions and decisions on papers with information on Part 2 of the agenda)  
Heidi Alexander  
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
Alex Williams	Director City Planning

#### **Staff**

Alexandra Batey	Director of Investment Delivery Planning
Neal Clarke	Senior Divisional Financial Controller, London Underground
Patrick Doig	Finance Director, Surface Transport and Major Projects
Andy Gray	Head of Connect Programme (for Minute 67/12/20)
Mike Hardaker	Network Extension Director (for Minute 71/12/20)
Philip Hewson	Head of Procurement, Strategy & Performance
Lorraine Humphrey	Head of TfL Project Assurance
Rachel McLean	Finance Director, London Underground
Sam Monck	Head of IDP - Healthy Streets Highways (for Minute 72/12/20)
Rob Niven	Head of Investment Delivery Planning, London Underground Major Projects
Martin Osborne	Head of ESN Programme (for Minute 66/12/20)
David Rowe	Head of Investment Delivery Planning, Surface Transport Major Projects
Shamus Kenny	Head of Secretariat
Jamie Mordue	Senior Committee Officer, Secretariat

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

Alison Munro	Chair, IIPAG
--------------	--------------

## **58/12/20 Apologies for Absence and Chair's Announcements**

There were no apologies for absence. 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 unable to attend the meeting.

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.

## **59/12/20 Declarations of Interests**

Members confirmed that their declarations of interests, as provided to the Secretariat and published on [tfl.gov.uk](http://tfl.gov.uk), were up to date and there were no interests to declare that related specifically to items on the agenda.

## **60/12/20 Minutes of the Meeting of the Committee held on 16 October 2020**

**The Committee approved the minutes of the meeting held on 16 October 2020 as a correct record. The minutes would be provided to the Chair for signature at a future date.**

## **61/12/20 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.**

## **62/12/20 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 one decision taken by Chair's Action, relating to the Healthy Streets Programme.



The Commissioner had exercised delegated authority to approve Procurement Authority for: the Four Lines Modernisation Programme Support Partner; London Overground infrastructure works; and air and braking system components and related services for the S8 fleet.

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

**The Committee noted the paper.**

## **63/12/20 Investment Programme Report – Quarter 2 2020/21**

Stuart Harvey introduced the paper, which set out the progress and performance in Quarter 2 2020/21 (26 July 2020-17 October 2020) of a range of projects that will deliver world-class transport services to London.

The in-year performance against 2020/21 strategic milestones was strong, with all complete and either green or amber rated. The Estimated Final Cost (EFC) in several projects had moved, primarily due to coronavirus related pressures. There had also been some savings and efficiencies that had positively impacted the EFCs.

The Four Lines Modernisation (4LM) Programme had restarted strongly, following the Safe Stop owing to the pandemic. It was the most impacted programme due to the intense relationship with the operational railway. The Programme had been descoped largely on the key Network Rail sections until they were re-signalled, as this reduced complexity and thus the risk of reliability issues. The trains per hour increases could still be maintained with a very small increase in journey time. The business case was being updated to understand the wider implications for the Programme. It was on target for the next migration area to go live in March 2021, the post coronavirus pandemic milestone.

Good progress had been made on design works for new Docklands Light Railway and Piccadilly line trains. Both programmes were close to a design freeze and mock-ups had been made available to TfL. Progress had also been made on the Goole facility, which would provide approximately 50 per cent of the new trains for the Piccadilly line.

On the Northern Line Extension, the high voltage switch rooms were powered up in October 2020, and the Programme would soon put high voltage on the traction rails. The first test train into the extension, from the existing Northern line, would begin at Christmas 2020.

The Bank Station Upgrade project had achieved high productivity, post Safe Stop, and had completed all tunnelling apart from the breakthrough to the existing line. The project had been de-risked and moved into an electro-mechanical fit out stage. Lessons from the Northern Line Extension were being applied.

On the London Underground (LU) In-Station Retail Programme, work had been completed on the shell and core works associated with the new units at Shepherd's Bush, King's Cross St Pancras and Bond Street, and work had nearly been completed at Liverpool Street, North Greenwich and Oxford Circus.

Good progress had been made at Tottenham Hale, where the foundation and steel work of the final phase was complete.

Step-free access main works at Amersham, Debden, Osterley and Ickenham stations were largely complete and lift installations were progressing. At Wimbledon Park, Harrow-on-the-Hill and Sudbury Hill stations, main works had started with the installation of lift towers, brick work and system upgrades to prepare for the lift installation. The lifts at Amersham station were planned to be brought into use in December 2020.

In Quarter 2, work on five ballasted track renewals sites had begun; 0.6km of deep Tube track had been renewed; and 0.4km of flat bottom conversion and re-rail work had been completed.

All 63 trains on the Jubilee line had been refurbished to comply with the rail vehicle accessibility regulations and were back in service.

TfL had worked closely with the boroughs to rapidly deliver a series of temporary interventions. In H1 (Quarters 1 and 2 2020/21), milestones relating to new and improved temporary cycle facilities and additional space for pedestrians at crowded spaces had been exceeded, with 57km of cycle facilities and 22,000sqm of additional pedestrian space delivered. Funding for H2 (Quarters 3 and 4 2020/21) had been confirmed and included guidance for delivering the temporary schemes and the consultation requirements.

A robust plan of renewals had been developed for Surface Transport assets, following the development of the 25-year capital plan. Expenditure had increased by £245m over five years. At Vauxhall Bridge, the project to replace the waterproofing and expansion joints had progressed to plan, with half of the bridge completed by mid-October. The works were on track to complete by mid-December 2020.

On the East London Line Enhancement Programme, the Housing Infrastructure Grant Determination Agreement had been signed, which would allow delivery of infrastructure improvements that supported housing growth along part of the London Overground.

Critical works at Custom House station had been completed and the new mezzanine was opened, which improve access to ExCeL and provided a new interchange with Crossrail. The station was the main access for key workers to the NHS Nightingale Hospital London.

Good progress been made with delivery of elements of the Surface Intelligent Transport System Programme, which was delivering innovative traffic management systems.

In September 2020, the first release of the Common Operational View Incident Management System was deployed into live operation in the Network Management Control Centre and body worn cameras were rolled out to six further sites.

Members asked why, for some programmes and projects, the Programme and Project Authority was not aligned with the EFC. Patrick Doig said TfL required authority to commit to a spend, so generally EFC and authorities were in alignment;

however, where TfL had forecast a cost pressure but not yet committed to the spend, this would not necessarily be reflected in the authorities. TfL was reviewing and would request changes to authorities as required as the impacts of the coronavirus pandemic became clear or efficiencies were realised.

The Committee requested information on how cost movements in certain areas balanced against the headline EFCs, to better understand where there were cost pressures or technical issues. **[Action: Stuart Harvey]**

Members suggested that TfL speak to Serco to understand the difficulties it had in the procurement of Caledonian Sleeper trains.

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

## **64/12/20 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 16 October 2020.

Alison Munro told the Committee that it had been a busy period, in terms of the number of reviews conducted. IIPAG continued to distil the emerging themes from the reviews but had identified three cross-cutting themes:

- (a) commercial strategies: relating to the choices of contacts, commercial capability and commercial agreements;
- (b) risk: relating to the allowances made and whether they were always adequate, the presentation of risk to decision makers and the resources available; and
- (c) approach to prioritisation: relating to clearer definition of outcomes and the focus on value for money.

The work on performing deep dives in Major Projects was welcomed and it was encouraging to see TfL following a similar approach in other areas.

Members suggested that future deep dives have an increased focus on the benefit-cost ratio and that learning from the programmes and projects that delivered the best value for money be shared. Stuart Harvey told the Committee that the deep dives had been implemented to drive stability in programmes and to give better visibility to the Director and Finance Director when a contingency or risk fund was being spent. The more stable programmes would be reviewed every six months, those that were less stable would be reviewed every quarter.

Each project was being examined to determine whether the whole scope was required. Alexandra Batey stated that the work on value for money aimed to change the culture and to build on the work done to date. TfL had recently adopted the

National Audit Office determination of value for money and its four criteria: economy, efficiency, effectiveness and equity.

In response to a question from Members, Alison Munro confirmed that IIPAG looked at the contract forms used as part of its wider cross-cutting work on commercial strategies. Stuart Harvey stated that TfL continued to look at whether the contract form was working and where changes could be collaboratively made with the supplier. TfL principally used NEC form contracts and was working with the procurement supply chain to see what might be changed in future.

Lorraine Humphrey told the Committee that the commercial aspect was examined every time Project Assurance looked at a programme or project, and it had strengthened its resource in this area. Where there was a change of contract, Project Assurance reviewed the risk profile and pushed back on projects progressing through gates if business cases had not been updated. Members requested information on how the gateway and performance review functions worked and best practice and the principles that guided this, including the work done to embed value for money within TfL. **[Action: Stuart Harvey / Alexandra Batey]**

Members thanked IIPAG for its work and welcomed the scrutiny that it provided, which gave the Committee more confidence in approving recommendations.

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

## **65/12/20 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 during Periods 7 and 8 of 2020/21.

All staff had returned from furlough and two expert posts had been filled, which strengthened Project Assurance's work on business cases and commercial issues.

There had been a downward trend in the number of overdue recommendations; the number relating to the Investment Programme Advisory Group and Project Assurance had decreased to 26 and 72, respectively. There was one overdue critical recommendation on an overdue business case for a project that had just restarted. There had been an increase in critical issues around affordability, owing to funding negotiations. The number of critical issues peaked and troughed throughout the year.

Issues on affordability and business cases tended to be where most of the critical issues were raised. Project Assurance was working closely with front line assurance teams and had delivered training with Finance on affordability.

Members noted that the Crossrail complimentary measures were funded through the Healthy Streets budget and involved providing assurance on the public realm around the stations and ensuring passengers could access stations safely, rather than the delivery of Crossrail itself.

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

## **66/12/20 Emergency Services Network and 4G Pilot Projects**

Shashi Verma introduced the paper, which provided an update on the progress of the Home Office funded Emergency Service Network (ESN) and an update on the 4G Pilot. The previously agreed merger with the wider telecoms commercialisation project had been delayed, due to the coronavirus pandemic.

As of November 2020, the ESN project had installed 380km of fibre cable and 395km of leaky feeders. Enabling works had been completed, or was underway, in 69 stations and design work was underway for 30 further stations.

The Home Office had instructed TfL to continue construction activities until the concessionaire was able to come online. The authority request would enable TfL to spend the funding provided by the Home Office. The grant agreement had not yet been signed but the works would not be instructed until this had been signed.

There was no direct relationship with the British Transport Police on the delivery of the ESN; the Home Office had the obligation to provide a system that was suitable for the emergency services. TfL was required to deliver to Home Office requirements.

Members asked if 5G rather than 4G should be considered for the project. Shashi Verma advised that the equipment for both was very similar, except for the switching equipment. If mobile operators expressed a preference for 5G equipment then TfL would determine if it were possible, noting that 5G had not had the same level of testing.

**The Committee noted the paper and the supplementary information on Part 2 of the agenda and approved Programme and Project Authority, as set out in the paper on Part 2 of the agenda, for a further extension of the Emergency Services Network 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.**

## **67/12/20 Connect: System Upgrade Projects**

Shashi Verma introduced the paper, which provided an update on the status of the Connect Upgrade project and sought authority for further investment to support necessary upgrades to the Connect radio and telecommunications system.

TfL had determined that it was more cost effective to upgrade the system to increase longevity, rather than develop a new system, with relatively modest investment that would deliver a significant return on a safety critical asset. The upgrades to the Connect system would allow base station hardware and the radio system's software to be upgraded and to ensure all assets had a useful life, until at least 2036.

An additional upgrade, relating to fibre optic cables, would be required to extend the life of Connect for 15-20 years. An authority request would be made at a suitable date in the future.

It was noted that market testing would require TfL to procure a system. The difficulties experienced by the Home Office in procuring the Airwave system indicated that this would not be without issues.

The Independent Investment Programme Advisory Group did not review the project prior to the meeting but had attended TfL Investment Group discussions and no issues were found.

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

- 1 approved additional Programme and Project Authority of £67.9m (giving a total of authority of £238.4m) to deliver the Connect Upgrade Project;**
- 2 granted additional Procurement Authority of £59.8m (giving a total authority of £277.0m) to deliver the Connect Upgrade Project;**
- 3 noted that the Authorities above included commitments that extended beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **68/12/20 London Underground Fleet Heavy Overhaul Programme**

Alexandra Batey introduced the paper, which provided an update on the London Underground (LU) Fleet Heavy Overhaul Programme and summarised planned delivery until December 2021.

TfL had established the essential minimum maintenance over the multi-year programme, which delivered large scale heavy maintenance activities on LU's existing fleet of passenger rolling stock and rail adhesion trains (RATs). These activities generally required a train to be removed from service for several days or weeks, and generally required: programme lift, heavy overhaul, door overhaul and other activities that were more efficient to complete when a train was out of service.

There had been challenges in the short to medium term, due to the coronavirus pandemic and its impact on TfL staff and the supply chain. Some delivery, particularly related to the Victoria line programme life, had been delayed and resulted in an increase in the Estimated Final Cost (EFC) of £1.6m.

Procurement of materials and spares, across all passenger fleets, had been combined and made more efficient, which delivered £11m in savings.

Lessons had been learned on the best time to initiate projects before delivery of the first train, which was determined to be around three years prior, to allow for good

asset condition and sufficient lead times on human activities. This lesson had been applied to the Jubilee line door overhaul.

Members noted that the request aligned directly with TfL's approach to its Capital Plan, particularly on the renewals of critical assets.

Project Assurance determined that good progress had been made at portfolio level, but it was crucial to finalise the roles/responsibilities matrix as soon as possible, so that the Programme could become even more efficient. Work had been completed to seek better value for money by working with an alternative manufacturer, rather than the original manufacturer.

It was important to ensure that the scope of work was fully understood by those conducting the heavy maintenance and that data was gathered on previously unknown issues that had been found, so that assets could be made even safer and reliable.

The authority requested was for the items that TfL knew that it had to make a commitment for to keep assets safe. As the Programme became more mature, further requests would be made to keep authority in line with the EFC.

The Committee suggested that TfL look at lessons learned from National Rail's overhaul of its fleets.

**The Committee noted the paper and:**

- 1 approved 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**
- 2 noted that the Authorities above included commitments that extended beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **69/12/20 London Underground Signalling and Controls Programme**

Alexandra Batey introduced the paper, which updated the Committee on progress against the London Underground (LU) Signalling and Controls Programme. The Programme was critical for the safe and efficient running of the railway and would extend the life of assets and contain obsolescence risks.

During the first lockdown due to the coronavirus pandemic, most work had been brought to a Safe Stop, in line with Government guidance, and a number of staff had been furloughed. Good progress had been made since works had safely restarted.

In line with the 25-year Capital Plan, there had been a shift to an incremental signalling and controls upgrades. The new strategy would cover all railway-based systems, including the Docklands Light Railway, the tram networks and the Elizabeth line.

The Programme was beginning to mature, and improvements had been made to ensure that investment was aligned to the long-term strategies. Further value for money had been delivered on the Jubilee line obsolescence works, through the exploration of potential economies of scale.

Project Assurance highlighted the efforts to link the work and asset strategy. Further work was required on value for money on the Jubilee and Northern lines and it was agreed that evidence of that work would be shared with Project Assurance before the money in the authority request was drawn down.

**The Committee noted the paper and:**

- 1 approved additional Programme and Project Authority of £16.2m, giving a total Programme and Project Authority of £212.3m (figures in outturn including risk); and**
- 2 noted that the Authorities above included commitments that extended beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **70/12/20 Docklands Light Railway – Housing Infrastructure Funding**

Alexandra Batey introduced the paper, which updated the status of the Docklands Light Railway (DLR) Housing Infrastructure Funding (HIF). It sought authorities to purchase up to 14 additional DLR trains, expand Beckton DLR depot and acquire the land to facilitate that expansion, and contribute to the cost of enabling works at Poplar DLR depot. Subject to that approval, the authorities for the Poplar development would be transferred to the Commercial Development Investment Programme.

The request for unbudgeted authorities would allow TfL to enter into a grant determination agreement with the Greater London Authority (GLA) and Ministry of Housing, Communities and Local Government and to receive £281m of HIF funding.

In October 2020, all parties had agreed to remove a proposed new station at Thameside Wharf from the scope.

The DLR HIF bid strategy would enable housing to be delivered in-line with the Mayor's Transport Strategy (MTS) and London Plan, and was a flagship example of 'good growth'. The DLR HIF Scope was one of the largest single contributions that TfL could 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 1,740 homes by TfL at Poplar.

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

- 1 approved 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:**
  - (a) purchase up to 14 additional DLR trains and procure supporting services in respect of the automatic train control system for the additional trains;**
  - (b) 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**
  - (c) 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**
- 2 noted 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 would be sought in accordance with Standing Orders; and**
- 3 noted that the Authorities above included commitments that extended beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **71/12/20 Barking Riverside Extension**

Stuart Harvey introduced the paper and supplementary information on Part 2 of the agenda. The paper provided an update on the progress of the Barking Riverside Extension (BRE) project, which had been restarted 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 would deliver a 4.5km extension of the electrified London Overground Gospel Oak to Barking line by autumn 2022, from its current terminus at Barking to a new station in Barking Riverside. The four-train per hour service would support 4,000 homes, that were being built at Barking Riverside and directly unlock a further 6,800 homes.

All piling for the extension had been completed and the focus was now on the rail systems and the interface with Network Rail.

There had been some slippage, from December 2021 to autumn 2022, and an increase in authority requested.

Members asked how confident TfL was in managing the potential for cost escalation, owing to compensation events. Stuart Harvey said the project had now moved on from the riskiest areas, such as ground conditions, and had received some commercial assurances.

The Committee queried to what extent TfL was liable for Network Rail delays and impacts. Stuart Harvey told Members that TfL was at risk for Network Rail delays but had the benefit of a self-assured engineering team and so was able to have more control over the project. The risks would be assessed and shared with the Committee in future submissions.

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

- 1 approved 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**
- 2 noted that the Authorities above included commitments that extended beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **72/12/20 Air Quality and Environment**

The Chair left the meeting part way through this item. The Vice-Chair chaired the rest of the meeting.

Alexandra Batey introduced the paper, which provided an updated on the Air Quality and Environment (AQE) Programme's progress and 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.

In response to the coronavirus pandemic, TfL temporarily suspended its Air Quality Systems schemes including the Congestion Charge, Low Emission Zone (LEZ) and the central Ultra Low Emission Zone (ULEZ) between 23 March 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. TfL also temporarily increased the daily Congestion cCharge and extended the hours of operation.

In the next year, the Programme would achieve significant milestones, including the delivery of DVS and LEZ, and ULEZ expansion.

Project Assurance was keen to ensure that new schemes in the pipeline went through the rigorous process of project initiation and value for money assessment. Alison Munro stated that the Programme was in good shape but there was further

scope to develop value for money prioritisation, for example by looking at carbon saved per pound (£).

Members stated that the progress in improving air quality across London was a great achievement. It was important to be aware of how rapidly the world was progressing and scenarios where the private sector might bear some of the capital expenditure. The Committee noted that electric vehicle public charging infrastructure was the subject of a study by the Competition and Markets Authority to determine how to develop a competitive sector, while attracting private investment to help the sector grow, and how to ensure people using electric vehicle charge points had confidence in the service.

**The Committee is noted the paper and:**

- 1 approved 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; and**
- 2 noted that the Authorities above included commitments that extended beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **73/12/20 Cycle Hire Modernisation**

Alexandra Batey introduced the paper, which provided an update on the Cycle Hire Schemes and sought authorities to modernise it over Financial Years 2021/22 to 2022/23.

The Cycle Hire Scheme was introduced in 2010 and had delivered over 97 million trips on 14,000 bikes, across 800 sites around London. The Scheme was a key contributor to the Mayor's Transport Strategy and essential in supporting Londoners through the coronavirus pandemic. TfL continued to encourage more people to cycle through additional products and services.

Since May 2020, the Scheme has attracted over 40,000 new members and has had the busiest weekends in its history.

The Scheme's assets had not been replaced since their introduction in 2010, including the back-office systems used to handle payments and customer information, and all were now approaching the end of their design life. The request would enable the Scheme to evolve with improved technology to deliver a better experience to customers, for example through flexible pricing models and enhanced app functions.

Project Assurance continued to look at the risks and would ensure that any affordability issues were addressed in future.

The Committee asked whether it was possible to move quickly and whether more e-bikes could be delivered to enable those who might be older or less fit to take more

journeys by cycling. There had been a lot of changes in the micro-mobility movement and it was critical that Santander cycles were delivered at the right phase, in line with the rest of the market.

The Committee asked what account had been taken of the private cycle hire companies that were looking to establish themselves in London. TfL had considered other operators in principle and had conducted some commercial discussions in determining the correct strategy.

TfL had been working on the Cycle Hire strategy, particularly to ensure that costs could be recovered. The surge in usage demonstrated that TfL could break even quicker than before and an optimised customer experience and flexible fare structures could help further.

Members welcomed the achievements of the Cycle Hire Scheme over the past year and throughout the pandemic. It encouraged a focus on the end user experience.

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

- 1 approved 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 the paper;**
- 2 approved 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**
- 3 noted that the Authorities above included commitments that extended beyond the period of the Business Plan and Budget to be approved by the Board on 9 December 2020 and appropriate provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **74/12/20 Enterprise Risk Update – Delivery of TfL Key Investment Programmes (ER8)**

Stuart Harvey introduced the paper, which provided an update on how TfL managed Enterprise Risk 8, Delivery of TfL key investment programmes, across its capital delivery.

While the coronavirus pandemic had caused a shock to the Investment Programme, in terms of productivity and finances, it had been a good test of TfL's risk management process. It proved that there were good systems in place, which could be demonstrated through lessons learned.

The risk was determined to be adequately controlled.

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

## **75/12/20 Healthy Streets Programme, H2 2020/21**

Alexandra Batey introduced the paper, which provided an update on the Healthy Streets Programme. Chair's Action had been exercised, on 17 November 2020, to approve an additional £75m of Programme and Project Authority for the continued delivery and remobilisation of the Programme, as a decision was required ahead of this meeting.

The London Streetspace Plan had been rapidly rolled out across London following the coronavirus pandemic, to encourage active travel rather than a car-based recovery. The schemes had delivered more than initially expected with 61.6km of new or upgraded cycle infrastructure, over 22,000sqm of extra space on the Transport for London Road Network (TLRN) and 850 borough led schemes supported.

Feedback and lessons learned from what had already been delivered would inform work on delivery for H2 (Quarters 3 and 4 2020/21), including greater consultation and greater engagement with communities and stakeholders.

Engagement with the emergency services remained a priority and the relationships were strengthened through regular meetings between TfL, the emergency services and the boroughs.

TfL would use agile management of change control, including switching funds between schemes or toward new schemes, to achieve delivery milestones and maximise benefits.

Through its work with London Technical Advisory Group, TfL had built up consensus with boroughs on key topics such as Low Traffic Neighbourhood design, Equality Impact Assessments and public engagement.

TfL confirmed that it had received £20m to deliver borough-led walking and cycling schemes from the Department for Transport (DfT) Emergency Active Travel Fund (EATF) Tranche 2, as set out in the November 2020 Chair's Action paper. The deadline to spend or commit EATF Tranche 1 funding by the end of the calendar year had been extended, which would enable seamless delivery between Tranche 1 and Tranche 2.

The Independent Investment Programme Advisory Group praised the work to deliver in H1 (Quarters 1 and 2 2020/21) and welcomed the development of a more strategic approach across element of the Programme. Alison Munro stated that there was scope to progress further, as there were lots of different elements, particularly on prioritisation and a focus on outcomes for customers, rather than outputs.

All schemes delivered under the London Streetspace Plan would be reviewed to determine if they were appropriate to be made permanent and how they supported the Mayor's Transport Strategy. All schemes on the TLRN were subject to monitoring and boroughs had been asked to do the same for the schemes that they had delivered.

The scale and pace of the Programme did present challenges for data collection and disaggregating the scheme's impacts. The shift in base line of the travel demand,

since April 2020, raised a further challenge in the scheme analysis. It was recognised that it was sometimes difficult to robustly monitor increases in levels of cycling on cycle route usage. Early findings would be included in the Travel in London report. Further monitoring results were expected to be available in the next 12-18 months. Members asked that longer term assessment of the impacts of the Programme be conducted, with the results shared with the Committee, when available.

**[Action: Alexandra Batey]**

Members recognised that the urgency of implementing the schemes quickly had meant some people felt that they had not been adequately consulted. TfL would keep the temporary schemes under review and subject to meaningful public and stakeholder engagement. An appropriate statutory process would be followed before decisions were taken on permanence, amendment or removal of schemes. TfL's consultation teams were working through the updated statutory guidance issued by the DfT to ensure TfL was compliant.

Members noted that those happy with changes were not always the most vocal and that nearly half of London households did not have access to a car. Opinion research recently published by the DfT showed that, in general, the public was in favour of reallocating street space where it improved walking and cycling conditions.

Sam Monck told the Committee that TfL and the boroughs were asked to respond incredibly fast and to deliver in a public health crisis. The additional time to engage and assess schemes was welcomed. There had been agreement with the DfT around monitoring, which would be coordinated by TfL, that would gather information on a scheme by scheme basis and on public opinion across London. Sam Monck thanked the boroughs for their work in delivering 600 schemes in five months.

**The Committee noted the paper.**

## **76/12/20 Bakerloo Line Upgrade and Extension Update**

Alex Williams introduced the paper, which updated the Committee on the progress of the Bakerloo Line Upgrade and Extension (BLUE) Programme. The paper requested the endorsement of 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 were included in the Financial Year 2020/21 TfL Revised Budget.

Recent progress on the Programme included: the integration of the extension and upgrades teams to take a single project approach; the refinement and development of the cost profile; work on an integrated station at Elephant and Castle; and an extensive consultation, with over 8,700 responses.

Members noted that, since the report was published, the Secretary of State for Transport had approved Safeguarding Directions, which were an important step in protecting the key sites along the routes in the long term.

The Independent Investment Programme Advisory Group determined that it was sensible to proceed with Safeguarding given the current circumstances.

**The Committee noted the paper and endorsed the Programme's plans to seek Statutory Safeguarding directions for the route to Lewisham.**

### **77/12/20 Members' Suggestions for Future Discussion Items**

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

**The Committee noted the forward plan.**

### **78/12/20 Any Other Business the Chair Considers Urgent**

There was no other urgent business.

### **79/12/20 Date of Next Meeting**

The next scheduled meeting of the Committee would be held on Wednesday 3 March 2021 10.00am.

### **80/12/20 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 2 2020/21; Independent Investment Programme Advisory Group Quarterly Report; TfL Project Assurance Update; Emergency Services Network and 4G Pilot Projects; Connect: System Upgrade Projects; Docklands Light Railway – Housing Infrastructure Funding; Barking Riverside Extension; Cycle Hire Modernisation; and Enterprise Risk Update – Delivery of TfL Key Projects and Programmes (ER8).

The meeting closed at 12.32pm.

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

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

[page left intentionally blank]



## Programmes and Investment Committee



**Date:** 3 March 2021

**Item:** Matters Arising and Actions List

---

### **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)

[page left intentionally blank]

## Programmes and Investment Committee Action List (reported to the meeting on 3 March 2021)

Actions from the meeting of the Programmes and Investment Committee held on 11 December 2020

Minute No.	Description	Action By	Target Date	Status note
63/12/20	<b>Investment Programme Report – Quarter 2 2020/21: EFCs</b> The Committee requested information on how cost movements in certain areas balanced against the headline EFCs, to better understand where there were cost pressures or technical issues.	Stuart Harvey	Ongoing	This will be included in future quarterly reports.
64/12/20	<b>IIPAG Quarterly Report: gateway and performance review functions</b> Members requested information on how the gateway and performance review functions worked and best practice and the principles that guided this, including the work done to embed value for money within TfL.	Stuart Harvey / Alexandra Batey	May 2021	To be reported to a future meeting of the Committee.
75/12/20	<b>Healthy Streets Programme, H2 2020/21: monitoring</b> Further monitoring results were expected to be available in the next 12-18 months. Members asked that longer term assessment of the impacts of the Programme be conducted, with the results shared with the Committee, when available.	Alexandra Batey	Ongoing	This will be included in the Health Streets update, included on the Forward Plan

## Actions from previous meetings of the Committee

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	May 2021	Included on the 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 the Forward Plan

## Programmes and Investment Committee



**Date:** 3 March 2021

**Item:** Use of Delegated Authority

---

### **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 11 December 2020, there have been:
- (a) no use of specific authority delegated by the Board;
  - (b) one decision taken by Chair's Action, in relation to the Surface Transport Infrastructure Construction Framework;
  - (c) no Mayoral Directions within the Committee's remit;
  - (d) two approvals by the Commissioner, who approved Procurement Authority for the Taxi & Private Hire (TPH) Re-let & Modernisation (RAM), and for the DLR Beckton Depot Upgrade (Northern Sidings); and
  - (e) two approvals by the Chief Finance Officer, who approved Procurement Authority for the Digital Traffic and Parking Enforcement Agreement, and for the purchase of components for the LU Fleet Heavy Overhaul.
- 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 since 11 December 2020**

3.1 There have been no uses of authority delegated by the Board since the meeting on 11 December 2020.

## **4 Use of Chair's Action since 11 December 2020**

- 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 11 December 2020.

### **Surface Transport Infrastructure Construction Framework**

- 4.3 On 27 January 2021, the Committee was sent a paper on the procurement process undertaken to appoint contractors to support the delivery of Surface Transport's medium to high complexity capital infrastructure projects and programmes, and a request related Procurement Authority. The framework agreements included the delivery of projects on and around the Transport for London Road Network, e.g. Cycleways, and for the renewal or enhancement of assets including bridges, tunnels and other highway structures. The framework agreements were developed with consideration of uncertainties around long term funding for TfL, with a zero spend commitment. Those agreements are:
- (a) five framework agreements collectively referred to as the Surface Transport Infrastructure Construction Frameworks (STIC); and
  - (b) call-off contracts under the STIC instructed for each individual project to deliver TfL's requirements from 1 April 2021 to 31 March 2027.
- 4.4 On 1 February 2021, the Chair of the Committee, following consultation with Members, approved TfL entering into Surface Transport Infrastructure Construction framework agreements and the related call-off contracts for Level 0 works and Level 1 works with the winning suppliers and granted related Procurement Authority. Procurement Authority to enter into call-off contracts for Level 2 works projects will be sought separately on a contract by contract basis in accordance with Standing Orders. The approved Procurement Authority included commitments that extend beyond the period of the Business Plan and Budget 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.
- 4.5 The use of Chair's Action was considered appropriate as the decision was required ahead of this meeting, as it was critical to secure a required six-week mobilisation period to ensure supplier readiness to commence the works and services from 1 April 2021.
- 4.6 The public paper has been published on [tfl.gov.uk](http://tfl.gov.uk). The information in the appendix referred to in the paper remains exempt from publication by paragraphs 3 and 5 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL and is legally privileged.

## **5 Programme and Project Authority Approvals since 11 December 2020**

- 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 two Procurement Authority requests in respect of matters within the Committee's remit, relating to the Taxi & Private Hire (TPH) Re-let & Modernisation (RAM), and for the DLR Beckton Depot Upgrade (Northern Sidings).

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

- 6.2 Since the last meeting of the Committee, the Chief Finance Officer has approved two Procurement Authority requests in respect of matters within the Committee's remit, relating to the Digital Traffic and Parking Enforcement Agreement, and for the purchase of components for the LU Fleet Heavy Overhaul.

## **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:**

None

**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



**Date:** 3 March 2021

**Item:** Investment Programme Report – Quarter 3, 2020/21

---

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

#### **1 Summary**

- 1.1 The Investment Programme Report describes the progress and performance in Quarter 3, 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 3, 2020/21

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

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

None

Contact Officers: Gareth Powell, Managing Director Surface Transport  
Email: [GarethPowell@tfl.gov.uk](mailto:GarethPowell@tfl.gov.uk)

Contact Officers: Andy Lord, Director London Underground and TfL Engineering  
Email: [AndyLord@tfl.gov.uk](mailto:AndyLord@tfl.gov.uk)

Contact Officers: Stuart Harvey, Director of Major Projects  
Email: [StuartHarvey@tfl.gov.uk](mailto:StuartHarvey@tfl.gov.uk)

[page left intentionally blank]

# Transport for London

## Investment Programme Report

### Quarter 3 2020/21

## Contents

Introduction .....	3
Performance at a glance .....	5
Major projects .....	5
Line upgrades .....	5
Network extensions .....	8
Elizabeth line .....	12
Crossrail .....	13
London Underground .....	15
Stations .....	15
Accessibility .....	16
Track renewals .....	17
Power, cooling and energy .....	17
Rolling stock .....	18
Renewals .....	19
Surface transport .....	20
Healthy Streets .....	20
Air quality .....	23
Asset investment .....	25
Public transport .....	26
Surface technology .....	29
Other .....	31
Technology and data .....	31
Growth Fund .....	32
2020/21 Strategic Milestone performance .....	34

# Introduction

This report provides an update on a range of projects that will further enhance our world-class transport services in London. This report covers Q3 2020/21 (18 October 2020 – 9 January 2021).

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.

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.

We also include cumulative EFC movements for savings and efficiencies that have been embedded since the 2020 Budget, while protecting safety, services and reliability. Numbers in brackets represent an EFC decrease and numbers without brackets represent an EFC increase.

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 2020 budget, which are net of any third-party funding.

During Q3, we have carried out 3.6 million hours of work across Major projects, Surface projects and programmes, London Underground renewals and enhancements and Crossrail directorates. During this time, there were 34 injuries, with 21 in London Underground renewals and enhancements, 11 in Major projects and one in Surface projects and programmes.

Every injury is subject to a local investigation to establish root cause(s) and put in place mitigations to help prevent re-occurrence. Where identified, lessons from local investigations are shared across capital delivery and, where appropriate, across the wider industry. Sharing is either via Safety, Health and Environment bulletins, our newly instigated capital lessons learnt process or a bespoke communication event.

In Q3, our top three causes of injury causes are slips, trips and falls (six), falling objects (four) and non-compliance with safety, health and environment rules (three). For the full report please see here: [Q3 Safety, Sustainability and Human Resources panel](#).

The strategic milestones for the second half of 2020/21 – the key milestones listed in the 2020 budget – are detailed on page 35.

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 Lines Modernisation, network extensions, major station upgrades, the Elizabeth line and Crossrail, which are covered on pages 5 to 14.

### **London Underground**

This comprises stations, accessibility, track renewals, power, cooling and energy, rolling stock, and signalling and control, which are covered in pages 15 to 19.

### **Surface transport**

This comprises Healthy Streets, air quality, public transport and asset investment. These are covered in pages 20 to 30.

### **Other**

This comprises technology and data and TfL Growth Fund which are covered in pages 31 to 33.

### **The impact of the coronavirus pandemic**

Following the temporary Safe Stop last year, each project had a full review of working practices in accordance with Public Health England guidelines. These were reviewed by construction managers before work recommenced.

There continues to be a knock-on effect from the coronavirus pandemic in terms of workplace requirements and the availability of our employees and the supply chain, however the main priority continues to be ensuring safe working practices for all.

Since the introduction of Tier 4 measures and the subsequent third national lockdown, we have reinforced safety measures further to address growing concerns regarding the transmissibility of COVID-19. The teams continue to plan and prepare for the risk of an outbreak on a site, including introducing limited flow testing using guidance from the Construction Leadership Council and from Public Health England.

# Performance at a glance

## 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	4,978	5,412	5,398	3	419

A zero-based review of the programme and EFC is underway, underpinned by a resetting of the commercial environment and thereby realignment to a more collaborative team-based approach. The outcome will also help in our coronavirus pandemic recovery plans. The programme and EFC review are planned to be completed in Q1 2021/22 the output of which will be reported at the May 2021 Programmes and Investment Committee meeting.

The programme continues to make good progress, successfully completing a number of key closure-based works and undertaking system testing of four future signalling migration areas.

We held a successful operational proving weekend at the beginning of January ahead of the next section of new signalling to go live in spring 2021. The operational proving weekend enabled our operational staff, including line controllers, service managers, train operators and asset maintenance teams to get hands-on experience of operating the new automatic signalling system in this complex area.

The weekend also enabled a trial timetabled service of six trains per hour to be operated and for some operational scenarios such as closing platforms and reversing trains to be trialled.

Following operational proving, the performance data is being analysed with the outputs fed into the final software, operational and maintenance assurance plans in preparation for go live in March.

Further key closure-based works have also been completed, including dynamic testing of the east end of the district line and remaining migration areas which will in future complete the Circle line. On the Metropolitan line significant work in the Neasden area has also advanced readiness for testing of the first section extending future operation beyond Finchley Road.

## 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	135	245	192	0	57

The EFC is £53m lower than Programme and Project Authority driven by additional Jubilee and Northern line trains being taken out of scope and scope transfer for High Voltage works at Stockwell station.

The Kennington speed uplift team has successfully completed four consecutive 52-hour weekend possessions in the Kennington area, which supports the Northern Line Extension programme. This work improves the track condition and is on plan to make all the necessary improvements in advance of the extension opening for revenue service.

The Northern line power team has successfully decommissioned and replaced a large and old coupling transformer at Stockwell substation, a significant logistical challenge due to the residential location of the site and the size of the transformer. The Northern line rolling stock team has completed the first phase of train management software testing with Alstom. This is part of the testing plans for the Northern Line Extension opening.

The Jubilee line optimisation signalling and rolling stock works were paused following a strategic business decision due to the funding pressures and reduced passenger demand brought on by the coronavirus pandemic. This work, if approved, would deliver the benefits to increase capacity across the Jubilee line by up to two trains per hour. There will be a review in 2022/23 to assess if it can go ahead.

## 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	76	864	858	(5)	782

The EFC has reduced as a result of savings made on the award of the contract for the Beckton Depot northern sidings works and mitigation of associated risks.

This programme is to manufacture and supply 43 new DLR trains, 33 to replace the life expired B92 fleet and 10 to increase capacity. It will also include an expanded depot to stable and service the new fleet and signalling modifications to the Thales Automatic Train Operation system to support the new trains and functionality. There will also be telecoms system modifications to provide enhanced customer facing information and traction power capacity works. To improve safety, there will be station improvements for evacuation and platform train interface at selected sites



The final design phase has been completed and manufacturing has now commenced with Construcciones y Auxiliar de Ferrocarriles. The final design for the Thales signalling has been accepted by the project team.

The Beckton Depot enabling package has been awarded and tender evaluation has been completed for the Beckton Depot northern sidings works and approval given to award this contract. Works to bring in a new traction power supply by UKPN have commenced on site.

Authority to enter into the grant agreement for the Housing Infrastructure Fund works to delivery 14 additional trains and stabling capacity was approved in December 2020, and the grant agreement has now been signed. There is a break clause in this agreement in July 2021, should TfL’s funding agreement make it not possible to proceed.

**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	241	3,294	2,902	(9)	2,661

The EFC is £392m lower than Authority and has reduced by £9m post 2020 budget as the project progresses and efficiencies are implemented allowing reduction of programme level risk and uncertainty.

The design for the new Piccadilly line trains is progressing as planned. Close collaboration continues with Siemens, our train supplier, and we remain on target to complete the final design in spring. Siemens has also started mobilisation of their train assembly facilities in readiness for manufacture.

The design of the One-Person Operation CCTV progresses as planned. This is a safety critical system that provides the train operator with CCTV images of the platform to enable safe departure. The contractor (Panasonic) has now started surveys due to take place on all Piccadilly line stations throughout the year, which is a key input to the site-specific designs. This will be followed by design, installation and testing and commissioning, we expect the first of these trains to be serving customers from 2025.

We continue to collaborate closely with our partners as part of the Transport Infrastructure Efficiency Taskforce and [Transport Infrastructure Efficiency Strategy \(TIES\)](#), to deliver three demonstrator projects. These projects are delivering innovative solutions in support of the Piccadilly Line Upgrade programme and will drive down costs, while also improving safety and sustainability. The projects include 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. Design and site

investigation works have started, as well as procurement of key components, so we remain on track for proof of concept delivered, including site trials in late 2021.

## 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	*	*	*	*	*

\* Data has been redacted due to commercial sensitivity

The first passenger test trains ran successfully on the new extension on the 19 and 25 December 2020. The test train runs allowed testing of the new signalling system, including stabling at all platforms and bi-directional running within the Kennington loop. We also carried out dynamic testing of trains in restricted manual and full speed automatic train operation on all routes. The extension remains on track to be available for revenue service in autumn this year.

The successful high-voltage power installation to the switch rooms has allowed the commissioning of key systems, such as escalators, lifts and CCTV. Stations and shafts tunnel ventilation fans were commissioned, and a test run was completed at Kennington Park shaft in December 2020.

Going forward, we are focused on the work packages and resources required for supporting the start of trial operations planned for summer 2021.

### 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	6	180	199	(2)	193

Please note: All numbers shown as net. Financial data includes direct capital costs to TfL, other than the early development costs incurred by TfL which have been reimbursed by the PFI contractor. It also excludes construction costs being incurred by the concessionaire, as these will be funded through the availability payments once the tunnel is open.

The EFC reduction is predominantly due to an updated resource forecast, land savings from early site handover and a reduction in the forecast risk for micro tunnelling. The Riverlinx design is expected to continue to programme, as is the land access schedule with the main tunnel enabling works progressing to main tunnel works in Q4.

The contract for the design and manufacture of the tunnel boring machine (TBM) continues to progress as planned. Contracts have been placed for transport and traffic, socio-economic and environmental monitoring which are part of our Development Consent Order obligations and environmental monitoring has started. This will enable us to carry out modelling to adequately plan and implement our strategies for mitigation prior to tunnel opening.

We have concluded the ground investigation and surveys to facilitate utilities mapping and have had productive engagement with the utility companies. Utility works have started on cabling and diversions to enable the power supply for the TBM. Site works have started in Greenwich and Silvertown including where the TBM launch chamber will be constructed, with demolition and clearance of existing buildings starting on time.

The permit to use date remains unchanged at 2025.

### 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	226	329	331	3	105

The programme was given an updated Programme and Project Authority in December 2020 of £328.5m and will come back to the Programmes and Investment Committee in June 2021.

All ramp and viaduct piling were completed in October and all pile caps by November 2020. The final pier walls, at Piers 13 and 14, where the north and south viaducts will meet, were poured in December 2020 and January 2021. The final deck span over Choats Road is scheduled to be lifted and installed during the Easter holidays in April 2021.

All concrete works on the south viaduct were also completed in December 2020, with works ongoing on the north viaduct to finish the ramp, install the last deck spans and pour the remaining deck slabs. Installation of the track slab are planned to start on the viaduct in March 2021.

At the new station, we have completed the main roof and platform canopy cladding and glazing and have commenced the installation of mechanical and electrical equipment.

On 3 January 2021, we completed the major signalling stage (stage nine of 16) that was cancelled at Easter 2020 due to the first wave of the coronavirus pandemic. It had not been possible to undertake this work any earlier because the entire rail systems plan needed to be reworked and new possession requirements, including for this extended closure, arranged with Network Rail and the operators.

## 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	560	701	701	0	140

The main tunnelling excavation and associated civil works were completed in late January 2021. The project continues to progress well through the fitout phase. Framework for new cladding finishes and the new bespoke integrated service booms have been completed in many areas of the station which allows for the installation of cable management systems located within the new service boom structure. The installation of the new fire suppression system has progressed through the new Cannon Street entrance building along with the insulation of mechanical ventilation ducting and the installation of internal drainage systems.

Planning for the temporary closure of the Northern line Bank branch and some associated Northern line stations continues. This will allow the existing southbound Northern line to be connected into the new running tunnel and platform at Bank allowing the old running tunnel to be transformed into a new larger passenger concourse.

## 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	4	*	*	*	*

\* Data has been redacted due to commercial sensitivity

Our negotiations with the developer have progressed and are now at the stage of detailed discussions around conditions of engagement. These discussions will be enshrined in a Development Agreement between the two parties.

The project is currently preparing for a presentation to the Programmes and Investment Committee in May on the key terms and conditions of the agreements needed for the scheme to progress. The matter of affordability for TfL remains outstanding and requires a decision prior to executing the Development Agreement and supplementary Section 106, currently planned for spring this year. The supplementary Section 106 is an agreement where TfL agrees to undertake certain works, and bring the new station entrance into use,

in this case fitting out the new station and providing new tunnels from the new station box to the existing Northern line platforms.

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. In parallel, the team continue to drive to identify cost reduction opportunities as well as logistical planning and other preparations.

The developer continues with its demolition of the existing Elephant & Castle centre.

## 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	22	63	(16)	48

Programme and Project Authority is £41m lower than EFC as it is granted on an annual basis for the following year's spend. The EFC reduction is predominantly due to a rescope of the Euston substation works and a reduction in bus replacement costs due to the reduced demand during the coronavirus pandemic.

This project is fully funded by HS2 Limited and the scope of works is dependent on third party requirements. HS2 Limited's construction activity has continued across all sites in London under COVID-secure conditions. This has included the continuation of site clearance and mobilisation at Euston including preparatory works for the new London Underground substation and ventilation building, and utilities diversions along Hampstead Road and across Euston Road. Enabling works for the interim taxi rank at Euston station commenced in February and further detailed design is still ongoing. Enabling works are ramping up at Old Oak Common in readiness for piling and excavation works for the main station box which is expected to start by April/May 2021, pending resolution of ground monitoring requirement issues.

TfL is working with the Department for Transport (DfT) to assess the preferred option from the Senior Responsible Owner Study especially with regards to our infrastructure, operations and passengers. This work also includes other key stakeholders, including HS2 Ltd, Network Rail, the London Borough of Camden and Lendlease under the umbrella of the newly formed Euston Partnership. Collectively we are working to refine early scheme designs, as well as input into the affordability workstream to ensure any investment delivers best value. A decision on the high-level proposal is currently anticipated in April following review through the Euston Partnership.

TfL has also restarted some activities on the Euston Healthy Streets project utilising funding provided by the London Borough of Camden. This workstream is taking a strategic view of the highways surrounding Euston to inform future aspirations in line with the

Mayor’s Healthy Streets principles. Current work includes developing a joint vision with stakeholders as well as identifying short-term improvements for pedestrians.

We continue to work collaboratively with HS2 Ltd and its supply chain in reviewing and assuring their designs and works where there is a potential impact on our assets or our operations.

## Elizabeth line

### Liverpool Street

The first Liverpool Street (main line station) ‘blockade’ was successfully completed in December 2020 – with the next one planned for Easter. These works will provide platforms long enough to accommodate full-length trains operating into the mainline station from Shenfield.

### 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	93	94	95	0	2

The On-Network Station Improvement Programme continues to deliver upgrades at the surface stations on what will form the future Elizabeth line route.

On both the Great Eastern and Great Western projects work continues to secure the appropriate level of handover paperwork from the contractors involved – a problem that has been exacerbated by remote working and many of the contractors’ staff being furloughed during 2020. It is hoped that a return to more normal working in 2021 will enable this process to finally be completed.

The station refurbishment programme, delivered in partnership with our operator MTR, has continued with works recently completed at Hanwell and Langley stations. The Grade II listed building at Hanwell has had significant refurbishment including brickwork and stonework cleaning and restoration, new windows and doors and reopening of a waiting room on platform 2 that has been derelict for a number of years. At Langley the completed work has included a 50 per cent larger ticket hall, refurbishment of the customer toilets, new automatic ticket gates and significant improvements to the stations southern entrance making it far more welcoming.

## 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	982	1,149	1,006	0	24

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

## Central operating section

System integrated dynamic testing (SIDT) was carried out during the quarter which was beneficial to the traffic managers and real time infrastructure managers who were deployed. A further period of SIDT commenced during the second week of January.

## Reading and Heathrow

Full Length Unit nine car Class 345 passenger trains were re-introduced to the Reading route on 22 December 2020 replacing the seven car Class 345 trains. This is a significant step forward using the latest software to improve the reliability of the trains and increasing the mileage run using the full-length units.

## 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 the first half of 2021/22 when they will be replaced with nine-car Class 345 trains.

## 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	*	18.4	*	*	*

\* Data has been redacted due to commercial sensitivity

Good progress has continued across the project in line with our plan to enter trial running at the earliest opportunity in 2021 and open the Elizabeth line by the target of the first half of 2022.

Health and safety remain a top priority and overall performance is kept under constant scrutiny. Collaborative meetings to discuss the coronavirus pandemic are held regularly with senior leadership across Crossrail and TfL and continue to review project resilience and continuity plans.

All shafts and portals have now been handed over and all central section stations, including Bond Street, are certified to support trial running.

Dynamic Testing of the signalling and train systems has completed with mitigations in place and bug fixes applied to future software releases. This allowed for SIDT to start on 3 December 2020. SIDT provides a valuable opportunity to test the complex systems in operational-like scenarios and begin to understand the reliability and software performance of the railway.

A third construction blockade was undertaken over the festive period to complete residual works on the routeway. The blockades have helped to recover significant time lost as a result of the coronavirus pandemic.

The current focus of readiness activity to prepare for the opening of the Elizabeth line continues to be the review and acceptance of asset data, drawings and operational and maintenance manuals.



# 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	184	535	1,131	0	923

The station programme includes a wide range of projects, from large station capacity upgrades to smaller but high-volume asset resilience and civils works. The structure of the programme is currently under review with the aim of simplifying the portfolio of projects – an update will be presented at a future Programmes and Investment Committee.

### Paddington

At Paddington we are working with Great Western Developments on a co-funded scheme that will deliver substantial benefits to customers accessing the Bakerloo line. The development scheme provides an enlarged ticket hall and step free access to the Bakerloo line platforms. Work is now proceeding on the full demolition of the old ticket hall to make way for the new station and lift shaft construction. The detailed design was developed at the end of 2020 and work starts this spring on the shell and core works.

### Tottenham Hale

Tottenham Hale has made good progress and the foundations and steelwork of the final phase are now complete. Critical roofing works have been completed and glazing and cladding works are in progress and will be substantially complete by the end of March.

### Knightsbridge

The build contract for the fit out of the lower passageways of the new Hooper's Court and Brompton Road entrance was awarded in Q3 and the works are due to commence in early 2021.

### South Kensington

The enabling works to implement and safeguard planning permission for works on the station were completed in Q3. Meanwhile, works start in Q4 on replacement of the life expired escalators. This will involve non stopping of Piccadilly line trains until 2022, however, the Circle and District line platforms remain open.

## Colindale

A detailed design contract was awarded in September 2020 and is due to be completed during Q1 of 2021/22. The design is progressing well, and geotechnical investigation works have been completed in Q3, enabling completion of the revised concept design.

## Stratford

A new south western station entrance is forecast to open during 2023 and will provide new ticket gates and create an improved public area. The project received approval to undertake and complete concept design and is a collaborative venture with London Legacy Development Corporation and the London Borough of Newham who are funding the capital works.

## West Ham

Enabling works adjacent to the Jubilee line track are ongoing, preparing the area for piling which is due to commence in 2021.

## Station retail

As part of our in-station retail programme, works are nearing completion at Liverpool Street and Oxford Circus and were finished in North Greenwich station in December 2020. Works also continue on a nine-unit development at Canary Wharf which is on target for completion by the end of 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	86	176	175	0	90

We are making 12 stations accessible as part of the Mayor's step-free access programme. We have delivered step-free access at six stations since 2018, with the remaining six to be delivered by the end of 2021, with main works largely complete and lift installations progressing at Debden, Osterley and Ickenham. At Wimbledon Park, Harrow-on-the-Hill and Sudbury Hill main works are progressing with the installation of lift towers, brick work and systems upgrades in advance of the lift installation.

## 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	48	81	81	0	33

The track programme made good progress during Q3, successfully achieving five key milestones. In November and December 2020, we completed the drainage works at Highgate Depot and renewed ballasted track in Ruislip depot.

We also reached a key milestone by completing 2,700 metres of track reconditioning works which will increase reliability.

We delivered two major blockades at Ealing Common Depot and Acton Town which includes the full renewal of 17 points and crossing units across two sites.

Looking to the next quarter, we remain on target to carry out six weekend possessions to renew a further 1.5km of track.

## 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	57	90	88	0	31

We continue to improve operational safety and are making good progress removing non-compliant legacy systems across several projects. We have commenced works on the Wood Lane control centre which are progressing well.

As part of the Mayor's zero carbon target we are converting traditional fluorescent lights to low energy LED lighting at 12 stations, improving efficiency and reducing ongoing maintenance costs.

We have completed detailed designs for the system-wide power control system replacement project to improve safety and reliability. This important step will enable us to proceed with the manufacture of hardware and software development. Unfortunately, the coronavirus pandemic has impacted works required for the planned factory acceptance testing leading to delay of the tier one strategic milestone. We are forecasting achievement of this activity by March in line with the Government's current coronavirus restrictions.

As part of the Four Lines Modernisation line upgrade works across the London Underground network, existing substations are being upgraded to accommodate the associated increase in power loads. The upgrades result in increased heat emissions within several substations, which, if left untreated, could have a detrimental effect to the operation of equipment and, in extreme cases, train service.

In April 2020, Shepherds Bush substation was significantly completed, with installation of all main construction works, before being impacted by the TfL Safe Stop of all active substation ventilation sites. A Safe Start at Earls Court substation was put in place in early August 2020, with Victoria substation, Notting Hill Gate and Shepherds Bush to follow. This package of work is due to be completed by the end of March. A tender for the final package of works has been undertaken with contract award forecast for early 2021 with a view to start on site in late March 2021, and to complete the package 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	253	525	972	0	718

We have delivered structural repairs to the Bakerloo line fleet to ensure continued reliability and started Rail Vehicle Accessibility Requirement prototype testing on three cars out of the seven-car train set at the Acton works depot. The Central Line Improvement Programme is progressing, with detailed design validation through the installation and testing of all prototype systems. A successful test cycle of the train management system on the network has been achieved. Production enabling has commenced at Acton and the long lead materials orders have been placed.

The first Metropolitan line S8 stock train has been lifted into heavy overhaul and the first bogies built. The Victoria line fleet overhaul is continuing to plan and is now 75 per cent complete. The Piccadilly line fleet overhaul of seating and flooring work has continued as planned and the pneumatic control module overhaul has re-started with Alstom.

The mechanised renewals vehicle wagons have been fully refurbished and returned to Ruislip depot. These wagons are trains that are specifically designed to renew old track in the deep tube. Design of the ancillary equipment is progressing well, and fitment of the track renewal equipment will begin shortly with trials planned to start in the Spring.

Four pre-production engineering wagons manufactured by CRRC in China have reached the UK, these wagons will be tested off network before London Underground infrastructure testing begins. Once these wagons have been fully tested and approved, the remaining wagons will be built and shipped.

The Kirow cranes are now approved for use within Ruislip depot, supporting lifting and loading operations and are already adding benefit. They are due for open section operation outside of Ruislip depot in the spring. Early market engagement for replacement battery locomotives started before Christmas which will look to enhance the existing engineering fleet to ensure they remain operational while a replacement fleet is considered. Unfortunately, the response to this was minimal due to the pandemic.

A second round of market engagement was undertaken recently. This project will look to enhance the existing engineering fleet to ensure they remain operational while a replacement is considered.

The Acton train modification unit project (AC14) has recently achieved a number of significant milestones. The civil construction works have been completed and the mechanical and electrical fit-out has commenced which gathers pace throughout the remainder of the year. In late 2020 the LV switchboard detailed design was approved, and the installation of the panel will commence at the start of Q4. The works are on target for energisation in February 2021. Track tamping and installation of the green roof are progressing, and the project is targeting completion in the first half of 2021/22.

## Renewals

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	93	212	216	0	123

Work continues 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 Operation CCTV cameras on platforms across Leytonstone, Stratford, West Ham and Holborn stations We have also prioritised works at Waterloo to address safety concerns and to provide safer access to and from the trains.

We also completed canopy refurbishment works at Wembley Park station.

# Surface transport

## Healthy Streets

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against 2020 Budget (£m)
2020/21 - 2024/25	97	221	1,089	20

The Healthy Streets portfolio is forecasting an increase in expenditure of £20m against the 2020 Budget. This reflects the £20m Active Travel Fund received from the DfT to continue delivering projects that support the Government's response to the coronavirus pandemic.

It should be noted that following the end of Q2 2020/21, a further £75m Programme and Project authority has been granted by Programmes and Investment Committee in November 2020 to deliver Healthy Streets and active travel programmes in the second half of 2020/21.

In the first half of 2020/21 a significant amount was delivered under the Streetspace for London programme in response to the coronavirus pandemic. This included over 60km of new or upgraded cycle infrastructure, more than 22,000 square metres of extra pedestrian space across 35 locations on the TfL Road Network with a further 180 schemes at town centres and transport hubs on borough roads, 320 School Streets, 88 Low Traffic Neighbourhoods delivered and 86km of bus lanes on TfL Road Network with operational hours extended to 24/7 operation delivered across London.

In the second half of the year, we have continued to deliver Healthy Streets and active travel programmes.

The majority of Healthy Streets schemes that were paused in March 2020, have now remobilised. Q3 highlights include:

- Publication of the Streatham Hill consultation report, a project to deliver new pedestrian crossings, segregate cycle lanes and urban realm improvements in a traffic-dominated town centre
- Start of construction in Peckham town centre, following a number of tragic pedestrian fatalities, to make the area safer for people walking

- A new segregated cycle lane has been built in Hackney to complete Cycleway 1. The two-way protected cycle lane is designed to encourage less confident or new cyclists to use the already popular Cycleway 1 route.
- Detailed work has restarted for Waterloo City Hub, along with progressing work on major schemes at Vauxhall, Lambeth Bridge and for a new Cycleway along Lea Bridge Road.

### **Old Street Roundabout**

Construction work continues to progress well on both the highway and station roof strengthening elements. The interim traffic switch was successfully completed in late October 2020, ahead of the final traffic switch, which was successfully completed over the weekend of 16-17 January 2021. This enables critical construction work for the new main station entrance, new goods and passenger lifts and the new public space to commence. The other new station entrance at Cowper Street is also progressing well and on track to be opened in summer 2021. Installation of the critical fire safety systems works in the sub-surface shopping arcade area will begin this spring. The scheme will substantially improve safety for people walking and cycling at this major junction. Completion is scheduled for Autumn 2022.

### **Cycleway 4**

Works along Creek Road within the Royal Borough of Greenwich restarted on 7 December 2020 and are progressing well. The section on Evelyn Street to the west is due to start construction in April 2021 and further east, trial cycling infrastructure is being progressed to help more people walk and cycle during the coronavirus pandemic.

### **Cycleway 9**

In West London, 2.4km of new temporary cycle track on Chiswick High Road opened in December as part of the Cycleway 9 route between Olympia and Brentford. Works to complete the Kew Bridge and Wellesley Road sections of Cycleway 9 restarted on 4 January 2021. Other sections of the route are progressing well and a safer cycling corridor between Olympia and Gunnersbury has been created.

### **Safer streets**

We are working on more than 100 vital projects delivering measures to address historical collision and reduce road danger on the TfL Road Network. Measures include new and upgraded crossing points, improved pedestrian and cycle facilities, speed limit reductions and innovative pedestrian crossing technology.

Forty schemes from the Safer Junctions programme are now complete. Construction works at Dalston Junction, which were safely paused in March 2020, have resumed and are expected to be completed by the end of the financial year.

Design of safety improvements at Camden Road / Camden Street is now complete. The London Borough of Camden have given approval for the construction works to commence following agreement of funding for mitigations on their road network which are expected to start in March 2021.

Detailed design work is nearing completion for A102 Homerton High Street and A10 Stoke Newington Road, between Amhurst Road and Shacklewell Lane, for delivery by the end of March. Footway works on Holloway Road will commence before the end of the financial year, with the Safer Junction upgrade works taking place in 2021/22.

## **Responding to the coronavirus pandemic**

We are continuing to work with the London boroughs to rapidly deliver a series of trial interventions implemented in response to the coronavirus pandemic. All activity is being kept under review as appropriate. A new milestone target of 30km of new and improved temporary cycle facilities has been set for the second half of the financial year. In mid-January 16.8km had been completed with a further 9.8km in construction.

Q3 highlights include a temporary cycle route opening in Greenwich on the A206, taking cyclists safely across the Angerstein Roundabout. Further work started in January on the eastern section of Cycleway 4 heading towards Charlton and Woolwich. Another temporary route opened on Chiswick High Road in Hounslow, which now allows safer cycling for local trips along the high street and improves cycling connections in west London. TfL is working closely with the London Borough of Hammersmith and Fulham to progress improvements to temporary cycle facilities through the borough and around Hammersmith Gyratory, and a temporary cycle route along Mansell Street is being progressed to provide an essential link between existing cycle superhighways two (Whitechapel High Street) and three (Royal Mint Street / Tower Hill).

Having submitted the bid for Active Travel Fund Tranche 2 funding for London in August 2020 and having received confirmation in November 2020 of £20m having been made available, we are working with the boroughs to confirm delivery of the appropriate schemes. Funding is in place for rolling delivery of borough cycling projects and has been confirmed for those new Low Traffic Neighbourhoods that were contained within the bid in December 2020. Where new funding has been requested, or changes of funding allocation (for example to change or strengthen existing Low Traffic Neighbourhoods in response to feedback) this has been considered and final allocations were made in mid-January. DfT have confirmed that they still want to see rapid delivery but given the new emphasis on appropriate consultation – welcomed by TfL and boroughs – delivery is expected to continue into 2021/22 in some cases. Guidance on consultation and monitoring, including where any proposals for schemes to be made permanent are under consideration, is being issued by TfL.

The United Trade Action Group Limited and the Licensed Taxi Drivers' Association Limited issued a judicial review claim against TfL and the Mayor of London, challenging TfL's interim Streetspace for London guidance issued to boroughs and a temporary scheme in Bishopsgate made pursuant to the Streetspace for London Programme. In a judgement given on 20 January, the court quashed the Streetspace for London Programme, our current borough guidance and the traffic order providing for the Bishopsgate scheme. We are disappointed with the court's decision and are seeking to appeal the judgement. The court has put a stay in place which means our interim guidance and the order can remain in place pending any appeal.

No specific findings were made about the lawfulness of other borough Streetspace for London plans which can remain in place as boroughs consider appropriate. The judgement is about the decision-making process leading to the issuing of our interim



borough guidance and the implementation of the Bishopsgate scheme and does not prevent decisions on other schemes being taken going forward, which should be taken having regard to the judgement as appropriate.

We recognise the need for schemes such as our Bishopsgate corridor to work for the communities they serve and have worked hard to ensure that people across the capital, including those who use taxis, can continue to make the journeys they need. We also recognise the need for schemes to be delivered in a fair and consistent manner and have worked closely with boroughs to create clear guidance for implementing schemes.

## Air quality

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against 2020 Budget (£m)
2020/21 - 2024/25	68	255	607	13

The Air Quality portfolio is forecasting an increase in expenditure of £13m against the 2020 Budget, mainly due to acceleration for Bus Electrification, We are targeting 2030 to have a zero emission bus fleet, which is dependent on funding but would be delivered by enabling appropriate power supply at bus garages for overnight charging in the current forecast view.

The EFC reflects the latest forecast set at Period 10 2021/22 to 2024/25.

As per our funding agreement with the government for the first half of 2020/21, we swiftly delivered changes to the operational hours of the congestion charge, which allowed us to realise cost reductions due to working innovatively. Work to ensure the congestion charging, Low Emission Zone (LEZ) and Ultra Low Emission Zone (ULEZ) schemes continue to operate beyond 2026 is also included in this portfolio forecast.

### ULEZ expansion

The installation of enforcement cameras has progressed, with more than 700 site surveys completed and 329 cameras installed. The new Siemens camera data processing system is nearly complete. All boundary signage site surveys have been completed and the infrastructure for boundary signs has been installation in Southwark and Lambeth.

The ULEZ expansion is scheduled to launch on 25 October 2021.

## **LEZ and Direct Vision Standard**

The LEZ, which covers most of Greater London, encourages the most polluting heavy diesel vehicles driving in the Capital to become cleaner by setting minimum standards for emissions. These standards are being tightened on 1 March 2021 for buses, coaches and lorries, in line with the requirements for the central London ULEZ.

Following on from the successful technical cutover of the core system on 30 November 2020, the post implementation period of additional system monitoring and validation was completed as planned on 14 December 2020. Final system testing is underway in preparation for Go-live on 1 March. The recruitment of operational staff was completed in December 2020 and training material baselined ahead of staff training starting on 28 January.

Our Direct Vision Standards Scheme (DVS) categorises heavy goods vehicles (HGVs) depending on the level of driver's direct vision from their cab. The DVS will require all HGVs more than 12 tonnes to hold a safety permit to enter or operate in Greater London from 1 March.

Improvements to the DVS Permit Application System were successfully deployed on 24 November as well as the technical deployment of the DVS Enforcement system on 15 December in preparation for the customer facing Operational Go Live on 1 March. The LEZ and DVS marketing campaign continued from November to January, with targeted letters having been sent to customers identified using the DVLA database as being subject to both schemes.

## **Vehicle scrappage and support schemes**

We have been operating the Mayor's £48 million scrappage schemes, which help drivers scrap their older, more polluting vehicles to meet required emissions standards. To date, the scheme has supported the scrapping of over 8,000 vehicles and over £37 million of grant payments issued.

We also continue to make grant payments to applicants of the Heavy Vehicle Scrappage Scheme, with 51 heavy vehicles scrapped to date, and three retrofitted to become compliant. While the Heavy Vehicle Scheme was only available for a short period due to high demand, we have recently secured an additional £344k of funding via underspend from the Greater London Authority's (GLA's) Good Growth Air Quality Fund, to enable a total of 156 heavy vehicles to be scrapped.

The ULEZ Car and Motorcycle Scrappage Scheme remains open to applicants. This will enable us to continue supporting those on low income and with disabilities, as a mitigation to the impact of the ULEZ expansion. The scheme has supported the scrapping of over 3,600 vehicles to date and has seen a significant rise in applications in recent months.

## **Rapid charging**

To support the growing number of zero emission capable taxis and wider take up of electric vehicles, we have invested £18 million to build a network of electric vehicle rapid charging points. Despite delays caused by the pandemic, we still achieved our original target of installing 300 rapid charging points by 31 December 2020 – with this figure met by 17 December. We now have 305 rapid charging points installed, including London's first

rapid charging hub at Stratford International, with work continuing on some additional sites as well as on two additional hubs at Baynard House in the City of London and Glass Yard in Greenwich.

### Greener fleet

Since the start of the year, the main bus network has been operating with Euro VI or cleaner buses. This has been helped by completion of up to 4,000 retrofits under the NOx Abatement retrofit programme. This is a major milestone for the bus fleet in tackling toxic air pollution in the capital and will see harmful NOx emissions from buses fall by an average of 90 per cent. A press release was issued on 14 January to mark this success. In addition to Euro VI, we continue to grow the number of zero-emission buses in the fleet; there are more than 400 all-electric buses in service and around 300 additional zero-emission buses expected to join the fleet by the end of this year, including 20 double deck hydrogen buses. Our Dial-a-Ride operation now has 242 Euro VI buses to help it comply with the expansion of the ULEZ, with the full fleet of 256 on track to be compliant by 31 March.

### Asset investment

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against 2020 Budget (£m)
2020/21 - 2024/25	63	302	995	7

The portfolio has Programmes and Investment Committee approval until 2021/22, so is only part funded in this five-year window.

There is a planned £2m accelerated spend on third party funded traffic signal modernisation in 2021 (work carried out on behalf of Boroughs and developers). Also £1m additional activity in 2021 on carriageways, structures, traffic signals and bus infrastructure, which is likely to increase by year end to offset underspends in other portfolios. This is currently covered within approved authority.

There has been a £10m reduction in third party funded signal modernisation in 2022 to reflect a more realistic delivery programme and the accelerated activity in 2021.

The latest forecast is aligned to the 2020 Budget which reflects the Long-Term Capital Plan moderate option. This option will enable TfL to address high risk assets (in particular bridges and tunnels) and begin to address the large backlog of works. This will also see gradual improvements in the state of good repair, the most evident of which will be carriageway.

A prioritisation exercise will be required to focus on ensuring the safety and operability of our highest priority assets, including critical tunnels (Rotherhithe and Blackwall) and structures (A40 Westway, Brent Cross, Croydon Flyover and Gallow's Corner).

The Asset Capital Programme is on target by the end of the financial year to deliver modernisation of 81 traffic signal sites, 195 new lighting columns, six new bus driver facilities, 400 new bus shelters, renewal of 40 safety cameras and 200,000 square metres of carriageway resurfacing. Against these targets by the end of December there had been successful completion of 38 traffic signal sites, 90 new lighting columns, two new bus driver facilities, 245 new bus shelters, renewal of 26 safety cameras and 85,000 square metres of carriageway resurfacing, and five structures built.

Notable progress in Q3 included:

- The works at Vauxhall Bridge to replace the waterproofing and expansion joints to the deck were successfully completed at the end of November 2020
- The final works at Ardleigh Green Bridge were also completed over the Christmas period earlier than anticipated and without any challenges
- Design work is also progressing to plan on the bridge expansion joint scheme on the A40 Westway, with the works forecast to begin in summer 2021
- The designs for protective security measures programme on central London river bridges is also progressing well, with the concept design for the measures at Westminster Bridge complete and works scheduled to begin on site 2021/22
- The major project to upgrade fire systems to the Rotherhithe Tunnel is progressing through the concept design phase as scheduled
- 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 2020 Budget (£m)
2020/21 - 2024/25	50	121	762	(22)

The Public Transport portfolio is forecasting a decrease in gross expenditure of £22m from the 2020 Budget.

The portfolio is strongly supporting the delivery of new infrastructure and housing in London as part of the Housing Infrastructure Fund schemes over the next five years. This

includes the commercial development for the Poplar Depot (+£20.1m) which has now been transferred to out of Public Transport to Commercial Development, to align with business delivery.

Expenditure on the City Greenwich Lewisham Rail PFI contract for the DLR Lewisham extension is related to passenger volumes, which have been higher than forecast in the 2020 Budget. This is offset by savings released on the new Routemaster buses refurbishment programme and an efficiency target applied to the portfolio which has further reduced planned expenditure.

We continue to develop plans for rail devolution, which, if agreement can be reached with central government, would bring the Great Northern Inners services from Moorgate to Hertford North/Welwyn Garden City/Stevenage into TfL's operational portfolio. The date of this transfer would depend on the position of DfT/HMT and the contractual status of the current operators of the services, but we remain keen. Indicatively, if we were able to make progress soon, we would transfer in 2023/24. This would increase our expenditure by £32m against the 2019 Business Plan.

## **London Overground**

Since signing the Grant Determination Agreement in August with the Ministry of Housing, Communities and Local Government and the GLA in August 2020 TfL has been working on the early design work of a number of projects on the London Overground network that contribute towards housing growth. The outcome of this design work will better inform the feasibility of these schemes and is expected to conclude in the Autumn of 2021.

Works have finished on site at White Hart Lane, West Hampstead and Crossrail stations, with close out of handover documentation ongoing. Additionally, early design work has started on Seven Sisters Access-for-All project, where the option selection report has been completed.

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.

A further eight Class 710 trains will be delivered by spring 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.

## **Elizabeth line fleet**

We are installing a safety system on the eastern and western Network Rail sections of the Elizabeth line to prevent inadvertent incorrect-side opening of doors at stations. This will complement the automatic correct-side door control provided by Crossrail in the central section. This is particularly important with the Elizabeth line coming into service.

The system uses new track-side equipment to verify to the train the position of the platform at the next station. Installation is in phases with the eastern section (Shenfield to Liverpool

Street) already started and forecast to complete in March 2021. Installation on the western section (Paddington to Heathrow and Reading) starts in March 2021 and is forecast to complete in July 2021.

## **DLR**

In Q3, construction activity continued at pace for our renewal projects, with the DLR team working closely with our contractors to monitor the coronavirus control measures in place at our construction sites and ensure they are mitigating the spread of COVID-19. The Vehicle Control Centre borders project completed the installation of critical signalling hardware and software which was successfully commissioned at Beckton Control Centre. Following a period of testing to address operational issues arising, commissioning is also planned at Poplar Control Centre in Q4.

Following successful tenders, a principal contractor was appointed to replace switchgear for the East Route Ring Main Unit and Hawker Siddley Nuclear Power Direct Current power.

In Q3, we completed track works at South Quay and City Airport and commenced the first phase of baseplate replacement programme on the network. Designs and procurement of long lead items for future track work has also started.

The lift system upgrade project saw the first three lifts successfully commissioned into use.

Woolwich Arsenal Roof Repair was finished on time which saw two of the station buildings being fully stripped and a new waterproof membrane installed within three months. Drainage and repaving at a number of stations were also concluded this period.

The GLA-funded Royal Docks Stations Programme continued, with concept designs now ready for approval 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**

Work progresses on a Correct Side Door Enable technical solution for the fleet to mitigate the risk of tram doors opening on the wrong side of the platform. The next stage of this involves upgrading the wayside tram communication equipment and a contract is to be awarded in Q4 to deliver this.

Our renewals programme continues across seven asset groups, including fleet, power, civils, systems and permanent way infrastructure. Phase two of the Reeves Corner embedded track renewal was completed on time over October half-term, and the design has commenced for the Lower Addiscombe Crossing track renewal planned for April 2021. The Phipps Bridge Fencing works to improve security in an area subject to unauthorised access was successfully completed in December, along with the commissioning of the systems for the CR4000 Cab Cooling project and the Detailed Design for the additional CCTV cameras on the Stadler fleet (Stadler Equipment Overhaul).

## Santander

A programme of works has started to modernise the cycle hire system. 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.

We have commenced delivery and have issued a contract to Cubic to start the upgrade of the back-office payment system. We are also developing exciting improvements to the Cycle Hire app.

## London River Services

The Woolwich Ferry maintenance and operation was brought in house to TfL on 31 December 2020. We will continue to engage with staff and unions as we work towards improving the organisational structure and service operation. Essential maintenance was carried out over the holiday period and has completed ready for when a two-vessel service is required to resume dependent on coronavirus travel advice.

## Surface technology

Forecast year range	Spend to date (£m)	Programme and Project Authority (£m)	Five-year gross expenditure (£m)	Movement against 2020 Budget (£m)
2020/21 - 2024/25	12	20	307	(5)

Surface technology authority has recently been updated via Programmes and Investment Committee in Oct 2020 to authorise spend to 2020/21 only. A submission for 2021/22 and part of 2022/23 is being presented in March. The Programme and Project Authority is therefore below the five-year gross expenditure as the portfolio is only part authorised.

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

Since setting the 2020 Budget, there has been minimal movement in the five-year forecast, an overall reduction of £5m made up of individually immaterial variances.

The programme supports increased levels of investment in technology in the coming years which enable many pillars of the Mayor's Transport Strategy including Healthy Streets, Vision Zero and enhancing customer experience, across three areas of focus: roads technology, compliance, enforcement and safety technology, and public transport technology.

Over 70 per cent of the programme funds refreshes of existing critical technology systems. The scope of the programme has increased since the 2019 Business Plan in line with the 'moderate' scenario in the Long-Term Capital Plan. This new scope includes modernising technology used within bus stations, improving operational colleagues' safety and security through technology, and additional deployable enforcement cameras to improve compliance and safety on our road network.

### **Surface Intelligent Transport Systems (SITS)**

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. In late 2020, we deployed the Real Time Optimiser system into live operation at two sites in Wandsworth and West Ham. This significant milestone demonstrates the new system can work effectively and provides a 'living lab' to develop improvements. We are also on track to conclude a trial of video analytics in early 2021. This trial uses anonymised video footage to analyse how people are using London's roads across all modes, including cycling and walking. In December 2020, we re-mobilised the predictive element of SITS which aims to predict impacts of unplanned incidents on the road network and respond automatically, in real time. This predictive element could deliver up to 30 per cent of the benefits of the overall SITS programme.

### **Operational safety and compliance**

This area includes initiatives to improve staff safety using technology, including introducing body worn video cameras for more front-line colleagues. Cameras have now been rolled out to over 5,000 colleagues across most London Underground stations, staffed bus stations and Victoria Coach Station, and to front line officers within compliance and policing on street. We are on track to complete roll out of cameras to colleagues at all London Underground stations before the end of March 2021. 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 deliver Deployable Enforcement Cameras. On 7 December 2020, we commenced the tender process to select a camera supplier and are on track to roll cameras out from late 2021.

### **Public transport technology**

We are maintaining and developing technology to operate our public transport networks and improve customer experience. It includes replacing the booking and scheduling system for Dial-a-Ride, which will enable us to book and deliver more trips with the same number of vehicles. Procurement for this system is progressing well, following commencement of the tender process in October 2020.



# 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	164	275	274	(1)	110

Values shown are for Technology and Data funded projects only and exclude the Emergency Services Network, the Public Cellular Network, the Telecoms Commercialisation Project and other Telecoms projects. The authority and EFC shown are for financial years 2018/19 to 2021/22. The spend authority includes additional programme and project authority approved by Programmes and Investment Committee on 6 March 2020.

## Payments

We have started work to re-procure our Integrated Revenue Collection Contract, which expires in 2025. We aim to award the contract by the end of 2023 to allow an orderly transition which will protect our ability to collect revenue reliably. The first step in this process is an early market engagement questionnaire to help inform our procurement strategy. Responses from potential suppliers are due in mid-January.

## Content and collaboration / 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 the end of December 2020, all 32,700 users had been moved to Windows 10 /Office 365 and all 44,323 e-mail inboxes (and associated archive data) had been successfully 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 previous version was not Windows 10 compatible but was successfully upgraded on 2 November 2020. Microsoft SharePoint is also one of our main departmental file sharing applications which needs to migrate to SharePoint Online. To date, all SharePoint 2007 sites (164 in total), 235 SharePoint 2010 and 832 SharePoint 2013 sites have been migrated to SharePoint Online. Only the five most complicated 2010 sites remain that requires customised development which currently under way. A further 247 SharePoint 2013 sites are left to migrate.

## Networks

We continue to deliver infrastructure to support the Home Office's national Emergency Service Network communications system; in tunnels we are focusing on fixing and testing the leaky feeder cable, with 311km (74 per cent) fixed and 240km (57 per cent, up seven per cent) tested to date. We have completed circa 51 per cent of the required station cabling works (up from 45 per cent) at 70 stations (previously 65 per cent).

There is a risk that delays to the award of our telecoms concession agreement may impact our ability to deliver the national Emergency Service Network to the Home Office's required timeline. We are working with the Home Office on mitigations.

## Data analytics

We have delivered a Bus Day Life Report, which allows the user to easily see bus events data from event files in a user friendly and intuitive manner. As a subsidiary benefit, we also provided a proof of concept report displaying bus driver messages, both on board display messages and SMS alerts back to the bus garages, which include things such as 'observe social distancing', 'face covering enforcement' allowing the bus safety team to easily see which routes were affected by coronavirus safety measures and therefore enabling them to better plan bus route numbers. We have also completed the Bus Radius Report, which is being used by the Police to allow them to see which bus routes fall within the radius of a specific location. Delivering these reports has supported the removal of an expensive legacy tool saving TfL £360k per annum. This tool was created to understand the usage of bus driver messages (SMS). The primary driver was to understand and analyse social distancing measures based on new messages introduced in the light of COVID-19. We have continued to support colleagues across the business with their self-serve offering with the latest support going to colleagues looking at our Vision Zero strategy and looking at collision information across our network.

## 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	251	251	0	251

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.

Over the last quarter, we have continued 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.

## 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.

Milestone description	Plan date	Actual/ forecast date	Status
<b>Major projects</b>			
<b>Four Lines Modernisation ■</b>			
Completion of foundation for train maintenance access platform at Neasden Depot	26 August 2020	16 July 2020	Complete ■
SMA03 Ready for revenue	31 January 2021	31 January 2021	■
<b>DLR Rolling Stock and Systems Integration ■</b>			
Detailed train design complete.	9 December 2020	9 November 2020	Complete ■
<b>Piccadilly Line Upgrade programme ■</b>			
One-person operation CCTV (design and build) approved by TfL for contract award	14 July 2020	14 July 2020	Complete ■
New passenger trains - Complete the detail design of the new Piccadilly line train	31 March 2021	31 March 2021	■
<b>Network extensions</b>			
<b>Northern Line Extension ■</b>			
Completion of 22kv installation, necessary for providing full traction power for the new extension to Battersea	1 September 2020	1 September 2020	Complete ■
First test train to run on the Northern Line Extension	25 December 2020	19 December 2020	Complete ■

<b>Silvertown Tunnel</b> ■			
<b>Milestone description</b>	<b>Plan date</b>	<b>Actual/ forecast date</b>	<b>Status</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 ■
Contractor compound set up to commence piling operations	29 March 2021	18 January 2021	■
<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.			
Completion of piling on all piers	23 December 2020	20 October 2020	Complete ■

## Major stations ■

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.

New transformer room complete and power on for supply to the new station ticket hall.

22  
February  
2021

18  
December  
2020

Complete ■

## London Underground

### Stations renewals and enhancements ■

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 ■

Accessibility – Step-free access available at 6 more London Underground stations

31 March  
2021

17 March  
2021

■

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 ■

Track Renewal - 2.7km of renewed track delivered

9 January  
2021

7  
December  
2020

Complete ■

Power, cooling and energy - Factory acceptance test of the new London Underground power control system comprising hardware, software and functionality	22 February 2021	22 February 2021	■
<b>Healthy Streets ■</b>			
Old Street roundabout removal - Permanent traffic switch complete	31 March 2021	18 January 2021	■
Streetspace for London - Complete 40km of improved cycling infrastructure	31 Mar 2021	31 Mar 2021	■
<b>Air quality ■</b>			
Congestion Charge changes go live	22 June 2020	18 June 2020	Complete ■
Direct Vision standards - Go live	1 March 2021	1 March 2021	■
Low Emission Zone stronger - Go live	1 March 2021	1 March 2021	■
Rapid Charge Point network - 300 Rapid Charge Points installed	30 December 2020	17 December 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>			
Trams - Reeves Corner: Embedded rail track renewal. Section one complete	14 September 2020	31 August 2020	Complete ■
DLR - 6 Lifts refurbished across the DLR network and brought into use	1 March 2021	19 February 2021	■

[page left intentionally blank]



**Date:** 3 March 2021

**Item:** Independent Investment Programme Advisory Group  
Quarterly Report

---

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

#### **1 Summary**

- 1.1. This paper presents the Independent Investment Programme Advisory Group (IIPAG) quarterly report for February 2021. It describes the work undertaken since the last report presented to the Committee in December 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 Recommendation**

- 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 February 2021 is included as Appendix 1 to this paper.

#### **4 Management Response to IIPAG Quarterly Report Recommendation**

- 4.1 In its report, IIPAG include a recommendation that project teams, in their submissions to the Committee, report how scope, schedule, cost and outcomes have compared with what was forecast and approved at the previous annual submission and how any changes affect the expected time and cost to complete the programme.
- 4.2 We are already planning to make changes to papers submitted to the Committee to ensure that they provide useful information to Members including a clear focus on demonstrating value for money. As part of these changes, we will take on board the recommendation made by IIPAG for improving the information provided within the papers.

**List of appendices to this report:**

Appendix 1: Independent Investment Programme Advisory Group - Quarterly Report  
February 2021

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

**List of Background Papers:**

None

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

## Independent Investment Programme Advisory Group – Quarterly Report February 2021

---

This paper will be considered in public

### 1. Introduction

1.1. This quarterly report to the Committee describes IIPAG's activities in the period December 2020 to February 2021. We make one new strategic recommendation about the reporting of a programme's performance with regard to scope, schedule, cost and outcomes over the past year compared with what was forecast.

### 2. IIPAG activity

2.1. We have engaged in a number of programme reviews ahead of the March meeting of the Programmes and Investment Committee, and a few targeted reviews for executive governance:

#### 2.2. Programmes

- LU Fleet and Access
- Surface Assets
- LU Renewals
- Technology and Data
- Surface Technology

#### 2.3. Targeted Reviews

- iBus
- Elephant and Castle Station

2.4. We have also continued to engage with the Four Lines Modernisation project.

2.5. The accompanying paper from TfL Project Assurance describes management progress in implementing IIPAG's recommendations from sub-programme and targeted reviews.

2.6. In several recent reviews we have made suggestions to project teams about the content of their submissions to the Committee. In particular, where programmes are seeking annual Programme and Project Authority, it is our view that the team should present the Committee with a clear picture of how they have performed since the previous annual programme submission compared with what they said they would do. Teams already report what has been delivered over the past year, but in addition **we recommend that project teams should report how scope, schedule, cost and outcomes have compared with what was forecast and approved at the previous annual submission. They should also indicate how this performance affects the expected time and cost to complete the programme.**

### **3. IIPAG and Crossrail**

- 3.1. Now that Crossrail has transferred to TfL, IIPAG's scope has been expanded to cover third line assurance for Crossrail. We have established an IIPAG CRL Sub-Group, and Terms of Reference have been agreed by the Elizabeth Line Committee. At the time of writing TfL is seeking to make two new appointments to the Sub-Group, including the Chair. Once these are in place the Sub-Group will develop a programme of work, which will seek to complement other assurance activities for Crossrail/Elizabeth line. In the meantime a review of Crossrail's first and second lines of defence has been initiated, and we are making some targeted enquiries in relation to preparedness for Trial Running.

### **4. Cross-cutting work**

- 4.1. We have undertaken a review of the TfL Programme Management Office (PMO). We have had an initial discussion at Investment Group, and TfL management is currently developing its plans for completing the PMO change programme in the light of that. We expect to report on the outcome of our work to the next meeting of the Committee.
- 4.2. We are currently finalising our review of Procurement and Supply Chain (previously referred to as 'Commercial Transformation').
- 4.3. We have initiated the annual benchmarking review which will be relatively light touch this year. As noted above we have also begun an assessment of the adequacy of the first and second lines of defence on the Crossrail project.
- 4.4. We are finalising the scope of a review which will look at form of contract choice, tender outcomes and then issues with contractors as part of contract management post award, with the aim of starting fieldwork in the next month.

### **5. Work Programme for 2021/22**

- 5.1. We will be presenting our work programme for 2021/22 to the June meeting of the Audit and Assurance Committee, when the funding position and investment programme should be clearer. We would welcome suggestions from both the Audit and Assurance Committee and the Programmes and Investment Committee on areas for our cross-cutting work.

### **6. IIPAG Stakeholder Survey**

- 6.1. In late Autumn 2020, IIPAG surveyed its stakeholders in TfL about its work. (This was off the back of a larger stakeholder survey by TfL Project Assurance.) The stakeholders included members of both the Programmes and Investment Committee and the Audit and Assurance Committee, relevant TfL executives and the sponsors and delivery leads of the programmes and sub-programmes which IIPAG has reviewed. The survey group was not large, but the results suggested that stakeholders value the reports IIPAG provides and are generally positive about IIPAG members. The results from the main questions are shown in the Appendix. A number of more detailed and helpful comments were also provided.

**List of appendices to this report:**

Appendix 1: IIPAG Stakeholder Survey Results 2020/21

**List of background papers:**

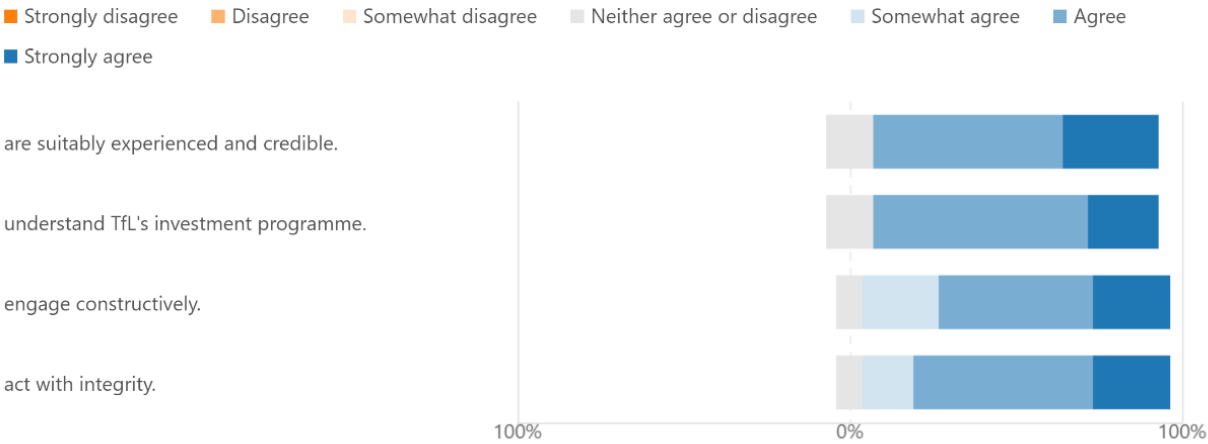
None

Contact Officer: Alison Munro, Chair of IIPAG

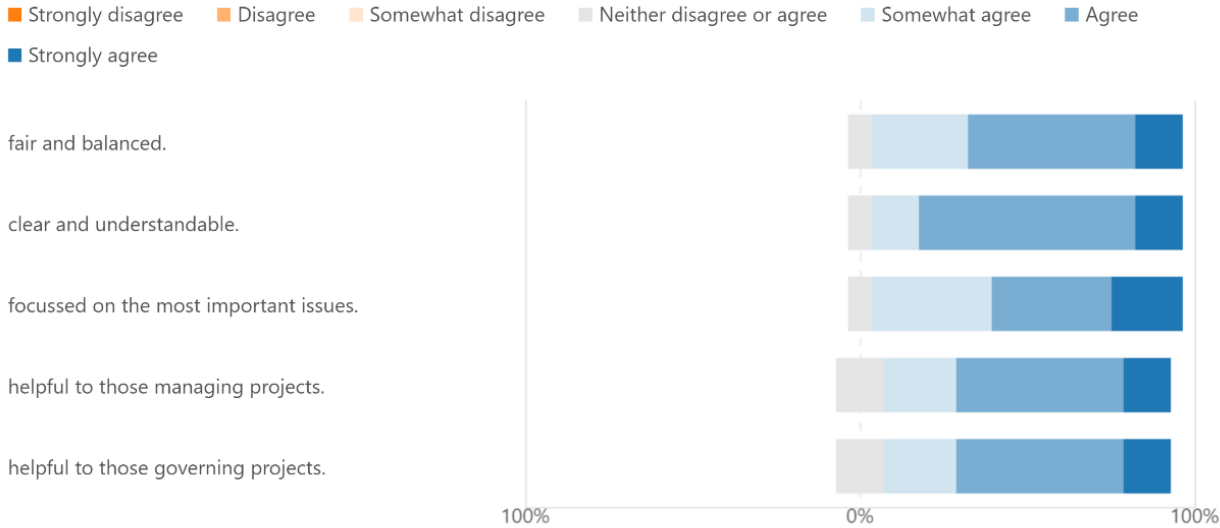
[AlisonMunro1@tfl.gov.uk](mailto:AlisonMunro1@tfl.gov.uk)

## IIPAG Stakeholder Survey Results 2020/21

Please indicate to what extent you agree with the following statements. I find that IIPAG members...



Please indicate which of these statements you agree with. IIPAG reports are...



## Programmes and Investment Committee

Date: 3 March 2021

Item: TfL Project Assurance Update



---

### This paper will be considered in public

## 1 Summary

- 1.1 This paper provides an update on the project assurance work undertaken between 15 November 2020 and 23 January 2021. Five programme reviews were undertaken during this time, with Independent Investment Advisory Group (IIPAG) involved in all these reviews. In the same time frame eight project assurance reviews were undertaken, with IIPAG involved in four of these.
- 1.2 These reviews gave rise to a total of 45 recommendations being made, of which none were considered to be critical issues. Critical issues are those that the TfL Project Assurance team or IIPAG believe should be addressed before projects proceed to the next stage.
- 1.3 Key findings from the reviews undertaken are:
  - (a) ensuring adequate levels of staff resources are planned and available to enable the successful delivery of projects;
  - (b) the need to ensure that value for money is clearly evaluated and demonstrated; and
  - (c) full management of risks is required, including timely undertaking of quantitative risk assessments to inform full project costs.
- 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 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 From the reviews undertaken, a total of 37 recommendations were made by TfL Project Assurance. These were all general recommendations with no critical issues raised. All recommendations have been agreed with the respective project teams.

4.2 From the assurance reviews undertaken, IIPAG made eight general recommendations, with all of these agreed with the respective project teams. IIPAG made no critical recommendations.

4.3 The following graphs show the number of open recommendations, the number that are overdue, and the number closed in the time period shown. Good progress has been made in reducing the number of overdue recommendations. Of the overdue recommendations there are three critical issues raised by TfL Project Assurance, with there no overdue IIPAG critical issues.

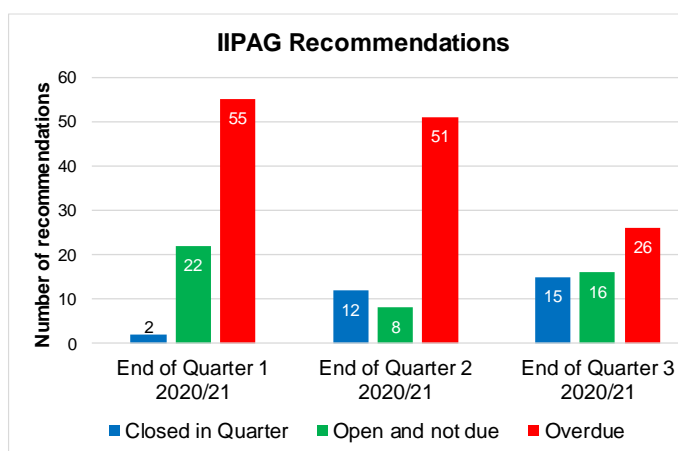


Figure 1: IIPAG Recommendations

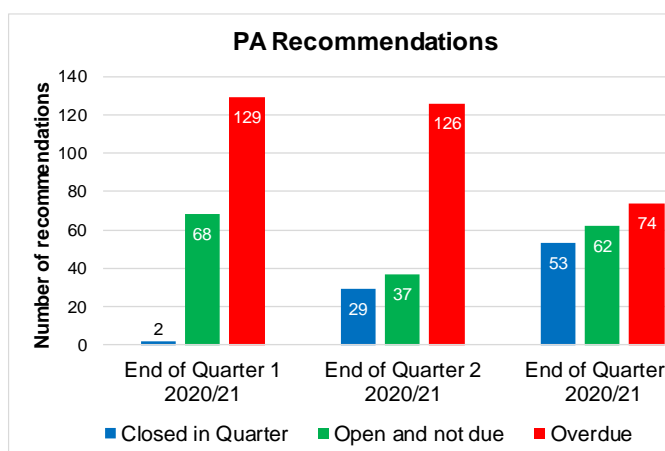


Figure 2: Project Assurance Recommendations

### List of appendices to this paper:

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

### 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



**Date:** 3 March 2021

**Title:** London Underground Renewals Programme

**This paper will be considered in public**

### 1 Summary

*Existing Financial Authority (£m)	EFC (£m)	Existing Programme and Project Authority (£m)	Additional Authority Requested (£m)	Total Authority (£m)
340.5	340.5	245.8	39.4	285.2
* Financial Authority is based on the 2020 TfL Budget and Business Plan				
<b>Authority Approval:</b> The Committee is asked to approve additional Programme and Project Authority of £39.4m for the LU Renewals Programme bringing the total authority to £285.2m to 2024/25.				
<b>Outputs:</b> Delivery of essential renewals across Buildings, Civils, Power & Electricals to ensure London Underground (LU) assets remain safe and operable through the delivery of prioritised workbanks to improve asset condition.				

**Table 1: Programme and Project Authority requests to 2024/25.**

- 1.1 This paper covers the LU Renewals Programme (the Programme). This paper is the first submission of this Programme to the Committee.
- 1.2 This paper will:
  - (a) summarise the component parts of the Programme;
  - (b) provide an update to the Committee in terms of Programme delivery; and
  - (c) summarise planned delivery in 2021/22.

### 2 Recommendations

- 2.1 The Committee is asked to note the paper, and:
  - (a) approve the creation the London Underground (LU) Renewals Programme;
  - (b) approve the transfer of the relevant existing £245.8m Programme and Project Authorities from the LU Station Renewals and Enhancements and Power Cooling and Energy Programmes to the new LU Renewals Programme;

- (c) **approve additional Programme and Project Authority of £39.4m for the LU Renewals Programme, to continue this essential renewal programme bringing total authority to £285.2m to 2024/25;**
- (d) **note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget 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; and**
- (e) **note that LU Signalling and Control will become part of the LU Renewals Programme at the next annual submission.**

### **3 Background**

- 3.1 The purpose of the LU Renewals Programme is to ensure LU assets remain safe and operable in perpetuity through the delivery of prioritised workbanks to improve asset condition.
- 3.2 The workbanks are created through the outcome of annual asset condition reviews. Assets that pose risk to safety and reliability are prioritised; these are identified through multi-discipline assessment and are ranked based on safety, compliance, reliability and obsolescence threat.
- 3.3 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. This Programme also supports LU's priorities for 'Safety and Reliability', 'Customer', 'People' and 'Affordability'.
- 3.4 Asset Renewals are a key aspect of TfL's Long-Term Capital Plan (LTCP) which recognises the importance of planned and sustained investment at the optimum intervention point within the asset lifecycle. The LTCP is a 25-year plan of investment with principles agreed at board level across TfL. The LTCP enforces the strategic aspiration to invest in asset renewal prior to asset failure.
- 3.5 The Programme also supports the LU Asset Strategy to deliver the capital renewals works necessary to sustain a perpetual asset life.

### **4 Programme composition**

- 4.1 The creation of this new LU Renewals Programme is in response to a 2019 recommendation from the Independent Investment Programme Advisory Group (IIPAG) that the station asset renewals elements of the then Station Renewals and Enhancements Programme should be split out and managed and reported with other similar renewal activities.
- 4.2 This LU Renewals Programme combines these station renewals with similar renewals, which were previously reported under the Power, Cooling and Energy Programme, streamlining the LU Programme structure and achieving alignment to both the capital delivery structure and the LTCP.

#### 4.3 The LU Renewals Programme comprises:

- (a) Buildings and Stations (Asset Resilience): targeted interventions on building systems (communications, fire and mechanical assets) and the built environment (fabric and surfaces that our customers and staff interact with) in stations, buildings and other LU premises. This also includes a workstream to improve the positioning of CCTV camera at the platform train interface;
- (b) Civils: renewals to civils assets across the network including earth structures, bridges and structures, deep tube tunnels and flood protection. There is also a small workstream of civils projects required to meet Rail Vehicle Accessibility Regulations (RVAR) which are nearing completion;
- (c) Power & Electricals: renewal of cabling, high voltage plant, substations and power generating stations and the life extension of the traction power control system. Electrical assets will be managed together with Power from 2021/22 (previously electrical assets were managed under Building and Stations Asset Resilience above); and
- (d) Cooling: asset renewals targeting the most degraded condition fans to maintain cooling and ventilation capability across stations.

4.4 It is intended that the LU Renewals Programme will also include LU Signalling and Control in the future. As the LU Signalling and Control Programme was presented to the Committee in December 2020, for simplicity of this paper it will be incorporated for the next LU Renewals Programme annual submission.

## 5 Impact due to coronavirus

- 5.1 Since March 2020, the delivery progress of the component parts of this Programme have been significantly impacted by the coronavirus pandemic.
- 5.2 TfL brought all project sites to a temporary safe stop to limit the spread of the coronavirus, with construction activity paused between 24 March and 26 May 2020, except for limited specifically approved activities. Since projects restarted on-site, they have all been subject to additional pandemic measures including, but not limited to, social distancing, extra hand sanitisation capability, face masks and additional personal protective equipment (PPE).
- 5.3 Additionally, there were impacts to the supply chain which constrained productivity and project progress.
- 5.4 Financial constraints have also had a significant impact on the Programme. As a result of the significant funding reduction in 2020/21 the Programme was re-prioritised to focus on delivery of the most critical works (as determined through the Asset Condition Register process) with less critical works deferred from 2020/21 for delivery in later years with appropriate mitigations put in place to ensure continued safe operation where applicable.

## **6 Delivery Progress in 2020/21**

- 6.1 Overall, the level of investment in all asset areas within the LU Renewals Programme in the past five years has been below the required levels to sustain the assets in a steady state. This has created a backlog of investment to be caught up.
- 6.2 Across the LU Renewals Programme investment was reduced from planned levels for 2020/21; as a result of the financial and delivery constraints arising from the coronavirus pandemic (as described above).
- 6.3 The deferral of work from 2020/21 to later years will have a further impact on achieving the required level of investment of the LTCP. This means the relative investment profile needs to rise significantly within overall financial constraints and delivery capability. Therefore, it will take a significant time to catch up with the level of investment envisaged in the 25-year plan. This will need to be addressed in future Business Plans.
- 6.4 Safety and operational works will continue to be prioritised based on criticality. Safety mitigations for those works deferred to later years will continue to be carried out by Asset Operations in order to sustain LUs high level of safety. In the short term there are however potential operational budget pressures and risks to operational performance as assets deteriorate. The current status for the key renewal areas are detailed in the sections below.

### **Buildings**

- 6.5 Projects addressing building systems assets (communications, fire and mechanical assets) were prioritised to continue in 2020/21. However, projects addressing the built environment were largely paused and deferred to later years, if not already contractually committed.
- 6.6 Of the projects that continued, seven assets were successfully brought into use in 2020/21. These included the completion of platform tactile replacements at Acton Town Station and the full replacement of the heating, ventilation, air conditioning and building management system at the Jubilee line Service Control Centre at Neasden.



**Figure 1:** Works to upgrade the heating, ventilation and air conditioning system which were required to keep the Jubilee Line Service Control Centre at Neasden operational were completed at a total cost of £1.1m

### Civils

- 6.7 Most Civils projects were put on hold until the second half of 2020/21. Several of these projects restarted in the second half of the year, although a number have been deferred until later years.
- 6.8 Construction work continued to stabilise the cutting between Chorleywood and Rickmansworth with practical completion achieved in September 2020. The works were critical to ensuring the safe running of the operational railway and appropriate pandemic measures were in place throughout. A contract was also let for the main works to stabilise the cutting between Grange Hill and Chigwell with works on target to start on site by the end of March 2021. Condition assessments on Bridges, Structures and Earth Structures continued in order to support greater understanding of the asset base and any safety risks to our network.



**Figure 2:** Stabilisation of the cutting between Chorleywood and Rickmansworth to protect the Metropolitan line train service were completed at a total cost of £4.5m

## **Civils projects required to meet Rail Vehicle Accessibility Regulations (RVAR)**

- 6.9 Works planned in 2020/21 to ensure that LU Bakerloo and Jubilee line stations are RVAR compliant were delayed as a result of the coronavirus pandemic.
- 6.10 Project works re-started on site in the second half of the year with Wembley Park canopy re-construction completed in November 2020 and seven Jubilee line Platform Edge Door (PED) modifications completed in January 2021. Manual Boarding Ramp (MBR) installation was also completed at Elephant and Castle station in January 2021.



**Figure 3:** A Jubilee line platform being modified for level access

### **Power & Electricals**

- 6.11 Work continued (with appropriate pandemic safe measures in place) to replace the Uninterrupted Power Supply Units at LU service control centres, with replacements completed for the Northern and Bakerloo lines. These works were critical to address recent in-service failures associated with power outages from the existing assets.
- 6.12 Light Emitting Diode (LED) and emergency lighting conversions were completed at twelve stations (replacing fluorescent lighting with energy efficient LED units) and replacements of Generator Fire Detection Control Panels were also completed at Greenwich Generating Station.
- 6.13 The Power SCADA (Supervisory Control and Data Acquisition) upgrade continued to complete the design phase and has successfully moved into the delivery phase.
- 6.14 Replacement of High Voltage switchgear at Greenford substation was paused in 2020/21 but is expected to recommence in the next financial year.
- 6.15 New Traction Isolation Switches have been installed and commissioned on site at Stonebridge Park and London Road depots, these are the first in an ongoing replacement of switches across the network.



**Figure 4:** Traction Isolation Switches (TIS) being installed at Stonebridge Park Depot

### **Cooling**

- 6.16 Due to the reprioritisation of budget across TfL in this financial year, the fan renewal projects have been paused. The opportunity will be taken to refresh the programme ensuring that replacements are aligned to the LU Asset Strategy and the LTCP with a view to recommencing in 2022/23.

### **Energy**

- 6.17 The RE:FIT project, was tasked with installing 1.1mWp (megaWatt peak) of generating capacity as part of the Mayor's Solar Action Plan. This project was descoped during the Emergency Budget process as funding was re-prioritised to address safety and compliance works with a significantly reduced budget.

## **7 Key deliverables for the Programme**

- 7.1 The LU Renewals Programme comprises of the components outlined in Table 2. Prioritised delivery of projects from the workbanks will continue in order to ensure assets comply with legislation and remain safe and reliable in operation. The programme delivers value for money by prioritising the asset renewals undertaken to balance affordability, safety and reliability.

**Table 2: Summary of the LU Renewals Programme (£m) to 2024/25**

Key Delivery in 21/22	Estimated Final Cost*	Existing Programme and Project Authority	This Authority Request	Total Programme and Project Authority
<b>Buildings and Stations Asset Resilience workbank:</b> <ul style="list-style-type: none"> <li>Continuation of the buildings systems and built environment workbank to address safety, legislative and condition concerns including the development of new workbank items.</li> <li>Start on site renewal of communication systems at 8 stations on the Jubilee Line</li> </ul>	140.8	104.3	14.3	118.6
<b>Civils workbank:</b> <ul style="list-style-type: none"> <li>Continuation of the workbank to address safety, legislative and condition concerns including the development of new workbank items.</li> <li>Start work on site to stabilise the cutting between Grange Hill and Chigwell</li> <li>Commence design to stabilise the cutting between Canon's Park and Queensbury.</li> <li>Completion of concept design for footbridge replacement at North Acton</li> </ul>	85.0	62.1	10.1	72.1
<b>Power &amp; Electricals workbanks:</b> Power <ul style="list-style-type: none"> <li>Continuation of the power workbank to address safety and condition concerns</li> </ul>	56.7	39.9	0	39.9
Electricals (transferred from Buildings & Stations Asset Resilience) <ul style="list-style-type: none"> <li>Contract award for station UPS design and delivery</li> </ul>	18.3	13.3	0	13.3
<b>CCTV cameras at Platform Train Interface</b> <ul style="list-style-type: none"> <li>Detailed design and delivery of CCTV camera works at the platform train interface</li> </ul>	6.7	5.2	1.5	6.7
<b>LED re-lamping:</b> <ul style="list-style-type: none"> <li>Introduction of a new LED re-lamping workstream at stations and depots</li> </ul>	10.0	0	10.0	10.0
<b>Staff Welfare Facilities:</b> <ul style="list-style-type: none"> <li>Initiation of a new workstream to improve the condition of staff welfare facilities</li> </ul>	3.1	0	3.1	3.1
<b>Power SCADA:</b> <ul style="list-style-type: none"> <li>Installation and commissioning of the Power SCADA system</li> </ul>	16.1	15.7	0.4	16.1
<b>Civils RVAR:</b> <ul style="list-style-type: none"> <li>Installation of Manual Boarding Ramps at six Bakerloo line stations</li> <li>Construction of platform humps at Oxford Circus and Paddington stations.</li> </ul>	3.6	5.3	0.0	5.3
<b>Total</b>	<b>340.5</b>	<b>245.8</b>	<b>39.4</b>	<b>285.2</b>

\* For LEDs and Staff Welfare the EFC includes to 22/23 only. The EFC for the workbanks includes currently scoped works plus assumed future investment in line with the 2020 TfL Budget and Business Plan. These numbers will continue to be developed and matured before the next annual submission.



- 7.2 The component parts of the LU Renewals Programme are existing programmes or projects which previously formed part of other LU Programmes. A transfer of the relevant Programme and Project Authorities (outlined in Appendix 1) is requested to bring the existing Programme and Project Authority for the new LU Renewals Programme to £245.8m.
- 7.3 In October 2019, authority was granted by the Committee (as part of the LU Station Enhancements and Renewals Programme) for ongoing delivery of the Buildings and Stations Asset Resilience (including electricals) and Civils workbanks to 2022/23. Additional Programme and Project Authority is requested in this submission (as outlined in table 2 above) to ensure that multi-year projects within these workbanks which extend beyond this timeframe can be completed. The previously granted Programme and Project Authority (as part of the Power, Cooling and Energy Programme) covers the ongoing delivery of the Power workbank in 2021/22.
- 7.4 Additional Programme and Project Authority is also requested for; the introduction of two new workstreams for initiation and delivery in 2021/22 and 2022/23, an LED re-lamping workstream (covering stations and depots) and a staff welfare workstream, and to complete two existing projects, the life extension of the Power SCADA system and platform train interface CCTV cameras (both expected to complete in 2022/23). The Civils RVAR workstream is due to complete in 2021/22 and no further Programme and Project authority is requested.
- 7.5 In total £39.4m additional Programme and Project Authority is requested bringing the total for the Programme to £285.2m to 2024/25.

## **8 Financial Implications**

- 8.1 Table 3 shows the financial impact of the Programme by year. The financial impact is shown up to 2024/25. This is to include multi-year projects within the workbank requiring commercial commitments which extend to this period.
- 8.2 The tables include the EFC and Financial Authority in line with the 2020 TfL Budget and Business Plan. These numbers will continue to be developed and matured during 2021/22 before the next annual submission.
- 8.3 The spend over the last financial year was significantly impacted by the coronavirus pandemic. A comprehensive review has been undertaken to ensure the level of investment planned for 2021/22 is achievable. Past performance, schedules, phasing, risk and known issues and concerns were all reviewed as part of the process.
- 8.4 The current funding agreement with Government, dated 31 October 2020, expires on 31 March 2021 but recognises that TfL will need to enter into new financial commitment that extend beyond 31 March 2021. It is anticipated that the financial commitments that this paper describes will be addressed in a replacement funding agreement.

**Table 3: LU Renewals Programme Financial Implications (£m) to 2024/25**

<b>Costs and Funding (£m)</b>	<b>Prior Years</b>	<b>2020/21</b>	<b>2021/22</b>	<b>2022/23 to 2024/25</b>	<b>Total</b>
Cost (Outturn)					
Financial Authority	113.6	21.2	56.9	148.8	340.5
Programme EFC	113.6	20.2	47.4	159.3	340.5
Existing Programme and Project Authority	113.6	20.2	40.4	71.7	245.8
This Authority Request			7.0	32.4	39.4

## **9 Challenges & Opportunities**

- 9.1 **Challenges:** In the short to medium term, the coronavirus pandemic may continue to impact staff and the supply chain to the Programme which could impact delivery. TfL will continue to work with suppliers to mitigate this.
- 9.2 **Challenges:** A greater level of internal resource is required to support the increased Programme delivery in 2021/22. This forms part of the resource planning for the relevant business areas, but there are some ongoing challenges with securing expert resources in certain key areas such as commercial and engineering.
- 9.3 **Opportunity:** The Programme is seeking to consolidate procurement of larger works packages for example where similar works are required at multiple locations. This approach will deliver value for money through efficiencies and the contractor gaining skills, knowledge and experience to apply to subsequent works.
- 9.4 **Opportunity:** As the Programme matures the scope and delivery strategy for new workbank items, opportunities to accelerate high priority items will be explored. This could result in increased levels of delivery in 2021/22 compared to the current plan (if funding is available to support) and may require Programme and Project Authority to be brought forward from later years.

## **10 Equalities Implications**

- 10.1 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.

## **11 Assurance**

- 11.1 TfL Project Assurance and the Independent Investment Programme Advisory Group (IIPAG) undertook an assurance review of the Programme in January 2021. No critical issues were identified and all recommendations are being addressed.

**List of Appendices:**

Appendix 1: Transfer of Programme and Project Authority from existing Programmes to the LU Renewals Programme

Appendix 2: Overview of London Underground Programmes

**List of Background Papers:**

Independent Investment Programme Advisory Group Report

TfL Project Assurance Report

Management response to IIPAG and TfL Project Assurance Reports

Contact Officer: Alexandra Batey, Director of Investment Delivery Planning  
Email: [AlexandraBatey@tfl.gov.uk](mailto:AlexandraBatey@tfl.gov.uk)

[page left intentionally blank]

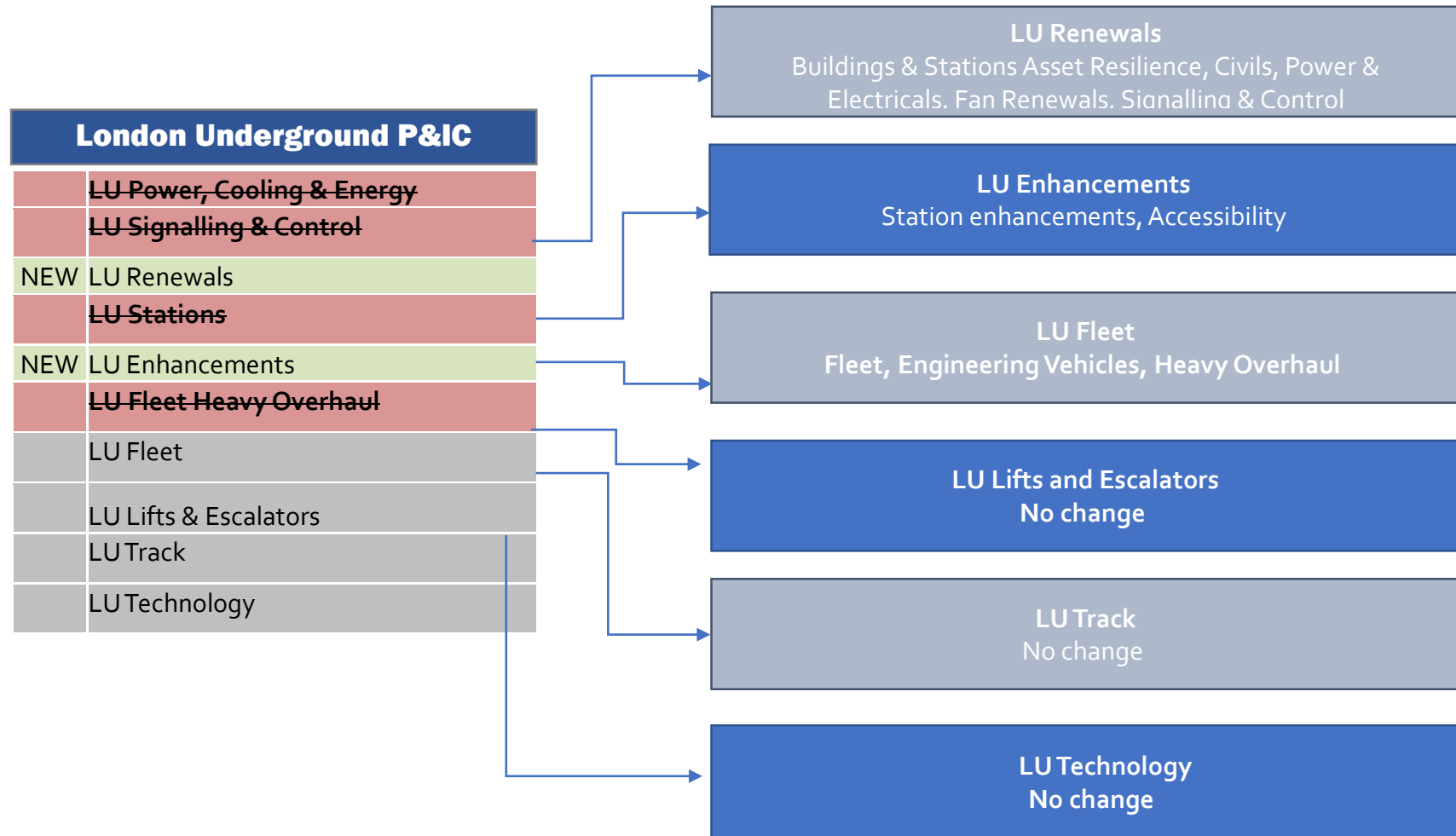
## Appendix 1: Transfer of Programme and Project Authority from existing Programmes to the LU Renewals Programme

### Transfer of Programme and Project Authority

Project	Programme & Project Authority	Current Location	Proposed Location
Buildings and Stations Asset Resilience Renewals workbank	£104.3m	LU Station Renewals & Enhancements Programme	LU Renewals Programme
Buildings and Stations Asset Resilience Electricals workbank	£13.3m	LU Station Renewals & Enhancements Programme	LU Renewals Programme (transfer from Asset Resilience and manage with Power)
Civils Renewals workbank	£62.1m	LU Station Renewals & Enhancements Programme	LU Renewals Programme
Power Renewals workbank	£39.9m	Power, Cooling and Energy	LU Renewals Programme
Platform train interface CCTV project	£5.2m	LU Station Renewals & Enhancements Programme	LU Renewals Programme
Power SCADA	£15.7m	Power, Cooling and Energy	LU Renewals Programme
Civils RVAR	£5.3m	LU Station Renewals & Enhancements Programme	LU Renewals Programme
<b>Total</b>	<b>£245.8m</b>		
Fan Renewals	£23.5m	Power, Cooling and Energy Programme	Authority not being transferred
Energy	£5.1m	Power, Cooling and Energy Programme	Authority not being transferred

[page left intentionally blank]

## Appendix 2: Overview of London Underground Programmes



[page left intentionally blank]



## Programmes and Investment Committee



Date: 3 March 2021

Item: London Underground Fleet and Access Programmes

This paper will be considered in public

### 1 Summary

Programme	Existing Financial Authority (£m)	EFC (£m)	Existing Programme and Project Authority (£m)	Additional Authority Requested (£m)	Total Authority (£m)
R&E Fleet	666.0	703.8	622.1	4.5	626.6
Access (Engineering Vehicles)	334.2	345.3	67.5	8.5	76.0
Total	1,000.2	1,049.1	689.6	13.0	702.6
<b>Total</b>	<b>1,000.2</b>	<b>1049.1</b>	<b>689.6</b>	<b>13.0</b>	<b>702.6</b>

**Table 1: Programme and Project Authority requests up to and including 2026/27.**

- 1.1 This paper represents the fifth submission of the London Underground (LU) Renewal and Enhancements (R&E) Fleet and (Access) Engineering Vehicles (EV) Programmes to the Committee. It details the request for £13.0m additional Programme and Project Authority up to and including 2026/27.
- 1.2 The Programmes ensure the compliance of London Underground's passenger trains and engineering vehicles with safety standards and legislation, securing expected reliability and availability levels, and the capability to cater for future forecast demands of the network. The Programmes align with the 2020 TfL Budget and Business Plan.
- 1.3 Since the previous submission to the Committee, the EV projects have now been transferred to a separate Programme in April 2020, referred to as the Access Programme.
- 1.4 This paper:
  - (a) provides an update on the Programmes 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 £4.5m outturn including risk, for the Renewal and Enhancement Fleet Programme, bringing the total Programme and Project Authority to £626.6m, to complete a new train modification workshop in Acton and to begin a feasibility to address cracking of bogie underframes on the Jubilee line fleet;**
- (b) approve additional Programme and Project Authority of £8.5m (outturn including risk) for the Access Programme, bringing the total Programme and Project Authority to £76.0m, to progress the remote track monitoring project, bring into use a mechanised track renewals vehicle and to progress modification works at Ruislip depot; 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 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 R&E Fleet Programme delivers targeted renewals and upgrades to ensure performance and regulatory compliance, essential to keeping passenger fleets in service until replaced in the future.
- 3.2 The Access Programme includes engineering vehicles (EV) and specialist train projects. EVs are core to the delivery of LU's track maintenance and renewals programme. They comprise of battery locomotives (for haulage capability), various wagons for different activities, and plant equipment such as cranes and tampers. LU also relies upon specialist rail vehicles such as the Track (geometry) Recording Vehicle (TRV) for mandatory safety assurance duties. This asset suffers reliability and component obsolescence problems, but its capability is planned to be replaced via the remote track monitoring project.
- 3.3 Both programmes support the Mayor's Transport Strategy (MTS) objective of 'providing a good public transport experience'. They contribute 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. These programmes also support LU's priorities for 'Safety and Reliability', 'Customer', 'People' and 'Affordability', and are aligned to the Fleet and EV strategies in the Long-Term Capital Plan (LTCP).

## **4 Impact due to coronavirus**

- 4.1 TfL brought nearly all project sites to a temporary safe stop to limit the spread of the coronavirus pandemic. Construction activity was paused between 24 March 2020 and 26 May 2020, aside for limited approved activities specifically needed to keep the worksites in a safe condition.

- 4.2 The R&E Fleet Programme and Access Programme stopped work on all sites through this period. This was followed by a prioritisation process that deferred the delivery of some work to 2021. In addition, a significant proportion of project staff were furloughed as part of the Government's coronavirus job retention scheme. This has had a direct impact on progressing physical work, however some work has continued with suppliers and progress has been made on many designs. Most projects within the two programmes have restarted on site following implementation of coronavirus safe working processes.

## **5 Delivery Progress since last submission**

- 5.1 Since March 2020 progress of both the R&E Fleet and Access Programmes have been impacted by the coronavirus pandemic. Key highlights for select projects are detailed in sections below.

### **R&E Fleet**

- 5.2 The Central line Improvement Programme (CLIP) provides reliability and safety improvements, ensuring trains on the Central and Waterloo & City lines<sup>1</sup> remain safe and fit for purpose until replacement as per the Fleet Asset Strategy and LTCP. A new traction propulsion system has now been installed on four cars and efficiencies have been identified for the future production-scale installation phase. This scope is a key enabler for reliability and financial benefits through reduced maintenance arising from the new systems. A new on-train computer has also been installed and testing has started on a single train. Following the completion of integrated designs, installation and testing has started for the Passenger Information System (PIS), CCTV and LED lighting systems. A deep dive review of CLIP has also been completed to accelerate the schedule and ensure completion by the end of 2025.
- 5.3 The construction of the 7,372m<sup>2</sup> new train modification workshop in Acton has restarted after the coronavirus safe stop during the spring of 2020. Civils work has completed along with mechanical and electrical fit out, including the installation of the building's solar panel array. Power 'on' to the building has been achieved with the testing and commissioning phase due to begin at the end of March 2021. Track layout has been completed and is now connected to the maintenance pit roads (allowing access to beneath a train). The new workshop had been planned to be available in Autumn of 2020 but will now be ready in Spring 2021.

---

<sup>1</sup> The Central line consists of 85 eight-car trains. The Waterloo and City line consists of five four-car trains.



**Figure 1: Completed Track Work      Figure 2: Solar Array Installation**

- 5.4 For LU's oldest fleet, brought into service in the early 1970's, Bakerloo line trains completed their life extension and structural integrity improvement scope in 2020 and began work to deliver compliance with Rail Vehicle Accessibility Regulations (RVAR). Wheelchair bays and grab pole test installations have completed and passenger information systems designs have progressed. Under the Fleet Asset strategy and LTCP this fleet is planned to be in operation until at least the late 2020's. Should this fleet be required to be in operation for longer, further life extension scope will be required in addition to the continuous programme of overhauls these trains are subject to.
- 5.5 The Train Cab J-Door Security Improvement project will prevent unauthorised access into the train operator's cab from the train saloon. In March 2020 this was brought to a safe stop and the project paused until spring 2021 (a year later than originally planned).
- 5.6 In October 2019 a routine maintenance inspection identified significant cracks on a Jubilee line train. The whole fleet was subsequently withdrawn for inspection with significant disruption to passenger service. The trains are operating safely using an interim solution. A Jubilee line Underframe Modification Project (JUMP) is being established to deliver permanent rectification of this issue, with design and development taking place in 2021.

### **Access Programme**

- 5.7 The Locomotive Capability project completed an early market engagement exercise and optioneering on the replacement of aged battery locomotives used to haul wagons, plant and equipment around the network. Some components of the existing locomotives are 100 years old and are increasingly difficult to replace. Feasibility results and a planning study based on a second market engagement exercise will support a locomotive capability solution for the LTCP in Spring 2021.
- 5.8 The Remote Track Monitoring (RTM) project aims to replace capability currently provided by the life expired Track Recording Vehicle (TRV) and Automatic Track Monitoring Systems (ATMS). The TRV is the sole vehicle LU employs to measure track geometry to avoid catastrophic rail breaks and the ATMS is LU's train-borne device to monitor rail defects on the Sub-Surface Railway, Victoria, and Bakerloo lines. The RTM project is procuring track geometry measurement systems to be fitted to two new wagons (see below) which will be hauled by battery locomotives

around the network. In the meantime, we need to keep the existing TRV in service. We have a solution to operate the TRV with new signalling being progressively introduced by the Four Lines Modernisation (4LM) upgrade. Implementation is to start in Spring 2021.

- 5.9 The Mechanised Renewals Vehicle (MRV) will automate the labour-intensive methods LU use to renew track and concrete structures in the deep tube tunnel environment. Although the coronavirus pandemic has affected the production of the first MRV prototype, associated wagons have been overhauled and fitted with equipment, and are almost ready for on-site trials in Spring 2021.
- 5.10 Topographical surveys and track feasibility studies have completed in support of the EV depot (Ruislip) re-configuration project. New track works are required to accommodate new engineering vehicles outlined in the Access Programme above and to improve depot EV operations overall.
- 5.11 In Autumn 2020, four pre-production wagons arrived in the UK from China. These were delayed due to the Chinese factory being shut down during the height of the coronavirus pandemic. Testing of these four wagons for certification of safe use on LU and Network Rail infrastructure has also unfortunately been delayed. This is due to initial inspection revealing a requirement for some remediation work before dynamic testing can commence. Subsequent contract negotiations and arranging of representation from China to physically inspect the wagons (including periods of quarantine upon arrival in the UK) has significantly delayed the milestone of commencing full production of the remaining 69 wagons.



**Figure 3: Four pre-production wagons shipped from China**

## 6 Key deliverables for the Programmes

### R&E Fleet

- 6.1 Table 2 presents the projects and associated financial impact to 2026/27 as well as key deliverables to December 2021.
- 6.2 Value for money is achieved through detailed scope development and procurement efficiencies. Fleet enhancements within the LTCP are reviewed to identify where these can be combined efficiently in single projects or programmes to reduce the time a train is out of service and provide the most efficient use of labour. The Programme reviews opportunities to combine procurements across projects, this is demonstrated through procurement between CLIP, the Fleet Heavy Overhaul Programme and fleet maintenance (not part of this submission). The Programme also looks for efficiencies in delivery and works closely with the Trains Modification Unit (TMU) to drive down resource cost.

Project and Key Delivery to December 2021	Financial Authority (£m)	Estimated Final Cost (EFC) (£m)	Existing P&PA (£m)	This Authority Request (£m)	Future Authority Requests (£m)
<b>CLIP, Programme Lift and New Workshop:</b> <ul style="list-style-type: none"> <li>Complete prototyping and testing in Spring 2021</li> <li>Begin first Production Train in Summer 2021</li> <li>First train handed back to fleet in Winter 2021</li> <li>New Workshop ready for CLIP in Summer 2021</li> </ul>	521.5	525.5	485.5	3.6	36.4
<b>Bakerloo line RVAR</b> <ul style="list-style-type: none"> <li>Complete installation of LED lighting, wheelchair bays and grab poles on eight trains</li> <li>Complete Passenger Information System installation on one train</li> </ul>	40.4	40.3	30.5	-	9.8
<b>Train Cab J-Door Security Improvement:</b> <ul style="list-style-type: none"> <li>Completion of installation of the security improvement system on J Doors of the Waterloo and City line, Central line and Bakerloo line fleets</li> </ul>	10.2	10.1	11.0	-	-

<b>Project and Key Delivery to December 2021</b>	<b>Financial Authority (£m)</b>	<b>Estimated Final Cost (EFC) (£m)</b>	<b>Existing P&amp;PA (£m)</b>	<b>This Authority Request (£m)</b>	<b>Future Authority Requests (£m)</b>
<b>Victoria line passenger fleet:</b> <ul style="list-style-type: none"> <li>• Continue to deliver ventilation and fan cleaning</li> <li>• Complete floor repairs where required</li> </ul>	4.7	4.7	4.7	-	-
<b>Continuing Projects Sub-Totals</b>	576.8	580.6	531.7	3.6	46.2
<b>JUMP:</b> <ul style="list-style-type: none"> <li>• Initiate project and complete JUMP feasibility stage</li> <li>• Begin design stages</li> </ul>	0.9	34.7	-	0.9	33.8
<b>New Projects Sub-Totals</b>	0.9	34.7	-	0.9	33.8
<b>Jubilee line passenger fleet mid-life refurbishment</b>	25.9	26.1	26.2	-	-
<b>Bakerloo line Life Extension</b>	55.2	55.2	57.0	-	-
<b>Metropolitan line Rail Adhesion Train</b>	7.2	7.2	7.2	-	-
<b>Closing Projects Sub-Totals</b>	88.3	88.5	90.4	-	-
<b>Totals</b>	666.0	703.8	622.1	4.5	80.0

**Table 2: Summary of the R&E Fleet Programme to 2026/27**

## Access

- 6.3 Table 3 presents the projects and associated financial impact to 2026/27 as well as key deliverables to December 2021.
- 6.4 The programme achieves value for money by leveraging expertise and efficiencies at Ruislip Depot to accelerate design, streamline assurance and handover activities with Transplant. This is helped by the move from R&E Fleet to Access that enabled the programme to deliver financially sustainable solutions effectively that are fit for purpose. Additionally, the Ruislip depot project and the proposed vacation of Lillie Bridge depot are liaising to, establish and exploit synergies in programme and timescale.

Project and Key Delivery to December 2021	Financial Authority (£m)*	Estimated Final Cost (EFC) (£m)	Existing P&PA Authority (£m)	This Authority Request (£m)	Future Authority Requests (£m)
<b>Locomotive Capability:</b> <ul style="list-style-type: none"> <li>Complete feasibility on fleet replacement versus life extension of existing locomotives</li> <li>Propose the commercial strategies for future stages</li> </ul>	183.1	187.6	0.3	0.3	187.0
<b>EV Overhauls Life extension:</b> <ul style="list-style-type: none"> <li>Overhaul of 6 locomotives, 80 wagons (subject to repair works), deep tube cranes, and tamping machines</li> </ul>	36.2	36.7	21.2	-	15.5
<b>Remote Track Monitoring (TRV):</b> <ul style="list-style-type: none"> <li>Contract award for the track geometry equipment and close out of TRV SSL project</li> </ul>	12.1	17.0	1.0	3.9	12.1
<b>Mechanised Renewals Vehicle (MRV)</b> <ul style="list-style-type: none"> <li>MRV brought into beneficial use</li> <li>Mechanise materials handling on the MRV</li> </ul>	24.9	25.3	3.7	0.5	21.1
<b>Engineers Vehicle Depot Enabling – Ruislip:</b> <ul style="list-style-type: none"> <li>Complete depot reconfiguration design and begin construction onsite</li> </ul>	8.8	8.8	1.9	3.3	3.6
<b>Mod P&amp;C:</b> <ul style="list-style-type: none"> <li>Commence operation on LU Sub-surface network (open section) for track renewals.</li> </ul>	27.5	27.7	27.4	-	0.3



<b>Project and Key Delivery to December 2021</b>	<b>Financial Authority (£m)*</b>	<b>Estimated Final Cost (EFC) (£m)</b>	<b>Existing P&amp;PA Authority (£m)</b>	<b>This Authority Request (£m)</b>	<b>Future Authority Requests (£m)</b>
<b>New Wagons:</b> <ul style="list-style-type: none"> <li>Complete testing of pre-production wagons and commence mass production of remaining wagons</li> </ul>	12.0	12.2	11.9	-	0.3
<b>Continuing Projects Sub-Totals</b>	304.6	315.3	67.3	8.0	239.9
<b>Future Projects</b> (Including tamper coupling modifications and overnight ballasted track renewals)	29.6	30.0	0.2	0.5	29.3
<b>New Projects Sub-Totals</b>	29.6	30.0	0.2	0.5	29.3
<b>Totals</b>	334.2	345.3	67.5	8.5	269.2

\* Financial Authority will be aligned to the overall EFC as part of the 2021 Business Plan before the next submission to the committee.

**Table 3: Summary of the R&E Access Programme to 2026/27**

## **7 Equalities Implications**

7.1 These programmes 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 Tables 4 and 5 show the financial impact of the Programmes by year. All cost figures include risk and inflation and illustrate plans up to and including 2026/27. This is considered as the minimum authority required to continue these multi-year, predominantly in-flight projects across both Programmes.

8.2 The Financial Authority is based on the 2020 TfL Budget and Business Plan, subject to change once it is approved. The tables include the Financial Authority, EFC and future requests in line with the LTCP. These numbers will be refined through 2021/22 before the next annual submission.

8.3 The current funding agreement with Government, dated 31 October 2020, expires on 31 March 2021 but recognises that TfL will need to enter into new financial commitment that extends beyond 31 March 2021. It is anticipated that the financial commitments that this paper describes will be addressed in a replacement funding agreement.

## R&E Fleet

- 8.4 The additional request of £4.5m Programme and Project Authority will bring the total to £626.6m.
- 8.5 The Financial Authority excludes allowance which have been made for the Programme within the LTCP. The 2021 Business Plan will align the Financial Authority with LTCP prior to the next submission to the Committee.

Costs and Funding (£m)	Prior Years	2020/21	2021/22	2022/23 to 2026/27	Total
Cost (Outturn)					
Existing Programme and Project Authority	173.6	20.0	60.1	368.4	622.1
This Authority Request	-	2.0	2.5	-	4.5
Future Authority Requests	-	-	-	80.0	80.0
Financial Authority*	173.6	21.6	66.0	404.8	666.0
Programme EFC	173.6	22.0	60.7	447.5	703.8

\* Financial Authority is based on the 2020 TfL budget and Business Plan.

**Table 4: R&E Fleet Programme Financial Implications to 2026/27**

## Access

- 8.6 The additional request of £8.5m Programme and Project Authority will bring the total to £76.0m.

Costs and Funding (£m)	Prior Years	2020/21	2021/22	2022/23 to 2026/27	Total
Cost (Outturn)					
Existing Programme and Project Authority	42.1	9.8	11.5	4.1	67.5
This Authority Request	-	0.1	6.3	2.1	8.5
Future Authority Requests	-	-	0.4	268.8	269.2
Financial Authority*	42.0	10.0	17.4	264.8	334.2
Programme EFC	42.0	10.2	17.1	276.0	345.3

\* Financial Authority is based on the 2020 TfL budget and Business Plan.

**Table 5: R&E Access Programme Financial Implications to 2026/27**

## 9 Challenges, Opportunities and Lessons Learnt

- 9.1 **Challenges:** In the short to medium term, coronavirus is likely to impact staff and the supply chain to these programmes. This could affect delivery and have financial impacts in a cash constrained environment. The impact of coronavirus and recovery measures have been included within project EFCs and schedules.

9.2 **Opportunity:** There is an opportunity for the Ruislip depot project to improve current EV stabling and movement constraints while accommodating new vehicles and mechanisation of processes. The project is also working closely with Commercial Development to consolidate and develop the site into a more purpose designed facility for Lillie Bridge Depot to relocate alongside track mechanisation.

9.3 **Lessons Learnt:** Exceptional challenges in FY20/21 have changed how the programme is recovering from the collateral impacts dealt by the supply chain slowdown. When the TRV SSL installation was hampered by the volatile market responses to coronavirus, the project supported the materials management team to prioritise long lead and critical items. The team also learnt to reach out to solve problems together with Asset Operators, who in turn provided an installation phase that also fits with the track recording regime.

## 10 Assurance

10.1 TfL Project Assurance and the Independent Investment Programme Advisory Group (IIPAG) completed an assurance review of the Programme in January 2021. No critical issues were identified and a plan to address recommendations has been agreed.

### List of appendices to this report:

None

### List of Background Papers:

Independent Investment Programme Advisory Group Report

TfL Project Assurance Report

Management response to IIPAG and TfL Project Assurance Reports

Contact Officer: Alexandra Batey, Director of Investment Delivery Planning

Email: [AlexandraBatey@tfl.gov.uk](mailto:AlexandraBatey@tfl.gov.uk)

[page left intentionally blank]

## Programmes and Investment Committee



Date: 3 March 2021

Item: Surface Transport Asset Renewals Programme

This paper will be considered in public

### 1 Summary

Surface Transport Asset Renewals Programme							
	Existing Financial Authority	Forecast 2017/18 to 2022/23	Forecast 2017/18 to 2024/25	Existing Programme and Project Authority	Additional Authority Requested (to end 2022/23)	Programme and Project Authority Requested for future years	Total Authority
Gross	£820m	£816m	£1,319m	£618m	£198m	£504m	£816m
Income	£56m	-£43m	-£43m	-£48m	£6m	-	-£43m
Net	£764m	£773m	£1,276m	£570m	£204m	£504m	£773m

**Authority Approval:** The Committee is asked to approve budgeted Programme and Project Authority of £198m. This request covers financial year 2022/23 and is within the 2020 TfL Business Plan and Budget.

**Outputs and Schedule:** The Surface Assets Programme is made up of multiple projects and programmes that deliver critical asset renewals, improving the state of good repair and providing a safe and operable network. The full outputs are documented below.

- 1.1 This paper sets out the request for Programme and Project Authority for the continuation of the Surface Transport Asset Renewals Programme (the Programme) until the end of 2022/23. The Programme maintains the safety, operability and reliability of highway, traffic, bus, coach and river assets through a prioritised programme of planned and reactive renewals.
- 1.2 In March 2020, the Committee approved additional Programme and Project Authority of £311m for delivery of the Programme – including £8m in 2019/20, £122m in 2020/21 and £180m in 2021/22. This paper seeks approval of Programme and Project Authority for 2022/23.
- 1.3 The focus of this paper is to:
  - (a) present the Programme's achievements since the previous submission;
  - (b) summarise the financial allocations by main asset types and projects for 2021/22 and the associated outputs; and
  - (c) provide assurance to the Committee on the progress of the Programme.
- 1.4 The Programme will return annually to the Committee for Authority approval.

## **2 Recommendations**

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

- (a) approve additional Programme and Project Authority of £198m for delivery of the Surface Transport Assets Renewal Programme through to 2022/23;**
- (b) note that Procurement Authority in respect of the various elements of the Surface Transport Assets Programme will be sought at officer level 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 as 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**

### **Strategic Context**

- 3.1** The Mayor's Transport Strategy (MTS) has three key themes: healthy streets and healthy people; a good public transport experience; and new homes and jobs. Action plans have been produced that detail the activities to achieve these objectives, including for Walking, Cycling, Freight & Servicing and Vision Zero. Maintaining a state of good repair of our Surface assets is key to delivering all these plans, as almost all journeys on London's transport system start or finish on the road network. This is particularly important in terms of road safety for users of the network and supporting local trips and active travel. Appendix 1 sets out how maintaining assets in a state of good repair supports the MTS.
- 3.2** The Programme's budget was substantially reduced in 2018/19 and 2019/20 as a consequence of the government removing Transport for London's (TfL) revenue grant. The funding was planned to return to steady state levels from 2020/21, but due to the impact of the safe stop and revised ways of working associated with coronavirus pandemic, investment reduced to 79 per cent of original planned levels for 2020/21 (from the planned £122m to £97m).

### **Surface Assets**

- 3.3** The assets covered by this paper include TfL roads and footways, bus and coach stations, bus stops and shelters, river assets, Woolwich Ferry, traffic signals, bridges, tunnels, street lighting, drainage and trees. Appendix 2 provides a summary of the assets. The Programme also covers the Local Implementation Plan (LIP) funding for borough principal road resurfacing and borough bridge strengthening.

## Asset duties and responsibilities

- 3.4 TfL, as the highway authority for the Transport for London Road Network (TLRN), has a statutory duty under the Highways Act 1980 to maintain the public highway. The Traffic Management Act 2004 places a duty on TfL to 'manage the road network with a view to securing and facilitating the expeditious movement of people and goods', which includes the provision and maintenance of assets (e.g. traffic signals) that support this activity. TfL has additional statutory duties under the Road Tunnel Safety Act 2007 for the safe management and operation of road tunnels.

## Maintaining assets in a State of Good Repair

- 3.5 State of Good Repair (SOGR) describes the condition in which TfL seeks to maintain assets to provide a safe and reliable network that minimises whole life costs and, where appropriate, meets customer expectations. The SOGR is based on industry standard condition measures which differ by asset type, for example the standard that describes the condition of a bridge is different to the condition for carriageways. Where the SOGR is below the preferred range it reflects the need for renewals investment to deliver a reliable network and reduce the risk of restrictions and closures.
- 3.6 Each asset has a target SOGR range, with examples shown in Table 1 below.

**Table 1: State of Good Repair ranges**

Asset	SOGR target range (per cent)	
Carriageway*	High volume of cyclists	93 to 96
	Low volume of cyclists	90 to 93
Footway	91 to 96	
Bridges	88 to 92	
Street lighting	90 to 95	

\* It will take several years for the difference to become apparent because the whole network is currently below 90 per cent SOGR due to the two year pause to renewals.

- 3.7 Details of how SOGR is measured and calculated are provided in Appendix 3.

## Asset maintenance and asset renewals

- 3.8 An effective regime of asset maintenance and renewal minimises whole life costs while maximising the benefits provided by the assets.
- 3.9 This paper seeks approval for the capital expenditure on asset renewals and does not make provisions for operational expenditure (with the exception of the LIP financial support TfL provides to the London boroughs for principal road resurfacing and bridge strengthening).

## Impact on Operations

3.10 The two-year reduction in asset renewals (refer to Table 7) has increased the number of temporary closures and interim measures on the network. This has placed substantial pressure on maintenance budgets and increased the risk of reputational damage to TfL and customer dissatisfaction. Table 2 sets out the implications in terms of direct TfL costs. However, there are also larger societal costs in terms of additional congestion, increased journey times and reduced reliability.

**Table 2: Interim Measures and Associated Costs**

Year	Assets with Interim Measures	Annual Cost of Interim Measures	Cost of Reactive Safety works	Total Cost
2016/17	24	£451k	£115k	£566k
2017/18	26	£556k	£410k	£966k
2018/19	39	£702k	£1,369k	£2,071k
2019/20	43	£2,496k	£1,440k	£3,936k
2020/21	48	£2,500k	£2,381k	£4,881k

3.11 Example of network impacts include:

- (a) Rotherhithe Tunnel – additional traffic restrictions put in place with only cars permitted;
- (b) A40 Westway – speed restriction (40mph to 30mph) and numerous short closures to implement reactive safety works (expansion joint repairs);
- (c) Vehicle Restraint System (VRS) – speed restriction (50mph to 40mph) implemented on A40 due to poor condition of VRS;
- (d) A12 lighting removal – columns failed structural testing and were removed but not replaced due to funding constraints but are now scheduled for replacement;
- (e) Hammersmith Bridge (which is owned by the London Borough of Hammersmith and Fulham) – closure to all users, including river traffic; and
- (f) Gallows Corner Flyover – speed restriction from 30mph to 20mph.

3.12 The proposed programme of renewals will, over time, reduce the burden on maintenance and operational budgets and improve network operability and reliability.

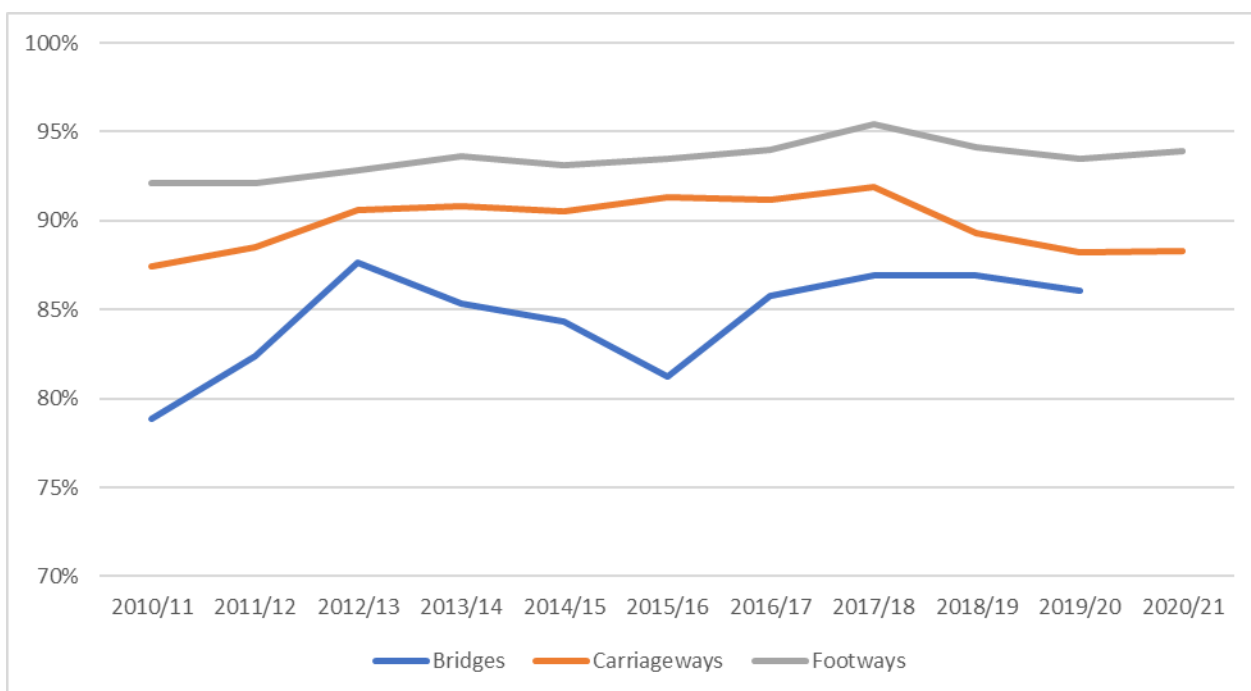
## 4 Programme Delivery in 2020/21

### Benefits and value

4.1 The total renewals expenditure across 2018/19, 2019/20, 2020/21 was £216m – for comparison, typical steady state investment per annum prior to 2018/19 was around £150m to £200m. Figure 1 shows the change in the SOGR for roads,



footways and bridges and Table 3 shows the change in customer satisfaction scores.



**Figure 1: State of Good Repair (SOGR) trend**

- 4.2 The pause in asset renewals for 2018/19 and 2019/20 resulted in a decline in asset condition, in particular for carriageway and footway condition.
- 4.3 The profile for TfL bridges has two significant SOGR fluctuations. In 2012/13 a marked improvement followed the completion of Hammersmith Flyover. In 2015/16 a marked drop followed a detailed inspection of Brent Cross structures and Westway structures, initiating some immediate remedial works, followed by the completion of several large projects contributing to SOGR improvement in the following two years (this does not include borough assets, such as Hammersmith Bridge). The SOGR for 2020/21 is not currently available as inspections are still ongoing.

**Table 3: 2020/21 Outcome measures**

Customer Satisfaction measure	15/16	16/17	17/18	18/19	19/20	20/21
Carriageway condition - all users	65	66	66	67	67	67
Carriageway condition – cyclists	62	64	63	68	66	63
Cycle lane condition – cyclists	61	63	62	67	66	64
Footway condition	62	63	64	65	63	64
Traffic Signal condition	73	73	72	73	73	73
Bus stations	87	88	80	NA*	NA*	NA*

\* Survey discontinued

- 4.4 There is a general downward trend in customer satisfaction scores for carriageway and footway. This reflects the associated reduction in SOGR shown in Figure 4.1, however, it also reflects a London-wide trend of declining highway condition – as it is highly likely that customers do not differentiate between TfL and borough roads when answering these questions.

#### **Delivery in 2020/21**

- 4.5 The planned level of investment was reduced in April 2020 because of the coronavirus pandemic. Most projects were paused with only safety critical activity, e.g. fire systems renewal at Victoria Coach Station, continuing. Following the resumption of the Programme in June 2020, the outturn expenditure for the year is £97m.
- 4.6 Key outputs for 2020/21 are:
- (a) Vauxhall Bridge – waterproofing of bridge deck to slow rate of asset deterioration mitigating the risk of traffic restrictions;
  - (b) Victoria Coach Station – fire systems renewal and information systems update;
  - (c) Hammersmith Bridge – detailed design completed for emergency stabilisation work and concept design completed for full stabilisation/strengthening and investigative works underway;
  - (d) Rotherhithe Tunnel – concept design completed, and value engineering review;
  - (e) A40 Westway – contractor appointed and concept design for work package one completed;
  - (f) Surface Asset Management Information Systems (SAMIS) – Highways and Inspections phase implemented;
  - (g) protective measures on bridges – concept design completed for Westminster Bridge, and feasibility completed on all other central London bridges;
  - (h) Highways contracts – new highways contracts awarded; and,

- (i) the Asset Capital Programme – multiple critical asset renewals completed covering all Surface asset types to maintain state of good repair.

4.7 Appendix 4 provides a summary of the key Programme investment and outputs for 2020/21.

## 5 Programme Delivery for 2021/22

### Option assessment

5.1 The following strategic options have been considered:

- (a) **Do Minimum:** Maintains a basic level of service at minimum cost to maintain safety and operability; under this option reliability and customer satisfaction will be lower. This option represents an absolute lower bound level of investment. The consequences of this option will likely result in significant peaks in investment as some assets become unmaintainable through operating expenditure interventions and will require significant capital investment to keep assets safe and available. The impacts of this option will be an ongoing and increasing number of interim measures on major tunnels and structures, removal of lighting, declining footway, cycle route and bus infrastructure condition and unreliable traffic signal infrastructure.
- (b) **Moderate (recommended):** Aligns with the 2020 TfL Budget with amendments to account for coronavirus pandemic impacts on delivery in 2020/21. This can support the key themes of the Mayor's Transport Strategy, however, at a slower rate and to a lower level of customer experience than the 'High Ambition' option. This option will manage and reduce the number of interim measures in place on major tunnels and structures with noticeable reductions over 10 years. Lighting column replacement can maintain the current levels with some continued roll out light-emitting diodes (LEDs). The current decline of cycle route and footway condition will be managed, however, significant improvements in state of good repair will not be seen in the short term. This option will also enable the continued investment in bus station staff welfare facilities and improvement works, such as Kingston Cromwell Road Bus Station.
- (c) **High Ambition:** This scenario aims to deliver the ambitions of the Mayor's Transport Strategy. It prioritises walking, cycling and public transport over other road users. Areas of focus include supporting Vision Zero, Healthy Streets and carbon reduction. This option will aim to reduce interim measures on major structures and tunnels assets over the next five years. Significant investment in lighting column replacement and roll out of the LED upgrade programme. Investment into carriageway, footway and cycle track renewals with state of good repair within the desirable range within three to five years.

5.2 The data shown in the remainder of this paper relate to the Moderate option which has been included in the 2020 TfL Business Plan and Budget.

### Benefits and value

5.3 Asset modelling and historic performance trends have been used to assess the SOGR that will be achieved by the planned investment and these are shown in

Table 4 compared to the 2019/20 outcomes. This shows a gradual decline in asset condition over the Business Plan period. This decline is anticipated due the impact of the coronavirus pandemic and the low levels of investment in the previous two years. The 'Moderate' option in the 2020 Business Plan will aim to reduce further declining asset condition based on removing the accumulated backlog and addressing needs as they arise. Asset performance is expected to improve beyond the business planning period based on this scenario. The predictions for carriageway and footway do not include severe winter weather events.

**Table 4: Current and Predicted State of Good Repair (per cent)**

Asset	19/20 (Actual)	20/21	21/22	22/23	23/24	24/25	25/26
Carriageway Overall*	88	88	86	85	85	85	85
Carriageway (High volume of cyclists)**	91	91	90	91	91	91	91
Carriageway (Low volume of cyclists)**	88	88	87	87	87	87	87
Footway	94	94	94	94	92	92	92
Structures	86	88	88	88	87	87	87

\* Due to coronavirus restrictions the annual survey that informs SOGR was not completed in 2020/21 so the previous year's figures from 2019/20 are reported here.

\*\* Note that these figures are indicative and are expected to represent the condition of the nearside lane. Further development of specific performance indicators are underway.

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

5.4 Key activities planned for 2021/22 include:

- (a) Rotherhithe tunnel – appointment of detailed design and build contractor;
- (b) A40 Westway – delivery commences for major expansion joint renewal;
- (c) Kingston Cromwell Road bus station – contract being awarded and construction commenced;
- (d) protective measures on bridges – construction completed on Westminster bridge;
- (e) new technology, bus stops and shelters contracts – procurement commenced;
- (f) modernised Victoria Coach Station – concept design having commenced and submission of planning and listed building application completed; and
- (g) the Asset Capital Programme – multiple critical asset renewals completed covering all Surface asset types to maintain state of good repair.

- 5.5 A breakdown of the 2021/22 activities, levels of expenditure and associated outputs across the Programme is provided in Appendix 4.
- 5.6 A large number of the activities will continue beyond 2021/22, such as completion of Kingston Cromwell Road bus station, this authority request therefore covers the period up to, and including, 2022/23.

## 6 Programme risks and milestones

### Programme risks

6.1 The top risks associated with the Programme are shown below.

**Table 5: Top risks from Surface Asset Renewals Programme**

Risk No	Risk Description	Mitigation Actions
1	Deliverability – insufficient supply chain resource	<ul style="list-style-type: none"> <li>The supply chain has been engaged and provided early access to the programme and outline funding allocations.</li> <li>A significant number of work orders have been raised this year to progress design works so (i) works are ready to go in 2021/22 and (ii) the supply chain has the confidence in resourcing.</li> </ul>
2	Contract mobilisation	<ul style="list-style-type: none"> <li>The new suite of highways contracts, which delivers a significant proportion of the annualised renewals activities, begins in April 2021.</li> <li>Close working and early planning of the programme with the supply chain is underway to mitigate the risk of mobilisation impacting delivery.</li> <li>Additional projects are being identified for assets delivered via other contracts (traffic signals and bus stops and shelters) to lower the risk across the Programme.</li> </ul>
3	Deliverability – insufficient internal resource	<ul style="list-style-type: none"> <li>The 2021/22 Programme is more than double 2020/21. Therefore, it is envisaged that a greater level of internal resource will be required within key areas.</li> <li>This forms part of the resource planning for the relevant business areas, but concerns remain in some areas over the need to ensure key resources are in place to support delivery.</li> </ul>
4	Unable to gain necessary network access	<ul style="list-style-type: none"> <li>The more extensive programme means this is a greater risk for 2020/21. Early planning is taking place for all major access requirements for 2021/22, e.g. A40 Westway.</li> <li>The Programme will be flexed to accommodate the most beneficial access arrangements.</li> </ul>
5	Uncertainty on new contract rates	<ul style="list-style-type: none"> <li>Whilst there are indicative costs for the new contracts, certainty will only be obtained once schemes have been priced and delivered.</li> </ul>

6.2 The Programme does not include an overall high-level risk allowance. It is comprised of hundreds of schemes that, experience has shown, enable risk to be managed across the programme using over-programming. On larger projects (e.g. the A40 Westway and Rotherhithe Tunnel) risk is held at project level.

**Programme milestones 2021/23**

6.3 The draft strategic milestones are shown in Table 6, which are being finalised for 2021/22.

**Table 6: Draft Strategic Milestones**

Project	Milestone	Tier	Target Date
Rotherhithe Tunnel	Design and Build Contract Recommendation	Strategic Tier 1	19 November 2021
Westway	Commencement of construction on site	Strategic Tier 1	14 September 2021
Carriageway	325,000m <sup>2</sup> of carriageway resurfaced	Strategic Tier 1	31 March 2022
Hostile Vehicle Mitigations – Westminster Bridge	Start of construction on site	Strategic Tier 1	31 October 2021

**Commercial Strategy**

6.4 The Programme is delivered via existing contracts or frameworks, and through individual contracts for larger/unique projects, e.g. A40 Westway and Kingston Cromwell Road bus station. Surface Transport has two frameworks in place which provide the typical route to market for delivery of the Programme. These are:

- (a) the London Highways Alliance Contract (LoHAC), for highway maintenance and related medium complexity capital works; and
- (b) the TfL Capital Projects Framework (CPF), for the delivery of high complexity capital projects

6.5 Both these frameworks expire on 31 March 2021 and will be replaced by:

- (a) London Highway Maintenance and Projects Framework (HMPF), which will deliver highway maintenance and low complexity capital works; and,
- (b) Surface Transport Infrastructure Construction Framework (STIC), which will deliver medium and high complexity capital works.

6.6 HMPF and STIC both commence on 1 April 2021 and will be used to deliver most projects within the Programme. Very high complexity or unique projects, such as Rotherhithe Tunnel refurbishment, may be delivered through external frameworks or via separate, individual contracts specifically procured to deliver a project.

6.7 Early engagement with the new contractors has commenced to ensure that planned activity, including handover of existing design work is as seamless as possible. The forecast for the first quarter of next financial year is £31m, with activity increasing in subsequent quarters reflecting the new contract mobilisation period.

## 7 Financial Implications

7.1 In March 2020, the Committee approved budgeted Programme and Project Authority totalling £311m for the period 2019/20 to 2020/21. There have been several adjustments to the Programme since March 2020, including:

- (a) £6m for accelerated schemes in the asset capital programme, predominantly for carriageways, structures and signalling in 2019/20;
- (b) a £25m reduction in 2020/21, principally due to an extended pause of renewal activity as a result of coronavirus pandemic impacting the Asset Capital and Borough Bridges and Roads programmes and a reduction in the forecast expenditure on Hammersmith Bridge due to the impacts of the pandemic on TfL finances; and
- (c) LRS Pier Renewal programme has been transferred from the Public Transport Programme – circa £2m for dry docking activities per annum from 2023/24.

7.2 The 2020 TfL Budget provides the Financial Authority needed to deliver the scope of the works set out in this request, with the exception of £13m additional expenditure in 2020/21 (this is subject to a separate request through the Chief Finance Officer). Of this:

- (a) £2m of this relates to additional third party funded Traffic Signal schemes (i.e. there is no net impact on TfL funding); and
- (b) £11m is to deliver further priority asset renewals in 2020/21 utilising available capital expenditure from other projects and Programmes across TfL

The £1m gap between the budgeted Financial Authority and the latest forecast in 2022/23 is a result of an accelerated programme for hostile vehicle mitigations.

7.3 The request as it relates to the Programme's Financial Authority and its Programme and Project Authority is shown in Table 7 below. The current funding agreement with Government, dated 31 October 2020, expires on 31 March 2021 but recognises that TfL will need to enter into new financial commitments that extend beyond 31 March 2021. It is anticipated that the financial commitments that this paper describes will be addressed in a replacement funding agreement.

**Table 7: Summary of the costs and funding**

<b>Assets Portfolio</b>		<b>Actuals</b>	<b>Actuals</b>	<b>Actuals</b>	<b>TfL Budget</b>					<b>Total forecast</b>	<b>Authority years to 22/23</b>
<b>Rounded to £m</b>		<b>17/18</b>	<b>18/19</b>	<b>19/20</b>	<b>20/21</b>	<b>21/22</b>	<b>22/23</b>	<b>23/24</b>	<b>24/25</b>		
<b>Financial authority</b>											
<b>Portfolio Total</b>		168	71	83	83	192	223	248	256	1,324	820
Budget or Plan	TfL Element	156	61	77	81	173	215	247	256	1,267	764
	Third Party Funding	12	10	6	2	18	8	0	-	57	56
<b>Portfolio forecast</b>											
Portfolio Total		168	71	83	97	173	224	247	256	1,319	816
Budget or Plan	TfL Element	156	61	77	93	162	224	247	256	1,276	773
	Third Party Funding	12	10	6	4	11	-	-	-	43	43
<b>Authority request</b>											
<b>Programme and Project Authority</b>	<b>PIC Approved</b>	<b>168</b>	<b>71</b>	<b>76</b>	<b>122</b>	<b>180</b>				<b>618</b>	<b>618</b>
	<b>Additional authority requested</b>	<b>-</b>	<b>-</b>	<b>6</b>	<b>-25</b>	<b>-7</b>	<b>224</b>			<b>198</b>	<b>198</b>
<b>Future Authority Requests</b>								<b>248</b>	<b>256</b>	<b>504</b>	<b>-</b>



## **8 Equality and inclusion**

8.1 TfL has an obligation under the Equality Act 2010 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 Most of the Programme is like-for-like renewals and, as such, maintains the existing provisions. The lower SOGR may have a negative impact on two groups: older and disabled customers, therefore the programme to improve SOGR is expected to benefit people in both these groups. Equality Impact Assessments will be completed on projects as required, for example for the project to provide hostile vehicle measures on river bridges.

## **9 Assurance**

9.1 TfL Project Assurance conducted an Integrated Assurance Review (IAR) on the Programme in January 2021. An independent review was also undertaken by the Independent Investment Programme Advisory Group (IIPAG). There were five recommendations by the IAR, two by IIPAG and no critical issues identified. Details of these recommendations and our Management Response have been shared with the Committee.

9.2 An agreed Integrated Assurance Plan (IAP) for the Programme, covering the next 12 months, has been produced that sets out those projects that are expected to be reviewed. The IAP will be reviewed and updated quarterly.

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

Appendix 1: How assets support the Mayor's Transport Strategy

Appendix 2: Transport for London Assets

Appendix 3: State of Good Repair

Appendix 4: 2020/21 actuals / forecast outputs

Appendix 5: 2021/22 budget allocations and outputs

Appendix 6: Surface asset photos

**List of Background papers:**

Independent Investment Programme Advisory Group Report

TfL Project Assurance Report

Management response to IIPAG and TfL Project Assurance Reports

Contact Officer: Gareth Powell, Managing Director Surface Transport

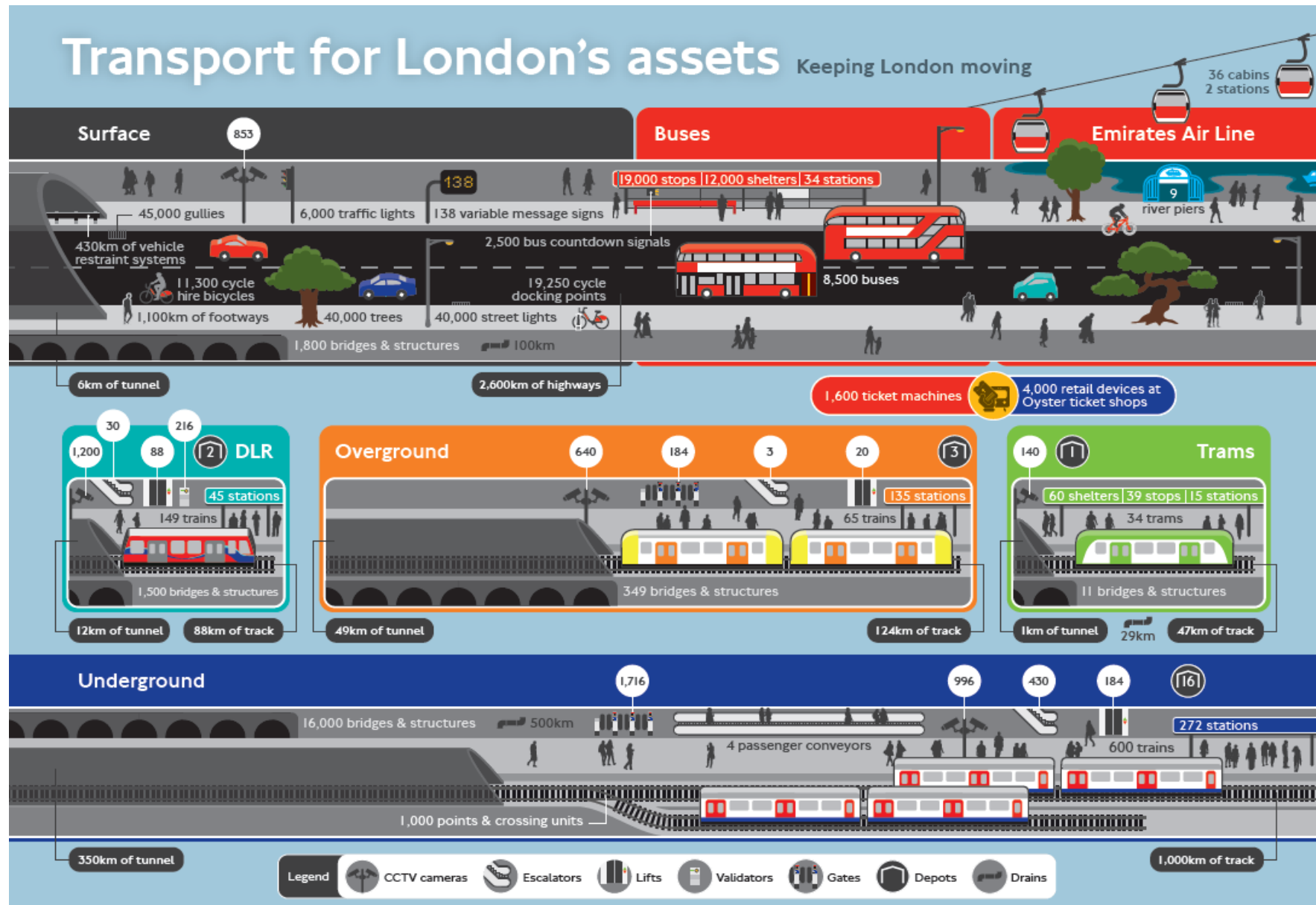
Email: [GarethPowell@tfl.gov.uk](mailto:GarethPowell@tfl.gov.uk)

## Appendix 1: How assets support the Mayor’s Transport Strategy

MTS Policy Statements supported by assets	Relevant assets and impact on outcomes
Policy 1 - Make London a city where people choose to walk and cycle more often by improving street environments, making it easier for everyone to get around on foot and by bike	Carriageway, cycle routes and footways – the increasing number of defects and reduced condition on roads and footways may discourage walking and cycling and make it less safe, as well as acting as a barrier to new cyclists
Policy 2 - Adopt Vision Zero for road danger in London	Carriageway and cycle routes – with more defects and a generally reduced condition there is an increased likelihood that asset condition may be a contributory factor in collisions and injuries
Policy 3 - Ensure that crime and the fear of crime remain low on London’s streets and transport system	Street lighting, bus shelters and bus stations – lights out, poorer condition bus shelters and a “run down” feel to bus stations may create a “broken window” feel on parts of the network
Policy 8 - Ensure that London’s transport is resilient to the impacts of severe weather and climate change	Carriageway and highway drainage – carriageway in poorer condition will deteriorate more rapidly in severe winter (freezing-thawing) conditions, and more highway flooding as there are no regular drainage renewals to deal with failed and substandard pipes
Policy 12 – Enhance London’s streets and public transport network so as to enable all Londoners, including disabled and older people, to travel spontaneously and independently, making the transport system navigable and accessible to all.	Carriageway, cycle routes and footways – as per impact on Policy 1 above, also, the reduced condition of the footway may become a barrier to some less able users as they require a higher State of Good Repair to support movement
Policy 13 - Transform the quality of bus services so that they offer faster, more reliable, accessible, comfortable and convenient travel by public transport	Traffic signals, bus stations, shelters and stops – reduced condition of traffic signals will lead to more outages which will impact bus reliability, and reduced condition of bus stations, shelters and stops will reduce the quality of the customer experience
Policy 15- Use of the full potential of the Thames to carry passengers, to integrate river services with the public transport system, walking and cycling networks.	River piers – a reduced programme of renewals may require piers to be restricted or taken out of use to maintain passenger safety. This can mean piers being out of service for extended periods if dry-docking is required to undertake the repairs.



# Appendix 2: Transport for London Assets



Asset	Quantity	Definition
Carriageway	580 km	The part of the highway primarily used by vehicular traffic and cyclists, except where the latter are restricted from use, e.g. on high speed routes.
Footways	1,422 km	Those parts of the highway used by pedestrians and/or cyclists – a shared use footway is for cyclists and pedestrians and will be clearly signed.
Traffic signals	Over 6,000 (pan London)	Electrical equipment placed at interchanges (including pedestrian crossings, crossroads and large roundabouts) to manage the interaction between pedestrians and traffic.
Bridges and structures	Approximately 1,800	Any bridge or other structure within the footprint of the highway or that materially affects the support of the highway or land immediately adjacent to it.
Bus shelters	12,000 (pan London)	Small structures, typically on footway, that provide shelter for waiting bus passengers and information on local buses.
Bus stations	34 major stations	Stations dedicated to managing the boarding and alighting of buses. These may also include staff facilities, information and sales hubs, waiting areas and retail outlets.
Drainage gullies	Over 45,000	A system of gullies, drains and pumping stations that capture and transport water away from the carriageway and footway.
Street lighting	Over 40,000	Lighting specifically provided to illuminate the highway, the most common form being lamp posts, but also includes lighting attached to buildings, subway lighting and tunnel lighting.
Green estate	40,000 trees & over 700 acres of grass, woodland & verges	Trees, hedges, shrubs, grassed areas and verges associated with the red routes.

Asset	Quantity	Definition
Vehicle restraint systems	430 km	Installed on a road to provide a level of containment for an errant vehicle.
River piers	9	River piers dedicated to managing the boarding and alighting of river boats. These may also include staff facilities, information and waiting areas.
CCTV	853	Used across the network to monitor traffic and support network management.
Road tunnels	12	An enclosed length of 150 metres or more through which a road passes.
Boroughs	Roads and bridges	Through LIPs we fund Borough Principal Road resurfacing (over 1000km) and bridge strengthening

[page left intentionally blank]



## Appendix 3: State of Good Repair

SOGR, where possible, is based on industry standard condition measures TfL has mapped these industry measures to a consistent five category scale of asset condition – the condition categories are Very Good, Good, Fair, Poor and Very Poor. The percentage of assets in these categories is used to calculate SOGR, namely:

- 1) SOGR – the sum of the percentages in the Very Good, Good and Fair categories. These assets, in general, do not require planned asset renewal in the next one to three years, although in some instances it does reduce whole life costs to intervene when an asset is in the Fair category.
- 2) Not in a SOGR – the sum of the percentages in the Poor and Very Poor categories. Typically, these assets should be considered for a renewal within the next one to three year period.

The target range differs by asset type, Table 3.2 provides some examples.

**Table 3.2: State of Good Repair ranges**

Asset	SOGR target range (per cent)
Carriageway (High volume of cyclists)	93 to 96
Carriageway (Low volume of cyclists)	90 to 93
Footway	91 to 96
Bridges	88 to 92
Street lighting	90 to 95

All assets are safety managed; where the SOGR is below the preferred range it reflects the need for renewals investment to deliver a reliable network and reduce the risk of restrictions and closures. Safety is maintained through appropriate inspections, minor repairs and restrictions.

Target are not set as 100 – the upper bounds of the target ranges are set using customer expectations (based on customer surveys) and whole life costs. The latter has shown that it is uneconomical and provides poor value for money to deliver a SOGR above the upper bounds of these ranges – plus, that face-to-face surveys with customers have illustrated that they do not expect a “perfect” asset, they accept that at time repairs are required.

Therefore, a carriageway SOGR of 88 means 88 per cent (or 510km) is not in need of renewal based on the latest condition data, however the remaining 12 per cent (or 77km) should be considered for renewal. There is not an immediate safety concern or need for an urgent intervention, however based on an overall assessment of safety, reliability, whole life costs, customer satisfaction and future performance, these parts of the network should be considered and planned for renewal in the coming years.

[page left intentionally blank]

## Appendix 4: 2020/21 actuals / forecast outputs

Sub-programme		2020/21 forecast (£m)	2020/21 expected output	
Assets Capital Programme	Borough Traffic Sig Modernisation	4.2	72 Sites modernised	
	TLRN Traffic Signal Modernisation	2.8		
	Cap Renew - Footway	0.2	3,850sqm	
	Cap Renew - Lighting	4.2	1242 luminaires, 140 columns	
	Cap Renew - Landscape	0.1	200 additional trees planted	
	Business as Usual Bus Driver Facilities	0.7	5 driver facilities completed	
	SCOOT Renewals	1.7	1600 loops replaced	
	Stations & Stands Annualised Programme		2.8	6 bus station builds completed
				40 Bus driver welfare capacity improvements
	Restraint Barriers	0.1	2 designs completed	
	Minor Capital Interventions	3.2	60-100 MCI related works	
	Pump Stations	0.09	2 builds completed	
	Highways Contracts Re-let	5.1	Award of new Highways Maintenance and Projects Framework	
	Kingston Cromwell Road Bus Station	0.1	Works ordered	
	Stops & Shelters Annualised Programme	4.4	415 shelters replaced	
	LRS Piers Renewals	0.4	4 feasibility studies completed	
	Asset Management Information Systems	7.3	Live system completed	
	SAMIS Technology	0.1	Project initiated	
	Cap Renew - Carriage	13.7	230,000sqm	
	Cap Renew – Structure	10	10 builds, 10 designs, 1 feasibility completed	
Cap Renew - Tunnels	0.07	1 feasibility		
		1 system renewed		
Third Party Signal Enhancements	4.1	Undefined		
<b>Assets Capital Programme Total</b>		65.1		
LIP Bridges & Roads	Borough Bridge Maintenance	1.3	3 renewal schemes completed	

	Borough Road Maintenance	2.8	44,000m2
	Hammersmith Bridge Restoration	6.8	Emergency Stabilisation works
<b>LIP Bridges &amp; Roads Total</b>		10.8	
Operations Assets	Hostile Vehicle Mitigations	0.6	1 Concept design completed
	Safety Camera Replacement Project	0.2	Project close initiated
	Dial A Ride IP	0.01	1 design completed
	Modernised Victoria Coach Station	0.4	Single option selected
	Safety Camera Extension Prog phase 2	0.6	40 renewal schemes completed
	VCS Infrastructure	4.4	2 builds completed
	Mayor's Bus Driver Facilities	0.8	5 builds completed
<b>Operations Assets Total</b>		6.5	
STIP 1	Ardleigh Green Bridge Replacement	0.5	Project completed
<b>STIP 1 Total</b>		0.5	
Major Asset Renewals Programme	MARP A40 Westway Structures Refurb	3.5	3 Concept and detailed designs completed
	MARP Vauxhall	5.4	
	MARP Rotherhithe	2	
	MARP Brent Cross	0.3	
	MARP Blackwall Tunnel Southbound Refurb	0.3	
<b>Major Asset Renewals Programme Total</b>		11.4	
Assets Overlay	Assets VE/Over programming	2.5	
<b>Assets Overlay Total</b>		2.5	
<b>Grand Total</b>		97	

## Appendix 5: 2021/22 budget allocations and outputs

Sub-programme		2021/22 allocations (£m)	2021/22 expected output*
Assets Capital Programme	Borough Traffic Sig Modernisation	8.5	80 controllers renewed
	TLRN Traffic Signal Modernisation	3.5	30 controllers renewed
	Cap Renew - Footway	1.0	12,000m2 of network treated
	Cap Renew - Lighting	7.0	300 Columns and 5500 Luminaires replaced
	Cap Renew - Drainage	0.5	120,000m2 network treated
	Cap Renew - Landscape	0.5	600 trees planted
	SCOOT Renewals	2.3	1800 loops renewed
	Stations & Stands Annualised Programme	5.4	20 renewal schemes delivered, 28 bus driver feasibility designs
	CCTV/VMS	3.8	38 sites renewed
	Restraint Barriers	2.0	2 renewal schemes delivered
	Minor Capital Interventions	1.0	65 schemes completed
	Pump Stations	0.5	2 renewal schemes delivered
	Highways Contracts Re-let (Tech and Bus contract relet)	4.1	Contract award recommendation issued
	Kingston Cromwell Road Bus Station	5.0	Construction to commence
	Stops & Shelters Annualised Programme	5.5	380 shelters treated
	LRS Piers Renewals	1.2	1 feasibility completed, 4 designs
	Asset Management Information Systems	7.9	Design of SAMIS Tech completed
	Cap Renew - Carriage	17.0	325,000m2 of network treated
	Cap Renew - Structure	9.8	8 renewal schemes delivered
	Cap Renew - Tunnels	1.0	3 feasibility studies/designs completed
Third Party Signal Enhancements	10.0	Undefined	

<b>Assets Capital Programme Total</b>		<b>96.5</b>	
LIP Bridges & Roads	Boro Bridge Maintenance	10.0	2 schemes completed
	Boro Road Maintenance	30.0	80,000m2 of network area treated
	Hammersmith Bridge Restoration	0.0	Temporary bridge detailed design complete
<b>LIP Bridges &amp; Roads Total</b>		<b>40.0</b>	
Operations Assets	Hostile Vehicle Mitigations	11.2	Westminster Bridge build completed
	Dial A Ride IP	0.5	1 build completed
	Modernised Victoria Coach Station	1.0	Planning application submitted
	Safety Camera Extension Prog phase 2	0.5	Single option selected
	VCS Infrastructure	1.1	1 build completed
<b>Operations Assets Total</b>		<b>14.3</b>	
STIP 1	Ardleigh Green Bridge Replacement	0.2	Project closed
<b>STIP 1 Total</b>		<b>0.2</b>	
Major Asset Renewals Programme	MARP A40 Westway Structures Refurb	21.4	Commencement of construction
	MARP Rotherhithe	6.8	Detailed design commenced
	MARP Brent Cross	2.0	Investigations commenced
	MARP Blackwall Tunnel Southbound Refurb	1.8	Concept design commenced
<b>Major Asset Renewals Programme Total</b>		<b>32.0</b>	
<b>Grand Total**</b>		<b>184.0</b>	

\*The forecast outputs between 2020/21 and 2021/22 may change depending on the ability to accelerate certain activities, or conversely if any works are delayed (e.g. due to bad weather).

\*\*This table shows allocations in TfL EPM net of over programming assumptions.

## Appendix 6: Surface asset photos



Vauxhall Bridge: Extensive corrosion on underside of bridge deck, load restriction required in next few years if this continues



A40 Westway: Concrete deterioration and expansion joint failures; extensive works planned for 2021/22 to repair joints



Gallows Corner: Metalwork corrosion and bolt failures requiring speed and load restrictions



Rotherhithe Tunnel: restrictions already in-place due to aging





A40 Central Vehicle Restraint Barrier (VRS): Corrosion of supports and longitudinal restraints requiring speed restrictions



Carriageway: increasing pothole numbers (from c5,500 in 2019 to c7,200 in 2020) and poor road condition (especially at bus stops and junctions)

[page left intentionally blank]

## Programmes and Investment Committee

**Date:** 3 March 2020

**Item:** Surface Technology Programme 2021/22 and 2022/23

**This paper will be considered in public**

Surface Technology Programme 2020/21 – 2022/23						
Existing Financial Authority for 2021/22 – 2022-23	Forecast Cost for 2021/22 – 2022/23	Forecast cost for 2020/21 – 2024/25	Existing Programme & Project Authority for 2020/21	Programme & Project Authority Requested for 2021/22	Programme & Project Authority Requested for 2022/23 and future years	Total Programme and Project Authority Requested
£157.7m	£148.1m	£407.2m	£20.3m	£40.7m	£69.2m	£109.9m

## 1 Summary

- 1.1 This paper summarises recent activity in the Surface Technology Programme (the Programme) and describes proposed activity in the coming year. The Programme is requesting £109.9m of Programme and Project Authority, of which £40.7m would fund all activity in 2021/22 and £69.2m would fund commitments extending into future years. Over 75 per cent of this funds renewals of existing systems used across Surface Transport; under 25 per cent funds new systems in priority areas like staff safety and road safety.
- 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 the meeting.

## 2 Recommendations

- 2.1 **The Committee is asked to note the paper and exempt supplemental information in the paper on Part 2 of the agenda, and:**
- (a) **approve £109.9m Programme and Project Authority for the Surface Technology Programme, of which £40.7m would fund activity in the Financial Year 2021/22 and £69.2m would fund commitments in subsequent years within the total £407.2m forecast cost for 2020/21 – 2024/25;**

- (b) note that the matters for which Authorities are sought above include commitments that extend beyond the period of the Business Plan and Budget as 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;**
- (c) approve the transfer of the iBus2 project into the Programme from the Technology and Data Programme, with Programme and Project Authority of £2.1m for 2021/22; and**
- (d) note that Procurement Authority for the various initiatives will be sought at officer level in accordance with Standing Orders.**

### **3 Background**

- 3.1 The Mayor's Transport Strategy (MTS) sets out a vision that TfL "will work to ensure its information systems and payment platforms take account of technological advances and evolve to remain fit for purpose". (Proposal 102). TfL's response to the MTS sets six priorities, including: "to exploit technology to produce better and faster results".
- 3.2 The Programme provides a holistic overview of technology projects being delivered for Surface Transport. Historically, levels of investment in technology across Surface Transport were insufficient to keep pace with developments in technology, or to avoid technical debt across silo-based systems. The Programme and provides a robust structure to support increased levels of investment in technology in the coming years which enable many pillars of the MTS including Healthy Streets, Vision Zero and enhancing customer experience.

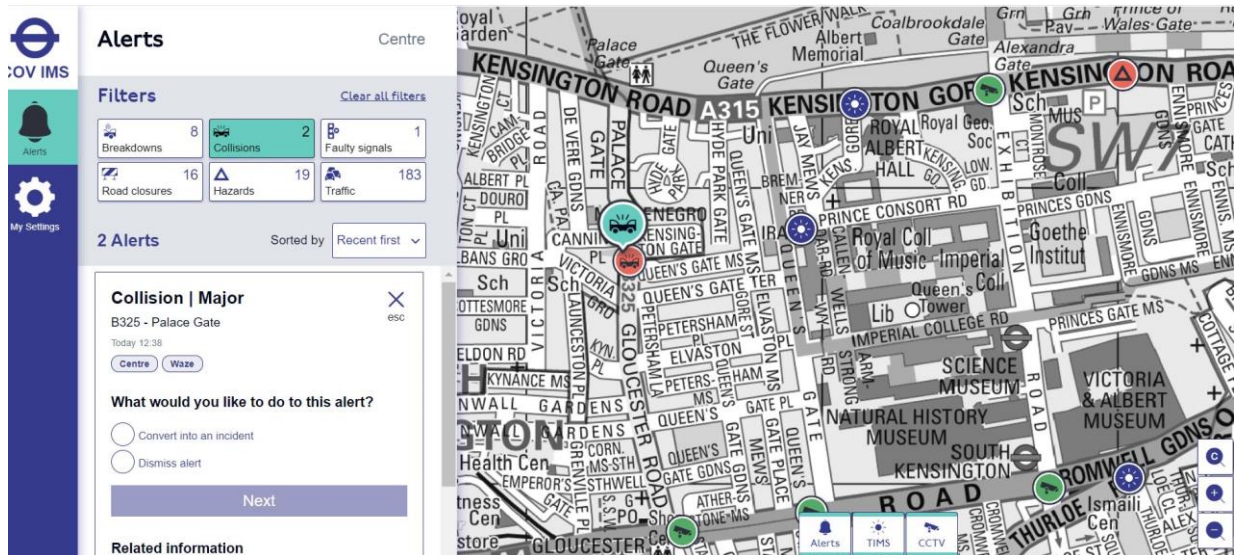
### **4 Investment Plan 2021/22 – 2022/23**

- 4.1 The current funding agreement with Government, dated 31 October 2020, expires on 31 March 2021 but recognises that TfL will need to enter into new financial commitments that extend beyond 31 March 2021. It is anticipated that the financial commitments that this paper describes will be addressed in a replacement funding agreement.
- 4.2 The Programme will return to the Committee in March 2022 to seek authority for a further two-year period. Approval for £69.2m in future financial years is sought, to cover existing or planned commitments before the Programme returns to the Committee in March 2022. Of this £69.2m, £49.8m is attributable to commitments in 2022/23, and a further £19.4m to committed spend in future years, predominantly on the Surface Intelligent Transport Systems (SITS) Programme to 2028 which ensures new systems can be delivered and commercially exploited.
- 4.3 The Programme is responsible for projects delivering outcomes for Surface Transport using technology, Roads Technology, Compliance, Enforcement and Safety Technology and Public Transport Technology. Appendix 1 sets out its scope and key activities.

- 4.4 The primary driver for these projects (over 75 per cent of authority sought) is renewal of existing systems required to continue core operations within Surface Transport, such as optimising traffic signals, tracking buses in real time and tasking on street enforcement activities. These projects typically deliver enhanced functionality, exploiting advances in technology to improve performance. The remaining authority sought will deliver new systems into priority areas like staff safety and road safety.
- 4.5 Key decisions planned during 2021/22 include:
- (a) Issuing the invitation to participate in dialogue for iBus2 procurement, in autumn 2021. This back-office system is vital to ensure buses continue to operate effectively in London. Refreshing it gives an opportunity to improve bus passenger experience with targeted enhancements including providing real-time information when a bus cannot follow its normal route, and linking virtually to traffic lights at more junctions to help buses travel more quickly;
  - (b) awarding the contract for Deployable Enforcement Cameras (DECs) in mid-2021. Each year more than 4,000 people are killed or seriously injured in collisions on London's roads. Seventy-six per cent of collisions happen at junctions – many of which involve moving vehicles contravening road traffic rules. Driving in bus lanes or waiting in yellow box junctions also negatively impacts bus reliability. DECs can be flexibly deployed at locations not covered by existing CCTV cameras, which will greatly improve enforcement coverage, reduce collisions and support bus reliability; and
  - (c) mobilising 14 additional projects to meet the objectives of the “moderate” scenario described in TfL's Long Term Capital Plan. This includes mobilising a programme of improvements to modernise bus operations to improve passenger experience and support colleagues.

### **Surface Technology Programme Progress Update**

- 4.6 Following a review of the Programme by the Committee in October 2020, projects have achieved key milestones supporting benefits in areas including:
- (a) Roads Technology: in late 2020, the Real Time Optimiser and Fusion (Future Split Cycle Offset Optimisation Technique) systems were deployed into live operation at two junctions, and the first version of the Common Operational View Incident Management System (COV-IMS) was deployed into the Network Management Control Centre. These deployments create the base from which to develop enhancements including multi-modal management of the road network. The Predictive workstream, which aims to predict impacts of unplanned incidents on the road network and respond automatically in real time, has also been re-mobilised following the coronavirus pandemic, to improve recovery from incidents and ensure the SITS programme delivers its full benefits;



**Figure 1: sample alerts from recently-deployed COV-IMS system**

- (b) Compliance, Enforcement and Safety Technology: body worn video cameras delivered to over 500 front line colleagues at greatest risk of work-related violence and aggression across Surface Transport as part of a wider roll-out of c.6,000 cameras across Surface and London Underground, with footage already being used to support police investigations; and
- (c) Public Transport Technology: procurement for a replacement booking and scheduling system for Dial-a-Ride commenced in October 2020. This system would deliver 20 per cent more trips with the existing fleet and drivers, providing more assisted transport for Londoners.



**Figure 2: Dial-a-Ride vehicle**

- 4.7 Investment in the Programme is planned to increase significantly from the £20.3m granted in 2020/21. This is due to:
- (a) the stage in project life cycle across constituent projects, as most cash outlay during projects occurs during the delivery phase. Most projects in the Programme are not currently in delivery, but will transition to delivery during the two-year period for which this paper requests authority; and
  - (b) the increase in the number of projects in the Programme, in line with key outcomes of TfL's Long Term Capital Plan and transfer of technology projects from the Rail and Sponsored Services Programme.
- 4.8 In late 2020, the bottom-up review of technology systems used across Surface Transport was refreshed in line with the outcomes set out in the Long Term Capital Plan. The "moderate" scenario requires an additional 14 projects to enable outcomes across key focus areas like Bus Operations.
- 4.9 Approval is sought to complete the transfer of the iBus2 project into the Programme from the Technology and Data Programme. This is key to ensure a single consistent and integrated view of all Surface Technology projects within the Programme, as agreed when the Programme was created in 2019.

#### **Financial Performance 2020/21**

- 4.10 The approved Programme and Project Authority in 2020/21 was £20.3m; the Programme delivered an outturn of £16.3m. Much of this underspend arose following a review of accounting treatment, which removed two elements to operational budgets in Network Management and CPOS . These elements have continued to deliver their agreed scope, namely: Metropolitan Police Infrastructure fund annual contribution (£2m) and Highways Annualised Programme modelling visualisation licences (£1m). The remaining £1m was driven by minor variances across the Programme, demonstrating a continued trend towards optimism bias in delivery schedules.
- 4.11 To account for this trend in optimism bias in 2020/21, an over-programming allowance of 18 per cent was built into the authorised spend. Incorporating this over-programming allowance, the Programme spent 34 per cent less than planned. This request includes an over-programming allowance of 32 per cent, adjusted down to account for part of the 2021/22 underspend being attributable to transfer of scope.
- 4.12 Over-programming is not applied to the authority requested for future years, as this represents existing or planned commitments with suppliers rather than value of work expected to be done in a given time period.
- 4.13 The funding request for 2021/22 also includes a five per cent efficiency target (£2.1m). This is included to encourage the portfolio to deliver savings against forecasts and drive towards a value for money solution for all projects. Opportunities to deliver savings include close management of scope and requirements, particularly in early stages of the project life cycle and working with suppliers to deliver projects more efficiently.

## 5 Benefits Management

5.1 The Programme contributes strongly to:

- (a) **A good public transport experience:** advances in technology provide an opportunity to deliver an improved public transport experience for our customers, by improved payment planning, scheduling and booking (where applicable), protecting bus journey times, and ensuring continued provision of accurate real time information;
- (b) **Vision Zero:** technology is a key enabler of TfL's Work-Related Violence and Aggression Strategy, through delivery of body-worn video cameras, improved incident reporting, and support for lone workers. It also enables enforcement and compliance activities that make public transport safer – which contributes to removing all deaths on our roads by 2041; and
- (c) **A Healthy Streets Approach:** adoption of new technologies will support:
  - (i) a spatial approach to reduce car dependency. Technology provides a greater understanding of how road space is currently used, and supports approaches to use space more intelligently and flexibly; and
  - (ii) encourage behaviours on London's streets that increase the use of sustainable travel modes and decrease congestion.

5.2 Appendix 2 provides an overview of the key outcomes delivered through the Programme and charts their relationship to the MTS objectives.



## 6 Proposal

6.1 An overview of the scope of the Programme is set out in Table 1:

Focus Area	Financial Authority 2021/22 – 2022/23	Forecast Cost 2021/22 – 2022/23	Forecast cost for 2020/21 – 2024/25	Existing Programme & Project Authority for 2020/21	Programme and Project Authority 2021/22	Programme and Project Authority for 2022/23 Commitments	Programme and Project Authority for Future Year Commitments
Roads	48.8	44.8	92.0	10.3	20.0	18.0	17.5
Compliance, Enforcement & Safety	55.7	53.3	86.8	4.8	15.7	13.4	0.6
Public Transport	78.2	83.3	216.3	9.8	26.9	18.4	1.3
<b>Total Activity</b>	<b>182.7</b>	<b>181.3</b>	<b>395.2</b>	<b>24.9</b>	<b>62.6</b>	<b>49.8</b>	<b>19.4</b>
Over-programming	(25.0)	(31.1)	14.1	(4.6)	(19.8)	-	-
Efficiency	-	(2.1)	(2.1)	-	(2.1)	-	-
<b>Total</b>	<b>157.7</b>	<b>148.1</b>	<b>407.2</b>	<b>20.3</b>	<b>40.7</b>	<b>49.8</b>	<b>19.4</b>

**Table 1: Current Scope of Surface Technology Portfolio (All values in £ms)**

### Delivery Plan

6.2 Delivering the increased number of projects will require additional resources to be assigned to the Programme. Where feasible, these will be re-assigned from other programmes; however, required specialisms and natural turnover mean resources may be sought outside of TfL. Delays in securing required resources have previously contributed to delays in delivery schedules; given tight resourcing restrictions, detailed consideration is given to a resourcing strategy.

6.3 Key risks and issues include the impact of the coronavirus pandemic within the supply chain. While delivery is generally undertaken remotely, the high rates of the virus have led some suppliers to report delays in submitting tender responses or difficulty securing contractors to attend site when required. Close working with suppliers has largely mitigated impacts on delivery to date, which will continue as more projects enter tender / delivery stages.

### Crime and Disorder Implications

6.4 The Programme will be delivered in accordance with the Crime and Disorder Act 1998. TfL has recently reviewed the risks we face from cyber threats across our technology systems, data, information and digital estate, and adopted a cyber security strategy and improvement programme. The Programme makes an initial provision to scope risks and options to address vulnerabilities of operating technologies that support critical systems covered under the Network and Information Systems Regulations 2018. In the future we will expand our risk assessment to our wider technology estate.

## **7 Equalities Implications**

- 7.1 The Programme will be delivered in accordance with the Equality Act 2010 and all aspects of the Public Sector Equality Duty. Consideration is given to the need for an Equality Impact Assessment for each project.

## **8 Assurance**

- 8.1 TfL Project Assurance conducted an Integrated Assurance Review (IAR) on the proposed Programme in September 2020.
- 8.2 First-line assurance continues to be carried out on the Programme and its constituent projects. TfL Project Assurance and the Independent Investment Programme Advisory Group undertook a targeted review focussing on recommendations from September 2020. Both agreed that good progress has been made in implementing the recommendations from the last full review but noted that resourcing, particularly for emerging projects, remains a risk. The next assurance review is planned in advance of the annual submission to the Committee in March 2022.

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

Appendix 1: Surface Technology Programme 2021/22 – 2022/23 Overview

Appendix 2: Surface Technology Benefits

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

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

None

Contact Officer: Alexandra Batey, Director of Investment Delivery Planning  
Email: [AlexandraBatey@tfl.gov.uk](mailto:AlexandraBatey@tfl.gov.uk)

## Appendix 1: Surface Technology Programme 2021/22 – 2022/23 Overview

### Focus area: Roads Technology

Project / Programme	Scope & Key Activities in 2021/22 – 2022/23
Surface Intelligent Transport Systems (SITS) Programme	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. SITS delivers these systems, including Real Time Optimiser (RTO) and Common Operational View – Incident Management System (COV-IMS) which are currently in delivery. Work is also underway to secure data sources, analytical tools and skills to deliver and run SITS. In 2021, we will commence procurement of new system to predict traffic displacement following un-planned events. Following delivery by 2023, ongoing funding will ensure systems remain fit for purpose.
Highways Annualised Technology Programme	Smaller initiatives to ensure core technology systems which enable us to manage the road network remain fit for purpose. Systems include London Works (managing roadworks) and the incident management bulletin board which handles over 1,200 emergency incidents per day.
Roads Systems Refresh	Larger refresh / refactoring of seven operationally-critical systems to ensure continuity of key roads technology. Systems are used to remotely monitor and optimise traffic signal timings, and manage tunnels, the Network Management Control Centre and the Lane Rental System.
Regulated Network and Information Systems (NIS)	Many of TfL's operating systems (such as signalling, traffic control, CCTV and tunnels operations) are of national significance to the UK's transport network, and reportable under the government's NIS directive. This project will ensure systems continue to comply with regulations, mobilising in 2021.
Innovation Fund	TfL Surface Transport is facing key strategic issues; this fund will ensure innovative solutions to these can be explored in accordance with procurement law requirements. Fund will mobilise in spring 2021.
Surface Common Operational View (COV)	Developing a common operational view across all areas of Surface Transport (e.g. Compliance and Policing On Street). Mobilisation would commence in 2022; no commitments in 2021/22 expected.

### Focus area: Compliance, Enforcement and Safety Technology

Project	Scope & Key Activities in 2021/22 – 2022/23
Enforcement & Compliance On Street	ECOS - Procurement of core IT systems to replace and improve existing CPOS digital capability. Feasibility underway, procurement expected to launch autumn 2021 with commitment after March 2022.
Deployable Enforcement Cameras	Improve road safety and reduce congestion by targeted camera enforcement. Initially, 50 cameras would be deployed onto TfL's road network from autumn 2021, at priority locations for road safety and bus reliability. Up to 100 additional cameras could be deployed per year afterwards.

Operational Staff Safety	Technology to enable outcomes of the Work-related Violence and Aggression (WVA) strategy, including deployment of body worn video cameras and lone worker devices in line with operational need.
Compliance, Enforcement and Safety (CES) Systems Refresh	Refresh of operationally-critical systems used to manage traffic orders, report on-street faults, secure data for compliance and enforcement activities, workforce rostering, and ensure systems used by TfL are secure. Varying stages of mobilisation / delivery.
Intelligent Travel Pattern Analysis 3	Use of Artificial Intelligence (AI) to spot patterns in fare evasion, improving enforcement and protecting revenue. Following two successful phases, this third phase would launch in spring 2021.
Micro-Mobility Management System Platform	This trial platform will collect data from operators of e-scooters, e-bikes and other micro-mobility modes. The platform would launch in spring 2021.
Common Planning View	Rationalisation of several network planning applications, to deliver a common view of planned temporary or permanent changes to London's roads in a single application. Not currently active, project will mobilise in 2022.
Pan-TfL Camera Rationalisation	Rationalisation of cameras across the TfL estate, with a view to improving functions each camera can provide and realising efficiencies. Project may commit to suppliers before 2022.

### Focus area: Public Transport Technology

Project	Scope & Key Activities in 2021/22 – 2022/23
iBus2	Replacement iBus system which tracks buses in real time. This system is vital to providing up to date information on where buses are, for passengers on the bus, waiting at bus stops and online. It also makes sure that performance bonuses TfL pays to bus operators are fair. The refreshed system will aim to improve pain points, including providing better information when a bus cannot follow its normal route, and linking with more traffic signals to help buses avoid congestion. Procurement to start spring 2021.
Countdown 3	Replacement Countdown system, providing live bus and TfL River Bus information through electronic signs and online apps. Procurement to start in 2021.
Future Bus Systems (FBS) 3 (Network Planning & Development)	This project has delivered software which automates inefficient manual processes currently required to plan bus services, saving over 80 per cent of time for planners and allowing consideration of a broader range of datasets. Software rolled out in late 2020, project will close in early 2021.
FBS 2 (Contracts, Payments and Fleet Data)	By replacing end-of-life back office systems used to manage bus contracts and bus fleet, FBS2 will allow us to operate buses more efficiently. Project will mobilise in mid-2021.
SAFE (Buses / LU Incident Management) Refactoring	Refactoring SAFE system used to manage incidents in NMCC to ensure map-based incidents appear in SITS COV-IMS. Project will mobilise in 2021.
Assisted Transport Services (ATS) Dial-a-Ride (DaR)	Replacement of current booking & scheduling system for ATS DaR, introducing potential to book and manage trips online and harnessing technology advances to drive ride-scheduling efficiencies.

<b>Project</b>	<b>Scope &amp; Key Activities in 2021/22 – 2022/23</b>
Bookings, Scheduling and Roadmap	Procurement commenced in late 2020, with system to be delivered from 2021-2023. Roadmap will Deliver of technology enablers set out in the Assisted Transport Services Roadmap.
Emirates Air Line (EAL) Passenger Comms System	Replacement of safety-critical EAL connectivity system, which currently operates on a legacy 2G Wi-Fi solution, with poor network and increased interferences. Delivery to commence late March 2021.
Pan-TfL Booking & Retail Platform	Developing a shared TfL platform for bookings and retail across EAL, London River Services, London Transport Museum, Visitor Centres and buskers. Project paused due to the coronavirus pandemic.
Santander Cycle Hire Programme	Major modernisation of the back-office operating system for Santander Cycles, introducing additional features to ensure the scheme remains attractive in the micro-mobility market. Authority for delivery by 2022 delegated at 16 December Committee meeting.
Santander Cycle Hire Expansion	Expansion of the Santander Cycles scheme to locations with high demand and potential for cycle hire trips. Feasibility study mobilised in early 2021. The authority to implement the expansion will be requested following the completion of the feasibility study and confirmation of Government funding.
Santander Cycle Hire Renewals	Ongoing maintenance of Santander Cycles assets to ensure the scheme is fit for purpose.
Cycle Hire Re-Let	Refresh of key contracts for Cycle Hire operations, with key existing contracts due to expire in 2022-25. Mobilisation from 2022.
E-Scooter Trial	12-month research and development project to trail an E-Scooter rental service in collaboration with London Councils and London Boroughs.
Bus Operations Technology Improvement Programme	Transformation of technology to modernise Bus Operations, supporting passengers and colleagues. Initiatives include improvements to bus station security, connectivity and workforce management.
Buses Business Intelligence Reporting	Developing a tool to report bus speeds within all of London's bus stations.
Minor Capital Interventions	Ensures minor changes can be made to critical systems in response to externally-driven changes.

[page left intentionally blank]

## Appendix 2: Surface Technology Benefits

Overall MTS themes the Surface Technology Programme will Support	<b>A Healthy Streets Approach</b>				<b>A Good Public Transport Experience</b>			
Specific MTS Policy Objectives that Surface Technology Programme will support	Adoption of Vision Zero for road danger in London	Reduction in Londoners dependency on cars	Prioritisation of space efficient modes of transport to tackle congestion	Healthy Streets Approach to deliver co-ordinated improvements to public transport and streets providing an attractive whole journey	Seek to make public transport network easier and more pleasant to use	Elimination of deaths and serious injuries from London's public transport services	Transform the quality of bus services making them faster, and more reliable	Seek to ensure London has a safe, secure, accessible, world class taxi and private hire service

Sub element of Surface Technology Programme	Surface Intelligent Transport Systems (SITS)	Operations Safety and Compliance	Public Transport Technology
Sub element high level Objectives	<ul style="list-style-type: none"> <li>To provide the capability to unlock significant additional effective capacity on the road network for the future.</li> <li>To enable and support delivery of a multimodal approach to transport management by using and allocating existing and new capacity in a way that responds to policy.</li> </ul>	<ul style="list-style-type: none"> <li>Maintain current and put in place new technology based compliance regimes to ensure road and public transport safety standards can be effectively monitored and enforced.</li> <li>To provide a range of technological enforcement tools that support the drive to ensure London's road space can be effectively managed to promote reductions in congestion</li> </ul>	<ul style="list-style-type: none"> <li>To maintain and improve the critical communications networks that enable the Surface public transport network to meet future demand, and allow effective management of safety critical situations.</li> <li>Allow for the sharing of real time service information with our customers. Ensuring this information is accessible and can be tailored to suite individual need.</li> </ul>
Sub element high level outcomes	<ul style="list-style-type: none"> <li>Faster incident detection and response</li> <li>Increased utilisation of under capacity areas of the road network to improve traffic flows</li> <li>The ability to be modally targeted in our management of the road network</li> <li>Improved road network information to the public, policy makers and operators to improve decision making</li> </ul>	<ul style="list-style-type: none"> <li>Reduction in impact of planned and unplanned work events</li> <li>Reduction in number of customers being deterred from using sustainable methods of transport such as cycling and walking.</li> <li>Vehicles travelling on London's streets will adhere to the highest safety standards.</li> </ul>	<ul style="list-style-type: none"> <li>Improved bus reliability and journey times</li> <li>Increase in bus customer satisfaction scores</li> <li>Elimination of deaths and serious injuries caused by London's public transport services</li> <li>Improved public transport information provided to the public improving decision making, satisfaction, and whole journeys.</li> </ul>

[page left intentionally blank]



## Programmes and Investment Committee

**Date:** 3 March 2021

**Item:** Technology and Data 2021/22 and 2022/23

**This paper will be considered in public**

### 1 Summary

<b>Technology and Data (T&amp;D) Investment Programme for FY21/22 and 22/23</b>				
Existing Financial Authority for FY21/22 and 22/23	Estimated Final Cost for FY21/22 and 22/23	Existing Programme and Project Authority for FY21/22 and 22/23	Additional Authority Requested for FY21/22 and 22/23	Total Programme and Project Authority for FY21/22 and 22/23
£184.6m	£182.3m	£72.4m	£113.9m	£186.3m

- 1.1 This submission presents the case for the overall Technology and Data Investment Programme (the Programme). This authority table covers project spends of £182.3m and an estimated income of £4m totalling £186.3m of authority requested for financial years 2021/22 and 2022/23. The Programme will return annually to the Committee to renew and validate a rolling two-year approval. This ensures that approvals are aligned to financial years to complement the nature of this Programme.
- 1.2 The total Project and Programme Authority temporarily exceeds Financial Authority for financial year 2021/22. This is due to changes to the phasing of our Programme since the 2020 TfL Budget was approved in December 2020 and will be corrected in the 2021/22 Budget, due to be approved by the TfL Board on 16 March 2021. Alignment of authorities will be achieved before entering the financial year 2021/22 and prior to drawing down any of the Programme and Project Authority being requested for that year. The authorities sought in this paper, if approved, will be revisited if the 2021/22 Budget is not approved by the Board in March as anticipated.
- 1.3 We are only seeking authority for activities that are directly funded within the Technology and Data (T&D) budget. We have excluded activities where T&D is accountable for delivery but where authorities are secured separately.
- 1.4 We have also excluded the Home Office funded Emergency Services Network programme and our Public Cellular Network project, which were approved separately by the Committee in December 2020.
- 1.5 We recognise that we are requesting an uplift in Programme and Project Authority at a time when TfL is facing severe financial difficulties. This reflects the cumulative impact of previous deferrals in investment and is explained further in section 6.

- 1.6 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 exempt supplementary information on Part 2 of the agenda and:**

- (a) approve an increase in Programme and Project Authority of £9.1m in Financial Year 2021/22 (bringing the total up to £81.5m) and additional Programme and Project Authority of £104.8m in Financial Year 2022/23 resulting in total additional project spend Programme and Project Authority to £111.9m (which sums include estimated income of £2m in each of Financial Years 2021/22 2022/23), giving a total of £113.9m Programme and Project Authority;**
- (b) approve unbudgeted Financial Authority of £4m for anticipated income over Financial Years 2021/2022 and 2022/2023;**
- (c) note that the matters for which Programme and Project Authority is sought above include commitments that extend beyond the period of the Business Plan and Budget 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; and**
- (d) note that Procurement Authority for the various projects in the T&D Investment Programme described in this paper will be sought at officer level in accordance with Standing Orders.**

## **3 Background**

- 3.1 T&D was formed in July 2017, as part of the Customers, Communication and Technology directorate, through the consolidation of multiple teams across the organisation charged with providing not only core IT services but also operational systems, payments, contact centre and digital online services to form a single function under the Chief Technology Officer.
- 3.2 The outputs that T&D provide are fundamental for TfL to operate and deliver service to its customers. A strong track record has been established of delivering significant benefits for TfL and its customers that continues into this year, despite having to refocus our attention to support London's coronavirus response and recovery. Significant achievements over the last year are outlined in section 4.
- 3.3 T&D also has a strong record of delivering value for money. In the last four years the cost of our technology has dropped by more than a third. This comes on top of a sustained programme of reductions in the cost of revenue collection, with world leading products being created within T&D. Our record of delivering value for money is outlined in section 5.
- 3.4 Our record of delivering innovation continues. During the year we launched TfL Go, a high-quality mobile app to provide enhanced customer information,

especially for customers with mobility needs. This will also be key to attracting customers back to public transport when the time is right. Alongside that, we have made improvements for customers to our payments and information services. The year has, of course, been defined by the switch to home working as a result of the coronavirus pandemic. Thousands of colleagues can work from home using the full set of technology services they need, including new collaboration tools and ways to keep our people connected in their teams.

- 3.5 We are building on these successes with the request for this year to ensure that our services deliver for London and enable our people to work productively.

## **4 Review of delivery during 2020/21**

- 4.1 On 6 March 2020, the Committee granted authority for the current programme. For the current financial year, the authority was for £78.0m. Soon after authority was granted, the coronavirus pandemic severely disrupted our delivery and created new demands on our business. Overall, we expect to complete the year with a spend of £70.4m.
- 4.2 The coronavirus pandemic has impacted our programme delivery in three principal ways:
- (a) Projects have taken longer, as we have had to slow down or even bring works to a Safe Stop. We made a conscious decision to support our staff in working from home, while balancing caring and home-schooling duties:
  - (b) we had to balance delivery with the need to recognise new funding constraints brought about by the loss of revenue. During the year we revised our budget several times as a result of the financial circumstances. Through these processes, and specifically to meet the conditions in the funding agreement with government, in October 2020 we reduced our budget by £7.6m through further deferrals; which is the difference between the authority granted in March 2020 and expected out-turn on costs; and
  - (c) the need to respond in an agile way to the pandemic has created significant new work that we had to accommodate, including work funded elsewhere in TfL.
- 4.3 We have migrated over 16,000 people to work from home. Our Digital Workplace transformation was accelerated to migrate all 32,700 users to Windows 10, Exchange Online and Microsoft Teams. Citrix capacity in our data centres was nearly doubled to 14,500 connections, to allow users to connect from home computers. Virtual Private Network connections were increased six-fold to 12,000, to allow users with laptops to connect as though they were in the office. Network capacity was increased to allow video calls and accommodate additional traffic from home working. All of these have resulted in an effective home working experience and is recognised widely across TfL.
- 4.4 Through our revised budget in July 2020, we secured additional Financial Authority of £4m (and repurposed existing Programme and Project Authority) and initiated a new project for standardised home office equipment to further support the needs of our employees and boost productivity while working from home.

- 4.5 Our Data and Analytics team has been one of the principal sources of information during the pandemic for TfL, Government and numerous other stakeholders. This has informed operational planning, customer messaging and much else. It has also provided insight to Government in critical decision making and featured prominently in daily press briefings from Number 10 Downing Street. Through Power BI we have made analytical capability available widely inside TfL. We have launched two public dashboards using journey data to help customers and businesses plan journeys throughout the pandemic.
- 4.6 Other delivery includes:
- (a) the switch to a new IT support desk, that led to a saving of £2m per annum;
  - (b) the launch of TfL Go, an innovative new travel app on iOS, designed to help Londoners and visitors plan their journeys around the capital. This app has had over 60,000 downloads and received a rating of 4.1 in the Apple app store. We recently launched an Android app; and
  - (c) we migrated our SAP hosting to the cloud, one of the largest such migrations to happen in the UK. This change will save us £1.7m per annum.
- 4.7 To prioritise, we force ranked every project and presented projects for cancellation and further deferrals. No further material cuts were accepted on the basis that the impact on our operational requirements and financial impacts were unacceptable.
- 4.8 A breakdown of our Programme structure can be found in Appendix 1 with further details of our delivery during the year in Appendix 2.

## **5 Delivering value for money**

- 5.1 T&D has continued to consolidate and simplify our services and core infrastructure. Operating cost has dropped from £362m in 2015/16 to £241m in 2019/20 and £234m in 2020/21, an overall reduction of 35 per cent. We continue to drive savings in other areas of the organisation through better processes and use of technology.
- 5.2 We have benchmarked the cost of revenue collection annually. Starting from a cost base of 14.3 per cent of revenue in 2005/6, we have driven them down to 7.1 per cent of revenue in 2017/18. This is a cost reduction of approximately £360m per annum. Benchmarking for later years will be available in the next few months and we expect it will show further reductions.
- 5.3 With new projects we conduct a 'make versus buy' assessment. More of our projects have been delivered internally as a result of high quality, in-house software development capability. This is best illustrated through our recent experience around asset management systems, where in-sourcing the Surface Asset Management Information System has resulted in a saving of £6m. We will also be saving £400,000 in operating costs per annum. Both capital and operating costs are about a third lower than commercial providers.

- 5.4 We have also established a variety of commercial tools to drive better value from our supply chain. Our large contracts with Cubic for fare collection, Thales for radio and communications and Computacenter for deskside and helpdesk support, all show a sustained downward cost trajectory. Innovative commercial methods have been used to enhance value from each of these contracts. Stronger discipline has been used on our major software licence contracts, such as with Microsoft, SAP, IBM and others. Our smaller contracts have also been subject to the same sort of exacting commercial discipline.
- 5.5 Our operating model has been benchmarked by Gartner (an IT consultancy). This review showed that we deliver an efficient service and benchmark well with our peers although our resource levels benchmark lower than peers. They also commented that compared to peers we have a lower reliance on non-permanent labour.

## **6 Strategic case for new authority**

- 6.1 T&D's strategy is aligned with the Mayor's Transport Strategy and TfL's strategic priorities. We recognise the central role technology plays in any modern organisation. Our strategy lays out our commitments and our delivery principles.
- 6.2 Our commitments are:
- (a) technology enabled workforce;
  - (b) informed customers;
  - (c) seamless payments;
  - (d) infrastructure that works;
  - (e) secure and resilient; and
  - (f) data driven technology design.
- 6.3 Our delivery principles are:
- (a) focus on business outcomes;
  - (b) consolidate and standardise;
  - (c) reuse;
  - (d) start small, plan big;
  - (e) safe, protective, resilient;
  - (f) protect our commercial position; and
  - (g) risk managed.
- 6.3 We have a suite of product, service and business strategies that align with the T&D strategy and provide more detail on how technology and data will be used in specific areas to address key challenges. Our teams update these strategies every year and share with relevant areas of the business.

- 6.4 In addition to the core technology challenges of dealing with legacy issues and technical debt, we are providing more effective management of cyber security risks and confidence in our digital resilience. We are updating our cyber security strategy, to improve our enterprise cyber security approach and ultimately to increase the capability and capacity of our cyber security team.

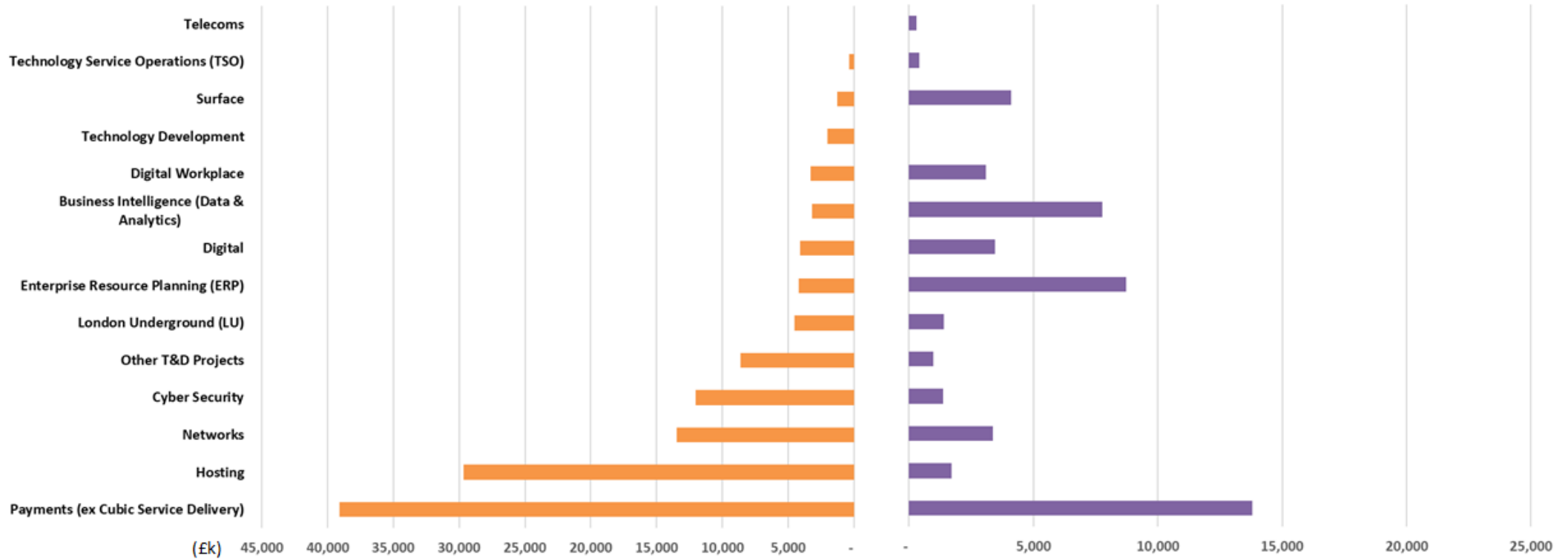
### **Financial Context**

- 6.4 Since 2016, before T&D formed, we have triaged our investment spend every year, stripping out non-essential spend. As a result, over 90 per cent of our investment falls into TfL's 'Minimum' and 'Minimum Plus' spend categories. Furthermore, in order to meet additional cost pressures in previous years we deferred investment wherever possible. In the 2018 Business Plan we deferred £41m in capital expenditure. In 2019 we needed an increase in investment, but this could not be accommodated within funding constraints, leading to further deferrals. We reached the point where we could no longer defer expenditure some time ago.
- 6.5 Systems such as iBus and the new reader are critical to our operations – there would be no bus services without iBus and no revenue collection without a functioning reader. This reality has been recognised in Business Plans since 2019, where no further reductions have been made to the T&D capital expenditure. Through this year we have gone through multiple rounds of project prioritisation where our projects have been judged to be sufficiently critical to be left unchanged.
- 6.6 The majority of our spend, 71 per cent, is renewals work which focusses on refreshing assets and infrastructure to address legacy technology issues and maintain the availability, security and quality of service, i.e. keeping the lights on. The remaining 29 per cent is for enhancements work, which is focussed on creating completely new capabilities and functionality. Figure 1 below sets out the expenditure by portfolio.
- 6.7 The current funding agreement with Government, dated 31 October 2020, expires on 31 March 2021 but recognises that TfL will need to enter into new financial commitments that extend beyond 31 March 2021. It is anticipated that the financial commitments that this paper describes will be addressed in a replacement funding agreement.

Figure 1: T&D Total Portfolio investment over FY 2021/22 -2022/23 between Renewals and Enhancements

A: Renewal - 71%

B: Enhancement - 29%



6.7 Four other factors lead to an increase in our request for authority:

- (a) a number of operational systems do not have clear upgrade paths. Some of these systems started as peripheral to core operations but have become central and need investment. An example is the inclusion of provisions to upgrade the infrastructure for Trackernet (a system that takes data from signals to provide accurate data on a train's position on the London Underground network) in FY 2022/23;
- (b) as mentioned previously, investment is required to build in our cyber security capability;
- (c) provision is being made for a new Oyster and contactless card reader. Our current reader is nearly ten years old and we are now in a once in a decade replacement cycle; and
- (d) other increases are made up of smaller items that have been deferred previously but can be deferred no longer.

### **Delivering capability**

6.8 Over the last year we have made significant improvements in our delivery capability. Despite the pandemic we have maintained our delivery, except for the £7.6m of reductions put forward as a result of the funding agreement with Government. The £7.6m is made up of cost reductions in several projects including: Data Centre Networks technology refresh; New Reader software and WiFi Service Improvements; and rephasing or deferring projects including Surface Data Network Transformation, Future Bus Systems and the Future Ticketing Project Phase 4.

6.9 We recognise that the increase in our investment programme requires an increase in our delivery capability. We will need to significantly increase our current resourcing levels. Rather than address this on a project by project basis, we are taking a holistic approach and are reviewing our resourcing across T&D to effectively meet this demand.

6.10 We are also progressing the evolution of our operating model as recommended by Gartner and discussed above in section 5.

## **7 Authorities sought**

7.1 A summary of the T&D Business Plan and Investment Programme from FY 2019/20 to FY 2024/25 is shown in Figure 2, and summary of breakdown of total Programme and Project Authority by portfolio in Figure 3.



**Figure 2: Summary of the T&D Investment Programme Costs and Funding**

		Portfolio	Business Plan Year						Total
Rounded to £m			19/20	20/21	21/22	22/23	23/24	24/25	
<b>Cost</b>	Base Gross Draft Forecast values	<b>(E)</b>	70.9	72.7	84.4	125.4	121.6	121.4	596.3
	Management adjustment to account for schedule optimism		0.0	(2.3)	(4.9)	(22.6)	(13.5)	(8.7)	(52.0)
	Investment Programme Total Gross	<b>(A)</b>	70.9	70.4	79.5	102.8	108.1	112.7	544.3
<b>Funding</b>	Financial Authority	<b>(B)</b>	70.9	72.2	77.5	103.2	35.0	38.1	396.7
<b>Authority</b>	Existing Programme and Project Authority	<b>(C)</b>	68.2	78.0	67.4	-	-	-	213.6
	This Programme and Project Authority request	<b>= A - C</b>	<b>2.6</b>	<b>(7.6)</b>	<b>12.1</b>	<b>102.8</b>			<b>109.9</b>
	Future Programme and Project Authority request	<b>= A - C</b>					<b>108.1</b>	<b>112.7</b>	<b>220.8</b>
<b>Income</b>	Investment Programme Income	<b>(D)</b>	6.3	5.4	2.0	2.0	2.0	2.0	19.7

**(A)** Gross Costs net of the management adjustment for overprogramming

**(B)** Financial Authority is based on the GLA Budget for FY20/21 to FY22/23 & the 2019 Business Plan for FY23/24 & FY24/25

**(C)** FY20/21 existing authority includes carryover of unused authority from prior years (FY19/20 & FY20/21)

**(D)** Income value which requires Programme & Project Authority

Figure 3: Summary of breakdown of Total Programme and Project Authority by T&D funded portfolios

Portfolio / Product Family	Estimated Final Cost (£k)		Total Estimated Final Cost (£) FY 2021/22 and FY 2022/23	Valid Existing Authority (£k)		Additional Proposed Authority (£k)		Total (£) FY 2021/22 and FY 2022/23
	2021/22	2022/23		2021/22 (incl prior year carryover)	2022/23	2021/22	2022/23	
Payments - CUBIC Service Delivery Assurance	8,751	5,553	14,304	13,073	-	(4,323)	5,553	1,231
Payments	20,281	32,863	53,143	26,796	-	(6,515)	32,863	26,347
Enterprise Resource Programme (ERP)	9,071	6,747	15,817	8,353	-	718	6,747	7,465
T&D Surface	3,937	1,901	5,838	18,995	-	(15,058)	1,901	(13,157)
Networks	12,157	9,737	21,894	22,190	-	(10,032)	9,737	(295)
Hosting	13,951	24,437	38,388	17,150	-	(3,199)	24,437	21,238
Digital Workplace	3,031	3,975	7,006	265	-	2,766	3,975	6,741
Contact Centre Operations (CCO)	1,602	470	2,072	1,767	-	(164)	470	305
Cyber Security (CSIRT)	5,371	8,000	13,371	1,596	-	3,775	8,000	11,775
Technology Service Operations (TSO)	813	561	1,374	1,860	-	(1,047)	561	(486)
Data & Analytics	2,120	8,048	10,168	1,221	-	899	8,048	8,946
Telecoms	166	157	323	(1,113)	-	1,279	157	1,436
3 Hub Accommodation Consolidation	-	-	-	105	-	(105)	-	(105)
Other Projects (incl LU Asset Mngmt, Digital, Strategy, Small Works)	3,120	22,909	26,029	3,417	-	(296)	22,909	22,612
Management adjustment	(4,871)	(22,597)	(27,468)	(43,314)	-	38,443	(22,597)	15,846
<b>Total Authority Required - Cost (A)</b>	<b>79,501</b>	<b>102,759</b>	<b>182,259</b>	<b>72,360</b>	<b>-</b>	<b>7,140</b>	<b>102,759</b>	<b>109,900</b>
Investment Programme Income	2,000	2,000	4,000	-	-	2,000	2,000	4,000
<b>Total Authority Required - Income (B)</b>	<b>2,000</b>	<b>2,000</b>	<b>4,000</b>	<b>0</b>	<b>-</b>	<b>2,000</b>	<b>2,000</b>	<b>4,000</b>
<b>Total Authority Required - Income (A + B)</b>	<b>81,501</b>	<b>104,759</b>	<b>186,259</b>	<b>72,360</b>	<b>-</b>	<b>9,140</b>	<b>104,759</b>	<b>113,900</b>

Notes on the above:

Note 1: 20/21 Authority uplift includes:

- o £67.4m authority for FY21/22 approved in March 2020
- o £7.1m of unused authority from FY20/21 (£12.1m authority uplift adjusted to account for £2.6m overspend in FY 19/20 and £7.6m unused authority in FY 20/21) carried over into FY21/22

Note 2: Total Additional Proposed Authority requested for FY21/22 and FY 22/23

## **8 Assurance**

- 8.1 TfL Project Assurance conducted a Programme Assurance Review (PAR) on the Programme on 19 and 20 January 2021.
- 8.2 No critical issues were identified through the Independent Assurance Review. We are yet to receive recommendations from the review and will respond on receipt.

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

Appendix 1: Technology and Data Delivery Programme summaries FY 2020/21 (T&D and non-T&D funded)

Appendix 2: Significant project deliveries from Technology and Data in FY 2020/21

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

### **List of background papers:**

T&D Technology Strategy 2020

Independent Investment Programme Advisory Group Report

TfL Project Assurance Report

Management response to IIPAG and TfL Project Assurance Reports

Contact Officer: Shashi Verma, Director of Strategy and Chief Technology Officer  
Email: [ShashiVerma@tfl.gov.uk](mailto:ShashiVerma@tfl.gov.uk)

[page left intentionally blank]

## Appendix 1: Technology and Data Programme summaries

Programme 1 – Technology Service Operations	Technology Service Operations is responsible for the day-to-day provision of IT systems and services that enable TfL to deliver its required business services cost effectively: Service Performance, Customer Experience, People, Compliance, Efficiencies and Lifecycle Management. Projects in this programme include service procurements, developing our service management systems, changes in sourcing-solutions and implementing licence compliance solutions.
Programme 2 - Surface	Delivery of technology projects aligned to the Surface business plan. Examples include Body Worn Video, iBus2 and Surface Intelligent Transport System. The Surface Programme delivers changes to the technology applications, systems, platforms and services that are utilised to manage the road network, public and private transport systems, safety, enforcement, compliance and licencing. Many of the initiatives are Surface funded but delivered by T&D.
Programme 3 - Networks	Delivery of projects to reduce the total cost of ownership of data network and telecommunications services which underpin our technology infrastructure. Projects include the refresh of the core network infrastructure provided via the Access and WAN Contract with Capita, and the Emergency Services Network , Connect, Public Cellular Network , Telecommunications Commercialisation Project and Wi-Fi upgrade project.
Programme 4 – Enterprise Resource Planning	Enterprise Resource Planning incorporates the processes we use to conduct our ‘back office’ activities. We will invest to retain and re-platform the existing system (mostly SAP) to support the ongoing improvement of our HR, Finance and Supply Chain business processes by delivering a more efficient supply chain capability to Commercial; standardise how Finance plan, budget, forecast and report financial information across the business; provide greater access to user friendly HR technology for our people. We will exploit Cloud technology to enable this.
Programme 5 – London Underground & Rail	Delivery of technology projects as aligned to the LU business plan. Examples are the Asset Management Information System, Station Security Technology Integration Programme, Safe Track Access and Trackernet projects. Many of the initiatives are London Underground funded but delivered by T&D.
Programme 6 - Major Rail Extensions and Telephony	Delivery of projects to install and/or change Fares & Ticketing devices and associated equipment across TfL and Train Operating Companies sites e.g. Gate lines, Ticket Vending Machines and Oyster readers. This is in support of new builds, modifications and expansions of Oyster and Contactless ticketing.

Programme 7 – Digital Workplace (End User Computing, Content & Collaboration, 3 Hub Accommodation)	Delivery of projects to ensure that all TfL workers have access to Digital Workplace products and services that are a good fit for their roles, easy to use, affordable for TfL, and drive effective performance. We will ensure TfL staff are upskilled in adopting digital technologies, enabling them to be mobile and more productive, leading to an increase in the use of virtual meetings and therefore more efficient building utilisation.
Programme 8 - Payments and Ticketing	Deliver a secure and compliant ticketing system, a better customer proposition and reduced revenue collection costs. Maintain and upgrade revenue collection assets to assure their service performance to minimise revenue loss for TfL.
Programme 9 - Road User Charging	Support the delivery of initiatives which involve the Road User Charging systems and schemes in London. These initiatives range from schemes to improve air quality, improve safety standards on heavy goods vehicles and encouraging cleaner modes of transport. Our products include maintaining and building the relevant TfL websites, building back office systems and seeking new and more efficient ways to improve services to our customers while delivering on the Mayor’s Transport Strategy. Most of the initiatives in this programme are business funded but delivered by T&D.
Programme 10 - Hosting	Hosting is how we organise, process, store and disseminate large amounts of data. We aim to provide a flexible, scalable and agile hosting model that allows us to adapt to changing business needs to deliver a cost efficient, flexible and secure hosting environment that keeps your data protected and your applications available with on-demand scalability.
Programme 11 - Data & Analytics	Collect, manage and deploy data to drive evidence-based decision making. We will continue to exploit transport data that drives operational performance, supports future planning, and provides our customers with data services and information while complying with data regulations. Projects include Wi-Fi Insights, CLEO Replatform, ODX Modernisation and Electronic Incident Reporting Form Improvements.
Programme 12 – Contact Centre Operations	Contact Centre Operations provides most of the contact resolution services for TfL’s customers via their in-house contact centre teams, and their out-sourced service providers. This involves managing customer contacts and complaints relating to ticketing and travel on TfL’s network via telephony, correspondence and social media platforms. The Contact Centre Operations programme aims to reduce the ongoing cost of operation while maintaining the current service level. Projects include service procurements and developing our service management systems.
Programme 13 - Digital	Ensure that TfL maintains a direct digital relationship with its customers so that it can deliver on the Mayor’s Transport Strategy. Without that relationship we cannot nudge customers towards sustainable transport modes.

Programme 14 - Cyber Security	Deliver or enhance controls, including technical solutions and services, to directly support cyber risk management within T&D. The programme also delivers or enhances elements of our pan-TfL cyber security programme, including our policy framework and assurance and reporting capability, to coordinate and support the management of cyber security risk pan-TfL.
Programme 15 - Accommodation	Ensure that all employee and third party movement around the TfL estate has IT provisioned (client hardware, telephony and Network) for our staff to work in TfL office buildings. This includes supporting decommissioning of buildings, departmental moves and new buildings.
Programme 16 - Mobile	Develop mobile solutions for TfL's internal team's that help to improve current ways for of working. For example, developing a paperless mobile solution for Fault Reporting of assets across London Underground – users can log faults anywhere using their mobile devices (rather than making notes of fault then coming back to office and record on a PC).

[page left intentionally blank]



## Appendix 2: Significant project deliveries from Technology and Data in FY2020/21

During this financial year, T&D has delivered significantly challenging and diverse projects, funded not only by T&D, but by wider TfL business areas and by Central Government, which have delivered both financial and political benefits for the organisation.

- Implemented critical update to 20,000 ITSO Secure Application Modules inside readers across the TfL Rail and Bus network.
- Upgraded Maximo - Metro Maximo, the London Underground Asset Management Information System in September 2020. This will improve maintenance, while reducing complexity and IT costs. It is estimated to save £19.2 million over the next 10 years.
- Successfully replaced obsolete and unsupported TrackerNet Secure Gateway hardware and software with upgraded and more generic system on the Northern line in September 2020. This will safeguard the continuity of data into TrackerNet, increasing robustness of our systems and standardising technology across Jubilee, Northern and sub-surface lines, and allowing efficiency in spares holding.
- In late 2020, Surface's Real Time Optimiser and Fusion (Future Split Cycle Offset Optimisation Technique ) systems were deployed into live operation at two junctions, and the first version of the Common Operational View Incident Management System was deployed into the Network Management Control Centre. These deployments create the base for on-going development including multi-modal management of the road network.
- Upgraded meeting room IT equipment at Palestra in October 2020 in preparation for the future return to offices. This included installation of large screens in 50 rooms and video technology in 25 rooms.
- Delivered new version of TfL Document Manager (Livelink) went live in November 2020 to over 6,500 users across TfL. The project delivered the new system on brand new infrastructure; containerised sensitive data across various areas to be GDPR compliant.
- In July 2020 we launched our new intranet portal – **Platform**. It is not just an integration of multiple intranets but also a flexible platform and will provide a new experience to our staff.
- We also launched an all-new online skills framework called **Digital Workplace Learning Paths**, so users can continually mature their digital skills and capabilities. There are still new challenges ahead as to how people will work in a **hybrid environment** when some people start returning to the office.

[page left intentionally blank]

## Programmes and Investment Committee



**Date:** 3 March 2021

**Item:** Members' Suggestions for Future Discussion Items

---

### **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 2021/22

**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 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)

19 May 2021		
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
Barking Riverside Extension	D Major Projects	Update and approval
LU Enhancements	MD LU	Annual approval
Healthy Streets	MD ST	Update and approval
Elephant and Castle	D Major Projects	Update and approval
Four Lines Modernisation	D Major Projects	Update

<b>21 July 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
Public Transport	MD ST	Update and approval
LU Lifts and Escalators	MD LU	Update and approval
LU Track	MD LU	Update and approval
Piccadilly Line Upgrade HV	D Major Projects	Update and approval
DLR HIF	D Major Projects	Update

<b>13 October 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 Track and Drainage	MD LU	Update and approval
East London Line HIF programme	MD ST	Update and approval

<b>15 December 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

**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
- Innovative Technology in Signalling
- IDAG (briefing)

**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