

# Agenda

**Meeting: Programmes and Investment Committee**

**Date: Wednesday 23 October 2019**

**Time: 10.15am**

**Place: Conference Rooms 1 and 2,  
Ground Floor, Palestra, 197  
Blackfriars Road, London, SE1  
8NJ**

## Members

Prof Greg Clark CBE (Chair)

Dr Nelson Ogunshakin OBE (Vice-Chair)

Heidi Alexander

Ron Kalifa OBE

Dr Alice Maynard CBE

Mark Phillips

Dr Nina Skorupska CBE

Dr Lynn Sloman

Ben Story

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).

This meeting will be open to the public, except for where exempt information is being discussed as noted on the agenda. There is access for disabled people and induction loops are available. 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: [JamieMordue@tfl.gov.uk](mailto:JamieMordue@tfl.gov.uk).

For media enquiries please contact the TfL Press Office; telephone: 0845 604 4141; email: [PressOffice@tfl.gov.uk](mailto:PressOffice@tfl.gov.uk)

Howard Carter, General Counsel  
Tuesday 15 October 2019

**Agenda  
Programmes and Investment Committee  
Wednesday 23 October 2019**

**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 17 July 2019 (Pages 1 - 10)**

General Counsel

**The Committee is asked to approve the minutes of the meeting of the Committee held on 17 July 2019 and authorise the Chair to sign them.**

**4 Matters Arising and Actions List (Pages 11 - 16)**

General Counsel

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

**5 Crossrail Update (Pages 17 - 22)**

Chief Operating Officer – Elizabeth line and Investment Delivery Planning Director

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

**6 Investment Programme Report - Quarter 1 2019/20** (Pages 23 - 114)

Director Major Projects, Interim Managing Director London Underground and  
Managing Director Surface Transport

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

**7 Independent Investment Programme Advisory Group - Quarterly Report** (Pages 115 - 122)

Director of Risk and Assurance

**The Committee is asked to note the Independent Investment Programme Advisory Group's Quarterly Report, the Management Responses and the exempt supplementary information on Part 2 of the agenda.**

**8 TfL Project Assurance Update - Quarter 2 2019/20** (Pages 123 - 128)

General Counsel

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

**9 Use of Delegated Authority** (Pages 129 - 134)

General Counsel

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

**10 London Underground Stations Renewals and Enhancements Programme** (Pages 135 - 146)

Director of Investment Delivery Planning

**The Committee is asked to note the paper and approve additional Programme and Project Authority.**

**11 London Underground Lifts and Escalators Renewals Programme**  
(Pages 147 - 152)

Director of Investment Delivery Planning

**The Committee is asked to note the paper and approve additional Programme and Project Authority.**

**12 London Underground Railway Systems Enhancements Programme**  
(Pages 153 - 160)

Director of Investment Delivery Planning

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

**13 Air Quality and Environment** (Pages 161 - 174)

Investment Delivery Planning Director

**The Committee is asked to note the paper and exempt supplementary information on Part 2 of the agenda and approve Procurement Authority.**

**14 TfL Growth Fund** (Pages 175 - 186)

Director of Spatial Planning

**The Committee is asked to note the paper and exempt supplementary information on Part 2 of the agenda and approve a reduction in Programme and Project Authority.**

**15 Member suggestions for future agenda discussions** (Pages 187 - 192)

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.**

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

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

## **17 Date of Next Meeting**

Wednesday 18 December 2019 at 10.15am.

## **18 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.**

## **19 Crossrail Update (Pages 193 - 428)**

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

## **20 Independent Investment Programme Advisory Group - Quarterly Report (Pages 429 - 434)**

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

## **21 TfL Project Assurance Update - Quarter 2 2019/20 (Pages 435 - 438)**

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

## **22 Air Quality and Environment (Pages 439 - 442)**

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

## **23 TfL Growth Fund (Pages 443 - 462)**

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

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## Transport for London

### Minutes of the Programmes and Investment Committee

**Committee Rooms 1 & 2, Palestra,  
197 Blackfriars Road, London, SE1 8NJ  
10.15am, Wednesday 17 July 2019**

#### **Members Present**

Professor Greg Clark CBE (Chair)  
Heidi Alexander  
Ron Kalifa OBE  
Dr Alice Maynard CBE  
Dr Nina Skorupska CBE  
Dr Lynn Sloman

#### **In Attendance**

##### **Executive Committee**

Howard Carter	General Counsel
Michèle Dix	Managing Director, Crossrail 2
Stuart Harvey	Director of Major Projects

##### **Other Staff**

Tanya Coff	Divisional Finance Director, London Underground
Patrick Doig	Divisional Finance Director, Surface Transport
Nigel Hardy	Head of Programme Sponsorship, Surface Transport
David Hughes	Investment Delivery Planning Director
Lorraine Humphrey	Head of TfL Project Assurance
Antony King	Finance and Commercial Director, Major Projects Directorate
John Lambert	Head of Track Programme, London Underground
Penny Rees	Head of Network Sponsorship, Surface Transport
David Rowe	Head of Major Projects Sponsorship, Surface Transport
Marc Sims	Senior Asset Strategy Manager – Track, London Underground
Clive Walker	Director of Risk and Assurance
Jackie Gavigan	Secretariat Manager

##### **Crossrail Limited**

Simon Adams	Head of Commercial, Crossrail Limited
Howard Smith	Director, Elizabeth Line Operations
Mark Wild	Chief Executive, Crossrail Limited

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

Alison Munro	Chair, IIPAG
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### **37/07/19 Apologies for Absence and Chair's Announcements**

Apologies for absence were received from Dr Nelson Ogunshakin OBE (Vice Chair), Mark Phillips and Ben Story. Apologies had also been received from Mike Brown MVO, Simon Kilonback, Nigel Holness and Gareth Powell.

The Chair informed the Committee that he intended to change the order of the agenda to consider the Crossrail Update and Crossrail – Project Delivery Partner Incentive Scheme reports (Agenda Items 5 and 6) immediately following the London Underground Renewals and Enhancements Track Programme report (Agenda Item 14).

To reflect TfL's focus on safety, the Chair advised that Members should raise any safety issues in relation to items on the agenda or within the remit of the Committee at the start of the item or under Matters Arising. If there were any other safety issues then these could be discussed with General Counsel or an appropriate member of the Executive Committee after the meeting.

### **38/07/19 Declarations of Interests**

Members confirmed that their declarations of interests, as published on [tfl.gov.uk](http://tfl.gov.uk), were up to date.

Howard Carter informed the Committee that Ron Kalifa OBE's biography and declarations of interest had been updated to reflect his two recent appointments, as a non-executive director to the Bank of England's Court of Directors and as an independent member to the England and Wales Cricket Board's newly formed T20 Board.

### **39/07/19 Minutes of the meeting of the Committee held on 15 May 2019**

**The minutes of the meeting held on 15 May 2019 were approved as a correct record and signed by the Chair.**

### **40/07/19 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.**

### **41/07/19 Investment Programme Report – Quarter 4 2018/19**

Stuart Harvey introduced the paper, which set out the progress and performance in Quarter 4 2018/19 of a range of major projects and sub-programmes delivering transport services to London. Safety continued to improve following the campaign to increase site safety among contractors.



The first section of the new signalling system on the Four Lines Modernisation programme had been successfully introduced and was operating between Hammersmith and Latimer Road. In June 2019, a contract for the supply of the next generation DLR trains was awarded to CAF of Spain. A detailed design contract had been let for the enabling works and sidings design at Beckton depot, with works on track to commence in summer 2019.

On the Northern Line Extension at Nine Elms, all columns for both the eastern and western superstructures were completed. At the Silvertown Tunnel, Riverlinx consortium had been selected as the preferred bidder to build the tunnel. At Barking Riverside, redundant wagons had been removed and initial ground works carried out. Readiness reviews were being undertaken to support the Network Rail possessions and blockade planned for later in the year. Work with stakeholders to secure the network change approval was continuing.

David Hughes told the Committee that the new Underground station entrance at Waterloo had opened in spring 2019. South Woodford Underground station had become step-free in March 2019 and work was on target to make over a third of stations accessible by 2020 by providing step-free access at a further 15 stations.

On the Jubilee line, 44 trains had been refurbished and put back in service. On the Central line, two carriages had been delivered to the Bombardier test site to begin prototyping the new traction system. Two thirds of the new Piccadilly line signalling control system had been commissioned at the control centre in west London, with plans to complete all remaining areas by the end of 2019.

In response to a request from Members, David Hughes agreed that an overview paper, which pulled together all the energy efficiency issues and solutions of the programme, would be brought to a future meeting of the Committee.

**[Action: David Hughes]**

Highway works on the major reconfiguration of the road network and removal of the gyratory at Highbury Corner was on track to be completed by late summer 2019. A major milestone had been achieved at Old Street Roundabout with the removal of the old vehicle-dominated roundabout and replacing it with a two-way traffic system in May 2019.

Work continued on several major new cycle routes, and stakeholder engagement for the first four routes had been undertaken to gather views and suggestions on the initial plans. A letter had been written to Kensington and Chelsea Borough Council to gain clarification on the recent decision to reject plans for the cycle scheme at Notting Hill.

Work had been completed to make 29 junctions safer, and the finished projects continued to be monitored to ensure that collisions were successfully reduced. The remaining 44 schemes were at the design stage, with 12 scheduled for construction by spring 2020.

**The Committee noted the report.**

## **42/07/19 Independent Investment Programme Advisory Group Quarterly Report**

Lorraine Humphrey introduced the paper, which set out the Independent Investment Programme Advisory Group's (IIPAG's) quarterly report.

IIPAG's Terms of Reference required that it 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.

The report focussed on the sub-programme and project assurance reviews IIPAG had participated in and provided details of the presentations received from TfL Officers. Alison Munro told the Committee that the reviews had identified a number of cross-cutting issues such as the approach to risk and contingency, and management information, for consideration in its work going forward. As recommended by TC Chew, a protocol had been agreed which set out ways of working and the relationship between IIPAG and TfL, with TfL teams continuing to respond positively to IIPAG's work.

The effectiveness of the first and second lines of project assurance was set out in the Management Response. Members of IIPAG had held initial discussions with the Head of Project Management Office on the first line effectiveness and agreed interaction going forward. The recommendations tracking process had been strengthened with details of recommendation status now being included in the Project Assurance update.

**The Committee noted the report and the Management Response.**

## **43/07/19 TfL Project Assurance Update – Quarter 1 2019/20**

Lorraine Humphrey introduced the paper, which provided an update on the project assurance work undertaken in Quarter 1 of 2019/20. The update summarised the assurance activity completed by TfL's second and third line assurance, and provided an overview of critical issues and recommendations agreed with the project teams.

A total of 18 reviews were undertaken, consisting of four sub-programme and 14 project assurance reviews. Key findings from the reviews included continued cost pressures on a number of projects, risk-assessments needing to be more robust given project maturity and a need for improved portfolio management.

Work continued with the project teams to ensure that recommendations were acted upon and closed within an appropriate timescale once evidence had been provided, and that future management responses provided timely and realistic dates for completing actions.

**The Committee noted the paper and the related paper on Part 2 of the agenda.**

#### **44/07/19 Use of Delegated Authority**

Howard Carter introduced the paper, which provided an update on the use of Chair's Actions and of Programme and Project Authority granted by the Commissioner and the Chief Finance Officer.

Since the last meeting of the Committee, the Chair, in consultation with available members of the Committee, had used Chair's Action to approve the recommendation that the project should return to Pathway Stage 2 (Feasibility) to further investigate strategic alternatives for the Rotherhithe to Canary Wharf Crossing.

A second Chair's Action had been used on a matter which had been delegated by the Board, in consultation with available Board members, to approve the appointment of two additional independent, non-executive directors of Crossrail Limited for a period of one year.

The Chief Finance Officer had approved Procurement Authority in relation to two contracts covering Design Capture Services for the Crossrail 2 Development Phase, and Surface Intelligent Transport System Common Operational View and Incident Management System.

The Committee noted that no new Mayoral Directions to TfL within the Committee's remit had been published since the last meeting.

**The Committee noted the paper.**

#### **45/07/19 Crossrail 2**

Michèle Dix introduced the paper, which provided an update on the current phase of the Crossrail 2 project which involved outline design and delivery planning, and facilitating an agreed approach between funders to take the scheme forward.

Since the last meeting, the project team had submitted a fifth version of the Strategic Outline Business Case to the Department for Transport which reflected recent work to improve the scheme's affordability. It also took account of changes in the economy, recent London travel patterns and lessons learnt from the original Crossrail project.

Assessment of the business case would be a key part of the Government's consideration of the project in the 2019 Spending Review in September.

The Committee conveyed its support and thanks to the team in recognition of their hard work to date on this important project in changing circumstances.

**The Committee noted the submission of the 2019 Strategic Outline Business Case and related information on Part 2 of the agenda.**

## **46/07/19     Silvertown Tunnel Update**

David Hughes introduced the paper, which updated the Committee on the status of the procurement of the Silvertown Tunnel scheme.

Since the last meeting, Riverlinx consortium had been selected as the preferred bidder to design, build, finance and maintain the Silvertown Tunnel. The consortium was now confirming financial arrangements with lenders and mobilising its supply chain. It was hoped that the Project Agreement would be completed by August 2019, subject to finalising the financial arrangements and no legal challenge to the procurement process.

Outside of and in parallel to the preferred bidder scope, TfL had a resourced delivery programme to progress a number of activities it was responsible for, which included arranging access to land and assisting the consortium in stakeholder consultation. It also included planning new bus services, updating the traffic model and providing the new user charging equipment at the Blackwall and Silvertown Tunnels.

**The Committee noted the paper and the related paper on Part 2 of the agenda.**

## **47/07/19     Healthy Streets Programme 2019/20 and 2020/21**

David Hughes introduced the paper, which represented the third annual submission of the Healthy Streets Programme to the Committee, and which set out the request for Programme and Project Authority to cover 2019/20 and 2020/21.

The focus was to provide an update on the Programme's success in delivering projects in 2018/19, to demonstrate the alignment of the approach in delivering the Mayoral priorities, to summarise the planned delivery in 2019/20, and to provide assurance on progress in terms of delivery and establishing robust arrangements for future years.

Approval for additional Programme and Project Authority was being sought to account for the transfer of some authority to other portfolios and to cover incremental costs to ensure that in-flight projects had sufficient allowance to reach the end of the project stage. The Programme returned annually to the Committee to renew and validate a rolling two-year approval, which enabled approvals to be aligned to financial years.

Nigel Hardy highlighted that good progress was being made on delivering Cycleways with the outcome of public consultations being awaited on a number of key projects. The support of local boroughs was also sought wherever possible, as schemes could be amended and re-shaped in response to analysis of views received.

In response to a question from Members, Nigel Hardy confirmed that data being used to review and evaluate the safer junctions and use of Cycleway schemes was the latest set of validated data, and that any trends were identified and acted upon.

In order to further embed the Healthy Streets Programme across the organisation going forward, TfL has outlined initiatives for mandatory Healthy Streets training for all TfL sponsors and designers, endorsement of the Programme's approach with

senior leadership, sharing best practice to maximise its impact and increasing the number of schemes delivered by broadening eligibility criteria.

**The Committee noted the paper and:**

- 1 approved additional Programme and Project Authority of £334m, giving a total of £1.2bn comprising:**
  - (a) the already approved £145m from 2017/18, accounting for the reallocation of £10m of authority to the Surface Technology Programme;**
  - (b) the already approved £284m from 2018/19, accounting for the reallocation of £29m of authority to the Surface Technology Programme;**
  - (c) £291m to undertake all Healthy Streets Programme activities during 2019/20;**
  - (d) £417m to undertake all Healthy Streets Programme activities during 2020/21 and £70m for any project stage that is planned to commence in 2019/20 and 2020/21 but may extend into subsequent years; and**
- 2 noted that Procurement Authority in respect of various elements of the Healthy Streets Programme will be sought in accordance with Standing Orders.**

#### **48/07/19 London Underground Renewals and Enhancements Track Programme**

John Lambert and Marc Sims introduced the paper, which presented the latest achievements of the London Underground Renewals and Enhancements Track Programme, summarised planned delivery on 2019/20 and provided assurance on progress.

Approval for additional Programme and Project Authority was being sought for the Programme for three years, spanning 2020/21 to 2022/23. The Programme would return annually to the Committee to review progress and re-validate the proposed investment.

Track assets consisted of the track form itself, track drainage and long timber bridges. The Programme played a vital role in maintaining day-to-day service levels and safety, and supporting line upgrades to meet the demands of intense train service patterns. The authority submission supported a continuous programme of renewals to partially offset the ageing of the track asset-base, to offset increases in traffic tonnage and to further modernise the track asset.

**The Committee noted the paper and:**

- 1 approved additional Programme and Project Authority of £18.3m for the London Underground Renewals and Enhancements Track Programme for 2019/20; and**
- 2 approved additional Programme and Project Authority of £402m for 2020/21 and 2022/23, giving a total Programme and Project Authority of £651.9m.**

#### **49/07/19 Crossrail Update**

David Hughes introduced the item, which updated the Committee on the status of the Crossrail project and the readiness of the Infrastructure Managers for the operations and maintenance of the railway after handover from the project.

In addition, the paper provided an update on the period reports from the Project Representative on Crossrail, as well as on the actions being taken by Crossrail Sponsors and Crossrail Limited, in response to two of the reviews undertaken for the Sponsors by KPMG.

The most recent Project Representative report highlighted the need for Crossrail Limited to undertake further work on the Delivery Control Schedule to ensure that the final cost forecast resulted in a robust and predictable output. It also included the need to enhance the risk management approach to ensure it was fit for purpose for the programme and its lifecycle delivery stage. Other observations included the need to increase the production rate of safety, technical and handover documentation, and to incorporate the rolling stock and signalling requirements into an integrated testing schedule.

The recommendations from the KPMG governance, financial and commercial reviews had either been completed or had actions in place, some of which were reliant on the availability of Crossrail Limited's revised schedule and cost baseline.

The Committee noted the joint letter sent from the Mayor of London and TfL in response to the recommendations from the London Assembly Transport Committee, which had previously been circulated to Members.

The Chair invited Mark Wild, Chief Executive Officer of Crossrail Limited, to update the Committee. Mark Wild told the Committee that site safety remained paramount, particularly with the move from construction activities to testing an operational railway. In June 2019, a week of safety activity had taken place across the programme to highlight the importance of safe procedures and operations in completing the Elizabeth line.

Three parallel activities were on track to be completed by January/February 2020 so the next stages of trial running and finishing off the stations could begin, with the railway expected to open at the end of 2020. These activities were to complete the installation and testing of equipment in the tunnels, test the software for the signalling systems, and install and test the station systems. Once all the systems had been tested and the stations completed, safety critical tests would be undertaken in live operation.

Current risk challenges included completion of Bond Street station, Siemens and Bombardier software plateau, scarce resources in the Tier 1 and Tier 2 supply chain, issues with handover of shafts and portals, and implementing the end to end commissioning plan for staged completion.

Following approval of the revised delivery schedule, Crossrail Limited's immediate focus was to transition the high-level programme into a detailed Delivery Control Schedule and develop the resultant final cost forecast. An updated baseline of project costs and forecasts would be provided when available.

**[Action: Simon Kilonback/ David Hughes]**

The Committee thanked Mark Wild for his work in managing the complex and challenging project, and for regularly updating the Committee.

**The Committee noted the paper and the related paper on Part 2 of the agenda.**

### **50/07/19 Crossrail – Project Delivery Partner Incentive Scheme**

David Hughes introduced the item, which updated the Committee on a proposal by Crossrail Limited to revise the staff rates and replace the current incentive scheme in the Project Delivery Partner Services Contract with a new incentive scheme that supported the delivery of the revised schedule. This proposed change required approval from the Crossrail Sponsors (TfL and the Department for Transport), for which the Committee had delegated authority from the Board.

As the milestones related to the new incentive scheme were not yet finalised, it was recommended that the Committee approve the proposal in principle and authorise the Chief Finance Officer to finalise the changes to the contract and revised incentive scheme.

The current contract was awarded to Bechtel Limited in April 2009 requiring services to be provided against a scope, annual service delivery plan and schedule of deliverables. In addition, an incentive scheme aimed to drive specific behaviours around cost, time and quality. Recent changes to the project delivery schedule meant that a revision of the existing incentive scheme would be value for money and negotiations had been entered into with Bechtel Limited.

**The Committee noted the paper and the related paper on Part 2 of the agenda, and under the authority delegated by the Board:**

- 1 approved in principle the changes proposed by Crossrail Limited to the current Financial Incentive Scheme contained within the Project Delivery Partner Services Contract with the Crossrail Project's revised opening programme, as described in the papers; and**
- 2 authorised the Chief Finance Officer to approve the final form of such changes.**

**51/07/19 Member suggestions for future agenda discussions**

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

There were no additional suggestions raised for future discussion items for the forward programme or for informal briefings.

**The Committee noted the forward programme.**

**52/07/19 Any Other Business the Chair Considers Urgent**

There was no other urgent business.

**53/07/19 Date of Next Meeting**

The next scheduled meeting of the Committee would be held on Wednesday 23 October 2019 at 10.15am.

**54/07/19 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: Crossrail, Project Assurance and Crossrail 2. The Committee agreed to exclude the press and public from the meeting, in accordance with paragraphs 3 and 5 of Schedule 12A to the Local Government Act 1972 (as amended), when it considered the exempt information in relation to the item on Silvertown Tunnel.

The meeting closed at 1.26pm

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

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



## Programmes and Investment Committee



**Date:** 23 October 2019

**Item:** Matters Arising and Actions List

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

#### **1 Summary**

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

#### **2 Recommendation**

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

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

Appendix 1: Actions List

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

Minutes of previous meetings of the Programmes and Investment Committee.

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## Programmes and Investment Committee Action List (reported to the meeting on 23 October 2019)

### Actions from the meeting of the Programmes and Investment Committee held on 17 July 2019

Minute No.	Description	Action By	Target Date	Status note
41/07/19	<p><b>Investment Programme Report – Quarter 4 2018/19: energy efficiency programmes</b></p> <p>An overview paper, which pulled together all the energy efficiency issues and solutions of the programme, would be brought to a future meeting of the Committee</p>	David Hughes	December 2019	On Forward Plan.
49/07/19	<p><b>Crossrail Update: project costs and forecasts</b></p> <p>Following approval of the revised delivery schedule, Crossrail Limited's immediate focus was to transition the high-level programme into a detailed Delivery Control Schedule and develop the resultant final cost forecast. An updated baseline of project costs and forecasts would be provided when available.</p>	David Hughes/ Simon Kilonback	December 2019	To be provided when available.

### Actions from previous meetings of the Committee

Minute No.	Description	Action By	Target Date	Status note
31/05/19	<p><b>Air Quality Management Programme: Privacy and Data Security</b></p> <p>As the Ultra Low Emission Zone Extension was implemented, TfL would necessarily capture more data, as Air Quality Management schemes spread over a wider geographical area. Members requested that a briefing be provided on privacy and data security.</p>	David Hughes	December 2019	A paper is on the forward plan for December 2019.

Minute No.	Description	Action By	Target Date	Status note
10/03/19	<p><b>Technology and Data Programme and Project Authority for Financial Years 2019/20 and 2021/22: Digital Pocket Map.</b></p> <p>Members liked the idea of the Digital Pocket Map app and asked whether it could be shared, once a fully functioning version had been created.</p>	Shashi Verma	November 2019	In progress.
14/03/19	<p><b>London Underground Major Stations Programme: Bank station Central line step-free access</b></p> <p>Members asked that further stakeholder engagement be carried out to determine whether step-free access to the Central line should be delivered.</p>	Stuart Harvey	October 2019	<p>TfL has started to engage with stakeholders on priorities for a future step-free access investment on the LU network.</p> <p>We are planning to use this engagement to inform planned consultation on future step-free priorities.</p>
38/07/18	<p><b>TfL Growth Fund: Monitoring and Evaluation</b></p> <p>The Committee requested that future updates include details on how projects and the benefits derived were monitored and evaluated.</p>	Alex Williams	October 2019	On agenda.

Minute No.	Description	Action By	Target Date	Status note
45/07/18	<p><b>Member suggestions for future agenda discussions</b> The Committee requested that the following information be provided at future Committee meetings:</p> <ul style="list-style-type: none"> <li>(a) Information on the Northern and Bakerloo line extensions;</li> <li>(b) Oxford Street;</li> <li>(c) Rotherhithe to Canary Wharf Crossing;</li> <li>(d) The interactions between TfL and HS2 systems;</li> <li>(e) Potential issues arising from the expansion of Heathrow Airport, particularly unforeseen cost for Surface Transport; and</li> <li>(f) Information on the overall schedule of work for TfL to be included in the Investment Programme Report.</li> </ul>	Secretariat	Ongoing	<ul style="list-style-type: none"> <li>(a) Complete.</li> <li>(b) On forward plan.</li> <li>(c) Complete.</li> <li>(d) Complete. A briefing was held.</li> <li>(e) Complete. A briefing was held.</li> <li>(f) Complete.</li> </ul>
25/05/18	<p><b>London Underground Legacy Signalling and Information: Use of innovative technology</b> The Committee requested a future discussion on the use of innovative technology for signalling upgrade works, such as 5G.</p>	David Hughes	March 2020	This work is being progressed with the development of future signalling strategies and upgrades. An update will be provided to a future meeting.
13/02/18	<p><b>Member suggestions for future agenda discussions: Investment Programme value for money</b> Members were keen to better understand what mechanisms and procedures were in place to drive and demonstrate greater value in the delivery of its investment programme. TfL was undertaking an end to end review of project lifecycles to identify how it could identify opportunities and cultural changes to drive better value. An update would be provided to the Committee when this work was better developed.</p>	Stuart Harvey	Ongoing	In progress. An update will be provided to a future meeting.

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## Programmes and Investment Committee



**Date:** 23 October 2019

**Item:** Crossrail Update

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### This paper will be considered in public

#### 1 Summary

- 1.1 This paper provides an update on the status of the Crossrail project and the readiness of the Infrastructure Managers (IM) for the operations and maintenance of the railway after handover from the Crossrail project.
- 1.2 In addition, the paper provides an update on the periodic reports from the Project Representative (P-Rep) on Crossrail as well as an update on the actions being taken by Crossrail Sponsors and Crossrail Limited (CRL) in response to two of the reviews undertaken for the Sponsors by KPMG.
- 1.3 A paper is included on the Part 2 agenda which contains supplementary information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL.

#### 2 Recommendation

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

#### 3 Crossrail update

- 3.1 At the meeting of the Board of CRL on 10 October 2019, the Board confirmed that they still expect to open the central section of the route within the planned six-month window between October 2020 and March 2021, however, there remains an element of risk in the project and interventions are in place to improve productivity.
- 3.2 The Board of CRL also confirmed on 10 October 2019 its view that, having considered the remaining work to be completed, the risk landscape and the mitigations already in place or being developed, the project continues to be deliverable within the existing funding envelope.
- 3.3 The current cost forecasts contain provision for additional risk contingency. Projections show the central cost forecast (including risk contingency) of £15,005m, £42m more than the funding committed under the financing package. Additional modelling scenarios have a significantly higher level of risk contingency and show that up to £392m could be required above the committed funding and show the Elizabeth line opening later than the declared window in 2021. CRL continue to fully develop the cost forecasts and risk mitigation actions including

quantifying the potential savings that could arise from their implementation and have reported positive performance against the schedule baseline.

- 3.4 Health and safety performance remains stable but still under scrutiny following the serious accident at Farringdon station where two scaffolders were injured when the scaffolding they were installing collapsed. The 'Safety Stand Down' was well received and executed by the whole programme leading to improvement action plans being implemented. The investigation is nearing completion and wider learning will be shared. The safety alert ensured immediate action was taken to check all working at height practices.
- 3.5 In response to the tragic death of a colleague working for one of TfL's contractors at Waterloo London Underground station, , Crossrail stood down all intrusive escalator works and ensured that contractors reviewed all safe systems of work before any activities recommenced. CRL will continue to work closely with us to learn from any incidents on our network.
- 3.6 The Metro and Daily Mirror ran online articles claiming air quality issues at the Bond Street Station project were linked with the death of workers who died at home. The CRL and Costain Skanska Joint Venture responded to all the health and safety concerns raised by the workforce. There is no evidence to link working conditions to the very sad deaths of workers over the past nine months. Extensive air quality monitoring has been carried out (and continues) and no issues have been detected.
- 3.7 Following on from handing over Victoria Dock portal and Pudding Mill Lane portal to the IM, some issues remain with Mile End shaft which was due to be the next shaft to be handed over. One cause of this is a fire alarm controller which needs to be upgraded to meet the standards required for the railway. Replacements are being ordered but will then need to be installed and tested. There are 31 instances of these fire panels across the rest of the stations, shafts and portals on Crossrail.
- 3.8 CRL has developed a Handover Strategy and Plan (HS&P) which sets the way forward for the production of 30 individual Handover Execution Plans (HEPs) for each Station, Shaft, Portal and Railway System. The HEPs set out the configuration of each element of the railway at each stage of completion. The strategy is based on starting Trial Running as soon as possible. Five of the first elements to be handed over have been identified as "nursery" elements from which key lessons for handing over the later, more complicated stations, shafts and portals will be learned.
- 3.9 Custom House station is due to be handed over early in November, but also has the fire panel that needs replacing. As it is one of the nursery handovers, CRL is making it a priority and the new panel has already been installed and begun testing.
- 3.10 Last month the hoarding in the ticket hall at Farringdon station was removed. This month the Crossrail worksite went "PPE-free" which means that most major work at the station is now complete so hard hats and hi-vis jackets are now no longer necessary for everyone on-site. Testing and commissioning work remains ahead of planned handover to London Underground as IM later this year.



- 3.11 The Siemens software configuration (PD+10) was planned to be the first version capable of supporting the Trial Running beginning in early 2020 though testing in the Crossrail Integration Facility (CIF) has identified some missing functionality and some defects. The next version (PD+11) will be used for the start of Trial Running.
- 3.12 PD+10 will still be installed in the central section in early October and valuable reliability and functional testing will continue while the next version is developed. PD+11 is planned to be delivered for testing on the central section of the route in early December. CRL report that the use of PD+11 should not delay the start of Trial Running planned in the first quarter of 2020, though if another version of the software configuration is required (i.e. to PD+12), the opening window would be under increased risk. The nature of software development means uncertainty will remain until each version is tested.
- 3.13 Siemens and Bombardier collaboration remains strong with senior resources collocated in Westferry Circus and with the right level of CEO engagement, including recent meetings in Germany with senior officials from Crossrail, Siemens and Bombardier. This has been a major achievement for the programme and will ultimately de-risk the development and assurance process.
- 3.14 The transitions between the eastern and western interfaces with Network Rail (NR)'s sections of the route are complex and securing availability of test slots from Network Rail has been challenging. There is now access booked for both transitions (Great Eastern and Great Western Main Lines) but testing will continue and further access may be required.

## **4 Operational Readiness**

- 4.1 In July 2019, the first nine car (full-length) train in TfL Rail passenger service was successfully introduced in the west between Hayes & Harlington and Paddington mainline station. This is an important step in operating the full-length trains which will be used for future opening stages of TfL Rail and the Elizabeth line.
- 4.2 TfL and MTR Crossrail are on course to start operating the stopping services from Paddington mainline station to Reading in December this year under the TfL Rail brand (referred to by the project as Stage 5A). MTR Crossrail already staff 11 of the 15 stations between Paddington and Reading, after taking over the running of these from Great Western Railway in December 2017. The full plan is to use the full-length (nine-car) trains but it is unlikely that the software updates necessary will be tested and available in time for the introduction of service. It is likely that the service will start with the seven car units currently used between Liverpool Street and Shenfield and the full-length units will be swapped in when available.
- 4.3 Maintenance teams have now moved into their new Maintenance Management Centre at Plumstead. The teams continue to support the project with track inspections and are still working towards a programme of increased support and familiarisation with the railway assets ahead of handover.
- 4.4 For Service and Traffic Managers, fully simulated operational desktop exercises resumed in the Romford Control Centre with the majority of functionality concerns now resolved since the team's visit to Siemens in Germany. Traffic Managers

have also supported the Crossrail contractor, ATC, in signalling trains during dynamic testing. Rail for London (Infrastructure) Limited (RfLI), the IM for the central section of railway, has taken on landlord responsibilities for Victoria Dock Portal and Pudding Mill Lane following a successful handover from the project. As the first elements to be handed over, Crossrail and RfLI have been able to test the handover completion process and learn lessons which will be used for the remaining elements.

- 4.5 Network Rail has begun the handover process for drivers' CCTV works and it is expected that full handover will be achieved by early November to support the introduction of services to Reading in December 2019.
- 4.6 Platform extension work at West Drayton and Slough is complete, whilst the final extension at Maidenhead is forecast for completion in early October. Station enhancement works continue at West Drayton, Hayes & Harlington, Southall, West Ealing, Ealing Broadway and Acton Main Line and are all anticipated to be completed in late 2020.
- 4.7 At the end of August 2019, Network Rail awarded the contract for the enhancement works at Ilford and Romford stations and is due to confirm the construction timetable shortly.

## **5 Project Representative**

- 5.1 The Project Representative (P-Rep) is in place for the purpose of providing the Sponsors with oversight of project delivery, advising and raising points of the challenge to the Sponsors and scrutinising progress.
- 5.2 In line with the KPMG recommendations and the commitments made by the Mayor for greater transparency of the Crossrail project, the most recent P-Rep reports are now included as part of the regular update to the Committee. We have already published the reports from 2018/19 and from the first two Periods of 2019/20 and the next three reports are now available on our website<sup>1</sup>.
- 5.3 As with all the P-Rep reports, it has been necessary to make some redactions to the reports prior to publication to protect commercially sensitive material. We have sought to keep such redactions to a minimum. Unredacted versions of the most recent P-Rep reports have been included in the paper on Part 2 of the agenda.
- 5.4 In the most recent reports, P-Rep highlighted the following key areas of concern:
  - (a) CRL's plans to ensure that a 'drift' in re-allocation of Tier 1 resources does not occur, which would impact the final outturn cost, and that the resources are removed in the most efficient manner possible;
  - (b) the various influences and challenges from across the programme for the readiness to enter Trial Running and CRL's ability to declare a firm date for the start of Trial Running to enable key interfacing parties to make robust plans;

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<sup>1</sup> <https://tfl.gov.uk/corporate/publications-and-reports/crossrail-project-updates>

- (c) the current rate at which the safety and technical assurance documentation is being produced, reviewed and approved does not align with the current Railways and Other Guided Transport Systems (ROGS) dates contained within the Delivery Control Schedule (DCS);
- (d) CRL's risk register and DCS may not adequately cover the future phases of the programme (post-Stage 3);
- (e) CRL's assessment as to 'what' has changed in the period, is to an extent well understood by the teams, however, the understanding as to 'why' the plans have changed, does not appear to be as robust; and
- (f) a number of CRL teams are planning to 'targets', rather than 'forecasts'. This approach potentially undermines the robustness in the delivery of future milestones on time.

5.5 The P-Rep observations are shared with CRL and discussed in detail by CRL, P-Rep and the Sponsors at the regular meetings of the Crossrail Sponsor Board. The Sponsors have asked that CRL produce a response to the P-Rep report. The response from CRL is included with the P-Rep reports on our website (with an unredacted version being included in the paper on Part 2 of the agenda).

## 6 KPMG update

6.1 The Sponsors and CRL have now largely completed the implementation of recommendations made by KPMG following their governance and financial and commercial reviews of the project. All recommendations have either been completed or have actions in place which, for example, are reliant on the availability of CRL's revised schedule and cost baseline. Any further updates on progress with completing the remaining actions will be provided to the Committee and the Board.

### List of Appendices:

A paper containing exempt supplemental information is contained in a paper on Part 2 of the agenda

### List of Background Papers:

None

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## Programmes and Investment Committee



**Date:** 23 October 2019

**Item:** Investment Programme Report – Quarter 1, 2019/20

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**This paper will be considered in public**

### **1 Summary**

1.1 The Investment Programme Report describes the progress and performance in Quarter 1, 2019/20 of a range of projects that will deliver world-class transport services to London.

### **2 Recommendation**

2.1 **The Committee is asked to note the report.**

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

Appendix 1: Investment Programme Report Quarter 1, 2019/20.

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

None

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# Transport for London investment programme report

Quarter 1 2019/20



## About Transport for London (TfL)

Part of the Greater London Authority family led by Mayor of London Sadiq Khan, we are the integrated transport authority responsible for delivering the Mayor's aims for transport.

We have a key role in shaping what life is like in London, helping to realise the Mayor's vision for a 'City for All Londoners'. We are committed to creating a fairer, greener, healthier and more prosperous city. The Mayor's Transport Strategy sets a target for 80 per cent of all journeys to be made on foot, by cycle or using public transport by 2041. To make this a reality, we prioritise health and the quality of people's experience in everything we do.

We manage the city's red route strategic roads and, through collaboration with the London boroughs, can help shape the character of all London's streets. These are the places where Londoners travel, work, shop and socialise. Making them places for people to walk, cycle and spend time will reduce car dependency and improve air quality, revitalise town centres, boost businesses and connect communities.

We run most of London's public transport services, including the London Underground, London Buses, the DLR, London Overground, TfL Rail, London Trams, London River Services, London Dial-a-Ride, Victoria Coach Station, Santander Cycles and the Emirates Air Line. The quality and accessibility of these services is fundamental to Londoners' quality of life. By improving and expanding public transport, we can make people's lives easier and increase the appeal of sustainable travel over private car use.

We are moving ahead with many of London's most significant infrastructure projects, using transport to unlock growth. We are working with partners on major projects like Crossrail 2 and the Bakerloo Line Extension that will deliver the new homes and jobs London and the UK need. We are in the final phases of completing the Elizabeth line which, when open, will add 10 per cent to central London's rail capacity.

Supporting the delivery of high-density, mixed-use developments that are planned around active and sustainable travel will ensure that London's growth is good growth. We also use our own land to provide thousands of new affordable homes and our own supply chain creates tens of thousands of jobs and apprenticeships across the country.

We are committed to being an employer that is fully representative of the community we serve, where everyone can realise their potential. Our aim is to be a fully inclusive employer, valuing and celebrating the diversity of our workforce to improve services for all Londoners.

We are constantly working to improve the city for everyone. This means freezing TfL fares so everyone can afford to use public transport, using data and technology to make services intuitive and easy to use, and doing all we can to make streets and transport services accessible to all. We reinvest every penny of our income to continually improve transport networks for the people who use them every day.

None of this would be possible without the support of boroughs, communities and other partners who we work with to improve our services. We all need to pull together to deliver the Mayor's Transport Strategy; by doing so we can create a better city as London grows.



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Please note that safety and sustainability information will no longer be referenced in this report. There is a quarterly Safety, Sustainability and Human Resources Report published on our website, which provides an overview of health, safety and environmental performance for London Underground, TfL Rail, Surface Transport and Crossrail services.

# Introduction

This investment programme quarterly performance report provides an update on a range of projects that will create world-class transport services in London.

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

For each major project or sub-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 any notable progress made after quarter end.

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

Financial records of spend to date, authority and Estimated Final Costs (EFC) represent the entire duration of each separate project or programme, except for annual portfolios where spend to date, authority and EFC figures represent the current financial year. Where authority is significantly lower than EFC,

it has been given for the current stage of works and further authority will be sought when appropriate.

To ensure continued transparency across TfL, the reporting of Estimated Final Costs for projects is based on the current risk profile and opportunity realisation at the time of publication. As a result, project EFCs could fluctuate every quarter, however this does not automatically mean that there is an increase in spend authority.

The EFC of each sub-programme or project may display a red, amber or green (RAG) status, which represents the level of change in EFC from the previous quarter, such as:

EFC increase of two per cent or more:



EFC increase of five per cent or more:



EFC decrease of two per cent or more:



EFC decrease of five per cent or more:



Where no symbol is used, the EFC increase or decrease (if any) is less than two per cent.

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

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

All financial figures are gross and may not appear to align with costs detailed in the TfL Budget, which are net of any third-party funding. In addition to the committed projects and programmes included in this report, we will be seeking to obtain capital spend authority for schemes such as the Bakerloo Line Extension and Crossrail 2.

Each sub-programme or project also has an overall RAG milestone status, which represents the average forecast date variance against plan for 2019/20 strategic milestones:

On time or early:



1-89 days late:



90 or more days late:



N/A (without 2019/20 strategic milestones):





Cycleway route by Rodney Road in Southwark

Strategic milestones for 2019/20 – the key milestones listed in the TfL Budget – are detailed in the Appendix (page 86).

Our investment programme is delivered by the following areas of the business: Major Projects, London Underground, Surface and Other and the report structure reflects this.

- Major Projects is responsible for our largest and most complex projects. It comprises line upgrades, the Piccadilly line upgrade, network extensions, and major stations, which are covered in pages 18-35 of this report. Future Projects (see page 37) will be reported in detail following financial authority approval
- London Underground comprises stations, accessibility, track renewals, power, cooling and energy, rolling stock renewals, and signalling and control, which are covered in pages 38-49
- Surface Transport comprises Healthy Streets, air quality and environment, public transport, and asset investment. These are covered in pages 50-73
- Other comprises technology and data, TfL Growth Fund, and the Elizabeth line (including Crossrail), which are covered in pages 74-85

### **Tragic incident at Waterloo**

On the morning of Wednesday 18 September 2019 Christian Tuvi, a contractor, tragically died at London Waterloo Underground station. An immediate and urgent investigation is being carried out by the Office of Rail and Road into the circumstances of this terrible incident. It is absolutely critical that we understand how this happened and how we ensure that it never happens again.

# Mayor's Transport Strategy

The Mayor's Transport Strategy sets out a bold vision for a growing, welcoming London, where 80 per cent of journeys will be made by walking, cycling or public transport by 2041.

We are increasing services as needed on existing lines and routes and are in the final phase of completing the Elizabeth line. We are also making

streets healthy, pleasant and productive places to stop at, travel through and live. Listening to, and acting on, the suggestions of our users and customers will allow us to make walking, cycling and public transport the first choice for the vast majority of trips, and everyday operational excellence will unlock the new jobs and homes that our city needs.

**This report looks at our investment programme in respect of the following themes from the Mayor's Transport Strategy:**

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**Healthy Streets and healthy people**



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**A good public transport experience**



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**New homes and jobs**





BYD electric double decker bus in service on Oxford Street

# Business at a glance

Keeping London moving, working and growing to make life in our city better

## How we report on our business



## Facts and figures\*

**945** Trains on the TfL network



**580km**

TfL-operated highways



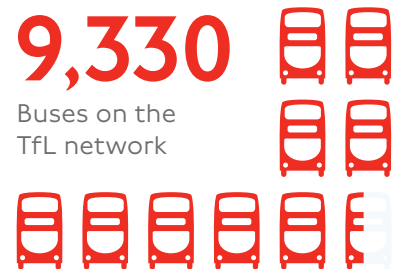
**720km**

TfL-operated Rail and London Underground routes



**9,330**

Buses on the TfL network

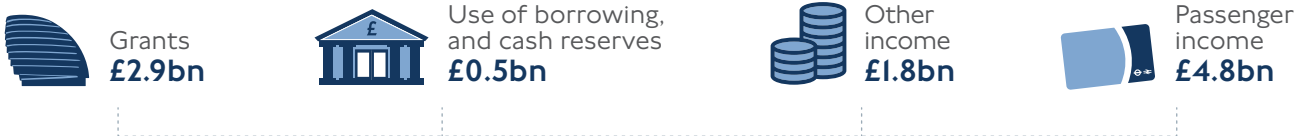


**6,365**

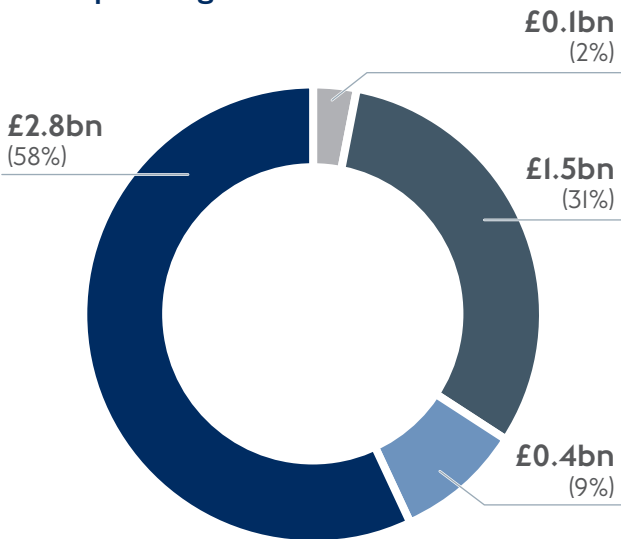
Traffic signals operated by TfL



## Finances at a glance\*



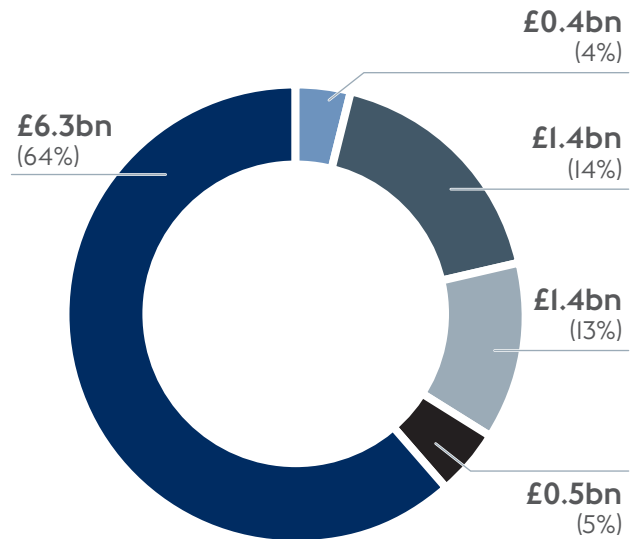
### Total passenger income



Total: **£4.8bn**

- London Underground
- Rail
- Buses
- TfL Rail

### Total costs



Total: **£10bn**

- Operating cost
- New capital investment
- Capital renewals
- Crossrail
- Net financing

\* Based on full year 2018/19

# Key achievements

## Line upgrades

On the Four Lines Modernisation programme, all the S-stock fleet – comprising 59 S8 (eight-car) trains for the Metropolitan line and 133 S7 (seven-car) trains for the Circle, District and Hammersmith & City lines – have now been fitted with automatic train control equipment to support communications-based train control (CBTC). This work has been completed ahead of, and in readiness for, commissioning the ATC system in the remaining signalling areas of the sub-surface railway network.

Separately, on Capacity Optimisation (RSE), we have completed speed improvement and track works to the Northern line and continue power enhancement works with Balfour Beatty.

## Network extensions

In June, track was installed which has allowed engineering trains to travel end to end through the 3.2km Northern Line Extension (NLE) to Battersea for the first time.

The NLE project won gold for the Battersea and Kennington sites and silver for Nine Elms at the Considerate Constructors Scheme National Site Awards. NLE was also awarded the Royal Society for the Prevention of Accidents GOLD for the third consecutive year.

## Station enhancements

The concept design for Colindale station is now complete and the next phase will be to procure detailed design. Full planning consent for the new entrance, along with outline consent for the adjacent residential developments, was granted in July 2019. The project will bring significant improvements, including a spacious new entrance, a new lift providing step-free access to the platforms as well as new homes around the station.

We have now completed the new South Bank station entrance at Waterloo with three new escalators (including one to replace the previous fixed staircase) and associated back of house systems and other facilities now all in service. The entrance was formally opened in May 2019.

## Track renewals

We have replaced more than 1.6km of ballasted track, which included renewal on the District, Bakerloo and Central lines. We have also replaced more than 600 metres of drainage in this quarter.

## Rolling stock

On the Jubilee line, 52 out of 63 trains have been refurbished and are back in service. The refurbishments include a wheelchair area, new flooring, refreshed interiors (including grab-poles and handles), as well as new sealing to the roof and windows. We have now started to apply the new priority seating moquette.



Gospel Oak to Barking line



Ardleigh Green Bridge

### **Highbury Corner**

The footway paving and kerbing were completed at the beginning of June following the traffic switchover to two-way operation which took place over the Easter weekend. The main highway and urban realm work is now complete; the road network is reconfigured and the gyratory at Highbury Corner removed. The Mayor Sadiq Khan visited the site on 2 October.

### **Walking and cycling**

In May 2019, the length of protected cycle infrastructure surpassed the 2016 baseline of 53km, with 112km complete or under construction. This includes pedestrian and cycle improvements between Acton and Wood Lane along the A40 (which started construction on 18 March). Recently completed schemes include new pedestrian and cycle crossings at Edgware Road and a route connecting Kensington High Street and Notting Hill. We have also introduced new pedestrian and cycle crossings across Euston Road at Judd Street and new segregated cycle lanes on Midland Road as part of Cycleway 6. This means we now have a cycle route all the way between Elephant and Castle and Kentish Town.

### **Borough Local Implementation Plan projects**

Construction of schemes at Baker Street, Beddington, Feltham, Hayes town centre, Stratford gyratory and Tottenham Court Road (West End project) are currently complete or under construction.

### **Fleet compliance**

Post quarter achievement, we introduced 10 Low Emission Bus Zones, with significantly lower NOx emissions in August.

### **Asset investment**

At Ardleigh Green Bridge all construction works to replace the bridge are now complete.

### **Public transport**

After the end of the quarter, in August, works at White Hart Lane station were completed. There are new station entrances and a more accessible station which included step-free access from the street to the platform for the first time. The design of the new station has been carefully planned to provide quicker and easier access for commuters.

The Gospel Oak to Barking line is now exclusively operated by new four-car electric air-conditioned trains, doubling capacity, restoring a 15 minute frequency and bringing greater reliability to the service. To celebrate this milestone, and to thank customers for their patience during the delay bringing the new trains into service, we offered customers a month of free travel on the line in September. This was in place from Saturday 31 August to Tuesday 1 October inclusive.

On London Trams, following the switch to cashless trams in July 2018, the existing ticket machines, which date back to the opening of the system, have now been removed from all but three tram stops, the remainder will be removed during November 2019.

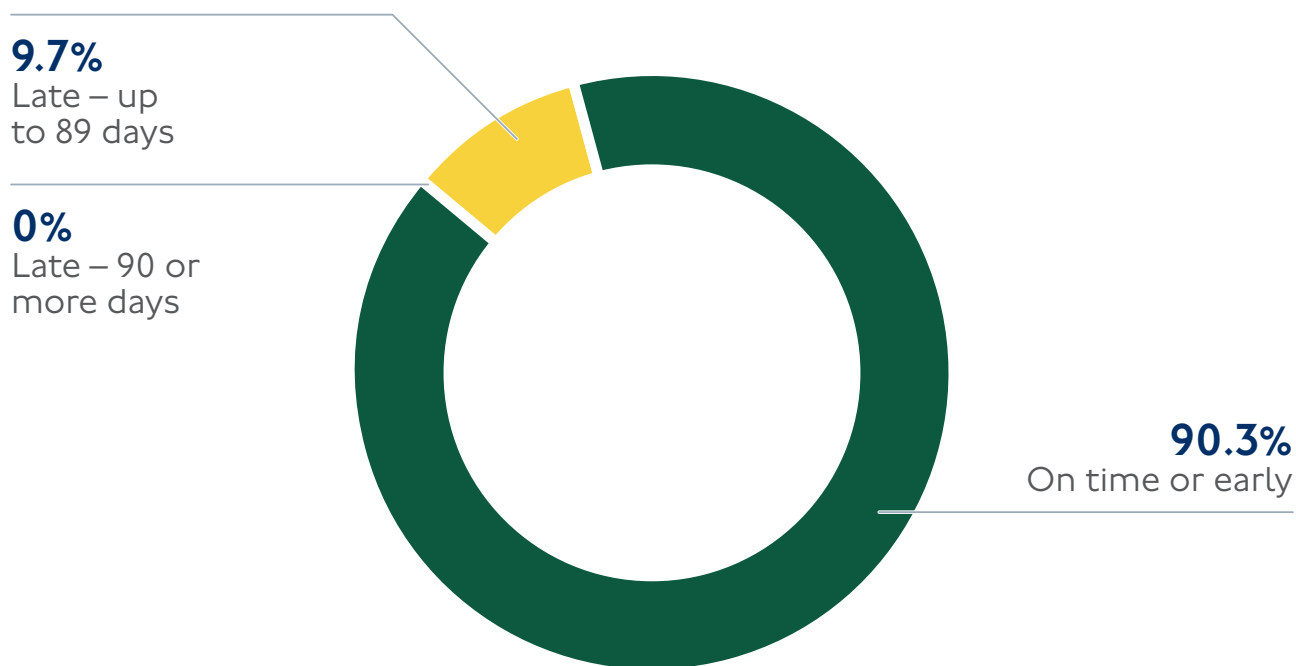
Tram track renewals between Addiscombe Road and Blackhorse Lane have successfully been delivered.

#### **Other**

The 4G Pilot project on London Underground is now established and we have signed a contract with Capita and their partners, Nokia and Installation Technology, for the delivery and service management of the solution. The scope of the 4G Pilot will cover station areas, platforms and tunnels of the Jubilee line between Westminster and Canning Town.

# 2019/20 Strategic milestone performance summary

The overall performance for all TfL 2019/20 strategic milestones is summarised as follows:



The late milestones are shown in the Appendix, on page 82.

# Major projects

Line upgrades 

## Four Lines Modernisation

Forecast completion year

**2023**

Spend to date (£m)

**4,728**

Spend authority (£m)

**5,412**

EFC (£m)

**5,301**

EFC movement post plan (£m)

**(34)**

2019/20 strategic milestone RAG On Track

**We have already introduced 192 new S-stock trains on the Circle, District, Hammersmith & City and Metropolitan lines.**

The first section of the new signalling system was successfully introduced earlier this year, and is now operating between Hammersmith and Euston Square and up to Finchley Road on the Metropolitan line. We have continued to improve the reliability of the system in this area and these improvements made will be rolled out as the remaining signalling areas are commissioned.

All the S-stock fleet – comprising 59 S8 (eight-car) trains for the Metropolitan line and 133 S7 (seven-car) trains for the Circle, District, Hammersmith and City lines – have now been fitted with automatic train control equipment to support communications-based train control (CBTC). This work has been completed ahead of, and in readiness for, commissioning the ATC system in the remaining signalling areas of the sub-surface railway network.

Commissioning of the final signalling area between Rayners Lane and Uxbridge remains on schedule to support the final service frequency increases in 2023.

In Quarter 4, a review of the programme schedule and EFC was undertaken, focusing on assurances over key forecast assumptions and risk exposure, supported by an extensive senior management review. The outcome of this review led to an EFC increase of £34m over the 2018 Business Plan. Work continues on analysing the expected EFC, to deliver programme benefits ahead of schedule.

The EFC remains at £5,301m this quarter, £111m under authority. The £111m reduction to date has been achieved by a previous schedule aimed at delivering the benefits ahead of the authority milestone dates, value engineering solutions, innovation, and providing the optimum scope to bring about the planned benefits.

Due to the complexities of this programme delivery and ongoing access requirements, there is a continuous analysis of the outturn costs which are expected to impact the EFC. The impact on the EFC is expected to remain within authority. The EFC is currently undergoing extensive senior management review.





S-Stock under ATO operation as part of Four Lines Modernisation at Goldhawk Road

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## Assurance

The Project Assurance Team completed a project assurance review on the Four Lines Modernisation programme submission to the Programmes and Investment Committee meeting in October 2018. A quarterly update was provided to the Committee on 17 July 2019 on the 15 recommendations that were made and accepted, including 11 by the Independent Investment Programme Advisory Group (IIPAG). Six recommendations are closed and good progress is being made to close the remaining nine. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.



## Capacity Optimisation - Railway System Enhancements (formerly World Class Capacity)

Forecast completion year

**2024**

Spend to date (£m)

**114**

Spend authority (£m)

**245**

EFC (£m)

**205**

EFC movement post plan (£m)

**2**

2019/20 strategic milestone RAG

**This programme includes upgrades to signalling, power, trains and track to maximise capacity on the Jubilee and Northern lines with the existing train fleets. While many of the works are stand-alone, a significant proportion is essential to other programmes, including further upgrades to the Jubilee line and the opening of the Northern Line Extension, as well as the reconfiguration of the Northern line at Bank.**

To enable the new capacity works, we have completed speed improvement and track works to the Northern line and continue power enhancement works with Balfour Beatty.

Enhancements to the Jubilee line continue, and include improving the speed at which trains exit the depot onto the mainline at Neasden.

### Assurance

The Project Assurance Team completed a project assurance review on the Railway System Enhancements programme submission to the Programmes and Investment Committee meeting in July 2018. A quarterly update was provided to the Committee on 17 July 2019 on the six recommendations that were made and accepted, including three by IIPAG. All recommendations are now closed.

EFC has reduced by £2m through efficiencies as a result of a change in the delivery approach for the wheel lathe at Morden depot.



## Capacity optimisation - DLR Rolling Stock and System Integration

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
<b>2025</b>	<b>17</b>	<b>603</b>	<b>603</b>	<b>*</b>

2019/20 strategic milestone RAG

### New DLR trains and infrastructure are vital to support the ongoing regeneration of east London, including housing growth and business opportunities.

The programme will replace the 60 per cent of the existing DLR fleet that is nearing the end of its design life and provide additional trains, which will increase capacity to meet the projected housing and employment growth in the Docklands area. The depot at Beckton will be extended, with further sidings for the new trains, a new maintenance facility and an extended automatic train operation test track. The Thales automatic train operation signalling system also needs updating and the traction power system needs to be strengthened.

Following an extensive period of review and negotiation, a contract for the supply of the next generation of DLR trains was awarded to Construcciones y Auxiliar de Ferrocarriles (CAF) of Spain in June 2019.

Beckton depot concept design has been accepted and a detailed design contract let for the enabling works and sidings design. The main works are due to commence in October 2019.

Key stakeholder activity includes close working with KeolisAmey Docklands, which operates the DLR, and plays a fundamental role in bringing the new trains and facilities into service.

#### Assurance

The Project Assurance Team completed a project assurance review on the DLR Rolling Stock Replacement programme submission to the Programmes and Investment Committee meeting in December 2018. A quarterly update was provided to the Committee on 17 July 2019 on the five recommendations that were made and accepted, including three by IIPAG. One recommendation is closed and good progress is being made to close the remaining four. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

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



## Piccadilly line upgrade – rolling stock and enabling (formerly Deep Tube Upgrade Programme)

Forecast completion year

**2030/31**

Spend to date (£m)

**122**

Spend authority (£m)

**3,294**

EFC (£m)

**3,111**

EFC movement post plan (£m)

**(2)**

2019/20 strategic milestone RAG On Track

The EFC and spend authority relates to works and enabling associated with the introduction of the Piccadilly line rolling stock.

**The Piccadilly Line Upgrade programme is designed to deliver a fleet of newly designed, high-capacity, walk-through, air-cooled trains to replace some of the oldest on our network along with a proposed new signalling system. The initial focus is on the introduction of new trains.**

We are on track to complete the associated milestone for train concept design ahead of the January 2020 target. This concept stage is carried out to ensure that requirements have been understood. The successful completion of the concept design allows later design stages to be finalised before beginning the manufacture and testing stages.

The trains are being designed to current British and European standards for EMC levels that some of our legacy signalling assets do not comply with.

Tender evaluation training and briefings were held and preparations are being finalised in anticipation of bids being returned for the new CCTV system for the Piccadilly line. The system will allow train operators to ensure safe departure of the new train from the platform. We aim to award the CCTV contract in Quarter 3 of 2019/20.



Computer generated image of the new Piccadilly line rolling stock

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## Assurance

The Project Assurance Team completed a project assurance review on the Piccadilly Line Upgrade programme submission to the Programmes and Investment Committee meeting in May 2018. A quarterly update was provided to the Committee on 17 July 2019 on the 10 recommendations that were made and accepted, including five by IIPAG. All recommendations are now closed. The Project Assurance team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Network extensions



## Northern Line Extension

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
<b>2021**</b>	<b>790</b>	*	*	*

2019/20 strategic milestone RAG

**The Northern Line Extension (NLE) is a twin-tunnelled extension from Kennington to a new terminus at Battersea Power Station, via a new station at Nine Elms. This supports the regeneration of the Vauxhall Nine Elms Battersea Opportunity Area.**

All running rail has been installed which has allowed engineering trains to travel end to end through the 3.2km Northern Line Extension to Battersea for the first time on 14 June. Using engineering trains, we have delivered and installed circa 6km of 22kv high voltage cable in the tunnels.

Going forward, the main focus is the fit-out of the new stations, installing the power supply, and extending the signalling used on the existing line to the extension.

At Battersea station, we handed back land, adjacent to the northern worksite boundary, to the Battersea Power Station

Development Company on 3 June 2019. Blockwork is nearing completion and we have commenced applying the finishes. The last architectural soffit panel has been installed, completing the ticket hall ceiling. The diamond track crossover, which enables trains to select between the northbound and southbound platforms and tunnels, has been installed.

At Nine Elms station, we have installed the pre-cast lift shaft walls in the western superstructure and poured the final concrete slab for the roof of the station. Blockwork is nearing completion and we have commenced applying the finishes.

\* This information is withheld for reasons of commercial sensitivity

\*\* Following a review of the remaining works on the Northern Line Extension, the opening date is now scheduled for autumn 2021 with a target of September. The opening of the extension continues to align with the wider regeneration of the Vauxhall Nine Elms Battersea Opportunity area and will ensure we will be operating Northern line services on the extension when demand for the line is there.





Platform and track at Battersea Station in June 2019

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The installation of a modular cable management system in the basement service corridors continues. The station public address and voice alarm system have passed factory acceptance testing. The system will provide an essential method for communicating critical information to both staff and customers at the new stations.

The construction of the external structures for head houses at Kennington Park and Kennington Green is complete. Work will now commence on making the structures watertight, construction of the internal walls and fitting the architectural cladding.

We won gold for the Battersea and Kennington sites and silver for Nine Elms at the Considerate Constructors Scheme National Site Awards. NLE was also awarded the Royal Society for the Prevention of Accidents Gold for the third consecutive year.

### Assurance

The Project Assurance Team completed a project assurance review on the Northern Line Extension programme submission to the Programmes and Investment Committee meeting in December 2018. A quarterly update was provided to the Committee on 17 July 2019 on the 10 recommendations that were made and accepted, including six by IIPAG. Four recommendations are closed and good progress is being made to close the remaining six. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.



## Silvertown Tunnel

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
<b>2025</b>	<b>55</b>	*	*	*

2019/20 strategic milestone RAG\*\*

**The Silvertown Tunnel will tackle traffic congestion at the Blackwall Tunnel and the consequential effects this has on travel, the environment, the economy and growth across the wider east and southeast London area.**

The tunnel will connect Silvertown and the Greenwich Peninsula, which are areas being developed by third parties with numerous tenants and landowners. The new twin-bore tunnel, within the extended Ultra Low Emission Zone (ULEZ), will effectively eliminate congestion and the problem of 'standstill' traffic to deliver an overall improvement in air quality and provide several new cross-river bus routes in east London which are expected to be zero-emission from launch.

Following an extensive tender process, in May 2019 the Riverlinx consortium was nominated as the preferred bidder to complete detailed design and to build the Silvertown Tunnel. Since then we have received a legal challenge to this decision by the reserve bidder which automatically suspends our right to award the contract to Riverlinx. We have now received the particulars of the claim and have submitted our defence. We

are also in the process of submitting an application to lift this automatic suspension so we can award the contract and begin construction on this vitally important project as soon as possible.

The project will be procured through a Design, Build, Finance and Maintain contract. Throughout the summer, Riverlinx has worked to confirm financial arrangements with lenders in respect of the project and to set up the supply chain.

Pre-build activities to facilitate a smooth start to construction, once the contract is awarded, have continued. This includes the design for enabling works packages following completion of concept designs for the replacement North Greenwich car parks last year. We continued monitoring existing structures in the area before the main tunnelling works commenced, and began noise monitoring ahead of the start of construction.

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

\*\* Due to the legal challenge, the forecast date for the contract award is now 14 November.

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We are working with utilities companies to agree how to progress early investigation and service diversions. We have been establishing third-party agreements with these companies and are negotiating land access. We have also been developing our consent obligations and finalised the agreement with the Royal Borough of Greenwich to ensure benefits of the tunnel are maximised and the area around the tunnel is enhanced.

#### **Assurance**

The Project Assurance Team completed a project assurance review on the Silvertown Tunnel programme submission to the Programmes and Investment Committee meeting in May 2019. A quarterly update was provided to the Committee on 17 July 2019 on the seven recommendations that were made and accepted, including two by IIPAG. Four recommendations are closed and good progress is being made to close the remaining three. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.



## Barking Riverside extension

Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
<b>2022</b>	<b>54</b>	<b>287</b>	<b>286</b>	<b>*</b>

2019/20 strategic milestone RAG

**We are delivering a new rail link to serve the 10,800 new homes that are planned for the Barking Riverside development area. We will build a spur from the Tilbury Loop line east of Barking, to extend our service to Barking Riverside. Train services are planned to start in 2021.**

Early overhead line equipment works were procured separately and completed over Christmas 2018, to enable subsequent possessions of Network Rail infrastructure by the main works contractor.

Planning permissions have now been granted for the Barking Riverside station and viaduct structure. Monitoring equipment has been installed ahead of piling in close proximity to the High Speed 1 tunnels planned for later this year. Preparations for the crucial Network Rail infrastructure blockade were completed on 4 August, where essential groundworks were undertaken.

Piling at the station is progressing well with 70 per cent completed. We have installed 600m of plain line and the first switch and crossing. We continue to work with stakeholders to secure the required network change approval from Network Rail. Unplanned utility services have been located where the piles for a pier

need to be installed. Investigations are being carried out to explore the feasibility of redesigning the pier structure to avoid diverting the services. The utility companies have advised service diversions could take in excess of one year which puts these activities on the critical path and pressure on the revenue into service date.

### Assurance

The Project Assurance Team completed a project assurance review on the Barking Riverside Extension programme submission to the Programmes and Investment Committee meeting in December 2018. A quarterly update was provided to the Committee on 17 July 2019 on the seven recommendations that were made and accepted, none by IIPAG. Four recommendations are closed and good progress is being made to close the remaining three. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

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

# Major stations

## Victoria station upgrade and finishes

Forecast completion year

**2019**

Spend to date (£m)

**578**

Spend authority (£m)

**604**

EFC (£m)

**584**

EFC movement post plan (£m)

**(3)**

2019/20 strategic milestone RAG

**We have built a new north ticket hall and 300 metres of subways, and have increased the size of the south ticket hall by 50 per cent. Step-free access to all platforms is now in place. The station is used by 83 million people a year.**

The EFC has increased by £3m since the 2018 Business Plan to reflect the prolongation of the programme to complete works and final account settlements. The EFC remains £20m below authority.

The new station has opened in stages with all passenger-facing facilities now in use. The Duke of York pub, which was closed so jet grouting works for the tunnels could be carried out, has now been returned to the possession of the freeholder. The site cabins have been removed and the area of Terminus Place, the taxi rank and the Network Rail site areas have now been reinstated.

The overall completion of the station and the surrounding buildings is largely complete with minor works outstanding on the District and Circle line platforms and 175-179 Victoria Street.



## Bank station upgrade

Forecast completion year

**2022**

Spend to date (£m)

**439**

Spend authority (£m)

**656**

EFC (£m)

**664**

EFC movement post plan (£m)

**(8)**

2019/20 strategic milestone RAG On Track

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

The modernisation of Bank station reached a landmark with over half of the construction work now complete. The new tunnel has been excavated, with waterproofing and concrete lining now underway. The escalator barrel from the new entrance on Cannon Street to the Northern line platforms is complete and another that will form a new escalator to the Central line is nearing completion.

A major milestone was reached in late summer, with the roof on the new station entrance completed, located on Cannon Street. Work will now continue to fit out the entrance, with the next stage focused on creating the dividing walls and operational rooms within the new station entrance, which is spread across 11 floors.

The new station on Cannon Street is beginning to take shape. The structure for the new station was completed this summer, allowing interior wall construction and station fit out to start in the autumn. The cross passages to the new Northern line tunnel are underway. The new tunnel will be connected to the existing Northern line in 2021.

The EFC has increased by £8m in the last quarter as a result of a changed risk profile and additional scope items required to deliver the upgrade safely. Risk mitigation reviews are continuing to be held each period to identify opportunities to reduce the current EFC. We continue to work collaboratively with the main contractor to identify and realise potential savings with a view to reduce the EFC back to the Business Plan level or below.



Bakerloo Line Link at Paddington station





## Bakerloo line link

Forecast completion year

**2019**

Spend to date (£m)

**74**

Spend authority (£m)

**76**

EFC (£m)

**75**

EFC movement post plan (£m)

**(6)**

2019/20 strategic milestone RAG

### **A new step-free pedestrian walkway at Paddington has been constructed to link the Bakerloo line platforms with the new Elizabeth line station.**

The new pedestrian walkway will provide step-free access from the Bakerloo line to the new Paddington Elizabeth line station. Two new escalators and a new lift have been installed. On 30 November 2018, the project completed the testing and commissioning works, which enabled the Bakerloo line link tunnel to be ready for trial running and integration with the Elizabeth line.

The final integration testing identified a small number of issues that needed to be addressed. These were completed in July 2019.

The EFC remains static in the quarter and reflects the final account settlement with the main contractor.

The EFC has increased by £6m since the 2018 Business Plan as a result of reaching a settlement agreement as part of the final accounts. This cost was provided for within the 2018 Business Plan (but outside the programme).



Regents Park on the Bakerloo line

## Future projects



**We continue to develop major projects – currently at an early stage – that will deliver the new homes and jobs that London and the UK need.**

In addition to already committed schemes, a number of major projects are in planning phases and dependent on future funding certainty, including Crossrail 2 and the Bakerloo Line Extension.

The Crossrail 2 team have been finalising the Strategic Outline Business Case (SOBC) which comprises five cases: strategic, economic, financial, management and commercial. They reflect lessons learnt from Crossrail 1. This was submitted to Government in June and details the development of Crossrail 2 to date and the options explored to deliver the greatest benefits and the most affordable scheme. It charts the connectivity benefits and economic impact for the rest of the country. The SOBC will now be reviewed by a number of different expert groups over the coming months including the Independent Assurance Panel, our Programmes and Investment Committee, the DfT's Business Investment Commercial Committee, the Infrastructure and Projects Authority's Project Assessment Review and, finally, HM Treasury's Major Projects Review Group.

We continue to develop our plans to deliver an extension and upgrade to the Bakerloo line to support development and regeneration in southeast London, including supporting at least 20,000 new homes in the Old Kent Road Opportunity Area, while also ensuring that our existing network is upgraded and modernised. We are working closely with Network Rail, GLA and the London Boroughs of Southwark and Lewisham, with a consultation in preparation to launch this Autumn. The consultation will seek views on new features of the extension proposals, including the proposed route of the tunnels and how we plan to construct those. We will also provide new proposals for a combined new Bakerloo and Northern line station entrance in Elephant and Castle. We have completed an assurance review which provided independent assurance of the project and are addressing the feedback received.

# London Underground

Stations 

Forecast completion year

**2023/24**

Spend to date (£m)

**2,042**

Spend authority (£m)

**3,218**

EFC (£m)

**2,607**

EFC movement post plan (£m)

**0**

2019/20 strategic milestone RAG

**The targeted renewal of existing assets will improve safety, reliability and ambience, and maintain resilience. Station enhancements will reduce congestion and improve customer journey times.**

## Integrated stations programme

We have completed works on eight stations, (Barbican, Charing Cross, Ealing Broadway, Holland Park, Paddington, Sloane Square, Vauxhall and Whitechapel), including three that will interchange with the Elizabeth line.

## Station enhancements

At Finsbury Park, work on the new western station entrance continues and we plan to open it in late 2019.

We have completed the concept design for the South Kensington station capacity upgrade project and we are working on the next stage in anticipation of commencing detailed design in 2020.

We will provide step-free access at Knightsbridge and build two new entrances on Brompton Road and Hooper's Court in partnership with a developer, who will enable and part-fund the works. The civil engineering works on the lift shaft to the platform were completed in June.

We continue the redevelopment and upgrade of Tottenham Hale station. The new station structure is in construction.

The EFC, which covers all projects including those completed within the stations programme, has increased from £2,553m at Quarter 4 as a result of increased costs on developer-led projects including Crossrail and Stratford.



Sloane Square Underground station

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Concept design for Colindale station is now complete and the next phase will be to procure detailed design. Full planning consent for the new entrance, along with outline consent for the adjacent residential developments, was granted in July 2019. The project will bring significant improvements, including a spacious new entrance, a new lift providing step-free access to the platforms and new homes around the station.

#### **Developer funded works**

We are working with Berkeley Homes to create a new western entrance to West Ham station, which will provide a direct route into the Jubilee line areas of the station from the development site. The developer's consultants have drafted the concept design specification documents and we are working with the developer to finalise agreements.

We have now completed the new South Bank station entrance at Waterloo with three new escalators (including one to replace the previous fixed staircase) and associated back of house systems and accommodation facilities now all in service. The entrance was formally opened in May 2019.

We are creating 11 retail units in the railway arches beneath Wood Lane station, where we continue to progress installation of core services.

#### **Collaborative enhancements and third-party projects**

In July, the London Borough of Southwark recommended that planning permission be granted for a new town centre at Elephant and Castle, subject to agreement and approval by the Greater London Authority and the Secretary of State. We continue to await final approval on the Section 106 agreement with the developer and the London Borough of Southwark. As part of the development, a new station box with connecting tunnels to the existing platforms will be built to increase capacity at the station and provide step-free access to the Northern line.

At Paddington, we are working with Great Western Developments to enable them to construct a new entrance to the Bakerloo line, with a much-enlarged ticket hall and step-free access to the platforms, as part of their redevelopment of adjacent buildings. We continue to collaborate with Great Western Developments and their consultants to confirm the scope, agree commercial terms and finalise a Works Agreement before starting the concept design phase.

At Stratford, we continue to work with stakeholders to consider access and capacity improvements. This includes working with the London Legacy

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Development Corporation on reviving proposals for a new entrance and ticket hall to serve the Carpenters Road area, and on improvements to step-free access and capacity in the adjacent western subway.

### **Assurance**

The Project Assurance Team completed a project assurance review on the Stations programme submission to the Programmes and Investment Committee meeting in July 2018. A quarterly update was provided to the Committee on 17 July 2019 on the eight recommendations that were made and accepted, including three by IIPAG. All recommendations are now closed.

# Accessibility



Forecast completion year

**2023/24**

Spend to date (£m)

**42**

Spend authority (£m)

**244**

EFC (£m)

**151**

EFC movement post plan (£m)

**25**

2019/20 strategic milestone RAG



The EFC has decreased from £165m at Quarter I as there is reduced funding available in the 2018 Business Plan.

**We are working on a wide programme of accessibility improvements, customer service and information enhancements across the Underground network. We will make over a third of stations accessible by 2020 by providing step-free access at a further 15 stations.**

Fifteen stations will become step-free by spring 2020 as part of the Mayor's funding for step-free access. Having upgraded Newbury Park and Buckhurst Hill stations to provide step-free access in 2018, we delivered step-free access at South Woodford in March. We converted the existing steps to the westbound platform to create ramped access, modified the station layout to meet the new fire strategy and added an additional fire escape. We also upgraded the lighting system, installed improved signage and repaired the station building.

Design and build contracts are in place for a further 12 stations (Amersham, Burnt Oak, Cockfosters, Debden, Hanger Lane, Harrow-on-the-Hill, Ickenham, Mill Hill East, Northolt, Osterley, Sudbury Hill and Wimbledon Park). These include the construction of new lifts and overbridges, and other assets will be upgraded while we carry out these works. We have started work at a number of these stations which will continue for the rest of this year.

We have completed early stage designs for more step-free stations to be delivered in the mid-2020s.



# Track renewals

Forecast completion year

**Annual**

Spend to date (£m)

**29**

Spend authority (£m)

**122**

EFC (£m)

**132**

EFC movement post plan (£m)

**(9)**

2019/20 strategic milestone RAG 

**We are replacing our ballasted and deep Tube track, points and crossings, and track drainage infrastructure to improve reliability, reduce maintenance costs and increase capacity.**

We replaced more than 1.6km of ballasted track, which included renewal on the District, Bakerloo and Central lines. We also replaced more than 600 metres of drainage in this quarter. The Track Renewals programme is on target to achieve all key milestones.

On our deep Tube track network, we replaced more than 1.7km of an older track with modern flat bottom rails and renewed a further 0.9km of concreted deep Tube track.

## Assurance

The Project Assurance Team completed a project assurance review on the Track Renewals programme submission to the Programmes and Investment Committee meeting on 17 July 2019. Five recommendations were made and accepted. Good progress is being made to close the recommendations. The Project Assurance Team tracks progress against the recommendations made as part of its continuous assurance.

The EFC has increased by £9m since Quarter 4 to reflect the current delivery programme for 2019/20.

# Power, cooling and energy



Forecast completion year	Spend to date (£m)	Spend authority (£m)	EFC (£m)	EFC movement post plan (£m)
<b>2023/24*</b>	<b>46</b>	<b>90</b>	<b>93</b>	<b>0</b>

2019/20 strategic milestone RAG

**Our renewals programme aims to improve safety, reliability and legal compliance of our power assets, introduce cooling in key locations to improve the customer experience and increase the energy efficiency of our assets.**

## Power

We continue to support the delivery of a number of third-party and major projects by providing power works, such as relocating the substation at Euston for High Speed 2, installing cable routes for the Northern Line Extension and works for the Piccadilly Line Upgrade, and the Bank Station Capacity Upgrade.

We are delivering a new portfolio of power renewal works to improve asset condition through a prioritised work bank of projects. Installation work on the first of these safety related projects has been completed with several others planned, and designs for the next priorities having obtained approval for procurement. The previous work bank of power renewals, operative since 2015, has reached the handover and close-out stage.

We are in the advance stages of procurement for a project to extend the life and address immediate obsolescence risk by consolidating three power control systems to a single system.

We are in the advance stages of procurement for a project to extend the life of and address immediate obsolescence risk by consolidating three power control systems to a single system. The system, once completed, will remotely monitor and safely operate traction, station, signalling and depot power supplies.

## Cooling

In August we completed works at Bond Street station to provide improved airflow to the new Elizabeth line tunnel.

\* The figures represent power and energy projects until 2023/24 and authority is sought in stages for future unapproved works.

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## Energy

To install solar panels at the Acton workshop the roof would require remediation at a significant cost, so we have put this site on hold and are assessing the feasibility of installation at alternative sites, to meet the Mayor's solar energy commitment.

## Assurance

The Project Assurance Team completed a project assurance review on the Power, Cooling and Energy programme submission to the Programmes and Investment Committee meeting in July 2018. A quarterly update was provided to the Committee on 17 July 2019 on the 13 recommendations that were made and accepted, including eight by IIPAG. Ten recommendations are closed and good progress is being made to close the remaining three. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Rolling stock renewals

Forecast completion year

**2029**

Spend to date (£m)

**203**

Spend authority (£m)

**602\***

EFC (£m)

**983** ▼▼

EFC movement post plan (£m)

**(109)**

2019/20 strategic milestone RAG On Track

**We are modifying our passenger rolling stock to improve safety, accessibility, reliability and customer satisfaction, and reduce maintenance costs. We are also modifying or replacing some of our existing engineering vehicles that support track maintenance and infrastructure renewals.**

The Quarter 4 EFC reported figure of £1,092m has reduced by £109m to £983m in Quarter 1. £105m of this decrease represents projects closed in 2018/19 not active in the current financial year and the remaining £4m is spread over various projects in the year.

We are carrying out improvements to ensure continued reliability of the Bakerloo line fleet. We have completed structural weld repairs to carriages on all 36 trains. We are refitting the vinyl of the first eight trains to make them consistent with later trains, and this will complete in autumn 2019.

On the Jubilee line, 52 out of 63 trains have been refurbished and are back in service. The refurbishments include a wheelchair area, new flooring, refreshed interior (including grab-poles and handles), and new sealing to the roof and windows. We have now started to install the new priority seating moquette.

On the Central line improvement programme, two carriages are being prototyped at the supplier's site with a further two carriages shipped for preparation. The new Train Management System has started dynamic testing on a second prototype train on LU premises. We continue to work with our supply chain on the enabling of the installation facilities for the improvement programme on the full fleet.

\*The authority is lower than the EFC as authority is sought in stages.

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Manufacture of the seven pre-production wagons in China has begun; these wagons will undergo testing in China before being shipped to the UK. Dynamic testing of these wagons will start in the UK early next year. Once the pre-productions wagons have been fully tested and approved, manufacture of the remaining 64 wagons will commence.

Stage 2 of the design and build tender for the mechanised deep tube renewal vehicle has commenced. When delivered this will improve the way track is renewed in the deep Tube sections of the London Underground network.

The two Kirow cranes and eight tilting wagons being procured to facilitate mechanisation of points and crossing renewals are undergoing final testing in Germany before being transported to the UK via rail later this year.

To ensure the infrastructure is ready to receive the engineering vehicles, Ruislip depot is undergoing infrastructure upgrades to facilitate stabling and loading of these vehicles.

Following an evaluation exercise, we have selected the option for replacing our track recording vehicle, which records and monitors the alignment and condition of the track, supporting track maintenance and renewal activities.

The construction of a new facility to support the Train Modification Unit based at Acton has progressed on site. Foundations are complete, structural steels are nearing completion and concrete pour of the slab sections has begun.

The project to provide train operators enhanced control over unauthorised entry into their cab from the saloon is progressing well – a prototype has been installed on a train and the contract award is on schedule.

### Assurance

The Project Assurance Team completed a project assurance review on the Rolling Stock Renewals programme submission to the Programmes and Investment Committee meeting in March 2019. A quarterly update was provided to the Committee on 17 July 2019 on the 14 recommendations that were made and accepted, including 10 by IIPAG. Three recommendations are closed and good progress is being made to close the remaining 11. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Signalling and control

Forecast completion year

**2023/24**

Spend to date (£m)

**76**

Spend authority (£m)

**142**

EFC (£m)

**172**

EFC movement post plan (£m)

**0**

2019/20 strategic milestone RAG  

The EFC has reduced to £172m due to reduction in delivery costs as a result of changes to delivery strategy and cost challenge.

**We are extending the life of our track-based signalling and control assets until they are replaced by either the Four Lines Modernisation or the Piccadilly Line Upgrade programmes. This ensures they can continue to support a safe, reliable and maintainable service until then.**

Siemens is continuing the design for the life extension of the Central line signalling and control systems. This project will maintain the reliability, availability, maintainability and safety of the assets and resolve obsolescence concerns. Once the design of a number of items has been finalised, we will work with Siemens to deliver pilot sites and complete trials.

We have commissioned approximately two-thirds of the new Piccadilly line signalling control system at the control centre in west London. The migration of control between Acton Town and South Harrow was achieved in February 2019. The programme is progressing well and all remaining migrations are planned to complete by the end of 2019.

Works to enable the replacement of the signalling system at Northumberland Park depot on the Victoria line has commenced; this is required to interface with the new depot control system. A contract has been awarded for the design phase.

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## Assurance

The Project Assurance Team completed a project assurance review on the Signalling and Control programme submission to the Programmes and Investment Committee meeting in March 2019. A quarterly update was provided to the Committee on 17 July 2019 on the nine recommendations that were made and accepted, including four by IIPAG. Three recommendations are closed and good progress is being made to close the remaining six. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Surface

## Healthy Streets

Forecast completion year

**2021/22**

Spend to date (£m)

**467**

Spend authority (£m)

**873** ▼▼

EFC (£m)

**1,607** ▼▼

EFC movement post plan (£m)

**0**

2019/20 strategic milestone RAG  

**The Healthy Streets Approach prioritises health and wellbeing, with the overall objective of creating a transport system where everyone can travel safely by the healthiest and most resource-efficient means, specifically walking, cycling and public transport. It is central to achieving the 80 per cent mode share target in the Mayor’s Transport Strategy.**

### Highbury Corner

The footway paving and kerbing were completed at the beginning of June and the traffic switchover to two-way operation took place over the Easter weekend. The main highway and urban realm work is now complete; the road network is reconfigured and the gyratory at Highbury Corner removed. Planting of new trees and installation of new hostile vehicle measures within the urban realm area and outside Highbury and Islington station will follow in the autumn. The Mayor Sadiq Khan visited the site on 2 October.

### Wandsworth Gyratory

This project is to remove the current gyratory system in Wandsworth town centre and provide significant improvements for pedestrians and cyclists. The purchase of properties from landowners on Putney Bridge Road continues to progress. The last three properties, of the first tranche of planned purchases, are expected to complete by late October. We are working with the London Borough of Wandsworth to ensure

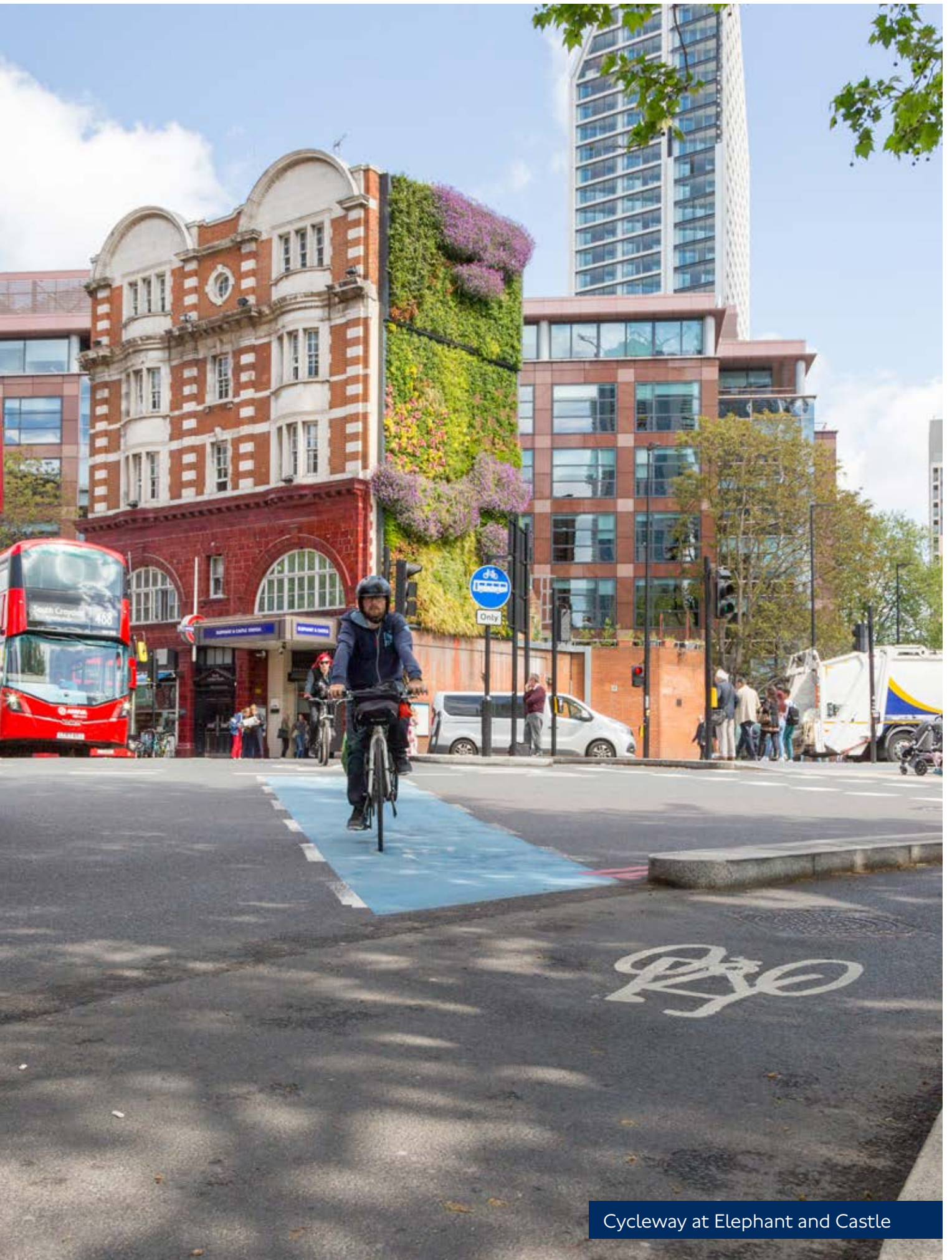
The EFC covers 2021/22 to provide a direct comparison to the programme as originally approved in 2017/18. The EFC has reduced since last quarter; it has been updated with the 2018/19 actuals and 2019/20 budget, and excludes projects transferred from the portfolio.

The 2018/19 actuals reflect Westminster’s decision to cancel Oxford Street pedestrianisation.

The Road Technology projects have transferred to the Surface Technology portfolio and highway schemes (s278) schemes have moved to Professional Services.

Spend authority is to the end of 2019/20 and has also been restated to remove the projects which have transferred.





Cycleway at Elephant and Castle

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the project is value for money; we are currently reviewing whether all land take on Armoury Way is essential. Any changes to land take or the highway design will be communicated to the public in late autumn 2019. We plan to start work on site in late 2021, subject to the compulsory purchase process.

#### **Fiveways**

The project aims to alleviate congestion and smooth traffic flows at Fiveways Corner in support of the Croydon growth zone with its new housing and jobs for the area. Design assurance is currently underway and a detailed design and build contract is being prepared. A planning application for the scheme will be submitted in due course, followed by commencement of compulsory purchase orders.

#### **Vauxhall Cross**

This project will remove the existing one-way gyratory and enhance the interchange by improving the bus station, traffic, urban realm, cycle and pedestrian provision. The Vauxhall Cross island site planning application was called in by the Secretary of State for Transport and a public inquiry has been set for December 2019. Design assurance for the gyratory removal and improved bus station is due to be completed by the end of September 2019. We are considering how best to progress the project while the planning matter is decided.

#### **Waterloo City Hub**

This scheme provides a significant upgrade for the safety and comfort of pedestrians, cyclists and public transport users, with a new pedestrian walking route to the river, improved crossings, segregated cycling facilities and improved bus waiting and boarding areas. The proposed transformational scheme continues to progress well. The concept design has now completed and we are working with our supply chain to commence the detailed design of the scheme and aim to start construction in spring 2020, subject to securing the necessary consents. We continue to work closely with the London Borough of Lambeth and developers in the area, to ensure delivery is coordinated with existing and future plans for Waterloo.

#### **Old Street Roundabout**

This transformational project will bring safety improvements to cyclists and pedestrians including new and improved crossings, fully segregated cycle lanes, a new public space with a main accessible entrance to Old Street Underground station and the shopping arcade. Advanced construction works to remove the traffic islands on all four arms of the roundabout are complete and the traffic switchover to two-way operation was successfully achieved over the late May bank holiday weekend. This temporary switch closes the southeast arm of the junction to traffic to enable construction

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of a new entrance to the Underground station near to Cowper Street. The existing subway canopy has been removed and construction to this station entrance will be complete in early 2020. Later this year, a further traffic switch will be required to reopen the southeast arm and permanently close the northwest arm, facilitating the construction of the public space and accessible main station entrance. Planning consent for the new main station entrance was granted by Islington Council in September 2019. Construction is on track to be completed by the end of 2020.

### Lambeth Bridge North and South

This scheme provides a significant upgrade for the safety and comfort of pedestrians and cyclists, by removing the current roundabouts on both sides of the river and replacing them with signal controlled crossroads. The proposal includes segregated approaches for cyclists with dedicated cycle phases at the junction and new signal-controlled pedestrian crossing facilities. In June 2019, the project scope was increased to: include replacement of the waterproofing and expansion joints on the bridge deck; determine the work required to the drainage system; and include permanent protective security measures on the bridge. Work is progressing on designing these additional items. We continue to work with Westminster City Council to identify

a design for the northern roundabout which responds to the concerns raised during the 2017 consultation.

### Cycleways

In May 2019, the length of protected cycle infrastructure surpassed the 2016 baseline of 53km, with 112km complete or under construction. This includes pedestrian and cycle improvements between Acton and Wood Lane along the A40, which started construction on 18 March with major carriageway works starting in early April. Other recently completed schemes include new pedestrian and cycle crossings at Edgware Road, which remove a key barrier on Quietway 2, and a route connecting Kensington High Street to Notting Hill. We have also introduced new pedestrian and cycle crossings across Euston Road at Judd Street and new segregated cycle lanes on Midland Road as part of Cycleway 6, providing a cycle route all the way between Elephant and Castle and Kentish Town. Construction work is also progressing well in the three Mini-Holland boroughs with 32 of the 103 Mini-Holland schemes now complete, including the A105 Green Lanes scheme, a five-kilometre protected cycle route linking Enfield Town to Palmers Green and installation of a new pedestrian and cycle bridge adjacent to Kingston Station. Construction is due to start on a number of major routes this year including Cycleway 4, which began on 5 July, and Cycleway 9 by the end of the year.



Junction at Euston Road and Judd Street in King's Cross

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Work continues on several major new routes, identified in the Strategic Cycling Analysis published in 2017. Public consultations for walking and cycling improvements opened in May for routes between Hackney and the Isle of Dogs and Wood Lane and Notting Hill Gate, and for the route between Ilford and Barking Riverside in June. We also plan to consult the public on a number of other routes over the next year including routes between Dalston and Lea Bridge, Greenwich and Woolwich and Camden and Tottenham Hale.

Construction started for Cycleway 4 on 5 July 2019, following the completion of the detailed design and a successful Integrated Assurance Review to request funding for delivery. Works have begun at three locations: on the A200 Jamaica Road, Rotherhithe Roundabout and Tooley Street, and are anticipated to complete by May 2020. We are also planning the construction phases for the Lewisham and Greenwich sections of the project.

#### **Cycleway between Acton and Wood Lane**

Construction is progressing well to deliver pedestrian and cycle improvements on the route along the A40, and works are due to be completed in spring 2020.

#### **Cycleway between Hackney and the Isle of Dogs**

The public consultation for the route between Hackney and the Isle of Dogs closed on 21 June and the consultation report was issued at the end of September. The Mayor of Tower Hamlets is due to make a decision to support the CFR5 Scheme in October. In light of residents' concerns raised in the report the Mayor may request changes to the scheme, which would affect delivery timescales.

#### **Rotherhithe to Canary Wharf Crossing**

Following the decision of the Programmes and Investment Committee on 21 June that the crossing should revert to feasibility, we have been examining options for a new ferry service, with work focused on route planning, fares, vessels, piers and connectivity to the local area. It is envisaged the feasibility work will continue through to November, and following an assurance review a report will be prepared for the Programmes and Investment Committee setting out the recommended way forward. The work on a new ferry to improve connectivity for pedestrians and cyclists between Rotherhithe and Canary Wharf is alongside the wider investment we are making in walking and cycling in the area, including delivery of Cycleway 4 and new cycle routes from Rotherhithe to Peckham and Hackney to the Isle of Dogs.

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### Safer Junctions

In April 2017, the Safer Junctions list highlighted 73 of the most dangerous junctions on our road network, defined as those with the highest vulnerable road user collision rates. We have now completed work at 29 of these junctions, with 12 more planned for completion by spring 2020. Public consultation on five Safer Junctions started in June, with engagement planned on a further four locations over the summer. The locations are Clapham Road/Union Road, Kennington Park Road/Braganza Street, East India Dock Road/Canton Street/Birchfield Street, Edgware Road/Harrow Road and Kingsland Road/Balls Pond Road.

### Lowering speed limits

In July 2018, the Vision Zero Action Plan was launched in conjunction with the Metropolitan Police Service, setting out our commitment to introduce a 20mph speed limit on the TLRN in central London by May 2020 (phase one) and lower the speed limit on a further 155km of Transport for London Road Network (TLRN) by May 2024 (phase two). Phase one concept design and consultation completed on 10 July. Our proposals include installing 20mph signs and road markings on all routes, installing raised pedestrian crossings in seven locations where clusters of collisions (that led to someone being killed or seriously injured) have occurred and where there are high volumes of people walking, and recalibrating all existing speed cameras in central London to enforce 20mph speed

limits instead of 30mph. Analysis of the consultation results is now complete and the consultation report was published on 6 September 2019 indicating we intend to proceed with implementation as planned, subject to statutory engagement and permitting. Phase two of the programme has also mobilised and started to integrate lower speed limits into existing projects, to accelerate delivery as far as possible. Proposals will include a mix of signs, lines and physical infrastructure.

### Direct Vision Standard

We are committed to reducing road danger for vulnerable road users. We have developed the world's first Direct Vision Standard (DVS) to measure the volume of space that a heavy goods vehicle (HGV) driver can see directly from each vehicle's cab. DVS will give regulators, manufacturers, operators and contractors an objective standard to rate and improve the safety of HGVs.

As the DVS and HGV Permit Scheme proposal for London amounts to a technical regulation, we were required to notify the European Commission to ensure it did not conflict with 'free movement' within the European Union. We were notified on 6 December 2018 that the European Commission had no objections to our proposals.

Following public consultation, statutory consultation started in April 2019 for the introduction of this standard which could be applied to prevent vehicles with the



Mayor Sadiq Khan tests a five-star safety rated truck at the Direct Vision Standard event at City Hall with Walking and Cycling Commissioner Will Norman

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lowest ratings from entering London from 2020. Public consultation closed in May 2019, and no objections were received to necessitate a public enquiry. London Councils confirmed the Traffic Order Regulation in August 2019. The registration system to enable HGV drivers to apply for DVS permits will go live by the end of 2019.

DVS contributes directly to the Mayor's Vision Zero objective to eliminate death and serious injury from London's roads.

### **Crossrail complementary measures**

We are working with the boroughs, Crossrail Ltd and Network Rail to develop and deliver a programme of improvements to 17 stations in outer London to create capacity for additional footfall and regenerate the areas. So far, Crossrail complementary measures works are complete at five stations (Abbey Wood, Chadwell Heath, Goodmayes, Manor Park and Romford). Site works at eight stations (Forest Gate, Gidea Park, Hanwell, Harold Wood, Ilford, Maryland, Seven Kings and West Drayton) are at various stages of construction. Four stations, (Acton Main Line, Ealing Broadway, Southall and West Ealing) are at design or consultation stage.

The original Crossrail Ltd programme has slipped and a new programme has been developed by Crossrail Ltd for station works. Complementary works at some stations are dependent on station works and some of the west London stations will be completed later than

December 2019, as a result. This does not affect stage 5a planned changes to train services between Reading and Paddington.

### **Liveable Neighbourhoods**

Liveable Neighbourhoods is a key part of the Mayor's Transport Strategy, which aims to create locally-led, attractive, healthy and safe neighbourhoods that encourage walking, cycling and public transport use and reduce car journeys. In 2018/19, feasibility funding was awarded for the first phase of the programme. Proposals for the first seven neighbourhoods include: the creation of a new public space in Crouch End and the introduction of new segregated cycle routes; removing the Greenwich town centre gyratory and reallocating more space to pedestrians and cyclists; and improving Romford town centre by making the busy ring road easier to cross on foot and by bike.

The second phase of funding was launched in February 2019. We received 22 bids from across London, 11 of which were awarded feasibility funding and started development work in April 2019. Projects awarded funding as part of phase two are: Bow (Tower Hamlets), Brixton (Lambeth), City Cluster (City of London), Croydon Old Town (Croydon), Custom House (Newham), Enfield Town Centre (Enfield), Holborn Gyratory (Camden), Ilford (Redbridge), Shortlands (Bromley), South Bermondsey (Southwark) and South Chiswick (Hounslow).



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Feasibility work led by each respective borough for phase two projects is currently underway.

### **Borough Local Implementation Plan projects**

Construction of schemes at Baker Street, Beddington, Feltham, Hayes town centre, Stratford gyratory and Tottenham Court Road (West End project) are currently complete or in construction, in line with the agreed programmes and budget allocations.

Construction has commenced at Hornsey Lane Bridge and the Blackhorse Road junction with Forest Road both on 10 June 2019. A safety-orientated scheme for Camberwell town centre on the TLRN is currently in detailed design with a planned start for October 2019. The scheme at Beam Parkway has been rescheduled for construction to overcome various modelling issues for buses.

A further 10 LIP3 submissions were approved by the Deputy Mayor in June, and LIP3 submissions for City of London, Redbridge, Newham and Southwark are progressing. As at the start of July, the Borough LIP3 submission for Merton was outstanding, due to issues with Cabinet Member sign-off but were expected to be resolved in August 2019, and Kingston's submission has been delayed by consultation over their Strategic Environmental Assessment (SEA).

### **Assurance**

The Project Assurance Team completed a project assurance review on the Healthy Streets programme submission to the Programmes and Investment Committee meeting on 17 July 2019. Thirteen recommendations were made and accepted, including seven by IIPAG. Good progress is being made to close the recommendations. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Air quality and environment



Forecast completion year

**2022/23**

Spend to date (£m)

**152**

Spend authority (£m)

**280**

EFC (£m)

**471▲**

EFC movement post plan (£m)

**38**

2019/20 strategic milestone RAG  

**The Air Quality and Environment programme reduces the impact of transport on air quality and climate change by targeting vehicles in our contracted and regulated fleets, and all vehicles driving in London**

## Ultra Low Emission Zone update

On 8 April 2019 we successfully introduced the new Ultra Low Emissions Zone (ULEZ) in central London. It enforces the world's toughest vehicle emission standard and is the first to operate 24/7. The ULEZ has replaced the T-Charge and operates in the same area of central London as the Congestion Charge. The initial running of the scheme has gone well, and we are now seeing 75 per cent compliance within the zone, which is ahead of expectations.

We are tightening the Low Emission Zone (LEZ) standards to Euro VI for HGVs, coaches and buses from October 2020. The aim is to encourage increased efficiency of road freight movements and to promote the consolidation of road freight. Non-compliant and non-exempt heavy vehicles will be charged £100.

In October 2021 the ULEZ will be expanded to the boundary formed by the North and South Circular Roads. This will expand the ULEZ to 18 times its current size. An update on the delivery strategy was presented to the Programmes and Investment Committee in May 2019 allowing the project to move into the design phase for the systems and infrastructure. A further update will be presented to the Programmes and Investment Committee by the end of 2019.

The EFC reflects the financial authority up to 2022/23. The £38m increase is materially driven by the enhanced taxi delicensing scheme announced by the Mayor in December 2018. This provides an additional £24m to support the trade and accelerate the drive to achieving the reduction in NOx emission of 45 per cent by 2020, by removing the most polluting taxis on London's streets. In addition, refined scope has been defined for projects, increasing the delivery costs for Low Emission Zone Strengthening (£12m) and Direct Vision Standard (£18m), which has transferred into the Air Quality portfolio from Technology.

This pressure has been offset by £11m relating to ULEZ Expansion as the delivery strategy is agreed and lower spend for Selective Catalytic Reduction (SCR) retrofit due to reduction in delivery units and release of risk.

Spend authority is to the end of 2022/23. The spend authority is less than the EFC as the programme is not currently fully authorised.



**Transport  
for London**

**Ultra low  
emission**

**ULEZ**

**ZONE**

**At all times**

Ultra Low Emission Zone sign in London

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## Fleet compliance

To help meet the Mayor's Air Quality objectives in 2021, we are working to ensure that 4,000 of our bus fleet vehicles (which is two-thirds of all our buses) are Euro VI compliant by 2020. We completed the retrofit of 2,500 buses by the end of January 2019 and all buses in Low Emission Bus Zones (LEBZs) will be retrofitted by the end of October 2019.

We have introduced 10 LEBZs, with the retrofitted vehicles now contributing significantly lower NOx emissions on these corridors.

The completed bus zones are:

- Putney High Street
- Brixton – Streatham
- A2 Camberwell – New Cross
- A3 Wandsworth – St. John's Hill
- High Road (Haringey)
- A12 Eastern Avenue (Homerton Road)
- A5 Edgware Road
- Lewisham – Catford
- Edmonton – Seven Sisters corridor
- Stratford corridor

After the end of the quarter close, we continued to upgrade buses along the final two LEBZs, namely Chiswick High Road to Kensington High Street and Uxbridge Road to Shepherds Bush, which were successfully launched by mid August 2019. Over 1,000 buses operating along these final two LEBZs will now meet Euro VI emissions or better.

## Ultra low emission vehicles - rapid charge infrastructure

To support the growing use of Zero Emission Capable taxis and electric vehicles, we are building a network of rapid charge points across London. By mid-July 2019, we had installed 190 rapid charge points, 73 of which are dedicated for taxis. We continue to prepare sites for installation, with the number of live sites planned to reach 225 by the end of 2019. We also continue to progress designs for two 'hub' sites, which have multiple rapid charge points. In addition, residential on-street charging is being installed in 23 boroughs via the Go Ultra Low City Scheme.

Recognising the need for a strategic approach to electric vehicle infrastructure, the Mayor launched the Electric Vehicle Infrastructure Taskforce in May 2018, to look at how much public infrastructure might be needed in London by 2025, and to mitigate any barriers to implementation. The accompanying delivery plan for electric vehicle infrastructure in London, to 2025, was launched in June 2019 and can be found at [tfl.gov.uk/ev-charging-plan](https://tfl.gov.uk/ev-charging-plan)

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### Mayor's Air Quality Fund

The Mayor's Air Quality Fund (MAQF) is a £22 million fund over 10 years to support projects by London boroughs to improve air quality.

Projects supported in the third round of the MAQF were announced by the Mayor on 7 June 2019. In this round he is supporting four Low Emission Neighbourhoods and 11 other innovative air quality projects.

### Go Ultra Low City Scheme

London's Go Ultra Low City Scheme bid was awarded £13m in capital funding to drive the uptake of ultra low emission vehicles in the period 2015/16 - 2019/20. 1,200 residential electric vehicle charge points have been installed by boroughs to date. The final round of funding, £4m, is now open for boroughs to bid for with a submission deadline of 31 October 2019.

### Taxi and private hire (TPH) re-let

We will procure systems and services to support TfL licensing taxi and private hire vehicles (PHV) and PHV operators. We will ensure that business continuity is maintained and provide an efficient service to taxi and private hire vehicle owners and drivers. As all newly licensed taxis will be zero emission capable, the new contract will significantly reduce emissions in London, contributing to the Mayor's Air Quality vision.

### Assurance

The Project Assurance Team completed a project assurance review on the Air Quality and Environment programme submission to the Programmes and Investment Committee meeting in December 2018. A quarterly update was provided to the Committee on 17 July 2019 on the eight recommendations that were made and accepted, including three by IIPAG. Four recommendations are closed and good progress is being made to close the remaining four. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Asset investment



Forecast completion year

**2021/22**

Spend to date (£m)

**245**

Spend authority (£m)

**303**

EFC (£m)

**599** ▲

EFC movement post plan (£m)

**14**

2019/20 strategic milestone RAG  

**We maintain our surface assets in a safe condition through prioritised and planned works to replace, refurbish or partially reconstruct them. This programme maintains and lengthens the useful life of a wide range of assets, including carriageway, footway, lighting, drainage, bridges and tunnels, traffic signals, bus stations and river assets.**

## Ardleigh Green Bridge replacement

All construction works to replace the bridge were completed at the beginning of June and the benefits were achieved. The remaining railway-side works to remove remnants of the old bridge are to be agreed with Network Rail and are likely to be completed around Christmas 2020 when a suitable railway possession is available.

## Bus driver facilities

Providing bus driver facilities aligns with the Mayor's Transport Strategy by ensuring the bus network is reliable and our bus drivers have the basic facilities required at work.

Good progress has been made since the Mayor announced increased funding for bus driver facilities in February 2018. A target was set to have a total of 42 priority routes with a permanent facility by the end of March 2020.

The EFC covers 2021/22 to provide a direct comparison to the programme as originally approved in 2017/18. The increase in EFC this quarter reflects transfers of projects from other portfolios.

This is the second year without any Government operating grant. Consequently, the EFC reflects a deliberate, conservative approach to spend with a two-year pause on proactive renewals. In 2019/20 circa £10-15m of schemes will be programmed and designed ready for delivery in Q3 and Q4. If the forecast at the end of Q2 indicates that funding will not be utilised on reactive works then approval will be sought to utilise any forecast underspend for planned works.

In the medium to long term, new sustainable funding sources for London's roads will need to be identified.

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The majority of these new facilities will be stand-alone permanent toilet units, adjacent to the bus stands where they are required. Where possible, we are adapting existing infrastructure to ensure integration with the local environment.

We have delivered a permanent or temporary facility on all of the 42 routes by the end of July 2019, exceeding the original target.

### **Hammersmith Bridge**

Recognising the impact the closure of this strategic route is having on local residents, we have been working with the London Borough of Hammersmith & Fulham to progress an appropriate solution. Tenders for the concept design of the bridge were received. Pell Frischmann has been awarded the contract for engineering services with contract sign off expected by the end of September. It is imperative we progress the design as quickly as possible, while in parallel trying to identify an appropriate funding source for building a replacement to this vital cross river link.

### **Rotherhithe Tunnel**

Rotherhithe Tunnel, opened in 1908, is a single-bore road tunnel carrying the A101 beneath the River Thames in East London. Rotherhithe Refurbishment Works include the following key items:  
1) renewal of tunnel lighting and its cable

support; 2) replacement of fire main system; 3) provision of resilient power supply; 4) upgrade and reconfiguration of ventilation system and as well as other mechanical, electrical and civil assets which are life expired/safety critical to the operation of the tunnel.

A Quantitative Risk Assessment (QRA) has been completed and has confirmed the appropriate ventilation system for safely managing fires given the tunnel configuration and vehicle sizes. The QRA has been peer-reviewed by an external consultant and their comments addressed. The project has now moved to concept design, which will be carried out by TfL tunnel specialists.

### **Assurance**

The Project Assurance Team completed a project assurance review on the Asset Investment programme submission to the Programmes and Investment Committee meeting in October 2018. A quarterly update was provided to the Committee on 17 July 2019 on the 12 recommendations that were made and accepted, including five by IIPAG. Eight recommendations are closed and good progress is being made to close the remaining four. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Public transport

Forecast completion year

**2021/22**

Spend to date (£m)

**222**

Spend authority (£m)

**347**

EFC (£m)

**394**

EFC movement post plan (£m)

**0**

2019/20 strategic milestone RAG  

**Post quarter end, in August, works at White Hart Lane London Overground station were completed. Customers were welcomed through new station entrances into a bigger, brighter and more accessible station which included step-free access from street to platform for the first time. The design of the new station has been carefully planned to provide quicker and easier access for commuters.**

We have started the installation of a train protection warning system for the Richmond to Gunnersbury section to enable us to interchange the fleet between lines and improve reliability across the network. Construction works are due to be completed in the autumn.

At West Hampstead, works have progressed with the new concourse now in passenger use and lifts due to be brought into use before the end of the September. The next steps are to complete the platform widening at the western part, which is planned to be completed in the autumn.

We are progressing with a design for updated signalling to enable the East London line to run 18 trains per hour. The design programme for the associated signalling works has been accelerated and is planned to complete in spring 2020.

The EFC and spend authority covers the period to 2021/22 to provide a direct comparison to the programme as originally approved in 2017/18. The spend authority is less than the EFC as the portfolio is only part authorised.



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The Gospel Oak to Barking line is now exclusively operated by new four-car electric air-conditioned trains, doubling capacity, restoring a 15-minute frequency and bringing greater reliability to the service. To celebrate this milestone, and to thank customers for their patience during the delay bringing the new trains into service, we offered customers a month of free travel on the line in September. This was in place from Saturday 31 August to Tuesday 1 October inclusive.

The month of free travel for those using the Gospel Oak to Barking line was requested by Mayor Sadiq Khan earlier this year. It was funded by the manufacturer, Bombardier Transportation.

The new state-of-the-art trains can carry nearly 700 people and feature free WiFi, real-time information screens, air-conditioning, USB charging points and more wheelchair spaces. The first of the new trains began carrying passengers in late May, and over the summer more units have been tested and brought into service to bring the Gospel Oak to Barking line, which is used by 30,000 people daily, back up to its full four trains per hour frequency. The new electric trains, which have replaced older diesel trains, are also much better for air quality and the environment.

## DLR

High voltage works have commenced at Stratford Street Market with the installation of a new transformer which once commissioned will provide future resilience. Preliminary designs have been completed for similar works at Poplar depot.

We have embarked on a number of infrastructure projects, including repointing of bridges and viaducts, and North Route staircase tread replacement.

Replacement of old lighting to LED continues at West India Quay and Shadwell.

Track renewals continue to be delivered during weekend closures and non-operational hours. Sections of track between Canning Town and South Quay have been completed to date.

The upgrade and fit-out works at Custom House station are progressing while the station remains operational.

The public address system installation is progressing with testing and commissioning works to be completed at Westferry. The main radio resilience works have been completed with testing and commissioning planned for this financial year.



Class 710 arrives at Blackhorse Road operating the Gospel Oak to Barking line

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## London Trams

As part of our commitment to making the tram network safer following the tragedy at Sandilands in 2016, we are continuing to address the recommendations from the Rail Accident Investigation Branch. We have completed a number of initiatives and are currently in the delivery phases of the Physical Prevention of Over-Speeding automatic braking system and the enhanced lighting for the Sandilands tunnel. We continue to evaluate design for tram emergency lighting.

The renewals programme consists of 17 projects across seven asset groups including fleet, power, and permanent way infrastructure. Overhauls of the hydraulic power units and brake callipers on the Bombardier CR4000 fleet have been completed ahead of schedule and to budget. The bogie overhauls have progressed well with over two-thirds of the CR4000 bogies overhauled to date.

Replacement of this year's parafil support wires, which hold up the overhead power lines, is progressing well. Additional design work for the rebalancing of power within the tram depot has been finalised and a new contractor will soon be appointed to deliver the works.

Following the switch to cashless trams in July 2018, the existing ticket machines, which date back to the opening of the system, have been removed from all but three tram stops in Blackhorse Lane, Mitcham and Wimbledon. The remainder will be removed during November 2019.

Following commissioning of the centre platform at East Croydon, training of the operational staff is currently being delivered by Tram Operations Limited and is expected to be completed by December 2019. Once accomplished, this will improve local operations at East Croydon and increase the resilience of the tram network, particularly in the town centre.

Discussions are ongoing with Network Rail on a revised programme for completing the outstanding works at Wimbledon.

Replacement of half of the two Victorian bridges at Blackhorse Lane has been completed, and service diversions are ongoing. The works are forecast to be finished during spring 2020, with single lane traffic operation expected to be in place by the end of 2019.

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Tram track renewals between Addiscombe Road and Blackhorse Lane have been successfully delivered, and planning for the Love Lane renewal in autumn 2019 is in progress.

Replacement of the Ampere Way retaining wall was completed in August 2019.

The systems obsolescence management project has completed its enabling works and began critical migration activities in summer 2019 which will continue through to December 2019.

### **Bus Safety Standard**

Vision Zero aims to achieve zero fatalities and serious injuries on our road network by 2041. The interim target for buses is zero fatalities, on or caused by a bus, by 2030. The Bus Safety Standard is the programme of work that is looking at improving the safety of London's buses in working towards Vision Zero.

The Intelligent Speed Assistant (ISA) application controls bus speeds using geo-fencing via GPS to the bus, linked to a safety zone speed map. This is an aid to the driver and does not replace the driver responsibility for maintaining the correct speed. 700 buses have been ISA enabled as of April 2019 and a further 400 buses are expected to be ISA

enabled by March 2020. All new buses that entered into service from the end of September 2019 are now ISA enabled as standard.

The Acoustic Vehicle Alerting System (AVAS) is a system to be fitted to quiet running buses: electric, hydrogen and hybrid (when in electric mode). The system comprises a distinctive sound to alert the public that a quiet running bus is approaching, moving off from stationary or accelerating. The development of the distinct sound is underway and expected to be trialled on buses later this year. New buses entering service from September 2019 are expected to have AVAS fitted as standard.

Accident evidence suggests that current near-side mounted bus mirrors have blind spots, which have resulted in cyclists and pedestrians being injured. A new near-side blind-spot mirror is to be rolled out to replace the existing mirror. The off-side mirrors will also be replaced to further reduce blind-spots and avoid driver confusion by standardising the side-mounted mirrors across our fleet. The blind-spot mirror is expected to be fitted to all buses by March 2020. All new buses will have the blind-spot mirrors fitted as standard.

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## Hydrogen buses

To help reach the Mayoral target for all buses to be zero emission by 2037 and meet the Mayor's air quality objectives, we are procuring 20 hydrogen fuel cell buses and building a Hydrogen Refuelling Station (HRS).

The contract has now been awarded for the construction of the HRS which is to be built at Perivale Bus Garage and be operated by bus operator Metroline. The supplier has produced initial designs and these have enabled the compiling of a planning application for the construction of the HRS which was submitted to Ealing Council in July. The station is due to be operational by March 2020. Following the Quarter end, the manufacturer of these buses, Wrightbus Limited, has gone into administration and we are working with the administrator to understand the impact on the project.

An order has been placed for 20 hydrogen fuel cell buses using the existing framework contract. The bus suppliers are mobilising to produce a bus earlier than originally scheduled to ensure capacity and bus safety standards are reached. The first buses are due to arrive in London in January 2020.

Following the quarter end, the manufacturer of these buses, Wrightbus Limited, has gone into administration and we are working with the administrator to understand the impact on the project.

## Assurance

The Project Assurance Team completed a project assurance review on the Public Transport programme submission to the Programmes and Investment Committee meeting in December 2018. A quarterly update was provided to the Committee on 17 July 2019 on the seven recommendations that were made and accepted, including two by IIPAG. Six recommendations are closed and good progress is being made to close the remaining recommendation. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Surface technology

Forecast completion year

**2023/24**

Spend to date (£m)

**3**

Spend authority (£m)

**85**

EFC (£m)

**177**

EFC movement post plan (£m)

**0**

2019/20 strategic milestone RAG

**This is a new programme responsible for overseeing strategically important technology projects within our five-year business plan and, from April 2019, to provide a structure for all future technology projects being delivered by surface transport.**

## Surface Intelligent Transport Systems (SITS)

We are leading the way in delivering innovative new road traffic management systems to make journeys on foot, bike and bus, as well as essential emergency services and freight trips, as efficient as possible. We are working with Siemens to develop the Real Time Optimiser system. This will manage the flow of people on London's road network by controlling the phasing of traffic signals using pre-planned timetables, manual interventions and optimisation techniques, with the first release scheduled for late 2020. We are currently in the process of finalising the appointment of a new delivery partner, to work with us to design, develop and implement a new incident management system, which will enable us to increase the speed at which we detect and respond to incidents on the road network.

The EFC reflects the financial authority, and the 2019 Programmes and Investment Committee authority, up to 2023/24. Surface Technology is a new portfolio and their first paper was submitted to the Programmes and Investment Committee in March 2019. The spend authority is below EFC as the portfolio is only part authorised.

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## Assurance

The Project Assurance Team completed a project assurance review on the Surface Technology programme submission to the Programmes and Investment Committee meeting in March 2019. A quarterly update was provided to the Committee on 17 July 2019 on the 10 recommendations that were made and accepted, including three by IIPAG. One recommendation is closed and good progress is being made to close the remaining nine. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Other

## Technology and data

Forecast completion year

**2020/21**

Spend to date (£m)

**66**

Spend authority (£m)

**228**

EFC (£m)

**215**

EFC movement post plan (£m)

**13**

2019/20 strategic milestone RAG 

Authority and EFC shown are for financial years 2018/19 to 2020/21.

**The Technology and Data programme provides the core infrastructure, services and technologies that allow us to achieve our strategic priorities.**

### Payments

We are continuing development work to allow pay as you go to be accepted between Reading and Paddington when TfL adopts the local services in December 2019. We are also in discussion with the train operating companies and the Department for Transport regarding the necessary changes to agreements which will facilitate this.

### Evergreen programme

Over 6,500 new thin client devices have been successfully deployed to the TfL estate, while the remaining 1,000 (of the 7,500 purchased) continue to be deployed and we expect completion during summer 2019.

150 pilot users have successfully been migrated to Windows 10 on thin client devices, hosted by temporary servers, while the all-new Windows 10/Citrix server infrastructure has been successfully installed and tested in the TfL data centres. The new servers have been in production from August 2019, progressively providing Windows 10 thin client desktop images for up to 15,000 concurrent users.



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We have successfully deployed over 1,000 laptops with Windows 10 and Microsoft Office software to early adopters across several departments, including Smart Working pilot areas. A further 500 Windows 10 laptops have been ordered for the initial waves of Smart Working roll-out which commenced in Q2.

A business engagement network of Leads and Champions has been established to guide and assist the formal roll out of Windows 10/Office 365, which started at the end of May 2019. So far, 350 users have officially migrated to Windows 10 in addition to the early adopter community, with further deployments scheduled through to winter 2019.

User acceptance testing of business applications migrating to Windows 10 continues to progress well. Critical applications were prioritised, with others scheduled to support the formal roll-out phases.

#### **Content and collaboration**

The SharePoint Legacy Consolidation project is in the implementation phase, and 205 SharePoint 2010 sites have been migrated to SharePoint Online.

The Livelink Upgrade project continues, with successful Proof-of-Concept builds for the new operating systems, and the new servers for the test and development environments built.

#### **Operating and monitoring systems**

The Future Bus Systems project is delivering the design documentation for the solution to replace our obsolete bus scheduling tools: BusNet, Caesar and SSTT.

#### **Hosting – data centre rationalisation and cloud migration**

The new lease agreement for our primary data centre has been executed by both parties. Two-thirds of the data centre was vacated and returned to the landlord ahead of the lease end date of 31 July 2019 and the circa £4.6m per annum savings can now be realised against our operating costs. We continue to develop a hybrid hosting operating model in which we have extended our data centre core capabilities into the public cloud through AWS and Azure. We are expanding these capabilities to deliver stronger governance, operational controls and cost transparency to yield additional efficiencies. We are also implementing new infrastructure technology in our data centre as part of the technology refresh project which will deliver further operational efficiencies and keep our estate technically supported.

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### Cyber security

Assessments of systems in scope for the Networks and Information Systems (NIS) regulation are now concluded. A summary of the assessments has been compiled and presented to the Executive Committee. Additional summaries by functional/business areas are being provided to service owners for approval, ahead of sharing the assessments with the competent authority, the DfT.

### Data and analytics

To support the Mayor's Transport Strategy, and specifically Vision Zero, we have produced a tool that takes bus telemetry data and overlays this on to the speed limits across the network to identify where bus drivers are exceeding the limit. This is in the final stages of development and once complete will allow for more accurate information when dealing with bus companies.

We are in the final stages of development to support major system changes as part of Future Ticketing Programme Phase 4 and are taking in new data that will feed into the revenue allocation reports with the TOCs to enable more timely reporting.

We are continuing to develop a product which detects fare evasion from patterns in ticketing data (Irregular Travel Analysis Platform - ITAP) which is in live trial and being used in a number of revenue deployments. We are working to secure funding for this financial year to move this into a supported production service.

We are continuing to provide analytic services that underpin London Underground's visualisation programme. We are working with the performance analysis and improvement programme and have created various reports and implemented system changes in the past quarter.

### Networks

The Access and Wide Area Network (WAN) transformation programme has rolled out our new WAN services at 133 sites.

The delivery of the London Underground Connect radio system upgrade has started. The required equipment has been installed at all five core sites (King's Cross St Pancras, Shepherd's Bush, Liverpool Street, Stepney Green and West Kensington) and these sites have been prepared for port and switch acceptance testing over a five-week period. Preparations for the operational exit of the Connect Private Finance Initiative and transition to the successor arrangements with Thales are on schedule to complete by November 2019.



Oyster contactless payment machine at Mitcham tram stop

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We continue to deliver infrastructure to support the Home Office's new national Emergency Service Network (ESN) communications system. We have installed 295km of the required tunnel fibre (73 per cent), pulled 335km of the tunnel leaky feeder (80 per cent) and fixed 97km of this leaky feeder (23 per cent). We are now working in areas of higher asbestos risk and non-LU areas that require different working methods; however, we are increasing the number of installation teams to address this. The outstanding snagging work is being completed at the first 25 stations (Phase IA), installation work has started at all of the next 14 stations (Phase IB) and design work has started for a further 12 stations (Phase IC). These 51 stations represent 50 per cent of the total required stations works.

We have signed a new grant agreement with the Home Office for £24m to cover further ESN installation works to the end of 2019/20. We have also agreed with the Home Office to align the ESN project with our Telecommunications Commercialisation Project (TCP) following an exchange of letters between the Commissioner and the Permanent Secretary. As a result we have included the majority of the remaining ESN installation work and ESN service management requirements in the TCP procurement. In parallel, we are

undertaking the preparatory work to install a second leaky feeder (required for public 4G services) on the Victoria line and have started the design work on the Elizabeth line and Northern Line Extension, which will complete by the end of the year.

The 4G Pilot project is now established and we have signed a contract for the delivery and service management of the solution. The scope of the 4G Pilot will be the station areas, platforms and tunnels of the Jubilee line between Westminster and where the line emerges above ground before Canning Town (excluding the station areas of Waterloo and London Bridge stations which, subject to final approvals, will be added later during 2020). We have baselined a plan that is targeting the service being operational from March 2020. Design work has started which includes engagement with all four mobile network operators.

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

Our mission-critical systems have been identified, prioritised for restoration and assessed in terms of resiliency. Implementation has commenced for delivering resiliency for underpinning technical services and business services with the highest risk.

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We are in the process of reviewing final submissions from bidders to supply a service desk, deskside support and hardware repair and build services. These services are currently supplied through multiple providers, and this procurement process will bring these services under a single contract and supplier. It is expected that the contract award will take place in Q2 of 2019/20, with a service commencement date in Q4 of 2019/20.

The in-housing of managed service transition activities due to complete in Q3 2019/20 are on track and progressing to expectation.

### Contact Centre Operation

The Oyster Photocard concessions contract was awarded to Novacroft at the end of 2017, with transition taking place since then. Service commencement for the new contract took place on 1 January 2019. A new online customer portal with enhanced functionality is in the process of being built.

### Assurance

The Project Assurance Team completed a project assurance review on the Technology and Data programme submission to the Programmes and Investment Committee meeting in March 2019. A quarterly update was provided to the Committee on 17 July 2019 on the seven recommendations that were made and accepted, including five by IIPAG. Good progress is being made to close the recommendations. The Project Assurance Team tracks progress against the recommendations made, including by IIPAG, as part of its continuous assurance.

# Growth Fund



Forecast completion year

**2024/25**

Spend to date (£m)

**0.4**

Spend authority (£m)

**144**

EFC (£m)

**144**

EFC movement post plan (£m)

**0**

2019/20 strategic milestone RAG

**The programme allocates funding to support transport schemes that help to unlock housing and commercial developments and support regeneration opportunities in some of London's key growth areas.**

## Existing Growth Fund schemes

The Growth Fund contributes to 15 existing schemes that will support more than 55,000 new homes and 30,000 new jobs. Recently completed schemes include the transformation of the northern roundabout at Elephant and Castle.

Significant progress has been made in upgrading and developing stations such as Woolwich (Elizabeth line), Tottenham Hale, White Hart Lane and West Ham, which all support new housing developments. Our investment in the transport infrastructure has been supported by financial contributions from developers and other sources, including the GLA.

## Sutton link

A detailed option selection process has been undertaken, including a public consultation on a shortlist of options.

## Committed schemes

We made recommendations to the Programmes and Investment Committee to provide contributions to support three schemes that met our agreed criteria.

These are:

- A new southern entrance at Ilford station to address capacity issues resulting from growth in the area, and to benefit bus passengers arriving at the station
- An upgrade at Colindale station in the first phase of a development programme to bring 10,000 new homes to the Colindale area

- 
- An upgrade at Walthamstow Central station, with improved entrances and step-free access, to provide additional capacity to support new homes and jobs in Walthamstow town centre

The Elmers End scheme is currently funded for the acquisition of the required land and we continue to liaise with the London Borough of Croydon on funding opportunities for the second phase for the detailed design and construction for enhancements to the London Trams network, which will include Elmers End

We are working with the GLA to select the next set of projects to receive Growth Fund support and to seek funding for certain schemes through the Government's Housing Infrastructure Fund and Business Rates Retention Pilot scheme.

### **Assurance**

The Project Assurance Team completed a project assurance review on the Growth Fund submission to the Programmes and Investment Committee meeting in July 2018. A quarterly update was provided to the Committee on 17 July 2019 on the 11 recommendations that were made and accepted, including four by IIPAG. All recommendations are now closed.



Escalators connecting the Bakerloo line to the Elizabeth line at Paddington station



# Elizabeth line



## On-network stations improvement programme

Forecast completion year

**2020**

Spend to date (£m)

**79**

Spend authority (£m)

**94**

EFC (£m)

**95**

EFC movement post plan (£m)

**1**

2019/20 strategic milestone RAG

**This programme focuses on 22 existing stations, ensuring improved customer experience and step-free access, and a consistent station environment across the Elizabeth line.**

Work on Great Eastern step-free schemes has been completed with lifts at Maryland, Manor Park and Seven Kings in use since late February 2019. The handover of the assets from the contractor to Rail for London Infrastructure is also nearing completion and final inspections were finished in early September.

On the Great Western section lift schemes at Hanwell, Iver, Langley and Taplow, construction is still progressing with steelwork installation ongoing and the transition into the fit-out phase started as planned in August 2019. Lifts are expected to be available for public use towards the end of the year in line with our commencement of train services between Paddington and Reading.

MTR Crossrail is continuing its station refurbishment programme with works to redecorate platforms at Brentwood, Harold Wood, Gidea Park and Romford completed and works underway to refurbish/ redecorate Hanwell and West Drayton stations on the Great Western section.

The EFC has increased this quarter because of the inclusion of additional third party funded scope into the programme. This has no impact on the net EFC of £94m reported in the previous quarter.



## Rolling stock

Forecast completion year

**2020**

Spend to date (£m)

**959**

Spend authority (£m)

**1,149**

EFC (£m)

**990**

EFC movement post plan (£m)

**7**

2019/20 strategic milestone RAG  

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

Post quarter end, a significant milestone was reached when the first nine-car train was introduced into passenger service operating between Hayes and Harlington on 29 July.

Testing of the train and Automatic Train Operation (ATO) signalling continues in the central section tunnels of the Elizabeth line, including transitions to the Network Rail mainline routes to the east and west and running multiple trains in the same tunnel under the control of the ATO system. Train and train signalling control software is progressing to the end of the development stage. The versions for the next phase of the Elizabeth line, Trial Running, were confirmed in August and will be tested in autumn 2019.

Testing continues using the European Train Control System (ETCS) for operation to Heathrow Airport, with development and testing approaching the end in preparation for reliability and operational trials before submitting the case to the Office of Road and Rail for authorisation to operate ETCS-fitted Elizabeth line trains in passenger service. Reliability testing of integrated ETCS and ATO signalling equipment on Elizabeth line trains has continued on the Great Western Main Line with a positive 11,000 miles accumulated to date.

The EFC has increased this quarter because of a change in the accounting treatment of funding received from a third party.

This has no impact on the net EFC of £983m reported in the previous quarter.

# Crossrail



## Crossrail

Forecast completion year

**TBA**

Spend to date (£m)

\*

Spend authority (£bn)

**17.6**

EFC (£m)

\*

EFC movement post plan (£m)

\*

2019/20 strategic milestone RAG



**Following the approval of a revised delivery schedule by the Crossrail Board on 25 April 2019, the Crossrail team is now focused on a detailed plan and is using this to update its forecast for the final project cost.**

The plan is aligned with the six-month opening window announced in April 2019, which covers October 2020 to March 2021 and the funding envelope announced in December 2018.

Close headway multi-train testing in the tunnels has now commenced with a minimum safe distance between trains, at slow speed, of only 50 metres. The project team continues to work collaboratively with Siemens and Bombardier to develop the software to the level necessary for full trial running early next year. Trial running also requires further progress in other aspects of testing and commissioning, including communications systems and also on the physical infrastructure, notably at Bond Street.

Maintenance teams started moving into the new Maintenance Management Centre at Plumstead at the end of June 2019. Training and familiarisation continues although transfer of maintenance information from contractors continues to be slower than planned. Some limited track inspection is now being carried out by our maintenance teams and this has proved extremely valuable. Work is underway to increase the scope of the maintenance remit and allow the construction contractor to focus more on their remaining tasks.

\*This information is withheld for reasons of commercial sensitivity

# Appendix

## 2019/20 Strategic milestone performance

Our 2019/20 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 the following key:

On time or early
  1-89 days late
  90 or more days late

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

Milestone description	Plan date	Actual/ forecast date	Status
<b>Major Projects</b>			
<b>Four Lines Modernisation</b> ■			
First customer services start on the new higher capacity moving block signalling system	30-Apr-19	17-Mar-19	Complete ■
Use of the new, higher capacity signalling system for customer service extends to the north side of the Circle line and to all other lines	22-Sept-19	22-Sept-19	■
<b>Piccadilly Line Upgrade programme</b> ■			
Complete the concept design of new Piccadilly line rolling stock and present first look walkthrough of DTUP air-cooled trains	15-Jan-20	04-Nov-19	■
<b>Network extensions</b>			
<b>Northern Line Extension</b> ■			
Track installation complete	28-Jun-19	03-May-19	Complete ■
Essential power supplies available at all sites for testing and commissioning work to begin	16-Mar-20	25-Feb-20	■
<b>Silvertown Tunnel</b> ■			
Contract to design, build, operate and maintain the tunnel begins*	29-Oct-19	20-Aug-19	■

\*Due to the legal challenge at post quarter end, the forecast date for the contract award is now 14 November

Milestone description	Plan date	Actual/ forecast date	Status
<b>Barking Riverside Extension</b> ■			
Main works commence for Barking Riverside Extension	19-Apr-19	19-Apr-19	Complete ■
Completion of I6 Day Network Rail Blockade (works to Support New Viaduct)	04-Aug-19	03-Aug-19	Complete ■
<b>Major stations</b> □			
Bank station – commence construction of new triple escalator tunnel to serve DLR customers at Bank station and relieve congestion	31-Mar-20	07-Feb-20	■
<b>London Underground</b>			
<b>Station renewals and enhancements</b> ■			
22 lift and escalator replacement and refurbishments complete on London Underground	31-Mar-20	18-Feb-20	■
Tottenham Hale – new station entrance and concourse opens to the public	31-Mar-20	19-Jun-20	■
Delays due to change in sequence of works and introduction of other works. Some works that were planned to be carried out in possessions will now be undertaken in Engineering hours			
<b>Accessibility</b> ■			
Eight more London Underground stations become step-free	31-Mar-20	04-Jun-20	■
Some delays due to unforeseen ground conditions and legacy assets across multiple stations. We are working with the contractor to recover the programme.			
<b>Track renewals</b> ■			
Install 7.5km of new track across the London Underground network	30-Mar-20	29-Mar-20	■
<b>Rolling stock renewals</b> ■			
Victoria line Fleet Programme Lift – first train enters production	31-Jul-19	01-Jul-19	Complete ■
Jubilee line fleet refurbishment is complete and all trains are compliant with the RVAR	31-Jan-20	05-Dec-19	■
Central line – begin refurbishment and life extension work on first production train	31-Mar-20	22-Oct-19	■
<b>Signalling and control</b> ■			
Piccadilly line interim signal control upgrade complete	26-Jan-20	28-Oct-19	■

Milestone description	Plan date	Actual/ forecast date	Status
<b>Power cooling and energy</b> ■			
First solar panels installed, representing the commencement of large-scale solar generation on our buildings (BIU Tranche1)	18-Feb-20	10-Mar-20	■
Croydon Tram Link IGP Review and Comment and IGP Comment Acceptance were delayed resulting in overrun against this milestone.			
<b>Surface</b>			
<b>Healthy Streets</b> ■			
Old Street Roundabout Removal – main works start	31-May-19	28-May-19	Complete ■
Highbury Corner Gyratory Removal – traffic switches to two-way system	13-Jul-19	22-Apr-19	Complete ■
Cycle Superhighway 4 – detailed design for Jamaica Road signed off	30-Aug-19	28-Jun-19	Complete ■
Direct Vision Standard – launch of system to enable heavy goods vehicle drivers to request Direct Vision Standard permits	29-Oct-19	28-Oct-19	■
Cycle Super Highway 9 – completion of detailed design for Kew Bridge section	06-Dec-19	13-Sep-19	■
<b>Air quality and environment</b> ■			
Launch of central London ULEZ scheme	08-Apr-19	08-Apr-19	Complete ■
All buses in Low Emission Bus Zones are retrofitted with new bespoke exhaust systems to reduce nitrogen oxides and particulate matter	31-Dec-19	30-Sep-19	Complete ■
<b>Assets</b> ■			
Concept design for the renewal of major assets starts	01-Dec-19	30-Sep-19	Complete ■
Mayor's Bus Driver Facilities – install permanent facilities on 42 routes	31-Mar-20	28-Feb-20	■

Milestone description	Plan date	Actual/ forecast date	Status
<b>Public transport</b> <span style="color: green;">■</span>			
Repairs to Blackhorse Lane Bridge - demolition of Blackhorse Lane Bridge begins	17-Aug-19	15-Apr-19	Complete <span style="color: green;">■</span>
White Hart Lane Station Capacity Upgrade – existing station entrance demolition complete	27-Mar-20	24-Dec-19	<span style="color: green;">■</span>
<b>Other</b> <span style="color: green;">■</span>			
<b>Technology and Data</b>			
Enable pay as you go to support the Elizabeth line extension to Reading	08-Dec-19	08-Dec-19	<span style="color: green;">■</span>
Preferred bidder selected for rolling out a 4G network across all London Underground lines and implementing other connectivity improvements across London	31-Mar-20	31-Mar-20	<span style="color: green;">■</span>

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## Programmes and Investment Committee



Date: 23 October 2019

Item: Independent Investment Programme Advisory Group  
Quarterly Report

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### This paper will be considered in public

#### 1 Summary

- 1.1 This paper presents the Independent Investment Programme Advisory Group (IIPAG) Quarterly Report for September 2019. It describes the work undertaken since the last report presented to the Committee on 17 July 2019.
- 1.2 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### 2 Recommendations

- 2.1 **The Committee is asked to note the Independent Investment Programme Advisory Group's Quarterly Report and the Management Response set out below and the exempt supplementary information on Part 2 of the agenda.**

#### 3 Background

- 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 for the Committee and the Audit and Assurance Committee.
- 3.2 There is one recommendation in the IIPAG Quarterly Report.
- 3.3 The TfL Project Assurance team continues to track progress against the recommendations made by IIPAG through their reviews of TfL's projects and programmes.

#### 4 Management Response

- 4.1 In their quarterly report IIPAG make one recommendation. This is for TfL to establish a rigorous and consistent approach to the quantification and valuation of economic development and housing benefits associated with our transport investments, with a central source of expertise providing guidance and to ensure consistency of application across our projects and programmes.

- 4.2 Our over-arching framework for appraisal is consistent with the broad approach defined by HM Treasury and the Department for Transport which includes quantification of economic development and housing benefits. The Investment Appraisal team, who own the central standards for appraisal within TfL, will work with the technical specialists in City Planning and with Sponsors to ensure that further guidance and a consistent approach is defined that will clarify the expected approach within TfL. This will be produced by the end of 2019 with a plan for further updates that can be incorporated as further research is undertaken.

## **5 Update on Previous Recommendations**

### **London Underground Signalling Strategy**

- 5.1 Following considerable pre-feasibility work over the last six months, an emergent new signalling strategy is in preparation primarily focussed on an incremental approach to renewing and upgrading obsolete signalling systems. This recognises the funding constraints TfL is under, whilst safeguarding reliability and performance. This was shared with the Asset Strategy Steering Group in August 2019. The next step is to progress this to full feasibility with appropriate supplier engagement in order to refine the strategy and associated cost profiles ahead of the next Business Planning round in summer 2020.

### **Establishing Cost and Schedule Baselines**

- 5.2 From the stand up of the TfL Programme Management Office (PMO) in June 2018, establishing a baseline across the organisation has been a priority. The PMO have taken the approach recommended by IIPAG to concentrate on providing a workable baselining capability as a matter of urgency, but with a target of making this more integrated as we achieve greater levels of maturity and system development.
- 5.3 For our major projects for the last five periods we have been reporting against a baseline which features cost, risk and schedule (focussing on milestones). Early signs of the usefulness of these reports have been encouraging with positive feedback around the increased visibility and warning that it has given to slipping (and potentially slipping) milestones. This now includes our Renewals and Enhancements directorate, and we are close to achieving the same level of reporting within Surface Transport. Over the coming months we will be working to expand our coverage to include Commercial Development and Technology & Data.
- 5.4 The cost and schedule baseline information as per Business Plan and at the setting of the yearly budget is retained and can be reported against to provide comparison with originally sanctioned baselines.
- 5.5 We have a documented re-baselining process which will be tested by the Deep Tube Upgrade Programme as they move from their Integrated Baseline 3 programme to the updated Integrated Baseline 4 programme, and when we align all project and programme baselines to the output from the 2019/20 Business Plan.

## **Engineering Resources**

- 5.6 A detailed exercise has been underway to review the future demand for engineering resource. We have an improvement plan in place which is being overseen by the Executive Committee. As part of this plan we have transferred the engineering resource planning team from TfL Engineering to the TfL PMO where there is greater visibility of the delivery programmes and corresponding resource demands. The resource planning team are now better able to issue resource requirement plans to the senior managers within TfL Engineering who are subsequently able to determine what resources are available to meet the plans. In parallel to this, a recruitment drive has been underway to address the need for additional engineering resources within the organisation, with a corresponding review of the organisational arrangements and deployment of engineers within the organisation.

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

Appendix 1: IIPAG Quarterly Report (September 2019)

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

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

None

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## Independent Investment Programme Advisory Group – Quarterly Report (October 2019)

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### 1. Summary

- 1.1. This is a report of the activities of IIPAG since the last meetings of the Programmes and Investment Committee and Audit and Assurance Committee. It highlights the types of issues that have commonly been raised in our reviews of projects and programmes, and cross-cutting or systemic issues that have emerged from this work. It makes one new recommendation. It reports our progress on the work on cross-cutting issues identified in our annual work programme.

### 2. Recommendations

- 2.1. We recommend that TfL establishes a rigorous and consistent approach to the quantification and valuation of economic development and housing benefits associated with its transport investments, with a central source of expertise to provide guidance and to ensure consistency of its application across all projects and programmes.

### 3. IIPAG reviews of projects and sub-programmes

- 3.1. Since our last report IIPAG has participated with Project Assurance (PA) in the following reviews.

<b>Project Assurance Reviews</b>
AC14
Fiveways Junction A23/A232
Cycling – Mini Hollands
Hammersmith Bridge
London Underground Essential Maintenance
Bank Station Capacity
Four Lines Modernisation
Elephant & Castle Station

- 3.2. Our reviews have highlighted a lot of good work in TfL, but each has also identified a number of issues and recommendations.
- 3.3. One particularly significant issue is that of train control. As a consequence of the decision last December to defer the Deep Tube Upgrade Programme (DTUP) and our reviews of DTUP it has become apparent that there is no longer a clear strategy to deal with the ageing train control infrastructure on the Underground. The existing London Underground (LU) Signalling Strategy, while very good at the time, is no longer valid. In line with our recommendation, work is now in hand to articulate an up to date strategy. We have been impressed by the quality of this

work but it raises some big issues about the condition and sustainability of the current train control systems and what needs to be done over the coming years. We will continue to engage with and support the business on these issues.

## 4. Recurring themes

4.1. We are building an analysis of our findings by theme, which we will update as we undertake further reviews. Initial analysis of reviews to date suggests that the most frequent areas for IIPAG findings have been:

- Capability and resources (most frequently TfL's own engineering, project management or PMO resource, but also critical areas of supply chain resource).
- Programme/portfolio management – especially whether there are strategies and the appropriate management information in place to enable effective programme prioritisation and management.
- Costs and risk – notably the robustness of cost estimates, the tracking of costs and the reasons for changes, and the adequacy of risk allowances.
- Schedule pressure is high in many projects which risks driving poor value for money decisions on some projects.
- Governance – whether appropriate governance structures are in place, and whether roles and responsibilities are sufficiently clear and appropriate, including in relation to stakeholders.
- Value for money – the robustness and comprehensiveness of business cases and the evidence to support best value option selection.

4.2. We are considering most of these themes further through our cross-cutting work, which is discussed below.

4.3. We have reviewed a number of projects where the strategic case depends in large part on growth, economic development and the number of additional homes that the projects will facilitate. We recognise that these are policy priorities for the Mayor. It is important that TfL can be confident that it is prioritising the right investments that will have the biggest impacts on economic development and the supply of new homes, and that value for money is being secured. Predicting the extent to which transport investment will unlock additional homes or stimulate development is not straightforward, as a number of other factors outside of TfL's control will also play a part.

4.4. There is guidance from central Government on quantifying and valuing additional homes, and TfL has developed a process in the context of the Growth Fund. However we have found that the approach adopted for TfL's major investment projects is inconsistent. For example, the analysis can range from demonstrating consistency with local plans, through a detailed analysis of land plots and development potential, to in one case a monetary valuation of housing benefits.

4.5. We recommend that TfL establishes a rigorous and consistent approach to the quantification and valuation of the development and housing benefits associated with transport investment, with a central source of expertise to provide guidance and to ensure consistency of its application across all projects and programmes.

## 5. Management progress on IIPAG recommendations

- 5.1. The accompanying paper by TfL Project Assurance reports on progress with management's responses to our recommendations on projects and sub-programmes.
- 5.2. Our February 2019 quarterly report made two recommendations on systemic issues. The first was about the need for information to track budgets, cost and delivery over the life of projects and sub-programmes; the second was about the need to review areas of resource risk, starting with engineering resource.
- 5.3. We are pleased to see that a detailed exercise is underway to review the future demand for engineering resource and how this demand will be met; and that this exercise is being overseen at a senior level within TfL through the Investment Group. We are also aware that work led by the PMO is in hand to establish cost and schedule baselines. This is an essential first step in providing the robust tracking information that we recommended, but we would also like the organisation to have visibility of the *originally* sanctioned baselines. The PMO has a challenging and ambitious work programme, but we would reiterate the priority that should be accorded to this work and the value of having a workable baselining capability as soon as possible, rather than a fully polished and better integrated system at a point in the future. We sense that on some projects TfL may be experiencing a combination of schedule drift, underspend in-year and rising EFCs. This could build up issues for later years, but current information does not provide a clear enough picture to be sure.

## 6. Cross-cutting work

- 6.1. Our annual work programme identified a number of areas which we would consider on a cross-cutting basis. We have classified this work into four categories:
  - Annual reviews (required by our Terms of Reference) – Benchmarking, Effectiveness of first and second lines of defence
  - One-off IIPAG reviews – Assurance of Commercial Development, Project Initiation, Management Reporting, Value for Money, TfL Standards, Cost Performance (scoping study)
  - IIPAG input into audits or exercises being undertaken elsewhere in TfL – Engineering Resources and Transformation
  - On-going advice – Business Planning
- 6.2. Fieldwork is underway on Benchmarking and Engineering Resources, and work is in hand to scope the other reviews in more detail. Where we undertake a one-off study ourselves, we will provide a report to AAC and PIC.

### List of appendices to this report:

None

### List of Background Papers:

None

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## Programmes and Investment Committee



**Date:** 23 October 2019

**Item:** TfL Project Assurance Update – Quarter 2 2019/20

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

#### **1 Summary**

- 1.1 This paper provides an update on the project assurance work undertaken in Quarter 2 of 2019/20. A total of 31 reviews were undertaken, consisting of one programme and 30 project assurance reviews.
- 1.2 These reviews gave rise to 67 recommendations being made, of which seven were considered to be critical issues. Critical issues should be addressed before proceeding to the next stage.
- 1.3 The key findings from the reviews undertaken in Quarter 2 are:
  - (a) there is continued cost pressure on a number of projects, and late notification of cost increases in delivery stages across the station portfolios in both London Underground and London Rail);
  - (b) business cases are not consistently providing conclusions; and
  - (c) a lack of portfolio management in key programmes.
- 1.4 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendation**

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

#### **3 Background**

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

## 4 Summary of Project Assurance Activity

- 4.1 One programme review was undertaken during the quarter. In the same quarter 30 project assurance reviews were undertaken, with ten of these involving IIPAG.
- 4.2 From the reviews undertaken a total of 67 recommendations were made by TfL Project Assurance, of which:
- (a) ten were critical issues agreed with the respective project teams; and
  - (b) 57 were general recommendations agreed with the respective project teams.
- 4.3 From the assurance reviews undertaken by IIPAG in the quarter, nine general recommendations were made by IIPAG.
- 4.4 Appendix 1 provides a summary of the critical issues and the actions being taken to address them.
- 4.5 The following graphs show the number of open recommendations, the number which are overdue and the number of recommendations closed in the quarter.

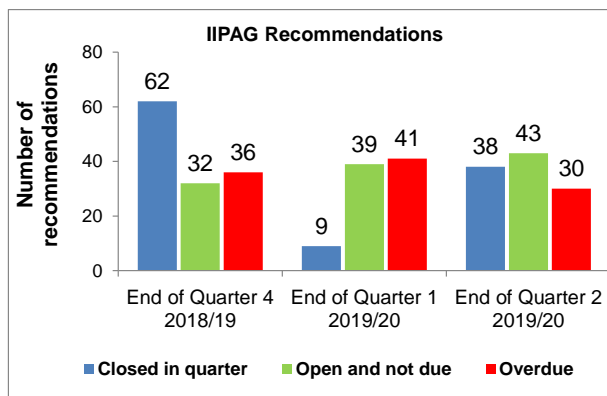


Figure 1: IIPAG Recommendations

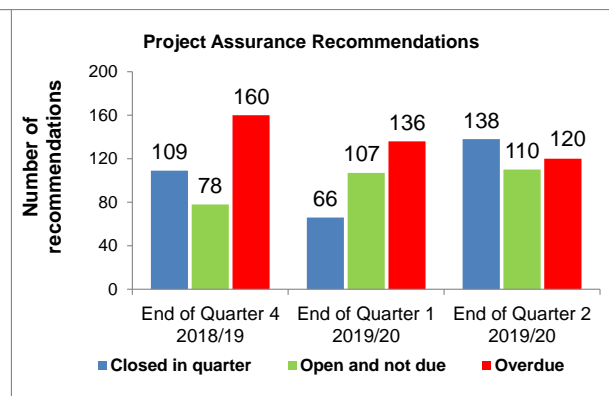


Figure 2: Project Assurance Recommendations

- 4.6 Last year we made over 800 recommendations. We are continuing to work with project teams to ensure that recommendations are acted upon and closed within an appropriate timescale once evidence has been provided. We have introduced a team level key performance indicator to monitor and manage the closure of recommendations within 3 months of becoming due.

### List of appendices to this paper:

Appendix 1: Overview of Recommendations

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

**List of Background Papers:**

None

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## Appendix 1: Overview of Recommendations

### Critical issues agreed with the respective project teams

Project: Hammersmith Bridge Refurbishment		
Raised by	Critical Issue	Management Response
Project Assurance	No specific funding allocated in Business Plan. Funding strategy required.	Will be reviewed as part of the Business Planning process based on better understanding of costs.

Project: Cycleway from Greenwich to Woolwich (formerly Cycle Future Routes 11)		
Raised by	Critical Issue	Management Response
Project Assurance	The business case should be fully developed in line with TfL guidance, ensuring clear evidence based conclusions are provided against each of the five cases.	We will develop the business case further with available data, making clear the case for safety.
Project Assurance	Robust cost estimate with assumptions and exclusion logs must be produced. Cost plan must include latest estimate costs.	Commercial will be providing cost estimates to enable finance tables to be worked on.
Project Assurance	Evidence should be provided to demonstrate that the cycle programme is being managed to the profile of the available financial authority.	Evidence will be provided at programme level.

Project: Surface Asset Management Information System (SAMIS)		
Raised by	Critical Issue	Management Response
Project Assurance	Current preferred option Estimated Final Cost is over Financial Authority and will only deliver Phase 1. Scheme is unaffordable.	Given the business critical nature of SAMIS (supporting safety inspections, condition inspections and defect/fault rectification, including the day-to-day running of the highway contracts) it has been agreed, under 2019 Business Planning, to allocate an additional funding from Minor Capital Renewals to SAMIS.

Project: Fiveways Junction A23/A232		
Raised by	Critical Issue	Management Response
Project Assurance	£14.7m funding gap in 2021/22.	This funding gap relates to the project spend phasing when considered against the annualised Financial Authority that was set out in the 2018/19 business plan. The project is fully funded in the TfL Business Plan. A revised view of the spend towards property acquisition and discussions with London Borough of Croydon regarding the timing of their agreed funding contribution has led to a variation in the previously agreed spend phasing. During the 2019/20 business planning round we will revisit both of the above and either rephrase spend or make other changes to the portfolio to accommodate the revised profile.
Project Assurance	Due to relatively weak strategic and value for money case, approval should be escalated and signed off by the CFO if this funding request is to be agreed in advance of business planning.	The project team will review and further refine the business case to better reflect the strong strategic case for the project. Agreement from the CFO will be sought as suggested

Project: Cycling Future Routes - CFR 3		
Raised by	Critical Issue	Management Response
Project Assurance	The business case should be fully developed in line with TfL guidance, ensuring clear evidence based conclusions are provided against each of the five cases.	The business case will be developed further as the required information becomes available during the Concept Design stage. Additional information available now will be added, (e.g. CYNEMON cycling model outputs) ahead of the authority request date.
Project Assurance	Evidence should be provided to demonstrate that the cycle programme is being managed to the profile of the available financial authority.	Evidence will be provided.

Project: Rotherhithe Tunnel		
Raised by	Critical Issue	Management Response
Project Assurance	Current preferred option Estimated Final Cost is over Financial Authority and the scheme is unaffordable.	This will be reviewed through the business planning process.

## Programmes and Investment Committee



**Date:** 23 October 2019

**Item:** Use of Delegated Authority

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

#### **1 Summary**

- 1.1 To inform the Committee of the use of Chair's Action and of Programme and Project Authority and Procurement 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 on 17 July 2019.
- 1.2 Since the last meeting of the Committee, the Chief Finance Officer approved Procurement Authority in relation to two matters. There was no use of Chair's Action.
- 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.

#### **2 Recommendation**

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

#### **3 Background**

- 3.1 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.
- 3.2 The Commissioner (and in his absence, the Chief Finance Officer) has delegated authority to approve Programme and Project Authority on programmes and projects up to a value of £50m that contain less than £25m of unbudgeted expenditure.
- 3.3 The Chief Finance Officer has delegated authority to approve Programme and Project Authority for programmes and projects under £25m that contain less than £10m of unbudgeted expenditure. Approval of authority for projects of less than £5m that contain less than £2m of unbudgeted expenditure is delegated to Chief Officers and is not reported here.
- 3.4 The Commissioner (and in his absence, the Chief Finance Officer) has delegated authority to approve budgeted Procurement Authority up to a value of £100m.
- 3.5 The Chief Finance Officer has delegated authority to approve budgeted Procurement Authority up to a value of £25m.

## **4 Programme and Project Authority Approvals since 17 July 2019**

- 4.1 To enable an appropriate level of governance, processes are in place for the authorisation, control and reporting of projects.
- 4.2 Programme and Project Authority will normally be granted by the Committee for all programmes and projects as part of the defined 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 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.
- 4.3 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.
- 4.4 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**

- 4.5 Since the last meeting of the Committee, the Commissioner has not approved Programme and Project Authority for any projects.

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

- 4.6 Since the last meeting of the Committee, the Chief Finance Officer has not approved Programme and Project Authority for any projects.

## **5 Procurement Approvals**

### **Approvals by the Commissioner**

- 5.1 Since the last meeting of the Committee, the Commissioner has not approved any Procurement Authority in respect of matters within the Committee's remit.

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

- 5.2 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 shown in the attached appendix.

## **6 Mayoral Directions to TfL**

- 6.1 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.



- 6.2 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.
- 6.3 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>.
- 6.4 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.
- 6.5 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.
- 6.6 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.
- 6.7 Mayoral Directions to TfL related to projects and programmes are reported to this Committee. Since the last meeting of the Committee, no Mayoral Directions to TfL within the Committee's remit have been published.

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

Appendix 1: Summary of Procurement Authorities approved by the Chief Finance Officer.

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

None

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**Appendix 1: Summary of Procurement Authority Approvals**

Approval Date	Contract / Project Name	Value (k)	Approval
09/08/2019	Essential Maintenance Programme	1,211	Chief Finance Officer
21/08/2019	Supply of parts (EP and roller spool valves) for 92TS doors (Central Line Improvement Programme)	2,575	Chief Finance Officer

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## Programmes and Investment Committee

**Date:** 23 October 2019

**Item:** London Underground Stations Renewals and Enhancements Programme

### This paper will be considered in public

#### 1 Summary

- 1.1 This paper sets out the request for the 2019/20 Programme and Project Authority for the London Underground (LU) Stations Programme (the programme). This is the third annual submission to the Committee.
- 1.2 With the programme now established, the focus of this year's paper is to:
- (a) present the programme's achievements since the last submission;
  - (b) summarise delivery planned within this authority request; and
  - (c) assure the Committee on the progress of the programme.
- 1.3 The paper requests approval of additional Programme and Project Authority of £176.84m. The programme will return annually to the Committee to renew and validate approval for future years.

LU Stations Programme					
Existing Financial Authority*	Estimated Final Cost (EFC)**		Existing Programme and Project Authority	Additional Authority Requested	Total Programme and Project Authority***
£711.22m	Gross	£1,308.86m	£576.78m	£176.84m	£753.63m
	Third Party	(£196.53m)			
	Net	£1,112.33m			

\*The existing Financial Authority is based on the 2018 Business Plan (18/19 – 22/23).

\*\*The Estimated Final Cost includes spend outside the current business plan period.

\*\*\* The total Programme and Project Authority exceeds the Financial Authority due to the inclusion of spend that extends beyond the current business plan period.

#### 2 Recommendation

- 2.1 **The Committee is asked to note the paper and approve additional Programme and Project Authority of £176.84m giving a total Programme and Project Authority of £753.63m for the London Underground Stations Programme.**

### 3 Background and Strategic case

#### Introduction

- 3.1 As the gateway to London Underground (LU), the network's 270 stations are a key part of customer journey experience. Stations must be able to safely accommodate current and future passenger demand and provide efficient and pleasant journeys by all types of user. We must manage and improve our stations assets to maintain reliable access to the network. Additionally, our stations enable commercial development opportunities, new jobs and housing in the areas they serve and they support the benefits of other TfL programmes such as upgraded train services.
- 3.2 The purpose of the LU Stations programme is to deliver renewed and enhanced assets to improve safety, accessibility, reliability, capacity and customer satisfaction whilst reducing maintenance costs. The programme comprises the following three elements:
- (a) **accessibility**, which includes Step-Free Access, is delivering on the Mayor's commitment to make our transport network available to more Londoners than ever before;
  - (b) **Stations Enhancements** that respond to growth in demand for travel by planning and delivering improved access and capacity, often in collaborative partnership with third parties to support local area regeneration, housing and job creation; and
  - (c) **Renewals** programmes that ensure our stations, buildings and civils assets remain safe and operable through prioritised workbanks.
- 3.3 The programme's objectives contribute to all three of the Mayor's Transport Strategy's key objectives; "healthy streets and healthy people", "a good public transport experience" and "new homes and jobs". It also contributes to the "improving public transport services" measure on the TfL Scorecard.

#### Previous Submission

- 3.4 In July 2018, the Committee approved:
- (a) authority of £97.97m to undertake detailed development and implementation of the Accessibility programme;
  - (b) authority of £19.36m to deliver a portfolio of Stations Enhancements and to commission further early feasibility for future enhancement scheme; and
  - (c) authority of £68.89m for Renewals.

## This submission

3.5 This submission seeks a further £176.84m of Programme and Project Authority. The components of the additional authority requested are:

(a) £113.32m for Stations Enhancements; and

(b) £63.52m for Renewals.

3.6 The Accessibility programme as currently scoped is fully funded through to 2024 and no additional authority is therefore required at this time.

3.7 Performance against authority granted in July 2018, and details of the scope to be taken forward under authority sought in this submission, are detailed in section 5. The authority requested in this submission is fully funded either by third party contribution or is funded in the 2018 TfL Business Plan (and the current 2019 draft plan). Further drawdown against the authority requested in this submission will be subject to the relevant further governance procedures. This governance will recognise the outcome of the 2019/20 Business planning round and subsequent budget setting.

## 4 Proposal

4.1 The authority being sought in this submission is detailed in the table below. All cost figures include risk and inflation. Recoverable financial contributions from third parties are shown in brackets. A detailed list of works and locations is in Appendix 1.

Description	Financial Authority (18/19-22/23) (£m)	Estimated Final Cost (EFC) (£m)*	Existing Programme and Project Authority (£m)	This Authority Request (£m)	Future Requests (£m)
Stations Enhancements and Accessibility	433.80	Gross 831.35 Third Party (192.63) Net 638.72	476.27**	113.32	241.76
Renewals	277.42	Gross 477.52 Third Party (3.90) Net 473.62	100.51	63.52	113.39
<b>TOTAL</b>	<b>711.22</b>	Gross 1,308.86 Third Party (196.53) Net <b>1,112.33</b>	<b>576.78</b>	<b>176.84</b>	<b>355.15</b>

\*The Estimated Final Cost includes spend outside the current business plan period.

\*\*Last year, a total Programme and Project Authority of £244.34m was approved for the Accessibility programme. The value of the authority included in this figure has been reduced to £176.63m to reflect the outcome of the 2018 Business Plan and current programme.

## **5 Programme Scope**

### **5.1 Accessibility, including Step-Free Access**

#### **Introduction**

- 5.1.1 In December 2016, the Mayor announced a new step-free access programme with £197.43m of funding to make the Tube more accessible, the largest boost to accessibility in the Tube's 156 year history. The programme's aim was to deliver 30 new step-free stations. Full Programme and Project Authority for the programme was approved by the Committee at its July 2018 meeting.
- 5.1.2 The 2018 Business Plan reduced the number of step-free stations to be delivered from 30 to 23. However this programme will continue to represent an unprecedented investment in Tube accessibility. By 2024, there will be more than 100 step-free stations, which represents more than a third of the LU network. Increasing the number of accessible stations will make life easier and give a greater range of travel options for many of our customers.

#### **Progress since previous submission**

- 5.1.3 In 2018 the Committee granted £97.97m Programme and Project Authority to undertake detailed development and to procure implementation of the Accessibility programme.
- 5.1.4 Since the previous submission, work has progressed as planned. Buckhurst Hill, Newbury Park and South Woodford stations have been made step-free. Work has also started on site at an additional 12 stations where step-free is scheduled to be available by spring 2020.
- 5.1.5 Successful delivery of the programme relies on finding c.35-40 per cent savings compared to our previous approach to step-free access. This is being achieved through greater innovation, challenging the interpretation and application of standards, economies of scale, and concentrating core scope elements.

#### **This submission**

- 5.1.6 No further authority is sought in this request.

### **5.2 Stations Enhancements**

#### **Introduction**

- 5.2.1 The purpose of the Stations Enhancements portfolio is to seek opportunities to integrate station capacity and access improvements as part of collaborative projects with other third party developments and programmes. These projects promote sustainable growth by enabling new homes and jobs served by good public transport access. Funding for these projects is from the Business Plan, TfL Growth Fund, TfL Commercial Development or through funding agreements with third parties including private developers. These opportunity driven projects



enable benefits to be delivered at much lower cost than would be possible if TfL was the sole funder.

### **Progress since the previous submission**

- 5.2.2 In June 2018, authority of £19.36m was granted by the Committee to continue the development and delivery of a portfolio of stations enhancements. This enabled the commissioning of further early feasibility for future enhancement schemes and to progress collaborative agreements to unlock developer funded works.
- 5.2.3 Since then a number of enhancements have been delivered as planned such as:
- (a) lifts to the LU platforms at Finsbury Park station which were opened for public use in January 2019 achieving a key Investment milestone;
  - (b) the installation of TfL funded lifts at Whitechapel and Moorgate stations to complement the future Elizabeth line step-free routes;
  - (c) in May 2019 a new, more capacious 'South Bank' entrance opened at Waterloo station in collaboration with and fully funded by a developer; and
  - (d) a combination of developer and TfL funding has seen good progress on constructing a new lift shaft to the platforms at Knightsbridge station.
- 5.2.4 Design, consents, and legal agreements with developers and local authorities have progressed on a number of schemes since the previous submission. This includes:
- (a) at South Kensington a proposed TfL funded station upgrade secured listed building consent including for the platform works as planned;
  - (b) at Paddington station, we have secured an agreement with a developer for the creation of a, primarily developer funded, new entrance for the Bakerloo line that will include step-free access;
  - (c) the principles for an agreement have been made with Network Rail to conclude outstanding issues and works on the Thameslink programme;
  - (d) planning permission to build a new, larger entrance with step-free access at Colindale station has been approved by the London Borough of Barnet. This will be substantially developer funded; and
  - (e) legal negotiations have been completed relating to securing commitments for station improvements as part of developers' planning permission at Elephant & Castle (Northern line) and Walthamstow Central stations.
- 5.2.5 There are numerous emerging projects where we have engaged with local authorities and developers to identify new partnership opportunities through feasibility funding from third parties. A pre-feasibility study was completed for High Street Kensington station that assessed options for improving accessibility and capacity. In collaboration with the local borough and the London Legacy Delivery Corporation, design work has restarted at Stratford station to create a new southwestern station entrance.

5.2.6 In addition to third party 'opportunity' driven schemes, we continue to take a wider overview of station capacity across the network, for instance understanding the impact of increased demand resulting from future service upgrades, such as the Piccadilly line. Gaining an understanding of consequent requirements for increased capacity at stations will enable TfL to work with stakeholders to safeguard future opportunities and benefits.

5.2.7 There have been delays on some projects this year. Challenges in coming to agreement with Network Rail and Greater Anglia and associated changes of scope have resulted in a delay and an increase in EFC for the upgrade at Tottenham Hale. The developer at Finsbury Park has required additional time for construction of the station box. This and additional technical challenges have delayed the new entrance fit-out which is programmed to complete later than planned towards the end of this year. The programme to complete works at Bromley-by-Bow, where a new step-free lift is now in service, has been extended into this year to remove asbestos and the need to replace the roof which was not part of the original scope. The phasing for Elephant & Castle (Northern line) station has been adjusted to reflect a delay in the developer achieving planning permission.

### **This submission**

5.2.8 This authority request of £113.32m for Stations Enhancements comprises a number of components. The authority requested in this submission is in addition to any previous authority granted, any future request, and does not present the full estimated final costs or full procurement request of the schemes.

- (a) to complete works at Finsbury Park (£1.2m) and Tottenham Hale (£7.8m) stations where new ticket halls will be opened in 2019 and 2020 respectively;
- (b) to further develop enhanced station security measures (£24.7m);
- (c) to commence procurement of site works at South Kensington station (£12.3m) where a new wider District line platform will be constructed as the first phase of a redevelopment that will include step-free access;
- (d) to commence enabling works at Euston (28m) station on behalf of, and fully funded by, High Speed 2. This includes procuring design and delivery of fit-out of a substation, and will be subject to the outcome of the Oakervee review that TfL are currently assisting on;
- (e) to commence site works on a redeveloped, station at Colindale (£7.8m). Significant funding for this scheme comes from non LU sources; and
- (f) to continue work to enable operational integration of LU stations with the new Elizabeth line infrastructure provided by Crossrail Limited.

5.2.9 The Stations Enhancements programme this year includes two new TfL funded projects. The station incident management project will undertake trials and modification of existing station assets (e.g. ticket gates and help points) to enable centralised incident management. The platform gap project will develop a prototype mechanical device at Baker Street station to address the distance

between the train and the platform to address one of the biggest safety risks to customers.

5.2.10 This request proposes that the programme continues to support effective engagement with stakeholders such as the GLA, Development Corporations, developers and local authorities to continue development of new Station Enhancement projects.

### 5.3 Renewals

#### Introduction

5.4 The purpose of the Renewals portfolio is to support investment in safety, reliability and performance of stations, structures and civils assets that are critical to LU's performance. Replacement and refurbishment of these assets are managed through the Stations and Civils Renewals programme. Key objectives are:

- (a) ensuring that stations and civils assets remain in a safe, legal and operable condition;
- (b) reducing asset whole life costs by planning renewal interventions at the optimum time in the asset lifecycle and/or standardisation of products across the network; and
- (c) improving the station environment for customers through targeted interventions including minor accessibility works such as platform level access humps.

5.4.1 The workbank is prioritised through the outcome of annual asset condition reviews. Assets that pose risk to safety and reliability are prioritised; these are identified through this assessment and are ranked based on safety, compliance, reliability and obsolescence threat.

#### Progress since the previous submission

5.4.2 In June 2018, authority of £68.89m was granted by the Committee for a Renewals workbank up to 2020/21.

5.4.3 Achievements in the past year include replacement of 32 electrical power supply assets, resurfacing platforms, and letting of a contract to survey over 90 stations to improve the asset condition data This will improve future workbank prioritisation and planning.

5.4.4 The Civils programme completed urgent embankment stabilisation works at Rickmansworth to Chorleywood embankment in November 2018 to ensure that the train service could continue to operate safely, as well as completing designs and procurement for a workbank of prioritised projects on embankments, bridges and other structures to be completed in 2019.

5.4.5 Overall, the Renewals programmes have been delayed and did not achieve all the output intended (27 per cent underspent against budget). This was due to resource constraints with delivery and engineering teams and delays in defining

the workbank scope. The delayed works will now be completed in 2019/20. The workbank has been re-assessed to ensure that critical safety items are prioritised. The impacts of this delay are being addressed within the existing on-going maintenance activities through temporary works and additional monitoring.

### **This submission**

- 5.4.6 Authority is requested for £63.52m for a Renewals workbank up to 2022/23. This year, the Renewals programme will continue with a plan to recover and improve delivery. This will include significantly improving asset knowledge through comprehensive surveys and ensuring a good understanding of works prioritisation, the benefits and risks at stake.
- 5.4.7 To build on recent achievements in mobilising a delivery team, the supply chain and strengthened programme governance, we will develop and deliver a comprehensive two-year workbank. This will be continuously reviewed in light of emerging issues and improved understanding of asset conditions and as the capability to deliver is developed. Ultimately the aim will be to reduce overall spend on renewing and maintaining our assets as we move from reactive to planned preventative works.
- 5.4.8 The authority requested will fund the ongoing delivery of the following workbanks to 2022/23:
- (a) £54.69m for Stations Asset Resilience; a prioritised workbank of communications, electrical, fire, mechanical and premises interventions; and
  - (b) £8.83m for Civils Renewals which includes a prioritised workbank of Earth Structures assets which support track, bridges and station structures; and, Bridges, Structures and Deep Tube Tunnels which account for 30,000 assets across the network including platforms, walls and flood protection.

## **6 Financial implications**

- 6.1 The table below provides a summary of costs and authority for the whole LU Stations programme, including previously and fully approved projects.
- 6.2 In the presentation of these numbers, note that the Financial Authority relates to the Business Plan (2018/19-2022/23). There are projects within this programme that are on-going outside of this plan period. For example, some Enhancement projects are on-site with prior year authority. Other Enhancement projects are in development with authority for their current stage, therefore the 'future years' column represents the likely authority required to take forward delivery.

<b>Costs and Funding (£m)</b>	<b>Prior Years</b>	<b>2018/19</b>	<b>2019/20</b>	<b>2020/21</b>	<b>2021/22</b>	<b>2022/23</b>	<b>Future Years</b>	
Financial Authority: Renewals	-	27.91	41.44	63.20	69.02	75.85		
Financial Authority: Enhancements	-	70.50	121.00	118.80	63.88	59.62		
Financial Authority: Total	-	98.41	162.44	182.00	132.90	135.48	-	
Estimated Final Cost (gross)	157.26	98.41	173.95	182.76	152.33	146.08	398.08	
Estimated Final Cost (net)	94.24	90.00	131.86	133.49	127.85	136.81	398.08	
<b>Existing Programme and Project Authority</b>								
<b>Additional Programme and Project Authority requested in this paper</b>								
<b>Total Programme and Project Authority</b>								1

## 7 Equality Impact Assessment

- 7.1 The Programme will be delivered in accordance with the Equality Act 2010. Equality Impact Assessments are considered on all strategies, policies, business plans, change programmes or projects, with regard to our obligations under the public sector equality duty in section 149 throughout the delivery of the Programme.
- 7.2 As projects progress through feasibility and design, consideration will be given to the need for an Equality Impact Assessment.

## 8 Assurance

- 8.1 A TfL Assurance and Independent Investment Programme Advisory Group (IIPAG) review of the programme took place in June 2018, with no critical issues identified. All the recommendations from the reports are being addressed, as detailed in the management response.

### List of appendices to this report:

Appendix 1: List of stations covered in this submission

**List of background papers:**

IIPAG report

Project Assurance Report

Management response to TfL Project Assurance Report

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## Appendix 1: Detailed list of stations covered in this submission

The authority requested in this submission is in addition to any previous authority granted, any future request, and does not present the full estimated final costs or full procurement request of the schemes.

<b>Station Enhancements</b>	<b>This Authority Request (£m)</b>
High Speed 2 (subtotal)	28.0
Station Security (subtotal)	24.7
South Kensington	12.3
Stratford (Southwest Entrance)	10.3
Colindale	7.8
Tottenham Hale	7.8
Active Gap Filler	5.5
West Ham	5.0
Notting Hill Gate	2.9
Bromley by Bow	2.3
Finsbury Park	1.2
Other Stations Enhancements & Accessibility	5.4
<b>Total Station Enhancements</b>	<b>113.3</b>
Asset Resilience	54.7
Earthwork, Bridges & Structures	8.8
<b>Total Renewals</b>	<b>63.5</b>
<b>Total request</b>	<b>176.8</b>

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## Programmes and Investment Committee

**Date:** 23 October 2019

**Item:** London Underground Lifts and Escalators Renewals Programme

**This paper will be considered in public**

### 1 Summary

- 1.1 This paper sets out the request for Programme and Project Authority for the continuation of the London Underground (LU) Lift and Escalator Programme for the next three years, from 2020/21 to 2022/23.
- 1.2 The purpose of this paper is to:
- (a) present the programme's achievements since the last submission;
  - (b) request authority for the in-truss replacement project for the next three years; and
  - (c) to provide assurance to the Committee on the progress of the programme.
- 1.3 This paper requests approval for Project and Programme Authority of a further £22.4m for 2020/21 to 2022/23. The Programme will return annually to the Committee to renew and request approval for projects in future years.

**Table 1: Summary of the Programme and Project Authority request**

<b>Lift and Escalator Renewals Programme and Project Authority</b>				
<b>Existing Financial Authority</b>	<b>Estimated Final Cost (EFC)</b>	<b>Existing Programme and Project Authority</b>	<b>Additional Funding Requested</b>	<b>Total Programme and Project Authority</b>
£590.79m	£590.79m	£862.73*	£22.40m	£885.13*

\*The existing Programme and Programme Authority is higher than the Financial Authority. This is because some of the sub programmes have authority until 2035. The total Programme and Project Authority spend to 2018/9 is £417m. A further £468m represents the total Programme and Project Authority.

### 2 Recommendation

- 2.1 **The Committee is asked to note the paper and approve additional Programme and Project Authority of £22.4m giving a total Programme and Project Authority of £885.13 for continued renewal of escalators from 2020/21 to 2022/23.**

### **3 Background**

#### **Introduction**

- 3.1 There are 447 escalators, 228 lifts and four passenger conveyors at LU stations. This is expected to grow by 35 per cent between now and 2026 due to new assets being introduced by major station projects, the Accessibility programme and the Elizabeth line. Lifts and escalators make the network more accessible to more people and contribute positively to the journey times.
- 3.2 The lifts and escalator programme has been established to refurbish and replace existing assets to ensure customers have reliable, quick and safe access to our train service. The availability targets are 99.5 per cent for escalators and 99 per cent for lifts. Other benefits of the programme include reduced energy and maintenance costs, enhanced customer environments, upgraded safety systems and improved maintenance working environments.
- 3.3 The programme supports the Mayor's strategic objective of providing a good public transport experience and contributes to the TfL scorecard measure of Improving Public Transport Services.
- 3.4 In September 2019, there was a tragic incident at Waterloo station involving a colleague, working for one of our contractors, working on one of the moving walkways. A full investigation is ongoing and any recommendations will be incorporated into the programme to ensure that works are completed safely.

#### **Previous submission**

- 3.5 In June 2017, the Committee approved the following additional Programme and Project Authority:
- (a) £72.6m for the Jubilee Line Extension escalator refurbishment contract (Kone, over approx. 6 years);
  - (b) £2.1m for the lift replacement at Hillingdon station (Kone);
  - (c) £45.9m for the extension to the lift replacement/refurbishment contract (Schindler/Aurora over approx. 6 years); and
  - (d) £5.3m for the trial of a new innovative way of replacing escalators, the 'In Truss' method.

#### **Summary of progress since previous submission**

- 3.6 The Programme is on track to deliver lift and escalator renewals in line with the approved Programme and Project Authority. In 2018/19, the key project milestone to complete 23 lift and escalator replacements and refurbishments was achieved three months ahead of schedule. The key milestone for 2019/20 to complete lift and escalator replacements and refurbishments will be achieved one month early.

- 3.7 The 'in-truss' approach is a new method of escalator renewal which is being trialled at Wood Green station, due to complete in March 2020. With this approach, mechanical components of the escalator are replaced while retaining the original steel supporting structure. This reduces scope which, in turn, reduces capital costs, and reduces customer disruption. By eliminating the need for civil construction works the approach saves around £175k per machine.
- 3.8 Lessons are being extracted from the Wood Green trial. They will be used to inform the next escalator replacements using the in-truss method and delivery methodology. A full report will be produced prior to committing to the next stage of the in-truss programme.

#### **This submission**

- 3.9 This submission seeks a further £22.4m of Programme and Project Authority to complete three years of in-truss escalator replacements. Further details are given in Section 5. The remaining lift and escalator renewals projects, described in Section 4, have existing Programme and Project Authority. This authority request is aligned with the 2018 TfL Business Plan.
- 3.10 This level of investment is sized to meet current asset availability targets.

## **4 Programme scope**

- 4.1 Lift and escalator renewals and replacements are contracted in packages with whole life contracts to the supply chain, as well as internal delivery teams. This procurement strategy promotes competitive pricing and standardisation of asset to achieve economies of scale.
- 4.2 There are six projects in the current lift and escalator Programme:

### **Escalators**

- (a) escalator replacements, which are contracted to Otis through a Pan-TfL contract;
- (b) escalator refurbishments for Jubilee Line extension stations, which are contracted to Kone;
- (c) escalator refurbishments, which are completed by an internal delivery team;
- (d) trial of the 'in truss' escalator replacement method at Wood Green station, which is contracted to Schindler;

### **Lifts**

- (e) lift refurbishment and replacements contracted to Kone through a Pan-TfL contract; and
- (f) lift refurbishment and replacements contracted to Schindler.

- 4.3 The management and volume of lift and escalators has grown progressively. This has resulted in a diverse product base (20 different types of escalators and seven different types of lifts). The current strategy is to seek to standardise these assets where possible in order to reduce unit costs.
- 4.4 For both lifts and escalators, there are detailed work banks that prioritise which assets should be renewed, replaced or life-extended in a given year. These work banks are prioritised using the following criteria:
- (a) asset risk profiles: an assessment of the risk associated with the failure of any of the asset sub systems or components, and the controls in place to prevent such failure and assure safety;
  - (b) asset condition: determined through the asset's compliance against standards, its reliability, and its estimated residual life;
  - (c) asset criticality: a measure of the asset's importance to the operation of the station and the potential lost customer hours which could result from failure; and
  - (d) opportunities and synergies from alignment with other planned works, for example line closures, to minimise disruption or save costs.
- 4.5 The work bank is regularly reviewed and the priority list evolves as asset condition concerns or work synergies emerge.
- 4.6 The Programme is actively pursuing efficiencies through a policy of standardisation, challenging scope and standards and by regularly testing the market to get the best value contracts. In 2018/19 a new specification was implemented for escalator controllers, which reduces complexity and delivers a saving of £15k to £20k per intervention. A new simplified and standardised specification for surface-level lifts has saved the Programme £750k.

## **5 Proposal**

- 5.1 The proposal is to continue the in-truss programme following the trial at Wood Green. The unit cost is expected to reduce further as familiarity with the process increases and more innovations are introduced. This will further extend the life of the escalator, provide improved reliability in comparison to a refurbishment and will contribute to a more standardised asset base.
- 5.2 The first in-truss installations will start in late 2021 following a period of design and procurement of parts. At the end of the current tranche of escalator refurbishments, the delivery team will carry out targeted minor capex interventions on up to fifteen machines as part of a condition improvement project, before starting the in-truss replacements. The in-truss programme will bring eight machines into use by March 2023.

5.3 The deliverables and financial implications are summarised below:

Intervention	Escalators completed				Costs (£m)			
	20/21	21/22	22/23	Total	20/21	21/22	22//23	Total
Capex interventions	6	6	0	12	£4.0	£3.5	0	£7.5
In-truss replacements	0	3	5	8	£1.4	£4.0	£9.5	£14.9

**Table 2: Proposed volumes and costs for 2020/21 – 2022/23**

5.4 The authority request includes a risk provision of 10 per cent.

## 6 Financial implications

6.1 The table below provides a summary of costs and authority for the lift and escalator Programme for future years. Due to the long-term nature of the pan-TfL contracts which include mid-life refurbishments, there are financial commitments up to 2035.

Costs and Funding (£m)	Prior Years	2019/20	2020/21	2021/22	2022/23	Total
<b>Cost (Outturn)</b>						
Existing Programme and Project Authority	417.14	31.76	30.61	45.82	48.01	573.34
Additional Authority Requested			5.4	7.5	9.5	22.40
Total Programme and Project Authority	417.14	31.76	36.01	53.32	57.51	595.74
Future Authority Requests						0
<b>Estimated Final Cost (EFC)</b>						
Existing Financial Authority	417.14	31.76	35.96	48.42*	57.51	590.79
Estimated Final Cost (EFC)	417.14	31.76	35.96	48.42*	57.51	590.79

\*Includes £4.9m proposed efficiency saving

**Table 3: Lift & Escalator Programme costs and funding**

6.2 The EFC and Financial Authority currently show a reduction in annual run rate in 2020/21. This is the result of an error in previous business planning cycles and an adjustment to this profile will be undertaken through business planning 2019 to reflect the correct phasing of the pan-TfL escalator contract.

## **7 Equality Impact Assessment**

- 7.1 The Programme is delivered in accordance with the Equality Act 2010. Equality Impact Assessments are carried out for every intervention, with due regard to our obligations under the public sector equality duty in section 149. Further work has been done by the Programme in certain locations to upgrade station facilities such that lifts can now be used to carry out managed passenger evacuations.
- 7.2 In addition, the Programme has in several instances done work to upgrade back-of-house lifts in order that they may be brought into temporary public use to maintain Step Free Access for the duration of the lift closure.

## **8 Assurance**

- 8.1 A TfL Project Assurance (PA) and Independent Investment Programme Advisory Group (IIPAG) Assurance Review of the programme took place in September 2019, with no critical issues and seven recommendations. All of the recommendations have been accepted and are being actioned.
- 8.2 An Integrated Assurance Plan for the Programme has been agreed with TfL PA, which details the project-level reviews that will take place over the course of the year.

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

None

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

IIPAG and PA Reports  
Management response to IIPAG and PA Reports

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## Programmes and Investment Committee



**Date:** 23 October 2019

**Item:** London Underground Railway Systems Enhancements Programme

**This paper will be considered in public**

### 1 Summary

- 1.1 The purpose of this paper is to update the Committee on progress with delivery of the London Underground (LU) Railway Systems Enhancements (RSE) Programme, until recently known as the World Class Capacity Programme.
- 1.2 The table below shows the current Programme and Project Authority, the Financial Authority in the 2018 Business Plan and current (2019/20) Budget, and the Estimated Final Cost (EFC) as at P6, 2019/2020.

<b>London Underground Railway System Enhancements (RSE)</b>				
Existing Financial Authority	Estimated Final Cost (EFC)	Existing Programme and Project Authority	Additional Authority Requested	Total Programme and Project Authority
£204.9m	£194.8m**	£245.1m	£0m	£245.1m*

\* The Programme and Project Authority exceeds the Financial Authority as a result of scope reductions and cost savings made as part of the Business Planning process.

\*\*The Programme EFC is below the Financial Authority in the 2018 Business Plan and 19/20 budget. It is expected that the 2019 Business Plan, once agreed, will be aligned to the current Programme EFC and phasing.

### 2 Recommendation

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

### 3 Background

- 3.1 The Railway Systems Enhancement (RSE) Programme) was established in 2013 to deliver service capacity increases on the Victoria, Jubilee and Northern lines.
- 3.2 In 2017 the Programme successfully delivered an end to end 36 trains per hour peak service on the Victoria line making it one of the highest frequency metro services in the world. In 2018 the Programme delivered enablers which supported an extension to the duration of time a 30tph peak service could be operated on the Jubilee line.

- 3.3 As the Committee will recall, after careful consideration to balance investment priorities across the network, the decision was made in 2017 not to proceed with the procurement of additional Jubilee and Northern line trains.
- 3.4 Following the rebalancing of our Investment Programme in 2017 the RSE Programme was revised to focus on maximising the utilisation of the existing Jubilee and Northern line train fleets. The revised scope and capacity outcomes were presented to the Committee in July 2018.
- 3.5 The RSE Programme will deliver the following capacity outcomes for the Jubilee and Northern lines:
- (a) Jubilee line capacity improvement: Up to 32 trains per hour to operate between West Hampstead and North Greenwich stations in the peak periods; and
  - (b) Northern line capacity improvement: 31 trains per hour on the Morden branch in the peak (one of the most congested parts of the entire London Underground network in the peak periods). This will also facilitate a small improvement in peak capacity on the Bank branch. Programme deliverables will also enable the introduction of services on the Battersea branch once the Northern Line Extension is completed.

### Capacity Table

	Start Capacity (Trains Per Hour)	End Capacity (Trains Per Hour)	Capacity Increase	Target Completion Date
Victoria line	33	36	9%	Delivered
Jubilee line	30	32	7%	Mid-2022
Northern line (Morden branch)*	30	31	3%	Autumn 2021
Northern line (Bank Branch)*	26	27	4%	Autumn 2021
Northern line (other existing branches)	24	24	No change	

\*morning peak hour in the Northbound direction

- 3.6 The Programme is also completing a number of Power and Rolling Stock activities which are either dependencies for the Four Lines Modernisation (4LM) programme, essential power resilience works or close out activities from the original Jubilee and Northern line signalling upgrades. More detail on the Programme scope is included in Appendix 1.

## 4 Programme Delivery Since July 2018

- 4.1 This section summarises progress made since the last update to the Committee in July 2018.



## **Victoria Line Upgrade 2**

- 4.2 The Victoria Line Upgrade 2 (VLU2) is complete and was financially closed in July 2019. A peak service of 36 trains per hour was successfully introduced in May 2017.

## **Northern Line**

- 4.3 In July 2019 the Programme reached agreement with the Northern line fleet maintainer to enable an additional train to be made available for service from the existing Northern line train fleet. This will be achieved through changes to maintenance processes enabled by the installation of a new wheel lathe at Morden train maintenance depot. A change in delivery strategy for these works has resulted in a cost saving to the Programme of £4m.
- 4.4 Track works required to support faster train speeds on the Northern line have been substantially completed. These works will deliver reduced run times which, in turn, will reduce journey times for customers and support a 31 trains per hour service level on the Morden branch.
- 4.5 In order to deliver these planned run time improvements into service an update to the existing signalling system software is planned. Over the past year design reviews for this software update have been successfully completed. However, in order to protect key milestones on other programmes which are also supported by our signalling supplier, the implementation date for this software update has been rephased from late 2019 to Spring 2020.
- 4.6 Due to the high number of investment projects being delivered across the London Underground network over the next 2-3 years a phased rollout of service improvements is planned. It is intended to introduce the 31 trains per hour Morden service in Autumn 2021 as part of the timetable change that will also incorporate the new service to Battersea Power Station.
- 4.7 The Programme includes power upgrade works on the Northern line. These are required to address poor asset condition, provide additional resilience to the Northern line service and enhance network power capacity to support the future increases in service level on the Sub-Surface lines (District, Circle, Hammersmith & City and Metropolitan) after the Four Lines Modernisation (4LM) Programme is delivered.
- 4.8 In August 2018 a contract was awarded for a first package of Northern line power works following a competitive tendering process. This is progressing to schedule, detailed design is nearing completion and enabling works have started on site.

## **Jubilee Line**

- 4.9 In 2018 a package of enhancement works was delivered on the Jubilee line under the original Jubilee Line Upgrade 2 (JLU2) scheme. These included power upgrades, tunnel cooling, staff accommodation refurbishment and an enhanced facility for reversing trains at West Hampstead. These improvements enabled the duration of 30 trains per hour peak service operation to be extended in both peaks in May 2018.

- 4.10 A further package of works for the Jubilee line was developed following the re-scoping exercise in late 2017. These works are designed to optimise capability and availability from the existing rolling stock and signalling assets to achieve a service level of 32 trains per hour in the central area of the Jubilee line.
- 4.11 These works include investment in the existing Jubilee line fleet to improve reliability and availability through new equipment and technology and changes to maintenance processes. In June 2019 an order was placed to procure a new wheel lathe which is expected to be installed at Stratford Market Train Maintenance Depot in Autumn 2020.
- 4.12 Plans to introduce a real time on-train condition monitoring system to the Jubilee line fleet are also progressing, with a detailed feasibility study nearing completion. This proposal is intended to reduce the likelihood of fleet service affecting failures, reduce the down time for repairs and improve overall train availability.
- 4.13 Signalling system modifications are needed to enable a higher service frequency to operate on the Jubilee line; these will be delivered through a software update by our signalling supplier. In the last year the Programme has been working to identify the scope of works for this software update with the intention of entering into a contract for these works in early 2020. With the signalling supplier committed to delivering works for a number of other programmes and the need to progress those works in a particular order, it is expected that the signalling software update on the Jubilee line will be delivered in time to support a frequency uplift on the Jubilee line in mid 2022.
- 4.14 A package of works is progressing to address train braking performance and remove redundant signalling equipment from both the Jubilee and Northern line fleets which form part of the final close out of the original signalling upgrades. Works on the Jubilee line are close to completion whilst Northern line works are due to complete by early 2021.

## 5 Financial implications

- 5.1 The RSE Programme has a current Programme and Project Authority of £245.1m. The table below provides a summary of capital expenditure and the funding position for the Programme in the 2018 Business Plan:

<b>Investment Funding</b>	<b>Prior years</b>	<b>18/19</b>	<b>19/20 (budget)</b>	<b>20/21</b>	<b>21/22</b>	<b>22/23</b>	<b>23/24</b>	<b>Total</b>
Financial Authority: Business Plan 2018	95.7	20.6	34.5	12.5	9.7	9.7	22.2	204.9
Programme EFC (Period 6)	95.7	15.7	17.7	21.1	19.8	5.8	19.0	194.8
<b>Plan Surplus / (Shortfall)</b>	<b>0.0</b>	<b>4.9</b>	<b>16.8</b>	<b>(8.6)</b>	<b>(10.1)</b>	<b>3.9</b>	<b>3.2</b>	<b>10.1</b>

- 5.2 The Programme EFC is below the Financial Authority in the 2018 Business Plan and 19/20 budget. It is expected that the 2019 Business Plan, once agreed, will be aligned to the current Programme EFC and phasing.

## 6 Challenges and Opportunities

6.1 Key challenges and opportunities facing the Programme are:

- (a) delivering the required signalling software updates optimisations on the Northern and Jubilee lines to the planned implementation dates. Our signalling supplier is already committed to delivering other TfL programmes in the same timescales;
- (b) a potential opportunity to bring forward the 31 trains per hour Morden service uplift to mid 2020 is currently being investigated; and
- (c) the opportunity for the modification of the Jubilee line signalling software update to also include a train coasting functionality which would improve energy efficiency – is being explored.

## 7 Assurance

7.1 A TfL Project Assurance Review of the Programme took place in September 2019. No critical issues were identified. Recommendations from the report are being addressed, as detailed in the management response.

7.2 The Integrated Assurance Plan for the Programme has been agreed with TfL Project Assurance and this plan details the project-level reviews that will take place over the course of the year.

### List of appendices to this report:

Appendix 1: Overview of RSE Programme Scope

### List of background papers:

Project Assurance Report

Management response to TfL Project Assurance Report

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## **Appendix 1: Overview of RSE Programme Scope**

### **Completed Works**

#### **Victoria Line Upgrade 2**

- 1.1 The Victoria Line Upgrade 2 (VLU2) is complete and financially closed. A peak 36 trains per hour service was successfully introduced in May 2017.

#### **Jubilee Line Upgrade 2**

- 1.2 A package of works was delivered on the Jubilee line under the previous Jubilee Line Upgrade 2 (JLU2) scheme in 2018. This included power, tunnel cooling, staff accommodation refurbishment and an enhanced West Hampstead train reversing facility. These improvements enabled an extended 30 train per hour peak service to be introduced on the Jubilee line in both peaks in May 2018. Final close out of works is being completed on these packages prior to them being financially closed.

### **Ongoing Works**

#### **Jubilee Line Capacity**

- 1.3 This includes projects which deliver the following main items of scope:
- (a) modification of the signalling system and braking improvements (supported by some track work);
  - (b) works to improve maintenance infrastructure at Stratford Market Train Maintenance Depot to improve fleet availability;
  - (c) modifications to improve real time on-train condition monitoring capability to reduce breakdowns in service that can occur, leading to an improvement in fleet availability; and
  - (d) changes to operational and maintenance practices.

#### **Northern Line Capacity**

- 1.4 This includes projects which deliver the following main items of scope:
- (a) track works and braking improvements to enable faster speeds;
  - (b) the modification of the signalling system;
  - (c) minor power works to support a higher frequency service;
  - (d) improvements to maintenance infrastructure at Morden Train Maintenance Depot and changes to maintenance processes to improve fleet availability; and
  - (e) renewal of track in the Kennington area.

## **Northern Line Power**

1.5 The Programme includes power works required to address poor asset condition, provide additional resilience to the Northern line service and enhance network power capacity to support the future increases in service level on the Sub-Surface lines (District, Circle, Hammersmith & City and Metropolitan) after the Four Lines Modernisation (4LM) Programme is delivered.

1.6 There are two main packages of works;

Power Package 1 comprises:

- (a) replacement of life expired coupling transformers at Stockwell substation; the condition of these assets is poor with no residual life remaining;
- (b) upgrades at Whitechapel and Mile End Substations. This work is required to reduce existing load on the coupling transformers at Mansell Street and release capacity for future load growth associated with the service improvements to be delivered on the Sub-Surface lines after the 4LM Programme is delivered; and
- (c) an upgrade to the High Voltage network between Stockwell and Clapham Common substations to support service levels on the Northern line.

Power Package 2 comprises:

- (a) upgrades at several substations and cable reinforcement works along the Northern line to provide additional resilience to the Northern line service. The scope and timescales for these works are being finalised following the completion of modelling and surveys.

## **Northern and Jubilee Line Rolling Stock**

1.7 This is a programme of modifications to address train braking performance, remove redundant signalling equipment from both fleets and alleviate a capacity constraint at Neasden train depot.

## Programmes and Investment Committee



Date: 23 October 2019

Item: Air Quality and Environment

**This paper will be considered in public**

### 1 Summary

- 1.1 This paper provides an update on the delivery of the ULEZ Expansion 2021 (ULEX), Low Emission Zone 2020 (LEZ 2020), HGV Safety Permit Scheme (Direct Vision Standard (DVS)), Camera Refresh project and associated Scrappage Schemes (Van and Minibus, and Car and Motorcycle schemes). This paper also requests Procurement Authority to continue development work with key suppliers.
- 1.2 A full update on all projects within the AQE programme and further authority requests will be included in the annual paper to the Committee in December 2019.
- 1.3 Supplementary information is included in Part 2 of the agenda for Members. This information is exempt and is therefore not for publication to the public or press 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 Recommendation

- 2.1 **The Committee is asked to note the paper and the related paper on Part 2 of the agenda and approve the additional Procurement Authority, asset out in the paper on Part 2 of the agenda, to extend and vary the contract with Capita Business Services Limited for the development of the back-office system elements for ULEZ Expansion 2021 (ULEX), LEZ 2020, HGV Safety Permit Scheme (DVS), Camera Refresh Project and associated scrappage schemes.**

<b>Air Quality and Environment</b>				
<b>Existing Financial Authority 2019/20-2023/24</b>	<b>Estimated Final Cost (EFC) 2019/20-2023/24</b>	<b>Existing Procurement Authority</b>	<b>Additional Procurement Authority Requested</b>	<b>Total Procurement Authority</b>
£373.5m*	£379.5m	As shown in Part 2 of the agenda	As shown in Part 2 of the agenda	As shown in Part 2 of the agenda

\*Existing Financial Authority and EFC for entire AQE Programme

### 3 Background

- 3.1 The Mayor has a legal responsibility under the Greater London Authority (GLA) Act 1999 to prepare an Air Quality Strategy for London (now part of the London Environment Strategy) and to lead on the implementation of measures in the city to achieve compliance with EU legal pollution emission 'limit values'. London is currently in breach of the legal limits for NO<sub>2</sub> concentrations. Improving air quality is one of the key objectives of the Healthy Streets Approach outlined in the Mayor's Transport Strategy (MTS) published in March 2018:

*"The Mayor, through TfL, will seek to introduce the central London Ultra Low Emission Zone (ULEZ) standard and charges in 2019, tighter emissions standard London-wide for heavy vehicles in 2020, and an expanded ULEZ covering inner London in 2021." (Proposal 24)*

- 3.2 TfL has a duty under section 39 of the Road Traffic Act 1988 to take appropriate measures to prevent accidents including in the exercise of its powers for controlling, protecting or assisting the movement of traffic on roads in the light of studies into road traffic accidents. The MTS states:

*"The Mayor, through TfL, the boroughs and policing and enforcement partners, will seek to reduce danger posed by vehicles by working to ensure that vehicles driven on London's streets adhere to the highest safety standards, starting with a new Direct Vision Standard for HGVs." (Proposal 9)*

- 3.3 There are a number of road user charging schemes already in operation including the Congestion Charge (CC), Low Emission Zone (LEZ) and ULEZ Central. The LEZ 2020 (upgraded emissions standards and charges for heavy vehicles across Greater London) will be introduced in October 2020. In addition, it is intended DVS<sup>1</sup> will also open in October 2019 (voluntary registration) and October 2020 (enforcement) and will require a similar back-office operation.
- 3.4 The two scrappage schemes associated with ULEZ - Van and Minibus (launched in February 2019) and Car and Motorcycle (due to be launched in October 2019) - also utilise some of the back-office operations.
- 3.5 In May 2019, it was agreed by the Committee, in order to improve efficiency and to avoid the risk of inconsistency, that ULEX, LEZ 2020, DVS, Camera Refresh project and the Van and Minibus Scrappage Scheme should all be managed and governed within the AQE programme. In addition, the Car and Motorcycle Scrappage Scheme (announced by the Mayor in February 2019) will also be launched in October 2019 within the same group of projects.
- 3.6 Table 1 below shows the summary of projects that are being delivered in similar timescales.

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<sup>1</sup> This is not a road user charging scheme but is to be implemented by means of a pan-London traffic regulation order, which will have similar back-office functions (e.g. issue of Penalty Charge Notices to non-compliant vehicles) to charging schemes.



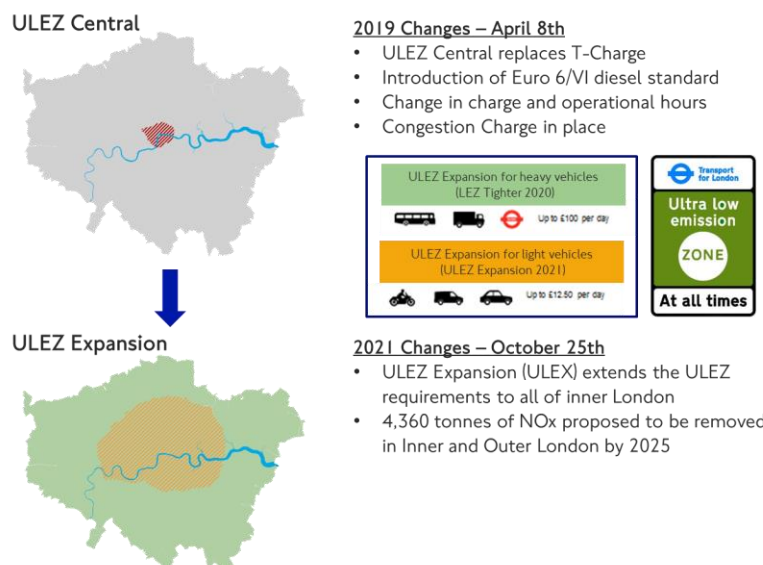
Scheme	Go Live	Supplier
Car and Motorcycle Scrappage Scheme	October 2019	Capita / Siemens
Van and Minibus Scrappage Scheme changes	Late 2019	Capita / Siemens
HGV Safety Permit (DVS) Registration	October 2019	Capita
LEZ Tighter 2020	October 2020	Capita / Siemens
HGV Safety Permit (DVS) Enforcement	October 2020	Capita / Siemens
ULEZ Expansion 2021	October 2021	Capita / Siemens
Camera Refresh	2021/2022	Siemens

**Table 1 – Summary Road User Charging, Road Safety and associated related schemes**

## 4 Project Background and Updates

### ULEZ Expansion 2021

- 4.1 The Mayor confirmed in June 2018 that the ULEZ will be expanded on 25 October 2021. Expanding the ULEZ up to the North and South Circular roads will add to the benefits delivered by ULEZ Central and contribute to London achieving NO<sub>2</sub> limit value compliance by 2025 or sooner (figure 1).



**Figure 1: ULEZ Expansion 2021**

- 4.2 The introduction of ULEZ Expansion in October 2021 will require the operating system to cater for around four times greater volumes than the current central London ULEZ. The system will need to be scaled to meet the expected demand in addition to the demand seen for the existing schemes.
- 4.3 Since the last submission to the Committee in May 2019, the ULEX project has been progressing through its concept and detailed design stages. The following activities have been achieved:

- (a) Traffic modelling has been undertaken and we have assessed the impact on the ULEX boundary. Evaluation of appropriate mitigations to address these impacts e.g. signal timings or highway amendments has commenced;
- (b) stakeholder engagement has started with Boroughs along the boundary to discuss the expected impact and identify opportunities to support local stakeholder engagement;
- (c) the back-office system design is underway through requirement gathering with Capita and Siemens; evaluating the interface between the data being collected and the capacity of the system to process it; and
- (d) a review of camera and signage locations has been undertaken, to ensure street clutter is minimised. Designs for new signs have been submitted to the Department for Transport for approval.

### **Van and Minibus Scrappage Scheme**

- 4.4 In February 2019, the Mayor launched a London wide scrappage scheme, targeted at micro businesses and charities who own non ULEZ compliant vans and minibuses. The aim of this van scrappage scheme is to increase vehicle compliance with the ULEZ emission standards and as a result increase air quality benefits, whilst supporting those businesses to make the switch.
- 4.5 Following feedback from scheme applicants, minor improvements were made to customer facing forms and systems interfaces in May 2019. In addition, updates were also introduced to include: refunding of paid ULEZ charges to all applicants; the introduction of long-term hire as a scrappage replacement option; and alternative evidence of frequent journeys being considered in addition to AutoPay journeys.

### **Car and Motorcycle Scrappage Scheme**

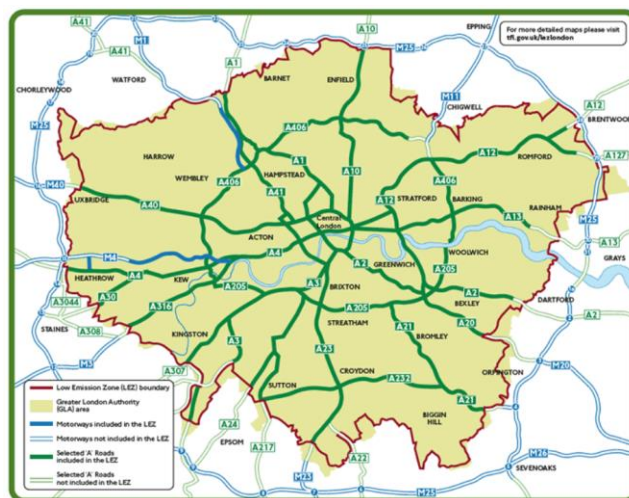
- 4.6 In October 2019, a new Car and Motorcycle Scrappage Scheme (the Scheme) will be launched by the Mayor to incentivise recipients that meet the Scheme's eligibility criteria, to scrap older, more polluting vehicles and switch to cleaner alternatives or use different modes of transport.
- 4.7 The principal benefit of the Scheme is to mitigate the financial impact of the ULEZ and thus prevent the possibility of socially excluding vulnerable groups in society, whilst also increasing vehicle compliance with the ULEZ emission standards and as a result increase the likelihood of realising air quality benefits.
- 4.8 Both of the scrappage schemes have been developed and delivered (since their announcement in February 2019) through the existing Capita contracts.

### **Low Emission Zone (LEZ) 2020**

- 4.9 As part of the Mayor's pledge to help improve air quality and health for all Londoners, LEZ 2020 will strengthen the emission requirements for the existing LEZ that applies to heavy vehicles.

4.10 LEZ 2020 is featured in Proposal 24 of the MTS as well as in the London Environment Strategy. It is also included and modelled in the Air Quality Action Plan submitted by the Government to the European Commission outlining how London will be brought into compliance with legal limits by 2025 or sooner. The strengthened emissions standards for heavy vehicles apply in the current Greater London area of the LEZ (see Figure 2). The main items of LEZ 2020 in scope are:

- (a) Introducing a new tier of emissions standards (Euro VI) to the London-wide LEZ scheme for heavy goods vehicles (HGVs), coaches and buses (i.e. heavy vehicles) from 26 October 2020, with non-compliant vehicles incurring a daily charge of £100; and
- (b) older HGVs that do not meet the Euro IV Particulate Matter (PM) standard will have their LEZ charge increased to £300.



**Figure 2: LEZ boundary**

4.11 LEZ 2020 is now progressing through the concept and detailed design stages, encompassing updates to both the TfL website and the business operations and enforcement systems. A joint marketing campaign targeted at HGV drivers for both LEZ 2020 and DVS was launched in October 2019.

### **HGV Safety Permit Scheme (DVS)**

4.12 The Mayor has committed to delivering a Vision Zero approach in London to make its streets safer for all. London has a particular problem with vulnerable road users and HGV collisions. All HGVs over 12 tonnes (largely Class N3) will be required to hold a Safety Permit in order to operate in the Greater London area from October 2020. Those not meeting a minimum DVS star rating of one star (i.e. those that are zero star) will be required to fit additional safety equipment to increase the vehicle's safety. The minimum DVS threshold will rise to three stars from October 2024 to ensure we continually improve the safety of HGVs coming into London. We believe this will greatly reduce the number of incidents where people are killed and seriously injured on our roads especially for vulnerable road user groups.

4.13 DVS will launch in October 2019 on a voluntary basis with a 12-month pre-compliance period within which hauliers will be able to apply for a permit. Enforcement of the scheme will begin in October 2020.



**Figure 3: DVS Safe System Proposals**

- 4.14 The DVS project is progressing well and will deliver the Registration system element in October 2019. The project is also at concept design stages for the Enforcement element, whereby Penalty Charge Notices will begin to be issued from October 2020.
- 4.15 We are continuing to engage with stakeholders in the freight industry including the launch of targeted marketing campaigns and presentations at events and forums. The following key activities have completed:
- (a) A fourth consultation on the final Scheme proposals and Statutory Traffic Regulation Order (TRO) (the legal mechanism for enforcing the HGV Safety Permit Scheme) was held from 26 April to 23 May 2019. This set out the final package of proposals for consultation, taking into account and responding to, feedback from the previous consultation; and
  - (b) London Councils Transport and Environment Committee made and advertised the TRO on 27 August 2019.

### **Camera Refresh Project**

- 4.16 The Camera Refresh project aims to replace the existing cameras which are approaching their end of life and upgrade the network within the Congestion Charging zone. This workstream has now be consolidated into the ULEX project to drive synergies as part of the wider strategy to introduce new cameras as ULEZ expands to the North and South circular roads. A review is being undertaken to identify the optimum number and locations of cameras.
- 4.17 In May 2019 the Committee approved £11.9m of Programme and Project Authority to progress this project.

## **5 Financial Implications**

- 5.1 In March 2019, the Committee approved £10.0m of additional Procurement Authority to enable the progression of a negotiation phase and the continuation of project design across the back-office system for ULEX.
- 5.2 In the May 2019 paper to the Committee it was confirmed that the Procurement Authority would be used for the negotiation strategy across all related projects

within the AQE programme. Since then the associated scrappage schemes have also been included within the AQE programme.

5.3 The Committee is requested to approve additional Procurement Authority in the sum set out in the paper on Part 2 of the agenda to support the development of the back-office systems for projects within the AQE programme.

5.4 It is proposed to return to the Committee in December 2019 to provide a full update as part of the AQE programme annual submission and to request to Project and Programme Authority for the coming year.

## 6 Benefits and Value

6.1 The overall aim of the AQE programme is to reduce air pollutant levels by reducing emissions from road transport and improve safety, which it will achieve through the following objectives as detailed in Table 2 below:

Objectives	Main benefits
Promote the uptake of cleaner and safer vehicles	<ul style="list-style-type: none"> <li>Improvements in air quality for the benefit of the general public, including visitors and residents of Greater London, resulting in improved health and quality of life and increased life expectancy.<sup>2</sup> Particularly beneficial for more vulnerable groups such as children, older people and those suffering from chronic respiratory conditions</li> <li>Reduced burden on the NHS and social care</li> <li>Increasing London's compliance with European limit values for NO<sub>2</sub> and with the WHO's PM recommendation.</li> <li>Reducing the number of incidents where people are killed and seriously injured on our roads especially for vulnerable road user groups</li> </ul>
Encourage a switch from private vehicles to cleaner, safer, alternative modes of transport	
Successful and timely delivery of LEZ 2020 and ULEZ Expansion by 2021 to meet TfL's obligations under the road user charging Scheme Order, EU air quality directive and domestic law	
Reduce air pollutant emissions from road transport, particularly those with greatest health impacts, to support Mayoral strategies and contribute to achieving compliance with EU limit values	
Adaptability and flexibility within the system and its operation to support delivery of any schemes	
Improve the safety, health and wellbeing of Londoners	

**Table 2 – AQE key benefits**

<sup>2</sup> In 2016, 6.4 per cent of all deaths in London were attributable to particulate air pollution - substantially higher than England overall (5.3 per cent) reflecting higher pollution levels in the Capital. [Public Health Outcomes Framework](#)

## 7 Delivery Plan

- 7.1 The projects have been working through option selection, and the key upcoming milestones are detailed in Table 3 below.

Milestones		Date
1	Car and Motorcycle Scrappage Scheme Launch	October 2019
2	HGV Direct Vision Standard Registration Launch	26 October 2019
3	LEZ Tighter 2020 Requirements completed	4 November 2019
4	LEZ Tighter 2020 Core design elements completed	13 December 2019
5	HGV Safety Standard Permit Registration System ready for launch	20 January 2020
6	ULEZ Expansion BOps Contract variation approved	4 March 2020
7	LEZ Tighter 2020 Core development completed	13 March 2020
8	HGV Safety Standard Enforcement Operations 'Go Live'.	26 October 2020
9	LEZ Tighter 2020 Operations 'Go Live'.	26 October 2020
10	ULEZ Expansion 2021 Operations 'Go Live'	October 2021

**Table 3 – Project Milestones**

## 8 Legal and Equalities Impacts

- 8.1 All relevant public bodies (including TfL) are under a legal duty to take appropriate action to achieve compliance with legal limit values for NO<sub>2</sub> concentrations, and reduce exposure to unlawful concentrations, as soon as feasibly possible. They must use those measures at their disposal that are most likely to succeed in this objective. This duty has been recognised by the courts as an imperative that outweighs other concerns not primarily concerned with securing the earliest feasible date, including the level of public expenditure, value for money and other normal operational considerations.
- 8.2 The Programme will be delivered in accordance with the Equality Act 2010. Equality Impact Assessments are considered on all strategies, policies, business plans, change programmes or projects, having regard to our obligations under the public sector equality duty throughout the delivery of the Programme.
- 8.3 An Equality Impact Assessment (EqIA) or Integrated Impact Assessment (IIA) has been undertaken for each scheme and impacts (positive and negative) on people with protected characteristics under the Equality Act 2010 have been identified. (See background papers for full reports for the individual schemes and Appendix 1 for a summary of the mitigations). TfL will continue to have due regard to the matters set out in the Equality Act 2010 as the project progresses and will mitigate adverse effects to the extent that it is possible and reasonable to do so. In parallel, we will also consider the requirement under the Equality Act 2010 advance equality of opportunity and fostering good relations between people who share a relevant protected characteristic and people who do not.

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

- 8.4 All relevant public bodies (including TfL) are under a legal duty to protect personal information and to ensure compliance with the General Data Protection Regulation (GDPR) and associated data protection legislation. A range of robust policies, processes and technical measures are in place to control and safeguard access to, and use of, personal information associated with all the Road User Charging schemes. Full details of how personal data is handled are made available on TfL's Privacy Page (<https://tfl.gov.uk/corporate/privacy-and-cookies/road-user-charging>).
- 8.5 The GDPR came into force on 25 May 2018. It makes conducting a Data Protection Impact Assessment (DPIA) mandatory for the processing of any personal data that is likely to result in a high risk to individuals' right and freedoms. It also requires consultation with the Information Commissioner's Office (ICO) where any such high risk is identified.
- 8.6 TfL is now undertaking a DPIA for ULEX. The DPIA will help to ensure operational decisions made on the locations and numbers of additional cameras that may be installed for an expanded ULEZ, take account of privacy and data security concerns - and identify mitigations for any privacy and data security risks. The DPIA will involve the Information Commissioner's Office (ICO) and the Metropolitan Police Service and include public consultation if the ICO advises to do so.

## **9 Assurance**

- 9.1 An Integrated Assurance Review (IAR) and IIPAG Review of assessment criteria will be undertaken in November-December 2019 to assure the entire AQE programme and will be reported against as part of the annual update and request for an additional Project and Programme authority in December 2019.

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

Appendix 1: Summary of EqIA outcomes

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

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

Paper on Air Quality Management submitted to the Committee on 6 March 2019

Paper on Surface Technology submitted to the Committee on 6 March 2019

Paper on Air Quality Management submitted to the Committee on 15 May 2019

Equality Impact Assessment for ULEX

Integrated Impact Assessment for ULEX

Equality Impact Assessment for LEZ 2020

Integrated Impact Assessment for DVS

ULEZ Car and Motorcycle Scrappage Scheme – Equalities Qualities Impact Assessment Report: Air pollution Exposure in London: Impact on the London Environment Strategy. Aether report GLA.

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## Appendix 1: Summary of Equality Impact Assessment Outcomes

In light of the key findings of the Equality Impact Assessments (EqIAs) a number of changes to the various projects within the Air Quality and Environment Programme are being made or considered by TfL:

### 1 ULEZ Expansion 2021

- 1.1 The EqIA found that certain sections of society could be disproportionately impacted by the introduction of an expanded ULEZ; these being shift workers, residents with poor public transport links, blue-badge holders, minibus operators and users and BAME owners of PHVs and businesses.
- 1.2 To ensure there are no unintended consequences on people with protected characteristics, a number of proposed mitigations are being considered. These include working with van manufacturers and second-hand dealers to provide or promote affordable compliant vehicles; introducing scrappage schemes; encouraging active travel; utilising the plug in car and van grants from the Office for Low Emission Vehicles and implementing improvements to public transport provision and safety.

Sunset periods will also be implemented for the following groups:

- (a) Disabled Tax class vehicles (26 October 2025);
- (b) licensed Private Hire Vehicles adapted for wheelchair access (26 October 2025);
- (c) vehicles registered by TfL under s.165 of Equality Act 2010 (26 October 2025); and
- (d) minibuses purchased before 8 June 2018 by not for profit organisations (25 October 2019 until 29 October 2023).

### 2 Van and Minibus Scrappage Scheme

- 2.1 The proposed scheme is a mitigation measure in response to the Integrated Impact Assessment (IIA) for the ULEZ scheme and is considered likely to be beneficial for groups with protected characteristics as it will contribute towards improving air quality by successfully delivering the ULEZ and reducing health inequality. A recent independent report by Aether<sup>1</sup> published by the Greater London Authority showed that while everyone will benefit from improved air quality; those living in the most deprived areas would benefit the most on average. The pollution exposure 'gap' between the least and most deprived areas is expected to fall by around 70 per cent by 2030 as a result of the ULEZ and other Mayoral air quality policies.

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<sup>1</sup> [https://www.london.gov.uk/sites/default/files/les\\_exposure\\_rpt\\_final2-rb.pdf](https://www.london.gov.uk/sites/default/files/les_exposure_rpt_final2-rb.pdf)

- 2.2 Implementing this pilot scheme will support microbusinesses (including those owned by people with protected characteristics) and appropriate third sector organisations (whose services may be more likely to be utilised by those with protected characteristics) to remove more polluting vehicles, switch to cleaner vehicles and thus avoid the ULEZ charge.

### **3 Car and Motorcycle Scrappage Scheme**

- 3.1 In light of the key findings of the EqIA, a number of changes have been made by TfL to ensure there are no unintended consequences on people with protected characteristics and that the scheme supports and is attractive to the target audience, they include: increasing the grant value, confirming telephone support, additions and changes to the mobility package (a range of special discounts and offers being offered to support sustainable travel), changing the name of the scheme and the development of the marketing and engagement plan.
- 3.2 There were a number of recommendations that could not be accommodated by the scheme due to set parameters including the launch date and need to target those most in need of support.

### **4 Low Emission Zone 2020**

- 4.1 The EqIA identified that both foreign companies and micro and small businesses in the East of London could be disproportionately impacted by the tightened standards.
- 4.2 To ensure there are no unintended consequences on people with protected characteristics a number of proposed mitigations are being considered. These include working with freight and coach manufacturers to encourage them to provide affordable compliant vehicles; lobbying the government through the Mayor to introduce scrappage schemes, the introduction of a van scrappage scheme and working with the British Vehicle Rental and Leasing Association to promote affordable compliant vehicles.
- 4.3 We will also be launching a comprehensive joint marketing campaign for both LEZ and DVS to ensure that both operators are aware of the upcoming schemes.

### **5 HGV Safety Permit Scheme (DVS)**

- 5.1 It is expected that the scheme will have minor negative effects on economic competitiveness and employment; with the construction sector predicted to incur the most adverse impact due to the high number of construction vehicles estimated to be rated below three stars and the high cost of meeting compliance. SMEs are likely to be disproportionately affected, due to their high representation in this sector.
- 5.2 Potential mitigation measures that we are considering include publication of the list of ULEZ compliant HGVs by DVS ratings as early as possible, to provide more clarity and certainty to HGV operators when planning their capital

expenditure; encouraging more freight consolidation in line with the Mayor's Transport Strategy.

- 5.3 We are continuing to work closely with the European Commission and the United Nations Economic Commission for Europe to ensure the requirements across all regulation are ambitious; saving lives not only in London but across Europe and beyond.

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## Programmes and Investment Committee



**Date:** 23 October 2019

**Item:** TfL Growth Fund

**This paper will be considered in public**

### 1 Summary

<b>TfL Growth Fund (Phase Two)</b>				
<b>Existing Financial Authority</b>	<b>Estimated Final Cost (EFC)</b>	<b>Existing Project and Programme Authority</b>	<b>Additional Programme and Project Authority Requested</b>	<b>Total Programme and Project Authority</b>
£244m	£244m	£200m	£-18m	£182m

1.1 This is the annual update to the Committee covering the TfL Growth Fund. The focus of this year's paper is to:

- (a) provide oversight and assurance to the Committee on the progress and management of the Programme;
- (b) identify lessons learnt, and the steps taken over the past year to enhance delivery and further ensure robust management of the Programme;
- (c) set out the Growth Fund's critical role in delivering the objectives of the Mayor's Transport Strategy (MTS) and London Plan and also delivery of the TfL Scorecard; and
- (d) summarise the changes made to the Growth Fund during 2018/19 and potential changes in this year's Business Plan and seek approval to reduce the Programme and Project Authority accordingly.

1.2 A supplemental paper is included in Part 2 of the Agenda which includes exempt supplementary information on individual schemes and supporting information. The information is exempt a 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 the exempt information must take place after the press and public have been excluded from this meeting.

### 2 Recommendations

2.1 **The Committee is asked to note the paper and the related supplemental information on Part 2 of the Agenda and approve the reduction in Programme and Project Authority, from £200m to £182m.**

### **3 Overview of the Growth Fund**

3.1 The Growth Fund is designed to unlock homes and regeneration in particular areas of London where transport acts as a constraint and it plays a core role in delivering the objectives of the MTS and London Plan. The key objectives of the Growth Fund are set out below, with a set of more detailed criteria (against which all projects are assessed), included in Appendix 1.

#### **A. Support sustainable transport schemes that directly unlock homes and jobs in line with the principles of Good Growth**

3.2 Delivering more homes is an even greater priority for London now than at any time since the creation of TfL. In his 2018 Housing Strategy, the Mayor described the chronic shortage of housing as the biggest threat to London's future. The new draft London Plan sets a target for 66,000 new homes every year, but delivery is currently only about half that. Both Government and the Mayor have made it clear that increasing housing supply is a top priority and TfL is helping to facilitate this.

3.3 Integrated transport and land use planning is also fundamental to achieving the mode shift, health and other objectives of the MTS and for underpinning good growth. While clearly there are pressures on our funding and Growth Fund dealing with growth is an important part of our role. If we don't do this proactively, we will have to deal with many more station controls, with road congestion and with reputational damage. With intense pressures already in many parts of London, action is needed now.

3.4 The Growth Fund plays a unique and critical role within TfL's wider investment programme and, while it consists of less than two per cent of TfL's capital investment programme, it sends a clear signal about our commitment to good growth and is the only programme (apart from our own property development portfolio) specific to the third pillar of the MTS 'Supporting new jobs and homes'.

#### **B. Support transport outcomes that align with the Mayor's Transport Strategy – delivering significant co-benefits in terms of step free access, Healthy Streets and passenger improvements**

3.5 In line with feedback from the Committee, the TfL Growth Fund also seeks to maximise other MTS benefits and TfL Scorecard measures. The types of scheme the Fund generally supports are:

- (a) new stations and links to unlock areas of major growth potential, and support place-making, regeneration and sustainable travel outcomes e.g. Woolwich Crossrail station;
- (b) station upgrades in areas of significant growth, to help address congestion problems, improve passenger experience, deliver step free access and catalyse regeneration e.g. White Hart Lane;

- (c) schemes on the Transport for London Road Network and borough roads that tackle constraints on development, and also support the delivery of Healthy Streets outcomes including bus and urban realm improvements and active travel e.g. Elephant & Castle Northern roundabout; and
  - (d) town centre packages including a range of different measures to regenerate town centres, improve bus, cycle and walking access and deliver a step change in place quality, alongside and facilitating significant development e.g. Colindale.
- 3.6 This does not dilute the focus of the Growth Fund but rather allows us to maximise synergies and cost effectively deliver schemes with a broad range of benefits. Some excellent value-for-money schemes simply wouldn't happen otherwise since they do not fit neatly into a single programme perspective.
- 3.7 This is typical of complex town centre schemes like Colindale, where the Growth Fund helps integrate different aspects including Commercial Development; step free access; station upgrade and Healthy Streets improvements alongside the wider regeneration. The range of benefits makes such schemes appropriate for a mix of funding sources (both internal and external). Boroughs also very much value integrated schemes and recognise that the money goes much further in this way.

**C. Leverage third party funding to maximise the impacts of TfL funding and ensure development and other sources are contributing an appropriate share**

- 3.8 A crucial factor is the ability of the Growth Fund to leverage third party funding – indeed, the current round of schemes should leverage funding worth over three times the cost of the programme itself. As the London Assembly Regeneration Committee highlighted:
- “There are clear benefits to a Fund that has a different role to the remainder of TfL’s capital budget. A flexible funding stream which gives a higher priority to regeneration in the business case allows TfL to unlock development in places where it may otherwise stall. And although the sums in question are relatively small, they can have a significant impact because they may lever latent funding from other sources such as developer contributions and boroughs”.*
- 3.9 The Growth Fund gives us the agility to pull together funding deals at key points in time (e.g. when s106 obligations are being negotiated). This is crucial as many of these opportunities emerge quickly, and are one-off / time limited and, without this Fund, many such opportunities would be lost.
- 3.10 The Growth Fund also helps us access other growth related programmes such as the Housing Infrastructure Fund (HIF), Strategic Infrastructure Fund (SIF), the Mayor’s Land Fund and Borough Community Infrastructure Levy (BCIL). In some cases, a timely commitment of funding may be sufficient in itself to bring together full funding packages without ultimately requiring TfL’s contribution.

## **D. Support schemes that are deliverable within the current TfL Business Plan period**

- 3.11 The focus is on delivering the schemes as quickly as possible to deliver tangible impacts in the short to medium term. However, as set out in Section 4, delivery is often dependent on third parties.
- 3.12 In particular cases, the Growth Fund may be committed now to safeguard significant 'prizes' some time in the future. For example, at Walthamstow and Elephant & Castle, funding from the Growth Fund is enabling future proofing works to be integrated into private development above / around the stations that is happening now. These opportunities would otherwise be lost or significantly more expensive in the future.

## **4 Growth Fund Management and Governance**

- 4.1 Work has continued over the past year to further enhance the management and governance of the Growth Fund, based on recommendations made by TfL Project Assurance and an independent review of the Programme by the Independent Investment Programme Advisory Group (IIPAG) in 2017/18 and 2018/19; as well as lessons learnt through the ongoing management of the Growth Fund.
- 4.2 TfL Project Assurance conducted an Internal Assurance Review (IAR) on the Growth Fund in September 2019. The objective of the IAR was to provide the Committee with a view on whether with the Fund is sufficiently well managed. Following the IAR, TfL Project Assurance issued the following statement on the Fund: 'Good progress was made since the last review in July 2018 with recommendations being addressed. There was significant improvement in the programme level documentation, controls and resources, including the production of a monitoring document 'Monitoring and Evaluating Strategy' as a guide to projects receiving the funds. No further recommendations were made'.
- 4.3 Details of the progress made against each of the recommendations is set out in Appendix 2, with some particular aspects highlighted below.

### **Scheme Assessment / Prioritisation**

- 4.4 Funding is allocated on a competitive basis to schemes that are best aligned with the Fund's objectives and the criteria approved by the Committee in 2017. We added some additional criteria in 2018 to ensure projects fully reflect the 2018 MTS and also structured the approach in line with the government's Green Book guidance on how to appraise and evaluate policies, projects and programmes. . The updated scoring and assessment process was shared with Project Assurance in Autumn 2018 and a number of further improvements were made. The full assessment criteria is included in Appendix 1.
- 4.5 Projects are reviewed against these criteria every six months as part of the active management approach set out below. We will continue to review the criteria to ensure the projects allocated funding best meet the Fund's – and TfL's overall – objectives.



## **Governance**

- 4.6 The Fund interfaces closely with other programmes and projects across TfL since it contributes to the wider funding package of a range of projects. This includes the stations (and step free access) programme, Healthy Streets, and Rail Investment programmes.
- 4.7 TfL's Investment Group provides governance and oversight reflecting the 'bespoke' remit of the Fund. All financial decisions on the Fund are considered by this Group prior to approval.
- 4.8 At a working level, the programme reports to the Growth Areas Steering Group every six weeks, which includes an update on the progress of schemes and a discussion of key issues and risks. The programme also closely interfaces with the Greater London Authority (GLA) who have strategic responsibility for planning and managing growth and development in London, in particular for the housing strategy for London, the Opportunity Area and Housing Zones programmes. The involvement of the GLA is vital to help ensure alignment of priorities, support the progress of schemes and realise benefits.
- 4.9 During the past year, TfL has further strengthened day to day interaction at the officer level. This close working has reciprocally also given us much more involvement in the HIF bidding process, which only the GLA as an upper tier authority can submit to. This close working has helped TfL secure two HIF bids: £291m for upgrades to the DLR and a further £81m for upgrades to the East London line.

## **Active Management Approach**

- 4.10 The reliance on third parties for delivery of the associated homes and development (and in some cases also elements of the transport schemes themselves) has always caused particular challenges and risks to project delivery. In particular, the need to assemble funding packages; secure planning permissions and requirements such as Compulsory Purchase Orders, can often lead to slippage.
- 4.11 This is inherent in the nature and objectives of the Growth Fund but it is clearly important that TfL effectively manages the Fund's delivery and exposure to risk. We have therefore made further improvements to enable us to respond to changes in project circumstances and ensure we focus funding on where it can best deliver the Fund's objectives.
- 4.12 Through an active management approach, working with the delivery businesses, we regularly review and re-evaluate the portfolio. Our experience shows that the status of schemes can change rapidly, and in some circumstances, it may be necessary to reallocate funding to other schemes which can better meet the Fund's objectives. Alternatively, we may agree other third party funding, which can enable TfL to reduce its contribution while still delivering the scheme.

- 4.13 We also carry out a general review against the criteria at least every six months. Schemes are then potentially re-prioritised according to any changes in their scores or status – subject to consideration by the Investment Group and the wider context of funding priorities.
- 4.14 A number of schemes have been reprofiled this year, which has allowed us to make funding available for new schemes to unlock more homes more quickly. Further details of these new schemes are set out in the paper on Part 2 of the agenda.

### **Delivery Service Agreements**

- 4.15 In line with the recommendation from the 2017 IAR (IAR recommendation (ii)), the commitment to funding for individual schemes is not open ended. Rather, we are placing reasonable stipulations on funding contributions made, through a Delivery Service Agreement.
- 4.16 These set out the specific timescales and milestones for each project as well as reporting and monitoring requirements and defined benefits to be realised – with the Growth Fund contribution and funding drawdown tied to meeting these.
- 4.17 This seeks to strike a balance between providing appropriate funding certainty for emerging schemes versus not sterilising the Fund with commitments to schemes that may not progress. The approach has been developed and improved over time with input from project leads. This year we have put in place Delivery Service Agreements with Sponsors for schemes at Ilford, Colindale and Walthamstow Central.

## **5 Growth Fund Monitoring and Evaluation Strategy**

- 5.1 The Monitoring and Evaluation Strategy, discussed with the Committee last year, was launched in the early part of 2019.
- 5.2 To ensure successful delivery of the project, as well as the wider benefits anticipated, all projects must undertake proportionate monitoring across multiple stages of project delivery. This will provide evidence of how the Fund is delivering against its objectives, and also inform lessons learned which will help shape and design future rounds of the Growth Fund.
- 5.3 The assessment measures derive from the Growth Fund Objectives and the Scheme Assessment Criteria. This ensures that there is consistency across both the original assessment and actual appraisal of schemes and ensures alignment with the agreed priorities. As well as tracking progress of the transport schemes themselves, we are also actively involved in the governance of individual Growth Areas with boroughs and the GLA to ensure the housing, jobs and regeneration benefits are secured.
- 5.4 We benchmarked the approach with other organisations (in line with IAR 2017 recommendation (v)), and will continue to collaborate with different teams across TfL and the GLA to keep the strategy under review.

- 5.5 A new handbook for sponsors provides guidance to project leads on how to collect evidence on project performance and understand impacts as an integral part of the project delivery process. Key aspects include:
- (a) a Monitoring and Evaluation Plan template to help Sponsors develop a bespoke monitoring and evaluation approach for the project;
  - (b) example logic chains to help Sponsors map the context, objectives, and expected outputs and outcomes of the project;
  - (c) an Impact Metric List which can be used to help understand impact throughout the project lifecycle; and
  - (d) a self-evaluation template to help Sponsors complete reporting once the project is complete.

## 6 Growth Fund Programme Progress and Delivery in 2019/20

- 6.1 A brief summary of each Growth Fund project, including recent progress, milestones and risks, is provided in Part 2 of this paper. There is good progress across many of these schemes, and the Growth Fund is starting to deliver benefits throughout London – unlocking new homes and jobs, delivering new public transport capacity and leveraging third party funding. This includes:
- (a) **White Hart Lane station**, completed in summer 2019: this increases capacity and provides step free access, and is actively supporting the regeneration and growth of the area;
  - (b) the **new step free Barking Riverside Overground station**, set to open in late 2021, has commenced and is progressing well. In late 2020, work on the viaduct structure will be complete, carrying an elevated twin track railway into the new Barking Riverside station. This station will support the delivery of 10,800 new homes, schools, and community space;
  - (c) construction work on the **new southern entrance at Ilford Station** for TfL Rail has commenced and is due to complete in early 2020. This will support the development of 2,000 new housing units in the area, accommodating the increasing passenger demand and benefiting bus passengers alighting at stops along Ilford Hill;
  - (d) at **Colindale station**, the Growth Fund contribution of £5m has helped to secure the release of £14m of s106 funding from London Borough of Barnet and with the borough approving the planning application, this means the scheme can now move forward to delivery;
  - (e) at **Thameside West station**, the £10m contribution from the Growth Fund helped to secure a further £10m of funding from HIF, and we are also negotiating a contribution from the developer who is proposing to deliver 5,000 homes around this new station; and
  - (f) the Growth Fund played a critical role in the success of the TfL and GLA

**HIF bids** for £291m to increase the capacity of the Docklands Light Railway and £81m to deliver improvements on and along the East London line.

## **7 Budget and Programme and Project Authority**

- 7.1 Programme and Project Authority was granted by the Committee for £200m in 2017 for Phase 2 of the Growth Fund. Subsequently, £31.5m for Rotherhithe to Canary Wharf crossing was transferred out of the Growth Fund and the Growth Fund was reduced in size by a further £25m for the period 2019/20 – 2023/24 as part of the 2018 TfL Business Plan, although a rolling £20m per annum was allocated for the period 2024/25-2029/30. This reduced the size of the Fund to £144m for the first five years of the 2018 Business Plan, but increased the total size of the Fund to £244m over the ten year Business Plan period.
- 7.2 To note a few further changes this year:
- (a) there has been some slippage to a small number of the Fund's projects which has resulted in the re-profiling of expected spend to future years (see Table 1 below). This is primarily a result of delays to the Sutton Link project which currently has £70m of Growth Fund monies allocated to it; and
  - (b) the paper on Part 2 of the agenda provides details of the spending profile for each project within the Fund.
- 7.3 Table 1 shows that the size of the Growth Fund in the 2019 Business Plan for the period to 2028/29 is £243m. Of this, £182m is allocated for specific schemes, with a further £60m yet to be allocated to projects in years 2026/27 – 2028/29. Further details of the schemes that have been allocated funding are set out in Part 2 of this paper.

**Table 1 Growth Fund Budget Profile 2017/18 – 2023/24 – October 2019<sup>1</sup>**

	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	Total
	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
December 2017 forecast	1	1	45	48	105	0	0	0	0	0	0	0	200
December 2018 forecast	0	0	5	33	49	55	3	20	20	20	20	20	244
October 2019 forecast	0	0	1	7	45	35	46	28	20	20	20	20	243
<i>Of which:</i>													
<i>Allocated projects</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>7</i>	<i>45</i>	<i>35</i>	<i>46</i>	<i>28</i>	<i>20</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>182</i>
<i>Yet to be allocated</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>20</i>	<i>20</i>	<i>20</i>	<i>60</i>

7.4 In light of this, our current Programme and Project Authority requirement is £182m – which is less than the £200m granted by the Committee in 2017. We are seeking the Committee’s approval of this reduction.

## **8 Equalities Implications**

8.1 Compliance with the Public Sector Equality Duty will be addressed on a scheme by scheme basis.

## **9 Financial Implications**

9.1 TfL’s 2018 Business Plan sets out the plans for the transport network over the five years 2019/20 to 2024/25 and provides the financial authority needed to deliver the scope of the work set out in this paper.

9.2 TfL’s Business Plan and Budget includes financial provision for the full year’s scope of work. A summary of the budget for 2019/20 and business plan costs to 2024/25 is shown in Table 1.

9.3 Schemes which benefit from a Growth Fund contribution will be required to seek the necessary full authorities through their established governance arrangements

<sup>1</sup> Note that this table only includes the financial profile for Phase 2 of the Growth Fund. The Growth Fund programme has no financial authority for the first tranche of Growth Fund money which was allocated to projects in 2012 - 2014, as this has now been transferred to the delivery businesses. However, the programme still retains a monitoring and evaluation function over the projects to ensure they deliver their wider growth objectives

**List of appendices to this paper:**

Appendix 1: Growth Fund Assessment Criteria

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

**List of background papers:**

Management response to 2018 IAR and IIPAG recommendations

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## Appendix 1: Growth Fund Assessment Criteria

Growth Fund assessment criteria	Notes
<b>Unlocking Growth</b> ( <i>Criteria presented in Dec 17 PIC Paper</i> )	
Number of homes /£m contribution	This is the key measure of value for money
Level of directness of the impact (contingent vs wider support role)	Qualitative judgement, informed by range of technical evidence
Alignment with priority growth areas	As identified in London Plan
Regeneration impact	Judgement based on whether scheme in bottom 20% of most deprived areas in London and expected impacts
<i>Additional criteria</i>	
Number of affordable homes unlocked	Based on current plans, or default to London Plan policy if not known
Number of jobs unlocked	Jobs directly unlocked by scheme, as well as potential for indirect economic growth
<b>Wider Funding Package</b> ( <i>Criteria presented in Dec 17 PIC Paper</i> )	
Contribution from developer(s)	Total expected contribution
Contribution from other sources	Total expected contribution
Reasonableness in context (eg low viabilities)	Qualitative judgement based on technical evidence of viability and other factors
<i>Additional criteria</i>	
% of funding from other sources	Schemes should have at least 50% of funding from other sources, subject to reasonableness context
<b>Deliverability</b> ( <i>Criteria presented in Dec 17 PIC Paper</i> )	
Timescale	Schemes are required to spend Growth Fund money before March 2022
Third party reliance	Scale of third party funding, plus number of different sources
Confidence/reliability of third party funding	Degree to which third party funding is secured
Risk to delivery	Includes cost and planning risks, as well as overall complexity of scheme
<b>Alignment with MTS / other Mayoral priorities</b> ( <i>Criteria presented in Dec 17 PIC Paper</i> )	
Wider / co-benefits delivered by the scheme	E.g. other cultural, environmental etc. benefits
Alignment with key approaches (e.g. Healthy Streets)	
<i>Additional criteria</i>	
Does scheme increase sustainable mode share?	Included to ensure scheme is aligned with MTS
Does scheme improve safety?	Included to ensure scheme is aligned with MTS
Does scheme improve access to PT for all?	Included to ensure scheme is aligned with MTS
Does scheme reduce motor dominance and improve AQ?	Included to ensure scheme is aligned with MTS
Does scheme improve quality of PT experience?	Included to ensure scheme is aligned with MTS

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## Programmes and Investment Committee



**Date:** 23 October 2019

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

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

#### **1 Summary**

- 1.1 This paper presents the current forward programme for the Committee and explains how this is put together. Members are invited to suggest additional future discussion items for the forward plan. Members are also invited to suggest items for the Committee's induction session and 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 Plan Development**

- 3.1 The Board and its Committees and Panels have forward plans. The content of the plans arise from a number of sources:
- (a) Standing items for each meeting: Minutes; Matters Arising and Actions List; and any regular quarterly reports. For this Committee these are the quarterly Investment Programme Report, the regular Project Monitoring 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 plan 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 Plan**

- 4.1 The current plan 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.

**List of appendices to this report:**

Appendix 1: Programmes and Investment Committee Forward Plan

**List of Background Papers:**

None

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## Programmes and Investment Committee Forward Planner 2019/20

**Membership:** Prof Greg Clark CBE (Chair), Dr Nelson Ogunshakin OBE (Vice Chair), Heidi Alexander, Ron Kalifa OBE, Dr Alice Maynard CBE, Mark Phillips, Dr Nina Skorupska CBE, Dr Lynn Sloman and Ben Story

Abbreviations: Managing Director (MD), Customer, Communication and Technology (CCT), London Underground (LU), Surface Transport (ST), CFO (Chief Finance Officer) and D (Director)

<b>18 December 2019</b>		
Use of Delegated Authority	General Counsel	Standing item
Crossrail Update	MD LU	Regular update on progress
Quarterly Programmes and Investment Report	MD LU, 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.
Second line Assurance Activities	Project Assurance	Standing item
IIPAG Quarterly Report	Project Assurance	Standing Item
Air Quality and Environment	MD ST	Annual approval
Surface Asset Programme	MD ST	Annual approval
Barking Riverside Extension	MD ST	To note
Canary Wharf to Rotherhithe Ferry	MD ST	Approval – Single Option Selection
Piccadilly line upgrade [formerly Deep Tube Upgrade]	MD LU	Annual update
Power, Cooling & Energy	MD LU	Annual Approval (may not be required due to Business Plan)
Four Lines Modernisation	MD LU	Annual update
Energy efficiency	Investment Delivery	To note

## Programmes and Investment Committee Forward Planner 2019/20

5 March 2020		
Use of Delegated Authority	General Counsel	Standing item
Crossrail Update	MD LU	Regular update on progress
Quarterly Programmes and Investment Report	MD LU, 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.
Second line Assurance Activities	Project Assurance	Standing item
IIPAG Quarterly Report	Project Assurance	Standing Item
LU Major Stations	MD LU	Annual update
Rolling Stock Renewals	MD LU	Annual approval
LU Signals and Control	MD LU	Annual approval
Northern Line Extension	MD LU	Annual update
DLR Rolling Stock Replacement	MD ST	Annual approval
Public Transport	MD ST	Annual approval

### 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).
- Crossrail updates

## Programmes and Investment Committee Forward Planner 2019/20

Items to be scheduled:

- London Overground future planning
- Bakerloo line extension (City Planning and LU)

Future items for Committee or Board:

- How TfL investment programme is effected by:
  - HS2
  - Heathrow expansion
  - Oxford Street pedestrianisation
  - Football stadiums/events
  - TfL potentially taking over SE/SW rail.

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