

# Agenda

**Meeting: Programmes and Investment Committee**

**Date: Wednesday 18 May 2022**

**Time: 10:00am**

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

## Members

Ben Story (Chair)

Dr Nelson Ogunshakin OBE (Vice-Chair)

Seb Dance

Julian Bell

Dr Lynn Sloman MBE

Peter Strachan

## Government Special Representative

Becky Wood

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

This meeting will be open to the public and webcast live on [TfL YouTube channel](#), 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; Email:

[y\\_JamieMordue@TfL.gov.uk](mailto:JamieMordue@TfL.gov.uk)

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

Howard Carter, General Counsel  
Tuesday 10 May 2022

**Agenda  
Programmes and Investment Committee  
Wednesday 18 May 2022**

**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 2 March 2022  
(Pages 1 - 14)**

General Counsel

**The Committee is asked to approve the minutes of the meeting of the Committee held on 2 March 2022 and authorise the Chair to sign them.**

**4 Matters Arising and Actions List (Pages 15 - 20)**

General Counsel

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

**5 Use of Delegated Authority (Pages 21 - 26)**

General Counsel

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

**6 Independent Investment Programme Advisory Group Quarterly Report** (Pages 27 - 32)

General Counsel

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

**7 TfL Project Assurance Update** (Pages 33 - 36)

General Counsel

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

**8 London Underground Technology Programme** (Pages 37 - 56)

Director Investment Delivery Planning

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

**9 Surface Transport Asset Renewals Programme** (Pages 57 - 84)

Director Investment Delivery Planning

**The Committee is asked to note the paper and agree that the current Programme and Project Authority will apply through to the end of 2024/25.**

**10 Capital Efficiencies Report** (Pages 85 - 102)

Chief Capital Officer

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

**11 Members' Suggestions for Future Discussion Items** (Pages 103 - 106)

General Counsel

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

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

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

**13 Date of Next Meeting**

Wednesday 20 July 2022 at 10.00am.

**14 Exclusion of the Press and Public**

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

**Agenda Part 2**

**15 Independent Investment Programme Advisory Group Quarterly Report (Pages 107 - 120)**

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

**16 TfL Project Assurance Update (Pages 121 - 122)**

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

**17 Capital Efficiencies Report (Pages 123 - 132)**

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

## Transport for London

### Minutes of the Programmes and Investment Committee

#### Teams Virtual Meeting 10.00am, Wednesday 2 March 2022

##### Members of the Committee

Ben Story (Chair)  
Dr Nelson Ogunshakin OBE (Vice Chair)  
Cllr Julian Bell  
Seb Dance  
Dr Lynn Sloman MBE  
Peter Strachan

##### Government Special Representative

Becky Wood

##### Executive Committee

Andy Byford	Commissioner
Howard Carter	General Counsel
Stuart Harvey	Chief Capital Officer

##### Staff

Alexandra Batey	Director of Investment Delivery Planning
Christina Calderato	Director of Transport Strategy and Policy (for Minute 10/03/22)
Daniel Champion	Head of Investment Delivery Planning – Air Quality, Technology and Environment (for Minute 10/03/22)
Michael Cooper	Director, Project Management Office
Patrick Doig	Group Finance Director and statutory Chief Finance Officer
Philip Hewson	Head of Procurement – Strategy and Performance
David Ho	Head of Finance (LU Assets and Engineering)
Lorraine Humphrey	Director of Risk and Assurance
Shamus Kenny	Head of Secretariat
Nick Lawrence	Head of Projects and Programmes (for Minute 10/03/22)
Jamie Mordue	Senior Committee Officer, Secretariat
Collan Murray	Head of Procurement, Major Project Systems
Kumaran Nagiah	Chief of Staff, Major Projects
James Norris	Interim Head of Project Assurance
Jadon Silva	Supply Chain Director
Garry Sterritt	Head of Asset Investment (for Minute 09/03/22)
Shashi Verma	Chief Technology Officer and Director of Strategy
Jonathan Wharfe	Supply Chain Director

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

Alison Munro	Chair, IIPAG
Simon Collins	IIPAG Member

## **01/03/22 Apologies for Absence and Chair's Announcements**

There were no apologies for absence from Members. Simon Kilonback, Chief Finance Officer, Andy Lord, Chief Operating Officer and Gareth Powell, Chief Customer and Strategy Officer were unable to attend the meeting. Patrick Doig attended in place of Simon Kilonback.

The Chair welcomed Cllr Julian Bell, Seb Dance and Peter Strachan as new Members of the Committee and thanked his predecessor, Professor Greg Clark CBE, the Vice-Chair, Dr Nelson Ogunshakin OBE, and key TfL staff for the advice and support he had received from them.

The Chair agreed to accept the item on the Air Quality and Environment Programme as a late paper, as information was not available at time of publication.

As the Committee was unable to meet in person, any decisions required would be taken by Chair's Action, following the discussion of the item with Members at the meeting. The meeting was being broadcast live on TfL's YouTube channel to ensure the public and press could observe the proceedings and decision-making.

Alexandra Batey told the Committee that on 1 March 2022, a cyclist had tragically been killed in a collision with a heavy goods vehicle in Holborn. The thoughts of everybody at TfL was with the friends and family of the deceased. TfL was committed to transforming the junction, which the Walking and Cycling Commissioner had identified as a high priority given the high levels of pedestrian and cyclist activity. The site was complex and interim and long-term changes were being discussed with the London Borough of Camden, to ensure they aligned with the borough's plans for changes to the Holborn gyratory.

Financial Authority was currently provided through the two-year Budget for 2021/2022 and 2022/23, approved by the Board on 28 July 2021. The current funding agreement with Government expired on 24 June 2022. Any Authority granted at this meeting that related to both the current funding period and commitments that extended beyond the period of the Business Plan and Budget may need to be revised as part of future budgets to be considered by the Board. If additional funding was not available, a prioritisation of the TfL Investment Programme would be required and some programmes and projects would not be taken forward and revised authority would be sought as appropriate.

All approvals given would be overseen in accordance with TfL Business controls in respect of draw down.

The Chair reminded those present that safety was paramount at TfL and encouraged Members to raise any safety issues during discussions on a relevant item or with TfL staff after the meeting. No matters were raised.

## **02/03/22 Declarations of Interests**

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

## **03/03/22 Minutes of the Meeting of the Committee held on 15 December 2021**

The Committee approved the minutes of the meeting held on 15 December 2021 as a correct record. The minutes would be provided to the Chair for signature at a future date.

## **04/03/22 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.**

## **05/03/22 Use of Delegated Authority**

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

Since the meeting on 15 December 2021, there had been two uses of Chair's Action: one in relation to approval of authority requests at the meeting of the Committee on 15 December 2021, which had been held on Teams; and one to approve authority requests for the Elephant and Castle Station Capacity Upgrade project.

The Commissioner had approved one Procurement Authority request relating to the Cycle Hire – Bike Maintenance and Supply Contract Extension.

The Chief Finance Officer had also approved four Procurement Authority requests relating to: Stops and Shelters, Advertising Shelters Assets – Advertising Panel LED Replacement; Lot 1 of Media Planning and Buying Services from Wavemaker; Maintenance of Platform Edge Doors on the Jubilee line with Knorr-Bremse Rail Systems (UK) Limited; and Jubilee line Heavy Overhaul Programme Lifts Components – Alstom and the Overhaul of Jubilee line – Line Contactors.

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

**The Committee noted the paper.**

## **06/03/22 Investment Programme Report – Periods 8, 9 and 10, 2021/22**

Stuart Harvey introduced the report, which updated the Committee on the progress and performance of Programmes and projects in the Periods 8, 9 and 10, 2021/22 (17 October 2021 – 8 January 2022).

There was a strong safety performance in the periods and trends had improved. The Four Lines Modernisation Programme was now largely focussed on software, as most of the construction had been completed. A strong software control plan was in place, which drove collaboration and identified issues. Colleagues were working hard to deliver the Programme within existing Authority. Completion of migration area five would complete work on the Circle and Hammersmith & City lines, which would improve customer experience.

Manufacture of the 20 car bodies for Docklands Light Railway had begun. The first two trains were complete and had started static testing. Construction of the Northern Sidings for storage of trains had been slightly delayed.

Stage one of assurance had been completed ahead of target on the new trains for the Piccadilly line. In December 2021, the depot delivery integrator contract was awarded to the joint venture of Lendlease Construction (EMEA) Limited and Jacobs UK Limited, which would support the depot project teams to upgrade the depot. Work on the infrastructure to support the trains had started six months late, owing to uncertainty over funding, and so the work on the trains had been rephased correspondingly.

On the Silvertown Tunnel, good progress had been made on both sides of the river, including where the tunnel boring machine launch, rotation and retrieval chambers were to be constructed.

There was confidence that the estimated final cost (EFC) for the Barking Riverside Extension project would be reduced and be delivered within Authority. The tracks had been laid on the viaduct and there was confidence that a systems integration weekend with Network Rail in April 2022 would be a success. TfL had a good working relationship with Network Rail, with a good contractor that was co-located with the project team.

The work at Bank station which required a 17-week blockade of a section of the Northern line had started well. There were inevitable challenges, given the location, but TfL remained on track to reopen the line in May 2022.

Discussions around the new facility at Elephant & Castle station had concluded and a contract was in place to build a new station box and work on the tunnel. Work continued on value engineering for the station fit out.

Alexandra Batey told the Committee that there were red rated milestones for the Central Line Improvement Programme, as it would be completed later than planned and for the Rotherhithe Tunnel due to an active decision on optioneering. The Committee would continue to be updated. Members welcomed the information on amber and red milestones and asked that they be discussed openly as a matter of course.

The major station improvement at Tottenham Hale station was brought into use on 13 December 2021. All remaining works were on schedule for completion and an official opening was planned for spring 2022.



A public consultation had been held from November 2021 to February 2022 on future step-free access (SFA) priorities. Five thousand responses were received and work on a future SFA strategy had begun.

Work continued on the five life expired escalators at South Kensington station. The Piccadilly line was not stopping at the station but Circle and District line services were uninterrupted.

There were EFC changes in the Rolling Stock Programme portfolio, as they approached different delivery gates, such as with the Central line fleet renewals following the completion of the prototype, and increased understanding of the engineering vehicles locomotive works towards the back end of the timeline.

The Fleet Overhaul Programme continued to develop long and short-term improvements to address the state of good repair across the fleets. Changes to the EFC were again related to delivery gates and greater cost clarity. In addition, funding pressures had resulted in TfL looking at more short-term needs.

As London's largest user of electricity, London Underground operated its own high voltage distribution system and backup power generation capabilities. To maintain the power and integrity of the railway, a rolling programme of renewals was enacted and currently focussed on 22 life expired uninterruptable power units.

The five-year forecast on Healthy Streets had reduced since the report submitted to the December 2021 meeting. This reflected the ongoing funding uncertainty and a managed decline scenario.

It was noted that the report submitted to the meeting on 15 December 2021 contained an error in the EFC for Asset Investment and the figure in the report was now accurate and up to date. The reduction in EFC reflected a managed decline scenario, the delivery of cost savings and deferral of some schemes. Work was focussed on the safety critical and highest priority assets.

A 2020 trial indicated that deployable enforcement cameras, delivered through the Surface Technology Programme, improved road-user compliance by up to 60 per cent in six months. The first camera was deployed to Cambridge Road in January 2022 and a further 50 were expected to be operational by the end of May 2022.

Members asked whether the delays to the completion of depots caused a material risk in terms of storing new trains. Stuart Harvey told the Committee that work on the trains had been rephased.

Members requested a graphical presentation of how costs-to-go was changing between reporting periods and narrative where there were large changes, although it was noted that most reflected a managed decline scenario. TfL officers would consider how best to present data to the Committee but advised that it was difficult with some Programmes that had rolling programmes of renewals with thousands of projects. Members stated that it would also be useful for the report to set out what was included in the portfolios. **[Action: Alexandra Batey]**

Members asked whether the right balance had been struck between reducing costs on road safety and on other assets. The Commissioner stated that a paper would be

submitted to a future meeting of the Board that would contain more detail once TfL knew what money was available; the Government and TfL would partner over capital expenditure but Government contribution size or length was not yet known.

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

## **07/03/22 Independent Investment Programme Advisory Group Quarterly Report**

James Norris and Alison Munro introduced the paper and supplementary information on Part 2 of the agenda, which provided an update on the work undertaken by the Independent Investment Programme Advisory Group (IIPAG) since the last meeting of the Committee.

Two sub-programme reports had been conducted in the period. Cross-cutting work continued, including on the Project Management Office (PMO) and the Procurement and Supply Chain Improvement Programme.

The second part of a report on asset information, which had synergies with asset renewals, was underway and IIPAG was looking at how TfL handled risk, for both cost and schedule.

Alison Munro welcomed suggestions from Members for future areas of work for IIPAG.

Simon Collins told the Committee that IIPAG had been reviewing TfL Supply Chain Contracts. It found that contract form, including the standard use of the New Engineering Contracts suite, had no direct bearing on the cost and schedule delays and levels of commercial dispute experienced. The main issues identified were immaturity of scope at the point of contract award, immaturity of design, poor risk evaluation and management, insufficient project information, such as site investigation or asset condition, pressure to deliver to a deadline, and accrual of unresolved variations.

The Vice Chair shared that he had been involved in development of the NEC form. This was not considered a conflict of interest.

Members asked that IIPAG work with the PMO to help on reporting when there was a change in project budget or scope.

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

## **08/03/22 TfL Project Assurance Update**

James Norris introduced the paper, which provided an update on the project assurance work undertaken between 9 November 2021 and 21 January 2022.

Three full Programme reviews and five project reviews had been conducted in the period. The Independent Investment Programme Advisory Group (IIPAG) had been involved in the majority.

There was a significant reduction in the number of overdue recommendations since the last meeting and, since the papers for the meeting had been published, the number of overdue recommendations had been reduced further to one made by IIPAG and 10 made by TfL Project Assurance.

The Chair welcomed the progress made and the openness in responding to supportive challenges from the Committee. Reviews usually ran on an annual cycle and a core line of enquiry was the status of previously made recommendations, whether they were open or closed and how they had been embedded. Recommendations were also discussed at periodic portfolio meetings.

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

## **09/03/22 Asset Renewals**

Garry Sterritt introduced the paper, which contained material shared with the Department for Transport (DfT) and the HM Treasury (HMT) as part of the discussions on TfL funding.

The presentation set out the process to ensure there was a consistent approach across TfL for describing asset condition and how this could be related back to a scale for state of good repair (SOGR). A dashboard had been created to flag up issues, such as different business areas not consistently using the same asset terminology.

Where assets were classed as 'obsolete' this did not necessarily translate into a poor SOGR; for example an asset might be functioning well but spare parts were no longer being produced or manufacturer support for the asset had ceased.

Owing to the coronavirus pandemic and resulting lower passenger numbers, the distance travelled before an asset needed maintenance had increased.

Data on asset condition and SOGR would eventually need to be related to the emerging definitions for network service and the Mayor's Transport Strategy. For example, excellent or good levels of service would mean that customers knew they would have a safe, reliable and easily accessible journey. A poor level of service would deliver a safe journey but with reduced reliability and customer satisfaction, as a result of restrictions, closures and unplanned maintenance.

TfL was working to estimate how much it would need to invest in renewals by looking at past spend, run rate and asset modelling. Past spend indicated that TfL needed to spend between £750m-1.1bn on renewals per year. Run rate indicated that TfL needed to spend £840m-1.1bn on renewals per year. Asset modelling used computerised models to assess and predict how assets would behave and degrade under different intervention and investment scenarios. Asset modelling would be a key area of focus for the next nine months, to provide a pan-TfL view of alternative

investment scenarios and their impact on outcomes. Checks and balances would be put in place to ensure the data provided was accurate.

In comparison to other asset-based entities, such as Network Rail or National Highways, TfL had a less formalised process for determining asset condition. When TfL was able to link asset condition to levels of service, TfL might be considered more advanced in the maturity of its process. It was noted that TfL did not operate single networks but was multi-modal, incorporating rail, road and active travel.

Given TfL's funding situation, it was critical to properly understand the consequences of investing less in some areas of the network than others. Traditionally TfL would work to ensure every network was at or above a base level, but the funding constraints meant that some trade-offs might be needed to ensure all networks were safe, despite some possibly performing below a base level.

Work was ongoing with colleagues in Planning and Strategy to assess whether the data could be used to determine how investment in assets ultimately impacted fare revenue.

The Committee stated that the digitalisation of TfL would allow for the determination of pain points and points of opportunity. Investment into technology could pay back initial investments and release value relatively quickly.

Members noted that DfT and HMT were encouraged by the work that TfL had done and appreciated its openness.

Members thanked staff for their work in this area and for the useful discussion.

**The Committee noted the paper.**

## **10/03/22 Air Quality and Environment Programme**

Alexandra Batey introduced the paper, which provided an update on the Air Quality and Environment (AQE) Programme's delivery of projects since December 2020.

Air pollution was one of the most significant challenges facing London, affecting lung development in children and increasing the risk of strokes, heart and lung disease. A study from Imperial College London stated in 2019 that over 4,000 Londoners died prematurely because of the impact of toxic air.

TfL had made significant progress through the AQE Programme to deliver at the forefront of solutions for air quality and urban health issues. There were 44,000 fewer polluting vehicles in central London as a result of increased compliance with Ultra Low Emission Zone (ULEZ) regulations and the Mayor's Air Quality Fund also realised over 433 tonnes in NOx savings and over 25 tonnes in PM10 savings. Further to this, the number of schools in areas exceeding legal limits for NO<sub>2</sub> fell by 97 per cent, from 455 in 2016 to 14 in 2019. Key achievements in 2021/22 included Low Emission Zone tightening and delivery of the ULEZ expansion.

The operating model for Road User Charging (RUC) comprised of three service contracts that were due to expire in 2026: Detection and Enforcement Infrastructure;

Business Operations Services; and Enforcement Operations Services. Feasibility work was undertaken to assess the options for delivery and procurement of the contract re-let of existing RUC projects from the contract end date in 2026. The review was expanded to include:

- (a) a potential 2023/24 scheme – four potential approaches to a scheme that could be implemented by May 2024 at the latest;
- (b) a potential acceleration of the Business Operations Services workstream for 2026 re-let, to coordinate with Silvertown and Blackwall Tunnels user charging in 2024;
- (c) the user charging element of the Silvertown and Blackwall Tunnels in 2024/25; and
- (d) early project initiation work on exploring options for the integration of future RUC systems.

The Independent Investment Programme Advisory Group (IIPAG) had conducted a review and focussed on the RUC elements of the paper. It noted that successful delivery of the Programme required strong project management and the agreement of a long-term business strategy, supported by adequate resourcing and governance. TfL accepted the recommendations made by IIPAG and had implemented changes to the governance of the portfolio.

Members welcomed the achievements delivered through the Programme. The Mayor had set the objective for London to be net zero carbon by 2030, which required focus and leadership from senior TfL staff and the Mayor's team, in addition to appropriate resources.

Seb Dance, Deputy Mayor for Transport, said that there were likely to be two phases: interim measures, followed by measures to achieve the longer-term goals for a sophisticated RUC scheme in London. Alexandra Batey confirmed that the team that had previously successfully delivered the ULEZ expansion would lead on delivering the RUC changes.

The Committee stated that it was important to consider potential costs alongside the potential benefits and income; the net revenue potential was larger than Crossrail and, for some options, it was the equivalent of gaining five million customers.

It was also important to locate electric vehicle (EV) charging points where people could access them when needed; London take up of EVs was higher than the national average and it would be essential to keep up with demand. It was noted that while EVs would help to reduce carbon emissions, brake and tire wear still created PM2.5 and PM10 particles, therefore modal shifts were still required to improve air quality.

The Chair would be updated on potential delivery for 2024 onwards. A note would be circulated to Members and a paper would be submitted to a future meeting.

**[Action: Alexandra Batey]**

The Chair, in consultation with Committee Members, noted the paper and exempt supplemental information on Part 2 of the agenda, and:

- 1 approved the additional Programme and Project Authority of £54.5m to support the delivery of the Air Quality and Environment Programme for 2022/23;**
- 2 approved additional Procurement Authority, in the sums requested in the exempt supplementary paper on Part 2 of the agenda, to extend the contracts with Capita Business Services Limited and Siemens Mobility Limited to continue activities in support of road user charging;**
- 3 approved Procurement Authority, in the sums requested in the exempt supplementary paper on Part 2 of the agenda, to commence contracts with third party suppliers to enable activities in support of road user charging; and**
- 4 noted that the matters for which Authority is sought above included commitments that extended beyond the period of the Business Plan and Budget noted by the Board on 8 December 2021 and provision would, therefore, need to be made for those commitments in future Business Plans and Budgets.**

## **11/03/22 Technology and Data 2022/23 and 2023/24**

Shashi Verma introduced the paper, which provided an update on the Technology and Data (T&D) Programme. The Programme provided core technology for TfL and part of London Underground and Surface Transport.

Funding uncertainty meant that most of the Programme was focussed on renewals, rather than enhancements. This was not ideal, as technology enhancement could be a driver of better outcomes. Should the Programme be shrunk further, it would pose increased risks to TfL. This was especially the case because the drive to reduce costs had seen a consolidation of hosting and networks onto single platforms.

The Programme was vital to establishing a new asset management system for Surface Transport, which would allow TfL to drive value from data. Previously TfL outsourced this system for London Underground assets but, subject to resourcing, TfL was confident it had the capability to deliver the system through in-house solutions.

TfL Project Assurance shared that issues around resourcing were the most critical identified in its reviews.

Gartner, a technological research and consulting firm, had reviewed the T&D delivery and resourcing models. On the delivery model, it found that TfL had 10-20 per cent fewer resources, was spending less than comparable organisations but was delivering at the median. Recommendations made would be incorporated into the programme of change for T&D. Gartner found that, while TfL had difficulty in achieving its operating model due to the difficulty in attracting resource, TfL was

better at finding permanent resources than competitor organisations. In recent months, however, TfL had struggled to attract and retain resource as the salary offered was not competitive. External benchmarking was essential, as it highlighted how TfL could deliver better value for money.

On its technology stack, TfL tried as far as possible to integrate best practice and technologies into its platforms. TfL had made improvements to its networks that resulted in £60-70m savings per year, which was 50 per cent of the overall cost of the programme. In addition, as much of the technology stack as possible had been moved to the cloud.

**The Chair, in consultation with Committee Members, noted the paper and exempt supplementary information on Part 2 of the agenda and:**

- 1 approved in respect of the Technology and Data Investment Programme (the Programme) an increase in Programme and Project Authority of £7.7m in financial year 2022/23 (bringing the total up to £110.5m) and additional Programme and Project Authority of £102.9m in financial year 2023/24 resulting in total Programme and Project Authority to £110.6m;**
- 2 noted that the matters for which Programme and Project Authority is sought above included commitments that extended beyond the period of the Business Plan and Budget noted by the Board on 8 December 2021 and provision would, therefore, need to be made for those commitments in future Business Plans and Budgets; and**
- 3 noted that Procurement Authority for the various projects in the Programme described in the paper would be sought at officer level in accordance with Standing Orders.**

## **12/03/22 Enterprise Risk Update – Delivery of Key Projects and Programmes (ER8)**

Stuart Harvey introduced the paper, which provided an update on the management of Enterprise Risk 8 – Delivery of Key Projects and Programmes (ER8).

In response to the current funding situation, and the impacts on the supply chains caused by Brexit and the coronavirus pandemic, the overall control effectiveness rating for ER8 had been changed to 'requires improvement'. The main concerns were difficulties in accurate forecasting, increasing overheads, projects stopping and starting, and issues with attracting and retaining resource. Further to this, TfL's supply chain was reconsidering their risk appetite, given TfL's funding position.

To control the risk, the Project Management Office (PMO) was driving consistency and provided first line assurance. A newly established Capital Improvement Group would work in parallel with the PMO to bring capital issues together in one place and drive improvements. In addition, the Capital Efficiencies Programme met periodically to seek greater efficiency, to escalate any issues and encourage openness.

TfL was driving cost efficiencies through three initiatives:

- (a) 'Pounds in the Ground': TfL had introduced smarter approaches in considering what needed to be done and how TfL deployed resources to be in a better position to put more 'pounds in the ground';
- (b) 'How Good can it get': TfL had started to look beyond traditional risk management approaches and explored what would happen if all risks were mitigated and opportunities realised, and the impact of delivering a project below the initial estimated final cost; and
- (c) reviewing the risk in projects: TfL would enhance risk management activities to look at risk occurrence, risk themes and risk mitigation.

A new PMO Director had been appointed, who would ensure greater clarity and consistency across projects and make it easier for project managers to move between projects to share knowledge.

The Chair thanked officers for being open about causes of the change to 'requires improvement'. The Committee would keep in mind this risk when discussing items at future meetings.

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

### **13/03/22 Members' Suggestions for Future Discussion Items**

Howard Carter introduced the current forward plan for the Committee.

Members noted that the Board would be provided with information on TfL's cyber security and that it was likely that papers on road user charging would be submitted to future meetings of the Committee. Members requested a future item on electric vehicle demand and strategy. **[Action: Secretariat]**

The Chair would speak with the Chief Technology Officer and Director of Strategy on how information on dependencies within the Technology and Data Programme would be presented to the Committee.

**The Committee noted the paper.**

### **14/03/22 Any Other Business the Chair Considers Urgent**

There was no urgent business.

### **15/03/22 Date of Next Meeting**

The next scheduled meeting was due to be held on Wednesday 18 May 2022 at 10.00am.



## **16/03/22 Exclusion of the Press and Public**

**The Chair, following consultation with 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 items on: Investment Programme Report – Periods 8, 9 and 10, 2021/22; Independent Investment Programme Advisory Group Quarterly Report; TfL Project Assurance Update; Air Quality and Environment Programme; Technology and Data 2022/23 and 2023/24; and Enterprise Risk Update – Delivery of Key Projects and Programmes (ER8).**

The meeting closed at 1.08pm.

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

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

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## Programmes and Investment Committee



**Date:** 18 May 2022

**Item:** Matters Arising and Actions List

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

#### **1 Summary**

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

#### **2 Recommendation**

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

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

Appendix 1: Actions List

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

Minutes of previous meetings of the Programmes and Investment Committee.

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

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## Programmes and Investment Committee Action List (reported to the meeting on 18 May 2022)

### Actions following approval of authority using Chair's Action

Description	Action By	Target Date	Status note
<b>Healthy Streets Continuation Programme: Old Street</b> The Chair requested that the Independent Investment Advisory Group (IIPAG) look at the increase in EFC for Old Street.	IIPAG	July 2022	This will be included in IIPAG's quarterly report, submitted to the July meeting.

### Actions from the meeting of the Programmes and Investment Committee held on 2 March 2022

Minute No.	Description	Action By	Target Date	Status note
06/03/22	<b>Investment Programme Report – Periods 8, 9 and 10: list of portfolios</b> Members stated that it would also be useful for the report to set out what was included in the portfolios.	Stuart Harvey/ Alexandra Batey	July 2022	The IPR submitted to the July meeting of the Committee will include this information.
10/03/22	<b>Air Quality and Environment Programme: post-2023 delivery</b> The Chair would be updated on potential delivery for 2024 onwards. A note would be circulated to Members and a paper would be submitted to a future meeting.	Alexandra Batey	March 2022	Complete. A note was circulated to Members on 30 March and an item was added to the Forward Plan.
13/03/22	<b>Members' Suggestions for Future Discussion Items</b> It was requested that an item be added to the Forward Plan on electric vehicle demand and strategy. The Board would be provided with information on TfL's Cyber Security.	Secretariat	March 2022	Complete.

## Actions from previous meetings of the Committee

Minute No.	Description	Action By	Target Date	Status note
72/12/21 (1)	<p><b>Investment Programme Report – Quarter 3, 2021/22: Value for money and Benefit-Cost Ratios</b></p> <p>The Committee asked that, where available, the value for money (VfM) calculations be included in future reports and, in instances where a project has been descoped, it be shown how that increased the VfM [and how the Benefit Cost Ratio has changed].</p>	Stuart Harvey / Alexandra Batey	Ongoing	Work is ongoing; the IPR report will continue to be refined as and when data is available.
72/12/21 (2)	<p><b>Investment Programme Report – Quarter 3, 2021/22: Tottenham Hale station</b></p> <p>A background note on Tottenham Hale station would be circulated to Members in early 2022, to set out how the project was delivered against the original estimated final cost and delivery date. A visit would be scheduled for February 2022.</p>	Alexandra Batey	July 2022	A note will be provided.
58/10/21	<p><b>Silvertown Tunnel: Traffic modelling</b></p> <p>Traffic remodelling would be re-run in 2022. The results from which would indicate how different sets of charges achieved different outcomes, in terms of both overall traffic level and what proportion of the traffic was made up of different vehicles.</p>	David Rowe	2022	A briefing will be arranged once modelling work has been completed.

64/12/20	<p><b>IIPAG Quarterly Report: gateway and performance review functions</b></p> <p>Members requested information on how the gateway and performance review functions worked and best practice and the principles that guided this, including the work done to embed value for money within TfL.</p>	Stuart Harvey / Alexandra Batey	2022	Complete. IIPAG has provided updates in subsequent reports and reviews. Steps taken to implement the recommendations has been set out in the relevant management responses
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## Programmes and Investment Committee



**Date:** 18 May 2022

**Title:** Use of Delegated Authority

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

#### **1 Summary**

- 1.1 This is a standing item on the agenda to inform the Committee of any use of delegated authority by the Committee, through Chair's Action, or of Procurement Authority and Programme and Project Authority (in respect of matters within the Committee's remit) granted by the Commissioner and the Chief Finance Officer in accordance with delegated authorities under TfL's Standing Orders since the last meeting of the Committee. The paper also provides information on Mayoral Directions to TfL within the Committee's remit.
- 1.2 Since the last meeting of the Committee, on 2 March 2022, there have been:
- (a) no uses of specific authority delegated by the Board;
  - (b) three uses of Chair's Action in relation to: the approval of authority requests submitted to the meeting of the Committee on 2 March 2022; Expanding Pay As You Go on Rail in the South East; and Healthy Streets Programme Continuation;
  - (c) no approvals of Programme and Project Authority by the Commissioner nor by the Chief Finance Officer;
  - (d) three approvals of Procurement Authority by the Commissioner, relating to: Piccadilly Line Upgrade Track – Manufacturing Contract for Composite Conductor Rail and Accessories; London-wide Ultra Low Emission Zone (Road User Charging 2023 Scheme); and the variation of the Managed Services contract to cover additional business critical changes to the SAP system;
  - (e) one approval of Procurement Authority by the Chief Finance Officer, relating to: Project Support Agreement – Four Lines Modernisation Wayside Works Agreement Wayside Delivery and Wayside Asset Protection; and
  - (f) no Mayoral Directions within the Committee's remit.
- 1.3 A similar report is submitted to the Finance Committee in respect of the use of Chair's Action and of Procurement Authority and Land Authority granted by the Commissioner and the Chief Finance Officer in respect of matters within the Finance Committee's remit, together with relevant Mayoral Directions.

## **2 Recommendation**

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

## **3 Use of authority delegated by the Board**

3.1 There have been no uses of authority delegated by the Board since the last meeting of the Committee.

## **4 Use of Chair's Action**

4.1 Under Standing Order 113, in situations of urgency, the Board delegates to each of the Chair and the Chairs of any Committee or Panel the exercise of any functions of TfL on its behalf, including the appointment of Members to Committees and Panels. Any use of Chair's Action is reported to the next ordinary meeting.

4.2 There have been three uses of Chair's Action since the last meeting of the Committee:

### **Approval of Authority Requests at the Meeting of the Committee on 2 March 2022**

4.3 The meeting on 2 March 2022 was held on Microsoft Teams only, following which the Chair exercised Chair's Action to approve the recommendations in the papers, as published on the TfL website. The minutes of the meeting are elsewhere on the agenda.

### **Expanding Pay As You Go on Rail in the South East**

4.4 On 22 February 2022, the Committee was sent a paper that requested Authorities required to deliver a Department for Transport (DfT) initiative to expand Pay As You Go (PAYG) on Rail in the South East as TfL had been selected as the DfT's preferred partner to implement the project. TfL will deliver the required PAYG solution, subcontracting the provision of on-station validation equipment to Cubic Transportation Systems Limited, a provider of PAYG services to TfL under the existing Revenue Collection Contract.

4.5 The use of Chair's Action was considered appropriate due to the urgency of the programme to meet the Government's timetable for implementation by May 2024. To meet this challenging deadline, TfL had to commence delivery as soon as possible in the 2021/22 financial year.

4.6 On 24 February 2022, the Chair of the Committee, following consultation with Members, approved unbudgeted Financial Authority for the receipt and expenditure of grant funding from the DfT of up to £61.77m for the remainder of financial year 2021/22 and financial years 2022/23 to 2026/27 and approved Programme and Project Authority of £43.61m for remainder of financial year 2021/22 and financial years 2022/23 and 2023/24.

4.7 The paper has been published on the [TfL website](#) but the appendices remain exempt from publication, pending a formal announcement by the DfT on the project and the stations within scope.

## **Healthy Streets Programme Continuation**

- 4.8 On 30 March 2022, the Committee was sent a paper that provided an update on progress across the Healthy Streets programme during 2021/22, future proposals that took into account the February 2022 TfL funding settlement with Government and an update on actions and recommendations from the Integrated Assurance Review undertaken in winter 2022. The paper requested additional Programme and Project Authority for the programme.
- 4.9 The use of Chair's Action was considered appropriate as reviewing the programme to take account of the funding settlement meant the paper could not go to the meeting on 2 March 2022 and additional Programme and Project Authority was needed to enable ongoing delivery of Healthy Streets priorities, including funding borough activity.
- 4.10 On 5 April 2022, the Chair, following consultation with the Committee, approved additional Programme and Project Authority of £10.4m to support delivery of the Healthy Streets programme, bringing the total Programme and Project Authority to £319.2m.
- 4.11 The paper has been published on the [TfL website](#).

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

- 5.1 To enable an appropriate level of governance, processes are in place for the authorisation, control and reporting of projects.
- 5.2 Programme and Project Authority will normally be granted by the Committee for all programmes and projects as part of the defined 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.
- 5.3 Where the main contract has not yet been awarded, the Financial Authority and Estimated Final Cost may not be stated because they are commercially confidential.

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

- 5.4 Since the last meeting of the Committee, neither the Commissioner nor the Chief Finance Officer has approved any Programme and Project Authority requests within the Committee's remit.

## **6 Procurement Approvals**

### **Approvals by the Commissioner**

- 6.1 Since the last meeting of the Committee, the Commissioner has approved three Procurement Authority requests in respect of matters within the Committee's remit. These related to: Piccadilly Line Upgrade Track – Manufacturing Contract for 21.6km of Composite Conductor Rail and Accessories; London-wide Ultra Low Emission Zone (Road User Charging 2023 Scheme) – Drawdown; and the variation of the Managed Services contract to cover additional business critical changes to the SAP system.

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

- 6.2 Since the last meeting of the Committee, the Chief Finance Officer has approved one Procurement Authority request in respect of matters within the Committee's remit. This related to Project Support Agreement – Four Lines Modernisation Wayside Works Agreement, Wayside Delivery and Wayside Asset Protection.

## **7 Mayoral Directions to TfL**

- 7.1 The Greater London Authority Act 1999 (as amended) permits the Mayor to issue to TfL general directions as to the manner in which TfL is to exercise its functions or specific directions as to the exercise of its functions (or not to exercise a power specified in the direction). Directions are also often made in relation to the implementation of matters in respect of which the Mayor delegates statutory powers to TfL.
- 7.2 The Mayor makes Mayoral Directions through Mayoral Decisions. Papers for Mayoral Directions set out the financial and other implications. If those implications change over time, that will be reported to the Greater London Authority (GLA).
- 7.3 All Mayoral Decisions are issued in writing, with the information that is not exempt from publication included on the GLA's Decisions Database on its website: <https://www.london.gov.uk/about-us/governance-and-spending/good-governance/decisions?order=DESC>.
- 7.4 Mayoral Directions fall into three broad categories: those addressing technical issues relating to statutory powers; those related to commercial development activities; and those related to projects and programmes. Mayoral Directions relating to TfL are reported to the Board's Committees for discussion as soon as possible after they are received by TfL or published. Regular reports will list the relevant Directions for as long as they are applicable.
- 7.5 Annually the Audit and Assurance Committee considers the list as part of its consideration of the annual audit plan to ensure that appropriate audit resource is applied to assurance on TfL's work in implementing Mayoral Directions. This will also be kept under review at each quarterly meeting of that Committee.
- 7.6 A summary of current Mayoral Directions to TfL is maintained on the [How we are governed](#) page on our website, with links to the relevant Mayoral Decisions. That page will be updated as and when further Directions are made.

7.7 Mayoral Directions to TfL related to projects and programmes are reported to this Committee. There have been no Mayoral Directions to TfL within the Committee's remit since the last meeting.

**List of appendices to this report:**

None

**List of Background Papers:**

Chair's Action paper on Expanding Pay As You Go on Rail in the South East, issued 22 February 2022

Chair's Action paper on Healthy Streets Programme Continuation, issued on 30 March 2022

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## Programmes and Investment Committee



Date: 18 May 2022

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 May 2022. It describes the work undertaken since the last report presented to the Committee in March 2022.
- 1.2. A paper is included on Part 2 of the agenda which contains exempt supplemental information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### **2 Recommendations**

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

#### **3 IIPAG Quarterly Report**

- 3.1 Under its Terms of Reference, IIPAG is required to produce quarterly reports of its advice on strategic and systemic issues, logs of progress on actions and recommendations and the effectiveness of the first and second lines of project and programme assurance. IIPAG's quarterly report for May 2022 is included as Appendix 1 to this paper.

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

##### **The Programme Management Office– A review of progress, one year on**

- 4.1 The Programme Management Office (PMO) welcomes the report and recommendation made. We are fully committed to the direction proposed by IIPAG, and we appreciate the practical and supportive approach taken to the changes proposed.
- 4.2 We are pleased to note that the report identifies some of the challenges the PMO has in normalising TfL's information; widely differing work banks with fundamentally different approaches, and historical data which are inconsistent. The current large-scale changes to the organisation do complicate this, and our improvement plan balances tangible progress against the risk of potential rework.

To this end, we are implementing an iterative approach to the change. This will still follow the industry standard approach, which is:

- (a) design a consistent and scalable process;
  - (b) clear definition of the data that each process will generate;
  - (c) lock the process and data into a system to prevent local variation; and
  - (d) derive insight and reporting such that appropriate decisions can be made.
- 4.3 To implement controlled change while the business evolves in line with the value chain, we will undertake multiple discrete cycles, each acting on an element of the PMO scope. These will develop consistency, cleanse data and lock it in progressively with systems. The priority order will be risk based, and each cycle will have a visible outcome. This is the process described as 'Sprints' in the IIPAG report.
- 4.4 This will require a multi-year programme for phased investment in systems, data storage and report hosting, interventions by our own colleagues, and support from the market to make the change. We will be seeking investment support for a multi-year programme to achieve it. This is currently unfunded, and all data changes are currently being made from in-year budgets, which is inefficient.
- 4.5 This represents a significant change programme, reflecting not only data sets, but a cultural change and significant upskilling in the delivery organisations, PMO, Commercial and Finance teams and the ongoing support of the business in driving towards this end goal will be required.

### **Sprints Plan**

- 4.6 We have organised our activity under four pillars to create clarity for our staff and stakeholders. Key among these are Clarity (showing line of sight from the detail at the base of the organisation to the strategic messages at the top) and Consistency (driving consistent processes, definitions, methods, interfaces and tools across the business). The other two pillars, Communication and People are enabling pillars.
- 4.7 As an example, the first of the sprints under our Clarity pillar is Reporting, which is then divided into smaller deliverables:
- (a) agree on the metrics that will be used for reporting at all levels; and
  - (b) redesign the Investment Group report pack.
- 4.8 These will require external spend and rewiring of existing processes and data, and so achievement of these dates is contingent on two business dependencies:
- (a) business agreement to a common data cut-off date across TfL for all functions; and
  - (b) a final version of the project/programme allocation as an output of the task analysis.



- 4.9 Once this first sprint is complete the next Reporting sprint (for which preparatory work is underway) is to ensure all data supporting the metrics is available and quality checked so that the automation of the report can happen. This is a major change project also requiring external spend, and which in its final phase will deliver the systems-lock for the process and data structures. This will therefore have a longer delivery period.
- 4.10 There are similar sprints underway for Baselines, Cost and Governance which sit under our Consistency pillar.

### **Progress Reporting**

- 4.11 The Project Assurance team will engage in regular periodic dialogue with IIPAG and PMO will generate timely progress reports, timings of which are to be agreed.

### **Treatment of Risk in the Investment Programme**

- 4.12 We agree with the points raised but noting the requirement for underlying continual cultural change in regard to risk management at all levels.
- 4.13 As part of our continuous improvement plan, we will prioritise the following activities:
- (a) widespread use of the Quantified Cost Risk Analysis (QCRA) summary report across large/complex/novel projects;
  - (b) re-train the Enterprise Risk team on undertaking detailed early-stage risk assessments to inform risk uplifts on larger projects;
  - (c) embedding risk management objectives as part of the annual performance review process in project management roles; and
  - (d) quarterly/six-monthly risk deep dives on major schemes to enable the senior leadership team to challenge all aspects of risk management including assessments.
- 4.14 For attention to schedule risk, both in-year and over the project life, we are progressing new Quantified Schedule Risk Analysis guidance. As part of the second revision of the QCRA summary report, we have introduced inclusion of the key risks that may impact on successful milestone achievement. We will continue to review risks in-year and over the project life as part of periodic risk reporting.
- 4.15 We accept and have provided management responses to each of the recommendations made. This includes for the recommendation that TfL develops guidance about which risks, and risk allowances, should be held at project, Programme and portfolio level, where we accept this aspiration, but it requires wider business change. Creating risk allowances at various levels need to fit with our project governance, organisational and finance structures and change control processes. A review will be led by the PMO to develop the approach to portfolio management, which will include the option of creating a risk allowance at portfolio level. The review will commence in the latter part of 2022 and the output will be shared with IIPAG and the Project Assurance team.

**List of appendices to this report:**

Appendix 1: Independent Investment Programme Advisory Group - Quarterly Report  
May 2022

Exempt supplementary information is included in a paper on Part 2 of the agenda.

**List of Background Papers:**

None

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## Independent Investment Programme Advisory Group – Quarterly Report May 2022

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### 1. Introduction

- 1.1. This report to the Committee describes IIPAG's activities in March and April 2022. It contains no new strategic recommendations from the small number of sub-programme reviews we have undertaken but contains conclusions from two cross-cutting reports we completed during this period.

### 2. IIPAG activity

- 2.1. We have undertaken reviews of two sub-programmes which will be considered by the Committee in May:
- Surface Assets
  - London Underground (LU) Technology
- 2.2. We are engaged in continuous assurance of the Four Lines Modernisation (4LM) programme. We also had an update briefing on the Healthy Streets (HS) programme. Appendix 1 (Part 2 only) summarises the key points from our reviews in this period.
- 2.3. The accompanying paper from TfL Project Assurance describes management progress in implementing IIPAG's recommendations from sub-programme and project reviews.

### 3. Progress with Cross-cutting Work

- 3.1. We have completed two cross-cutting reports, which are summarised below.
- 3.2. The Programme Management Office (PMO) – A review of progress, one year on. We have revisited the PMO as a follow up to our 2020/21 report, in which we recommended that the PMO change programme be relaunched with renewed energy. We are now pleased to see that, after a slow start, there is growing momentum under the new PMO Director. Some progress has been made on the fundamentals: defining the project set, brigading projects into programmes and portfolios, defining their baselines, controlling their progress through rigorous gates, and reviewing and reporting on their progress against a clear governance drumbeat. But, while progress has been made, much remains to be done, and improvement will be fragile until these basics are fully embedded and supported by systems. We made one recommendation, which is that the organisation stays the course and tries to accelerate. With sustained energy, the PMO will provide better

support to project managers, more insightful information for stakeholders, and a significant saving in administrative effort

### 3.3. Treatment of Risk in the Investment Programme

Although TfL processes for risk assessment are broadly sensible and represent reasonable practice for most investments, we still see projects in which risk is underestimated leading to delays and unexpected increases in cost. We have consequently undertaken a short review into how TfL approaches risk analysis in its projects. We concluded that contributors to less than effective risk assessment include an over reliance on process, a tendency to optimism, lack of experience and inadequate challenge. An area of particular concern is the almost exclusive focus on cost risks and lack of attention to schedule. We made a number of recommendations, including that TfL should consider where risk allowances are best held in the organisation.

### 3.4. Other cross-cutting work

We are in the process of completing our reports on Asset Information Part Two (which considers how asset data is generated) and our review of progress on the Procurement and Supply Chain Improvement Programme (now referred to as Procurement and Commercial).

## 4. **IIPAG Membership**

- 4.1. We are sorry to say farewell to Kenny Laird who leaves IIPAG at the end of April for a full time position with WSP in New York. Kenny's experience, especially of signalling projects, has been very valuable for IIPAG's work on 4LM and other LU major projects, as well as the Elizabeth Line. Discussions are underway regarding recruitment to ensure IIPAG has appropriate resource in place.

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## Programmes and Investment Committee

Date: 18 May 2022

Item: TfL Project Assurance Update



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### This paper will be considered in public

## 1 Summary

- 1.1 This paper provides an update on the project assurance work undertaken between 21 January and 31 March 2022. Two programme reviews were undertaken during this time, with the Independent Investment Programme Advisory Group (IIPAG) involved in both. In the same timeframe five project assurance reviews were undertaken, with IIPAG involved in three.
- 1.2 These reviews gave rise to a total of 25 recommendations being made, of which none were considered to be critical issues. Critical issues are those that the TfL Project Assurance team or IIPAG believe should be addressed before projects proceed to the next stage.
- 1.3 A paper is included on Part 2 of the agenda which contains exempt supplemental information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

## 2 Recommendation

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

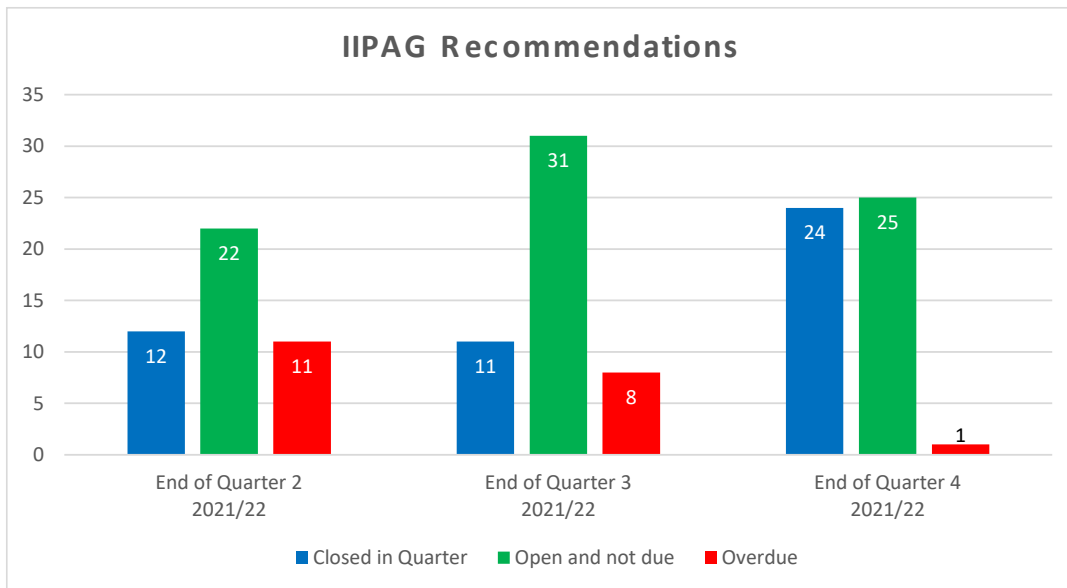
## 3 Background

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

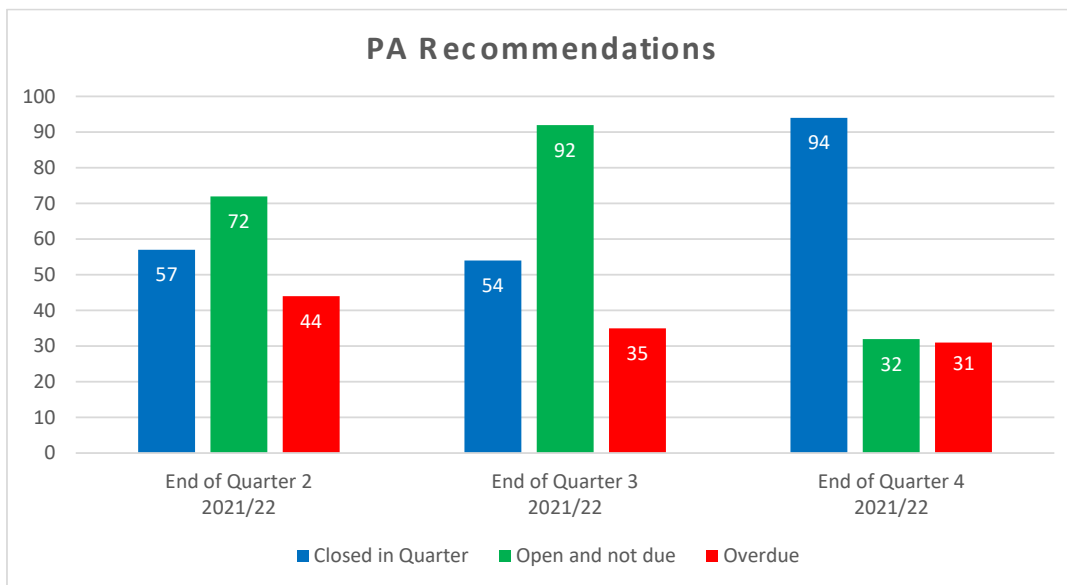
## 4 Summary of Project Assurance Activity

- 4.1 From the reviews undertaken, a total of 21 recommendations were made by TfL Project Assurance. These consisted of 21 general recommendations and no critical issues, with all these having been agreed with the respective project teams.
- 4.2 IIPAG made four recommendations, with all agreed with the respective project teams. These consisted of four general recommendations and no critical issues.
- 4.3 The following graphs show the number of open recommendations, the number that are overdue, and the number closed in the last three quarters. The overdue recommendations include two overdue critical issues. One critical issue relates to Permanent Current Rail Indicator Device where the business case needs to set out the specific benefit effect of the different options more clearly. The second overdue

critical issue relates to the Central line Signalling and Control Life Extension project and the need to ensure that the business case demonstrates value for money for all elements of the scope. There are no overdue IIPAG critical issues.

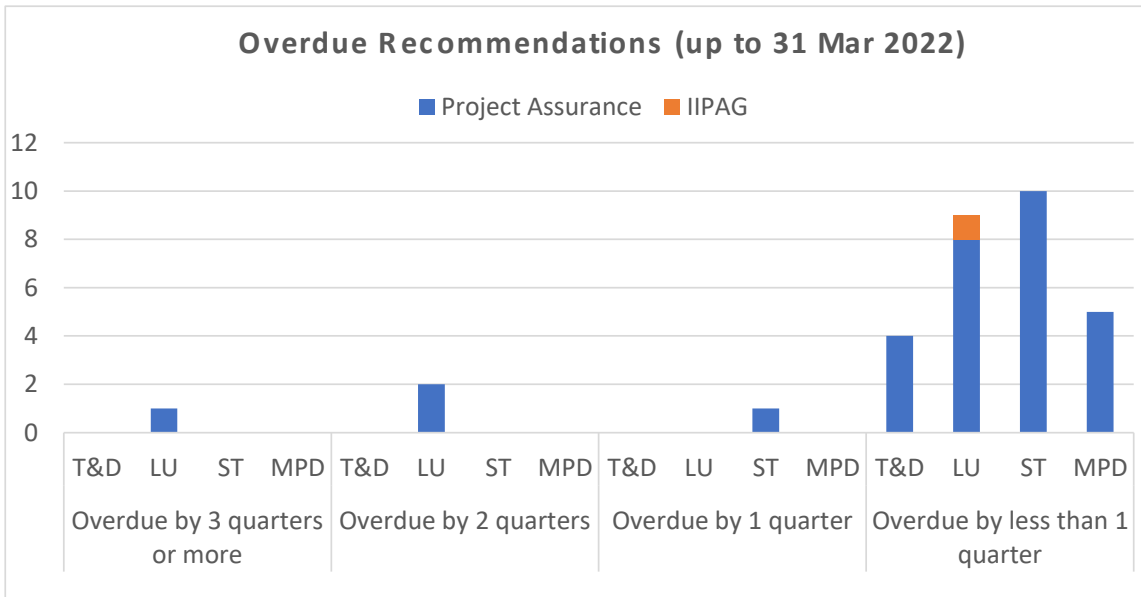


**Figure 1: IIPAG Recommendations**



**Figure 2: Project Assurance Recommendations**

4.4 The following graph shows the length of time by which recommendations are overdue. The information shows whether the recommendation is an IIPAG or TfL Project Assurance recommendation and the business area that the recommendation relates to (T&D being Technology and Data, LU being London Underground, ST being Surface Transport and MPD being Major Projects). The delivery areas under the new Chief Officer structure will be reflected in our reporting from Quarter 1 of 2022/23.



**Figure 3: Breakdown of Overdue Recommendations**

**List of appendices to this paper:**

Exempt supplementary information is included in a paper on Part 2 of the agenda.

**List of background papers:**

None

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## Programmes and Investment Committee



**Date:** 18 May 2022

**Item:** London Underground Technology Programme

**This paper will be considered in public**

### 1 Summary

LU Technology Programme					
Existing Financial Authority	Estimated Final Cost (EFC) (To March 2025)	Full Programme EFC	Existing Programme and Project Authority	Additional Authority Requested	Total Authority
£ 265.7m	£ 266.9m	£541.1	£ 162.6m	£ 63.3m	£ 225.9m

- 1.1 This paper is the second annual submission for London Underground (LU) Technology Programme (the Programme). It summarises programme delivery since our last update, gives an overview of planned business investment and requests £63.3m of additional Programme Authority to cover planned investment in 2022-23 and 2023-24. This paper requests Programme and Project Authority (P&PA) to cover existing and planned commitments in future years.
- 1.2 The Programme is an annualised rolling programme to renew our operational technology in LU. These works enable us to continue to use technology effectively to support our operations, ensure compliance with relevant legislation and drive improvements for our customers.

### 2 Recommendations

- 2.1 **The Committee is asked to note the paper, and:**
  - (a) **approve additional Programme and Project Authority of £63.3m for the London Underground Technology Programme, giving total Programme and Project Authority of £225.9m; and**
  - (b) **note that Procurement Authority in respect of the various elements of the London Underground Technology Programme will be sought at officer level in accordance with Standing Orders.**

### 3 Background

- 3.1 The Programme was established in October 2020 to address the need to renew our core technology assets and systems in a more co-ordinated manner, while exploring new opportunities to improve network safety and customer security. The Programme focusses on ensuring our 'operational technology' is kept in a

good state of repair and renewed accordingly. Operational technology in this context falls into three main inter-linked asset categories, outlined in Figure 1 below.

Connectivity and Networks	Assets and Staff Tools	Cyber, Data and Digital
Voice and Data Communications	Staff Devices and Body Worn Cameras	Cyber Security and GDPR compliance
Station Security and CCTV	Asset Obsolescence	Data Storage and Visualisation
Train Monitoring (Tracker-Net)	Workforce Planning and Scheduling tools	Performance Data Updates and Improvements
Staff and Operational Wi-Fi	Revenue Protection	Asset Condition Data and Reporting

**Figure 1: Overview of Operational Technology Categories**

- 3.2 In October 2020, the Committee approved the transfer of £94.7m of Programme and Project Authority to streamline the delivery of various operational technology projects into a single programme that supports a strategic and integrated technology approach across the LU estate. Since then, the Committee has approved further transfers from other programmes, bringing total Programme and Project Authority to £162.6m.
- 3.3 To date the Programme has spent £102m and committed to a further £57.1m. Most of the committed expenditure relates to the Connect programme which is a major investment in our communications networks. By March 2023, we plan to spend £134.9m with further commitments estimated at £56.1m at that point, raising our total commitment to £191m. By March 2024, we expect to have spent £207.5m with further commitments of £18.4m, bring our total commitment to £225.9m
- 3.4 The phasing of the approved Programme and Project Authority may be adjusted across the years 2022/23 and 2023/24 to meet in-year business requirements, for example if there is opportunity to accelerate work-bank projects
- 3.5 Of the £266.9m estimated cost of the programme to 2024/25, over ninety per cent is to be spent on renewals projects. All spend in 2022/23 will fund renewals projects though it should be noted that, in technology projects, renewal works almost always entails some elements of enhancement.
- 3.6 Financial Authority is currently provided through the two-year Budget for 2021/2022 and 2022/23, approved by the Board on 28 July 2021. The current funding agreement with Government expires on 24 June 2022. Any Authority granted which relates to both the current funding period and commitments that

extend beyond the period of the Business Plan and Budget may need to be revised as part of future budgets to be considered by the Board.

- 3.7 If additional funding is not available, a prioritisation of the TfL Investment Programme will be required, some programmes and projects will not be taken forward and revised authority will be sought as appropriate. All approvals given will be overseen in accordance with TfL Business controls in respect of draw down.
- 3.8 Since the establishment of the Programme, we have successfully delivered seven projects, continued to make substantial progress on the larger multi-year projects, established effective programme governance, and aligned the Programme to our Long-Term Capital Plan (LTCP).
- 3.9 The Programme has adopted an “annualised work-bank” approach, whereby projects are added to the programme each year according to the LTCP, with a strong focus on addressing obsolescence issues and maintaining core assets in a state of good repair. This approach ensures that projects are prioritised according to operational impact and tangible customer benefits and means that projects addressing safety and compliance are progressed as a matter of urgency.
- 3.10 Over the last few years, we have been in a challenging financial position and therefore deferred non-essential spend. As a result, the majority of planned spend in the Programme is focussed on supporting essential business functions, including collecting revenue and keeping our systems running, as well as upgrading systems and processes to be compliant with legislation (e.g. General Data Protection Regulation). Due to historical deferral of planned investment, all Programme spend is now essential.
- 3.11 We continue our prioritisation exercises, driven by the ongoing funding negotiations with Government. Any further investment reductions will come with substantial operational risks as we will not be able to carry out essential activities across our portfolios, including critical renewals work.

## **4 Programme Delivery 2021-22**

- 4.1 The coronavirus pandemic and the resulting impact upon TfL’s finances had a significant impact upon programme delivery, particularly in 2021/22, with supply chain issues, material shortages and internal resource constraints all contributing to delays on several projects. As a result, overall Programme spend was less than forecast. Our original forecast expenditure for 2021/22 was £38m against an outturn of £34m.
- 4.2 To help mitigate against a recurrence, we have undertaken a detailed deliverability review of the Programme. While we expect to spend approximately £32.9m in 2022/23 and £68.2m in 2023/24, there are considerable resource constraints within the organisation and supply chain. We will continue to monitor our forecast spend and work to improve our understanding of the strategic risks to delivery in 2022/23 and beyond.

- 4.3 The Programme initially consisted of 12 projects, seven of which were temporarily paused as part of our response to the coronavirus pandemic. In 2021, we re-started all paused projects, except “Feasibility Studies/Minor Interventions” which was removed from the Programme because no specific scope for this work had been identified. We are currently developing a register of feasibility studies and innovative proof of concept work subject to prioritisation, assessment of likely benefits and funding availability.
- 4.4 Since our last submission, we have also delivered seven projects successfully, including rolling out over 7,000 replacement hand-held devices and 4,500 new body worn cameras to our operational staff. These projects have meant that we can continue to provide excellent customer service, whilst keeping our people safe. A summary of these completed projects and the progress made on continuing projects is contained in Appendix 1. Additionally, three further small-scale renewals projects were initiated and delivered by the Programme since our last submission:
- (a) replacement of the LU Control Centre video wall (£0.4m);
  - (b) capturing of key asset condition data to enable more efficient maintenance, relating primarily to mechanical assets such as pumps and drainage systems (£0.3m); and
  - (c) renewing our scheduling systems for operational staff at stations (£1.5m).
- 4.5 There were two projects that had notable Estimated Final Cost (EFC) increases during this period, which are:
- (a) Asset Management Information System (AMIS): This project will improve our ability to maintain our assets in a state of good repair, by introducing a single consolidated asset management system. Due primarily to supplier performance issues, this EFC has risen by £5.4m and the final delivery date has been delayed by 15 months. We are continuing to mitigate these impacts by bringing additional phases of the work in-house and undertaking a full review of the scope and delivery plan to seek further efficiencies. The project is now scheduled for completion in mid-2023; and
  - (b) Station Security Technology Integration Programme (SSTIP): SSTIP will improve our ability to respond to critical incidents on the network, helping us keep our customers safe. The delivery of SSTIP has been delayed by around four months since our last submission. This is due primarily to resource shortages and delays related to the pandemic. Accompanied by increased material costs, this has led to an EFC increase of £1.6m since our last submission. We are working to reduce the impact by seeking efficiencies from bulk purchasing and reviewing the scope and delivery model for the Programme.

## **5 Investment Plan 2022/23 – 2023/24**

- 5.1 In 2022/23, the Programme consists of fifteen projects, ranging from significant infrastructure works such as Connect to smaller renewals of back-office systems.

While projects within the Programme will deliver outcomes specific to London Underground, several are part of wider efforts across TfL to improve customer services and business operations. For example, the Revenue Protection project is part of a pan-operational work-stream to tackle fare evasion.

- 5.2 Eleven of the projects within the 2022/23 work-bank are expected to continue into 2023/24 and we also expect to add projects to the value of £4.4m to the programme in 2023/24, based on our prioritised work-bank of necessary renewals. Appendix 2 provides an overview of these projects.
- 5.3 The increased EFC of the programme is due primarily to the addition of new projects from the work-bank in line with our LTCP, which will occur each year. The EFC and annual spend for this 'future work-bank' have therefore been included in this paper. The final composition of the Programme for 2022/23 and future years remains subject to ongoing prioritisation of TfL capital investment portfolio and outcomes of any funding settlements with the central Government.

### **Summary of Significant Programme for 2022/23**

- 5.4 Figure 2 below sets out the key information for the five significant projects within the Programme, with further commentary provided below:

<b>Project</b>	<b>Baseline EFC (£m)</b>	<b>Current EFC (£m)</b>	<b>Baseline Forecast Completion Date</b>	<b>Current Forecast Completion Date</b>
<b>Connect</b>	99.6	92.9	March 2025	March 2025
<b>Future Operational Network</b>	48.0	48.0	March 2027	March 2027
<b>Asset Management Information Systems</b>	20.3	25.7	April 2022	July 2023
<b>Station Security Technology Integration Programme</b>	38.4	40.0	November 2024	February 2025
<b>Workforce Planning</b>	14.5	14.5	March 2026	March 2026

**Figure 2: Overview of Significant Projects**

### **Connect**

- 5.5 The Connect system is an operational network which provides communication services between LU control centres, stations, train drivers and station staff, and links a wide range of applications critical to the operation of the network. It is essential to the ongoing reliable and safe functioning of the LU network. The Connect system was introduced in 1999 and is now facing obsolescence and increased risk of asset failure. The Connect project was established to address this obsolescence risk and consists of a series of capital upgrades to enable the continued effective operation of the Connect system beyond 2026.

### **Future Operational Network**

- 5.6 Several networks that TfL uses to provide critical services such as CCTV, data and radio links are also facing obsolescence beyond 2026. The Future Operational Network project will develop a new operational communication strategy and deliver a new network that will address these issues and ensure that TfL has a data network capable of meeting the needs of future demand. This project will design the future of our operational networks into the 2030s and beyond, then deliver the necessary improvements to consolidate our various

data networks, helping to reduce complexity and whole life costs across the business. This project is in the early stages of development and is planned to be complete in March 2027.

### **Asset Management Information Systems - AMIS**

- 5.7 To keep our network operating effectively, we must continue to invest in the maintenance and renewal of critical assets. An effective asset management system is vital to both target that investment in the most cost-beneficial manner and support day-to-day operations. The AMIS project will consolidate the various asset management systems used by LU into a single, consolidated structure and support the delivery of a fully integrated asset operations team. The successful delivery of the AMIS project will enable us to deploy maintenance staff more effectively and work to realise necessary efficiency savings in maintenance.
- 5.8 The project is part of a wider pan-TfL effort to consolidate asset management systems, with other parts of TfL also migrating to the same asset management system. This convergence to a single management system will improve asset management capability across the organisation.

### **Station Security Technology Integration Programme - SSTIP**

- 5.9 Since our last update, SSTIP has delivered “Critical Incident Management” functionality at 62 stations. This provides us with the ability to remotely control and evacuate a station in the event of a critical incident, such as a terrorist attack. We have also upgraded our CCTV at 75 stations, allowing footage to be remotely viewable by the British Transport Police and their policing partners, and are working with the Train Operating Companies to enhance CCTV at key interchange stations.
- 5.10 These improvements have been recognised in the recent Harris Report (2022)<sup>1</sup>, which noted the bolstered resilience of our critical incident management capability and our investment in improving our remote response capability. Lord Harris further recommended that “TfL must treat this as a priority to ensure the remaining stations secure enhanced remote response capabilities in due course.”
- 5.11 We are now rolling out these upgrades across the remainder of the LU estate, whilst working to update our engineering standards to allow us to better resolve obsolescence issues and integrate our assets more quickly and efficiently.

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<sup>1</sup> Harris, T (2022). London Prepared: A City-Wide Endeavour – An Independent Review of London’s Preparedness to Respond to a Major Terrorist Incident. Retrieved from <https://www.london.gov.uk/mopac-publications-0/london-prepared-city-wide-endeavour>

## **Workforce Planning**

- 5.12 Workforce Planning (WFP) is the set of processes we use to ensure that we have the right staff in the right place at the right time. These are critical and complex processes in running the network and deploying over 15,000 staff across London. Currently, we use several systems and processes to support our workforce planning, many of which are facing obsolescence beyond 2026. This project will deliver a renewed workforce planning capability in advance of 2026 and will look to address existing pain points such as a reliance on manual data processing and a lack of visibility of schedule efficiency which can result in cancelled trains or closed stations.
- 5.13 Whilst a distinct project within the Programme, WFP forms part of our organisation-wide Enterprise Resource Planning (ERP) strategy and is aligned with the other projects within that strategy. There are several inter-dependencies between WFP and the broader ERP strategy, which is also at an early stage of development, and we are also currently exploring opportunities to improve value-for-money by combining WFP with a similar Work-force Management Project within the Surface Technology programme.

## **6 Financial Implications**

- 6.1 The forecast cost of the Programme is set out in Figure 3. This covers the life of the five-year Business Plan and includes:
- (a) Financial Authority of £265.7m to 2024/2025;
  - (b) EFC of £266.9m to 2024/2025; and
  - (c) Existing Programme and Project Authority of £162.6m
- 6.2 The Programme plans to make annual submissions to the Committee to request the Programme and Project Authority required for the onward financial year. Subject to approval of this paper, the next Programme-level request is planned for March 2023.



Project	Financial Authority to 2024/25	Cost to 2024/25	EFC – Full Programme	Spend to Date - P1 FY22/23	Existing P&PA	P&PA Allocation*	Future Authority Requests
Connect	92.9	92.9	92.9	39.1	82.1	92.9	0
AMIS	26.3	25.7	25.7	16.1	19	25.7	0
SSTIP	39.9	40	40	11.4	21.9	30	10
Revenue Protection Programme	3.4	1.6	1.6	1.1	3	1.6	0
Competency Management System	2.6	3.1	3.1	0.5	2.7	3.1	0
Station Staff Scheduling System (SSSS)	1.7	1.5	1.5	1.4	1.5	1.5	0
RailSys	2.5	2.5	2.5	0	0	2.5	0
Future Operational Network	26	35	48	0	0	11.5	36.5
Staff Devices (Tranche 2)	12	7	12	0	0	4.5	7.5
Performance Data Warehousing	2	2	2	0	0	2	0
NACHS 5G	0.2	0.2	0.2	0	0	0.2	0
EIRF/CUPID	2	2	2	0	0	2	0
LU Cyber-Security Improvement Project	2	3	3	0	0	2	1
LU Workforce Planning	12.5	12.5	14.5	0	0	8.5	6
Customer Operations Modernisation	3	1.1	3	0	0	1.1	1.9
Future Work-bank	4.4	4.4	256.7	0	0	4.4	0
<b>Sub-Total</b>	<b>233.4</b>	<b>234.5</b>	<b>508.7</b>	<b>69.6</b>	<b>130.2</b>	<b>193.5</b>	<b>62.9</b>
<b>Completed Projects</b>	<b>32.4</b>	<b>32.4</b>	<b>32.4</b>	<b>32.4</b>	<b>32.4</b>	<b>32.4</b>	<b>-</b>
<b>Total</b>	<b>265.7</b>	<b>266.9</b>	<b>541.1</b>	<b>102</b>	<b>162.6</b>	<b>225.9</b>	<b>62.9</b>

**Figure 3: Overview of Spend to Date and Project Authorities (All figures in £m)**

(\*subject to approval of this paper)

## **7 Equalities Implications**

- 7.1 TfL has an obligation under the Equality Act 2010 to:
- (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;
  - (b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and,
  - (c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.
- 7.2 The Programme will be delivered in accordance with the Equality Act 2010. Consideration is given to the need for an Equality Impact Assessment for each project. For the LU Technology Programme, particular areas of focus include protection of data, customer information, ensuring our systems are user friendly and are kept in a good state of repair, and improving safety and security for all of our customers.

## **8 Assurance**

- 8.1 An Integrated Assurance Review on the LU Technology Programme was carried out in March 2022 by the TfL Assurance Team and the Independent Investment Programme Advisory Group (IIPAG). No critical issues were identified by IIPAG or Project Assurance.
- 8.2 The Integrated Assurance Plan will be updated to set out the reviews for projects within the Programme for the next 12 months.

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

Appendix 1: Summary of Key Delivery Performance

Appendix 2: Composition of LU Technology Programme 2022-2023

Appendix 3: Overview of Expected Spend

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

IIPAG and Independent Assurance Review (IAR)

Management Response to the IAR

Contact Officer: Alexandra Batey, Director of Investment Delivery Planning  
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## Appendix 1: Summary of Key Delivery Performance

Project Name	Life Cycle Stage	Summary of Benefits Delivered	Category of Benefit	Original Completion Date	Final Completion Date	Original EFC (£m)	Final / Current EFC (£m)
Staff Devices	Complete	Over 7,000 replacement devices delivered on time and under budget, enabling staff to continue providing excellent customer service with real-time operational, safety and journey information. Delivery was completed on time and under budget, with new devices successfully rolled out across our network with minimal operational impact. Device enrolment has been strong, and we continue to support colleagues in transitioning to these new devices as part of business-as-usual support.	Addressing Obsolescence	January 2022	March 2022	3.9	3.8
Data and Visualisation	Complete	Delivered improvements to data management processes and visualisation of data to better identify and respond to asset and service faults, improving reliability for our customers. Initial delays experienced of approximately five months due to resource and funding challenges but delivered to budget.	Service Reliability	December 2022	January 2022	2.6	2.6
Tracker-Net	Complete	Upgraded Tracker-Net hardware and software ensured we continue to provide up to date customer information. Project was delivered successfully with no operational impact and updated system is performing well.	Service Reliability	December 2021	December 2021	0.5	0.5

## Appendix 1: Summary of Key Delivery Performance

Body Worn Cameras	Complete	Delivery of 4,500 body-worn video cameras to our customer-facing staff to improve perception of safety. Footage has supported legal proceedings and project was delivered under budget	Safety and Security	January 2022	February 2022	3.6	3.1
LU Control Centre – Video Wall	Complete	Replacement of failing hardware and software in our control centre has improved our operational resilience and our ability to respond effectively to incidents. This project delivered successfully over two weeks, with minimal disruption to operations and was delivered under budget as several risks did not materialise.	Service Reliability	May 2021	May 2021	0.5	0.4
Asset Condition Data	Complete	Undertaking condition surveys of mechanical assets at stations, depots, and operational buildings to improve our ability to maintain our assets, enhance safety assurance levels and increase accuracy in contract valuations and future maintenance requirements. This project was not able to deliver the full planned scope of works due to resource shortages but did complete the most critical work. The project was stopped in March 2022 to incorporate future asset data improvement work into a larger programme of data improvements.	Addressing Obsolescence	March 2022	March 2022	1.2	0.3

## Appendix 1: Summary of Key Delivery Performance

Wi-Fi at Stations	Complete	New Wi-Fi at thirteen stations will improve our customer offer, improved operational communications, and improved our ability to maximise advertising revenue. This project delivered new Wi-Fi capability at thirteen stations from 2019 to April 2022. The project was significantly delayed, primarily due to access difficulties at key Crossrail stations such as Bond Street. The project was closed in April 2022, with minor activation works to be completed as part of final Crossrail works.	Efficiency Improvements	March 2022	April 2022	21.7	21.7
Feasibility Studies/ Minor Works	Closed	Removed from Programme	N/A	N/A	N/A	8.5	0.0
		<b>Completed Projects Sub-Total</b>				<b>43.1</b>	<b>32.0</b>
Connect	Delivery	The Connect Project is replacing the software and hardware that supports our operational communications, allowing us to continue to safely run our services. The EFC of Connect has decreased by £6.7m due to a combination of reduced hardware supply costs and a reduction in risk exposure as the project has progressed. Project delivery is progressing well, with over 100 of 293 new major hardware installations now complete and the works remain on track to complete in March 2025.	Addressing Obsolescence	March 2025	March 2025	99.6	92.9

## Appendix 1: Summary of Key Delivery Performance

Asset Management Information Systems (AMIS)	Delivery	AMIS will improve our ability to maintain our assets in a state of good repair, by introducing a single consolidated asset management system. We have now built and tested the new software platform and are now in the process of migrating our asset information to the new system. The EFC has risen by £5.4m since our last submission, primarily due to supplier performance issues which have also led to delays in delivery of over a year. We are working to mitigate this increase by bringing additional phases of the work in-house and undertaking a full review of the scope and delivery plan to seek further efficiencies. The project is scheduled for completion in mid-2023.	Efficiency Improvements	April 2022	July 2023	20.3	25.7
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## Appendix 1: Summary of Key Delivery Performance

Station Security Technology Integration Programme (SSTIP)	Delivery	SSTIP will improve our ability to respond to critical incidents on the network, helping us keep our customers safe. The project will also improve our General Data Protection Regulation compliance levels across London Underground. The delivery of SSTIP has been delayed by around four months since our last submission. This is due primarily to resource shortages and delays related to the coronavirus pandemic. Accompanied by increased material costs, this has led to an EFC increase of £1.6m since our last submission.	Safety and Security	November 2024	February 2025	38.4	40
Revenue Protection Programme	Delivery	The Revenue Protection programme consists of four projects aimed at improving our ability to tackle fare evasion. We are the process of closing two of these projects and are closely monitoring the benefits of these changes. The programme is on target to complete in March 2023, and EFC has reduced by £1.6m since our last submission due to efficiency savings across the Programme.	Efficiency Improvements	March 2023	March 2023	3.4	1.6

## Appendix 1: Summary of Key Delivery Performance

Competency Management System	Delivery	This project will deliver a new competency management system for our train operators, replacing several existing systems. This project will improve the efficiency and management of our staff training and help us continue to safely run our services. Project Delivery is progressing to schedule, though the EFC has increased by £0.5m due to higher systems integrations costs than anticipated. We are working to mitigate this cost through value engineering.	Addressing Obsolescence	February 2024	February 2024	2.6	3.1
Scheduling System for Station Staff	Delivery	This project will deliver a new scheduling tool for our station staff, replacing several obsolete systems currently in use. This will improve our rostering efficiency and mean we are better able to deploy our staff where most needed. Delivery is progressing well with completion scheduled for mid-2022.	Addressing Obsolescence	July 2022	June 2022	1.5	1.5
		<b>Sub-Total : Projects Continuing in Delivery</b>				<b>165.8</b>	<b>164.8</b>
		<b>Total : All Projects</b>				<b>208.9</b>	<b>197.2</b>



## Appendix 2: Composition of LU Technology Programme 2022-2023

Name	Description	Renewal / Enhancement	EFC (£m) to 2024/25	EFC Change (£m) *	
Connect	Infrastructure Upgrades to maintain operations of critical radio communications	Renewal	92.9	(6.7)	
Asset Management Information Systems (AMIS)	Consolidation of numerous asset management systems into one integrated system	Renewal	25.7	5.4	
Station Security Technology Integration Programme (SSTIP)	Upgrades to CCTV and stations security systems across network	Renewal	40.0	1.6	
Revenue Protection Programme	Various projects to support revenue protection	Enhancement	1.6	(1.6)	
Competency Management System (CMS)	Delivery of new CMS for train operators	Renewal	3.1	0.3	
Station Staff Scheduling System	Renewal of scheduling systems used to roster operational staff.	Renewal	1.5	1.5	New Additions to Programme 2022/23
“RailSys”	Renewal of “RailSys” system used to support planning of track and infrastructure works.	Renewal	2.5	2.5	
Future Operational Network	Renewal of key connectivity infrastructure	Renewal	35.0	35.0	
Staff Devices (Tranche 2)	Multi-year planned renewal of staff devices.	Renewal	7.0	7.0	
Performance Data Warehousing	Addressing obsolescence issues impacting data storage and processing.	Renewal	2.0	2.0	
NACHS 5G	Updates to data sets which inform key performance measures for organisation	Renewal	0.2	0.2	
EIRF/CUPID	Upgrades to incident reporting mechanisms and links to key databases.	Renewal	2.0	2.0	
LU Cyber-Security Improvements	Ensuring compliance with cyber-security legislation	Renewal	3.0	3.0	
LU Workforce Planning	Renewing systems which support effective planning of staff rostering and HR mechanisms.	Renewal	12.5	12.5	
Modernisation Enablers	Asset renewals to support Modernisation Programme	Renewal	1.1	1.1	
<b>Total (Live Projects 2022-23)</b>			<b>230.1</b>	<b>+65.8</b>	

\*EFC Change is change from last submission to the Committee in October 2020

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### Appendix 3: Overview of Expected Spend (All values in £m)

Project	Financial Authority to 2024/25	Cost to 2024/25	Estimated Final Cost	Prior Years Spend (to March 2022)	Expected Spend 2022-23	Expected Spend 2023-24	Expected Spend 2024-25	Future Years	Total
Connect	92.9	92.9	92.9	39.1	11.6	23	19.2		92.9
AMIS	26.3	25.7	25.7	16.1	5.7	3.9	-	-	25.7
SSTIP	39.9	40	40	11.4	5.9	12.5	10.2		40
Revenue Protection Programme	3.4	1.6	1.6	1.1	0.5		-	-	1.6
Competency Management System	2.6	3.1	3.1	0.5	1.4	1.2	-	-	3.1
Station Staff Scheduling System	1.7	1.5	1.5	1.4	0.1	-	-	-	1.5
RailSys	2.5	2.5	2.5	0	0.5	2	-	-	2.5
Future Operational Network	26	35	48	0	0.5	11	23.5	13	48
Staff Devices (Tranche 2)	12	7	12	0	1.5	3	3	4.5	12
Performance Data Warehousing	2	2	2	0	1	1	-	-	2
NACHS 5G	0.2	0.2	0.2	0	0.2	-	-	-	0.2
EIRF/CUPID	2	2	2	0	0.7	1.3	-	-	2
LU Cyber-Security Improvements	2	3	3	0	0.7	2.3	-		3
LU Workforce Planning	12.5	12.5	14.5	0	1.5	7	3.5	2.5	14.5
Modernisation Enablers	3	1.1	3	0	1.1	-	-	1.9	3
<i>Completed Projects (2022)</i>	32.4	32.4	32.4	32.4		-	-	-	32.4
<b>Live/Complete Projects: Total</b>	<b>261.4</b>	<b>262.5</b>	<b>284.4</b>	<b>102</b>	<b>32.9</b>	<b>68.2</b>	<b>59.4</b>	<b>21.9</b>	<b>284.4</b>
Future Work Bank (Estimate)	4.4	4.4	256.7	-	-	4.4	-	252.3	256.7
<b>Cumulative Total to 2025</b>	<b>265.7</b>	<b>266.9</b>	<b>541.1</b>	<b>102</b>	<b>32.9</b>	<b>72.6</b>	<b>59.4</b>	<b>274.2</b>	<b>541.1</b>

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Date: 18 May 2022

Item: Surface Transport Asset Renewals Programme

**This paper will be considered in public**

## 1 Summary

<b>Surface Transport Asset Renewals Programme</b>						
	Existing Financial Authority (to 2024/25)	Forecast 2018/19 to 2025/26	Existing Programme and Project Authority	Additional Authority Requested (to end 2023/24)	Total Authority (to end of 2023/24)	Programme and Project Authority to be Requested in future years
Gross	£737m	£823m	£648m	£0m	£648m	£175m
Income	-£40m	-£37m	-£40m	£0m	-£40m	£0m
Net	£697m	£786m	£608m	£0m	£608m	£175m

- 1.1 This paper sets out the request for Programme and Project Authority for the continuation of the Surface Transport Asset Renewals Programme (the Programme) until the end of 2024/25. The Programme maintains the safety, operability and reliability of highway, traffic, bus, coach and river assets through a prioritised programme of planned and reactive renewals.
- 1.2 The Programme is made up of multiple projects and programmes that deliver essential asset renewals, managing the state of good repair to provide a safe and operable network. The full outputs are documented below.
- 1.3 The level of investment planned is below the “Do Minimum” scenario required to support the assets. This will result in asset condition deterioration, an increased likelihood of network restrictions and increased operational expenditure.
- 1.4 In March 2021, the Committee approved additional Programme and Project Authority of £198m for delivery of the Programme through to the end of 2022/23. The balance of this is carried forward as set out table 7 below.
- 1.5 The focus of this paper is to:
  - (a) present the Programme's achievements since the previous submission;
  - (b) summarise the financial allocations by main asset types and projects for 2021/22 and the associated outputs; and,
  - (c) provide assurance to the Committee on the progress of the Programme.
- 1.6 The Programme will return annually to the Committee for Authority approval.

## **2 Recommendations**

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

- (a) agree that the current Programme and Project Authority of £648m will apply through to the end of 2024/25; and**
- (b) note that Procurement Authority in respect of the various elements of the Surface Transport Assets Programme will be sought at officer level in accordance with Standing Orders.**

## **3 Background**

### **Strategic Context**

- 3.1** The Mayor's Transport Strategy (MTS) has three key themes: healthy streets and healthy people; a good public transport experience; and new homes and jobs. Action plans have been produced that detail the activities to achieve these objectives, including for Walking, Cycling, Freight & Servicing and Vision Zero. Maintaining a state of good repair of our Surface assets is key to delivering all these plans, as almost all journeys on London's transport system start or finish on the road network. This is particularly important in terms of road safety for users of the network and supporting local trips and active travel.
- 3.2** The Programme's budget was substantially reduced in 2018/19 and 2019/20 as a consequence of the Government removing TfL's revenue grant. The funding was planned to return to steady state levels from 2020/21 however, due to the impact of the safe stop and revised ways of working associated with coronavirus pandemic, investment reduced to 79 per cent of original planned levels for 2020/21 (from the planned £122m to £97m). Investment was also reduced in 2021/22 from £184m to £122m to reflect the available funding.
- 3.3** The Programme's budget for 2022/23 has been decreased further to £90m to ensure it is within the overall £600m allocation from the budget for capital renewals across all of TfL. This is significantly lower than the 'Do Minimum' scenario needed to maintain the current condition of the assets. Consequently, TfL's assets are now subject to a 'Managed Decline' scenario where it is forecast that asset condition will deteriorate in 2022/23.
- 3.4** Financial Authority is currently provided through the two-year Budget for 2021/2022 and 2022/23, approved by the Board on 28 July 2021. The current funding agreement with Government expires on 24 June 2022. Any Authority requested by this paper which relates to matters outside the period of the current funding agreement with Government and/or commitments that extend beyond the period of the Business Plan and Budget may need to be revised as part of future budgets to be considered by the Board. If additional funding is not available, a prioritisation of the TfL Investment Programme will be required and some programmes and projects will not be taken forward and revised authority will be sought as appropriate. The application of any Authorities approved by the Committee for this Programme will be overseen in accordance with TfL business controls in respect of draw down.

## Surface Assets

- 3.5 The assets covered by this paper include TfL roads and footways, bus and coach stations, bus stops and shelters, river assets, Woolwich Ferry, traffic signals, bridges, tunnels, street lighting, drainage and trees. The Programme also covers the Local Implementation Plan funding for borough principal road resurfacing and borough bridge strengthening, although this is limited to costs already committed and does not include any new investment in 2022/23 for borough renewals.

### Asset duties and responsibilities

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

### Maintaining assets in a State of Good Repair

- 3.7 State of Good Repair (SOGR) describes the condition in which TfL seeks to maintain assets to provide a safe and reliable network that minimises whole life costs and, where appropriate, meets customer expectations. The SOGR is based on industry standard condition measures which differ by asset type, for example the standard that describes the condition of a bridge is different to the condition for carriageways. Where the SOGR is below the preferred range it reflects the need for renewals investment to deliver a reliable network and reduce the risk of restrictions and closures.
- 3.8 Each asset has a target SOGR range, with examples shown in Table 1 below. The table also includes the current SOGR, which shows the condition for most asset groups is already below the accepted range. The SOGR is expected to deteriorate further in 2022/23 due to the managed decline funding scenario with the consequence that there will be increased likelihood of assets being restricted or taken out of service in order to maintain safety.

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

Asset	SOGR target range (per cent)		Current SOGR
Carriageway*	High volume of cyclists	93 to 96	88
	Low volume of cyclists	90 to 93	88
	Overall	92 to 95	88
Footway	>92		94
Bridges	88 to 92		83
Street lighting	90 to 95		89

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

3.9 Details of how SOGR is measured and calculated are provided in Appendix 1.

### Impact on Operations

3.10 The two-year reduction in asset renewals in 2018/19 and 2019/20 (refer to Table 7) and continued reduced investment has increased the number of temporary closures and interim measures on the network to ensure we maintain safety. This has placed substantial pressure on maintenance budgets and increased the risk of reputational damage to TfL and customer dissatisfaction. Table 2 sets out the implications in terms of direct TfL costs. However, there are also larger societal costs in terms of additional congestion, increased journey times and reduced reliability.

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

Year	Assets with Interim Measures	Annual Cost of Interim Measures	Cost of Reactive Safety works	Total Cost	Estimated delay cost
2016/17	24	£451k	£115k	£566k	Not measured
2017/18	26	£556k	£410k	£966k	
2018/19	39	£702k	£1,369k	£2,071k	
2019/20	43	£2,496k	£1,440k	£3,936k	
2020/21	48	£2,500k	£2,381k	£4,881k	
2021/22	54	£2,900k	£3,330k	£6,200k	
2022/23*	60	£3,200k	£3,660k	£6,860k	£35,890k

\* - forecast based on 22/23 capital renewals funding

3.11 Interim measures are specific to the asset type and form of deterioration, but typically could include speed restrictions, weight or width restrictions, lane closures or even carriageway or road closures. All of these restrictions are likely to result in delays to road users, shown in Table 2 as the estimated delay cost. This has been calculated from the total estimated number of interim measures, the average daily traffic flows, and the hourly economic delay costs.

3.12 Examples of network impacts include:

- (a) Rotherhithe Tunnel – traffic restrictions in place with only cars permitted;
- (b) A40 Westway – speed restriction (40mph to 30mph) and numerous short closures to implement reactive safety works (expansion joint repairs);
- (c) Vehicle Restraint System (VRS) – speed restriction (50mph to 40mph) implemented on A40 due to poor condition of VRS;



- (d) Barclay Road Bridge (A232) – lane restrictions introduced in March 2022;
- (e) Hammersmith Bridge (which is owned by the London Borough of Hammersmith and Fulham) – closure to buses and general traffic; and
- (f) Gallows Corner Flyover – speed restriction from 30mph to 20mph, and weight restriction of 7.5 tonnes.

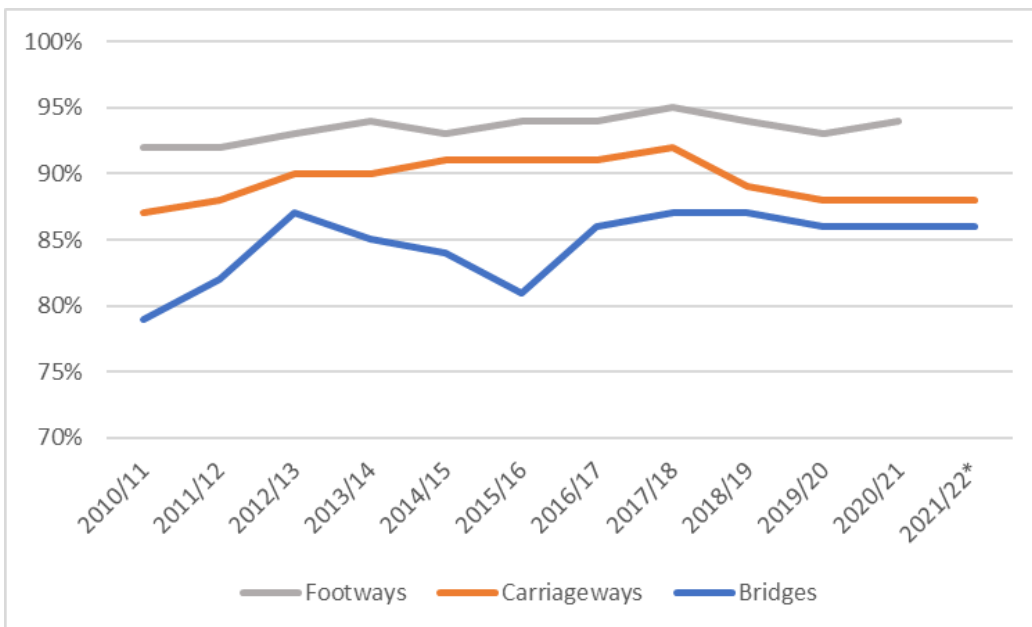
3.13 As the proposed programme of renewals is below the Do Minimum investment required, the burden on maintenance and operational budgets will increase, and network operability and reliability will decrease. Furthermore, there are increasing risks of accelerating asset deterioration that will require difficult decisions to be made on how we prioritise the assets most in need of renewal, recognising factors such as the financial constraints, safety, operability, cost recovery, people and supply chain resources, as well as road space access issues.

## 4 Programme Delivery in 2021/22

### Benefits and value

4.1 The total renewals expenditure across 2018/19, 2019/20, 2020/21 and 2021/22 was £374m, equivalent of £93m per annum. For comparison, typical steady state investment per annum prior to 2018/19 was around £150m to £200m. Figure 1 shows the change in the SOGR for roads, footways and bridges.

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



\* - latest SOGR but not all condition surveys have been completed and reviewed.

4.2 The pause in asset renewals for 2018/19 and 2019/20 and continued reduced investment since has resulted in a decline in asset condition, in particular for carriageways.

4.3 The profile for TfL bridges has two significant SOGR fluctuations. In 2012/13 a marked improvement followed the completion of Hammersmith Flyover. In 2015/16 a marked drop followed a detailed inspection of Brent Cross structures and Westway structures, initiating some immediate remedial works, followed by the completion of several large projects contributing to SOGR improvement in the following two years (this does not include borough assets, such as Hammersmith Bridge). The final SOGR for 2021/22 is not currently available as inspections are still ongoing, with the figure provided based on a forecast extrapolated from those already completed.

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

4.4 The total investment in 2021/22 was £119m. At the time of the last update to the Committee the planned investment was to be £180m. This was reduced in June, when the TfL Budget was approved, reflecting the available funding and a managed decline scenario.

4.5 Key outputs for 2021/22 are:

- (a) A40 Westway – major expansion joint replaced on eastbound carriageway, westbound carriageway under construction;
- (b) protective measures on bridges – construction substantially complete on Westminster Bridge;
- (c) Rotherhithe Tunnel – Concept Design completed for major renewal;
- (d) Blackwall Tunnel Southbound – Concept Design completed for major renewal;
- (e) Brent Cross – contract awarded for Feasibility and investigations commenced;
- (f) Kingston Cromwell Road bus station – contract awarded for Detailed Design;
- (g) Hammersmith Bridge – completion of pedestal casing removal and blast cleaning to inform the detailed stabilisation repair methodology (undertaken on behalf of London Borough of Hammersmith & Fulham);
- (h) the Asset Capital Programme – multiple critical asset renewals completed covering all Surface asset types to maintain state of good repair including:
  - (i) 340,000sqm of carriageway resurfacing;
  - (ii) 600 new bus shelters with 57 electrical connections;
  - (iii) 270 lighting columns and 2,500 luminaires installed on the network;
  - (iv) 150 number of traffic signal controllers renewed; and
  - (v) six renewals of TfL structures and bridges.

4.6 Appendix 2 provides a summary of the key Programme investment and outputs for 2021/22. To ensure efficient and effective management of the Programme in year,

adjustments to individual budget allocations were made to reflect any changes to known asset condition, whilst also focusing on priority schemes where delivery was achievable. The resultant variances are set out in Appendix 2. Examples of in year changes in 2021/22 include reductions in planned investment in lighting and variable message signs due to material supply issues and increases in the number of traffic signals, bus stops and carriageway renewals.

- 4.7 The Programme had an efficiency target of £3.4m for 2021/22, which was successfully exceeded, with a total £5.7m of efficiency savings made. Examples of efficiencies include reductions in lane rental charges through better traffic management and planning of delivery activity to co-ordinate closures therefore reducing costs.

## 5 Programme delivery for 2022/23

### Option assessment

- 5.1 The following strategic options have been considered:

- (a) **Do Minimum –30 per cent (this is the planned level of investment):** Managed decline scenario reflecting the £600m in the budget for capital renewals in 2022/23 is insufficient to meet the minimum asset condition need across TfL. Under this scenario, asset condition will deteriorate more rapidly than the 'do minimum', resulting in increased likelihood of restrictions and asset closures in order to keep the network safe. This will result in increased operational expenditure, as set out in table 2, to install and maintain increasing numbers of temporary restrictions as well as increased network impacts and delays to road users including increased journey times for buses. The backlog of renewals will increase in both scale and time to address it, and renewals schemes are likely to need more extensive, and therefore costly, interventions as works are no longer optimised. Paragraph 5.2 explains the Programme delivery approach to efficiently manage investment within this funding scenario.
- (b) **Do Minimum:** Maintains a basic level of service at minimum cost to maintain safety and operability; under this option reliability and customer satisfaction will be lower. This option represents an absolute lower bound level of investment. The consequences of this option will likely result in significant peaks in investment as some assets become unmaintainable through operating expenditure interventions and will require significant capital investment to keep assets safe and available.
- (c) **Moderate:** Aligns with the 2020 TfL Budget with amendments to account for coronavirus pandemic impacts on delivery in 2020/21. This can support the key themes of the MTS, however, at a slower rate and to a lower level of customer experience than the 'High Ambition' option. This option will manage and reduce the number of interim measures in place on major tunnels and structures with noticeable reductions over 10 years. Lighting column replacement can maintain the current levels with some continued roll out light-emitting diodes (LEDs). The current decline of cycle route and footway condition will be managed, however, significant improvements in state of good repair will not be seen in the short term. This option will also enable the

continued investment in bus station staff welfare facilities and improvement works, such as Hostile Vehicle Mitigation measures on other central London bridges.

- (d) **High Ambition:** This scenario aims to deliver the ambitions of the MTS. It prioritises walking, cycling and public transport over other road users. Areas of focus include supporting Vision Zero, Healthy Streets and carbon reduction. This option will aim to reduce interim measures on major structures and tunnels assets over the next five years. Significant investment in lighting column replacement and roll out of the LED upgrade programme. Investment into carriageway, footway and cycle track renewals with state of good repair within the desirable range within three to five years.

5.2 To manage the Programme efficiently potential project activity in 2022/23 has been identified to the value of £107m (i.e. £17m above the £90m budget). This provides a workbank of additional priority schemes that can be accelerated should further funding become available, or if delivery on other schemes is slower than anticipated. Periodic reviews will be used, together with quarterly investment decision points to assess the level of delivery achieved, the planned outputs and determine whether additional commitments can be made. This approach gives maximum flexibility to ensure a safe and operable network is maintained.

### Benefits and value

5.3 Asset modelling and historical performance trends have been used to assess the SOGR that will be achieved by the planned investment and these are shown in Table 3 compared to prior year outcomes. The managed decline scenario will result in deteriorating asset condition and is expected to increase the backlog of renewals. Asset performance is expected to deteriorate as increasing restrictions are needed to keep the network safe with more defects and insufficient funding to complete the necessary repairs. The programme has been prioritised focussing on high safety and reliability risks, but this means whole life costs and best value are unlikely to be achieved as investment will not be at the optimum time.

**Table 3: Current and Predicted State of Good Repair (per cent)**

Asset	19/20	20/21	21/22	22/23	23/24	24/25	25/26	Target range
Carriageway Overall*	88	88	86	85	84	83	82	92 to 95
Carriageway (High volume of cyclists)**	91	91	90	91	90	89	88	93 to 96
Carriageway (Low volume of cyclists)**	88	88	87	87	86	86	85	90 to 93
Footway	94	94	93	92	92	90	89	>92
Structures	86	83	83	83	82	81	81	88 to 92

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

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

### **Delivery in 2022/23**

5.4 Appendix 3 details the planned expenditure and forecast outputs for each of the assets in 2022/23. Key activities planned include:

- (a) A40 Westway – major expansion joint on westbound carriageway replaced mitigating a key asset risk, concept design work on work package two (comb joints, parapets, concrete deterioration) completed to allow prioritisation of future activity;
- (b) Kingston Cromwell Road bus station – Detailed design completed for the renewal of the bus station;
- (c) Brent Cross Structures – Feasibility completed and single option identified;
- (d) Croydon Flyover – surveys and investigations complete;
- (e) Gallows Corner – single option selected and submission of business case to Department for Transport;
- (f) Protective measures on bridges – works complete on Westminster bridge;
- (g) Hammersmith Bridge – completion of stabilisation works to make the bridge safe and allow its continued use by pedestrians and cyclists (TfL contribution to the works being progressed by the London Borough of Hammersmith and Fulham)
- (h) new technology, bus stops and shelters contracts – procurement commenced; and
- (i) the Asset Capital Programme – multiple critical asset renewals completed covering all Surface asset types, including:
  - (i) 150,000sqm of carriageway resurfacing;
  - (ii) 350 new bus shelters;
  - (iii) 157 lighting columns and 2400 LED replacements to be installed on the network;
  - (iv) 45 traffic signal controllers renewed;
  - (v) 5 bridge and structure renewals; and
  - (vi) 11 bus driver welfare renewals.

5.5 Due to the reduced funding available in 2022/23 several planned projects will not progress, these include:

- (a) the procurement for detailed design and build for the major renewal of Rotherhithe Tunnel. A series of short-term targeted interventions will be progressed to keep the asset safe and operable in the interim;
- (b) we will complete the Hostile Vehicle Mitigation (HVM) work on Westminster Bridge, but no permanent measures will be progressed on other bridges;
- (c) 98,000sqm of carriageway renewals; and
- (d) Borough Roads and Bridges investment priorities outside those already committed.

5.6 A large number of the activities will continue beyond 2022/23, such as progressing the design on Brent Cross structures. This authority request therefore covers the period through to the end of 2024/25.

## 6 Programme risks and milestones

### Programme risks

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

**Table 4: Top risks from Surface Asset Renewals Programme**

Risk No	Risk Description	Mitigation Actions
1	Road Access Booking	Early engagement with permitting and co-ordinating teams. Additional training of project teams to efficiently plan road access bookings.
2	Reduction of CAPEX Funding limits delivery of project objectives.	Projects within Programme robustly prioritised based on whole life cost and risk to ensure best value. Delivery focused on highest priority asset need. Utilise the workbank so additional priority schemes can readily progress where possible.
3	Forecasting accuracy	Regular forecasting reviews in place taking into account availability of road space, materials, people and funding. Regular meetings with supply chain to ensure costs and programmes are accurate.
4	Emergency works may be required (Hammersmith bridge pedestals, Rotherhithe Tunnel etc)	Project scope regularly reviewed to identify short term measures required to keep asset safe and operable. Appropriate risk provision in place on specific projects based on asset condition.
5	Lead time for materials	Advance purchase of materials where possible. Regular forecast of future demand to allow supply chain to plan efficiently.

6.2 The Programme does not include an overall high-level risk allowance. It is comprised of hundreds of schemes that, experience has shown, enable risk to be

effectively managed across the programme using the workbank approach describe. Periodic reviews of the Programme risks are held with escalations reported at the Portfolio Review meeting. On larger projects (e.g. the A40 Westway and Rotherhithe Tunnel) risk is held at project level.

### Programme milestones 2022/23

6.3 The strategic milestones are shown in Table 5.

**Table 5: Strategic Milestones**

Project	Milestone	Tier	Target Date
Brent Cross	Options Assessment Report signed off	TfL Scorecard	19 December 2022
Gallows Corner	Submission of draft Outline Business Case to DfT	TfL Scorecard	17 July 2022
A40 Westway	Completion on site of replacement of major expansion joint (Work Package 1)	TfL Scorecard	14 October 2022
Hostile Vehicle Mitigations – Westminster Bridge	Delivery into service	TfL Scorecard	12 August 2022

### Commercial Strategy

6.4 The Programme is predominantly delivered via existing frameworks, either via direct award or mini-competition for larger/unique projects e.g. Kingston Cromwell Road bus station. Surface Transport has two frameworks in place which provide the typical route to market for delivery of the Programme. These are:

- (a) the Highways Maintenance and Projects Framework (HMPF) for highway maintenance and related medium complexity capital works; and,
- (b) Surface Transport Infrastructure Construction framework (STIC), which will deliver medium and high complexity capital works.

6.5 HMPF and STIC both commenced on 1 April 2021 and are used to deliver most projects within the Programme. Very high complexity or unique projects may be delivered through external frameworks or via separate, individual contracts specifically procured to deliver a project. In all cases the route to market is considered on an individual project basis to maximise value for money.

## 7 Financial Implications

7.1 The 2021 TfL Budget provides the Financial Authority needed to deliver the scope of the works set out in this request. Of this:

- (a) £7.5m of this relates to additional third party funded Traffic Signal schemes (i.e. there is no net impact on TfL funding); and

- (b) Other third party - this includes a £2.93m contribution to the costs of the stabilisation works on Hammersmith Bridge, which is a condition of our funding agreement with the Department of Transport (DfT)<sup>1</sup>.

7.2 The Programme's Financial Authority and the Programme and Project Authority is shown in Table 7 below. The current funding agreement with Government, dated 25 February 2022, expires on 24 June 2022 but recognises that TfL will need to enter new financial commitments that extend beyond this date. It is anticipated that the financial commitments that this paper describes will be addressed in a subsequent funding agreement.

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<sup>1</sup> Note: The £2.93m funding contribution to the stabilisation works at Hammersmith Bridge is held by TfL centrally and does not form part of the Surface Assets Portfolio authorities shown in table 6 below.



**Table 6: Summary of the costs and funding**

<b>Assets Portfolio</b>		<b>Actuals</b>	<b>Actuals</b>	<b>Actuals</b>	<b>TfL Budget</b>					<b>Total forecast</b>	<b>Authority - Years to 24/25</b>
<b>Rounded to £m</b>		<b>18/19</b>	<b>19/20</b>	<b>20/2</b>	<b>21/22</b>	<b>22/23</b>	<b>23/24</b>	<b>24/25</b>	<b>25/26</b>		
<b>Financial authority</b>											
<b>Portfolio Total</b>		71	83	98	129	101	96	159	96	833	737
Budget or Plan	TfL Element	61	77	95	119	90	96	159	96	793	697
	Third Party Funding	10	6	3	10	11	0	0	0	40	40
<b>Portfolio forecast</b>											
<b>Portfolio Total</b>		71	83	98	119	101	96	159	96	823	727
Budget or Plan	TfL Element	61	77	95	112	90	96	159	96	786	690
	Third Party Funding	10	6	3	7	11	0	0	0	37	37
<b>Authority request</b>											
<b>Programme and Project Authority</b>	<b>PIC Approved</b>	<b>71</b>	<b>83</b>	<b>98</b>	<b>172</b>	<b>224</b>				<b>648</b>	<b>648</b>
	<b>Additional authority requested</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-53</b>	<b>-123</b>	<b>96</b>	<b>80</b>		<b>0</b>	<b>0</b>
<b>Future Authority Requests</b>								<b>79</b>	<b>96</b>	<b>175</b>	<b>0</b>

## **8 Equality and inclusion**

8.1 TfL has an obligation under the Equality Act 2010 to:

- (a) eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Equality Act 2010;
- (b) advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it; and,
- (c) foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

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

8.3 The impact of the managed decline scenario will be subject to an Equality Impact Assessment completed by the end of quarter 1, 2022/23. This will consider the impact of asset deterioration (e.g. footway) on different user groups.

## **9 Assurance**

9.1 TfL Project Assurance conducted an Integrated Assurance Review (IAR) on the Programme in March 2022. An independent review was also undertaken by the Independent Investment Programme Advisory Group (IIPAG). There were three recommendations by the IAR, and two by IIPAG. No critical issues were identified. Details of these recommendations and our Management Response have been shared with the Committee.

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

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

Appendix 1: State of Good Repair

Appendix 2: 2020/21 actuals / forecast outputs

Appendix 3: 2021/22 budget allocations and outputs

Appendix 4: High priority assets

**List of Background papers:**

IIPAG and TfL Project Assurance Reports

Management response to IIPAG and TfL Project Assurance Reports

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## Appendix 1: State of Good Repair

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

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

The target range differs by asset type, Table 7 provides some examples.

**Table 7: State of Good Repair ranges**

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

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

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

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

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## Appendix 2: 2021/22 actuals and outputs

Note: Whilst allocations and outputs for the year were part of the submission for the year 2021/22 they were reset by the TfL/DfT funding agreement as outlined in the letter from the DfT on 1<sup>st</sup> June 2021.

Sub-programme		2021/22 allocations as of July 2021 (post funding deal) (£m)	2021/22 actuals (£m)	Expected outputs as of July 2021 (post funding deal)	2021/22 outputs
Assets Capital Programme	Borough Traffic Signal Modernisation	11.0	17.3	110 Sites Renewed	143 Sites Renewed
	TLRN Traffic Signal Modernisation				
	Capital Renew - Footway	1.2	0.5	13,000m <sup>2</sup> network treated	1,201m <sup>2</sup> network treated
	Capital Renew - Lighting	9.0	6.0	300 Columns and 5,500 Luminaires replaced	237 Columns and 2,872 Luminaires replaced
	Capital Renew - Drainage	0.4	0.4	285,000 m <sup>2</sup> network investigated	257,705m <sup>2</sup> network investigated
	Capital Renew - Landscape	0.4	0.4	600 trees planted	400 trees planted
	Split Cycle Offset Optimisation Technique (SCOOT) Renewals	1.7	1.7	1800 loops renewed	1800 loops renewed
	Stations & Stands Annualised Programme	5.7	4.8	20 renewal schemes delivered, 28 bus driver feasibility designs	29 driver welfare feasibilities completed, 10 renewal schemes delivered
	Closed Circuit Television (CCTV) and Variable Message Signs	3.0	4.2	55 sites renewed 200 Cameras 25 RVC installed.	350 cameras and 36 columns renewed 2 VMS sites renewed

	Restraint Barriers	1.7	0.2	1 renewal schemes delivered 9 Design schemes	N/A
	Minor Capital Interventions	2.2	1.5	65 schemes completed	55 schemes completed
	Pump Stations	0.8	0.2	2 renewal schemes delivered	2 renewal schemes completed
	Stops & Shelters Annualised Programme	6.2	7.0	540 shelters treated 55 electrical connections	610 – Shelters Installed 58 – Electrical Connections
	LRS Piers Renewals	0.3	0.2	6 targeted renewals	6 targeted renewals
	Contracts Re-lets (Inspections, Tech and Bus stops)	4.8	3.7	2 contract award recommendations	2 single option selections completed
	Surface Asset Management Information Systems	6.9	6.5	Design of SAMIS Tech completed	Design of SAMIS Tech completed
	Capital Renew – Carriageway	15.5	17.2	325,000m <sup>2</sup> of network treated	345,166m <sup>2</sup> of network treated
	Capital Renew – Structure	9.8	7.3	8 renewal schemes delivered	6 renewals delivered
	Capital Renew – Tunnels	0.6	0.2	3 feasibility studies/designs completed	2 feasibility studies completed
	Third Party Signal Enhancements	10	6.8	Undefined	Undefined
LIP Bridges & Roads	Borough Bridge Maintenance	2.5	2.6	7 interim measures, 3 assessments, 3 designs, 2 strengthening works	7 interim measures, 3 assessments, 3 designs, 2 strengthening works
	Borough Road Maintenance	2.5	2.5	57,000 m <sup>2</sup> of network treated	57,000 m <sup>2</sup> of network treated



	Hammersmith Bridge Restoration	1.2	0.9	Completion of early works, including pedestal removal and blast cleaning	Completion of early works, including pedestal removal and blast cleaning
Operations Assets	Hostile Vehicle Mitigations	10.3	6.6	Westminster Bridge build completed, concept design on other bridges	Westminster bridge substantially complete, design on other bridges paused
	Dial A Ride	0.5	0.4	1 design completed	3 builds completed
	Victoria Coach Station Modernisation	0.4	0.3	Planning application submitted	Design and planning activity
	Safety Camera Extension Prog phase 2	0.5	0.6	40 renewal schemes completed	65 Sites Renewed
	Victoria Coach Station Infrastructure	1.4	1.1	2 builds completed	CCTV renewed
	Lodge Avenue Flyover	1.0	0.3	Build commenced	Design completed
STIP 1	Ardleigh Green Bridge Replacement	0.2	0.1	Project closed	Defect investigation
Major Asset Renewals Programme	MARP A40 Westway Structures Refurb	15.3	9.8	Commencement of construction	Commencement of construction
	MARP Vauxhall	0.4	0.1	Project close	Project close
	MARP Rotherhithe	3.5	2.3	Concept design completed	Concept design completed
	MARP Brent Cross	2.8	1.6	Concept design commenced	Concept design commenced
	MARP Blackwall Tunnel Southbound Refurb	1.2	1.5	Concept design completed	Concept design completed
	Kingston Cromwell Road Bus Station	2.7	1.0	Construction to commence	Detailed design commenced
	MARP Croydon Flyover	0.2	0.1	Outcome definition	Outcome definition
	MARP George Green	0.1	0.1	Outcome definition	Outcome definition

	MARP Green Man	0.1	0.1	Outcome definition	Outcome definition
	MARP Projects	0.0	0.1	Kew Bridge project initiated	Kew Bridge project initiated
	MARP Piers	1.1	0.5	4 Concept designs completed	4 Concept designs commenced
	MARP Gallows Corner	0.2	0.2	Single option recommended	Single option recommended
<b>Less</b>	Overprogramming	10			
<b>Grand Total</b>		129	119		

### Appendix 3: 2022/23 budget allocations and outputs

Sub-programme		2022/23 allocations (£m)	2022/23 expected output*
Assets Capital Programme	Borough Traffic Sig Modernisation	6.6	45 controllers renewed
	TLRN Traffic Signal Modernisation		200 sites LED retrofitted
	Capital Renewal - Footway	0.7	3130m <sup>2</sup> network treated
	Capital Renewal - Lighting	4.5	157 Columns and 2409 Luminaires replaced
	Capital Renewal - Drainage	1.9	372,000m <sup>2</sup> network treated
	Capital Renewal - Landscape	0	0 trees planted
	SCOOT Renewals	1.5	1500 loops renewed
	Stations & Stands Annualised Programme	4.9	11 driver welfare renewals, 14 lighting renewals
	CCTV and VMS	3.1	280 cameras renewed
	Restraint Barriers	2.2	1 renewal schemes delivered
	Minor Capital Interventions	2.6	65 schemes completed
	Pump Stations	1.4	5 pump stations renewed
	Contracts Re-lets (Inspections, Tech and Bus stops)	3.9	1 Contract award, and one feasibility report
	Stops & Shelters Annualised Programme	4.2	350 shelters treated
	Surface Asset Management Information Systems	6.3	SAMIS Tech development complete
	Capital Renewal - Carriageway	9.3	150,000m <sup>2</sup> of network treated
	Capital Renewal - Structure	9.8	5 renewal schemes delivered
	Capital Renewal - Tunnels	1.0	2 designs completed, 1 build completed
Third Party Signal Enhancements	7.5	Undefined	

LIP Bridges & Roads	Borough Bridge Maintenance	0.9	Completion of works at Wandsworth Bridge, interim safety measures on other structures and condition surveys
	Borough Road Maintenance		
	Hammersmith Bridge Restoration	3.0	TfL contribution to LBH&F
Operations Assets	Hostile Vehicle Mitigations	1.3	Westminster bridge build completed
	Dial A Ride	0.3	1 build completed
	Victoria Coach Station Modernisation	0.4	Property negotiations completed
	Safety Camera Extension Programme phase 2	0.5	Contract options report
	Victoria Coach Station Infrastructure	1.3	1 build completed
	Lodge Avenue Flyover	1.7	Build commenced
Major Asset Renewals Programme	MARP A40 Westway Structures Refurb	9.1	Work package 1 completed, Concept Design for work package 2 completed
	MARP Rotherhithe	1.3	Targeted works to support ongoing operation
	MARP Brent Cross	2	Feasibility completed and single option identified
	MARP Blackwall Tunnel Southbound Refurb	0.7	Contract awarded for Detailed Design
	MARP Croydon Flyover	1.1	Phase 1 feasibility and investigations completed
	MARP George Green	0.4	Feasibility completed
	MARP Green Man	0.4	Feasibility completed
	MARP Kew Bridge	0.4	Outcome Definition completed
	MARP Projects	0.6	Commencement of two new MARP projects
	MARP Kingston Cromwell Road Bus Station	2.5	Construction to commence

	MARP Ardleigh Green Bridge Replacement	0.1	Project close
	MARP Gallows Corner	0.6	Business case submitted to the DfT
	MARP Piers	1.2	4 Concept Designs completed
<b>PROGRAMME TOTAL</b>		101	
<b>Less:</b>			
Third Party Income	Blackfriars underpass pump station	0.5	
	Canada Water Bus station	0.1	
	Third Party Signals	7.5	
	Hammersmith Bridge Restoration	3.0	
<b>TOTAL (net)</b>		90	

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## Appendix 4: Examples of Major Assets

### A40 Westway

(12 x key bridge Joint renewals)

Daily users – 90,000



### Rotherhithe Tunnel

(Fire / Ventilation system renewal)

Daily users – 30,000



### Gallows Corner Flyover

(steel fatigue)

Daily users – 38,000



Major renewal interventions required between 2022 to 2025 to avoid significant network closures, with imminent closure possible



### Brent Cross Structures

(all over structural condition – very poor, temporary parapets in place)

Daily users – 175,000



### Vauxhall Bridge

(steel fatigue / overall condition – very poor)

Daily users – 47,000



### Croydon Flyover

(significant structural renewal)

Daily users – 40,000

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## Programmes and Investment Committee



Date: 18 May 2022

Item: Capital Efficiencies Report, 2021/22

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### This paper will be considered in public

#### 1 Summary

- 1.1 This is the first annual report of the pan TfL Capital Efficiency Programme , covering the financial year 2021/22. It sets out how we have delivered on the milestones contained in our Capital Efficiency Plan, together with the efficiencies realised during the year.
- 1.2 As well as being TfL's annual report, this report also satisfies the requirement set out in the funding settlement letter of 25 February 2022 to "provide a report setting out the realisation of capital efficiencies over the funding period".
- 1.3 A paper is included on Part 2 of the agenda which contains exempt supplemental information that is exempt from publication by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains commercially sensitive information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

#### 2 Recommendation

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

#### List of appendices to this report:

Appendix 1: Capital Efficiencies Report, 2021/22

#### List of Background Papers:

None

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## Introduction

This is the first annual report of the pan TfL Capital Efficiency Programme (CEP), covering the financial year 2021/22. It sets out how we have delivered on the milestones contained in our Capital Efficiency Plan, together with the efficiencies realised during the year.

Efficiency is one of the 'four pillars of value for money' used by TfL, the others being economy, effectiveness and equity. The objectives of the CEP are to:

- Allow us to deliver better outcomes within a given financial envelope, getting us closer to delivering the objectives in the Mayor's Transport Strategy;
- Demonstrate to industry and our supply chain that we are serious about working together to improve how we deliver and how we work together;
- Provide transparency in our capital delivery performance to stakeholders.

Our CEP initial report stated that our annual reporting will include:

1. Confirmation of the efficiency target and whether anything has happened that should result in a change to that target (for example, if Government found it necessary to change the level of funding available to TfL from the original indications during the 5-year period this could impact on TfL's ability to deliver efficiencies)
2. Details of each "banked" and "evidenced" efficiency with the total value of efficiencies achieved to date
3. The value of "claimed" efficiencies that have not yet completed validation (if any are outstanding at the time of the report)
4. Case studies and other supporting metrics
5. Commentary on milestones actions and initiatives that have been delivered
6. Details of "efficiency to be found" targets embedded in the latest Budget/Business Plan
7. It will also include a forward look of the level of efficiencies that the workstreams are working towards achieving and the level of business-as-usual efficiencies, together with an indication of the status of the plans.

These are set out below:

### 1. Efficiency target range

In our Capital Efficiency Plan, we targeted a five-year efficiency profile from 2021/22 to 2025/26. Recognising that initiatives will take time to impact on costs, the profile ramps up with a target range in each year.

This ambition was informed by benchmarking against other asset intensive organisations in the UK that have similar regulatory frameworks, similar supply chains, and operate in a similar macroeconomic context. These ranges are based on existing embedded efficiencies combined with the impact of our initiatives, as well as ambitious value engineering and risk-release challenges. A range better represents the uncertainties in our future planning and assumptions.

During 2021/22, TfL has continued to be subject to funding uncertainty, which in turn creates significant risk to achieving efficiencies in two main ways:

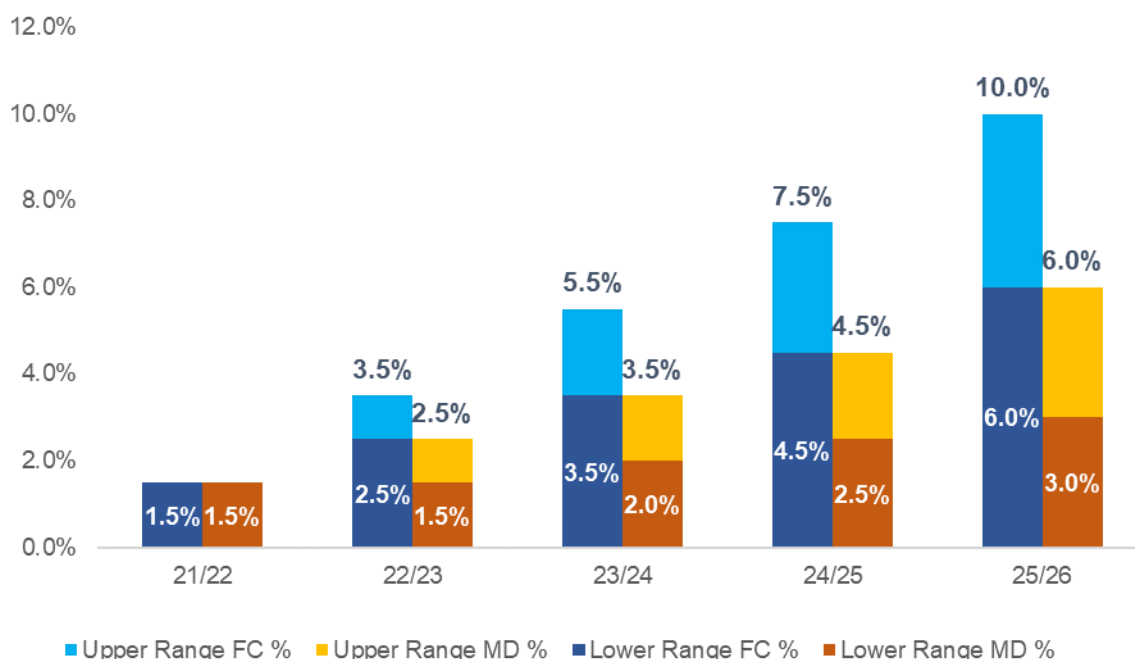
- **Long term planning:** It is recognised that certainty in planning and funding creates an environment conducive to efficient investment. The DfT’s 2013 paper ‘Action on Roads’ stated, “Certainty will enable savings of up to 20% on maintenance and improvement work”, while 2018 research by the Railways Industry Association stated that ‘boom & bust’ work profiles cause a 30 per cent increase in the cost of infrastructure. The Government has acknowledged that the funding certainty afforded to other transport infrastructure operators such as Network Rail and National Highways can enable savings of some 10 to 15 per cent on maintenance and improvement work.
- **Impact of project / scope reductions:** If TfL has to reduce its forecast capital expenditure then it will limit how much efficiency can be delivered. In the simplest terms, the same percentage efficiency will deliver a lower financial saving if the capital programme is smaller. However, the impact is likely to be greater than that. Efficiencies will disproportionately target expenditure that is less committed or at an early stage of the lifecycle, as this is where the opportunity lies. However, these are also the areas of the capital programme that are more likely to be removed or de-scoped due an overall reduction in capital funding.

In November 2021, due to a lack of longer-term funding certainty, TfL moved to a “Managed Decline” scenario for budgeting, which restricted expenditure to committed enhancements and only the most essential renewal projects. Our CEP report already made clear that if TfL’s future business plan contained significantly less activity (e.g. Managed Decline) then the efficiency target presented in the original plan would no longer be valid and would lead to a significantly lower percentage and pound saving.

In addition, a number of efficiencies that had already been identified related to projects which had to be terminated as a consequence of the reduced funding being available and hence are no longer realisable.

Furthermore, DfT have indicated that they are only able to provide certainty of capital funding for up to three years beyond 2021/22 and therefore targets are now only appropriate to this time horizon. TfL has previously indicated the percentages in Figure 1 as more appropriate in a Managed Decline scenario; the shorter the horizon of funding certainty and the later this funding certainty is provided the lower the likely level of efficiencies that will be deliverable.

**Figure 1: TfL Capital efficiency indicative targets – Financially Constrained and Managed Decline scenarios**



## 2. Total value of efficiencies evidenced

“Evidenced” efficiencies are those TfL has achieved and can substantiate. In some cases, action taken results in changes to several future years costs, hence values are shown over the five-year period.

£m	21/22	22/23	23/24	24/25	25/26	5 year total
<b>Evidenced efficiencies achieved</b>	<b>38</b>	17	(4)	(6)	(6)	<b>39</b>

The breakdown of the “Evidenced” efficiencies by Business Area is below.

£m	21/22	22/23	23/24	24/25	25/26	5 year total
London Underground	5	3	0	0	0	<b>8</b>
Surface Transport	11	0	0	0	0	<b>11</b>
Major Projects	13	16	(5)	(6)	(6)	<b>13</b>
Professional Services	8	(2)	0	0	0	<b>7</b>
<b>Total Evidenced Efficiencies Achieved</b>	<b>38</b>	<b>17</b>	<b>(4)</b>	<b>(6)</b>	<b>(6)</b>	<b>39</b>

The individual efficiencies that make up this total and their supporting evidence are set out in the private paper. The evidence submitted is proportional to the size of the efficiency as set out in our Capital Efficiency Plan.

Some of the efficiencies achieved during the year have delivered reductions (or increases) against future years spend levels, and these reductions have been incorporated into the latest projections/budgets for future years. Some efficiencies which lead to savings in the total cost of a multi-year project, may increase the spend value in a particular year, which explains the “negative” efficiency values in some parts of the above table.

In addition, TfL identified a number of efficiencies which were subsequently “eroded”.

£m	21/2	22/2	23/2	24/2	25/2	5 year total
<b>Efficiencies identified subsequently eroded</b>	<b>26</b>	<b>20</b>	<b>(0)</b>	<b>0</b>	<b>0</b>	<b>46</b>

“Eroded” efficiencies are those that were identified but subsequently “lost” - for example where the project making the efficiency was terminated. The values in the table are driven by additional third party income for existing scope obtained by Growth Fund projects subsequently terminated.

### 3. Total value of claimed efficiencies

£m	21/22	22/23	23/24	24/25	25/26	5 year total
<b>"Claimed" efficiencies</b>	<b>4</b>	<b>12</b>	<b>21</b>	<b>2</b>	<b>11</b>	<b>51</b>

“Claimed” efficiencies relate to risk release for projects which have not completed, particularly in major projects. It would be premature to count such reductions as evidenced efficiencies at this stage. TfL’s definition of efficiency requires projects to complete before risk release can be evidenced as an efficiency – as unforeseen risks may subsequently arise resulting in an increase in risk budget. Also included above are £1m for efficiencies achieved in 2021/22 where sufficient supporting information could not be obtained in time for this report.

## 4. Commentary on milestones set out in our CEP report

TfL seeks to deliver efficiencies both from CEP Efficiency workstreams, and business as usual activities, as set out in the table below. Some workstreams will deliver cashable efficiencies directly, others will improve efficiency indirectly.

<b>Categories</b>		
Project controls		Indirect
Investment Planning		Indirect and Direct
Benchmarking		Indirect and Direct
Accountabilities and Governance	<b>Workstreams aligned to efficiency initiatives</b>	Indirect
Commercial		Direct
Engineering		Direct and Indirect
Access		Direct
Value engineering		Direct
Process improvement	<b>Aligned to business as usual efficiency activities</b>	Indirect and Direct
Risk management		Direct
Internal resourcing		Direct

Some CEP workstreams will provide a greater direct cashable contribution than others.

- The workstreams with likely lower (or nil) cashable savings are still critical to our improvement because they create the right conditions and environment for success but are considered less likely to result in directly attributable savings. For example, the benchmarking workstream will highlight efficiency opportunities, but those opportunities will likely be enabled through other workstreams e.g. commercial, access, risk.
- Furthermore, many of the workstreams will only impact on projects not yet in delivery. For example, to meet efficiency targets, projects in their early stage will likely have to deliver greater percentage saving against their forecast than projects already in construction will need to deliver.

## 4.1 Project controls

This workstream is not anticipated to directly deliver cashable efficiencies itself but will help identify and enable efficiencies for BAU and other workstreams to deliver.

TfL has mature processes for controlling projects (Pathway) but there is a recognition that universal adoption across the business is increasing over time. This workstream's intent is to improve the scrutiny and focus on project decisions at each stage of the lifecycle, particularly those in the early stages, by delivering the initiatives as set out below.

**How will this make us more efficient?** Having poorly controlled projects may lead to unnecessary costs – with projects not being stopped (or paused) where and when appropriate, or scope not being adequately controlled.

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### Temporary special measure - a series of Independent Pathway review checks

A review was conducted of the gate control / checks with the intent to improve adherence to Pathway and ensure efficiency opportunities were being maximised via the initiative.

**Autumn 2021**

**Delivery summary:** The outcome was to update the gate checks through a gate quoracy review (tailored quoracy matrix) which focused on balancing the need for priority and efficiency with ensuring the right scrutiny by the right people to enable quality decision making around the life of the project.

**Achieved**

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### Standardised change control

The intent of this milestone was to implement standardised change control process across capital delivery to manage risk and cost through project lifecycle.

**Autumn 2021**

**Delivery summary:** A consistent and standardised change control process was designed, validated by the business, and approved at Investment Group and launched in line with the forecast plan.

**Achieved**

---

### Performance Measurement Baseline

Implement performance measurement baseline for *significant* London Underground and Surface Transport capital project and programmes (and links to budget baseline).

**Winter 2021**

**Delivery summary:** This milestone was achieved around the specific application to significant projects in the specified timescale There were elements of inefficiency in terms of the level of specificity highlighted and efforts are ongoing (with the below milestone) in order to effectively standardise this measure more broadly and reduce manual intervention in the process as much as possible.

**Achieved**



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**Implement performance measurement baseline** for *all* London Underground and Surface Transport capital project and programmes (and links to budget baseline). **Winter 2022**

This effort is scheduled for delivery later this year, however work has already commenced and is currently in an early feasibility stage and is on track for delivery later this year. **In progress**

## 4.2 Investment planning

The existing initiatives in this workstream, below, will indirectly improve efficiency and were designed to ensure that we start the right projects and consider all available delivery options at the outset. There are improvements to be made around ensuring that projects are fit for our needs and outcomes and developing a clear pipeline of schemes for each outcome / portfolio.

**How will this make us more efficient?** A great opportunity for efficiency – at both a programme and individual project level - is before initiation. Getting this stage right is critical as we can prevent the wrong interventions being started at all, and ensure we have the right projects with the right requirements.

The largest element of cashable efficiencies expected to arise from this workstream is from a future review of project risk budgets, particularly around risk allocation at initial phases of a project, which is still being defined. As risk reductions are only evidenced on completion of a project, it may be some time before material cashable reductions are reported from activity to date.

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### Developing strategic investment outcomes

The intent of this initiative was to develop single set of strategic project outcomes, to which we can link benefit measures and use to evidence the impact of programmes/portfolios in aggregate benefit terms, and show progress toward strategic objectives as outlined in the Long-Term Capital Plan and Mayor's Transport Strategy **Autumn 2021**

**Delivery summary:** The Strategic Outcome Framework (SOF) has successfully launched and has now been used as a key input to the enhancement prioritisation work for the 22/23 budget. Work will now focus on how it can be embedded into existing processes. **Achieved**

---

### Decision Making and Guidance / Value for Money policy & guidance Streetscape

**Delivery summary:** Upon review it was determined that the scope of the initiative was closely linked and, in some areas would duplicate the work being conducted around the quoracy initiative in the Project Controls workstream. This initiative therefore underwent change control, and the remaining scope focus was placed on ensuring VfM in design guidance (Streetscape) as per original CEP report. The revised scope is therefore to update the Streetscape guidance in and take proposed draft to the Streetscape Review Group for approval in Summer 2022. **Winter 2021**  
**Underwent change control (reduction in scope)**

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## Pipeline Planning & Requirements

Roll-out consistent pipeline planning approach across all portfolios (based on Healthy Streets model) and develop longer term asset pipeline to better manage work banks

**Spring 2022**

**Delivery summary:** This initiative was de-scoped in November 2021 when TfL moved to a 'Managed Decline' capital position. This is because 'Managed Decline' constrained TfL expenditure and therefore accelerated the need for Capital functions and Programme Directors to review and re-prioritise the work-banks as necessary under the funding agreement, impacting opportunities and longer-term pipeline planning.

**Underwent change control (de-scoped)**

---

## Prioritisation & Optimisation

Using the strategic outcomes (see above) develop and refine portfolio prioritisation / optimisation model

**Summer 2022**

**Delivery Summary:** The Strategic Outcome Framework has been used to refine the portfolio prioritisation during 22/23 budget setting. Work will now focus on developing a more comprehensive process ahead of business planning in summer 22.

**Partly complete, further refinements expected in Summer 2022**

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## 4.3 Benchmarking

The main element of direct efficiencies expected to arise from the workstream is the “pounds in the ground” element which directly drives the setting of savings targets. Some CEP workstreams will contribute to improvements in the “£ in the ground” metric as will some BAU efficiencies. Efficiencies will only be counted against one workstream or BAU to avoid double counting.

Benchmarking would ideally be done for all activities within the project lifecycle – reviewing our schedules, methodologies, construction approaches, standards etc. As well as against specific metrics – unit costs, whole life costs and pounds in the ground. These initiatives will set a clear place for benchmarking in investment decisions as well as standardise activity across the organisation.

**How will this make us more efficient?** Data is key to informing project decisions. TfL's current benchmarking data is disparate and could be better coordinated and shared to inform decisions across the organisation, indirectly leading to efficiency.

---

### **Benchmarking process & resource review**

Identify our benchmarking responsibilities (and resource required to meet this)

**Autumn 2021**  
(review launch)

**Delivery summary:** Review completed, recommended outcomes were to focus on 3 key areas: People, Technology and Process.

**Achieved**

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### **Reporting good practice**

While good practices occur that lead to efficiency savings these are not always automatically logged and shared for others to learn from.

**Autumn 2021**

**Delivery summary:** Area created in the online *Knowledge Portal* for publication, sharing and access to good practice reports. Significant case studies to be presented at periodic Capital Improvement Group.

**Achieved**

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### **Accessible benchmarking data**

Single accessible store of all available benchmarking data, reports and lessons learnt

**Autumn 2021**  
(approach agreed)

**Delivery summary:** Area created in Knowledge Portal for staff request and store benchmarking reports, data, lessons learnt

**Achieved**

---

### **Transport Infrastructure Efficiency Strategy (TIES)**

Work with other transport infrastructure organisations to share data and best practice to drive down costs

**Spring 2022**

**Delivery summary:** Collaboration with TIES is underway and is a continuous process. In-flight collaborative benchmarking on whole-life costing, performance benchmarking, forecasting of asset investments, etc with member organisations.

**Achieved & ongoing**

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## 4.4 Accountabilities and Governance

This workstream is not expected to directly lead to cashable efficiencies, but the improvements below are expected to lead to efficiencies being realised by both other CEP workstreams and BAU activities.

**How will this make us more efficient?** In the Capital Efficiencies Plan, it was identified that by clarifying accountabilities and decision-making responsibility we can speed up our processes and ensure that the right people are involved at the right time which would in turn make projects run smoother and allow problems to be better managed when they arise. The introduction of a new executive structure in February 2022 caused a holistic review of TfL's governance to take place which includes investment governance, business rhythm and reporting and delegated authority, alongside other governance forums such as performance and operations. The executive restructure has required that the output of this workstream, whilst completed, is held for implementation whilst the wider organisational governance is reviewed. This is appropriate so that the entire governance regime is reviewed to ensure that all facets of this function are optimised and aligned for the needs of the business.

---

### Delegated authority

Autumn 2021

Assess scope for reintroducing delegated authority (both formal i.e., spend and informal) across the organisation – and training required to successfully implement.

**Delivery summary:** A combined authority matrix has been developed proposing consistent delegated authority levels across TfL for spend.

Achieved

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### Reporting on capital investment performance

Review our existing periodic, quarterly, and annual investment performance reporting processes (incl. our approach to managing risk) and top-down business rhythm to ensure reporting provides decision makers with the right information in a succinct manner.

Autumn 2021

Achieved

**Delivery summary:** Current reporting processes have been mapped by the PMO team with improvements to business rhythm proposed and socialised across stakeholder groups as a result.

---

### Investment governance framework

Review the scope of TfL's investment governance groups and forums to ensure clearly defined remits and the right data inputs and outputs to enable more efficient decision making.

Winter 2021

Achieved

**Delivery summary:** The scope of TfL's investment governance groups has been reviewed with 12 recommendations made regarding the structural, knowledge, authority and digital aspects of governance, proposals included for changes to 'level-specific' forums which introduce delegated authority

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and updated remits for forums, underpinned by an improved business rhythm.

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#### 4.5 Commercial workstream

The Commercial workstream captures all the benefits achieved by procurement and commercial teams. These include items like “cost avoided” which do not count as efficiencies. However, there is potential for efficiencies delivered by this workstream to be claimed by BAU teams. Therefore, to avoid double counting, values stated against this workstream may understate its contribution.

No commercial milestones are due at this point, however the workstream is mobilised and in-flight for conducting an opportunity assessment with outputs being consolidated to inform key areas of focus and prioritisation.

As noted last year, commercial activity spans the full project lifecycle from initiation to project close. We aim to maximise the value we get out of our supply chain partners and have the right market, procurement, contract, and relationship strategies to drive business outcomes and create the right commercial environment for efficient delivery.

The initiatives in this workstream will review all elements of our commercial lifecycle approach and how they interact with other CEP workstreams to ensure we are delivering the best value for money.

**How will this make us more efficient?** The vast majority of our capital expenditure is delivered through the supply chain and therefore the workstream is recognised as a key impact opportunity area for increasing our direct efficiencies.

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#### Supplier Relationship Management (SRM) pilot

**Delivery summary:** SRM early engagement has been scoped and key suppliers selected and validated with TfL Exec Leads identified. Focus is on engagement and collating internal intelligence to identify themes/initiatives across the relationships for prioritisation and delivery.

**Autumn 2022**

**In progress**

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#### Estimating

Build out our estimating processes across capital schemes, benchmark data quality and use of common systems to improve should-cost modelling and estimate maturity, increase budget confidence.

**Autumn 2022**

**Delivery summary:** Estimating exists across different teams and is not uniformly performed across functions. There is an effort underway to address inconsistent approaches within Estimating capability within TfL, by transferring process ownership to one area of remit (Supply Chain Director – Capital). Transformation is planned to create two distinct teams from the existing capability (Cost Planning & Cost Intelligence)

**In progress**

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## Cost management and reporting

A review of current cost management practices across TfL to increase standardisation, harmonising processes, creating clear lines of accountability, and improving cost controls

**Autumn 2022**

**Delivery summary:** Workstream will collaborate with the Project Management Office and will optimise around standardisation to support the Capital function.

**Mobilising**

---

## Opportunity Assessment

**Delivery summary:** The purpose of this effort is for Procurement & Commercial delivery partner to conduct an Opportunity Assessment via a 6-8 week sprint with production of review / report with recommended key areas of focus / opportunities to explore in OPEX & CAPEX.

**Autumn 2022**

**In progress  
(underwent  
change control  
– new scope)**

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## 4.6 Engineering workstream

The Engineering workstream seeks to generate efficiencies both directly e.g. by reducing the charges made to projects by the Engineering function and indirectly e.g. through better access to information. In addition, care is being taken to avoid double counting between Capex Efficiencies and Opex efficiencies, given that many engineers off-charge most of their time to capital projects.

**How will this make us more efficient?** This work will help us reduce the cost of projects through pragmatic application of requirements and standards, collaboration with the supply chain and timely handover into operational use. Digital engineering will give us better data and insight to make the right decisions faster. This can particularly impact costs through challenging requirements and value engineering; and increased digitalisation will enable further efficiencies in future years.

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### Engineering resource

Key Make vs Buy strategies documented

**Autumn 2021**

**Delivery summary:** Strategies have been documented and focus is now on longer term strategic resourcing to ensure we deliver efficient engineering outcomes.

**Achieved**

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## Digital Engineering

Deliver an asset data and digital strategy to make consistent, informed whole-life cost decisions and become a data-driven, digital business.

Winter 2021

(digital agenda agreed)

**Delivery summary:** The asset data and digital strategy has been developed and our Delivery partner has completed final draft of the Digital Blueprint. This is a key step towards making consistent, informed whole-life cost decisions and become a data-driven, digital business.

Achieved

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Roll-out of **self-service Resource Tool** (currently on trial within TfL's Major Projects Directorate) within TfL Engineering

Spring 2022

**Delivery summary:** Completed with launch of 'SmartCore' in February 2022. This is a key enabler for the delivery of efficient engineering outcomes and the effective allocation of internal capability.

Achieved

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## Engineering standards

Trial and business case for standards digitisation

Spring 2022

**Delivery summary:** Business case being developed and on plan to complete in Spring period.

In progress

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## 4.7 Access workstream

The workstream was separated into Roads and Rail elements, as access for each is controlled differently with bespoke nuances to manage effectively and appropriately. It is expected to deliver cashable efficiencies directly through reducing costs of delivering project outcomes.

The Roads Access team have completed their work via a software tool which is enabling multiple works to be combined saving "lane access charges" and other costs, which are now capable of being separately identified and reported. Efficiencies are expected to start to flow from the start of 2022/23. The value of direct efficiencies achievable depends both on the level of project spend on roads projects and the extent to which it is possible to combine works.

The Rail Access team have a longer-term programme as Access bookings are fixed some 18 months in advance, and while the Capital Improvement Group have approved revised approaches these will take time to deliver cashable efficiencies. The level of efficiencies possible to achieve is very dependent on volumes of particular types of work such as Track replacements and signalling upgrades (although all kinds of works can then attempt to piggyback on those closures). However, note that BAU activity has managed to save £1.8m from combining track possessions in 21/22 ahead of this new approach.

This workstream is designed to deliver improvements in how we book, schedule, and manage access to our network for all capital and maintenance activity. We can leverage significant efficiencies by exploring the use of longer closures that combine multi-discipline works, as well as making better use of our limited engineering hours through planning and controls.



**How will this make us more efficient?** Access to the road and track network is one of the most important commodities on a transport project, but we may not use this resource in the most productive way possible, therefore adding cost to delivery.

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### Maximising working hours

Review opportunities to fully utilise productive time within existing working/engineering hours and build case for extended hours

**Autumn 2021**

**Delivery summary Roads** – review conducted. Efficiency opportunity identified and to be explored via the lane rental scheme through the 22/23 programme of works.

**Achieved**

**Delivery summary Rail** – review conducted alongside blockades and closure review. Workstream team looking at opportunities to pilot / test but will take detailed planning.

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### Reduce overbooking

Incentivise delivery teams to avoid over-booking closures - develop/track utilisation metric

**Autumn 2021**

**Delivery summary Roads:** not in scope for initiative.

(commence metrics review)

**Delivery summary Rail:** Upon deep dive discussion the initiative was not taken forward as this is historically a cultural / behavioural issue to address. Timely and appropriate processes are in place, but adherence to them in different areas of operational functions is the local improvement requirement.

**De-scoped**

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### Integrated access

Review opportunities for completing more projects as part of one closure including maintenance activities. Introduce Senior Responsible Officer (SRO) for closures

**Delivery summary Roads** – review conducted; enhancement opportunities identified for more effective use of the Playbook tool to enable maximising working hour windows.

**Autumn 2021  
(commence review)**

**Delivery summary Rail** – folded this opportunity review into the Closures and Blockades initiative work (see below).

**Achieved**

**Note** - SRO role not taken forward. Clear duties and co-ordination requirements under CDM regulations make clear roles and responsibilities within a given project.



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## **Blockades policy**

Intent of the initiative was to reassess our blockades policy/approach to consider efficiency benefit from longer closures, including comparisons to other agencies.

**Delivery summary Roads** – – review conducted; enhancement opportunities identified for more effective use of the Playbook tool to enable maximising working hour windows

**Autumn 2021**

**Delivery summary Rail** – longer term blockades, weekend closures, extended engineering hours and larger sections of network possessions to be explored. Intent is review pipeline works to identify appropriate opportunities to test in the field.

**Achieved**

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## **Conduct end-to-end Access Planning Operating Model Lifecycle Review (Rail only)**

Following workstream deep-dive discussions a new scope was developed to complete an end-to-end review of the Access Planning Operating Model. The intent of the initiative is to explore the planning lifecycle and Access Ecosystem through a wider, holistic lens (rather than symptomatic / tactical level of above initiatives).

**April 2022**

**In progress**

**Delivery summary:** This review is currently underway, with recommendations due to be finalised by the end of April 2022. The recommendations will enable exploration and endorsement of potential improvements / pilot opportunities.

**Underwent  
change control  
(new scope)**

## **5. “Savings to be found” targets in TfL’s latest Budget**

At the time of writing, TfL is yet to have confirmed Government funding for the complete 2022/23 financial year. The current funding settlement period expires on 24 June 2022. The TfL Budget assumes a further c.£0.9bn of funding is provided by Government for the remainder of 2022/23.

Without funding certainty, efficiency targets have not been finalised. However, TfL is continuing to seek efficiencies both via the CEP Efficiency workstreams described in this report, together with business-as-usual activities.

## **6. Forward look**

Without funding certainty beyond 24 June 2022, it is not possible to have a clear view on the level of capital efficiencies that can be delivered as the capital programme itself is not certain.

Therefore, the “forward look” element of the report has been deferred. However, it remains clear that the larger the capital settlement and the longer the period of funding certainty, the greater the potential to deliver capital efficiencies.

## Programmes and Investment Committee



**Date:** 18 May 2022

**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 plan 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 future informal briefings.

#### **2 Recommendations**

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

#### **3 Forward Plan Development**

- 3.1 The Board and its Committees and Panels have forward plans. The content of the plan arises from a number of sources:
- (a) Standing items for each meeting: Minutes; Matters Arising and Actions List; and any regular quarterly or periodic reports. For this Committee, this is the quarterly Investment Programme Report.
  - (b) Programmes and Projects at a level requiring Committee approval. These include the annual review of the 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 Chair of this Committee 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 2022/23

**List of Background Papers:**

None

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## Programmes and Investment Committee Forward Plan 2022/23

**Membership:** Ben Story (Chair), Dr Nelson Ogunshakin OBE (Vice Chair), Seb Dance, Julian Bell, Dr Lynn Sloman MBE and Peter Strachan.

**Government Special Representative:** Becky Wood

**Abbreviations:** CCO (Chief Capital Officer), CCSO (Chief Customer and Strategy Officer), CFO (Chief Finance Officer), COO (Chief Operating Officer), D IDP (Director Investment Delivery Planning)

Standing Items		
Use of Delegated Authority	General Counsel	Standing item
Quarterly Investment Programme Report	CCO, CCSO and COO	To note high-level progress updates of the Investment Programme and Major Project items and any specific approvals required in relation to programmes not on the deep-dive list for that meeting.
Independent Investment Programme Advisory Group Quarterly Report	General Counsel	Standing item
TfL Project Assurance	General Counsel	Standing item
Regular programme annual reviews		

20 July 2022		
London Underground Renewals Infrastructure Portfolio	D IDP	Update and approval
Public Transport	D IDP	Update and approval
East London Line HIF programme	D IDP	Update and approval
Surface Technology	D IDP	Update and approval
Four Lines Modernisation	CCO	Update and approval

Road User Charging [procurement]	D IDP	Update and approval
Northern Line Extension	CCO	Update and approval [(transfer of authorities)]

<b>19 October 2022</b>		
Piccadilly Line Upgrade	D IDP	Update and approval
London Underground Enhancements	D IDP	Update and approval
Docklands Light Railway Rolling Stock	D IDP	Update and approval

**Items to be scheduled:**

- London Overground future planning
- Rotherhithe Tunnel
- Fiveways Corner in Croydon
- Lessons Learnt from Complex Projects with Commercial Issues (CCO)
- Enterprise Risk Update - Delivery of key projects and programmes (ER8) (CCO)

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