

Agenda

Meeting: Programmes and Investment Committee

Date: Wednesday 26 June 2024

Time: 10:00am

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

Members

Dr Nelson Ogunshakin OBE (Chair)
Peter Strachan (Vice-Chair)
Seb Dance

Mark Phillips
Dr Lynn Sloman MBE

Government Observer

David Coles

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.

Further Information

If you have questions, would like further information about the meeting or require special facilities please contact: Zoe Manzoor, Secretariat Officer;
Email: v_ZoeManzoor@tfl.gov.uk.

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

Andrea Clarke, General Counsel
Tuesday 18 June 2024

**Agenda
Programmes and Investment Committee
Wednesday 26 June 2024**

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 28 February 2024
(Pages 1 - 12)**

General Counsel

The Committee is asked to approve the minutes of the meeting of the Committee held on 28 February 2024 and authorise the Chair to sign them.

4 Matters Arising and Actions List (Pages 13 - 16)

General Counsel

The Committee is asked to note the updated actions list.

5 Use of Delegated Authority (Pages 17 - 20)

General Counsel

The Committee is asked to note the paper.

6 Investment Programme Report Quarter 4: Periods 10, 11, 12 and 13, 2023/24 (Pages 21 - 82)

Chief Capital Officer and Director of Investment Delivery Planning

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

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

General Counsel

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

8 TfL Project Assurance Update (Pages 87 - 90)

General Counsel

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

9 London Underground Four Lines Modernisation Programme
(Pages 91 - 100)

Chief Capital Officer and Director of Investment Planning

The Committee is asked to note the paper and the exempt supplementary information on Part 2 of the agenda and approve Programme and Project Authority and additional Procurement Authority for the Automatic Train Control signalling contract and approve the transfer of Programme and Project Authority (granted by the Committee in July 2022) and Financial Authority for the signalling element of the works at Aldgate Junction to the London Underground Renewals Programme.

10 Streets, Bus and Rail and Sponsored Services Renewals Programme
(Pages 101 - 128)

Director of Investment Delivery Planning

The Committee is asked to note the paper.

11 Rail and Station Enhancements Programme - Annual Update
(Pages 129 - 150)

Director of Investment Delivery Planning

The Committee is asked to note the paper and approve increased Programme and Project Authority of £30.7m for 2024/25 for the Rail and Station Enhancements Programme.

12 Asset Management Strategy Update (Pages 151 - 158)

Chief Capital Officer and Director of Engineering & Asset Strategy

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

13 Forthcoming Key Procurement Activities (Pages 159 - 162)

Chief Finance Officer

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

14 Members' Suggestions for Future Discussion Items (Pages 163 - 168)

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.

15 Any Other Business the Chair Considers Urgent

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

16 Date of Next Meeting

Friday 20 September 2024 at 10:00am

17 Exclusion of the Press and Public

The Committee is recommended to agree to exclude the press and public from the meeting, in accordance with paragraphs 3 and 5 of Schedule 12A to the Local Government Act 1972 (as amended), in order to consider the following items of business.

Agenda Part 2

18 Investment Programme Report Quarter 4: Periods 10, 11, 12 and 13, 2023/24 (Pages 169 - 186)

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

19 Independent Investment Programme Advisory Group Quarterly Report (Pages 187 - 192)

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

20 TfL Project Assurance Update (Pages 193 - 202)

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

21 London Underground Four Lines Modernisation Programme (Pages 203 - 222)

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

22 Asset Management Strategy Update (Pages 223 - 248)

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

23 Forthcoming Key Procurement Activities (Pages 249 - 254)

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

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Transport for London

Minutes of the Programmes and Investment Committee

**Conference Rooms 1 and 2, Ground Floor, Palestra,
197 Blackfriars Road, London, SE1 8NJ
10:00am, Wednesday 28 February 2024**

Members

Seb Dance (in the Chair)
Peter Strachan (Vice-Chair) (via Teams, from Minute 01/02/24 to 16/02/24)
Mark Phillips
Dr Lynn Sloman MBE

Government Observer

David Coles (via Teams)

Executive Committee

Andy Lord	Commissioner
Andrea Clarke	Interim General Counsel
Stuart Harvey	Chief Capital Officer

Staff

Rebecca Bissell	Director of Information Technology (for Minute 10/02/24)
Dan Champion	Head of Investment Delivery Planning, Air Quality Technology and Environment (for Minute 09/02/24)
David Christie	Growth and Masterplanning Manager, Director of Spatial Planning (for Minute 11/02/24 and 12/02/24)
Michael Cooper	Director of Programme Management Office
Justine Curry	Interim Director of Legal
Luke Jarvis	Interim Director of Procurement and Commercial – Capital (for Minute 13/02/24)
Shamus Kenny	Head of Secretariat
Zoe Manzoor	Senior Committee Officer
Peter McNaught	Director of Operational Readiness
James Norris	Head of Project Assurance
David Rowe	Interim Director of Investment Delivery Planning
Rachel Sherry	Finance Director - Capital
Shashi Verma	Chief Technology Officer (for Minute 10/02/24)
Matthew Yates	Head of Projects Consents and Urban Design (for Minute 12/02/24)

Independent Investment Programme Advisory Group (IIPAG)

Alison Munro	Chair IIPAG
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01/02/24 Apologies for Absence and Chair's Announcements

An apology for absence had been received from Dr Nelson Ogunshakin OBE (Chair). Peter Strachan (Vice-Chair) attended the meeting via Teams and was able to participate in the discussion but was not counted towards the quorum. He had indicated that he would need to leave the meeting by 12pm. The meeting was quorate.

Andy Lord and David Coles were also attending via Teams. Glynn Barton, Interim Chief Operating Officer was unable to attend and was represented by Peter McNaught, Director of Operational Readiness.

As the Chair was not present and the Vice-Chair was attending via Teams and so did not count towards the quorum, the Committee Members present elected Seb Dance as the Chair for the meeting.

The Chair welcomed everyone to the meeting. The meeting was broadcast live to TfL's YouTube channel, except for the discussion of the information on Part 2 of the agenda, which was exempt from publication, to ensure the public and press could observe the proceedings and decision making.

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 the appropriate member of the Executive Committee after the meeting.

On behalf of the Committee and officers, the Chair thanked Joanne White for her helpful and thoughtful contribution to TfL's assurance processes during her time as a member of the Independent Investment Programme Advisory Group since November 2018. The Chair wished her well for the future.

02/02/24 Declarations of Interests

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

There had been two updates to declarations since the last meeting. Dr Lynn Sloman MBE had stood down from her role as Director of Transport for Quality of Life Limited and Mark Phillips had been appointed as the Chair of the Saffron Walden Choral Society.

There were no other interests to declare that related specifically to items on the agenda.

03/02/24 Minutes of the Meeting of the Committee held on 6 December 2023

The minutes of the meeting of the Committee held on 6 December 2023 were approved as a correct record, and the Chair was authorised to sign them.

04/02/24 Matters Arising and Actions List

Andrea Clarke introduced the item, which set out progress against actions agreed at previous meetings of the Committee.

The Committee noted the updated Actions List.

05/02/24 Use of Delegated Authority

Andrea Clarke introduced the item. Since the last meeting of the Committee on 6 December 2023, there had been one use of Chair's Action in relation to the Ultra Low Emission Zone Scrappage Scheme and one approval of authority by the Finance Committee (that would ordinarily be in the remit of this Committee) in relation to the Piccadilly Line Upgrade.

There had been two approvals of Procurement Authority in relation to the Gallows Corner Flyover Refurbishment Design and Build Contract award, and the novation of the Detection and Enforcement Infrastructure Contract. There had also been one approval of Procurement Authority and cumulative Programme and Project Authority in relation to the Colindale Station Upgrade Main Works Contract award. There had been no other use of delegated authority by the Commissioner or the Chief Finance Officer nor any Mayoral Directions to TfL within the Committee's remit.

The Committee noted the paper.

06/02/24 Investment Programme Report Quarter 3: Periods 7, 8, and 9, 2023/24

Stuart Harvey and David Rowe presented the Investment Programme Report for Quarter 3 of 2023/24 (17 September to 9 December 2023).

Beginning with the safety update, it was confirmed that there had been no incidents which reached the threshold of Reporting of Injuries, Diseases and Dangerous Occurrences (RIDDORs) but there had been eight injuries in the quarter. As a result, the overall workplace injury rate in the Capital programme had fallen. TfL continued to focus on safety matters and, on 9 February 2024, the first Zero Harm safety conference was held at City Hall attended by suppliers and staff that showcased innovation. Officers had received positive feedback about the session. The Committee acknowledged the good safety performance of the Capital team and felt that the team deserved recognition for this given the scale of its work.

TfL had delivered seven strategic milestones on time, or early, in the quarter, and so far 16 milestones had been met. Two milestones had been missed regarding the Jubilee line heavy overhaul and the DLR rolling stock replacement: Beckton depot southern sidings.

Since the previous meeting, the estimated final cost (EFC) for the Four Lines Modernisation Programme had been updated to reflect the revised completion date, following a review of the software for the next stage of the programme. The team would continue to focus on opportunities and mitigation. The team was not at this stage seeking an increase in the EFC. Signal Migration Areas 8 and 9 (Neasden and Harrow) were the most complex and challenging area of work and were the next stages to be commissioned. TfL had undertaken detailed testing of the signalling software. In response to a question, officers provided details of the nature of the safety testing including use of a simulator, and the extensive plans to comprehensively test the system before it went live.

Manufacturing of the new DLR trains was ongoing and 22 of the new trains had now been completed and testing had also been progressing well. The delay in testing had

impacted on the delivery dates for the new trains, which would now be delivered in Quarter 1 of 2024/25. Work had restarted on the Beckton depot site with the new contractor. The project team would continue to review costs to mitigate cost pressures caused by the previous contractor's insolvency.

On the Piccadilly Line Upgrade (PLU), the EFC had been held at £3,050m, which exceeded the Programme and Project Authority. The team had made significant progress on identifying opportunities to reduce costs and achieve greater certainty around the scheduling. The first train was due to arrive in summer 2024 for testing and would be introduced into service for 2025. Following changes to the programme, 80 per cent of the trains would be manufactured in Goole, Yorkshire instead of 50 per cent. The Committee welcomed this development and how it would benefit the national supply chain. Good progress had been made in preparing for the infrastructure required for the new trains.

On the Silvertown Tunnel, the EFC had increased. There was confidence that this would be recovered, and TfL remained on target to meet the targets for the project. Following the appointment of the new operator, the new cross-river bus for the tunnel network would begin operation in 2025 when the Silvertown Tunnel was due to open.

Work was underway to determine the feasibility of installing step-free access at more stations. At Colindale, the main works began on site in January 2024, and plans were in place for a blockade and station closure to provide the step-free access. TfL was working with a developer to provide a new ticket hall at West Ham station and it was expected that the ticket hall would open in 2025. Following the approval of the business case by the Department for Transport (DfT) to provide a ticket hall and step-free access at Leyton station, pre-construction surveys were underway, with the main site works programmed to begin in August 2024. At Old Street, TfL remained on course to complete the project by April 2024. Officers were pleased to report that the works had transformed the area.

David Rowe provided an update on progress with delivering the Safe and Healthy Streets Programme. TfL was close to delivering several targets including those for expanding the cycling network, lowering speed limits and the provision of 10km of new bus lanes. Cycleway 4 (London Bridge to Greenwich) was expected to complete in early March 2024 and works were progressing well to deliver other cycleways. Construction work also continued on the Holloway Road/Drayton Park safer junction scheme which was due to complete in March 2024. TfL had reviewed potential sites to provide bus priority and had commenced work to create a new bus lane at Woodford Avenue in Ilford to support the new Superloop SL2 express bus service. Members welcomed this development to facilitate the Superloop service. TfL had also recently confirmed to the boroughs funding allocation for 2024/25 to progress Healthy Streets schemes.

At Gallows Corner Flyover, a contract had been awarded to carry out the detailed design and refurbishment and TfL was awaiting confirmation of funding from the DfT's Major Road Network fund towards this work.

Another key highlight was the redevelopment of Kingston Cromwell Road bus station. The works were due to complete in summer 2024. As part of this work, TfL had provided a range of energy efficiency improvements. Members welcomed the progress but stressed the need to review progress with delivering the Zero Vision target this year, with a view to accelerating delivery of this target. It was confirmed that the Environment Programme included a range of activities aimed at meeting this target. Andy Lord confirmed that he had asked colleagues across TfL to look at further interventions to accelerate the delivery of projects to meet this target.

Good progress also continued to be made with the London Trams Renewal Programme. Work was underway to deliver TfL's first net zero carbon project at the Therapia Lane depot.

Good progress had also been made with the London Underground Renewals Programme to improve the reliability and quality of services, including the Jubilee line fleet. It was now forecast that the Kentish Town station works would be completed in September 2024, rather than June 2024, due to the need to complete necessary works to the station floor. To improve the reliability of the Central line, TfL had stepped up the repair works, including the use of replacement motors, though the work to replace motors was time-consuming. A new timetable had been introduced to bring more trains into service. In response to questions from the Committee, confirmation on how TfL is accommodating a strategy for spares for PLU, learning lessons from Central line challenges, would be included in the PLU annual update to the September 2024 Committee meeting. **[Action: Stuart Harvey]**

TfL had also been progressing well the work to provide LED lighting on the Bakerloo line fleet. Works had also been recently completed at Oxford Circus to provide LED lighting, four months ahead of schedule. This work was expected to save a significant amount of carbon dioxide equivalent per year.

A brief update was also provided on High Speed 2 (HS2). TfL was continuing to engage with key stakeholders to consider next steps in relation to HS2 provision at Euston and the plans for Old Oak Common, to ensure decisions were taken as quickly as possible. TfL was also due to meet with the Minister of State for Transport. TfL was also working with partners such as the London Borough of Camden to optimise development opportunities.

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

07/02/24 Independent Investment Programme Advisory Group Quarterly Report

James Norris introduced the Independent Investment Programme Advisory Group's (IIPAG) quarterly report, which set out work undertaken by IIPAG since the report to the Committee in December 2023.

Alison Munro presented the Appendix, summarising IIPAG activities during the quarter. IIPAG and Project Assurance had undertaken three programme level reviews on: Environment; Technology; and Network Development and Third-Party Pipeline. Several recommendations had been made, aimed at bringing greater clarity to the operation of each programme, and these were in the process of being actioned. A further common theme identified concerned the shortage of resources, including staff, particularly in relation to delivering the Technology programme. This was identified as an industry wide problem and certain specialist vacancies were difficult to fill.

IIPAG had also carried out a number of cross-cutting reviews and had completed a review of the progress of improvements in Procurement and Commercial. Most of the recommendations had been closed out or were due to be by the end of March 2024.

IIPAG would continue to engage with teams and to monitor the matters raised, in particular on the concerns around resourcing. IIPAG was also reviewing its programme for next year.

Members asked how better practice on project management was shared across TfL. Officers advised that they were in the final stages of establishing the Project Management Community to identify and apply lessons learnt and to train and upskill staff. Work was also undertaken to better manage relations with the supply chain to identify efficiencies. A new Net Zero matrix team had been established to share and coordinate progress in relation to environmental matters across the Capital team. A further update would be provided on this work to the Committee. **[Action: Stuart Harvey]**

IIPAG was also drawing up Terms of Reference for a review of TfL's approach to delivering the targets to reduce carbon emissions, with a specific focus on the Investment Programme.

The Committee noted the Independent Investment Programme Advisory Group's quarterly report and the exempt supplementary information on Part 2 of the agenda.

08/02/24 TfL Project Assurance Update

James Norris introduced the item, which provided an update on the project assurance work undertaken between 12 November 2023 and 6 January 2024.

Three programme reviews were undertaken during this time, with the Independent Investment Programme Advisory Group (IIPAG) involved in all three. Seven project reviews were undertaken, with IIPAG involved in three of these. These reviews gave rise to a total of 48 recommendations, of which four were considered critical issues. All recommendations had been agreed by the project teams concerned.

The report also provided an overview of the status of IIPAG's and the Project Assurance team's recommendations, the highest number of which concerned business cases. There were only a small number of outstanding recommendations. Project Assurance would continue to work with project teams to close out recommendations.

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

09/02/24 Environment Programme

David Rowe and Dan Champion introduced the item. The Environment Programme aimed to deliver key outcomes in the Mayor's Transport Strategy, primarily to help tackle the challenges of air pollution, traffic congestion and the climate emergency. Members noted the progress with delivering a wide range of projects, including existing Road User Charging schemes, Business Operations in-house, Direct Vision Standard Phase 2 and the Electric Vehicle Infrastructure Delivery programme. Members also noted an update on the waste heat project and building decarbonisation initiatives, which were at an earlier stage in the life cycle of the plans. The paper also provided an update on planned delivery.

Members welcomed the programme, but also noted the scale of the challenges in meeting the objective to decarbonise buildings across TfL's estate by 2030. Members sought assurances about the availability of funding for this work, and the work with third parties to secure funding.

It was confirmed that the project teams had carried out initial studies to develop a pipeline of projects, with a focus on buildings with the largest footprint. Officers were mindful of the financial challenges and were working to identify the exact costs of the programme and the funding available for the programme. To assist with the costs, TfL was working to leverage third-party funding, including securing a further grant from the Public Sector Decarbonisation Scheme. In addition, through the Street, Bus and Rail-sponsored Service Renewals Programme, TfL also sought to identify opportunities to additionally provide environmental improvements to buildings to support the Environment Programme. Officers cited the work to redevelop Kingston Cromwell Road bus station as an example of this.

Assurance was provided that TfL was on track to implement the Road User Charging arrangement for the Silvertown Tunnel by the end of the year.

IIPAG had undertaken a full assurance review of the programme and had raised several issues relating to the timetable for the introduction of Road User Charging and progress with the decarbonation of buildings among other issues. This had been responded to by management.

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

- 1 approved additional Programme and Project Authority of £64.3m to support the ongoing delivery of the Environment Programme giving a total Programme and Project Authority of £1.077bn;**
- 2 approved the additional Procurement Authority, in the sums requested in the exempt supplementary paper on Part 2 of the agenda, relating to the contracts with Capita Business Services Limited (Capita) and Yunex Limited to continue activities in support of existing Road User Charging schemes; and**
- 3 noted that matters for which Procurement Authority was sought above include commitments that extend beyond the period of the 2024/25 Budget and 2024 Business Plan. Provision would, therefore, need to be made for those commitments in future Budgets and Business Plans.**

10/02/24 Technology Programme

David Rowe, Shashi Verma and Rebecca Bissell introduced the item, highlighting progress with delivering projects since March 2023 for Technology and Data projects and since July 2023 for Operations Technology projects. The paper summarised planned delivery in relation to several themes identified in the paper for 2024/25 and 2025/26. It also set out planned future activity.

It was recognised that there were challenges to deliver the projects, due to such factors as a shortage of specialist resources, and issues with supply chain resourcing. A significant amount of work had been carried out to ensure that TfL was in a much stronger position to deliver the programme.

The new Technology Programme was established in May 2023. There was still work ongoing to embed the new programme structure, including establishing the reporting structure and aligning resources but good progress was being made with this work. Since the last report to the Committee in March 2023, there had been changes to the estimated final cost for projects. This was mainly due to such factors as scope changes, resourcing and supply chain challenges, but was also in part due to early budget forecasting which had underestimated the costs of long running projects. Members welcomed this explanation and agreed that it should be more clearly reflected in future reports, to provide the Committee with a more accurate understanding of developments with the programme.

[Action: Shashi Verma]

Expenditure was regularly reviewed to manage any underspend. The project teams sought to re-allocate any such underspend to suitable projects in the work bank which would have the most meaningful impact, and ensured they did not draw skills from key areas. Members stressed the need to ensure that projects brought forward from the work bank satisfied this objective and were the most effective projects, not just those that were easily deliverable. TfL invested in developing its own in-house technology and utilised existing tried and tested technologies, depending on which solution was the most appropriate.

Alison Munro reported on the findings of the Independent Investment Programme Advisory Group's review. She welcomed the information in the report but also noted that there was a pattern of project under-spend in year and adjustments to the budgets which suggested that lessons should be learnt from this.

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

- 1 approved an increase in Programme and Project Authority of £227m for the Technology Programme giving a total of £1,092m Programme and Project Authority;**
- 2 noted that matters for which Programme and Project Authority was sought above include commitments that extend beyond the period of the 2024/25 Budget and 2024 Business Plan. Provision would, therefore, need to be made for those commitments in future Budgets and Business Plans; and**
- 3 noted that Procurement Authority for the various initiatives would be sought at officer level in accordance with Standing Orders.**

11/02/24 The Growth Fund

David Rowe and David Christie presented the item, which set out details of the major regeneration schemes awarded funding by the Growth Fund, since 2012 during the two phases and the impact of the coronavirus pandemic on the delivery of the projects, especially the Phase 2 projects. The paper also set out details of the positive impacts of the Fund in terms of the creation of significant regeneration benefits, leveraging in third-

party contributions to projects, mode shifts to sustainable forms of transport, reduced carbon emissions and additional TfL revenue.

The major developments that had benefited from the funding included: the Barking Riverside Extension; Elephant and Castle Northern Roundabout; Stratford – Angel Road (North); Tottenham Hale station improvements; West Ham station upgrade; White Hart Lane station enhancements; and Woolwich station on the Elizabeth line. The paper also identified lessons learnt and the steps taken, over the lifecycle of the Fund, to enhance the delivery of the newly established Sustainable Housing and Accessibility (SHA) Fund.

To fully understand the benefits of major projects, a comprehensive survey had been undertaken to identify the wider economic benefits of specific projects, such as the Barking Riverside Extension. The Department for Transport had also made it a requirement of the funding for Leyton and Colindale stations that TfL track the benefits of these projects. TfL was also working to progress the concept designs for North Acton and West Hampstead, with a view to delivering schemes that not only delivered housing growth but provided step-free access. Generally, it was envisaged that schemes in the pipeline should be able to deliver both these key objectives of growth and step-free access. The project team engaged closely with Places for London, TfL's property company, in developing pipelines for the SHA programme to identify synergies.

Members welcomed the programme. At the request of Members, officers would look to analyse the overall wider benefits for the economy from the projects supported by the Growth Fund. **[Action: David Rowe / David Christie]**

The Committee noted the paper.

12/02/24 Network Development and Third-Party Pipeline Programme

David Rowe, David Christie and Matthew Yates presented the item, which provided an overview of the Network Development and Third-Party Pipeline Programme. The programme brought together pipeline schemes at an early stage of development, with significant estimated costs, prior to their allocation to one of the existing Investment Programmes, or to them being considered as a standalone major project. The paper covered proposed network extensions, the Interchange programme, the Sustainable Housing and Accessibility Fund and the third-party funding prioritisation plan.

The Committee welcomed the programme. In relation to the proposals for the Elizabeth line, Members expressed support for TfL's proposed approach to supporting third-party projects in areas outside London. It was considered that priority should be given to funding projects that increased housing and jobs in London in line with core policy priorities.

Members discussed whether the Committee should review the potential options, before a preferred option was selected for development, rather than only seeing the recommendation. Officers would consider this, taking into account the timing of when it would be best to bring the options and proposal to the Committee.

[Action: David Rowe / David Christie]

It was also noted that some of the smaller scale schemes could have a significant impact, therefore Members were keen to ensure that due consideration was given to adding smaller schemes to the programme.

The Committee noted the paper and:

- 1 approved Programme and Project Authority of £3.5m for the Thamesmead and Beckton Riverside programme (including £1m for the Bus Transit between Thamesmead, Woolwich and Abbey Wood to deliver a concept design, and Programme and Project Authority of £2.5m for the DLR to Thamesmead project to develop an Outline Business Case); and**
- 2 approved Programme and Project Authority of £9.5m from the Sustainable Housing and Accessibility Fund to deliver step-free access at Northolt station and concept designs for capacity upgrades and step-free access at North Acton and West Hampstead and, in relation to such sum, approved its removal from the Network Development and Third-Party Pipeline Programme and an equivalent increase in the Programme and Project Authority of the Rail and Station Enhancements Programme.**

13/02/24 Forthcoming Key Procurement Activities

Luke Jarvis introduced the item, which set out the major new procurements or contract extensions planned over the next two years and decisions that were anticipated to be required from the Committee through Chair's Action between this meeting and the next planned meeting in June 2024.

The paper also highlighted significant forthcoming procurements that required approval at officer level during that period.

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

14/02/24 Members' Suggestions for Future Discussion Items

Andrea Clarke introduced the item. No additional suggestions were raised for future discussion items on the forward plan or for informal briefings, other than those already noted during the meeting.

The Committee noted the forward plan.

15/02/24 Any Other Business the Chair Considers Urgent

There was no other urgent business to discuss.

16/02/24 Date of Next Meeting

The next scheduled meeting of the Committee would be held on Wednesday 26 June 2024 at 10.00am.

17/02/24 Exclusion of the Press and Public

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, Quarter 3: Periods 7, 8, and 9, 2023/24; Independent Investment Programme Advisory Group Quarterly Report; TfL Project Assurance Update; Environment Programme; Technology Programme; and Forthcoming Key Procurement Activities.

The meeting closed at 12.30pm.

Chair: _____

Date: _____

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Programmes and Investment Committee



Date: 26 June 2024

Item: Matters Arising and Actions List

This paper will be considered in public

1 Summary

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

2 Recommendation

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

List of appendices to this report:

Appendix 1: Actions List

List of Background Papers:

Minutes of previous meetings of the Programmes and Investment Committee.

Contact Officer: Andrea Clarke, General Counsel
Email: Andrea.Clarke@tfl.gov.uk

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Programmes and Investment Committee Action List (to be reported to the meeting on 26 June 2024)

Actions from the meeting held on 28 February 2024

Minute no.	Item/Description	Action by	Target Date	Status Note
06/02/24	<p>Investment Programme Report Quarter 3: Periods 7, 8, and 9, 2023/24: Piccadilly Line Upgrade (PLU)</p> <p>In responses to questions from the Committee, confirmation on how TfL is accommodating a strategy for spares for PLU, learning lessons from Central line challenges would be included in the PLU annual update to the September 2024 Committee meeting.</p>	Stuart Harvey	September 2024	Information will be provided as part of the PLU annual review scheduled for the meeting in September 2024.
07/02/24	<p>Independent Investment Programme Advisory Group Quarterly Report: Environmental matters</p> <p>A new Net Zero matrix team had been established to share and coordinate progress in relation to environmental matters across the Capital team. A further update would be provided on this work to the Committee.</p>	Stuart Harvey	September 2024	Information will be provided as part of the annual review of the Corporate Environment Plan (Capital) to be submitted to the September 2024 meeting of the Safety, Sustainability and Human Resources Panel.
10/02/24	<p>Technology Programme: Future Reports</p> <p>Changes to the Estimated Final Cost (EFC) for projects should be more clearly reflected in future reports, to provide the Committee with a more accurate understanding of developments with the Programme.</p>	Shashi Verma	March 2025	Changes to EFCs will be reflected in future reports to the Committee, with the next report scheduled for the meeting in March 2025.

Minute no.	Item/Description	Action by	Target Date	Status Note
11/02/24	<p>The Growth Fund: Analysis of the Overall Wider Benefits for the Economy</p> <p>At the request of Members, officers would look to analyse the overall wider benefits for the economy from the projects supported by the Growth Fund.</p>	David Rowe / David Christie	December 2024	Information will be provided as part of the update on Network Development and Third-Party Pipeline Programme scheduled for the meeting in December 2024.
12/02/24	<p>Network Development and Third-Party Pipeline Programme: Options Paper</p> <p>Members discussed whether the Committee should review the potential options, before a preferred option was selected for development, rather than only seeing the recommendation. Officers would consider this, taking into account the timing of when it would be best to bring the options and proposal to the Committee.</p>	David Rowe / David Christie	December 2024	An update will be provided on the Network Development and Third-Party Pipeline Programme, with a significant element on West London Orbital options at the meeting in December 2024.

There are no actions from previous meetings

Programmes and Investment Committee



Date: 26 June 2024

Title: Use of Delegated Authority

This paper will be considered in public

1 Summary

1.1 The use of delegated authority 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 28 February 2024, there have been:

- (a) no uses of specific authority delegated by the Board;
- (b) one use of Chair's Action in relation to approving authorities relating to the Elizabeth line: Service Frequency Increase to Support High Speed 2 (HS2);
- (c) two approvals of Procurement Authority in relation to Purchasing S Stock and 09TS Compressors; and Depots Delivery Integrator variation to extend the contract for a further two years.
- (d) no approval of unbudgeted Financial Authority by the Commissioner nor Chief Finance Officer; and
- (e) no Mayoral Directions within the Committee's remit.

1.3 Similar papers are submitted to the Finance Committee and the Land and Property Committee in respect of the use of Chair's Action, Authorities granted by the Commissioner and the Chief Finance Officer and any relevant Mayoral Directions that fall within the remit of those Committees.

2 Recommendation

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

3 Use of authority delegated by the Board

3.1 There has been no use of authority delegated by the Board since the last meeting of the Committee.

4 Use of Chair's Action

- 4.1 Under Standing Order 112, in situations of urgency, the Board delegates to each of the Chair and the Chairs of any Committee or Panel the exercise of any functions of TfL on its behalf, including the appointment of Members to Committees and Panels. Any use of Chair's Action is reported to the next ordinary meeting.
- 4.2 There has been one use of Chair's Action since the last meeting of the Committee.

Elizabeth Line: Service Frequency Increase to Support HS2

- 4.3 With the agreement of the Chair (due to a declared interest) and the Chair of the Finance Committee, this Chair's Action request was submitted to the Chair of the Finance Committee.
- 4.4 In December 2023, the Committee approved authorities for five additional Elizabeth line trains to support HS2 customers. On 4 June 2024, members of this Committee (except for the Chair) and members of the Finance Committee received a paper that now proposed 10 additional trains to support service enhancements on the Elizabeth line to respond to the pressures and opportunities on the network.
- 4.5 On 6 June 2024, the Chair of the Finance Committee, in consultation with available Members of this Committee (excluding its Chair) and the Finance Committee, noted the paper and the exempt supplementary information. Subject to receipt of a final signed funding letter from Government (which has subsequently been received) she approved unbudgeted Financial Authority, Programme and Project Authority and Procurement Authority for the service enhancements.
- 4.6 The use of Chair's Action was considered appropriate as a decision to enter into the agreement was required before the date of this meeting and the decision was critical to agreeing the contract variation with Alstom and issuing the notice to proceed with the order for 10 additional class 345 trains for the Elizabeth line in line with the funding conditions set by Government. The public paper will be published on [tfl.gov.uk](https://www.tfl.gov.uk) in due course.

5 Programme and Project Authority and Procurement 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.
- 5.4 Procurement Authority is the authority to make a binding or contractual commitment with a supplier for the purchase of goods, services, land or works or to receive income arising from TfL Group activities in the areas of goods, services, land or works.

Approvals by the Commissioner and Chief Finance Officer

- 5.5 Since the last meeting of the Committee, the Commissioner has approved:
- (a) Purchasing S Stock and 09TS Compressors – Overhaul: Procurement Authority of £51, 888,086 was approved to Knorr-Bremse Rail Systems (UK) Limited; and
 - (b) Depots Delivery Integrator variation to extend the contract for a further two years: Procurement Authority £27,524,862.67 was approved for the variation of the contract with Lendlease Construction (EMEA) Limited and Jacobs UK Limited joint venture.

6 Financial Authority Approvals

- 6.1 Financial Authority is the authority to spend money, receive income, incur a financial liability or redistribute funds to relevant third parties in respect of their respective allocated budgets. Financial Authority is automatically granted to the extent that an activity or Programme or Project is 'budgeted'. This paper reports on any use of unbudgeted Financial Authority.
- 6.2 Since the last meeting of the Committee, neither the Commissioner nor the Chief Finance Officer has approved any unbudgeted Financial Authority requests within the Committee's remit.

7 Mayoral Directions to TfL

- 7.1 The Greater London Authority (GLA) Act 1999 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 often issued in relation to the implementation of matters in respect of which the Mayor delegates statutory powers to TfL.
- 7.2 Mayoral decision papers inviting the Mayor to issue a direction set out the financial and other implications. If those implications change over time, that will be reported to the GLA.
- 7.3 All Mayoral decisions are issued in writing, with the information that is not exempt from publication included on the GLA's Decisions Database on its website: <https://www.london.gov.uk/about-us/governance-and-spending/good-governance/decisions?order=DESC>.

- 7.4 Mayoral directions relating to TfL are reported to the Board's Committees for information as soon as possible after they are received by TfL or published. Regular reports will list the relevant directions for as long as they are applicable.
- 7.5 Annually the Audit and Assurance Committee considers the list as part of its consideration of the annual audit plan to ensure that appropriate audit resource is applied to assurance on TfL's work in implementing Mayoral directions. This will also be kept under review at each quarterly meeting of that Committee.
- 7.6 A summary of current Mayoral directions to TfL is maintained on the "How we are governed" page on our website, with links to the relevant Mayoral Decisions: <https://tfl.gov.uk/corporate/about-tfl/how-we-work/how-we-are-governed>. That page will be updated as and when further directions are made.
- 7.7 Mayoral Directions to TfL related to projects and programmes are reported to this Committee. 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:

Elizabeth line Chair's Action paper, issued 4 June 2024
Greater London Authority Decision Making Database.

Contact Officer: Andrea Clarke, General Counsel
Email: AndreaClarke@tfl.gov.uk

Programmes and Investment Committee



Date: 26 June 2024

Item: Investment Programme Report Quarter 4: Periods 10, 11, 12 and 13, 2023/24

This paper will be considered in public

1 Summary

- 1.1 The Investment Programme Report describes the progress and performance in Quarter 5, 2023/24 (10 December 2023 to 31 March 2024) of a range of projects that will deliver world-class transport services to London.
- 1.2 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraphs 3 and 5 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL and in respect of which a claim to legal professional privilege could be maintained in legal proceedings. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

2 Recommendation

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

List of appendices to this report:

Appendix 1: Investment Programme Report Quarter 4 2023/24

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

List of Background Papers:

None

Contact Officers: Alex Williams, Chief Customer and Strategy Officer
Email: AlexWilliams@tfl.gov.uk

Contact Officers: Claire Mann, Chief Operating Officer
Email: ClaireMann@tfl.gov.uk

Contact Officers: Stuart Harvey, Chief Capital Officer
Email: StuartHarvey@tfl.gov.uk

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Investment programme report

Quarter 4 2023/24
(10 December 2023 to 31 March 2024)

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An aerial photograph of London, England, showing a dense urban landscape. The River Thames flows through the city, with several bridges crossing it. In the foreground, the Gherkin (30 St Mary Axe) is prominent, along with other modern skyscrapers like the Lloyd's building and the Leadenhall Building. The background shows the city extending to the horizon under a clear sky.

Introduction

Our investment programme comprises projects to maintain the reliability of the network and support growth in the capital



Safe, efficient services are fundamental to London's way of life

Purpose and scope

Purpose

Transport for London (TfL) is part of the Greater London Authority (GLA) family led by Mayor Sadiq Khan. We are the integrated transport authority responsible for delivering the Mayor's aims for transport.

We run most of London's public transport services, including London Underground, London Buses, the DLR, London Overground, Elizabeth line, London Trams, London River Services, London Dial-a-Ride, Victoria Coach Station, Santander Cycles and the IFS Cloud Cable Car. The quality and accessibility of these services is fundamental to Londoners' quality of life. By improving and expanding transport, we can make people's lives easier and increase the appeal of sustainable travel.

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

Scope

The report gives a progress update on the programmes and major projects that seek authority each year from the Programmes and Investment Committee. It includes programmes of renewals and enhancements to maintain reliability and support growth. Renewing and replacing our assets is our required baseline to maintain our current performance in terms of safety, reliability, capacity and asset

condition. Additional enhancements can unlock new capacity and enable us to use our existing network more intensively.

This report covers Quarter 4, which runs from 10 December 2023 to 31 March 2024. For each key project or programme, the financial and milestone data represent the position at the end of Quarter 3, with commentary on key achievements, progress and challenges. It also updates on notable progress since the last report.

The data displayed differs depending on whether the programme or portfolio has a finite scope to deliver:

- For projects with a finite scope, financial records of spend to date, authority and estimated final cost (EFC) are provided, which represent the entire duration of the programme or portfolio except where stated. For these projects, a completion date is also provided, indicating the year and which quarter the specified event will occur
- For ongoing portfolios that aggregate a number of projects, financial records of spend to date and forecast cost are provided for a discrete period of time

Numbers in brackets represent a deficit in the figure or a decrease since the last report; numbers without brackets represent a surplus in the figure or an increase since the last report. Where financial information is commercially sensitive, it has been redacted. The performance over time graphs illustrate financial performance over the last four quarters. The commentary alongside the graph explains any specific trends or changes to trends over a snapshot in time.

Investment programme delivery structure

Our investment programme is delivered by the areas of business set out below. This is reflected in this structure of the report

Since Quarter 1 2023/24, a new structure has been established for the report to reflect the new organisational structure under Capital. There may be further small changes over time to refine parts of the structure, however at present it comprises the following areas:

Major projects

This includes our largest and most complex projects. It comprises line upgrades such as the Piccadilly line upgrade and the Four Lines Modernisation programme, as well as network extensions, major station upgrades and the Elizabeth line.

Rail and station enhancements

This brings together London Underground and surface-related enhancements. In particular, where there are links to third-party developments and funding, it recognises the similarities in the activities involved and the outcomes that they deliver.

It includes the HS2 programme, Elephant & Castle station capacity upgrade project, the East London line, Surrey Quays station, Canada Water bus station, Signalling enhancements and power reinforcements, Tram replacement rolling stock, DLR Royal Docks and DLR Thames Wharf.

Safe and healthy streets

This programme comprises Cycling infrastructure, Vision Zero, Bus priority and Bus safety, among others.

It recognises the importance of holistic investment in the bus network, alongside cycling and walking, to increase travel by sustainable modes.

Similarly, the addition of bus safety schemes such as intelligent speed assistance alongside the Safer Junctions and Lowering speed limits programmes aligns activities to improve safety on London's road network.

Environment

This includes the London-wide Ultra Low Emission Zone (ULEZ), Direct Vision Standard phase two, Electric vehicle infrastructure, Zero-emission bus fleet, Waste heat, Solar private wire and Buildings decarbonisation, while also reflecting the new green project pipeline that is being developed.

Technology

This programme comprises two technology programmes. Operations technology covers activities such as Enforcement, compliance, safety and security, Network and public transport management, Cycling and micromobility, Connectivity and Digital asset management.

Technology and data includes projects focusing on Oyster card payment, contactless payment, the Tfl Go app and several projects relating to our internal technology services

These have separate governance despite sharing common resources, stakeholders and delivery of strategic outcomes.

Streets, bus and rail-sponsored services renewals

This groups together renewals of Streets, Buses, River Services, London Overground, DLR and London Trams.

These programmes share a common approach to work-bank management and by combining associated activities such as bus-focused renewals, we can improve investment prioritisation and efficiency.

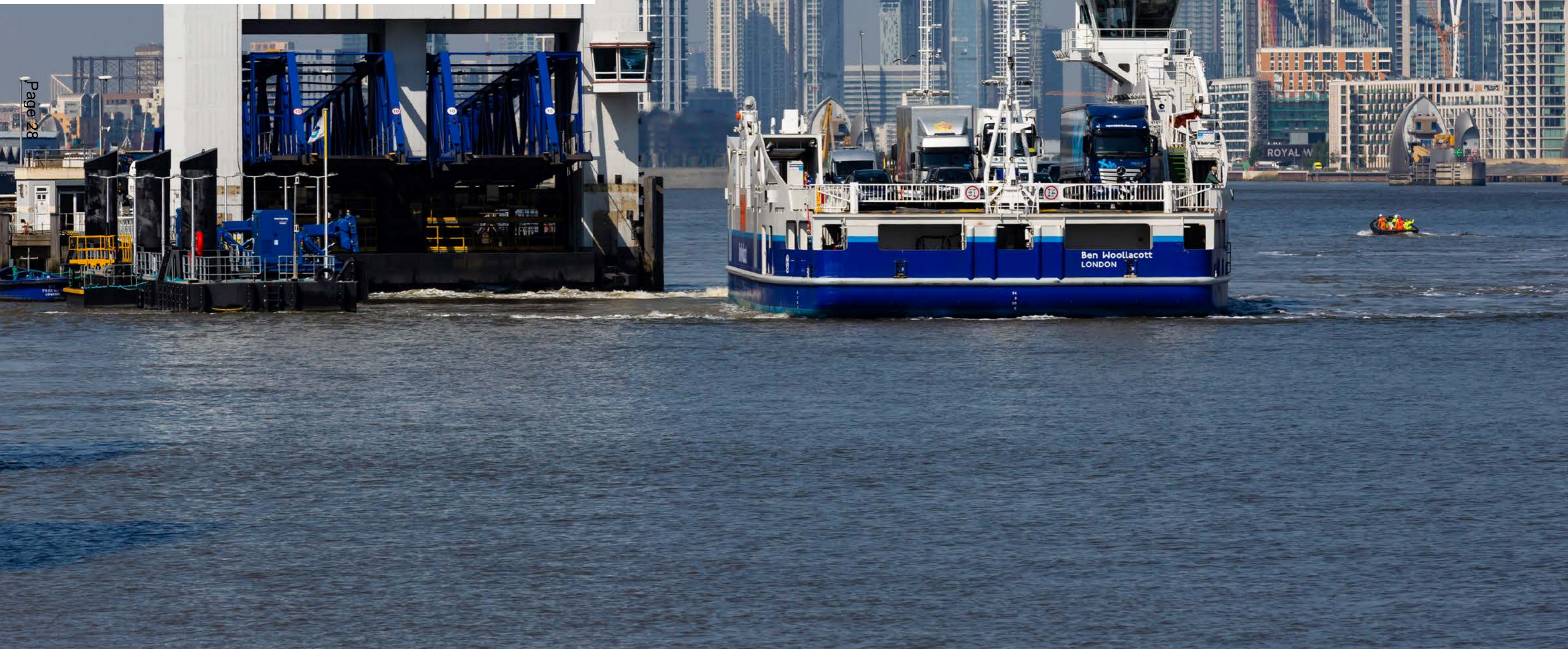
London Underground renewals

This covers two main London Underground renewals activities – Train systems and Infrastructure.

Grouping these activities enables a more holistic oversight and prioritisation in managing renewals across programmes. In addition, this programme incorporates Railway systems enhancements and Elizabeth line renewals.

Our performance

We measure the safety and milestones progress of our investment programmes schemes



Environmental initiatives

Air quality

London-wide ULEZ

The ULEZ successfully expanded London-wide on 29 August 2023, ensuring five million more Londoners can breathe cleaner air.

The First-month report, published in October 2023, showed the scheme to be highly effective at reducing the proportion and number of older, more polluting vehicles on London's roads; 95 per cent of vehicles seen daily driving in London now meet ULEZ standards.

While this report does not cover the impact of the scheme on air pollutant emissions and concentrations, we continue to monitor the impact of the London-wide expansion of the ULEZ and will report on preliminary analysis of air quality impacts in the Six-month report, with a fuller analysis in the One-year report.

The total scrappage fund increased to £160m in August 2023, and to £210m in February 2024, due to the continued high demand for the scheme and its importance in supporting Londoners to change to less polluting vehicles. As of 3 March 2024, data shows that 49,361 applications have been approved and more than £169m has been committed. With millions in scrappage funds still available, there is still support for those who need it.

In March 2024, the Mayor launched an expanded ULEZ scrappage scheme to give applicants the option to donate their non-compliant vehicles to the Ukraine, via a trusted partner, for humanitarian purposes. Those choosing to donate their vehicle receive the same grant payment as those who choose to scrap their vehicle.

A number of ULEZ support offers were also secured to help Londoners (irrespective of whether they received a scrappage grant) save money and use greener, cleaner forms of transport. This includes offers from more than 30 partners, offering money off hire and subscription services for bikes, e-bikes, cargo bikes and e-scooters, discounts on car clubs and many other great deals. To date, there have been more than 2,000 redemptions of these offers.

Additionally, we offered a set of temporary exemptions ('grace periods') to support disabled people, community transport minibuses, people using wheelchair-accessible vehicles, and businesses and charities with brand-new compliant vehicles or a retrofit solution on order. More than 6,600 applications have been accepted to date for these grace periods.

Climate emergency

Net Zero Matrix team launch

The Net Zero Matrix team was officially launched on 28 February 2024 to support and accelerate delivery of our net zero commitments. The team will manage set up, delivery and oversight of programmes and projects with the primary objective of reducing our operational carbon emissions to net zero by 2030. The team is made up of colleagues from across TfL.

Zero-emission buses

Decarbonisation of the London bus network remains a priority as we transition towards a net zero London. We have achieved and exceeded our 2023/24 target of 1,400 zero-emission buses by the end of the financial year. With 1,418 zero-emission buses operating across London, approximately 16 per cent of our bus fleet is now zero-emission at tailpipe.

London has the largest zero-emission bus fleet in western Europe. The Mayor has committed to delivering a zero-emission fleet by 2030 and we are working on plans to accelerate this, contributing to cleaner air for London and an estimated saving of 5.5m tonnes of carbon by 2030.

LED upgrades across the network

To date, 95 per cent of bus shelters, 67 per cent of street lighting on our road network and 43 per cent of London Underground stations have been converted to LED lighting. This consumes approximately 57 per cent less energy than fluorescent lighting while providing brighter light in our public spaces and a safer network for our customers, especially those travelling at night.

Public sector decarbonisation scheme

We have been awarded £16.3m grant funding from the Public Sector Decarbonisation Scheme. This funding is awarded for decarbonisation initiatives and will be used for improvements across our sites to reduce our reliance on fossil fuels and help us get closer to reaching the target of a net zero London.

£2.3m will be used to carry out heating decarbonisation initiatives at Neasden depot and Finchley Central signals depot. £14m will be used to reduce the carbon emissions of six head office buildings across our estate. Installations will include heat pumps, solar panels, LED lighting, improved glazing and wall insulation.

Internal processes to sign off on the grant income are now underway, with steps towards delivery starting in the coming months.

Carbon literacy accreditation

In February 2024, we were awarded a carbon literacy bronze accreditation by the Carbon Literacy Project, marking the milestone of every chief officer, including the Commissioner, completing and becoming certified in carbon literacy. We also achieved our 2023/24 scorecard target to train 3,000 colleagues in carbon literacy nearly two months early. This was made possible by a network of 75 volunteer trainers and nearly 20 volunteer coordinators from across TfL who delivered our Carbon literacy programme. Since the training began in July 2022, we have trained more than 4,500 colleagues.

Climate change adaptation

We hosted the last of two series of workshops: one with all London boroughs to identify London's highways climate risks and appropriate mitigation actions, and another with other infrastructure sectors (such as power, water and communications) to identify our key interdependent climate risks and appropriate mitigation actions. The results of these projects will feed into our fourth Adaptation Reporting Power submission to the Department for Environment, Food and Rural Affairs at the end of 2024.

We have begun a project exploring the integration of weather hazards as a contributory factor in TfL incident reporting systems. If successful, this would allow us to better understand the impact of severe weather on our current operations. In combination with the Met Office's climate projections data, we could then better assess likely future impacts and use this to influence business planning.

Green infrastructure and biodiversity Green infrastructure and biodiversity plan published

On 7 March 2024, we published our first [Green infrastructure and biodiversity plan](#). This is aligned with the TfL Corporate environment plan and sets out how we will care for and improve green infrastructure and biodiversity across our estate.

We are one of London's largest landowners. Almost a third of our land is covered by vegetation and supports more than 1,000 animal species and 700 plant species. Many of these species are legally protected and their habitats must be preserved. Increasing green infrastructure and biodiversity on our network helps London to adapt to climate change and encourages active travel.

The plan captures in one place our existing relevant targets, legal requirements and policy commitments while also setting out strategic actions to deliver against these.

Key targets include:

- Achieving a 10 per cent biodiversity net gain on applicable schemes from February 2024
- Delivering a net gain in biodiversity across our estate by 2030, compared with the 2018 baseline
- Increasing tree canopy cover across TfL by 10 per cent by 2050, compared with the 2016 baseline
- Doubling our wildflower verges to 260,000 square metres in 2024 (after doubling them to almost 130,000 square metres in 2023)

- Installing 5,000 square metres of sustainable drainage systems across our network every year. This not only includes measures to help reduce the amount and/or slow the flow of rainwater reaching London's drainage networks but also includes nature-based solutions such as rain gardens, roofs planted with vegetation and wetlands. Nature-based solutions have several advantages, such as supporting biodiversity and improving the visual appeal of the urban realm. A green and well-adapted road network helps encourage active travel across the city in line with our Healthy Streets approach. It can also help reduce road runoff pollution from tailpipe emissions and brake wear
- Further reducing the use of pesticides and eliminating them where operationally and financially feasible

PPE recycling trial

Capital has launched a six-month personal protective equipment (PPE) recycling scheme trial, in collaboration with our PPE providers Hayley Rail and Avena Group. This is a new, low-cost scheme where all end-of-life PPE items can be placed in specialist recycling bins located at our offices.

PPE items will be collected by Avena Group and either recycled into alternative materials such as soundboards, insulation, or geotextiles, or converted into pellets for refuse-derived fuel. Avena have estimated that we will save 40,404kg of carbon dioxide emissions and 3,120 litres of water per annum with this scheme, compared to general waste disposal of PPE or uniforms.



Our green estate supports 700 plant and 1,000 animal species

Safety performance

The full safety report on the network is reported in the Safety, health and environment report. The update for Quarter 4 below is for the programmes mentioned in this Investment programmes report.

Capital

Capital includes all activity under the Chief Capital Officer and maintenance activity under the Chief Operating Officer. In Quarter 4, our Capital programmes and projects delivered a combined total of 1.4 million site-based hours, an increase of 0.2 million on the previous quarter.

Quarterly performance

There were no incidents reaching the threshold for reporting under the Reporting of Injuries Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR). The RIDDOR accident frequency rate for Capital remained stable at 0.04 and ended the year below the target of 0.10. In total, there were two incidents that required reporting under RIDDOR during 2023/24, in line with 2022/23.

There was one lost-time injury in Quarter 4. The lost-time injury frequency rate ended the year at 0.11, below the target of 0.20.

In total, there were only four injuries (minor, with no common cause), in the quarter and 22 throughout 2023/24. This is a 49 per cent reduction in injuries compared with 2022/23 and an 80 per cent reduction over the past five years. During the same period, hours worked have fallen by 52 per cent as several major projects have concluded, demonstrating a reduction in risk and Capital's continued progress towards our zero harm ambitions.

The reduction in injuries is indicative of an improvement in safety performance across the wider UK construction industry over the past decade. However, our safety performance compares favourably to similar client organisations, with Capital's accident, lost-time and RIDDOR frequency reporting rates significantly below the sector average.

To maintain our positive progress towards zero harm, we thoroughly investigate every injury, using the learnings to address root causes and make continuous improvements. This year, the most common root causes of injury related to poor communication, inadequate safe systems of work and asset conditions.

Significant Capital incidents

On 26 December 2023, an in-service train overran the platform at Shepherd's Bush Market by approximately 30 metres. The Four Lines Modernisation programme and associated engineering team are supporting the ongoing investigation and liaising with our supplier, Thales. The Office of Rail and Road have requested to be kept apprised as the investigation progresses.

Improvement activity

The most significant incidents have been those relating to vandalism and work-related violence and aggression directed towards both people and assets that perpetrators believe to be connected with the expanded ULEZ. The workers of our suppliers are facing significant threats, and this is also a major concern for our colleagues who carry out work in public areas.

As referenced in the Quarter 3 report, we have worked with our Compliance, Policing, Operations and Security team. We now have specific Capital-orientated guidance to support us in managing the risks from violence and aggression. It provides advice to enable managers to consult with their team on the most suitable or effective options for their specific circumstances. This now complements other existing support such as the Urban Safety course.

Zero Harm conference and Suppliers SHE awards ceremony

This event, organised by our Safety, Health and Environment team, took place in February at City Hall, hosted by our Chief Capital Officer, Stuart Harvey, and Chief Safety, Health and Environment Officer, Lilli Matson.

We were joined by TfL suppliers from across the UK, who shared some of the incredible work they are doing. This includes reducing carbon from construction, reducing other harmful emissions such as nitrogen oxides, supporting the wellbeing of their people, avoiding buried services, and managing potential harm from respirable silica.

Morgan Sindall won three awards, for Outstanding Safety, Health and Environmental initiatives. Hayley Rail were awarded for Outstanding Carbon Reduction Initiative, while Taylor Woodrow won an Outstanding SHE Innovation award for robotic cutting technology. Innovations were showcased.

Hinkley Point benchmarking

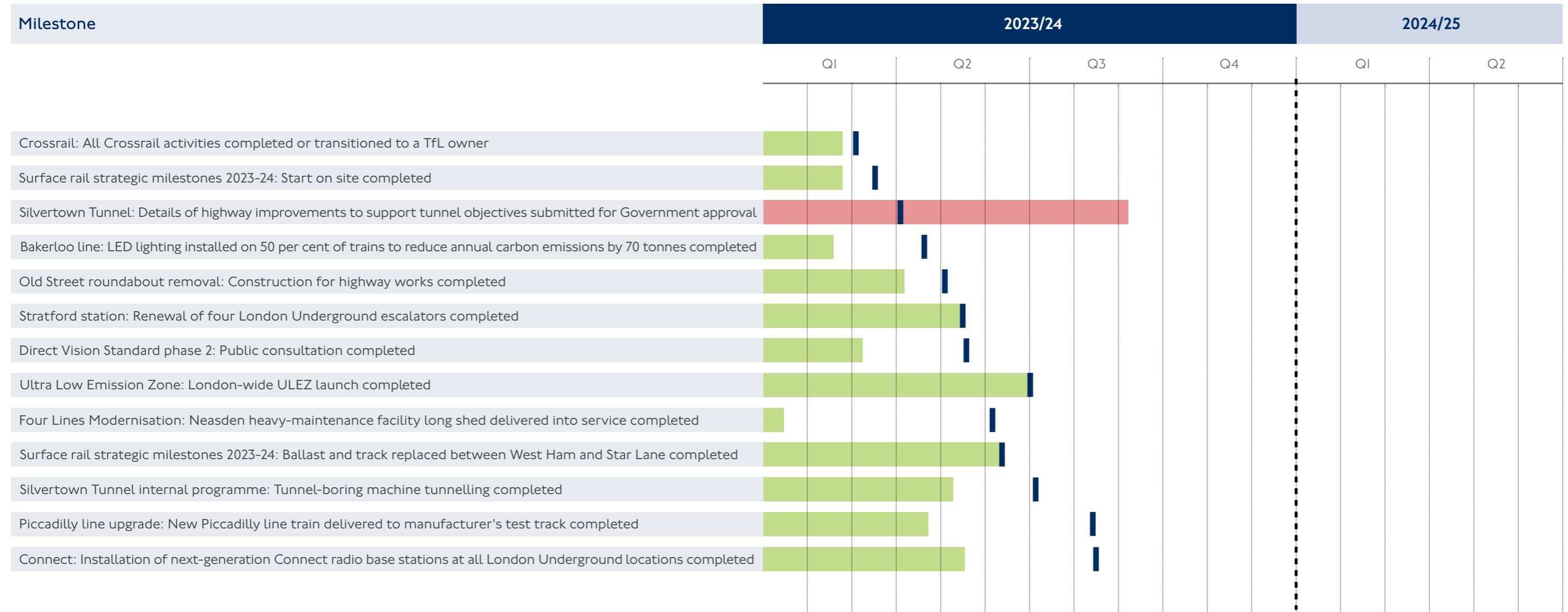
We regularly benchmark performance and share good practice with other organisations. On 20 December 2023, we visited the Hinkley Point C nuclear power station construction site to establish a channel of collaboration and learning between our respective capital teams. The initial visit focused on fire safety, with a follow-up discussion on construction, design and management duties.

Strategic milestones

At the end of this year we have delivered 23 of the 28 milestones set for the year

Twelve strategic milestones were forecast for completion in Quarter 4. Of these, we delivered three on time, while four milestones were completed early. Five of the 12 milestones scheduled for completion in Quarter 4 are forecast to be late.

Below are our strategic milestones for 2023/24. The solid blue bar shows when the milestone was due to be met, while the green, amber and red blocks show when it was achieved, or is forecast to be achieved.



■ Delivered on time or earlier than planned
 ■ Delivered less than 90 days later than planned
 ■ Delivered more than 90 days later than planned
 ■ Planned delivery date
 Reporting period cut off by 31 March 2024

Strategic milestones 2023/24 (continued)



■ Delivered on time or earlier than planned
 ■ Delivered less than 90 days later than planned
 ■ Delivered more than 90 days later than planned
 ■ Planned delivery date
 Reporting period cut off by 31 March 2024

Schedule performance

Below are the milestones for the financial year 2023/24.
Four were achieved on time, 18 were achieved early and one was achieved late

Milestones achieved on time

Environment - ULEZ

London-wide ULEZ Go-Live – Q2 2023/24

Safe and healthy streets – Bus Priority

10 km of new bus lane to be delivered by March 2024 – Q4 2023/24

Safe and healthy streets – Lowering speed limits

Lowering the speed limit by 10 mph on 77km of the network – Q4 2023/24

Street, bus and rail-sponsored service renewals – Staff welfare

Eight bus drivers welfare facilities completed in 2023/24 – Q4 2023/24

Milestones achieved early

Crossrail

All Crossrail activities completed in transitioned to a TfL owner – Q1 23/24

Street, bus and rail-sponsored service renewals – East London line - Surrey Quays

Start on site – Q1 2023/24

London Underground renewals - Bakerloo line

Reduce annual carbon emissions by 70 tonnes by installing energy-saving LLED customer lighting on 50 per cent of Bakerloo-line trains – Q1 2023/24

Environment – Direct Vision Standard phase 2

Completion of public consultation – Q1 2023/24

Four Lines Modernisation

Deliver into service Neasden heavy maintenance facility long shed – Q1 2023/24

Safe and healthy streets

Old Street roundabout removal – completion of construction for highway works – Q2 2023/24

London Underground renewals

Stratford - Complete renewal of four escalators – Q2 2023/24

Street, bus and rail-sponsored service renewals

Replacing ballast between West Ham and Star Lane – Q2 2023/24

Silvertown Tunnel

Silvertown tunnel-boring machine completes tunnelling – Q2 2023/24

Piccadilly line upgrade

New Piccadilly line train delivered to the manufacturer's test track – Q2 2023/24

Technology - Connect

Complete installation of next-generation replacement Connect radio base stations at all London Underground locations, improving reliability – Q2 2023/24

Street, bus and rail-sponsored service renewals — Kingston bus station

Kingston Cromwell Road bus station – Start of construction on site – Q3 2023/24

London Underground renewals – Staff welfare

Delivery of first eight London Underground staff welfare sites – Q3 2023/24

Piccadilly line upgrade

First stationary commissioning test complete on a new Piccadilly line train – Q3 2023/24

DLR rolling stock replacement programme

Signalling complete to allow trial running for new DLR Trains – Q4 2023/24

Technology – Mobile phone coverage

Increase the current mobile phone coverage on the London Underground to cover a total of 100 locations being made up of stations and tunnel roads – Q4 2023/24

London Underground renewals – Track programme

Deliver 3.5km of new London Underground track, improving reliability and reducing noise – Q4 2023/24

Street, bus and rail-sponsored service renewals

Vehicle restraint system – 5,500 Mts completed in financial year 2023/24 – Q4 2023/24

Milestones achieved late

Silvertown Tunnel

TfL submits details to the Secretary of State for approval of wider highway improvements that support the Traffic, Environmental and Socio-Economic objectives of the Silvertown Tunnel – Q3 2023/24

Milestones forecast to be late at the end of 2023/24

London Underground renewals - Jubilee line (fleet overhaul and component renewal) - completion of the renewal of key components on 50 per cent of Jubilee line trains

This strategic milestone target date was missed by 46 days. The refurbisher of the train wheels has experienced a number of issues since the start of the programme, including inaccurate material estimates, shortage of employees and issues with quality.

Rail and station enhancements – Stratford south-western entrance - Open new south-western entrance to Stratford station

The strategic milestone was not achieved this quarter, due to compressed timescales for assurance and identification of water ingress issues which required resolution.

DLR rolling stock replacement programme - First new DLR train enters passenger service

The first train in service milestone is delayed due to an issue encountered during integration testing. This does not impact the final date for completion of the fleet renewal.

DLR - Beckton depot and network infrastructure - Bring into use Beckton depot southern sidings, which will allow introduction of new DLR trains

This milestone will be impacted by the principal contractor for the northern sidings project, Buckingham Group, entering into administration, as the southern sidings can only be commissioned following the northern sidings commissioning. The delay achieving this milestone does not impact the final date for the completion of the fleet renewal.

Technology – Enforcement, Compliance, safety and security – Making London safer by installing automatic traffic contravention detection deployable enforcement cameras (DEC) at a further 265 sites in London by 31 March 2024

At the end of Quarter 4 we had installed 269 cameras, however they were not all live and operational owing to implementation issues and a change to Vehicle Certification Agency (VCA) legislation. As of the end of May, we have implemented an alternative solution to overcome the VCA changes and have installed 293 cameras, of which 165 are live. We are continuing to work with our suppliers to resolve implementation issues and are projecting to have 265 cameras live in Quarter 2 2024/25.



New DLR trains will enter service later this year

Major projects

This portfolio includes our largest and most complex projects. It comprises line upgrades such as the Piccadilly line upgrade, the Four Lines Modernisation programme and the Elizabeth line



Elizabeth line

Rolling stock

Forecast completion	Gross cost to date (£m)	Gross cost to go (£m)	Gross EFC (£m)	Programme and Project Authority (£m)	Variance: EFC versus authority (£m)
Q4 2024/25	1,002	5	1,007	1,149	142
Change since last Investment programme report					
No change	No change	No change	No change	No change	No change

Financial commentary

The cost to date relates to ongoing rolling stock work that will be completed in 2024/25.

Performance over time commentary

The forecast end date represents the delivery of the rolling stock and depot, including all additional changes. Since authority was awarded in 2013/14, the estimated final cost dropped from £1,090m to £1,007m because the trains have since been part of a sale and leaseback arrangement. They are now being leased and the costs charged as operational costs.

Programme update

Class 345 Trains

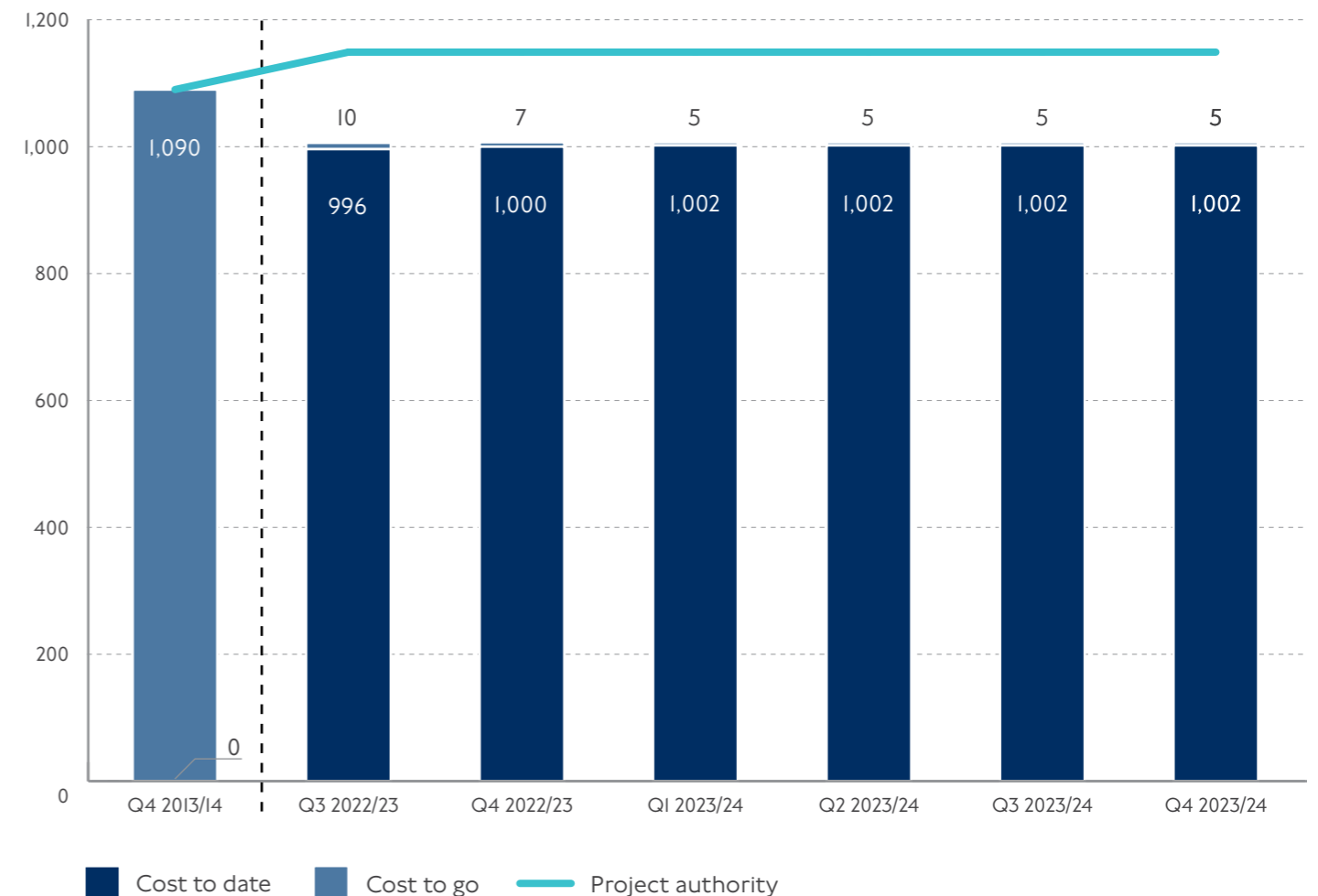
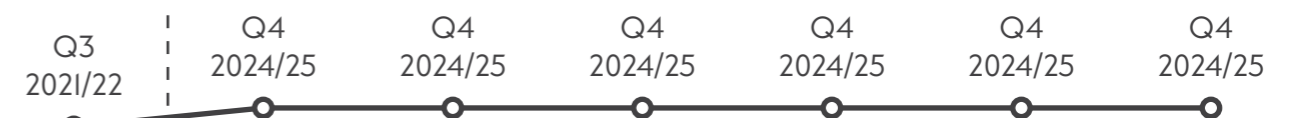
Since 21 May 2023, the Class 345 fleet has been operating the peak service of 24 trains per hour, consistently meeting the required daily availability level of up to 65 trains.

The train and signalling manufacturers continue with their programme of software upgrades to address residual reliability issues (with an appreciable improvement in Quarter 4)

This programme has been accounted for in the rolling stock project forecast through to 2025.

Estimated final cost performance over time (£m)

Forecast completion date



Line upgrades

Four Lines Modernisation

Forecast completion	Gross cost to date (£m)	Gross cost to go (£m)	Gross EFC (£m)	Programme and Project Authority (£m)	Variance: EFC versus authority (£m)
Q3 2025/26	5,363	163	5,526	5,520	(6)
Change since last Investment programme report					
No change	31	120	10	No change	

Financial commentary

In Quarter 4 2023/24, the estimated final cost (EFC) has increased by £10m. £7m of this results from a more detailed assessment of the changes to the prolonged signalling software schedule from our signalling supplier and Canadian dollar exchange rate impacts.

The remaining £3m results from updates to the latest inflation rate assumptions due to the delay, prolongation and revised profile of resources and spend. The inflation impacts both the signalling contract spend and our internal spend.

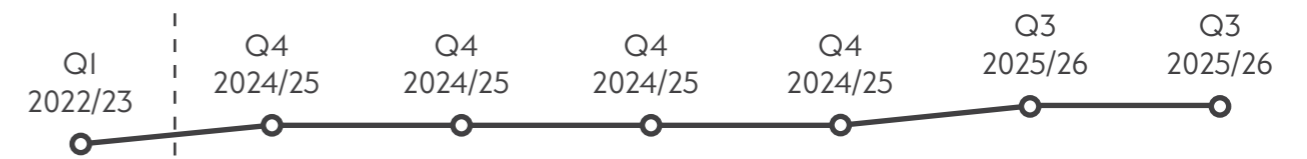
Four Lines Modernisation is a complex and challenging programme and remains under both schedule and cost pressure as we progress with the development and commissioning of the most complex areas.

We continue to explore a range of opportunities to mitigate these pressures where possible, including assessing the benefits of different delivery strategies.

A detailed update of the costs and schedule will be provided in the annual submission to the Programmes and Investment Committee in June 2024.

Estimated final cost performance over time (£m)

Forecast completion date



Performance over time commentary

The forecast completion date shows when the final signal migration area (SMA), will be brought into service. The date has been delayed from the initial forecast made when the signalling contract was awarded in 2015. This is principally owing to challenges with complex software development, testing and commissioning, closure availability and, to a slightly lesser extent, the pandemic.

Following the further maturing of software development for the next signalling migration area to go live (SMA8) and our matured understanding of the interdependencies with operational readiness, we are now targeting SMA8 go-live early in Quarter 4 2024/25. This will have a knock-on impact on the programme critical path and will see a delay in completing the overall project. This programme slippage and the associated mitigations are currently under analysis, the outcome of which will be reported in the annual submission to the Programmes and Investment Committee in June 2024.

Programme update

The programme is delivered by progressively installing new signalling on sections of the railway known as signal migration areas (SMAs). The new automated signalling system is already in place at 62 stations, including the whole of the Circle and Hammersmith & City lines, as well as the east end of the District line.

The remaining areas still to go live with the new signalling system include the Metropolitan line north of Finchley Road (SMAs 8, 9, 13 and 14) and the boundaries of the commissioned areas with the west end of the District line (SMA 10/12 Boundary Moves).

SMAs 8 and 9 (Neasden and Harrow) are the most complex areas in the programme and present significant challenges associated with the integration of the new signalling system with the Jubilee line and Neasden depot train control software, along with the management of manually driven Chiltern trains, restricted access opportunities and significant operational training requirements.

Significant progress has been made for these areas with development of the software and several successful site system testing sessions. This has increased our confidence in the maturity of the software for go-live and enabled a better understanding of the challenges of these technically complex areas and therefore the schedule to complete.

From 13 to 14 April 2024, we completed further system testing in the SMA 8 area during a weekend closure, with more testing planned for July 2024. This is a step forward in reducing risk towards achieving our planned commissioning milestone for this area in Quarter 4 2024/25.

We continue to make positive progress in maturing the software development for SMA9 (which includes the integration of manually driven Chiltern trains with the new signalling system) ahead of our third system test planned later this year.

Installation of trackside signalling assets in the areas that are yet to go live is now substantially completed (a very small number of assets remain outstanding as they require a more complex installation method, these assets are due to be completed by the end of 2024).

Works are progressing on the planned upgrades to the heavy lifting shed at Neasden depot. The detailed design for the new staff accommodation block is planned to be completed in Quarter 2 2024/25 and will include a number of sustainable technologies to minimise operational carbon and environmental impact, including a solar panel system (with any excess electricity feeding back into the London Underground supply network), LED lighting and a new efficient intelligent heating and cooling system. Once built, these facilities will enable the planned overhaul of Metropolitan line trains.

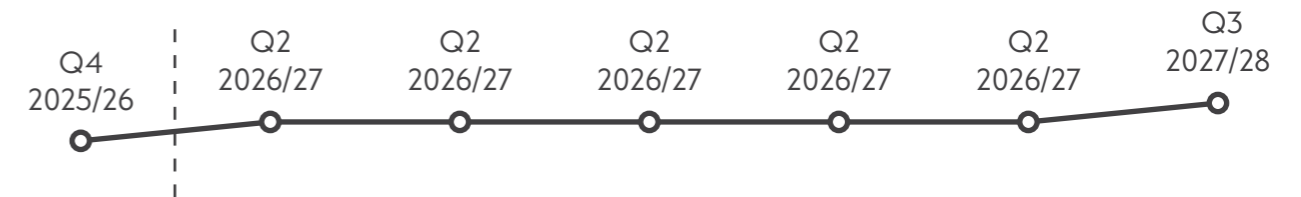
Line upgrades

DLR rolling stock and systems integration

Forecast completion	Gross cost to date (£m)	Gross cost to go (£m)	Gross EFC (£m)	Programme and Project Authority (£m)	Variance: EFC versus authority (£m)
Q3 2027/28	540	402	942	881	(61)
Change since last Investment programme report					
3 quarters later	77	(42)	35	No change	

Estimated final cost performance over time (£m)

Forecast completion date



Financial commentary

There has been a significant EFC increase to the programme, as a result of the insolvency of the principal contractor delivering infrastructure works at Beckton in Quarter 2 2023/24, and the reassessment of the likely outturn cost of all remaining works across the entire programme, including estimates for unprocured scope and future inflationary allowances. We continue to review options to mitigate these cost pressures where possible and will provide a further update to the Programmes and Investment Committee in October 2024 and, if required, seek additional Programme and Project Authority.

Performance over time commentary

Since Programme and Project Authority was granted in 2019, we have received approval from the Government to purchase II additional trains funded through the Housing Infrastructure Fund (HIF).

The increase in EFC from Quarter 4 2018/2019 reflects the additional scope associated with the £261m of grant funding from the Government to deliver the HIF scope of works.

The EFC in Quarter 4 2023/24 reflects a reappraisal of the initial estimates of the impact of the insolvency of the principal contractor delivering infrastructure works at Beckton depot and the reassessment of the likely outturn cost of all remaining works across the entire programme, including estimates for unprocured scope and future inflationary allowances. This has resulted in a higher range than our initial estimates and a higher mid-point, which is reflected in the current forecast.

The planned completion date is now based on incorporation of the HIF-funded works to the schedule.



Rolling stock delivery

Manufacture of the new rolling stock in Spain continues to programme, with 30 of the 54 trains completed.

As stated in the Quarter 3 investment programmes report to the Programmes and Investment Committee, we encountered some challenges during integration testing works towards the end of 2023 which has had an impact on when the first train can enter service. Testing has begun again, and we now expect the new trains to begin to enter into passenger service in Quarter 2 2024/25. Importantly, the end date for the renewal of the full fleet remains unchanged for Quarter 2 2026/27.

Beckton depot and network infrastructure

Following Buckingham Group, the principal contractor for the Beckton depot northern sidings contract, entering administration, we are implementing alternative arrangements to ensure the completion of these works. Works have now restarted on site with Morgan Sindall, our southern sidings contractor, and we anticipate bringing the northern sidings into use in Quarter 2 2024/25.

Works are progressing in parallel on the southern sidings and we anticipate bringing these into service shortly after the northern sidings in Quarter 2 2024/25. The invitation to tender for the design and build contract for the new southern expansion, funded through the HIF, has been issued.

Construction has started on a second entrance at Blackwall station, with piling works now complete. Power resilience works have been completed on three of four routes on the DLR network.

Carbon reduction

The following carbon reduction initiatives have been undertaken:

New train acceleration modification software

Initiative: Modifying new train acceleration enables reduction of planned power upgrades and reduces energy consumption, leading to significant carbon and cost savings.

Carbon saving: 4.057 tonnes of carbon dioxide emissions over the new train lifecycle. Average 130 tonnes of carbon dioxide emissions annually.

Reuse of excavated material

Initiative: All site-won material is proactively assessed for reuse at Beckton depot. So far, 3,605 cubic metres of concrete have been crushed and reused.

Carbon saving: 990 tonnes of carbon dioxide emissions to date.

Modular substation

Initiative: For Beckton depot's substation, the team opted for a modular design as opposed to a standard construction method, saving on transport and construction carbon.

Carbon saving: 107 tonnes of carbon dioxide emissions.

HVO fuel

Initiative: Use of hydrotreated vegetable oil as a fuel product for onsite generators.

Carbon saving: 127 tonnes of carbon dioxide emissions to date.

Solar panels on depot maintenance buildings

Initiative: Maintenance facility building design features 400 roof-mounted PV panels with 104,000 kWh annual energy generation.

Carbon saving: 124 cubic tonnes of carbon dioxide over a 30-year operating lifecycle.

Temporary fit-out shed

Initiative: Temporary building was planned to accommodate trains while other depot works were complete. Solution was found by incorporating assembly of trains into existing buildings.

One-off carbon saving: 1,200 tonnes of carbon dioxide emissions.

Beckton depot expansion

Initiative: Reduced the number of planned depot sidings from 28 to 17, validated through systems performance engineers.

Carbon saving: 2,345 tonnes of carbon dioxide emissions between now and when the project is expected to be completed in 2026/27.

A total of 9,980 tonnes of carbon dioxide emissions have been reduced across the Rolling stock replacement programme's whole life cycle, a carbon equivalent of powering TfL head offices for three years.

Line upgrades

Piccadilly line upgrade

Forecast completion*	Gross cost to date (£m)	Gross cost to go (£m)	Gross EFC (£m)	Programme and Project Authority (£m)	Variance: EFC versus authority (£m)
Q4 2026/27	1,101	1,955	3,056	2,994	(62)
Change since last Investment programme report					
No change	152	(146)	6	No change	

Financial commentary

In Quarter 4 2023/24, the EFC increased by £6m to £3,056m, which exceeds the current Programme and Project Authority of £2,994m. This increase largely reflects the outcome of negotiations with Siemens Mobility Limited in December 2023 to reschedule new train deliveries to better align with depot and infrastructure availability and revise the payment profile.

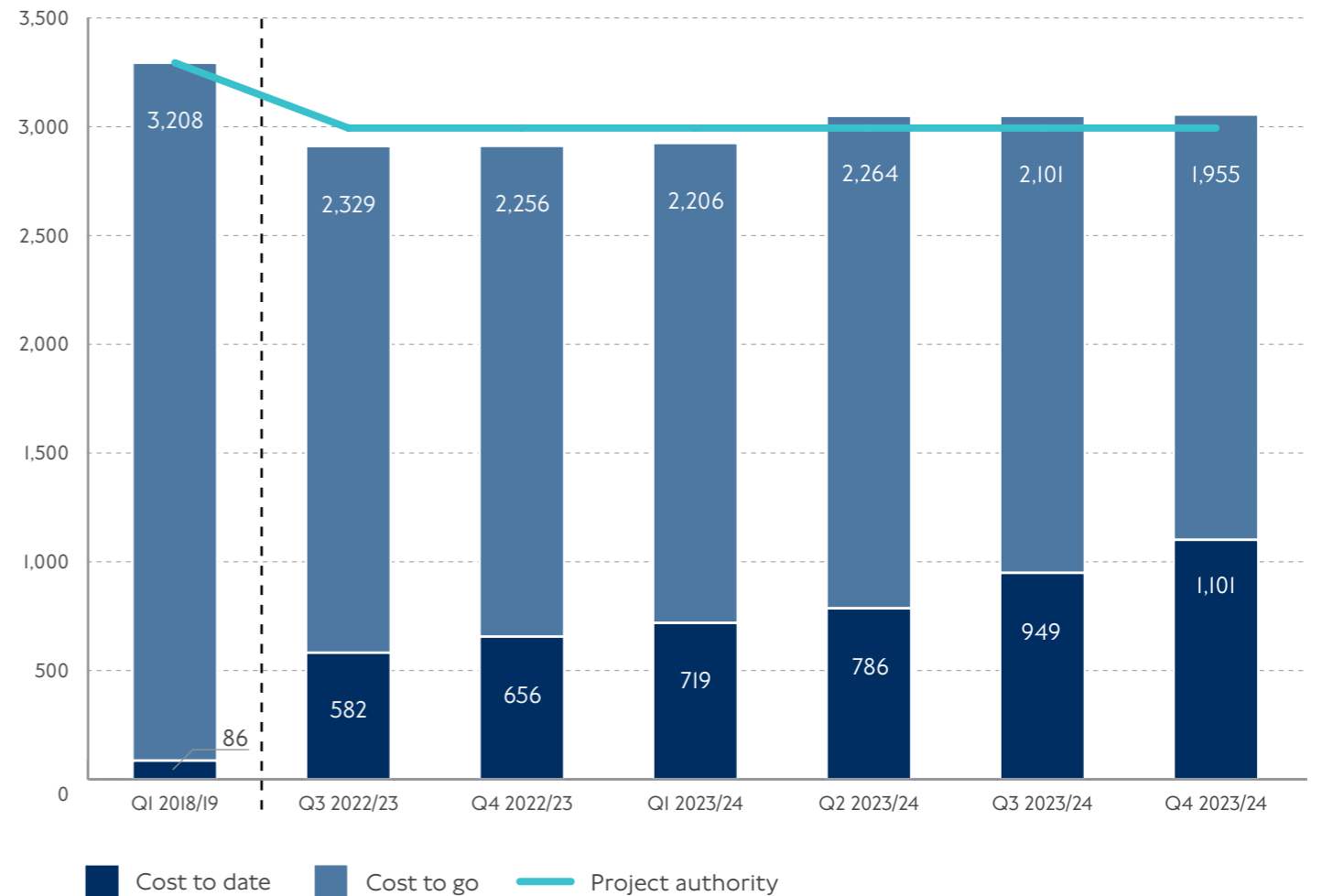
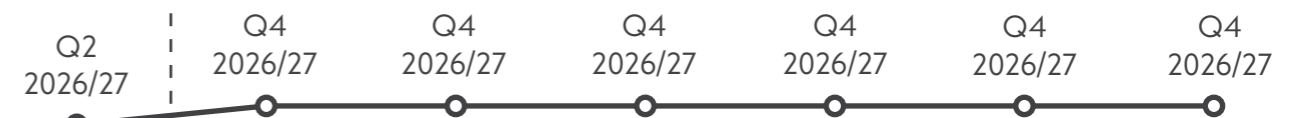
The underlying increase has been partially offset by opportunities identified during a detailed review of the EFC in Q4. A revised schedule has been agreed for completing delivery of the new rolling stock which better aligns with the scheduled availability of line-wide infrastructure and depot facilities.

These actions mean that the first train will still arrive in London for testing in late summer 2024 and is planned to be introduced into service in 2025. The programme remains challenging but on target for achievement of the key output of a peak service frequency uplift to 27 trains per hour during 2027.

Significant work has been completed to grow the pipeline of opportunities to reduce costs. With this increase in opportunities, we now have a plan in place to lower the EFC back to the existing Programme and Project Authority.

Estimated final cost performance over time (£m)

Forecast completion date



* The forecast completion date reflects the achievement of all sponsor key benefits for the programme: (1) first train into passenger service; (2) train replacement is complete, and (3) the timetable is increased to 27 trains per hour.

Performance over time commentary

As reported to the Programmes and Investment Committee on 5 October 2023, schedule and EFC have been under pressure from several factors, including increases in base costs due to emerging scope in the depot upgrades, industry price increases and indexation. Programme risk and uncertainty provisions have also been increased to reflect schedule risks and the associated impacts. Despite this, our planned completion date has remained stable.

We continue to progress actions to realise the range of programme-wide opportunities identified, to reduce pressure on the programme EFC, including the revised delivery approach for the depot upgrades and improved risk management.

Programme update

The revised profile for train delivery has been incorporated into the schedule for the programme.

We remain on track to receive the first new train in late summer 2024 and to begin system integration testing on the Piccadilly line shortly after its arrival. The first train into passenger service remains on track for 2025.

As previously reported, the revised delivery profile enables 80 per cent of the new Piccadilly line trains to be assembled in the UK, at Siemens' manufacturing facility in Goole, Yorkshire (previously 50 per cent).

Good progress has been made on enabling works to ensure the existing railway infrastructure will be ready to support the testing of the new train later this year.

Significant work has been completed to establish a plan for reduction in EFC for the programme. We are working with our supply chain partners to drive innovation, identify opportunities to further reduce delivery costs, and create value engineered solutions in key areas, with the aim of driving the EFC down within the current Programme and Project Authority for the programme.

New trains

The new higher-capacity Siemens trains will be accessible and feature walk-through interiors, saloon air-conditioning (for the first time on a Deep Tube train) and all-double doorways to improve boarding and alighting. Modern audio/visual communication systems will include digital display screens for live customer information and advertising, a new CCTV system for the train operator to view the platform-to-train interface from the driving cab, and improved customer security cameras.

The manufacturing contract with Siemens is progressing well, with the first two fully assembled trains now at Siemens' test and validation centre in Westphalia, Germany.

The new trains are undergoing a comprehensive programme of pre-delivery performance and reliability proving trials prior to series production. This has included climatic chamber testing to evaluate the performance of on-board systems under extreme temperature conditions, vehicle sway characteristics and crush-loaded traction and braking performance tests.

Results to date have been very positive, with performance of the new train fully matching technical specification requirements and performance expectations.

The rephasing of the train delivery schedule and timing of payments agreed under the contract with Siemens has not affected the delivery of the first test train to London, which remains on target for summer 2024 for testing on the network. The revised schedule means that up to 80 per cent of the new trains will now be built in the UK at Siemens' factory in Goole, Yorkshire, surpassing the 50 per cent target originally planned. Siemens is investing up to £200 million, creating up to 700 jobs at the Goole factory and 1,700 new jobs in the supply chain.

The Piccadilly line upgrade is a key contributor to TfL's Green strategy and the ambitions and targets of the Mayor's Transport Strategy, the London environment strategy and TfL's Corporate environment plan. The withdrawal of the legacy 1973 Tube stock fleet and introduction of new energy-efficient 24 Tube stock trains will enable the progressive introduction of regenerative braking on the Piccadilly line, which will reduce annual traction energy consumption by 20 per cent.

Infrastructure is being designed to minimise whole-life carbon and the Piccadilly line upgrade carbon baseline is being updated to reflect the current delivery strategy.

Enabling works

Infrastructure enabling works are progressing in line with the revised delivery strategy, which supports systems integration testing with the new trains and facilitates earliest arrival of new trains at Cockfosters depot for maintenance familiarisation and staff training. This includes infrastructure gauging works to enable new train operation.

Good progress is being made with the new platform to train one-person operation closed circuit TV system, with successful software testing at Siemens facility in Germany.

New platform stopping markers are being installed for the new trains at all stations across the Piccadilly line.

Work is progressing on high voltage power supply upgrades at Northfields and Cockfosters to support the increased power loads at the train maintenance depots.

Depots

Modifications are underway within existing depots to provide initial maintenance facilities for the first new trains.

The construction of three new stabling and reversing sidings at Northfields is substantially complete with final commissioning planned for October 2024.

At Cockfosters depot, site preparation and enabling works are underway for the new wheel-lathe facility and a contract has been awarded for building construction.

The first of two new cab simulators is being commissioned in readiness for the start of train operator training and arrangements are being finalised for installation.

Good progress continues to be made on the design and delivery planning for the end-state depot facilities, with input from the contractors engaged to provide early contractor involvement, which aims to reduce the schedule and cost to complete both depots.

Network extensions

Silvertown Tunnel

Forecast completion	Net cost to date (£m)	Net cost to go (£m)	Net EFC (£m)	Programme and Project Authority (£m)	Variance: EFC versus authority (£m)
Q4 2024/25	125	55	180	176	(4)
Change since last Investment programme report					
No change	6	(6)	No change	No change	

Financial commentary

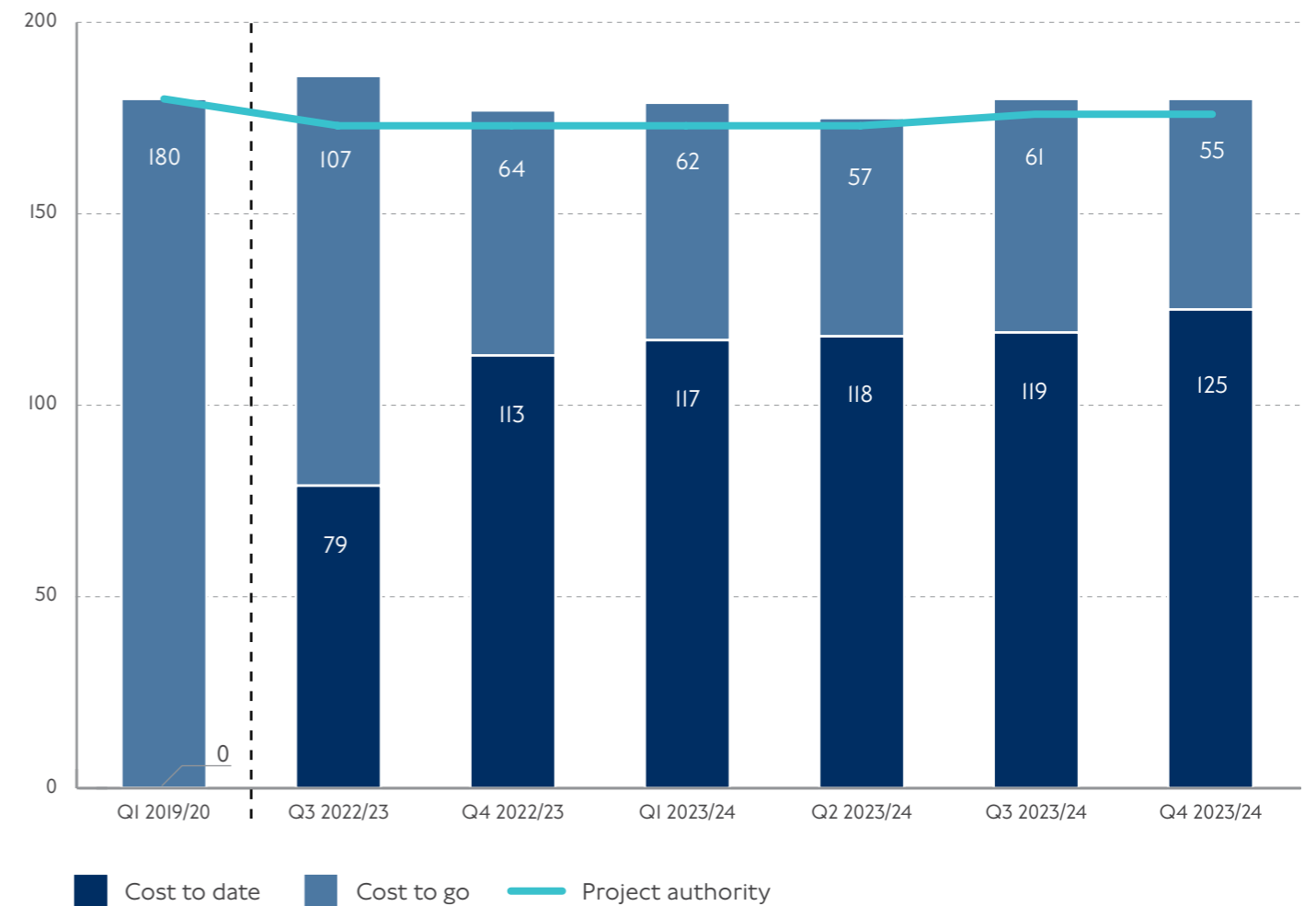
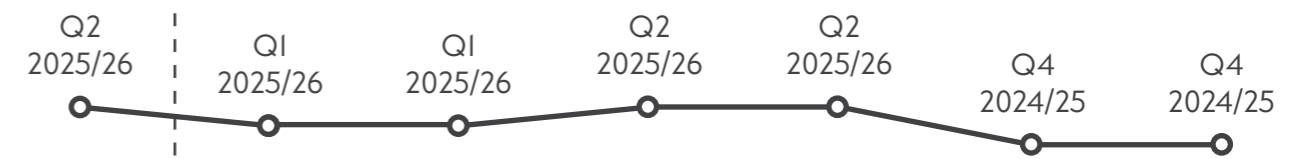
The EFC is currently £4m over Programme and Project Authority due to COVID Safe Stop and inflation. The project team continue to look for ways to bring the EFC back in line. The forecast permit-to-use date remains in Quarter 4 2024/25.

Performance over time commentary

The forecast end date is when the permit from an independent assessor to use the new Silvertown Tunnel is obtained. Forecast permit to use remains in Quarter 4 2024/25.

Estimated final cost performance over time (£m)

Forecast completion date



All the figures in the financial table above are shown as inclusive of income and third-party contributions.

Programme update

At Silvertown, construction of the permanent wall to the tunnel portal approach is progressing well. Construction of the tunnel domes in the area that was previously excavated has been completed and backfilling has begun. At Greenwich, similar work has started to allow waterproofing of the tunnel domes prior to backfilling.

Another milestone was reached in the quarter with the completion of cable tray installation throughout the entire 1.1km stretch of tunnels and cross passages. Cable pulling has now started within the tunnel, including the first tranche for lighting. Approximately 75km of electrical cable will be fitted during the next quarter.

Works have progressed well at the A102 road, following several productive weekend closures of the Blackwall Tunnel. This includes installation of gantries across the carriageway, construction of a new overbridge and resurfacing, negating the need for proposed contingency weekends.

Up to the end of March 2024, a cumulative total of 2,322,030 tonnes of materials and waste have arrived or left the site, of which 1,678,529 tonnes were delivered or left the site via river transport. By using an average of 17 tonnes per vehicle journey, approximately 98,736 heavy goods vehicle movements were taken off the road.

Works continue with the bus service operator (Go-Ahead London) to develop a programme for procurement of the required electric vehicles. The network includes routes I08 (the existing service using Blackwall Tunnel), I29 and SL4, which forms part of the wider Superloop network.

The I29 and SL4 will begin operating when the Silvertown Tunnel opens in 2025. We will be working to deliver a zero-emission bus fleet across all three routes by the time the tunnel opens, including the accommodation of electric double-deck vehicles.



New Superloop bus routes will operate when the tunnel opens

Network extensions

Bank station capacity upgrade

Forecast completion	Gross cost to date (£m)	Gross cost to go (£m)	Gross EFC (£m)	Programme and Project Authority (£m)	Variance: EFC versus authority (£m)
Q4 2025/26	694	10	704	702	(2)
Change since last Investment programme report					
No change	(1)	1	No change	No change	

Financial commentary

Since the last investment programme report, we have been able to reduce the EFC and risk position following final account settlement with the main contractor, Dragados (approximately £0.5m, rounding prevents display on table). Despite these reductions, the project's EFC remains above the existing Programme and Project Authority.

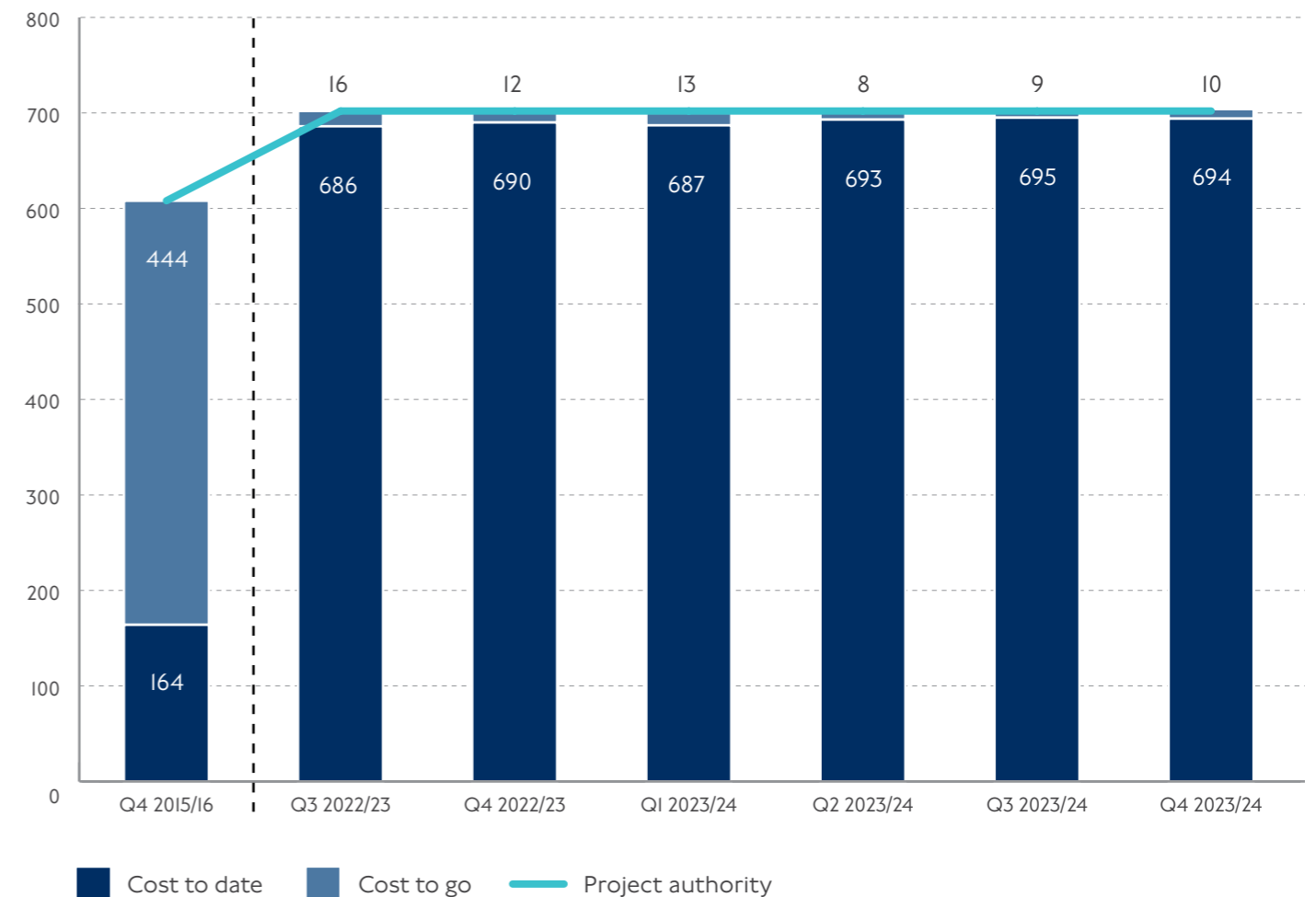
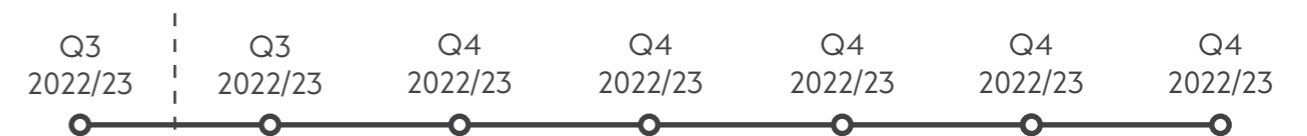
All opportunities for reductions to the EFC are being closely monitored. However, given the greater certainty of the project's schedule and costs to go, to ensure the project does not exceed Project and Programme Authority, a paper is being drafted to seek additional authority from the Programmes and Investment Committee meeting in June.

Performance over time commentary

Our estimated final cost has increased since the Programme and Project Authority award in 2016. This is due to site works being disrupted by the impact of the terrorist attack at London Bridge, the need for additional scope following the discovery of asbestos, and the impact of the pandemic. Over the last six quarters, our estimated final cost has remained static.

Estimated final cost performance over time (£m)

Forecast completion date





Work at Bank station has improved the experience for customers

Programme update

This complex project has increased the station's capacity by approximately 40 per cent, improved passenger flows and reduced journey times, enhancing the overall customer experience. Improvements include step-free access to and from the Northern line, improved access to and from DLR platforms, two new moving walkways, 12 new escalators and two new lifts. There are also more direct routes within the station and a new entrance on Cannon Street.

Since opening the new Cannon Street entrance last year, the project has focused on closing out final snagging works, together with the assurance activities needed in order to hand the new and revised assets into maintenance.

For a complex project of this nature and longevity, this takes time to ensure comprehensive and accurate information is captured, together with ensuring our suppliers deliver on their obligations.

In addition to the station works close-out, there are a number of external works to complete, largely associated with junction upgrades and highway reinstatements. A new signalled pedestrian crossing has recently been commissioned on Cannon Street, and works are in the detailed planning stage for modifications to the Upper Thames Street–Arthur Street junction. Added to this are the ongoing negotiations with the City of London (the City) regarding backfilling our access shaft in Arthur Street.

Directly contributing to close-out is settlement of the final account with Dragados, meaning we now have a better element of cost certainty. This in turn is providing a clearer picture in terms of Programme and Project Authority, and the project is preparing a paper for the Programmes and Investment Committee in June 2024 to ensure authority is increased sufficiently.

Works to complete snagging and assurance are ongoing and subject to weekly scrutiny. Risks are reviewed on a regular basis and updated where necessary. Detailed logistical planning is underway for the remaining junction works, combined with planning for the backfill of the Arthur Street shaft once the lease between TfL and the City is in place.

Other progress has seen the team successfully navigating the complex pipe subway technical challenges to the gas extract system and are now in the process of final snagging prior to re-opening of the section of the station known as the bullring. Assurance is now focused on those few asset areas currently outstanding, for example those relating to fire prevention and management.

Rail and station enhancements

This programme brings together London Underground and surface-related enhancements to create a single focus for an improved transport network



Rail and station enhancements

Forecast period	Gross cost to date (£m)	Gross cost to go (£m)	Forecast cost (£m)	Programme and Project Authority (£m)	Variance: Forecast cost v authority (£m)
2022/23 to 2025/26	133	182	315	1,036	721
Change since last Investment programme report					
No change	35	(42)	7	9	

Financial commentary

An additional £9.5m of Programme and Project Authority was approved at the February 2024 meeting of the Programmes and Investment Committee for step-free access projects funded from the Sustainable Housing and Accessibility Fund. The approval will enable the delivery of step-free access at Northolt in 2026, as well as concept designs for capacity upgrades and step-free access at North Acton and West Hampstead by spring 2025.

The Programme and Project Authority of £1,036.2m also reflects spend outside of the review period, prior to 2022/23 and beyond 2026/27.

The forecast between 2022/23 and 2025/26 has reduced by £7m. The reduction is predominantly driven by £2.8m efficiency target allocated against the forecasted spend in financial year 2024/25, which will be actively monitored against value engineered delivery, in addition to the reprofile of spend into later years, including the Royal Docks Programme, due to availability of funding.

The reduction is offset by the transfer of funding into the step-free access programme of £4.3m (Northolt £3m and West Hampstead and North Acton £1.3m) for delivery in financial year 2024/25.

Performance over time commentary

The total cost shows little movement from the previous quarter but there has been good progress in converting the £35m of cost to go into spend to date when compared with Quarter 3. Some delays have resulted in delivery moving into financial year 2024/25 and later years. Increased authority recognises the longer-term forecast for the programme.

High Speed 2

The Government's Network North announcement in October 2023 significantly scaled back the project north of Birmingham and has led to a review of Euston station design and funding arrangements. In December 2023 the Government issued the Station Design Authority letter to HS2 concerning Euston, and we have continued to engage collaboratively with them and other Euston

Partnership members including Network Rail, Department for Transport (DfT) and Lendlease, the masterplan development partner, in understanding the impacts of this change on us, our operations, passengers and London.

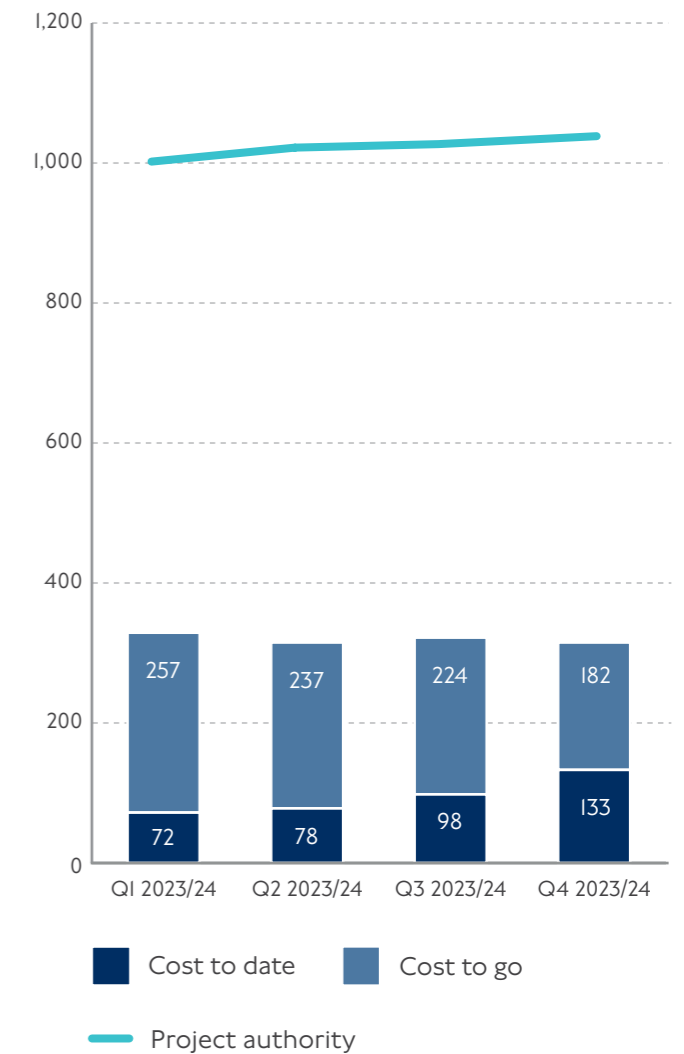
We are continuing to work with HS2 Ltd and partners on options to reduce costs while ensuring effective functionality of our infrastructure and operations, such as the London Underground and bus stations at Euston.

Environmental requirements and carbon reduction targets for new or altered assets have been incorporated into the functional requirements and have been cascaded to the HS2 Ltd supply chain.

With the link from Old Oak Common to Euston now delayed and concerns relating to the funding and timing of the tunnels from Old Oak Common to Euston, Old Oak Common will become a temporary terminus for HS2 services for up to a decade. We have made the case to the Government to procure additional Class 345 Elizabeth line trains to ensure sufficient capacity for passengers coming from HS2 services to continue their journey into central London.

There has been some progress in relation to the provision of level boarding for Elizabeth line rolling stock at Old Oak Common, with the DfT providing support for HS2 to undertake feasibility design work to investigate the lowering of tracks. We continue to actively engage with HS2 Ltd and Network Rail on this proposal.

Rail and station enhancements performance over time (£m)



Elephant & Castle

A new station entrance and Northern line ticket hall will support the creation of 5,000 new homes and 10,000 new jobs in the area around Elephant & Castle station. This new entrance will significantly increase the station's capacity to meet both existing and new demand for Tube services, as well as delivering vital step-free access to the Northern line platforms.

Procurement arrangements for the new passenger connecting tunnels between the new station box and the existing Northern line platforms continues to plan in readiness for award later in July this year. Environmental requirements have been incorporated into tunnelling package contract documents and the contract is planned to be awarded in Quarter 2 2024/25. As a precursor to the main tunnelling works, the pre-tunnelling ancillary works made excellent progress and works on site were completed in February 2024. These works allow the main contractor to focus on tunnelling activities, without the added complications of relocating services or needing to strengthen existing platforms.

All these works, plus the station box, are known as Stage 1 works and are fully third-party funded. Construction of the station box continues, with excavation to deep basement levels making progress. The developer is planning to hand over the station box by Quarter 1 2025/26, as agreed.

Options have matured for the fit-out of the station box and tunnels, including bringing the new station entrance into use (known as Stage 2). Furthermore, Stage 2 was included in our business plan, approved by the TfL Board on 22 December 2023.

Battersea Power Station western entrance

The Battersea Power Station western entrance project will fit out a second entrance to Battersea Power Station, including providing additional step-free access.

Since 2022, funding has been secured and a funding and development agreement between us and Battersea Power Station Development Company has been entered into to facilitate the delivery of the Western entrance project, including an integrated construction and design team. Most recently, the project has completed the enabling works phase and is currently preparing for the start of the installation of escalators at the end of June 2024.

East London line enhancement programme

We are making a series of improvements to the East London line on London Overground, enabling us to increase train frequencies and support growth and regeneration in the local area. These works are fully third-party funded.

Surrey Quays station upgrade

Our upgrades to Surrey Quays station are progressing well, with piling works on platform two now complete and installation of drainage and the platform super-structure underway. On platform 1, the installation of the platform super-structure began over the Easter period. Construction works are progressing safely under interim Network Rail assurance governance as we finalise technical design elements.

We will bring the platform 1 temporary secondary means of escape into service in August 2024 to support the installation of the overbridge linking the two platforms. Works remain on track to complete in early 2026.

Power reinforcement

We have now formalised our implementation agreement with Network Rail to deliver required power reinforcement works on the Clapham Junction branch (which is managed by Network Rail).

We will undertake the power works on our infrastructure during the planned Easter blockade and plan to commission the new infrastructure in late June 2024.

Signalling enhancements

As part of our signal upgrade works, we will relocate and commission line-side signals during the planned Easter blockade, enabling us to proceed with the extension of platforms at Surrey Quays Station. Signalling control design is underway and is due to be commissioned in early 2026.

Canada Water bus station

We are upgrading Canada Water bus station to increase capacity and improve staff and customer facilities. The bus station was closed on 4 March 2024 to enable construction works to begin. We completed these works and reopened the bus station to the public on in mid-April.

Tram replacement rolling stock

Our rolling stock replacement programme will replace the life-expired Bombardier CR4000 trams, which are experiencing declining reliability and have one of the lowest states of good repair across our fleets.

A standard selection questionnaire was issued to the market on 3 January 2024. Following this, there has been significant interest from rolling-stock manufacturers and responses were received in April to be considered for the main tender phase. Design development for the depot and power interventions are ongoing.

DLR Thames Wharf

Feasibility-level design and initial value engineering work has now concluded for a new station at Thames Wharf, in line with the revised masterplan for the Thameside West development. We are in discussions with the developer for the Thameside West residential development on progression of the station design for Thames Wharf.

DLR Royal Docks

The Royal Docks station programme, funded by the Greater London Authority (GLA), is aligned with the emerging aspirations of the Royal Docks and Beckton Riverside Opportunity Area Planning Framework. This framework aims to improve accessibility and reduce congestion to enable an additional 3,000 homes to be built in the area.

At present, the upgrade to Pontoon Dock station is the only live project within the programme. We are nearing completion of the concept design and are in the process of preparing a planning application to the London Borough of Newham for the station upgrade. The upgrade will provide new escalators to platform level and improve the urban realm beneath the station. We submitted a formal planning application on 28 March 2024 and are continuing to work with the GLA and other third parties to secure a full funding package for the delivery of the works.

London Underground

The London Underground enhancements and station developments project covers a range of improvements, mainly to stations and depots. We continue to improve stations by carrying out capacity upgrades and delivering projects that increase and improve accessibility and relieve congestion.

Throughout Quarter 4, we made good progress, notably progressing the fit-out phase on the new western entrance at Stratford, starting works on site at Colindale and completing feasibility and pre-construction verification exercises to support the emerging sustainable growth and step-free access projects.

Colindale

The scheme involves the reconstruction of the ticket hall building above the tracks to provide increased capacity, step-free access and enable the future redevelopment of our land for residential use.

The DfT approved the business case for the Colindale and Leyton projects in December 2023, which allowed the release of money for Colindale station from the Government's Levelling Up Fund and the letting of the primary construction contract.

The main site works are now underway, with the erection of a tower crane and the successful installation of 34 piles at track level and opportunity work during a productive 10-day track possession between Edgware and Golders Green in early April 2024, with the line reopening as planned on 12 April 2024.

Knightsbridge

The project is working to resolve power capacity issues to meet the requirement for a secondary power supply to the new lifts. Engagement with UK Power Networks (distribution network operator) continues, with early enabling works underway to provide a new substation. Additional scope has been identified to manage excessive heat being generated by operational equipment in the new customer-circulating area serving the lifts.

The project team is working closely with key stakeholders and partners to refine the associated delivery schedule before confirming a revised opening date for the new dedicated step-free entrance.

Leyton

The scheme involves the creation of a new ticket hall to provide increased capacity and step-free access by means of an overbridge and lifts. These works will support thousands of new homes being built in the area.

The DfT approved the business case for the Colindale and Leyton projects in December 2023, subject to confirmation of the final programme, costs and benefits of the project upon completion of detailed design.

The detailed design and pre-construction phase of the scheme is close to being finalised, with the construction contract due to be let in Quarter 2 2024/25. We continue to liaise closely with key stakeholders, including the London Borough of Waltham Forest.



We are working to deliver step-free access at eight stations

Paddington – Bakerloo line

We are working with a third-party developer to deliver a new step-free ticket hall at Paddington (Bakerloo line). Installation of cabling, services and finishes for the new ticket hall and step-free access areas continue, ahead of opening in late summer 2024.

South Kensington

We are working with Places for London and its joint venture partner, Native Land, on plans for an integrated redevelopment of the station and surrounding properties to secure much needed step-free access to the Circle and District line platforms, capacity improvements and sustainable income from our estate.

The works comprise two distinct but related scopes:

- South Kensington station upgrade to provide congestion relief and step-free access
- South Kensington adjacent station development, which will provide new homes, retail and office space working with a development partner

The station upgrade works were paused in 2019 to allow for progress of the adjacent station development planning submission and subsequent appeal. This was further impacted by our financial situation following the coronavirus pandemic. The outcome of the adjacent station development planning appeal was confirmed in December 2023, permitting the development.

Places for London is now working with Native Land to further establish costs and viability. Meanwhile, we are revalidating the project's requirements and scope and seeking opportunities to value engineer the design.

This design work will also explore an option to include the installation of lifts to serve the Piccadilly line platforms, which would then make the station fully step-free.

Step-free access

In February we announced we will deliver step-free access at Northolt station. The next step is to update the previous pre-pandemic design and construction approach. We intend to start construction in early 2025.

In summer 2023, we announced eight stations where we were carrying out studies on the feasibility of making them step-free. A single preferred option has been identified for the majority of the eight stations, and costs are being updated and build plans confirmed. We announced in February that funding was in place for two of these stations (West Hampstead and North Acton) to proceed into full design.

We plan to give an update on the remaining stations (Alperton, Arnos Grove, Eastcote, Finchley Road, Rayners Lane and White City) and on our study of the southern branch of the Northern line later this year.

We also continue to actively engage with local authorities, developers and businesses in an effort to explore the options available to introduce further step-free access to stations. Feasibility work at other stations could be progressed, should the right amount of investment be provided.

Stratford

Construction works continue to progress, delivering a new urban realm and new southwestern station entrance and ticket hall.

Work is being completed on transforming part of the operational parking area into a new urban area, along with completion of the new entrance and ticket hall. The project is forecast to bring the entrance into use towards the end of June 2024.

The project continues to liaise closely with the Network Rail project to deliver a new customer lift connecting the Jubilee line concourse to the western subway.

Waterloo – Elizabeth House

This work is currently paused at the request of the developer.

West Ham

We are working with a third-party developer, Berkeley Homes, to build a new ticket hall to serve the Twelve Trees Park housing development, comprising 3,847 units to be delivered in four phases. The main construction works associated with the new entrance started in summer 2022. However, the developer, Berkeley Homes, has experienced challenges with the design and with the supply chain. It is anticipated that the works associated with the station will restart on site later this year.

Safe and healthy streets

This programme brings together bus enhancement and healthy streets projects to create a single focus for investment in healthy streets and enhancements for bus users



Safe and healthy streets

Forecast period	Gross cost to date (£m)	Gross cost to go (£m)	Forecast cost (£m)	Programme and Project Authority (£m)	Variance: Forecast cost v authority (£m)
2022/23 to 2025/26	305	384	689	588	(101)
Change since last Investment programme report					
No change	61	(52)	9	No change	

Financial commentary

The programme has progressed in line with the funding settlement conditions agreed with government over the two-year period for 2022/23 and 2023/24 and we have continued to provide funding to London boroughs for investment in their streets. The total investment in Healthy Streets across both operating and capital expenditure, is an average of £150m per year net of income across our business plan 2022/23 to 2025/26.

Investment in Quarter 4 was £61m, bringing spend to date this year to £172m, after delivering efficiency savings and cost reductions of £8m. This compares to an annual budget of £180m with the underspend due to slower-than-expected remobilisation of internal and external resources and the need to coordinate our works with others such as the utilities companies and the London boroughs.

Forecast cost has increased by £9m, primarily in 2026, as projects have reviewed their delivery plans and schedules. We will continue to manage these cost movements to ensure we remain within our funding envelope.

Performance over time commentary

Following the government funding settlement and the TfL Board agreement of the 2023 Business Plan, programme investment has continued to accelerate each quarter. This includes continued investment and commitment to deliver the Walking and cycling, Bus and Vision Zero action plans.

Programme update

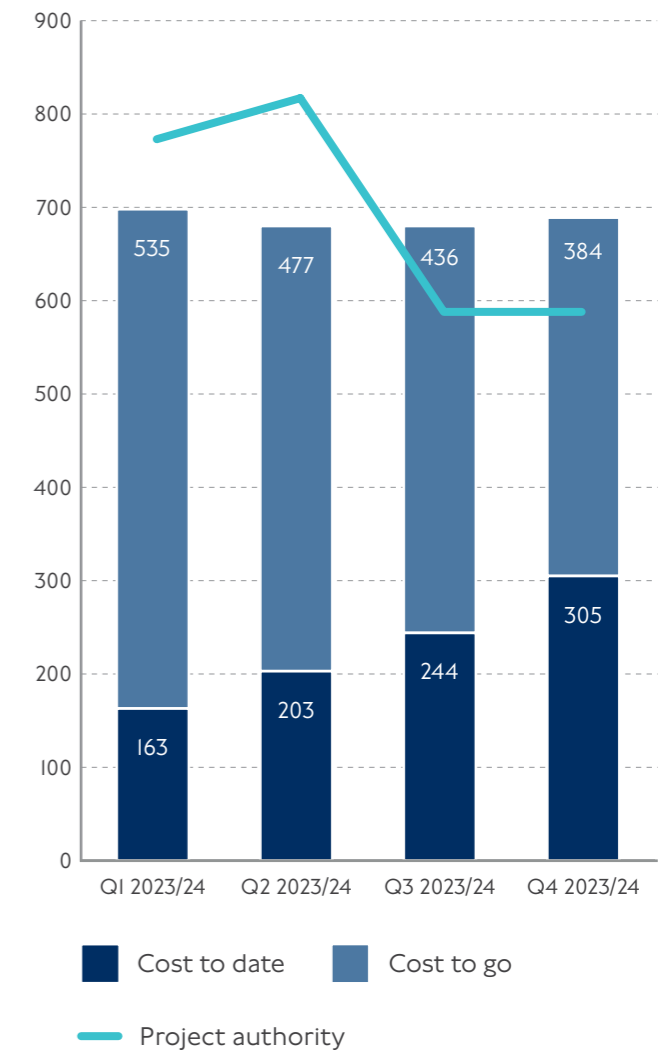
The programme continues to reduce road danger in line with the Mayor's Vision Zero strategy, as well as making it easier to walk, cycle and travel by bus across London. It will also accelerate progress towards mode shift, decarbonisation, economic recovery and tackling health inequalities.

The programme has delivered against targets for the year. London's cycleways network has quadrupled in length over the last eight years, with 68km delivered in 2022/23 and 2023/24, dramatically exceeding the target of 39km. This included a programme of delivery which capitalised on borough implementation of Low Traffic Neighbourhoods, through which cycleways could be designed on quiet roads, using wayfinding signs and road markings to make the main crossing safe and to connect communities to amenities and the wider cycleways network.

The Vision Zero target relating to lower speed limits was delivered early, with 20mph now in place on 265km of our road network against a May 2024 target of 220km. Bus lane totalling 10.06km has been delivered against a target of 10km, providing much-needed priority for some of the new Superloop routes, as well as supporting bus performance on other routes. Construction of a further 500m of new bus lane was completed in the first half of April 2024, bringing the current total to 10.56km.

Across TfL and the London boroughs, some post-pandemic mobilisation challenges persist – for example, in securing skilled project and engineering staff and coordinating works with a backlog of utility company road space requests for maintenance. Nonetheless, we remain world-leading in our approach to creating safe and healthy streets for London.

Safe and healthy streets performance over time (£m)





We continue to invest in our extending our Cycleways

Cycling infrastructure

Cycleway 4 London Bridge to Greenwich

The London Borough of Southwark completed their works to construct the temporary scheme for Lower Road between Rotherhithe roundabout and Surrey Quays Road on 4 March 2024, completing the final section of a protected cycling route between London Bridge and New Charlton. Snagging works are due to be completed in August 2024.

Cycleway 9 East Kensington Olympia to Brentford

The London Borough of Hounslow's works to deliver with-flow cycle tracks from Watermans Park to Brentford Magistrates' Court is progressing well and is due to complete in Q3 2024/25.

Cycleway 23 Lea Bridge to Dalston

Construction of segregated cycleways around Lea Bridge roundabout was completed on 26 January 2024, with snagging due to be completed in late July 2024. Construction of Lea Bridge Road started as planned on 24 July 2023 and is being delivered by the London Borough of Hackney.

Cycleway 50 Finsbury Park to Tottenham Hale

Construction of the section on our roads from Caledonian Road to Finsbury Park was completed on 8 January 2024, with snagging work completed in April 2024. Consultation and monitoring of the changes we have made began on 22 May, while the scheme is in operation under an experimental traffic order.

Vision Zero

Lowering speed limits

Lowering the speed of vehicles in London is key to reducing both the likelihood of a collision and the severity of the outcome. The second phase of the programme is complete, with a 20mph speed limit now in operation on 264km of our roads against the Vision Zero action plan progress report target of 220km.

This quarter, we lowered the speed limits on more than 30km of our roads, including new 20mph speed limits in Wandsworth, Merton, Sutton, Newham, Greenwich, Richmond and Hounslow, as well as a new 30mph speed limit on the A4 Bath Road in Hounslow.

Banners mounted on lamp columns will be installed across these corridors to help raise driver awareness of the new 20mph speed limit. A digital advertising campaign ran from 5 February to 15 March 2024 to complement the changes and raise customer awareness.

Work is underway to introduce a new 40mph speed limit on the A406 North Circular Road in Enfield and Waltham Forest, with detailed design nearing completion. This project will complete phase 2 of our Lowering speed limits programme and is expected to come into operation in early July 2024.

Outcome definition work is taking place to identify where complementary speed-reducing features such as green infrastructure, lane reallocation and raised crossing points can be installed to provide a self-enforcing speed limit where it has recently been introduced, in line with DfT guidance on setting speed limits.

Safer Junctions programme

Following the completion of the Holloway Road/Drayton Park safer junction scheme in March 2024, we have now made improvements at 45 of the 73 locations identified on our roads with some of the highest collision rates involving vulnerable road users.

Further design and survey work continues at pace on the Battersea Bridge safer junction project, with construction due to start in Quarter 3 2024/25, pending statutory approvals and coordination with other works on the network.

We are continuing with design and planning work on the remaining safer junctions and are committed to public engagement on potential changes to 10 further locations by the end of 2024. We completed engagement on designs for Seven Sisters Road/Woodberry Grove in February 2024 and intend to undertake public consultation on the Cannon Street/King William Street (Monument junction) and Hogarth roundabout by Quarter 2 2024/25.

Pedestrian safety

Design work continues on more than 40 schemes across London, at locations where there is an identified road safety concern.

Construction was completed in March 2024 at the junction of Grosvenor Place and Duke of Wellington Place in Westminster, introducing a new signalised pedestrian crossing near Hyde Park. Prior to implementation of the new crossing, pedestrians were only able to cross via a subway with stairs, which was inaccessible to those using wheelchairs.

Improvements to a pedestrian crossing on the A10 by Palatine Road in Hackney, and the construction of a new pedestrian crossing on busy Cavendish Road in Clapham were also completed in March 2024.

During 2024/25, we plan to deliver pedestrian safety improvements at a number of locations, including King's Cross, the A23 in Lambeth, Redcliffe Gardens in Kensington and Chelsea, and the A5 Edgware Road in Westminster.

Bus priority

We continue delivery of new bus lanes, working towards a target of 25km by the end of March 2025. In Quarter 4 we achieved our milestone to introduce 10km of new bus lanes on borough and our roads, delivering 10.56km by the second week of April (10.06km by end March).

Signal timing reviews have been completed at a total of 898 sites to provide additional priority for buses, well exceeding the target of 700 for the year. Two-thirds of buses in London approaching traffic signals either arrive on a green signal or receive some form of bus priority.

In 2024/25, more than £10m of funding has been allocated to London boroughs to deliver enhanced bus priority on their local road networks. As well as new bus lanes, this investment will deliver other bus priority features such as new bus gates, the removal of pinch-points and changes to the operating hours of bus lanes.

We have identified a suite of activities to improve bus priority across the nine recently launched Superloop routes. Improvements include traffic signal upgrades, new and improved bus lanes and removing pinch-points. In some locations, a holistic corridor-based investigation is being progressed to focus on end-to-end bus priority. Signal timing reviews have already been reprioritised to include Superloop corridors.

Transformational schemes

Catford town centre

We entered into an agreement with the London Borough of Lewisham in February 2024 and are working with them to support their ambition to create a greener town centre for Catford, ensuring it is a pleasant place to live, work and visit, and improve transport in the area.

The concept design is progressing well: we submitted a planning application for the scheme in December 2023 and made a compulsory purchase order for the land required in January 2024. A public inquiry will take place on 2 and 3 October 2024.

To fund this scheme, we are also applying for funding through the DfT's Major Road Network fund. The business case was considered at the DfT Roads Investment Committee on 22 May 2024, ahead of ministerial and HM Treasury review.

Lambeth Bridge

The detailed design is substantially complete and on track for completion by the end of June 2024. Traffic management plans are substantially advanced for both the advance works and for the main works on the bridge and junctions.

BT will undertake advance works on their assets from mid-June 2024 before the main works start early in September 2024. Our advance works to remove the northern roundabout will be done to facilitate the BT works, finishing in mid-June 2024.

Borough funding

Safer corridors and neighbourhoods (SC&N) is the largest of our Local Implementation Plan programmes that enables boroughs to deliver a holistic range of Healthy Streets measures across their borough. Over the course of the year, boroughs progressed and completed around 600 Healthy Streets schemes funded by the SC&N programme. These include walking, cycling, safety and bus priority schemes delivering a range of active travel benefits on borough roads. The core measures that have been introduced include new Low Traffic Neighbourhoods, School Streets, pedestrian crossings, junction safety improvements, 20mph limits, cycle parking, cycle training and bus stop accessibility upgrades.

Bus safety

As of early June 2024, there are more than 1,500 buses in the fleet that meet either the 2019 or 2021 Bus Safety Standard (depending on the point at which they entered service). This makes up 45 per cent of the bus fleet with ISA units. The first new vehicles that meet the new 2024 requirements are now entering the fleet, which include optimised front-end geometry and enhanced interior measures to protect passengers. Meanwhile, we continue to research and trial potential features for inclusion in the Standard in 2027 and beyond.

Working with our bus operators, vehicle manufacturers and their suppliers, we have now agreed retrofit works on more than 2,600 buses. This will involve installing key safety features on older vehicles that entered the fleet prior to the Bus Safety Standard coming into effect. These works will take place throughout 2024/25 and the upgrades include intelligent speed assistance, which automatically restricts bus speeds to local limits, and camera monitoring systems, which replace wing mirrors with high performance cameras to improve driver visibility and reduce blind spots.

Fatigue detection technology is also being fitted on 500 buses in a trial that is expected to provide reliable data on fatigue risk in bus operations: its overall extent and the number of events by route, time of day or roster, for example. Bus operator managers will conduct supportive interventions based on the analysis, with the results helping to establish which interventions work most effectively in addressing fatigue risk.

Bus customer action plan

We published our Bus action plan in March 2022, which outlines how we will build and broaden the appeal of the bus service. This includes delivering a step-change in customers' perceptions and experiences of bus travel, which can be achieved through offering better information and meeting expectations of a modern and comfortable experience at bus stops and on buses.

Following the success of our trial on Route 63, where we introduced a coordinated package of enhancements both to the vehicles and to the at-stop waiting experience, we have applied these customer features to a further 433 buses across 29 routes. This includes richer on-bus content displays with more detailed customer information, USB charging points, priority seat demarcation and enhanced lighting.

We have also improved the experience for customers waiting for their bus with the rollout of more than 300 new countdown signs at bus stops across the capital, with all boroughs benefitting from new live travel information signs at a variety of locations. We have also renewed more than 400 bus shelters.

In 2023 and early 2024 we also improved wayfinding information, to include points of interest on 6,900 bus shelters, and delivered enhanced bus signage at 14 multi-exit London Underground stations and 11 single-exit Elizabeth line stations, to support customers with interchanging and navigating the network.

We continued to deliver trials to address customer pain points, including an enhanced on-bus cleaning trial with one of the bus operators on three of their bus routes to improve the experience on board for passengers, as well as the use of QR codes for customers to access live bus arrivals information at 74 of the most-used bus stops, as a potential replacement service for live SMS bus arrivals.



We are introducing a range of features to improve bus safety

Environment

This programme comprises environmental projects and includes the new green project pipeline that is being developed



Environment

Forecast period	Gross cost to date (£m)	Gross cost to go (£m)	Forecast cost (£m)	Programme and Project Authority (£m)	Variance: Forecast cost v authority (£m)
2022/23 to 2025/26	384	245	629	1,025	396
Change since last Investment programme report					
No change	56	(4)	52	12	

Financial commentary

We invested a further £56m in our Environment programme during the quarter. This was mainly related to the London-wide ULEZ, but we are starting to see increased activity in the other projects, in line with assumptions.

The primary driver of the increased costs since last quarter is due to the expanded ULEZ scrappage scheme. Underlying spend for other projects has remained broadly stable. The Programme and Project Authority has been realigned to the programme over the review period to ensure the portfolio has sufficient authority to the end of 2025/26.

Performance over time commentary

A number of projects in the programme are in an early stage of development and costs have been subject to review as we mature the scope, understand the challenges and opportunities within. Such projects include Waste heat, Solar private wire and elements of our Buildings decarbonisation programme.

In addition, to deliver our full net zero ambitions we will need to explore additional funding sources, both internal and external.

London-wide ULEZ*

On 29 August 2023, the ULEZ was expanded to cover all London boroughs. A report published on 31 October 2023, showed that in the first month after expansion vehicle compliance in outer London increased by 10 percentage points – from 85 per cent when the Mayor announced the consultation for the proposed expansion in May 2022, to 95 per cent. In addition, the number of non-compliant vehicles seen driving in London on an average day had decreased by 77,000 compared to June 2023, a reduction of 45 per cent. A further update on the impacts of London-wide ULEZ in the Six-month report will be available in the coming weeks.

* This includes other road user charging schemes

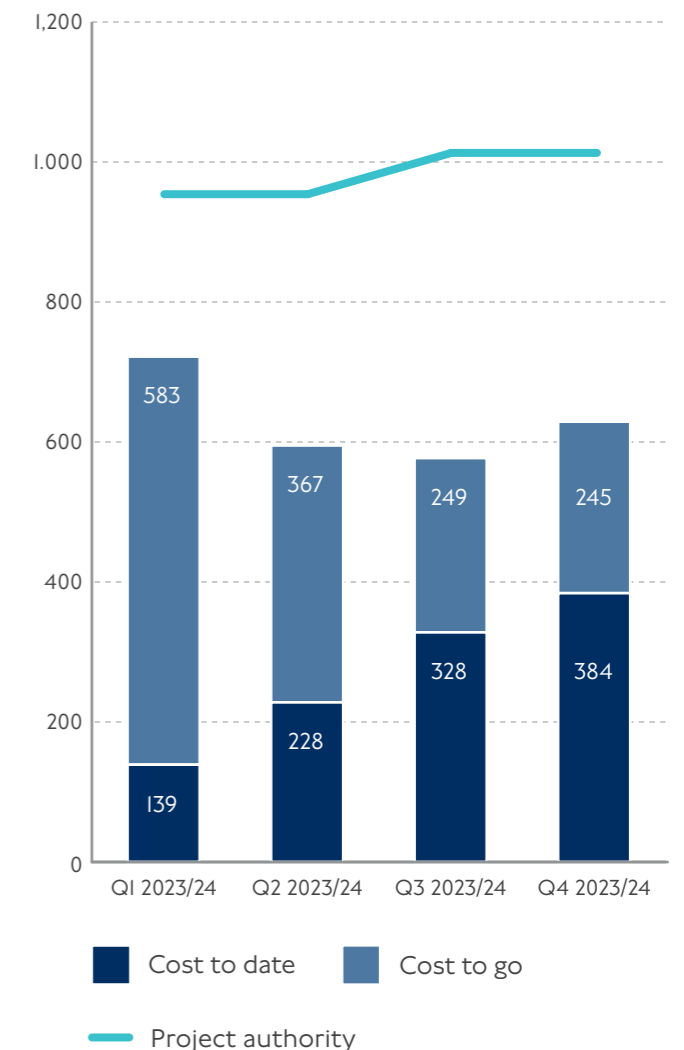
Since 30 January 2023, the largest vehicle scrappage and support scheme of its kind in the UK has been available to assist Londoners with vehicles that do not comply with the ULEZ emissions standards. Up to 3 March 2024, nearly 50,000 applications had been approved, which equates to almost £170 million of support committed for eligible Londoners.

In March 2024, the option to donate suitable vehicles to Ukraine was added to the scheme. A trusted intermediary, British Ukrainian Aid, will support the transfer of vehicles to Ukraine, which will be used for humanitarian purposes.

We have installed an extensive camera network to support the effective operation of the scheme. Up to 11 April 2024, we had more than 3,500 cameras enforcing road user charging schemes in London.

Unfortunately, vandalism of ULEZ cameras has continued in Quarter 4. All incidents are reported to the police. Several individuals have been arrested and charged, and one convicted. We are working closely with our contractors and the police. Where necessary, cameras are repaired or replaced.

Environment performance over time (£m)



Direct Vision Standard phase 2

Since March 2021, all heavy goods vehicles (HGVs) over 12 tonnes are required to obtain a safety permit to operate in London as part of the London HGV safety permit scheme. This scheme contributes to the Mayor's Vision Zero strategy by improving HGV drivers' visibility, thereby reducing the risks HGVs present to vulnerable road users. It is run in partnership with the boroughs through London Councils. Vehicles that do not meet the minimum one star on the Direct Vision Standard rating, introduced in 2019, are required to fit additional 'safe system' measures to the vehicle. Since March 2021, the scheme has been enforced by a penalty charge notice.

From 28 October 2024, HGVs will need to have at least a three-star rating for Direct Vision Standard or fit additional safety measures known as the progressive safe system (PSS), to operate in London. Between 8 January and 6 February 2024, a survey was conducted into the readiness of HGV operators to meet the 28 October star-rating go-live date. Feedback from this survey and subsequent industry engagement is being used to inform the update to London Councils on 20 June 2024, including a review of the proposed three-month grace period eligible operators can apply for to fit the PSS to their vehicles.

These changes will build on safety improvements from the current scheme which, using a baseline of 2017-2019 (averaged), has seen a 49 per cent reduction in the number of fatal collisions, and a 30 per cent decrease in serious collisions, involving an HGV and those who walk, cycle and motorcycle.

Electric vehicle infrastructure delivery

London is expected to need between 40,000 and 60,000 electric vehicle charging points by 2030, including up to 4,000 rapid chargers. Estimates show that a quarter of these could be accommodated on public sector land. This infrastructure could help support a reduction of carbon dioxide emissions of between 1.5 and 2.6 million tonnes per year. The Mayor has committed to supporting the continued rollout of charging points alongside the private sector, to help meet exponential growth in demand and contribute towards achieving a net zero carbon London by 2030.

The first tranche of our electric vehicle infrastructure delivery programme will provide rapid and ultra-rapid charging points across 100 parking bays on our roads. Charge-point operator Zest was contracted for an initial batch of charging bays in May 2023, and two further batches in November 2023.

We have completed a preliminary assessment of more than 2,400 sites across the GLA estate, which has allowed us to accelerate the release of further batches to the market. In addition, we have reviewed current assessment criteria to bring forward new sites across our land and wider GLA land. We have also initiated a second tranche of delivery, to identify a pipeline of sites to be delivered on both our own and GLA Group members' land.

In addition to the rollout of rapid electric vehicle charging points, the Office for Zero Emission Vehicles has recently announced that London will receive almost £39m of

funding through the DfT's Local Electric Vehicle Infrastructure fund. This will primarily be used to accelerate the delivery of low-powered charging infrastructure on borough highways. This includes residents without access to off-street parking and builds on the 400 fast-charging points that will be delivered by London boroughs by March 2024 using £9.7m of the Local Electric Vehicle Infrastructure pilot funding and additional borough delivery funded by the Government's on-street residential charge point scheme.

Zero-emission bus fleet

We have reached another significant zero-emission milestone and now have more than 1,400 zero-emission buses operating on numerous routes across London. This means 16 per cent of the bus fleet now operates with zero-emission buses, which include hydrogen, battery electric and 'opportunity charged' electric buses.

London has the largest zero-emission bus fleet in western Europe and this progress is key to our wider ambition to convert the entire fleet to zero-emission by 2030.

Zero-emission buses contribute to the decarbonisation of the transport network, which is crucial to our work to meet the Mayor's mission for London to be a net zero carbon city by 2030 (as detailed in London Net Zero 2030: An updated Pathway report). It is estimated that, through the decarbonisation of London's bus network, we could save an estimated 5.5m tonnes of carbon by 2030.

All new buses joining the fleet will also have enhanced customer features, such as improved flooring, seating, lighting and customer information, and will meet the industry-leading Bus Safety Standard.

Introducing new zero-emission buses into London involves collaboration from our bus operators and bus manufacturers. TfL continues to support investment into innovative zero-emission bus technology and jobs and production across the bus industry.

Waste heat

Waste heat from London Underground ventilation shafts is a constant and reliable source of energy. This project will capture thermal energy from the ventilated air to feed to local users, powering heating and hot water.

This project could contribute to serving thousands of residential premises, plus commercial and public buildings. The proposed supply of waste heat would reduce a requirement for gas combustion and could be associated with improved air quality through a decrease in emissions.

Activity is focused on delivering an initial site. A report on the viability of this site is expected by August 2024. The delivery model would be for an energy supplier to fund the design and delivery of the infrastructure. TfL would hold a technical assurance role, to prevent any adverse impact on operations.



Our approach to establishing a longer-term programme on the identification of waste heat opportunities will be driven by the outcome of a recent consultation from the Department of Energy Security and Net Zero. This relates to the creation of heat network zones. More will be known on how this will impact future projects for TfL in the coming months, with engagement ongoing with the Department to understand details as they emerge.

Solar private wire

As London's single largest consumer of electricity, it is our responsibility to identify and utilise renewable energy sources.

The Solar private wire project presents an opportunity to directly receive zero-carbon (solar-generated) electricity from decentralised sources, bypassing the national grid and distribution network operators and associated charges. This has the twin benefits of guaranteeing renewable energy, while also offering financial savings.

Initial investigations suggest our power network can accommodate 64 megawatts of renewable energy, equivalent to five per cent of the annual load.

The intention is for a solar collaborator to carry out detailed project identification, design and delivery. We would ultimately purchase the energy to assist with powering the London Underground network. We are currently finalising procurement documentation to support an invitation to tender. Once a contract is secured with a preferred delivery partner, work will begin on creating a design and delivery schedule across a variety of proposed sites.

Buildings decarbonisation

Emissions from our buildings represent around 12 per cent of total operational carbon emissions. As the majority of emissions from our buildings are a result of directly burning fossil fuels – primarily gas-powered heating systems, these are broadly unaffected by grid decarbonisation when compared to other operational emissions, such as running the London Underground network on electricity generated by renewables. This programme has been created to prioritise the removal of fossil fuel heating systems and improving the thermal efficiency of our buildings.

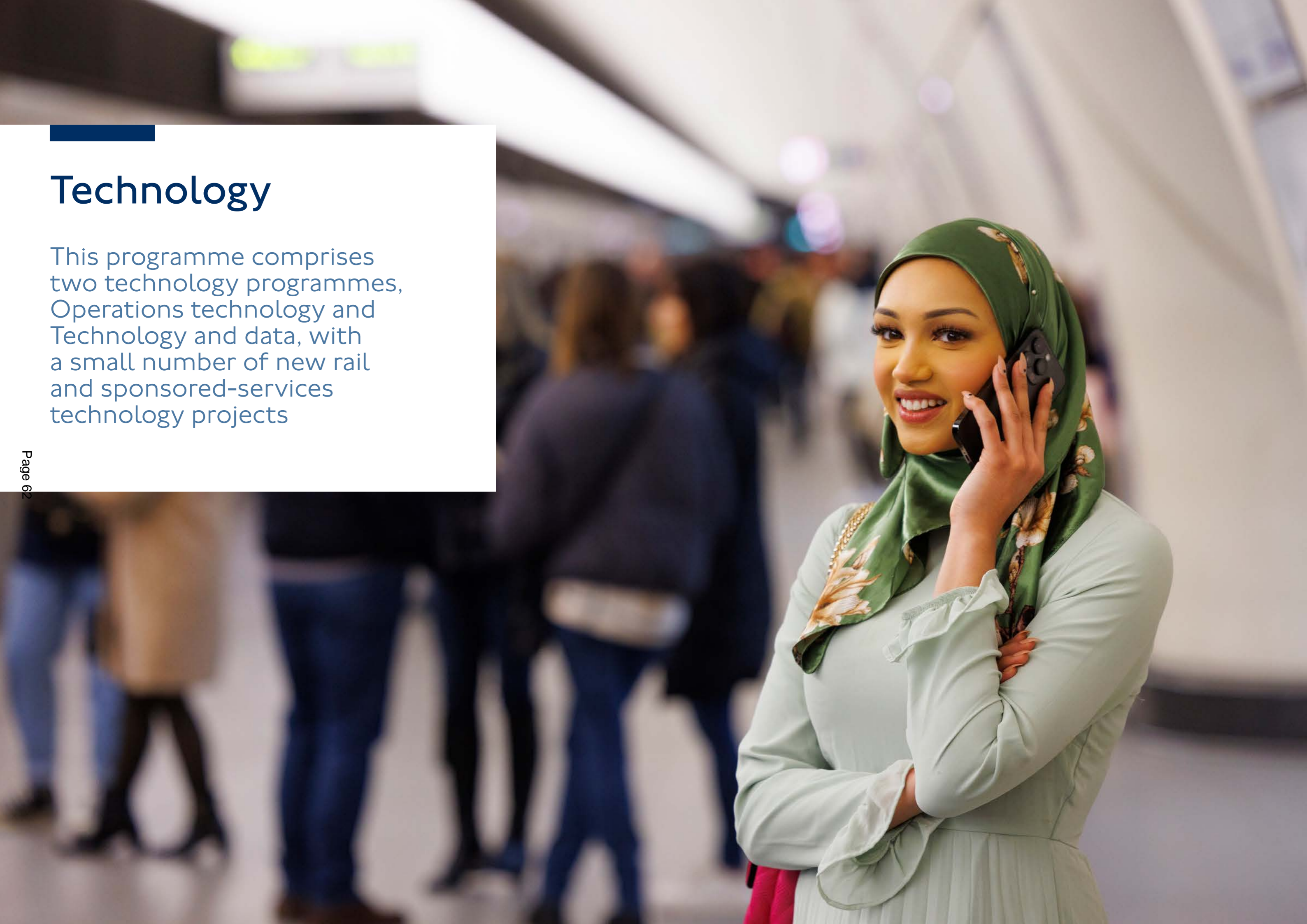
Work is on track to complete feasibility studies across 19 sites by the end of June 2024 and a prioritisation methodology is being developed to inform a delivery schedule.

Grant funding of £2.3m has recently been secured through the Public Sector Decarbonisation Scheme to deliver heat decarbonisation interventions by March 2026 at Neasden depot and Finchley Central signals depot.

In the last year, funding has been allocated to some targeted interventions. A trial of reduced escalator speeds achieved an average 10 per cent power reduction, with associated carbon savings. Plans are underway to reduce the speed of more than 100 escalators. In the next year, 25 escalators across eight stations are scheduled for delivery, to save 32,500kg of carbon dioxide emissions – equivalent to the emissions of an average car travelling more than 120,000km.

Technology

This programme comprises two technology programmes, Operations technology and Technology and data, with a small number of new rail and sponsored-services technology projects



Technology

Forecast period	Gross cost to date (£m)	Gross cost to go (£m)	Forecast cost (£m)	Programme and Project Authority (£m)	Variance: Forecast cost v authority (£m)
2022/23 to 2025/26	382	451	833	848	15
Change since last Investment programme report					
No change	69	(95)	(26)	65	

Financial commentary

Projects with the highest spend in the last quarter include the Connectivity asset renewal programme, Project Hina (a project to replace ticket reader technology for buses to aid revenue collection), procurement of new pin entry devices, London Underground station security integration, Project Oval (DfT initiative to expand the acceptance of contactless pay as you go to suburban rail services across south-east England), station WiFi rollout and deployable enforcement cameras.

Increased Programme and Project Authority was approved by the Programmes and Investment Committee in February 2024, covering the period through to 2025/26.

The projects with the largest forecast reductions since last quarter include Surface Intelligence Transport System (SITS), iBus 2 and Oyster online.

iBus2 has decreased in forecasted cost following a successful contract engrossment where TfL mitigated the exchange rate risk on contract signature. In addition, supplier implementation costs were reprofiled against delivery milestones, in line with the final contract position.

Performance over time commentary

Over the last four quarters our forecast spend has decreased by £75m, due to forecast reductions across some projects, as stated in the financial commentary above. Movement in Programme and Project Authority during the year was caused by correction of values stated in Quarter 2, which included an additional £82m relating to a period further out than the forecast period of 2022/23 to 2025/26. This was updated in the Quarter 3 report. The increase in Quarter 4 for 2025/26 spend is described above.

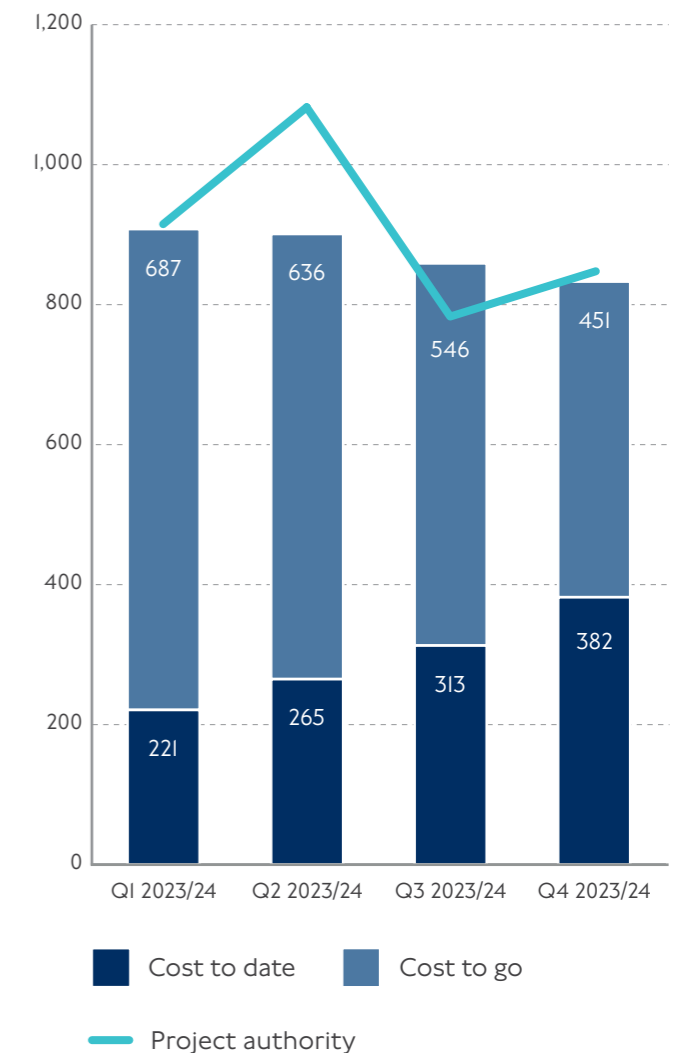
Operations technology Enforcement, compliance, safety and security

Work continues on the rollout of deployable enforcement cameras on our road network, enabling us to target specific safety and non-compliance hotspots and make a significant contribution to meeting our Vision Zero goal. We have identified sites with the most impact to safety and are well underway with the delivery of cameras at these prioritised sites. There are currently more than 150 sites live and monitoring compliance, with a further 100 sites having equipment installed and being prepared for go-live.

Any money recovered from penalty charge notices will be reinvested in maintaining a safe and efficient road network for everyone travelling in London. The cameras are used for enforcement of civil traffic rules only and are fully compliant with data protection legislation.

On average, we manage 10,000 cases of work-related violence and aggression every year. As part of our strategy to address this, the operational employee safety programme has rolled out an additional 700 body-worn video cameras since September to employees most at risk. In total, we have rolled out 6,200 body-worn video cameras and they are now part of essential equipment. We successfully distributed 294 emergency communication devices by the end of 2023.

Technology performance over time (£m)



As part of the station security technology improvement programme, we have completed the design of critical incident management functionality for 14 stations and started the design for 13 stations. The delivery of this functionality in 2024 will enable us to manage these stations during a critical incident and other key events. We will start design of a further 98 stations later this year. We are rolling out safety improvements to our CCTV estate and we can now remotely view CCTV at 243 stations and have started design and installation at a further 22 stations. We are also improving customer Help Points, making sure emergency calls are handled promptly by those best able to help. We have prioritised improvements at 15 stations initially, and design has started at further 40 stations in 2024.

Network and public transport management

We are delivering innovative new road management systems that will reduce delay, improve journey times, and encourage a shift to more sustainable modes of transport.

We delivered the real-time optimiser system into use in Quarter 4 2023/24. This system optimises traffic signals and responds to multiple modes of traffic, improving network performance. Further enhancements to the system are planned for 2024.

For the common operating view incident management system, we are working to complete the final two releases by the autumn 2024, which will enable more effective and efficient management of the

road network and incidents through an integrated interface to the variable message signs on the street.

Real-time optimiser (the system for managing TfL's 6,000 traffic signals) was delivered into live operations in March 2024. This paves the way for FUSION (the optimiser for traffic signals) to be implemented, unlocking journey time benefits for all road users.

Requirements for SITS predictive and video analytics are in the final stages. Once completed, market engagement can begin, enabling TfL to make better data-led decisions around incident management and develop a system that gives the user automated responses to smaller incidents on the network, reducing the time to respond.

We are maintaining and developing technology to operate our public transport networks and improve the customer experience. This includes upgrading the critical technology systems that underpin the bus network, such as the iBus system which provides real-time information on bus locations.

At its meeting on 6 December 2023, the Programmes and Investment Committee granted Procurement Authority for the iBus 2 project. The contract was awarded in February 2024.

Procurement has progressed for the new Countdown 3 system, where the past few months have focused on the evaluation of suppliers and business case development to find the best option, ahead of contract award at the end of Quarter 3 2024/25.

Micromobility rental

Procurement is ongoing for a new operating contract for the Santander Cycles scheme, as the existing contracts expire from 2025. The procurement is due to complete in January 2025.

The London e-scooter rental trial has been operating since June 2021, with 10 participating London boroughs. For the period ending 10 March 2024, more than 3.8 million e-scooter trips have been taken as part of the trial. Following the extension of UK-wide e-scooter trials by the Department for Transport, the second phase of the London trial began on 25 September 2023. This phase presents an opportunity to collect more data on e-scooters, as well as trial new technologies, such as measures to improve parking compliance, identify pavement riding and provide vehicle alerts.

Connectivity

We have completed renewal of radio base stations at 293 sites on London Underground, replacing 20-year-old legacy equipment. This enables critical radio communications between colleagues across London Underground stations, trains and control centres. Since completion, we are benefiting from increased reliability, with no failures to date and lower power consumption, reducing our carbon footprint. The rollout of 7,000 handheld radio devices to London Underground stations has begun, with Bakerloo and Victoria line stations complete.

We are renewing three obsolete radio transmission networks with new infrastructure capable of transmitting multiple types of communication. This work will ensure that critical information

like operational data, CCTV and radio continues to be transmitted, facilitating continued operation of the London Underground network. Detailed design works have begun, and a live system simulation has been completed which will be used for testing. As it rationalises multiple existing systems, it will be cheaper to operate and further reduces our carbon footprint. In 2024, we plan to begin feasibility work on extending this network.

Digital asset management

A programme is being developed to digitise our asset management capabilities to improve future planning, decision-making and efficiency. Procurement has begun for a system to support strategic investment decision-making in a consistent, transparent and evidence-based way. The consolidation of our asset management systems into a single platform to improve performance and efficiency was completed in May 2024..

Tools for planning, automation and staff

We are exploring a new system for staff training and assessment, which will improve the efficiency and effectiveness of our competency management processes.

Future scope

We intend to bring a number of licensing and regulation projects into the Operations technology portfolio. This includes the existing Taxi and Private Hire re-let and statutory standards projects which deliver a replacement system for the management of driver/operator licensing, to meet Department for Transport statutory standards.

The report at the end of June will include licensing and regulation projects in both the financial and programme updates.

Technology and data

Payments

We have successfully delivered the introduction of a new concession for eligible care leavers aged between 18-15 and living in London. From 21 February 2024, in partnership with London Councils, those eligible can apply for an Oyster photocard which entitles them to half-price adult fares on bus and tram services.

On 3 March 2024 we delivered the annual fares revision. As directed by the Mayor, pay as you go fares on our services have not increased. However, fares for joint products, including pay as you go fares for journeys involving National Rail, daily and weekly caps and Travelcards increased by an average of 4.9 per cent, in line with the Department for Transport's direction to the train operating companies.

As part of this fares revision, we implemented a trial of removing peak-time fares on Fridays for a period of three months which started on 8 March 2024. This change means that off-peak Tube and rail fares on pay as you go with contactless and Oyster apply all day, removing the higher-peak fares which applied between 04.30 and 09.30 and between 16.00 and 19.00. The change also means that 60-plus and older persons' Freedom Passes are valid all day during the trial, removing the pre-09.00 restriction. This change was introduced to stimulate economic growth on Fridays, where demand has not recovered as strongly as on other days of the week.

Digital workplace

Design work on Our future desktop (successor to Windows 10) is well underway. We have also begun the laptop refresh programme to deliver Windows 11-compatible laptops to users requiring a hardware upgrade. Old laptops continue to be donated for reuse in schools, which not only benefits children in London, but actively supports our sustainability objectives.

With our contracted specialists, Nomensa, we are nearing completion on work to create our frontline and field personas. Once established, the personas will be a precursor to several technology initiatives including the Windows 11 deployment and digital literacy training.

Work to upgrade hardware in London Underground station offices has begun. A survey of equipment was followed by the acquisition of new monitors and speakers for approximately 150 sites, with installation work due to follow in Quarter 2 2024/25.

Networks

Work to extend mobile coverage on the Tube has continued this quarter. Testing has been successfully completed on the Bakerloo, Piccadilly and Victoria lines. Further testing has also been successfully completed on the remaining Elizabeth line stations and Elizabeth line tunnels. The testing opens up opportunities to go live with many more stations and tunnels on these lines in the coming months. We remain on track to deliver improved coverage by the end of 2024.



Pay as you go fares on our services have not increased

Our project to replace the end-of-life data network services that underpin virtually all surface services continues to progress. Our contract with the incumbent provider (GTT) expires at the end of August so our focus is on completing the remaining site migrations

To date, we have migrated 4,571 of 4,596 (99 per cent) sites to the new network delivered by Capita. Of the migrated sites, 55 are currently operating on an interim 4G-based solution.

Hosting

The lease for our main data centre has been extended for six years with an option to extend for a further two years. This extension provides a rent-free period for the first year resulting in a significant saving.

The agreement to use Amazon Web Services for hosting applications has been extended for another two years. This ensures the continued efficient, secure, and reliable operation of services such as SAP enterprise resource planning (ERP) and the TfL website.

Technology services operations

As a central part of the Greater London Authority (GLA) family we are undertaking several initiatives, termed IT shared services (ITSS), that will see TfL assume responsibility for agreed IT systems and services across the GLA family.

In October 2023 there was an initial rollout to 70 Change Champions in the GLA and the Old Oak and Park Royal Development Corporation. As part of this successful phase, useful data was captured and has been acted on. This facilitated a decision in January 2024 to begin the wider rollout in February 2024. To date, more than 500 users have successfully been migrated to their OneLondon devices.

Similarly, the ITSS initiative with London Legacy Development Corporation (LLDC) continues and has progressed from feasibility and planning to an implementation phase. We forecast to have assumed responsibility for LLDC IT shared services by March 2025.

Enterprise resource planning

The myJourney phase 2 project is in progress. This project replaces our core HR system of records and digital system for recruitment and onboarding new colleagues. It is a prerequisite for the new payroll system in future years. Go-live has been set for September 2024 and the project is entering testing.

For our core SAP ERP system and its upgrade to SAP S/4 HANA, we have pushed back the market tender by four weeks to accommodate a revised procurement strategy and the opportunity to closely examine a subscription service-based model proposed by SAP. Process and data improvement work in advance of contract award is progressing well, especially in Operations.

The Operational workforce management project design stage is in progress, with some iterative build activities already completed. Walkthroughs with key stakeholders are planned in the next quarter. The next major business milestone is the launch of new software, UKG Workforce Dimensions, for the rostering and scheduling of compliance, policing on streets, London Underground revenue control and bus operations colleagues in March 2025 as part of phase 1.

This will be preceded by a working pilot from October 2024 to ensure operational readiness. Phases 2 and 3 will then look to deploy the solution across the majority of operational teams in 2026.

Contact centre operations

Contracts have been awarded to Journeycall and Marston Holdings for the contactless payment card contact handling service. The first half of the service, 100 per cent of calls, were transitioned from the incumbent between February and March 2024. All correspondence was transitioned in mid-April 2024.

Evaluation of potential suppliers has been completed for the re-tender of the interactive voice response contract. The contract award recommendation has been approved and the contract was signed in early June 2024.

Data analytics

Over the past nine months, we have gathered with colleagues across TfL to define our vision for data and the principles for our case for investment. We've set out a roadmap of specific data initiatives which will both deliver early business

value and transform our data capabilities, infrastructure and services over the initial 18 months. We also continue to work closely with the One TfL programme to align to the programme's aims to improve TfL's ways of working, and we have articulated our strategic direction for data.

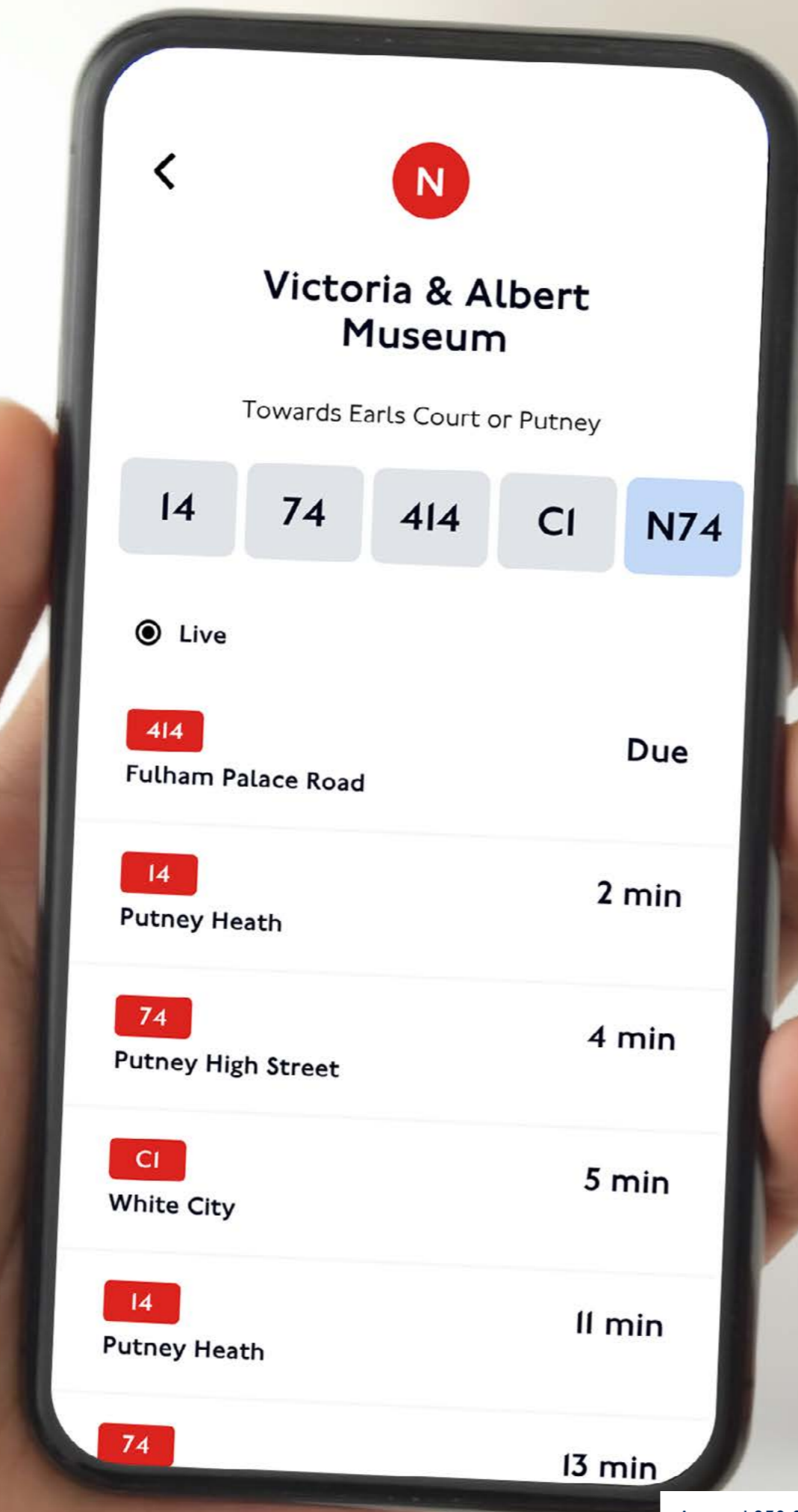
We have started to discuss governance of our data assets, our existing and future needed data capabilities, and how we work to best share learning and best practice to support our vision of empowering our people with data. We published a finalised draft of TfL's Data strategy at the end of March and have engaged with our Executive leadership team, gaining full endorsement on 17 May 2024.

We have gone live with traffic signals data reporting, which has completed integration of the real-time optimiser (RTO) data. This RTO system generates high volumes of traffic flow and general network performance data from the split cycle and offset optimisation technique system.

This data will enable network managers and traffic operational analysts to run ad-hoc analysis on the datasets, enabling them to optimise signal timings, and will help to enhance the automatic management of two-thirds of London's traffic signals.

Digital

The TfL Go app has now been downloaded more than six million times, with 850,000 monthly active users in March 2024. Significant progress has been made with Tube and rail notifications, with an expected release in Quarters 2 and 3.



Around 850,000 customers use our TfL Go app each month

We also used the app to promote Friday off-peak fares and amended our Journey Planner to ensure that the Elizabeth line was more likely to appear for journeys to Heathrow (avoiding challenging interchanges at Paddington).

We have successfully released the first six components of the mobile payments API (supporting the migration to a new cloud hosting platform). This is a precursor to the release of payments in TfL Go in Quarter 3. Following successful approvals, we are now seeing the first new resources from the Crown Commercial Framework. This will help accelerate the delivery of TfL Go and enabling data products.

Technology challenges

Global semi-conductor supply issues which have previously distorted our delivery due to long lead times and pricing increases at short notice are now resolved, with our strategic partners and their key suppliers having returned to business as usual.

Resourcing continues to be a challenge, with numerous campaigns unable to fill all required vacancies. This issue is most notable for senior or specialist roles. There is a similar challenge in our customer community, with business engagement in projects an ongoing challenge due to business-as-usual operational demands which must take priority. There are issues with supplier resource which have affected delivery this year, however there are signs that the resource pressures in the supply chain are starting to ease, with one of our strategic suppliers now reporting that they have secured all the resources they were seeking.

Street, bus and rail-sponsored service renewals

This programme groups together renewals of Streets, Buses, River Services, London Overground, DLR and London Trams. These programmes share a common approach to work-bank management and by joining together associated activities such as bus-focused renewals this offers improved investment prioritisation and efficiencies



Street, bus and rail-sponsored service renewals

Forecast period	Gross cost to date (£m)	Gross cost to go (£m)	Forecast cost * (£m)	Programme and Project Authority (£m)	Variance: Forecast cost v authority (£m)
2022/23 to 2025/26	367	367	733	1,137	404
Change since last Investment programme report					
No change	65	(88)	(23)	No change	

Financial commentary

This programme includes renewal projects previously reported in the Surface assets and Public transport portfolios. This consolidation of projects gives a single focus to maintain a good state of repair on the surface transport networks.

There has been a £23m forecast reduction since the previous quarter, with the forecast having been updated to reflect the asset strategy reprioritisation exercise that was completed for the 2024/25 Budget.

Performance over time commentary

The forecast over the last four quarters has been stable. The Quarter 4 forecast reflects a small reduction to align to prioritised scope. The increase in Programme and Project Authority in the year was granted for scope to be delivered through to the end of 2025/26, and DLR station controllers to the end of 2028/29.

* Forecast cost reflects forecast starting 2022/23 vs authority which includes legacy Public transport portfolio starting 2017/18

Programme update

The programme consists of a capital programme, surface operations assets, surface major assets and Local Implementation Plan support to the London boroughs for bridges and roads. The remainder of the portfolio consists of renewals such as bus, rail and sponsored-services renewals, and supports investment needed to maintain the safety, performance and reliability of the DLR, London Trams, London Overground, Cable Car, Cycle hire, new Routemaster buses and Woolwich Ferry.

Delivery in 2023/24 successfully achieved the planned outputs and benefits, therefore mitigating asset risk and ensuring the continued reliability and safety of our networks. However, the level of investment was significantly below that required (up to 50 per cent lower on some asset types) to remove the backlog of renewals and maintain service levels.

Plans for 2024/25 are now fully developed but, due to constrained budgets, several projects have been deferred.

Securing third-party funding, for example through the DfT's Major Road Network programme, is therefore essential to help mitigate asset risks. Nevertheless, through tough decisions and our work to reduce costs, we are beginning to work through the programme of long-delayed and vital improvement to the network, including further work on the A40 Westway. This a key strategic route and one of our most important freight corridors. It is one of London's busiest roads, carrying around 90,000 vehicles per day.

Streets

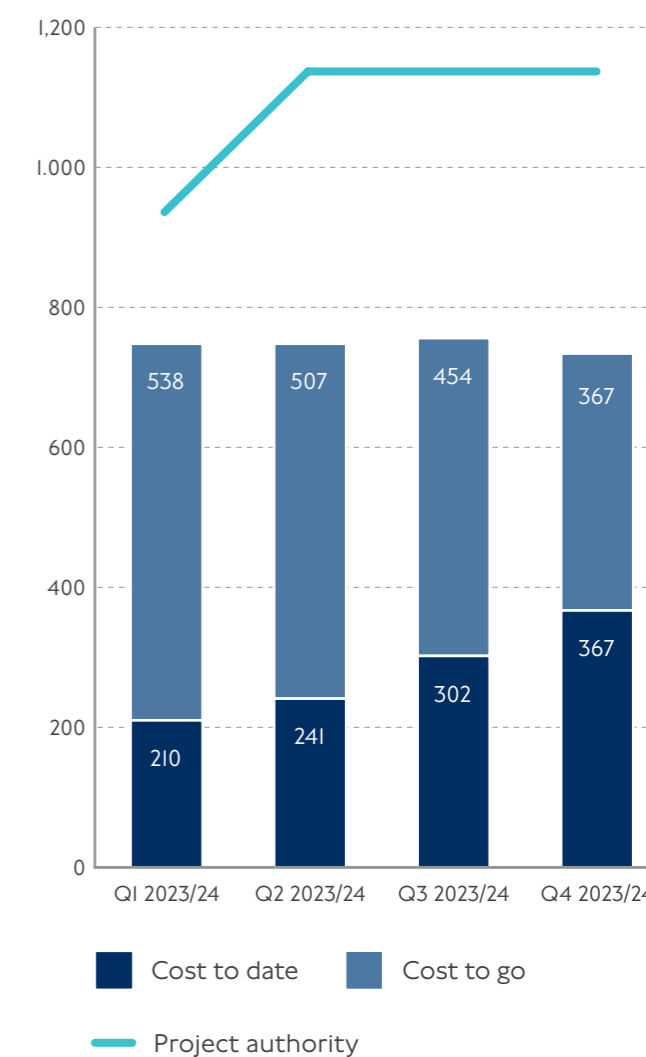
Blackwall Tunnel southbound

This project aims to renew critical systems that support tunnel operation, including lighting, concrete repairs and CCTV. Following detailed modelling assessments, we have selected a preferred construction option: a series of weekend and night closures to minimise impacts on people and goods needing to cross the river. We appointed Tarmac Kier Joint Venture as design and build contractor in April 2023 and plan to complete the design work by September 2024 with delivery timescales subject to budgets and value for money.

Gallows Corner

The Gallows Corner flyover in Romford is one of our highest-priority assets for renewal due to its age, condition and the current restrictions in place. Following the completion of feasibility work, we have selected a preferred option to fully refurbish and strengthen the flyover which has 30 per cent of the scheme carbon compared to the alternative of a full replacement.

Street, bus and rail-sponsored service renewals performance over time (£m)



The concept design using the existing foundations to support the new deck structure has been completed. The outline business case was formally approved by the Department for Transport (DfT) and Treasury in April 2024, unlocking up to £57m support through the Major Road Network Fund towards the required repairs. The contract for design and build has now been awarded and the detailed design stage begun.

A40 Westway

Following successful completion of the major joint replacement, the project is now focused on delivering the remaining scope. This includes further joint replacements, parapet renewals and repairs to concrete deterioration. The project will deliver essential renewals of one of London's key highway assets, ensuring that the road network is safe and operable and avoiding unplanned closures and disruption.

Concept design work for the remaining elements has been completed and we have awarded the contract for work on seven expansion joints. Detailed design is progressing well. We plan to begin the next stage of the delivery from July this year. This includes work on the slip roads at the Westway roundabout. We are working carefully with key stakeholders to coordinate and plan the delivery of this stage project and ensure advance publicity is in place.

We are also progressing with the design of work on three expansion joints to establish the earliest opportunity to replace these remaining vital components. The progress of concrete repairs and other works will start at a future date subject to budget availability.

Hammersmith Bridge

The London Borough of Hammersmith & Fulham started stabilisation works in 2022. The majority of the works are now complete, ensuring Hammersmith Bridge is safe and can remain open to pedestrians and cyclists in the short term. Alongside the DfT, we continue to support the borough in developing a business case for the longer-term strengthening works to fully restore the bridge.

Carriageway renewal

A total of 180,000 square metres of resurfacing was delivered in the year against an initial target of 127,900 square metres. In the last quarter we have delivered schemes at A205 Westhorne Avenue, A4 Hyde Park Corner, A2213 Kidbrooke Park Road and A3 Tolworth Roundabout.

Two additional schemes were also delivered in the last quarter. funded by the DfT through Network North highway maintenance funding, at A1202 Leman Street and A1210 Prescott Street.

Buses

Kingston Cromwell Road bus station

The major redevelopment of Kingston Cromwell Road bus station will deliver a bus station that offers a better customer experience, is easier to navigate, and is greener and more energy efficient.

The new bus station includes the introduction of energy-efficient lighting, energy-efficient buildings with a low environmental impact, a new sustainable urban drainage system, new vegetation including a green bus station canopy edge, and the introduction of solar panels.

The build began in August 2023 and works are planned to complete by Quarter 2 of the financial year 2024/25.

New Routemaster refurbishment

This programme is the mid-life refurbishment of 998 TfL-owned New Routemaster buses. To date, 575 buses have been refurbished, 297 of which were during financial year 2023/24, and the Tier 2 milestone to complete 430 refurbishments was achieved ahead of schedule.

The programme target for the financial year 2023/24 was to complete a cumulative total of 600 refurbishments. A total of 575 refurbishments were delivered due to the constrained programme budget for the financial year 2024/25 (£1.2m CapEx allocated from the £7m request) which meant that refurbishment centres reprioritised work for the financial year 2023/24 causing some slippage.

With the pipeline of project work turned right down, refurbishment centres have been rephasing their resources to a smaller TfL pipeline, reprioritising other work to ensure they generate enough revenue by working with other bus operators across the UK to protect jobs. The operating expenditure budget impact of this reduced investment will be up to £35m of additional pressure in the next five years. The target for this financial year is still to achieve a cumulative total of 700 refurbishments.

The programme has successfully delivered enhanced customer experience improvements while driving revenue, safety benefits, patronage growth and a reduction in operational costs. It relies upon refurbishment centres based across the UK and has a fully UK-based supply chain.

River Services

We have completed our five-yearly out-of-water assessment and maintenance cycle on both Woolwich Ferry vessels, in line with our regulatory obligations. Both vessels have now received Lloyds Class approval, with successful completion of the Lightship survey on the second ferry at the end of March 2024.

Additional layby berth options continue to be reviewed, with the opportunity to use existing assets instead of building new ones. Meetings have been held with the Royal Borough of Greenwich to agree next steps in using their existing berth.

The operation of the existing auto-mooring system is being reviewed ready to undertake a feasibility study to understand options available to deliver more reliable auto-mooring in the future and to build a strong business case.

Telent have begun preparations for installing our customer Help Points at ferry terminals.

A proof of concept to provide real-time journey information for the ferry service will be trialled during the year to inform next steps with a further project.

Work is ongoing on the linkspan (a type of drawbridge used to allow moving vehicles on and off the ferry in changing tide conditions) and the works are on target to complete by August 2024.

London Overground renewals

We have considered a procurement route through Network Rail for the replacement of the East London line signalling control system. After careful consideration, a new procurement strategy has been developed for TfL to tender the new system through its own tender process. A decision on this approach will be reviewed and agreed by July 2024.

Rhomberg Sersa UK were selected to replace a total of 2,300 insulated track baseplates within the Thames tunnel. They delivered 135 insulated baseplates and prepared a further 1,000 of the new baseplate locations over the 2023 Christmas period. Further preparation of 400 locations was carried out under possession in March 2024. There have been issues with ground conditions and they have opted to amend their delivery mechanism for the baseplates. They are currently conducting off-site trials to ensure the programme is robust. The works are forecast to be complete in March 2025.

Work has started on replacing the redundant BT Kilostream circuits that control the traction power switches for the East London line. BT, Dyer & Butler and Motion Rail are all collaborating on this project, which is expected to be delivered in July 2024.

The final Class 710 train (train 54) was entered into passenger service on 22 March 2024. These trains, alongside the Class 378 trains, ensure a reliable service across the London Overground network. The Class 710 trains also offer additional passenger benefits such as Wifi and USB ports, and have enhanced visual passenger information displays.

DLR renewals

Procurement activities for the renewal portfolio continue, with priority given to critical and safety-related projects. We are looking to achieve efficiency where possible through early engagement with our contractors to understand where value can be achieved.

The replacement bogie frame project for the B92 train type is progressing well. DLR has, in consultation with the franchise operator, developed a new strategy to recover spare bogies from the B92 units being scrapped, which has resulted in a £700,000 saving to the programme while maintaining a sufficient spares. The delays to the introduction of the new trains will increase the pressure on bogie frame replacements, with additional units required. Wheel slip protection trials have been completed. Software installation has begun for the plan to upgrade all I10 train units.

Long-line public address system works are now finished and migration is ongoing to bring the new system online. This system is used for station announcements, which are essential for evacuations as the majority of DLR stations are unstaffed. Automatic people counters rod server migration is complete, and a contract has been awarded to replace the DLR transmission network.



Signalling

Station controllers are an integral part of the DLR signalling system and the equipment is becoming obsolete. A replacement contract has been awarded to Thales, following a successful negotiation. The existing first-generation station controllers will be replaced with fourth-generation controllers which will support the rollout of the new DLR trains in 2024 and expansion of the DLR network.

The project is now looking to ensure that work required to integrate the new trains, funded through the Government's Housing Infrastructure Fund, is combined to reduce any risks on operational requirements. Loop cable renewal continues with the majority changed on the west, Stratford International and east routes of the network.

High-voltage projects

High-voltage projects were impacted by the UK Power Networks (UKPN) sub-station fire at Poplar in March 2022. As a result, UKPN completion of power supply was delayed until July 2024, requiring some key projects to be re-programmed so as not to affect services. The Poplar direct current (DC) switchgear has been commissioned into service. Custom House DC replacement switchgear is commissioned into service. Works have completed on shore supply at Beckton and have begun at Poplar depot, which provides power in the workshops to move trains without the third-rail traction system. Poplar depot power supply has been sectionalised and works completed at Royal Mint Street for additional low-voltage supply to the substation. A contract has been awarded to replace eight transformer rectifier units to support the new trains project.

Low-voltage renewals

Canary Wharf and Heron Quays low-voltage renewals are progressing, with Heron Quays planned to be completed in Quarter 4. West India Quay lighting renewal has been commissioned into service. Poplar low-voltage renewals are complete, including the migration to the new switchgear.

An opportunity has arisen to change the ceiling tiles at Canary Wharf, for which we have completed the scope, and the works are ready for tender. Low-voltage distribution upgrade works continue, with 80 per cent of the works completed. Tenders for the remaining LED renewals work are being reviewed, ready for appointment in the first quarter of 2024/25.

Platform resurfacing

The second phase of platform resurfacing has started, with designs approved for All Saints, Royal Albert and Prince Regent. Construction work has begun at Royal Albert, with the team using existing possessions and engineering hours. We have completed the Bank tunnels cross-passage door surveys, which will allow us to agree product selection with our contractors. Station equipment rooms surveys have started to ascertain the scope required to bring the rooms to meet fire-rating standards. A contract to replace the existing carbon dioxide fire suppression with a technical gas has been awarded and has begun.

Track fixing

Track-fixing works continue, and we completed more than 1,000 baseplates in Quarter 3. Switch and crossings renewals of 1,126 points were undertaken over Christmas, during a week-long closure. Trials have started at Bank tunnel to mitigate against structural clearance issues.

Lift upgrades

The lift system upgrade project has started on the next phase of 46 lifts. Three escalators at Cutty Sark have been refurbished and returned to service. Two escalators at South Quays have returned to service following refurbishment. Work has begun on lift renewals at Westferry, Limehouse, City Airport, King George and Star Lane. We have also begun mid-life refurbishment on the escalators at East India and Canary Wharf.

London Trams renewals

Our renewals programme continues across five asset groups: rolling stock, power, civils, systems and permanent way infrastructure.

Installation work for both the wayside and on-tram upgrades to communications equipment are now complete, and we have completed the correct-side door enabling system on the Bombardier CR4000 trams.

Track renewals

The first phase of the East Croydon and George Street track renewal was successfully completed during the track closure in February 2024 and the second phase was completed in the second closure in April 2024. The ballasted track renewal at Sandilands junction was also completed in the April 2024 closure.

We have initiated site surveys and design work for future track renewals projects, such as Shirley Hills road crossing, Kent Gate Way road crossing, Saffron Curve and Barclays Curve embedded track renewals, and Mitcham Interlace ballasted track renewal. These projects are expected to be on site in 2025.

Birkbeck tram stop

We completed site investigations to replace the retaining wall and step-free access ramp at Birkbeck tram stop and identified that an updated design is needed. The design plans have been issued to the contractor for pricing and the works are planned to start in 2024, subject to funding.

London Trams depot

In May 2022, we awarded a contract to replace fire doors at the London Trams depot and ensure compliance with current fire safety standards. However, due to supplier delays, works restarted in October 2023, and the fire doors were completed in March 2024. The compartmentation aspects have been rescheduled for delivery in August 2024.

The contract for TfL's first net zero carbon project – Therapia Lane depot decarbonisation – is ready to be awarded, with work currently forecast to start in Quarter 3 of 2024/25.

Tram control system renewal

The feasibility study for the tram control system renewal to replace critical life-expired components is ongoing and will complete in Quarter 2 of 2024/25.

London Underground renewals

This programme delivers critical renewals across multiple asset groups that form an integrated transport system, including whole-life asset interventions on our train systems and wider infrastructure. The programme also includes renewals for the Elizabeth line and our colleague welfare projects



London Underground renewals

Forecast period	Gross cost to date (£m)	Gross cost to go (£m)	Forecast cost (£m)	Programme and Project Authority (£m)	Variance: Forecast cost v authority (£m)
2022/23 to 2025/26	752	802	1,554	3,721	2,167
Change since last Investment programme report					
No change	148	(242)	(94)	No change	

Financial commentary

Quarter 4 closes the 2023/24 financial year with strong performance observed throughout, delivering £431m of costs to date. There was £148m of cost to date between Quarters 3 and 4, as TfL reports 13 periods, Quarter 4 includes four periods of reporting rather than three.

The key movements this quarter are observed across the Central line improvement programme (£13m), Fleet overhauls (£34m), Track (£45m) and Systems and infrastructure (£31m), with the balance delivered across remaining asset categories.

Cost to go and forecast cost have reduced by £242m and £94m respectively, due to the rephasing of spend until after 2025/26 and being outside of the reporting period. This reflects the recent asset strategy reprioritisation as part of 2024/25 budget setting.

The variance between cost to go and authority is due to requested authority for years beyond the reporting period.

Performance over time commentary

Between 2022/23 and 2023/24, London Underground renewals have delivered £752m of spend to date. In the year to date, £29.6m of cost reductions and efficiencies have been delivered. The reduced cost to go between Quarters 3 and 4 is due to a further reprioritisation exercise.

Network-wide track renewals

In Quarter 4, we converted 3,092 metres of bullhead rail with the more modern flat-bottom form. We also completed 518 metres of deep tube renewal (DTR) reconditioning works, thereby improving reliability and reducing noise.

Weekend possessions this quarter delivered the following:

- In January, 288 metres of ballasted track renewal (BTR) through Sudbury Town westbound platform on the Piccadilly line and 133 metres of new drainage, three catch pits and an under-track crossing

- In February, 131 metres of BTR, 36 metres of track drainage and new train arrestor installation at Acton Town sidings and renewal of five points and crossing units at Northfields station on the Piccadilly line
- In March, 195 metres of BTR between Kings Cross St Pancras and Farringdon and 189 metres between Gloucester Road and South Kensington

Victoria line (fleet overhaul and depot control system renewals)

We completed installation of the pressurised ventilation system, coupler overhaul, trailer wheelset overhaul, phase 1 of door works across fleet and phase 2 of door works on 32 of 47 trains..

Metropolitan line (fleet overhaul)

Overhaul of bogies (the structure which supports the train carriages and includes wheels, bearings, and axles) is progressing to plan, with 57 of 60 trains completed.

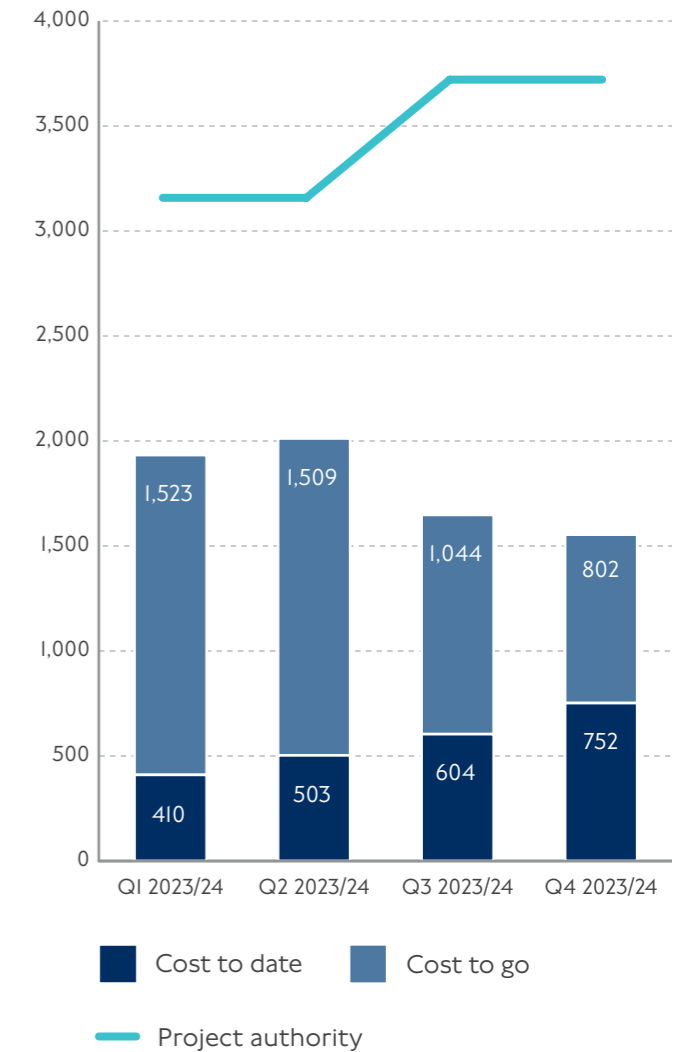
Metropolitan line (Liverpool Street escalators)

We completed civils enabling works and started delivery of the three escalators ahead of schedule. Parallel works to the electrical and fire systems continue as planned.

District line (fleet overhaul)

We are progressing with preparations and work scoping to start overhaul of the S7 fleet (Circle, District and Hammersmith & City lines) in 2025/26 at a reduced rate of one train per period due to financial constraints.

London Underground performance over time (£m)



Jubilee line (fleet overhaul and component renewal)

We completed programmed lifts on 28 of 63 trains. In March 2024, we awarded the contract to repair the underframe cracks.

Jubilee line (station communication and ventilation systems)

In March 2024, we completed station communication systems renewals and brought them into operational use at all sites. This includes software migration to the new management integration and control of assets system which now operates the public address systems, customer information screens and customer Help Points at nine stations on the Jubilee line between Westminster and Stratford.

We are progressing on schedule with works to upgrade the obsolete tunnel ventilation control panels and refurbish the fans of the staircase pressurisation system from Southwark to Canning Town and intermediate shafts. The overall ventilation programme is scheduled to finish in September 2026.

Jubilee and Central lines (escalators)

In Quarter 4, we delivered three escalator refurbishments at Bank, Canada Water and London Bridge stations.

We are working on the next three refurbishments at Bank, London Bridge and Canning Town stations, which are currently forecast to be returned to service by the end of June 2024. These works continue to incorporate the opportunity to renew fire linear heat detection systems in the escalator machine chambers.

Jubilee and Northern lines (incremental signalling upgrade)

We are progressing with detailed design for the replacement of central computers on the Northern line, with installation works started for the first pair of computers. The design for works to replace the train operator displays on both lines were completed in May 2024.

Northern line (Kentish Town escalators)

We completed enabling works and both new escalators have been installed, allowing for electrical works to begin. Remedial works to platform tiling and ticket hall ceiling and floor has begun. The station is due to re-open to the public in September 2024.

Piccadilly line (fleet overhaul and signalling renewals)

We completed programme lift and phase 1 door overhauls. We also completed approximately 90 per cent of phase 2 door overhauls.

Piccadilly line (Holloway Road lifts)

Due to further issues experienced in commissioning the new type of controller, lift 1 was returned to service on 4 June 2024, and the replacement of lift 2 is expected to start by the end of June 2024. This will allow further work to ensure the new lift performs as designed and provides the required level of reliability.

Central line (fleet and signalling renewals and incremental signalling)

In Quarter 4, the first refurbished train successfully operated through-tunnel runs and served an equivalent of 50,000 passenger journeys.

The Central line signalling life extension and Control and information projects continue to make progress on obsolescence and maintainability by replacing key assets on the Central line.

In March 2024, in collaboration with Siemens, there was a successful 52-hour closure on the east end of the Central line. New assets were tested and commissioned to replace obsolescent signalling room assets at Debden, Epping, and Theydon Bois.

Feasibility and planning for the first tranche of the incremental upgrade to the signalling interlocking computers on the east end of the line continues, with full contract award expected in the first quarter of 2026.

Bakerloo line (fleet overhaul, LED lighting conversion and signalling upgrade)

We completed the overhaul of traction motors and wheels. Work is continuing on programme lift (50 per cent completed), heavy overhauls (60 per cent completed) and trailer wheels (15 per cent completed).

We achieved 100 per cent LED conversion on the fleet in April 2024. Ten trains are also fitted with wheelchair bays and the new passenger information system passed live testing on the line.

We continue to install the key signalling and control interface equipment in lineside rooms. Fifteen out of 16 sites have been finished, with Waterloo recently completed as planned. Cable installation and some initial testing has begun.

Bakerloo line (Marylebone escalators)

The work was finished on the final escalator replacement in September 2023.

In Quarter 1, we completed station welfare renewals works and fire hydrant upgrade works are progressing to programme.

We also completed work on the gateline and the final Bostwick gate and panelling works are due to complete in July 2024.

Bakerloo, Central and Waterloo & City lines (accessibility)

Public consultation on London Underground application to extend the rail vehicle accessibility regulations exemption for the Bakerloo line to the end of 2029 closed on 28 March 2024. We responded to consultation comments so that the application can be considered when Parliament returns after the Easter recess.

Rail adhesion train

We completed overhaul of Central line rail adhesion trains, and the project is now closing. Preparations are in progress to begin overhaul of District line rail adhesion trains, with the scope of works agreed.

Mechanised track renewal vehicle

We've made final adjustments to the mechanised renewal vehicle (MRV) following consultation with trade unions, including the addition of a deployable ladder for welfare access. Final trials of the vehicle will take place by September 2024, following which the MRV will be available for booking for other project works.



London Underground renewals improve accessibility and safety

Modular points and crossings

We are continuing assurance works to guarantee that Kirow cranes are safe to use in sub-surface environments. Remaining open and tunnel sections tandem lift safety assurance approvals are due to be delivered by November 2024.

Remote track monitoring

The project is delivering new equipment which will be installed on two wagons to enable track condition recording. This will increase service reliability and provide critical data to keep the network safe. A feasibility study to determine the next phase of the project was completed in April 2024 and is currently under review.

Engineering vehicle overhauls

The battery locomotive and repair process for the bogie frames is currently under trial, with completion expected by the end of June 2024. Successful completion of this testing will enable the full production programme for the bogie frame repair and overhaul to begin. This will be an integral part of the battery locomotive overhaul programme, including a similar strategy for the traction motors.

In addition, we have mobilised a new workshop facility at our Acton works depot to enable directly employed maintenance teams to carry out overhaul works on our fleet of engineering wagons. The facility is now up and running and work on the first two wagons to be overhauled is ongoing, and due to complete at the end of June 2024. We expect to be able to achieve a beat rate of two wagon overhauls per period by mid-2024. Work to overhaul one of our Matisa tampers began in February and is expected to complete in mid-2024.

Network-wide water ingress remediation

A single tender return was received for a design and build contract for works at Mayor Sworder's Arches substation, but was non-compliant. Feasibility work is being carried out to develop a solution (scheduled to be completed by the end of June 2024) in advance of concept design update and procurement for the build.

Because of resource constraints, concept design completion for St Paul's and Chancery Lane stations has been delayed from August to December 2024 and detailed design for Liverpool Street and Charing Cross stations is now planned for completion in June 2025.

Network-wide cutting and embankments

We continue works to stabilise the cutting between Grange Hill and Chigwell stations on the Central line to ensure safe running of the railway, including strengthening the N31 footbridge and drainage works. The project is due to finish on site in late June 2024.

Cabins are now coming off site and reinstatement works will start shortly. The contractor has identified that the original programme for the reinstatement works was unrealistic, since it did not fully account for all on site activities nor for inclement weather, which resulted in the reprofiling works being put on hold.

Procurement of topographical, ecology and vegetation clearance at Finchley Central and Mill Hill East stations and at Triangle sidings is ongoing. Ground investigation survey works started on site in April 2024 between Debden and Loughton and between Northolt and South Ruislip. Procurement of a constructability report for North Acton to Hanger Lane is also ongoing.

Plaistow power substation roof replacement

We delivered all works, and the project is moving to close, expected, which is planned for July 2024.

Station platform remediation works

Remedial works at 10 sites (delivery phase 1) will start in July 2024 and are scheduled to complete in December 2024. The delay to start on site is due to the contractor's IT system being compromised and the need to ensure the issue had been rectified, as well as a new project management team being assigned to support project delivery.

We began procurement for remedial works at 14 sites (delivery phase 2). Contract award is due in March 2025, with start on site in July 2025.

Design of the remaining platforms selected for remediation is continuing, and site works for those are scheduled to start in June 2025.

Welfare facility renewals

We started site works at Goldhawk Road, Westbourne Park and Royal Oak stations. Designs at five further sites are nearing completion. Procurement for five substation facilities is ongoing, with tenders for two further sites released in May 2024.

Smoke and heat exhaust ventilation systems

We are replacing and refurbishing the life-expired components that form part of the smoke and heat exhaust ventilation systems located in the roofs of Bermondsey station and Stratford Market depot. We started site works at Stratford and works are scheduled for completion in late 2024.

Secondary lifts (supporting step-free access)

Due to further delays in receiving the electrical designs, the works at Green Park have been delayed by a further two months. Start on site at Green Park was achieved on 5 May 2024.

Works at Hounslow East and Bermondsey stations are progressing to plan.

Uninterruptable power supply (UPS)

Rolling replacement of the UPS is continuing as planned. Ten have now been commissioned on the Victoria and Jubilee lines, with 16 being manufactured for completion in 2024/25.

Offline battery power inverters

As part of the replacement programme, 20 units have been successfully commissioned so far, and a second tranche of 40 are being manufactured, with the first unit factory-tested and installed in May 2024. These new units include product development changes and recycling of key components that will help mitigate the obsolescence risk of the remaining units.

A separate market engagement has been conducted and contract specifications are being prepared for further units as part of the strategy work on the longer-term solution.

Traction power

Design work to replace isolation switches in sidings were planned to begin in 2024/25 but will need to be deferred to prioritise spending in more critical areas.

A replacement switchboard at Holborn has been installed and pre-commissioning activities completed in March 2024. Full commissioning into service was achieved on 28 April 2024, a little later than planned, to ensure additional operational requirements were addressed.

LED lighting

We continue work at all three depots, with Ruislip and Hainault 95 per cent complete. Work will slow in 2024/25 due to constrained funding.

LED conversion at King's Cross St Pancras station is currently 20 per cent completed. The conversion will be completed by the end of 2024/25.

Small station conversion continues, with 17 stations fully completed in 2023/24. This is lower than projected, however a number of the larger stations in this classification have been completed. The replacement rate of 1,000 lamps per period has continued as planned. This will reduce carbon output by 360 tonnes next year.

East Ham wall rebuild

We are undertaking a gap analysis of the feasibility work with a contractor.

A combination of access licences and processes under the Party Wall etc. Act 1996 are being arranged for 28 properties that border the railway. Site works are expected to start in Quarter 3 2024/25.

Elizabeth line renewals

The Ilford staircase replacement works were completed during the February blockade and the Ilford platform 4 roof replacement works finished in April 2024.

Works to install tactile paving at Manor Park and Romford stations were completed, as well as the replacement of the footbridge tiling at Chadwell Heath.

The project to replace obsolescent lighting with new LED fittings at Canary Wharf is currently underway.

The completion of remaining voltage transformer renewals has been delayed to the end of June 2024, due to Network Rail possession availability.

Railway systems enhancements

We continue delivery of the Northern line signalling software updates, with the most recent update being commissioned in January 2024. This update rectifies non-safety-related issues that the service controllers encountered at Highgate control centre and the train operators experienced on the rolling stock operator displays.

These software updates address residual issues and requirements following completion of the Northern line extension and the Bank station closure works. The final software release is scheduled for Quarter 3 2024/25. This has been rephased to accommodate other projects that are dependent on the same supplier key resources, including the Four Lines Modernisation and DLR rolling stock replacement programmes.

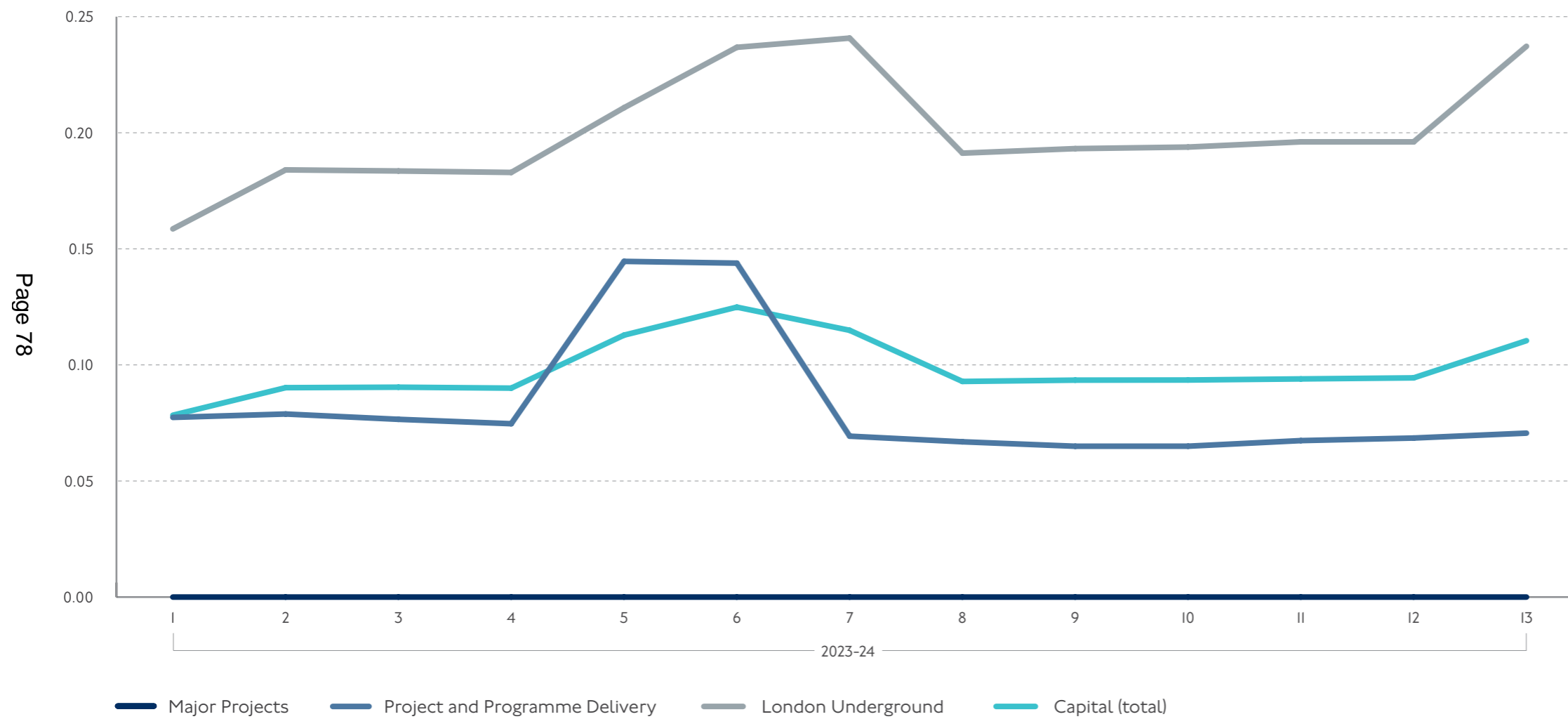
Delivery of Jubilee line signalling software updates continues. The final software release is currently scheduled for Quarters 3 and 4 2025/26. This is dependent on successful delivery of the Four Lines Modernisation programme on the Jubilee line taking place in Quarter 2 2024/25.

Appendix

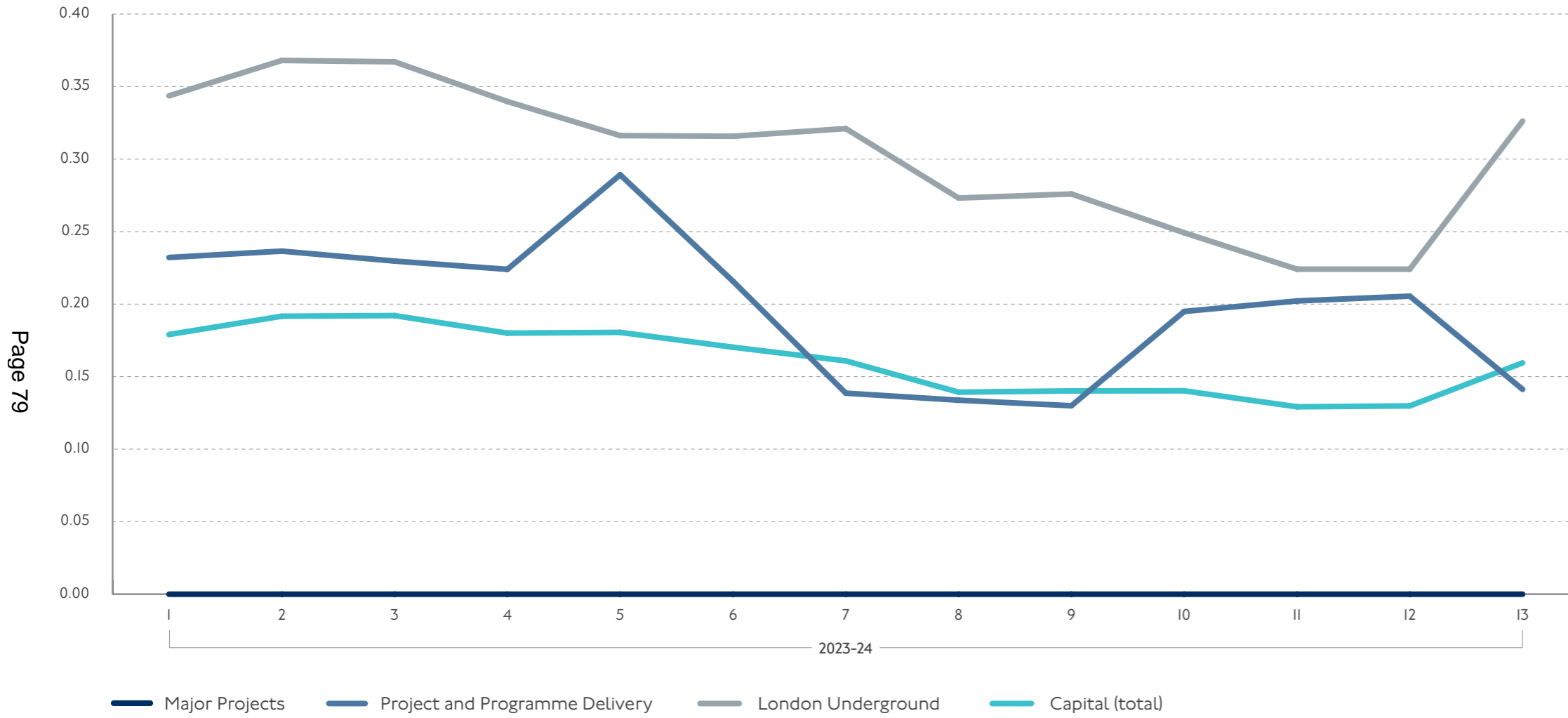
Our safety performance data

We track the number of injuries among our workforce to show our progress towards our safety ambitions

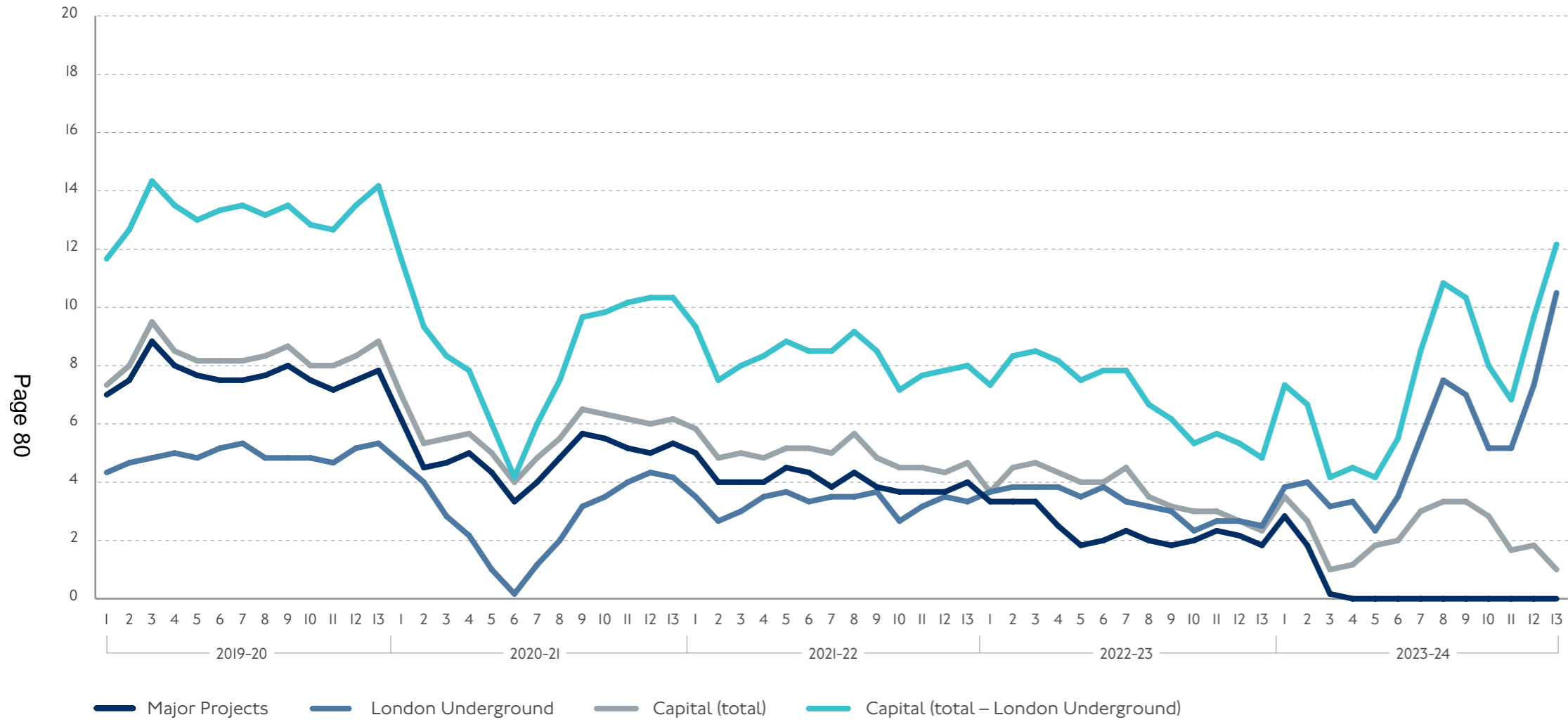
RIDDOR accident frequency rate
(per 100,000 hours worked)



Lost time injury frequency rate
(per 100,000 hours worked)



Total Capital workforce injuries
(six-period average since 2018/19)



About us

Part of the Greater London Authority family led by Mayor of London Sadiq Khan, we are the integrated transport authority responsible for delivering the Mayor's aims for transport. We have a key role in shaping what life is like in London, helping to realise the Mayor's vision for a 'City for All Londoners' and helping to create a safer, fairer, greener, healthier and more prosperous city. The Mayor's Transport Strategy sets a target for 80 per cent of all journeys to be made by walking, cycling or using public transport by 2041. To make this a reality, we prioritise safety, sustainability, health and the quality of people's experience in everything we do.

We run most of London's public transport services, including the London Underground, London Buses, the DLR, London Overground, Elizabeth line, London Trams, London River Services, London Dial-a-Ride, Victoria Coach Station, Santander Cycles and the IFS Cloud Cable Car.

We manage the city's red route strategic roads and are responsible for the maintenance, management and operation of more than 6,000 sets of traffic lights across the capital. The London boroughs are responsible for all the remaining roads within their boundaries. The experience, reliability and accessibility of our services are fundamental to Londoners' quality of life. Safety remains our number one priority and we continue to work tirelessly to improve safety across the network for both colleagues and customers.

Our vision is to be a strong, green heartbeat for London. We are investing in green infrastructure, improving walking and cycling, reducing carbon emissions, and making the city's air cleaner. The Ultra Low Emission Zone, and fleets of increasingly environmentally friendly and zero-emission buses, are helping to tackle London's toxic air. We are also improving public transport options, particularly in outer London, to ensure that more people can choose public transport or active travel over using their vehicles.

That is why we are introducing the outer London Superloop bus network, providing express bus routes circling the entire capital, connecting outer London town centres, railway stations, hospitals and transport hubs.

We have constructed many of London's most significant infrastructure projects in recent years, using transport to unlock economic growth and improve connectivity. This includes major projects like the extension of the Northern line to Battersea Power Station and Nine Elms in south London, as well as the completion of the London Overground extension to Barking Riverside and the Bank station upgrade.

The Elizabeth line, which opened in 2022, has quickly become one of the country's most popular railways, adding 10 per cent to central London's rail capacity and supporting new jobs, homes and economic growth. We also use our own land to provide thousands of new affordable

homes and our own supply chain creates tens of thousands of jobs and apprenticeships across the country.

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

We are constantly working to improve the city for everyone. This means using information, data and technology to make services intuitive and easy to use and doing all we can to make streets and transport services accessible and safe to all. We reinvest every penny of our income to continually improve transport networks for the people who use them every day. None of this would be possible without the support of boroughs, communities and other partners who we work with to improve our services. By working together, we are creating brighter journeys and a better city.

Programmes and Investment Committee



Date: 26 June 2024

Item: Independent Investment Programme Advisory Group
Quarterly Report

This paper will be considered in public

1 Summary

- 1.1. This paper presents the Independent Investment Programme Advisory Group's (IIPAG) quarterly report for June 2024. It describes the work undertaken since the last report presented to the Committee in February 2024.
- 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 Recommendation

- 2.1 **The Committee is asked to note the Independent Investment Programme Advisory Group's quarterly report 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 June 2024 is included as Appendix 1 to this paper.

4 Management Response

TfL Assets

- 4.1 We recognise and agree with the IIPAG findings regarding the Streets, Bus and Rail and Sponsored Services Renewals Programme and elsewhere in TfL.
- 4.2 The current position on the condition of TfL assets is the direct result of constrained TfL finances. This has meant that over the last seven years TfL's asset investment has been considerably lower than previously planned or required to effectively maintain TfL assets. This has resulted in a steady decline of asset condition and the current position with a lower level of asset resilience and an increasing reliability risk across TfL services. This is evidenced by the increasing impact on and disruption to services due to asset faults.

- 4.3 To ensure we fully understand the risks and associated impacts, and to inform decision making, we are placing greater emphasis on asset condition through senior level meetings (including the Executive Committee) and the TfL business planning process and Members will be briefed as part of this process. An asset management steering group has been established for escalation of asset risks, development of improvement workstreams and balancing of investment priorities. Asset risks including Enterprise Risk ER06 (Deterioration of operational performance) are also presented to the Executive Committee and the Customer Service and Operational Performance Panel to ensure they are fully aware of any emerging concerns. Business planning for this financial year has placed an increased emphasis on asset condition and risks, and detailed network and asset plans are being developed to ensure all senior stakeholders are fully sighted on the asset risks prior to and during key investment decision making.
- 4.4 Greater financial certainty will help us address our asset condition and in parallel we will continue to improve our asset management and deliver efficiencies. We are progressing a number of asset management improvement initiatives to maximise the impact of investment. These initiatives include digitising of asset management, optimising delivery planning, improved decision support systems, activity-based budgeting and understating the whole life costs of asset ownership.

Cross Cutting Reviews

- 4.1 TfL welcomes the work IIPAG is undertaking on cross cutting reviews, and we look forward to the outputs from the current reviews for which we will provide the necessary management responses to the recommendations made.

List of appendices to this report:

Appendix 1: Independent Investment Programme Advisory Group - Quarterly Report June 2024

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

List of Background Papers:

None

Contact Officer: Andrea Clarke, General Counsel
Email: AndreaClarke@tfl.gov.uk

Independent Investment Programme Advisory Group – Quarterly Report June 2024

1. Introduction

- 1.1. This report to the Committee describes the Independent Investment Programme Advisory Group (IIPAG) activities in March 2024 – May 2024. We have made no new strategic recommendations.

2. IIPAG Activity

- 2.1. We have undertaken three programme level reviews in this period covering:
- (i) Four Lines Modernisation (4LM);
 - (ii) Street, Bus and Rail and Sponsored Services (RSS) Renewals;
 - (iii) Rail and Station Enhancements.
- 2.2. We are also undertaking continuous assurance on the Piccadilly Line Upgrade Programme (PLU) and continue to provide third line assurance for the Elizabeth Line.

3. Common Themes

- 3.1. Recent IIPAG reviews, in particular the Streets, Bus and RSS Renewals review, have reinforced our ongoing concerns over the condition of TfL assets. There appears to be an increasingly firm consensus amongst those responsible for the maintenance and renewal of TfL's assets that declining asset condition and the increased number of assets with higher levels of risk will lead to increasing levels of unpredictability and a greater likelihood that assets will have to be taken out of service in the next few years. This is already happening (for example the A40 slip road and Brent Cross last year) and is likely to accelerate, impacting services and putting greater pressure on budgets.
- 3.2. In our view TfL's renewals posture is becoming increasingly reactive driven by an annual funding envelope and a long-term lack of investment in renewals. This has meant prioritising in-year failures and emerging priorities using a short-term risk-based approach rather than based on long-term asset condition and minimising whole-life costs. In some parts of the network, for example trams and Docklands Light Railway, several asset groups are approaching their end of life simultaneously (fleet, track, and signalling and control). The current renewals budget is insufficient to improve or even stabilise condition across all these major asset groups simultaneously.
- 3.3. We consider that it is especially important that levels of asset risk, the future trajectory and the implications of increasing levels of failure for service disruptions are clearly articulated to senior management and the TfL Board members, both to

raise awareness around future customer and policy change risks, and also to make the case for the appropriate level of funding.

4. Cross-cutting work

4.1. We are currently finalising our reports on the Pathway process for projects, and on the effectiveness of the first and second lines of assurance. These will be covered in our next quarterly report to the Committee.

4.2. We have two reviews underway:

- i. A review of how TfL takes account in the investment programme of targets to reduce carbon emissions.
- ii. Our second piece of work on Renewals (following our earlier review of the Delivery of Renewals). This second piece is looking at the earlier stages of prioritisation and workbanks.

4.3. We are also considering TfL's progress in implementing the recommendations of IIPAG's 2021 review of value for money, and our review of asset information.

5. Work Programme for 2024/25

5.1. Our work programme for 2024/25 has been approved by the Audit and Assurance Committee. It includes proposals for IIPAG to undertake cross-cutting work in the following areas:

- Effectiveness of Pathway Gates Part 2: Programmes
- Aspects of value for money (which may be incorporated into other cross-cutting reviews)
- Programme and project schedules
- Investment Governance
- Annual review of Effectiveness of Line of Assurance (LOA)1 and LOA2
- Progress with Procurement and Commercial improvement plans

5.2. We will also keep engaged with the Programme Management Office, including in their review of Barking Riverside Extension following a request from the Audit and Assurance Committee to investigate the cost and schedule performance of major projects.

Alison Munro
Chair, IIPAG

June 2024

Programmes and Investment Committee

Date: 26 June 2024

Item: TfL Project Assurance Update



This paper will be considered in public

1 Summary

- 1.1 This paper provides an update on the Project Assurance (PA) work undertaken between 7 January and 25 May 2024 (Period 11 of 2023/24 to Period 2 of 2024/25). Three programme reviews were undertaken during this time, with the Independent Investment Programme Advisory Group (IIPAG) involved in all of them. In the same timeframe 17 project reviews were undertaken, with IIPAG involved in four of these.
- 1.2 These reviews gave rise to a total of 79 recommendations, of which three were considered to be critical issues. Critical issues are those that the PA 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 This paper provides the Committee with a summary of the second line assurance, provided by TfL's PA team. It also gives an update on the status of assurance recommendations including those made as part of third line assurance, provided by IIPAG.

4 Summary of Project Assurance Activity

- 4.1 From the reviews undertaken, TfL Project Assurance made 58 recommendations, of which two were critical issues. All of the recommendations have been agreed by the project teams concerned.
- 4.2 IIPAG made 21 recommendations, of which one was a critical issue. The recommendations were all agreed with the respective project teams.

5 Status of IIPAG and Project Assurance Recommendations

5.1 The following graphs show the number of open recommendations, the number that are overdue, and the number closed as at the end of Period 8 2023/24 (ending 11 November 2023), Period 10 2023/24 (ending 6 January 2024) and Period 2 (ending 25 May 2024).

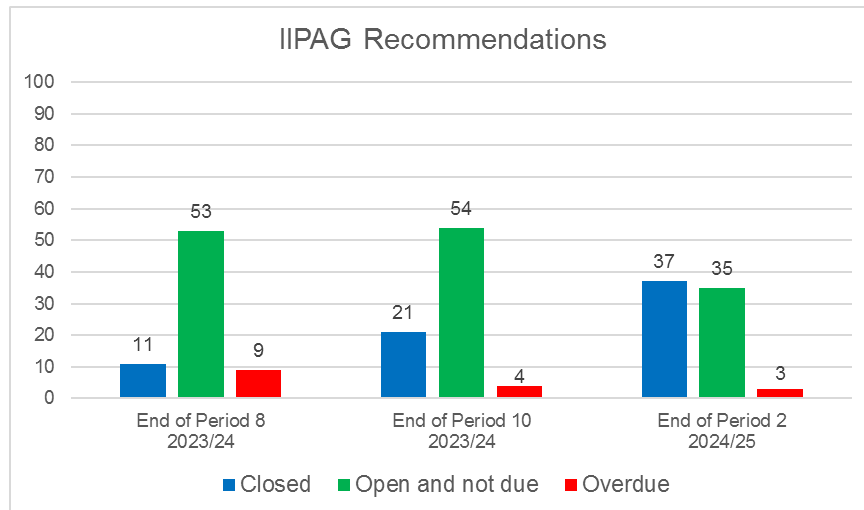


Figure 1: IIPAG Recommendations

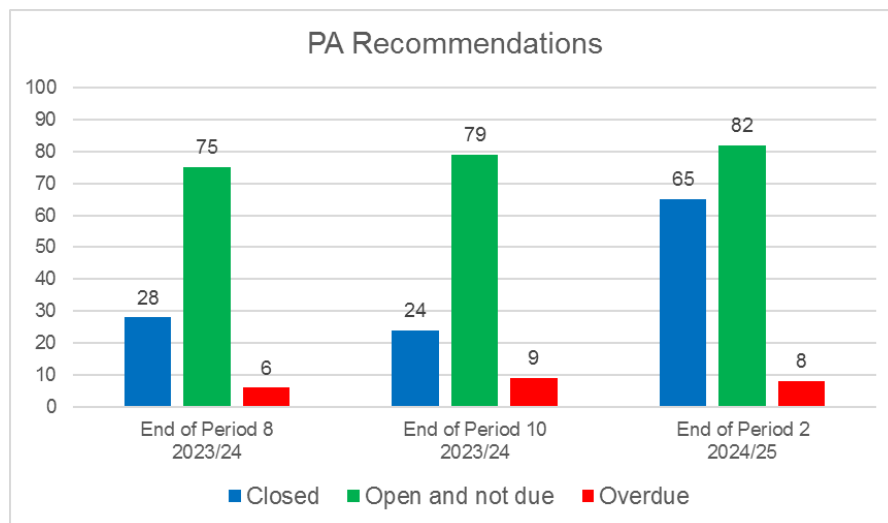


Figure 2: Project Assurance Recommendations

5.2 The following graphs show the length of time that the overdue Project Assurance and IIPAG recommendations have been overdue by, as at the end of Period 2, and the Chief Officer area responsible for addressing the recommendations.



Figure 3: Overdue IIPAG Recommendations



Figure 4: Overdue Project Assurance Recommendations

5.3 The following graph shows the number of recommendations made over the last four quarters grouped by recommendation topic. This is shown against the number of recommendations made in the previous year.

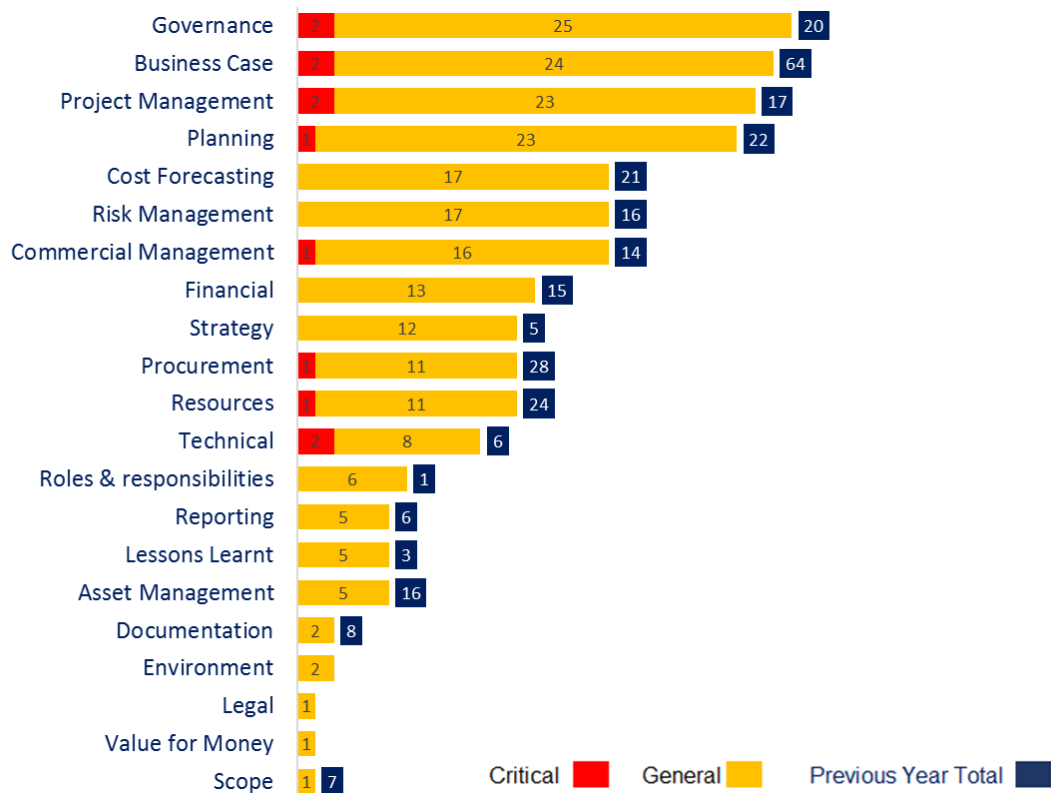


Figure 5: Project Assurance Recommendations by Topic (Totals over last four quarters versus previous year)

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

Contact Officer: Andrea Clarke, General Counsel
 Email: AndreaClarke@tfl.gov.uk

Programmes and Investment Committee

Date: 26 June 2024

Item: London Underground Four Lines Modernisation Programme

This paper will be considered in public

1 Summary

- 1.1 The purpose of this paper is to update the Committee with progress on the delivery of the London Underground (LU) Four Lines Modernisation (4LM) Programme (the Programme).
- 1.2 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

2 Recommendations

- 2.1 **The Committee is asked to note the paper and the exempt supplementary information on Part 2 of the agenda and:**
 - (a) **approve additional Programme and Project Authority for the sum set out in the paper on Part 2 of the agenda;**
 - (b) **approve additional Procurement Authority for the Automatic Train Control signalling contract for the sum set out in the paper on Part 2 of the agenda;**
 - (c) **approve the transfer of Programme and Project Authority (granted by the Committee in July 2022) and Financial Authority for the signalling element of the works at Aldgate Junction to the London Underground Renewals Programme for the sum set out in the paper on Part 2 of the agenda; and**
 - (d) **note that the matters for which Authority is sought above extend beyond the period of the 2024/25 Budget and 2024 Business Plan. Provision will, therefore, need to be made for them in future Business Plans and Budgets.**

3 Background

- 3.1 The LU Sub-surface Railway (SSR) consists of four lines – the Metropolitan, District, Hammersmith & City and Circle lines. Between them these four lines carry one million passengers per day, representing a quarter of overall LU ridership, and cover over a third of the LU network in terms of track kilometrage.
- 3.2 The 4LM Programme comprises the replacement, modernisation and integration of life-expired assets (signalling, rolling stock, track, power and depots) on the SSR. This will add capacity (through longer trains and improved train frequency) and improve journey times. The 4LM Programme is the largest single upgrade in the history of the network and one of the most ambitious signalling upgrade programmes in the world. Due to its scale and interoperation with other LU lines, Train Operating Companies and Network Rail, it has a high level of complexity. Although we already have Automatic Train Control on the Victoria, Jubilee, Northern and Central lines on the LU network, the scale and complexity of upgrading the four lines of the SSR in one programme is a global first and is transforming the overall experience for our customers.
- 3.3 The renewal of life-expired assets is essential to ensure we have a reliable asset base which can be maintained at an affordable cost. Future demand and operational costs will determine the higher frequency timetable introduction dates once the capability provided by the new signalling is delivered.
- 3.4 In July 2015, the Board approved Programme and Project Authority of £5,412m to undertake the Programme. Subsequent requests to increase Programme and Project Authority were approved by the Committee in July 2021 and July 2022.
- 3.5 The Programme consists of 192 new trains, infrastructure changes, upgrades to three depots, which will maintain the trains, and new signalling (and associated signalling works). With the full introduction of the new fully walk-through, air-conditioned trains in 2016, most of the work is now complete, except for the remaining signalling works on parts of the Metropolitan and District lines.
- 3.6 A contract was awarded in July 2015 to Thales Ground Transportation Systems UK Limited to signal the SSR with an automatic, modern signalling system (noting that on 31 May 2024 Hitachi Rail announced the acquisition of Thales' Ground Transportation Systems business).
- 3.7 Given the scale of the programme, the SSR has been split into sections (known as Signal Migration Areas or SMAs) for the purpose of introducing the new signalling system.
- 3.8 Since the awarding of the signalling contract in July 2015, our forecast completion date for commissioning the new signalling system has been delayed. This is principally owing to challenges with complex software development, testing and commissioning, closure availability and the impact of the coronavirus pandemic.
- 3.9 As previously reported to the Committee in July 2023, 4LM is a complex and challenging programme and remains under both schedule and cost pressure as we progress with the development and commissioning of the most complex areas.

- 3.10 Since July 2023, the Committee has been regularly updated (through the Investment Programme Report updates) on Programme progress and challenges including the latest schedule and cost position.
- 3.11 A review of the schedule and cost has been undertaken which has informed the requested change to the Programme and Project Authority sought in this paper.

4 Project Update and Challenges

Signalling Infrastructure Works

- 4.1 Since the last update to the Committee in July 2023, we have made significant progress in the design and installation of the remaining trackside signalling assets with installation of these assets now substantially completed (a very small number of assets remain outstanding as they require a more complex installation method; these assets are due to be completed by the end of 2024).
- 4.2 With these trackside assets now in place, the 4LM Programme is now principally focused on the development, implementation and testing of the signalling software to enable the go live of the new signalling system in the remaining signalling migration areas.

Signalling Software Development and Testing

- 4.3 Following the successful commissioning of SMA6 (Stepney Green to Becontree) and SMA7 (Dagenham East to Upminster) in 2023, the new automated signalling system is in operation through 62 stations, including the whole of the Circle and Hammersmith & City lines, as well as the east end of the District line. For comparison purposes, the Jubilee line has 27 stations. This means that two of the four sub-surface lines (and around 57 per cent of the Tube network in total) is now operated by an automatic train control signalling system. The signalling migration area map is attached as Appendix 1 and shows the sections of the SSR now operating under the new automatic train control signalling system.
- 4.4 The remaining areas still to go live with the new signalling system include the Metropolitan line north of Finchley Road (SMAs 8, 9, 13 and 14) and small sections of the west end of the District line from Barons Court to Stamford Brook and Fulham Broadway to East Putney.
- 4.5 The Metropolitan line areas are the most technically complex areas in the Programme and present significant unique challenges associated with the integration of the new signalling system with the Jubilee line and Neasden depot train control software, along with the management of manually driven Chiltern trains and integration with the Piccadilly line.
- 4.6 There are also additional challenges arising from the restricted access opportunities (due to sporting and entertainment events at Wembley and the need for closures significantly impacting on a combination of the Metropolitan line, the Jubilee line, the Piccadilly line and Chiltern Railway operations) and the training requirements to support operation of the interoperable areas (which are significantly greater than for previous migration areas).

- 4.7 In the past year significant progress has been made in developing and testing the signalling software in the next two areas to go live, SMA8 (Finchley Road to Preston Road) and SMA9 (the Harrow area) with positive progress in software development and successful site system testing being undertaken. This has increased our confidence in the maturity of the software for go live and enabled a better understanding of the challenges of these complex areas and therefore the schedule to complete.
- 4.8 The next SMA to be commissioned, covers the Metropolitan line between Finchley Road and Preston Road (SMA8). This area is one of the most complex on the London Underground network. Metropolitan line trains share tracks with Jubilee line trains and the signalling system needs to enable trains from both lines to enter and exit the depot at Neasden.
- 4.9 We have increased our confidence in the system integration for this complex area through significant off-site testing, ensuring that we optimise efficient use of on-site planned closures. This includes successful works undertaken during a closure on 10-11 November 2023 to test the connection between the control systems of the Jubilee and Metropolitan lines to ensure communication between them. On 13-14 April 2024 we completed further system testing during a weekend closure with more testing planned for July 2024. This is a step forward towards achieving our planned commissioning milestone for this area in early 2025.
- 4.10 Beyond SMA8, further progress was made in October 2023 when we completed the second system test for SMA9 in the Harrow area, successfully testing the integration of Chiltern trains with the new signalling system for the first time. We continue to make positive progress in maturing the software development for this area ahead of our third system test planned for later this year.

Signalling Go Live

- 4.11 While we have made positive progress in the signalling software development and testing over the last year, there have been ongoing challenges and pressures to the software schedule due to the technical complexity of the software development required.
- 4.12 Since the last update to the Committee, in July 2023, our forecast commissioning dates for the remaining SMAs have been revised. We are now targeting SMA8 to go live in early 2025 and the final section of signalling, SMA14 (Rayners Lane to Uxbridge) to go live in 2026.
- 4.13 The revised software schedule reflects an updated assessment of the timescales for development, testing and commissioning and completion of operational readiness activities.
- 4.14 This follows a detailed collaborative review with our signalling supplier specifically focusing on the next two SMAs to go live (SMAs 8 and 9) with consequential updates to the schedule for the remaining SMAs beyond this (and to the estimated cost of the programme). Additional time is needed for development and testing of these complex areas to ensure reliable operations once these areas are commissioned.

- 4.15 Closures are required to enable the installation, testing and commissioning of the new signalling and to familiarise Train Operators with the new system. We have had to carefully balance the use of weekend closures to support the programme whilst also keeping the railway open to customers and planning around major events in London.
- 4.16 The revised schedule also reflects the impact on our signalling software schedule arising from the need to accommodate additional fixes to resolve two software issues identified in the commissioned system. This was not unexpected, given the complexity of the signalling system, and these fixes were successfully implemented in August 2023.
- 4.17 The revised commissioning schedule for the remaining SMAs represent target dates and there remain challenges to achieving these. We continue to work collaboratively with our signalling supplier to review opportunities and mitigate future risks associated with the delivery of the remaining signalling migration areas including assessing the benefits of different delivery strategies.

Timetable changes

- 4.18 The successful commissioning of SMAs 6 and 7 in January and March 2023 allows further runtime improvements to be included in a planned timetable change in early 2025. This will enable a five to 10 per cent improvement in average journey times between Stepney Green and Upminster.
- 4.19 This adds to journey time improvements of around five per cent on average on the Circle and District lines between Monument, Fulham Broadway, Barons Court and Paddington that were introduced in September 2022 and the journey time improvements of up to 10 per cent introduced on the north side of the Circle line through a timetable change in September 2021.
- 4.20 As a result of the delays to the signalling software roll out, as previously reported to the Committee in July 2023, the timetable frequency improvements cannot be introduced by the dates originally planned in 2015.
- 4.21 We continue to review the implementation dates for service frequency improvements based upon balancing passenger demand with operational costs, Network Rail timetable introduction dates, operational readiness and the dates at which capability becomes available (noting that further optimisation of the commissioned signalling software is required in certain areas).

Table 1: Movement of planned dates set at Programme and Project Authority in 2015

Timetable Milestones	2015 Planned Date	Current Forecast Date
Runtime Improvements (SMA3)	May 2021	Achieved September 2021
Runtime Improvements (SMA5)	N/A	Achieved September 2022
Runtime Improvements (SMA7)	N/A	Planned early 2025
30 trains per hour (in the central area)	December 2021	The implementation dates for service frequency improvements remain under review as described above.
32 trains per hour (in the central area)*	May 2022	
24 trains per hour Metropolitan Line	December 2021	
26 trains per hour Metropolitan Line	December 2022	
28 trains per hour Metropolitan Line	May 2023	

*Achievement of a reliable 32 trains per hour service level is also dependent on the renewal and remodelling of Aldgate Junction currently targeted for summer 2027.

Depots

- 4.22 Upgrade works at Ealing Common Depot, bringing new facilities to allow maintenance of the new train stock, were completed in 2022. Along with the already completed upgrade of Upminster Depot, we have now delivered casualty and planned maintenance facilities for the District, Hammersmith & City and Circle line trains.
- 4.23 The Heavy Maintenance Facility upgrade works at Neasden Depot achieved a significant milestone with the Bringing into Use of the Long Shed in July 2022. This has enabled critical door maintenance capabilities for the Depot. In the past year the team have made progress with the awarding of contracts for the remaining packages for the Heavy Lifting Shed and the new Staff Accommodation building. The works has experienced some delays owing to challenging ground conditions with a high volume of buried cables and pipes within excavations that were not detailed in records. Once complete in 2025 these facilities will enable the planned overhaul of the new trains and provide much needed welfare facilities for the maintenance staff carrying out these activities.
- 4.24 The detailed design for the new staff accommodation block is close to completion and will include a number of sustainable technologies to minimise operational carbon and environmental impact including a solar panel system (with any excess

electricity feeding back into the LU supply network), LED lighting and a new efficient intelligent heating and cooling system.

Train Fitment

- 4.25 We continue to progress with the fitment of signalling equipment to our fleet of Engineering Vehicles with all 29 Battery Locomotives completed. Both D-Stock Rail Adhesion Trains have been fitted and have undergone dynamic testing and we continue with the fitment of the signalling equipment to our two Tamper trains. Commissioning of the signalling on all our Engineering Vehicles is planned to be completed alongside the go live of the final signal migration area (SMA14).

5 Benefits and Value

- 5.1 The introduction of the 192 new trains has delivered 25 per cent of the programme benefits which include:
- (a) the first step up in capacity while maintaining the current train service frequency as the new trains are longer, walk-through and carry more passengers;
 - (b) an improved customer experience with walk-through gangways, in-car CCTV, air conditioning, a Rail Vehicle Accessibility Regulations compliant saloon and improved Customer Information Systems; and
 - (c) the opportunity to recover energy through regenerative braking.
- 5.2 The introduction of the new signalling will deliver 75 per cent of the Programme benefits, which include:
- (a) speed increases which reduce journey times between stations; and
 - (b) the ability to run trains closer together increasing service frequency up to 32 trains per hour in the central area.

District line Branches

- 5.3 As reported to the Committee in July 2021, following a review assessing and challenging costs and schedules for the Programme, the western branches of the District line will not be re-signalled. This means sections of the District line south of East Putney and west of Stamford Brook will remain under the existing signalling. Journey times in these sections will remain unchanged, however, we can still increase frequencies to up to 16 trains per hour, as originally planned. We will also continue with works to improve the live customer information available on platforms in this area.

Metropolitan line Branches

- 5.4 There remains a strong case to continue with the re-signalling of the Metropolitan line north of Finchley Road. The re-signalling of the Metropolitan line differs from the District line branches because:
- (a) the existing signalling on the Metropolitan line is older than that on the District line. If it is not replaced the ongoing renewal and maintenance costs are significant and greater than the District line;

- (b) our planned step-change in passenger experience relies on the line being re-signalled. If we retain the legacy signalling, we will be unable to either reduce passenger journey times or increase train frequencies; and
 - (c) as we have substantially completed the installation works our opportunity to save costs by reducing scope are limited and outweighed by the ongoing renewal and maintenance costs of retaining the existing signalling.
- 5.5 Replacing life-expired signalling is key to achieving cost effective management of our asset base. Any immediate savings made by not signalling the Metropolitan line branches will result in higher spend in the longer term and will not achieve any customer benefits.
- 5.6 Despite cost pressure on the programme, there is a strong case to complete the remaining signalling migration areas, however the immediate affordability will be kept under review as the programme progresses.

6 Assurance

- 6.1 TfL Project Assurance and Independent Investment Programme Advisory Group (IIPAG) have undertaken their review of the 4LM Programme via continuous assurance. They have received detailed briefings from the project team and are fully aware of the issues and challenges on the 4LM Programme. In addition, TfL Project Assurance have undertaken a targeted review to support this submission to the Committee. All recommendations are being addressed, as detailed in the management response.

List of appendices to this report:

Appendix 1: Signal Migration Area map

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

List of background papers:

Independent Investment Programme Advisory Group Report

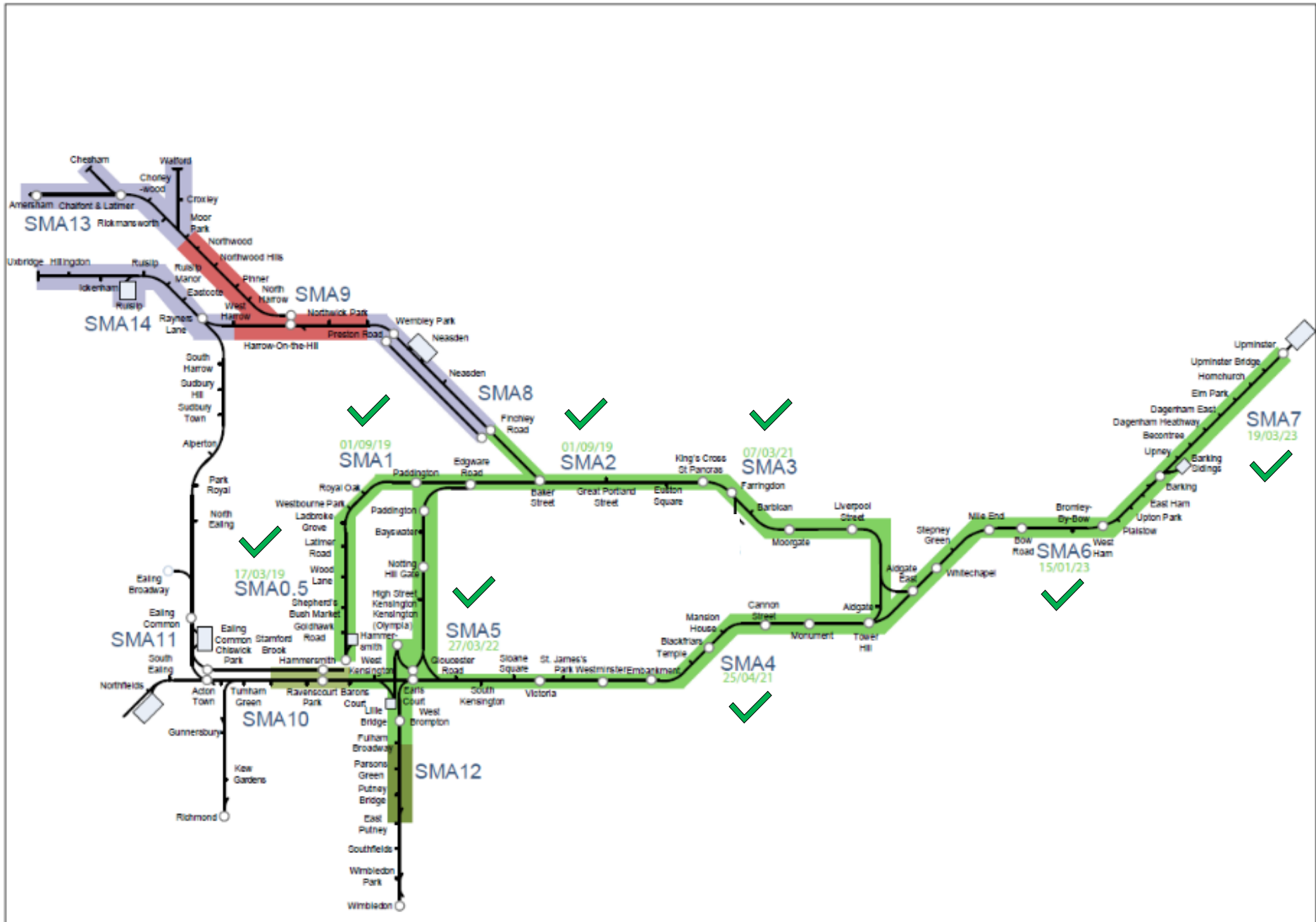
TfL Project Assurance Report

Management response to TfL Project Assurance Report

Contact Officer: Stuart Harvey, Chief Capital Officer
Email: StuartHarvey@tfl.gov.uk

Contact Officer: David Rowe, Director of Investment Planning
Email: DavidRowe@tfl.gov.uk

Appendix 1: 4LM Signal Migration Area map



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Programmes and Investment Committee



Date: 26 June 2024

Item: Streets, Bus and Rail and Sponsored Services Renewals Programme

This paper will be considered in public

1 Summary

	Existing Financial Authority (2024/25-2028/29)	Forecast (2024/25-2028/29)	Existing Programme and Project Authority (2024/25-2028/29)	Additional Programme and Project Authority Requested (to end 2028/29)	Total Programme and Project Authority (2021/22-2028/29)	Programme and Project Authority to be Requested in future years
Gross Cost	£889m	£889m	£468m	£0m	£1,440m	£421m
Income	£40m	£40m	£0m	£0m	£66m	£0m
Net Cost	£849m	£849m	£468m	£0m	£1,374m	£421m

Table 1 – Streets, Bus & Rail and Sponsored Services Programme

- 1.1 This paper provides an update to the Committee on the achievements and progress of the Streets, Bus and Rail and Sponsored Services (RSS) Renewals Programme (the Programme) since the last reports in May and July 2023. The paper will also summarise the financial allocations by main asset types and projects for 2024/25 and the associated outputs and provide assurance to the Committee on the progress of the Programme.
- 1.2 The Programme groups together renewals that were previously split across the Surface Assets and Public Transport Programmes. These Programmes shared many similarities and now, through joint oversight, improved investment prioritisation and efficiencies can be gained.
- 1.3 In May 2023, the Committee approved increased Programme and Project Authority of £109m through to the end of 2025/26 for the Streets and Bus elements of the Programme. In July 2023, the Committee approved increased Programme and Project Authority of £201m through to the end of 2025/26 for the Rail and Sponsored Services elements of the Programme. This paper represents the first submission for the whole of the Programme and no additional Authorities are sought in this paper.

2 Recommendation

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

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. Maintaining the health of the Programme's assets is essential to delivering all these themes as almost all journeys on London's transport system interact with the Programme. It is particularly important to ensure that renewal of critical assets takes place to maintain a safe, operable and reliable public transport network.
- 3.2 A prioritisation framework for all of TfL's capital renewals investment has been used to determine the Programme's budget, comparing the priorities against those in other Programmes and networks. The framework uses six Asset Management Objectives (AMOs) aligned to business objectives. The AMOs are safety, service, customer and staff, environment, capacity and growth, and finance. Current Levels of Service against the AMOs are established and future forecasts are made through the investment modelling using the scenarios outlined in section 5 below.
- 3.3 The Programme's budget for 2024/25 is £180m. This is affordable within the overall TfL Business Plan allocation of £795m for capital renewals. The Programme is ensuring that value for money by assessing forecast benefits against costs at both a sub-programme level and in respect of individual projects. For larger and more complex projects individual business cases have been developed, with examples including the DLR Station Controllers project and Gallows Corner Flyover. This provides a good understanding value for money for most of the programme.
- 3.4 In addition to an established asset prioritisation process, we are now reviewing project scope and any notable changes in asset condition on a periodic basis. This enables us to proactively slow down projects that are less important (confirmed through an asset strategy review) in favour of accelerating other projects in the Programme dependent on the priority need. This is building on the success of delivery performance in 2023/24. We will continue to undertake efficiency challenges with regular re-baselining in the asset work-banks to ensure the most important projects proceed.
- 3.5 The Programme comprises multiple projects that deliver essential asset renewals, managing the state of good repair (SOGR) to provide safe and operable networks. The assets covered by this paper include TfL highways, traffic, highway structures, bus infrastructure, river piers, DLR, London Overground, London Trams, Cable Car, Cycle Hire, Woolwich Ferry and London Buses. The Programme also covers the Local Implementation Plan funding for borough principal road resurfacing and borough bridge strengthening. More detail on the sub-assets can be found in the appendices.
- 3.6 Investment in the Programme since 2018/19 has averaged £98m per annum in Street renewals and £60m in RSS renewals. For comparison, typical steady state investment per annum prior to 2018/19 in Streets was around £150m to £200m; while RSS Renewals would need an additional £50m to £80m per annum to clear the backlog of renewals. Considering the impact of inflation, the level of investment is significantly lower than pre-2018.

- 3.7 In 2023/24, around 50 per cent more expenditure was required to maintain the networks and services in a steady state and remove the backlog of renewals; this has now increased to around 70 per cent. As a result, it has been necessary to defer certain works. This will result in further asset deterioration, the introduction of additional network restrictions and increased operational expenditure. This will also place additional pressure on future years' budgets because as the assets deteriorate further, they will require more extensive, and therefore more expensive repairs.
- 3.8 As a result of the reduced level of investment there is a significant backlog of renewals with further details provided in Appendix 1.
- 3.9 The Programme has significant planned investments in major renewals such as Rotherhithe Tunnel and signalling across the DLR and Trams trackwork to address high priority asset risks and obsolescence. The required funding to address all of these is significant (up to £800m through to 2028/29) and not all planned activity is affordable from TfL funding alone.
- 3.10 Alternative funding for these major asset renewals is essential to progress some of the projects, such as through the Department for Transport's (DfT) Major Road Network (MRN) programme. In April 2024, the DfT approved the Outline Business Case for Gallows Corner Flyover – this is an important milestone but continued funding through this route is critical.

Environmental objectives

- 3.11 The Programme contributes to positive environmental benefits through avoiding asset failure and therefore the resulting congestion, longer journeys and associated environmental disbenefits. The Programme also delivers renewals that improve TfL environmental performance and contribute to the net zero by 2030 goal, by seeking to deliver construction activity and ongoing operations that minimise environmental impacts. However, due to constrained budgets, the type and extent of environmental benefits achieved will be limited without additional funding. Examples of where the Programme delivers environment benefits include:
- (a) all lighting renewals will be LED;
 - (b) carbon modelling is currently completed for highway structures and track renewals. We are developing plans to implement this approach for all assets from this year to inform decision making;
 - (c) planting of additional trees and shrubs, where appropriate; and
 - (d) building renewal projects will maximise opportunities to improve environmental performance, such as through the provision of green roofs, solar panels and heat pumps.

Asset duties and responsibilities

- 3.12 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. We also follow the duties under the Road Tunnel Safety Regulations 2007 for the safe management and operation of road tunnels and the Greater London Authority Act 1999 to act as the Traffic Authority for traffic signal assets.

3.13 The Railways and Other Guided Transport Systems (Safety) Regulations 2006 provide the regulatory regime for rail safety, including the mainline railway, metros, tramways, light rail and heritage railways. We are required to meet the Office of Rail and Road (ORR) safety requirements to obtain the certification and authorisation required to operate trains, stations and infrastructure. The need to meet the health and safety standards set by the ORR, as well as other relevant health and safety legislation, drives many renewals projects.

Maintaining assets in a State of Good Repair

3.14 State of good repair (SOGR) describes the condition in which we seek 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.

3.15 Table 2 shows examples of the current SOGR across various asset groups in the Programme. Target ranges across TfL typically score between 85 and 95 per cent. The SOGR is expected to deteriorate further in 2024/25 due to the 'budget constrained' funding scenario; consequently, there will be increased likelihood of assets being restricted or taken out of service to maintain safety.

Table 2: Current State of Good Repair

Asset	Current SOGR (%)	Target Range (%)
Carriageway	88	85-95
Structures	79*	85-95
DLR: Lifts & Escalators	63*	85-95
DLR: Track	90	85-95
DLR: Power	75*	85-95
Trams: Track	75*	85-95

*These assets are below the current target of SOGR.

3.16 Details of how SOGR is measured and calculated are provided in Appendix 2.

Obsolescence concerns

3.17 Obsolescence is an increasing concern which has become more significant due to reduced level of investment and assets coming to the end of their life expectancy. Examples of obsolescence include software signalling systems across the DLR and Trams. These systems are complex, resource-intensive and take a significant time to replace (up to five years). Work has been initiated to commence these projects. Other examples include removal of the production of tungsten halide

lamps and fluorescent tubes which has an impact across the asset base, particularly in station lighting and traffic signals. This lowers the ability for a like for like replacement during a maintenance event. Risk of obsolescence is mitigated by storing and securing spares from the supply chain and the widespread LED installation programme, which continues to be a key driver in maintaining the investment in traffic signals.

Impact on Operations

3.18 The reduced level of investment has had a significant impact on operations with increased temporary closures, increased interim measures to keep the network safe and substantial pressure on maintenance budgets. The societal costs in terms of this include additional congestion, increased journey times and reduced reliability. Examples of network and asset impacts include:

- (a) Rotherhithe Tunnel – traffic restrictions in place with only cars permitted;
- (a) A40 Westway – speed restriction (40mph to 30mph), numerous short closures to implement reactive safety works (expansion joint repairs) and closure of the north-west slip road from the A40 Westway to A3220 West Cross Route in August 2023;
- (b) A20 Drainage scheme – speed reduction and enforcement due to poor surface drainage;
- (c) A41 Brent Cross Flyover – load restrictions implemented in October 2022;
- (d) Gallows Corner Flyover – speed restriction from 30mph to 20mph, and weight restriction of 7.5 tonnes;
- (e) Trams – original fleet of trams rolling stock is now 24 years old and is reaching end of its design life and there is a regular shortfall in service. The impact of this has been an increase in short notice cancellations until trams are fixed and returned to service;
- (f) DLR – the Rolling Stock Replacement Programme of the new DLR train fleet will replace the current B92s. However, until these new trains are in operation mitigation work continues to current rolling stock such as replacement of bogie frames and additional vehicle overhauls.

3.19 The Programme has various interim measures that are specific to the asset type and form of deterioration; for example, for Streets and Rail we could typically include speed restrictions, weight or operating restrictions, additional or more frequent inspections, or even closures. All these restrictions are likely to result in delays to our customers across the network.

4 Programme Delivery in 2023/24

4.1 The total investment across the Programme in 2023/24 was £206m. This is £15m above the Budget and is because of dropped prior year accruals (i.e. where final accounts have confirmed costs are lower than initially estimated). This has allowed us to deliver increased outputs, which has been achieved through progressing

design work to enable accelerated delivery of critical renewals, as well as utilising budget availability from the wider TfL Investment Programme.

- 4.2 Appendix 3 provides a summary of progress made with the key Programme investment and outputs for 2023/24. 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. Overall, we had an improved level of delivery and managed to secure some additional funding to progress several critical renewals which otherwise would have been delivered in 2024/25.
- 4.3 Programme and Project Authority which was approved in 2023/24 for the continuation of the Programme had a portion allocated to the DLR Station Controllers project that has been extended by a year to the end of 2028/29. This aligns with the schedule subsequently agreed at contract award.

Challenges in 2023/24

- 4.4 Challenges in 2023/24 included securing network access to complete works and some projects were delayed as a result. This challenge was mitigated by developing a work-bank of projects which were brought forward when required.
- 4.5 In DLR a delay in introducing the new Rolling Stock Replacement Programme has in turn introduced a delay in commencing procurement of the mid-life overhauls for the existing fleet of B2007 trains. This is impacting on train fleet availability. We are now capturing the impacts on our renewal programme as they arise.
- 4.6 In London Overground the replacement of 3,000 baseplates in the Thames Tunnel was not achieved due to supplier access issues and unforeseen complexity of delivery. There was also an unsuccessful procurement part of the signalling control system replacement. For both renewals lessons learnt activities have been completed.

5 Programme delivery for 2024/25

Option assessment

- 5.1 To inform the 2024/25 Programme, the following scenarios were considered in addition to those modelled last year (see Appendix 4). These two new scenarios are based on the Budget Constrained funding scenario within the TfL Business Plan but focus on different delivery outputs.
- (a) Budget Constrained (Option 3a): This scenario considered the outputs and outcomes forecast if the Business Plan allocation was targeted at business-as-usual projects and interventions, rather than currently unfunded high-cost renewals. This impact of this option is that the high-cost renewal projects, for example Rotherhithe Tunnel, would continue to deteriorate and have an increasing risk of further restrictions or prolonged closures. This was chosen as the funded scenario as more of the asset base can be treated and therefore more risk is mitigated than under Option 3b.

- (b) **Budget Constrained (Option 3b):** This scenario considered the outputs and outcomes forecast if the Business Plan allocation was targeted at high-cost renewals projects instead of the business-as-usual activities. The impact of this option is that condition across the wider asset group would continue to degrade and so increase the number of high-cost renewals in future. This is due to a lack of low-cost early interventions being unfunded, resulting in an increase in high-cost end of life treatments to fully restore asset condition being required across the estate. In addition, the current Business Plan allocation is not sufficient to fund all the high-cost renewals identified.
- 5.2 A prioritisation process was followed to assess which projects across the different asset groups and networks were the most urgent and deliver the most value against the AMOs. Following this, an Asset Assurance Safety Review was undertaken for each asset area to capture residual safety risks and identify mitigations needed.
- 5.3 To manage the Programme efficiently, critical renewals in 2024/25 have been identified to the value of £216m (i.e. £43m above the £173m TfL Budget). This represents a work-bank 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 to determine whether additional commitments can be made. This will include ongoing review of asset priorities to ensure the best value for money investment. This approach gives maximum flexibility to ensure a safe and operable network is maintained.

Value for Money

- 5.4 There are a wide range of investments in this Programme, which collectively make contributions to all five of TfL's Strategic Priorities: Customer, Colleague, Safety & Security, Green, and Finance. The largest monetised value contribution is to outcomes supporting the 'Customer' priority, as these investments help to keep the network safe, and therefore operable, minimising closures, and the consequent delays and disruption.
- 5.5 Typical value for money associated with most of the investments in this Programme are in the 'high' and 'very high' categories. The standalone major projects such as the MRN initiatives have benefit cost ratios calculated, for example Croydon flyover has a Benefit to Cost Ratio (BCR) of 10:1 (£10 of public value back for every £1 spent), and for Gallows Corner flyover, the BCR is even higher.
- 5.6 We are confident that the robust prioritisation approach to activity in this Programme, described in sections 5.1 and 5.2, maximises the value for money from the budget we have available. Asset modelling and historical performance trends have been used to assess the SOGR that we expect this planned investment to achieve. Overall, we expect asset condition to continue to deteriorate, leading to more defects and our backlog of renewals increasing. With more things to fix than we have the budget for, the Programme has had to focus investment on the highest safety and reliability risks, compromising optimal timing of spend, and value for money over the long-term.

- 5.7 Projects are assessed to ensure value for money is fully considered when selecting delivery, and procurement, options. For example, the A40 Westway project has recently considered a range of traffic management options balancing capital costs, asset risk, deliverability, and network impacts to inform decision making.
- 5.8 Benefits monitoring and evaluation activity during the development, design and operation phases of investments in this Programme is significant. Its aims and objectives are to ensure the end benefits are safeguarded and optimised, value for money is maximised, and lessons to be learned are fed back and embedded in future plans. Comprehensive activity associated with the major schemes is planned and being scoped, for example we are developing detailed plans to validate the expected benefits of our MRN projects.
- 5.9 Work is ongoing to fully capture the benefits delivered at year end for the Programme over and above SOGR and network safety.

Delivery in 2024/25

- 5.10 Appendix 5 details the planned expenditure and forecast outputs for each of the assets in 2024/25. Key activities planned include:
- (a) A40 Westway – delivery completed for work package 2a (seven expansion joint replacements);
 - (b) Kingston Cromwell Road bus station – bus station major renewal completed;
 - (c) Brent Cross Structures – concept design completed and advanced strengthening work delivered;
 - (d) Gallows Corner – detailed design completed and build commenced subject to DfT approval of the final business case (the outline business case was approved earlier this year);
 - (e) the Asset Capital Programme – multiple critical asset renewals completed covering all Surface asset types, including: 90,000sqm of carriageway resurfacing; 180 new bus shelters; four bridge and structure renewals; and 12 bus driver welfare room renewals delivered;
 - (f) DLR – multiple critical renewals across several asset areas, including: platform resurfacing at three stations and realigning copers at 11 stations; Transmission Network; low voltage renewals at Herons Quay; replacement of DC circuit breakers at Beckton Substation; B2007 Data Recorders and Door Nosing Rubbers, continue design phase for Station Controllers; and replacement of two crossovers at Poplar and Beckton;

- (g) London Overground – multiple critical renewals across several asset areas, including: procurement of Saft¹ 48v rectifiers and spares, continued design for GSM-R² and Transmission, and delivery of Kilostream³; canopy and roof refurbishment and platform resurfacing, design at Hackney Downs; Windrush line Signalling Control System, Thames Tunnel baseplates;
- (h) Trams – multiple critical renewals across several asset areas, including: Sandilands water ingress; drainage remedial works; renewal of the cab doors, rooftop cabling and flooring on the CR4000 tram fleet; Control Room upgrade at Therapia Lane Depot; Lineside Isolator Cabinet renewal; Sandilands ballasted track renewal; and East Croydon and George Street embedded track renewal;
- (i) Woolwich Ferry – Rolling asset maintenance on ferry terminal linkspan, installation of ferry service customer information improvement projects;
- (j) Buses – Deliver a further 51 refurbishments, over half the New Routemaster fleet will have been refurbished;
- (k) Cycle Hire – 620 e-bike replacements to be delivered; station relocations and repairs; and
- (l) Cable Car – ship impact protection and replacement of ventilation.

5.11 Due to the lack of further funding available in 2024/25, several projects will not progress, including:

- (a) Tunnels projects, including the renewals at George Green and Green Man Tunnels, have been paused;
- (b) procurement for the major renewals at Westminster and Bankside piers has been paused;
- (c) borough roads and bridges investment is significantly lower than previous years with only the highest priority activity progressed;
- (d) DLR – some track fixings; Bank Tunnel reconditioning; LED Lighting projects; Custom House water supply, where the station has no water supply therefore deep cleaning is not possible;
- (e) London Overground – mid-life overhaul of 378 trains; Seven Sisters escalator overhaul; West Anglia wall refurbishment;

¹ Saft – a company that provides high technology batteries used by the railway system

² GSM-R – the Global System for Mobile Communications-Railway for comms between drivers and signallers

³ Kilostream – installation and commission of new circuits to replace existing services withdrawn by BT

- (f) London Trams – eight projects associated with the replacement of CR4000 fleet, track pipeline, digital radio and passenger counting system;
- (g) Woolwich Ferry – terminal tower works; boiler replacement and improving North Terminal capacity works; and
- (h) Cycle Hire – station repairs, customer information updates.

5.12 Many activities will continue beyond 2024/25, such as progressing the design on Brent Cross structures and delivery of DLR Station Controllers. This authority request therefore covers the period through to the end of 2028/29.

6 Programme Risks and Milestones

Programme risks

6.1 The top risks associated with delivery of the Programme are shown in Table 5 below.

Table 3: Top risks from Streets, Bus and RSS Renewals Programme

Risk No	Risk Description	Mitigation Actions
1	Reduction of capital 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. A work-bank of projects is in place so additional priority schemes can readily progress where possible. Projects with third party funding opportunities, including through the Government's MRN Programme, are prioritised with business case submissions to secure funding planned.
2	Emergency works may be required (e.g. Rotherhithe Tunnel)	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.
3	Supply chain resilience due to investment being below planned levels	Regular engagement with the supply chain to ensure investment plans are clearly communicated. A work-bank of schemes has been produced that enables underspend across the business to be utilised at short notice.
4	Resource shortages including difficulties in recruitment retention	Succession planning and nurturing our staff. This includes the creation of a robust plan to cover illness, leave, and staff who move on with an action plan.

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 work-bank approach described. Periodic reviews of the Programme risks are held with escalations reported at the Programme Review meeting. On larger projects (e.g. the A40 Westway, DLR Station Controllers and Rotherhithe Tunnel) risk is held at project level.

Programme Milestones 2024/25

6.3 The strategic milestones are shown in Table 4 below.

Table 4: Strategic Milestones

Delivery Team	Project	Milestone	Target Date
Chief Capital Office: Rail & Sponsored Services	East Croydon & George Street Track Renewal	Completion of Trams Track Renewal	05/05/2024 (achieved)
Chief Capital Office: Infrastructure	MARP A40 Westway	Work Package 2a Start on Site	16/09/2024
Chief Capital Office: Rail & Sponsored Services	Woolwich Ferry Resilience and Renewals - Maintenance Grid	Commence construction of upgraded maintenance facility to support essential work to vessels leading to increased availability for customers and cost savings.	06/10/2024
Chief Capital Office: Infrastructure	Kingston Bus Station Redevelopment	All works completed on site and bus station back in use to the travelling public.	30/10/2024
Chief Capital Office: Infrastructure	ACP Stations and Stands Programme	12 Bus Drivers Welfare Rooms Completed in 2024/25	31/03/2025

7 Financial Implications

- 7.1 The 2024 TfL Budget provides the Financial Authority needed to deliver the scope of the works set out in this request. Of this, £7.3m of this relates to additional third party funded traffic signal and bus infrastructure schemes, along with DfT funding (i.e. there is no net impact on TfL funding).
- 7.2 The Programme's Financial Authority and the Programme and Project Authority is shown in Table 5 below.

		Actuals	Actuals	Actuals	Business plan forecast					Total forecast to 28/29	Authority - Years to 28/29
Rounded to £m		21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29		
Financial Authority											
Programme Total		169	176	190	180	197	158	166	189	889	1425
Budget or Plan	TfL Element	162	168	179	173	188	150	158	181	849	1358
	Third Party Funding	7	8	12	7	8	8	8	8	40	67
Programme forecast											
Programme Total		169	176	206	180	197	158	166	189	889	1440
Budget or Plan	TfL Element	162	169	194	173	188	150	158	181	849	1374
	Third Party Funding	7	7	12	7	8	8	8	8	40	66
Authority request											
Programme and Project Authority	Committee Approved	169	176	206	180	147	79	55	7	468	1020
	Additional authority requested	-	-							0	0
Future Authority Requests						49	79	111	182	214	421

Table 5: Summary of the costs and funding

*Value of work done in 2023/24 (£206m) is higher than Budget (£190m) due to the effect of prior year dropped accruals

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 customers and customers with disabilities. The programme to improve SOGR is therefore expected to benefit people in both these groups. Equality Impact Assessments will be completed on projects as required.

9 Assurance

9.1 TfL Project Assurance conducted an Integrated Assurance Review on the Programme in April 2024. An independent review was also undertaken by the Independent Investment Programme Advisory Group (IIPAG). Both TfL Project Assurance and IIPAG highlighted the challenges and risks of a deteriorating asset condition which is generally below desired levels of SOGR and is continuing to decline. Reduced investment means that the number of assets with higher levels of risks is rising across all areas. The review identified three general recommendations.

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: Investment backlog summary
- Appendix 2: State of Good Repair
- Appendix 3: 2023/24 actuals and forecast outputs
- Appendix 4: Investment modelling scenarios
- Appendix 5: 2024/25 budget allocations and outputs

List of Background papers:

- IIPAG and TfL Project Assurance Reports
- Management response to IIPAG and TfL Project Assurance Reports

Contact Officer: David Rowe, Director of Investment Planning
Email: davidrowe@tfl.gov.uk

Appendix 1: Backlog summary

Asset	24/25 allocation	Estimated backlog	Estimated average steady state annual budget	Annual funding gap	Estimated backlog in 5 years
Bus Stops and Shelters	£3.75m	£23m	£11m	-£7.25m	£60m
Bus stations, garages and stands	£3.9m	£11.7m	£10m	-£6.1m	£42m
River Piers	£0	£17.2m	£5m	-£5m	£42m
Victoria Coach Station	£1.2m	£30m	£3.5m -£5m	-£2.5m	£43m
New Routemasters	£1.2m	£5.8m	£7m*	-£5.8m	n/a
Dial-a-Ride	£0	n/a	n/a	n/a	n/a
Highway Structures	£40.85m	£850m	£70m -£100m	-£40m	£1.2bn
Tunnels	£3.25m	£270m	£5m -£10m	-£3.5m	£290m
Pumping Stations	£0.1m	n/a	£5m	-£5m	£25m
Carriageways, footways and cycleways	£7.5m	£52m	£20m	-£12.5m	£115m
Drainage	£2.7m	n/a	£3m -£5m	-£1.5m	£7.5m
Street lighting	£3.45m	£51m	£7m -£10m	-£6.5m	£85m
Vehicle restraint systems	£6m	£34m	£5m -£10m	-£2m	£44m
Green infrastructure	£0m	£0.1m	£0.5m	-£0.5m	£2.5m
Minor Capital Interventions	£5m	n/a	n/a	n/a	n/a
Traffic signals	£9.8m	£54m	£10m -£15m	-£4m	£94m
CCTV	£0m	£0.3m	£0.5m	-£0.3m	£2m
Safety cameras	£3.1m	£18m	£2m -£4m	£0m	£18m
Over-height vehicle detection	£0m	£4.2m	£0.4m	-£0.4m	£6m
Variable message signs	£0m	£5.8m	£0.4m	-£0.4m	£8m
Total Road, Bus and River	£92.5m	£1.3bn	£150m	-£57.5m	£1.9bn

Asset	24/25 allocation	Estimated backlog (millions)	Estimated average steady state annual budget	Annual funding gap	Estimated backlog in 5 years
DLR	£29.70m	£234.0m	Being developed		
London Overground	£7.50m	£12.9m			
Trams	£23.10m	£219.0m			
Woolwich Ferry	£3.10m	£0.6m			
Cycle Hire	£3.50m	0			
Cable Car	£0.80m	0			
Total RSS	£67.7m	£467m			

Appendix 2: State of Good Repair (SOGR)

- 1.1 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.
- 1.2 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.
- 1.3 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. Additionally, face-to-face surveys with customers have illustrated they do not expect a “perfect” asset and accept that at times repairs are required.
- 1.4 Therefore, a carriageway SOGR of 88 means 88 per cent (or 510km) is not in need of renewal based on the latest condition data, but 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, but 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.

Appendix 3: 2023/24 actuals and forecast outputs

	Sub-programme	Allocations Feb/July 23 (£m)	2023/24 Actual spend (£m)	2023/24 expected output	2023/24 actual output
Assets Capital Programme	Borough Traffic Signal Modernisation	10	16.9	45 controllers renewed	77 controllers renewed
	TLRN Traffic Signal Modernisation			72 designs	110 designs
	Capital Renewal - Footway	0.5	2.6	3,441sqm network treated	8,858sqm network treated
	Capital Renewal - Lighting	3.9	7.9	400 columns and 505 luminaires replaced	558 columns and 681 luminaires replaced In year cost increased due to site specific traffic management requirements
	Capital Renewal - Drainage	1.5	1.8	131,114sqm network treated	107,095sqm network treated
	SCOOT loop Renewals	2.3	2.3	2,000 loops renewed	2,000 loops renewed
	Stations and Stands Annualised Programme	5.9	10.4	8 Driver welfare builds	8 Driver welfare builds
				2 Civils builds	2 Civils builds, including Victoria bus station acceleration
				1 CCTV renewal	3 CCTV renewals
				7 lighting renewals	10 lighting renewals
					Canada Water build completed
	CCTV/Variable message signs (VMS)	0.4	0.9	1 overheight vehicle detector (OVD) renewed	1 OVD renewed
				1 VMS renewed	2 VMS renewed
				Digital Video Network Protocol (DVNP) delivered	DVNP delivered
	Vehicle Restraint Systems (VRS)	4	3.4	7,193m VRS treated	5,934m VRS treated
Minor Capital Interventions	3	2.2	100 schemes completed	100 schemes completed	
Pump Stations	0.6	0.7	2 pump stations renewed 4 designs completed	2 pump stations renewed 4 designs completed	
	4.5	6.1	325 shelters treated	420 shelters treated	

	Sub-programme	Allocations Feb/July 23 (£m)	2023/24 Actual spend (£m)	2023/24 expected output	2023/24 actual output
	Stops & Shelters Annualised Programme			15 additional shelters lit	15 additional shelters lit
	Surface Asset Management Information Systems	0.6	0.8	6 minor capital works completed	6 minor capital works completed
	Capital Renewal - Carriageway	10.3	15.7	128,000sqm of network treated	177,795sqm of network treated
	Capital Renewal - Structure	7	11.1	5 builds completed	4 builds completed - Cost increase driven by asset condition issues and Network Rail access on key projects (e.g. Grove Park)
				10 detailed designs	9 detailed designs
	Capital Renewal - Tunnels	1.5	0.8	6 designs 1 build completed	5 designs 1 build completed
	Third Party Signal Enhancements	8	4.2	Undefined	Undefined
Operations Assets	Dial A Ride	0.25	0.14	1 build completed	1 build completed
	Safety Camera Extension Programme phase 2	0.5	1	Option definition	Option definition
	Victoria Coach Station Infrastructure	1.5	1.7	3 build completed	1 build completed
				1 design	1 design
	Modernised Victoria Coach Station	0.15	0.15	Property negotiations completed	Property negotiations ongoing
	Contracts Re-lets (Inspections, Technology and Bus stops)	3.5	1.5	1 Contract execution	1 Contract execution
				1 Contract award	1 Contract award
			1 feasibility completed	1 feasibility completed	
Surface Asset Management Information Systems	9.3	5.1	SAMIS Tech and Bus stops delivered	SAMIS Tech delivered	

	Sub-programme	Allocations Feb/July 23 (£m)	2023/24 Actual spend (£m)	2023/24 expected output	2023/24 actual output
MARP	MARP A40 Westway Structures Refurbishment	6.78	2.8	Work package 2 Detailed Design complete	Work package 2 Detailed Design complete
	MARP Rotherhithe	1.38	1.3	Targeted works to support ongoing operation	Targeted works to support ongoing operation
	MARP Brent Cross	2.48	1.3	Contract awarded for Concept Design	Contract awarded for Concept Design
	MARP Blackwall Tunnel Southbound Refurbishment	3.66	2	Contract awarded for Detailed Design	Contract awarded for Detailed Design
	MARP Croydon Flyover	0.7	1.3	Phase 1 feasibility and investigations completed	Phase 1 feasibility and investigations completed
	MARP George Green	0.86	0.8	Feasibility completed	Feasibility completed
	MARP Green Man	0.77	0.7	Feasibility completed	Feasibility completed
	MARP Kew Bridge	2	1	Feasibility completed	Feasibility report drafted
	MARP Hope & Anchor	2	1	Feasibility completed	Feasibility report drafted
	MARP Kingston Cromwell Road Bus Station	4.3	8	Construction commenced	Construction commenced
	MARP Ardleigh Green Bridge Replacement	0	0	Project close	Defect resolution ongoing
	MARP Gallows Corner	2.86	1.3	Concept Design completed	Concept Design completed
	MARP Piers	0.6	0.2	Procurement for Detailed Design and Build Completed	Procurement paused due to budget constraints
Borough Roads and Bridges	Borough Roads and Bridges	0	5.1		
DLR	Civils	40.44	2.9	Refurbishment of final arch at Limehouse	Complete
	Communications		2.8	Transmission Network design and build contract awarded and commencement of works	Complete

	Sub-programme	Allocations Feb/July 23 (£m)	2023/24 Actual spend (£m)	2023/24 expected output	2023/24 actual output	
				Long Line Public Address system Phase 4 in delivery	Complete	
	Electrical & Mechanical		8.9	Commence design and delivery of 59 lifts	Design and delivery commenced, six lifts complete	
				Commence delivery of 18 escalators	9 of 18 complete	
	High Voltage (HV) Traction		2.9	Delivery of six HV and Direct Current (DC) switch gear renewals	3 of 6 complete. Delays due to Rolling Stock Replacement Programme	
	Rolling Stock		1.1	Agree Project Requirements for B2007 mid-life refresh	Complete	
	Signalling		3.3	Station Controllers design and build contract award	Complete	
	Track		13.7	Re-railing 300m and install sixteen structural expansion joints	1,200m of fully renewed track (ballast, rail and sleepers)	
London Overground	Asset Management	13.74	0.3		Maximo updates complete	
	Civils		1.2	Wall 642 remediation and reinforcement	Complete	
	Comms		0.3		Deliver the design for the replacement of 11 GSM-R base stations and five repeaters	Concept design ongoing
					Deliver the design for the replacement of the transmission equipment on the East London Line core route	Concept design ongoing
	Electrical & Mechanical		0.9		Lift obsolescence renewals programme	Delivery ongoing. Will be complete in Q1 24/25
					Saft 48V rectifier renewal	Delivery ongoing. Will be complete in 24/25
	Fleet		0.4		Deliver the updated 378 Train Cab Simulator	Complete
	Premises		1.2		Roof, canopies, and stairs renewals across West Anglia Route Stations	Delivery ongoing. Will be complete in Q1 24/25
		Viaduct Arch water ingress remediation		Complete		

	Sub-programme	Allocations Feb/July 23 (£m)	2023/24 Actual spend (£m)	2023/24 expected output	2023/24 actual output
	Power		0.4	Fire alarm installation design and build at Dalston Track Paralleling Hut / Transformer Room	Complete
	Signalling		0.3	Windrush Line Signalling Control System – design and install a new Signalling Control system	Unsuccessful procurement
				Remote condition monitoring of Axle Counters	Complete
	Track		2.5	Replace 3,000 baseplates in the Thames Tunnel	Not achieved due to supplier access issues and unforeseen complexity of delivery
Trams	Civils	23.5	3	Carriageway resurfacing and crossing safety improvements within Croydon town centre,	Complete
				Renewal of step-free access ramp at Birkbeck retaining wall	Design complete
	Fleet/ Depot		1.9	Progress detailed design for renewal of Control Room at Therapia Lane Depot,	Complete
				Renewing the cab doors and flooring on the CR4000 tram fleet	Multi-year project, delivery ongoing
	Power and Systems		1.6	Completion of replacement of life-expired depot lineside power isolators	Design and procurement complete, delivery ongoing
				Completion of design for new digital tram radio system	Concept design ongoing
	Track		15.3	Embed 120m of track at Church Street	Complete
				Complete drainage renewal at Mitcham Junction	Complete
				Design and delivery of drainage at Sandilands	Complete
	Woolwich Ferry		Woolwich Ferry Renewals Programme	5.23	4.2
Rolling asset maintenance on the ferry terminal Linkspan		Complete			

	Sub-programme	Allocations Feb/July 23 (£m)	2023/24 Actual spend (£m)	2023/24 expected output	2023/24 actual output
				Implementation of ferry service customer information improvement projects	Design complete
Cycle Hire	Bike and Docking Station renewals	4.03	3.8	Deliver against contractual bike numbers	Complete
				Docking station repair and relocation projects	Complete
				Asset condition survey and follow-on works	Complete
Buses	New Routemaster Refurbishment	8.4	7.7	Deliver a further 335 refurbishments, over 50 per cent New Routemaster fleet will have been refurbished	297 buses refurbished, almost half of Routemaster fleet refurbished
Cable Car	Cableway Maintenance	1.01	0.95	Gearbox and sheave assembly overhaul	Complete
				Replacement of defective air conditioning unit	Complete
				CCTV upgrades	Complete
TOTAL		206	206		
Less:					
	Canada Water Bus station	0.5	0.5		
	Third Party income	8	11		
NET TOTAL		198	194		

Appendix 4: Investment modelling scenarios

The following strategic options were considered in 2023/24:

- (a) **Budget Constrained (funded scenario):** Remaining within GLA budget allocations for the next 10 years and forecasting condition and levels of service against the Asset Management Objectives. The impacts are described in paragraph 5.3.
- (b) **Base:** Achieving the 'Base' level of service for the Asset Management Objectives. Declining State of Good Repair and increasing asset defects/faults; majority of interventions are reactive. Restrictions, closures, and service reductions will be required to manage safety. Increased pressure on operational and engineering teams to manage assets and safety, with a large renewals backlog which will take years to address and result in a prolonged period of service disruption (several years). The service remains safe; however, reliability is reduced. Customers frequently experience disruptions and delays during their journey and modal shift is evident. Customer satisfaction will decline and there will be frequent negative press coverage of London's transport network.
- (c) **Average:** Achieving the 'Average' level of service for the Asset Management Objectives. A mix of planned and reactive renewals depending on risk exposure. In control of State of Good Repair and asset risks. Customers receive an adequate but acceptable service that is safe and generally reliable, services can be inconsistent. Customer experience of TfL services is mixed; this is reflected in customer feedback with major complaints occasionally made.
- (d) **Good in 10 years:** Achieving the 'Average' level of service for the Asset Management Objectives within the next 10 years. Optimised interventions, utilising preventative interventions to reduce whole life costs. Well planned interventions that minimise network disruption, innovating materials and processes. Customers know they will have a safe, reliable and easily accessible journey. The experience will be of a 'world-class' transport environment with trains, buses, stations, and facilities which customers praise and promote to others. A good/high-quality service, with the appropriate reliability and availability, which delivers the ambition of the Mayor's Transport Strategy and caters for on-going passenger growth/demand; and
- (e) **Good in five years:** Achieving the 'Average' level of service for the Asset Management Objectives within the next five years. As for Good in 10 years but achieved within five years

Appendix 5: 2024/25 budget allocations and outputs

	Sub-programme	2024/25 Allocation (£m)	2024/25 expected output
Assets Capital Programme	Borough Traffic Sig Modernisation	7.8	20 Junctions renewed
	TLRN Traffic Signal Modernisation		
	Capital Renewal - Footway	0.2	1,600sqm treated
	Capital Renewal - Lighting	6.7	323 Columns replaced LED luminaires retrofitted
	Capital Renewal - Drainage	2.7	187,000sqm of network treated
	Capital Renewal - Landscape	0.0	0 trees planted
	SCOOT Renewals	2.0	2,000 loops renewed
	Stations & Stands Annualised Programme	4.4	12 bus driver welfare renewals (rooms) completed
	Bus station layouts	2.5	Walthamstow Bus Station build completed, 5 targeted builds completed at other bus stations
	Restraint Barriers	6.0	7,300m treated
	Minor Capital Interventions	4.0	50 schemes completed
	Pump Stations	0.1	1 build completed
	Bus Stops & Shelters	3.7	180 shelters treated
	Capital Renewal - Carriageway inc. cycleways and DfT contribution	7.6	90,000sqm treated
	Capital Renewal - Structure	4.1	4 builds completed
	Capital Renewal - Tunnels	1.4	3 builds completed
	Lodge Flyover Minor Capital Works	0.4	4 minor capital works schemes completed
	SAMIS Bus Stops	3.5	System delivery
	Victoria Coach Station Infrastructure	1.2	1 build completed
	Contract re-let	0.1	Project closure
Safety Camera Extension Programme phase 2	2.3	3 contracts extended	
Third Party Enhancements	5.8	Undefined	

	Sub-programme	2024/25 Allocation (£m)	2024/25 expected output
Major Asset Renewals Programme (MARP)	MARP A40 Westway Structures Refurbishment	18.5	Delivery of work package 2A (7 expansion joints)
	MARP Rotherhithe	1.0	Targeted works to support ongoing operation
	MARP Brent Cross	9.1	Completion of Concept Design. Strengthening works at A41 Flyover delivered
	MARP Blackwall Tunnel Southbound Refurbishment	0.9	Detailed Design completed
	MARP Croydon Flyover	2.4	Concept Design completed
	MARP Kew Bridge	0.6	Feasibility completed
	MARP Hope & Anchor	0.6	Feasibility completed
	MARP Kingston Cromwell Road Bus Station	3.8	Construction completed and bus station open to the public
	MARP Ardleigh Green Bridge Replacement	0.1	Project close
	MARP Gallows Corner	6.1	Detailed Design completed
	Efficiency	-3.9	
Borough Roads and Bridges	Borough Roads and Bridges	4.6	
DLR	Civils	1.6	Complete platform resurfacing at three stations (All Saints, Prince Regent, Royal Albert); Realigning copers at 11 stations
	Communications	0.8	Contract completion, commencement of survey works and completion of concept design for Transmission Network
	Electrical & Mechanical	6.2	Completion of low voltage renewals completion at Herons Quay, Commencement of delivery at West Silvertown and Pontoon Dock
	HV Traction	2.5	Replacement of DC Circuit breakers at Beckton Substation; Switchgear replacement at Royal Mint Street & Bow Church Substation; Replacement of shore supply contactors at Poplar Depot and Beckton Depot
	Rolling Stock	1.2	Commencement of delivery for Door Nosing Rubbers; Commencement of delivery for B2007 Data Recorders

	Sub-programme	2024/25 Allocation (£m)	2024/25 expected output
	Signalling	10.9	Continue design phase for Station Controllers; Continue installation of loop cables
	Track	6.2	Replacement of 2 crossovers at Poplar and Beckton, Re-railing and SEG replacement at Greenwich, Renewing re-railing through Bank Tunnel
London Overground	Asset Management	0.7	AMIS (SAP) functional updates
	Civils	0.0	No allocation
	Comms	1.4	Procurement of Saft 48v rectifiers and spares, Continuation of design for GSM-R, Transmission; Delivery of Kilostream
	Electrical & Mechanical	0.0	No allocation
	Fleet	0.0	No allocation
	Premises	0.6	Delivery of canopy and roof refurbishment and platform resurfacing, Commence design at Hackney Downs
	Power	0.0	No allocation
	Signalling	2.3	Windrush Line Signalling Control System, Feasibility and options study for SSI Tech Terminal Refresh
	Track	2.6	Thames Tunnel Baseplates
Trams	Civils	1.0	Completion of design and procurement for Sandilands Water Ingress; Completion of drainage remedial works
	Fleet/ Depot	3.5	Continue renewing the cab doors, rooftop cabling and flooring on the CR4000 tram fleet; Delivery of Control Room upgrade at Therapia Lane Depot
	Power and Systems	3.4	Delivery of Lineside Isolator Cabinet renewal
	Track	15.2	Completion of delivery Sandilands ballasted track renewal; Completion of delivery of East Croydon and George Street embedded track renewal

	Sub-programme	2024/25 Allocation (£m)	2024/25 expected output
Woolwich Ferry	Woolwich Ferry Renewals Programme	3.1	Rolling asset maintenance on ferry terminal linkspan, Installation of ferry service customer information improvement projects, Feasibility work on a Passenger Real-time Information system initiated, Asset systems upgrade initiated, Feasibility work on alternative ferry layby berth Replacement for auto-mooring system.
Cycle Hire	Bike and Docking Station renewals	5.0	620 e-Bike replacement to be delivered; Station relocations and repairs
Buses	New Routemaster Refurbishment	1.2	Deliver a further 51 refurbishments, over half of the New Routemaster fleet will have been refurbished
Cable Car	Cableway Maintenance	0.8	CCTV feasibility works and refresh; Ship impact protection; Replacement of ventilation equipment
Staff welfare	Staff welfare	0.6	Refurbishment of 21 station staff welfare facilities across LO, DLR and Trams
TOTAL		180	
Less:			
Third Party Income	DfT carriageway income	0.3	
	Third party bus shelters	0.8	
	Third Party Signals	5.0	
	Third Party Cycle Hire	1.0	
NET TOTAL		173	

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Date: 26 June 2024

Title: Rail and Station Enhancements Programme – Annual Update

This paper will be considered in public

1 Summary

	Existing Financial Authority* (£m)	Estimated Final Cost (EFC)** (£m)	Existing Programme and Project Authority**** (£m)	Additional Requested (£m)	Total Programme and Project Authority (£m)
Gross Cost***	£1,068.8	£1,493.0	£1,036.2	£30.7	£1,066.9
Gross Income	£586.1	£617.3	£530.6	£8.6	£539.2
Net Expenditure	£482.7	£875.7	£505.6	£22.1	£527.7

Table 1 – Summary of Programme and Project Authority

* Existing Financial Authority includes 2024/25, 2025/26 Budget, and the TfL Business Plan.

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

*** Gross value is total TfL expenditure, including expenditure recovered from external parties and income from third parties.

**** This includes an in-year uplift of £9.5m for London Underground (LU) Step-Free Access granted by the Committee.

1.1 The purpose of the Rail and Station Enhancements Programme (the Programme) is to deliver enhancements to safety, accessibility, reliability, capacity, sustainability, and customer experience while reducing maintenance costs and extending the life of operational assets.

1.2 This paper provides an update to the Committee on the achievements and progress of the Programme since July 2023 and seeks additional Authorities. This paper focuses on enhancements which were previously part of the LU Enhancements programme, Public Transport programme and standalone programmes.

2 Recommendations

2.1 The Committee is asked to note the paper and:

- (a) approve increased Programme and Project Authority of £30.7m for 2024/25 for the Rail and Station Enhancements Programme giving a total Programme and Project Authority of £1,066.9m;**
- (b) note that matters for which authorities are sought above include commitments that extend beyond the period of the 2024/25 Budget and provision will, therefore, need to be made for those commitments in future budgets; and**
- (c) note that Procurement Authority for the various initiatives will be sought at officer level in accordance with Standing Orders.**

3 Background

- 3.1 This is the second annual update to the Committee on the Rail and Station Enhancements Programme. The Programme includes a wide range of projects which will enhance the London rail network and make significant contributions to many of TfL's economic, social, and environmental outcomes and targets. Many will also directly and indirectly support sustainable housing and jobs growth. Most of the schemes include providing an improved customer experience, such as step-free access, in the case of stations-related projects or new trams for Croydon to replace the life expired initial fleet. The Programme covers enhancements on Docklands Light Railway, High Speed 2, London Overground, London Trams and the London Underground.
- 3.2 Value for money is a key consideration in the Programme. Work at stations such as Colindale and Leyton, the London Underground (LU) Step Free access programme and the DLR Royal Docks programme deliver outcomes that support key objectives on delivering sustainable housing and accessible transport for all. Most of the schemes are made possible by working in partnership with commercial and other public agencies. This involves a significant investment provided by third party agencies that also reflects the contribution made to wider strategic objectives such as housing, productivity and sustainable growth. By bringing these projects into one programme we are also able to leverage better management of resources and identify in-project efficiencies.
- 3.3 A priority for the Programme is making carbon reduction a central part of how design process for each scheme as part of our commitment to making London a net zero city by 2030.
- 3.4 The Programme already contributes to positive environmental outcomes by delivering measures such as sustainable drainage systems (SUDS), blue and green roofs and solar power and employing fossil fuel free construction sites over and above the core benefits of enabling more people to use sustainable transport.

3.5 The standalone programmes and projects included in the Rail and Station Enhancements Programme are listed below:

- (a) LU Enhancements and SFA;
- (b) High Speed 2 (HS2);
- (c) Elephant and Castle;
- (d) Battersea Power Station western entrance;
- (e) East London Line (ELL HIF);
- (f) DLR Royal Docks enhancements;
- (g) Trams enhancements (including Tram Replacement Rolling Stock and the Sandilands programme);
- (h) London Overground Capital Investment Programme (LOCIP);
- (i) Rail and Sponsored Services (RSS) Initiation projects; and
- (j) a number of smaller RSS legacy projects that are being closed out.

3.6 In the year since the last paper, the Programme had the following in-year increases in Programme and Project Authority approved by the Committee:

- (a) £9.5m for the Step Free Access programme; and
- (b) £4.8m for High Speed 2.

4 Value for Money

4.1 The schemes in this Programme typically represent 'Medium' (Benefit:Cost Ratio (BCR) of 1.5 - 2) or 'High' (BCR 2 - 4) Value for Money based on the Treasury Green Book methodology. This means that for every pound spent, they are returning at least £1.50 or £2 of benefit to society.

4.2 The largest benefits of these schemes by monetary value typically arise from the following TfL's Strategic Outcomes:

- (a) Customer Experience and Public Transport Service improvements, as journey times and crowding levels reduce, and service reliability and journey quality gets better;
- (b) Sustainable growth as sites for new residential and employment development are enabled; and

- (c) Accessibility as more of the rail network becomes step free, and easier to use by customers who find the network more difficult to navigate.
- 4.3 These schemes also make significant contributions to a number of other TfL Strategic Outcomes, including:
- (a) Customer and colleague safety as scheme design consciously addresses identified risks and issues; and
 - (b) Green Outcomes including TfL and London's Carbon emissions, Air Quality and Adaptation – as these schemes support a shift to more people using public transport, by increasing the capacity for, and attractiveness of trips to be made by rail. The Programme also ensures that environmental design features such as SUDS, blue and green roofs and solar power are incorporated where possible; and that environmental factors are taken into account in delivery decisions. This includes minimising the impact of construction trips and employing fossil fuel free construction sites.
- 4.4 To ensure that these schemes deliver the value we expect, are optimised, and that we learn any lessons from them, we have a comprehensive plan for monitoring and evaluation. This includes a programme of work looking at the impacts of comparable schemes that we have already delivered, as well as extensive activity planned for schemes still in development and delivery.

5 Programme delivery since last submission and planned delivery for 2024/25

5.1 Progress on key projects and programmes within the Programme are set out below:

5.1.1 LU Step-Free Access and station enhancements

SFA programme

- (a) The SFA programme exists to deliver the Mayor's Transport Strategy target of halving the additional step-free journey time compared to users of the full network. Where appropriate, the programme looks to integrate with TfL's Sustainable Housing and Accessibility (SHA) Fund, supporting sustainable housing by enabling accessible travel and adding capacity where needed.
- (b) In July 2023, following a prioritisation exercise informed by TfL's 2022 Step Free access consultation, we announced feasibility, cost and benefits of SFA scheme would be explored at eight stations – Alperton, Arnos Grove, Eastcote, Finchley Road, North Acton, Rayners Lane, West Hampstead and White City. We also said that we would review the design, cost and construction strategies at Northolt and Burnt Oak, two stations which were about to enter construction before being paused at the start of the coronavirus pandemic.
- (c) In February 2024, the Committee approved Programme and Project Authority and allocation of £9.5m of funding from the SHA Fund towards

design and delivery of SFA at Northolt station and for concept design at West Hampstead and North Acton stations. Northolt will be the next LU station made step-free under this programme, expected to become step-free in 2026.

- (d) Following the completion of feasibility, we intend to proceed to concept design at a number of these stations. The remaining stations are still under review, including discussions with potential funding partners and could proceed to concept design in future. Work is also ongoing to challenge costs in the delivery model for SFA projects throughout the value chain.
- (e) The Morden branch of the Northern line is the longest stretch of the tube network without step-free access. All stations are deep-Tube and therefore significantly more complex to deliver. Following an initial assessment, we intend to proceed to full feasibility at two stations on the Morden branch. We will also carry out feasibility at another five surface-level Underground stations to build a larger work bank of projects ready to be taken forward into design in future years.
- (f) Additional Programme and Project Authority of £11.1m is requested to complete the additional feasibility studies and concept designs described above and to cover the remaining cost of constructing SFA at Northolt.
- (g) An assessment is underway about how to achieve significant increase in the rate of delivery of step free access schemes at LU stations.. We anticipate returning to the Committee ahead of the annual Rail and Station Enhancements submission to seek further authority to progress this work.

Leyton and Colindale

- (h) Leyton and Colindale station projects consist of SFA and capacity improvements to support housing growth and regeneration in the surrounding areas, funded by the Government's Levelling Up Fund (LUF) and local authority funding. Works at Leyton are scheduled to commence in winter 2024/25 following submission of updated business case to the Department for Transport (DfT) to enable release of funding.
- (i) Work has commenced on site at Colindale, with a 10-day line closure in April 2024 to successfully deliver track-side piling in advance of a station closure starting in June 2024.
- (j) The Colindale project is requesting an increase of £3.49m in Programme and Project Authority for 2024/25 to further enhance the bus provision during the ongoing extended station closure, noting the required Financial Authority is provided from the existing 2024/25 Budget. This work must be undertaken during a closure for safety reasons and is expected to be complete by Christmas 2024 allowing the station to re-open and enable completion of wider works in 2025/26.

Stratford station

- (k) The new south western entrance is expected to open by July 2024. This project was funded by the Greater London Authority (GLA), the London Legacy Development Corporation (LLDC) and the London Borough of Newham, with a contribution from TfL to allow completion of the project. The project milestone for opening was 9 March 2024. Opening was delayed by late design change and emerging issues throughout the delivery stage including unforeseen ground conditions and water ingress.
- (l) The resulting cost increase of £0.5m has been funded from within existing TfL budget in 2023/24 and a further £0.2m contribution from LLDC. Since that time, further prolongation and delays to opening mean that an additional increase in Programme and Project Authority of £0.9m is requested to achieve final completion of these works, noting the required Financial Authority is provided from the existing 2024/25 Budget.
- (m) Separate from the TfL works, Network Rail are funding and delivering capacity enhancement works at Stratford's Southern ticket hall, and a new South-Eastern entrance for TfL to operate as part of an adjacent development on Network Rail land. Programme and Project Authority for income and expenditure of £0.3m is requested for 2024/25 to support the design and delivery of these works.

South Kensington station

- (n) Work to further develop the design for South Kensington station SFA and congestion relief has re-commenced to support the timescales of the Places for London development surrounding the station. This design work is being funded by Places for London and relevant authorities have been gained outside of this Programme. The project is being considered in the ongoing TfL Business Planning round.

Knightsbridge SFA and Capacity Enhancement:

- (o) The project is working to resolve power capacity issues to meet the requirement for a secondary power supply to the new lifts. Engagement with UK Power Networks (distribution network operator) continues, with early enabling works underway to provide a new substation. Additional scope has been identified to manage excessive heat being generated by operational equipment in the new customer-circulating area serving the lifts.
- (p) The project team is working closely with key stakeholders and partners to refine the associated delivery.

5.1.2 High Speed 2

- (a) The pause of the Euston programme will mean that Old Oak Common station will be the London temporary terminus for around 10 years. This is a key interchange station for HS2, the Elizabeth line, and other existing rail services, as well as a site of major regeneration. The use of the station as

a temporary HS2 terminus has the potential to significantly affect the Elizabeth line. It also reinforces the need for level boarding to be provided at Old Oak Common station for passengers interchanging between HS2 and Elizabeth line trains.

- (b) On 14 June the Secretary of State for Transport approved a funding settlement for 10 additional Elizabeth line trains that will enable us to operate additional services to Old Oak Common when it opens as the initial terminus for HS2 services as well as supporting growth in passenger numbers at other key locations along the route. HS2 are also undertaking a study for DfT on options to provide level boarding at Old Oak Common.
- (c) The Government has committed to delivery of 10,000 new homes in the Euston area, a privately financed HS2 Euston station, and is working to identify parts of the station for early development to support this.
- (d) We are continuing to work closely with The Euston Partnership and HS2 on further Station Design Authority reviews to identify opportunities to reduce costs at Euston and provide a safe and accessible interchange for our passengers.
- (e) Programme and Project Authority for income and expenditure of £7.9m is requested for these works which is funded by HS2. This will enable continued engagement on Euston, Old Oak Common, and working with HS2 on further electrical fit out and related activities at the Euston Traction Sub-station ahead of commissioning in 2025.

5.1.3 Elephant and Castle

- (a) The project delivers SFA and capacity improvements to support housing growth and regeneration in the surrounding areas and remain on schedule. The developer is currently constructing the station box as part of its planning obligations. This includes enabling works to prepare for delivery of new passenger tunnels connecting to the existing Northern line platforms. The Project cost thus far Financial Authority is currently fully covered by third-party funding agreements with the GLA and the London Borough of Southwark.
- (b) The project recently 'bottomed out' by excavating to its lowest level – 33 metres beneath ground level for our station box – and this remains on track for handover to us in 2025. We are pushing ahead with the procurement of the new passenger tunnels which will connect the new station box to existing Northern line platforms. Contract award is planned for summer 2024.
- (c) The next phase of the project, station fit out, will be delivered once additional funds are secured. Post-pandemic estimates of future passenger demand are being validated to ensure forecasts remain accurate. We expect the scheme to deliver significant regeneration benefits, with higher passenger capacity and step-free access enabling the creation of new jobs and homes across the local area. The project has safeguarding to enable the future Bakerloo Line Extension project to

connect to the new ticket hall. This project will return to the Committee to request additional Authorities in 2024/25.

5.1.4 Battersea Power Station Western Entrance

- (a) This is a legacy project from the Northern Line Extension. The project will fit-out a second entrance to Battersea Power Station, including providing additional SFA.
- (b) Funding for the project is being provided by TfL, the GLA, the London Borough of Wandsworth and Battersea Power Station Development Company (BPSDC). Delivery of the project is through an Integrated Construction Delivery Team, led by BPSDC. The new station entrance remains on course to open to the public in spring 2025 and is within existing budget and authority.

5.1.5 East London Line (ELL) Enhancements Programme

The ELL (Windrush line) Enhancements Programme

- (a) This programme consists of infrastructure improvements to support housing growth and regeneration in the Surrey Quays / Canada Water area. The programme will enable us to increase train frequencies to meet increasing demand on this busy section of the Overground network, add SFA at Surrey Quays and provide an improved bus service through an upgraded Canada Water bus station. The programme is fully third-party funded, with £80.8m of funding provided by the Department for Levelling-Up, Housing and Communities. The remainder is secured from developer contributions.

Surrey Quays:

- (i) Station upgrade works, including a new station entrance, are well underway. Having awarded the main contract for design and build at Surrey Quays in December 2022, we fully mobilised on site in July 2023 and are progressing to schedule. Station works are expected to be complete in 2026.

Traction Power:

- (ii) We are upgrading traction power on the ELL to support future increases in train frequency and operational resilience. We have now implemented an agreement with Network Rail to deliver these works on the Clapham Junction branch (which is managed by Network Rail). Works are progressing well and we plan to commission the new infrastructure in late June 2024.

Signalling:

- (iii) We are improving signalling infrastructure to support the train frequency increase. We have recently relocated line-side signals to extend the usable platforms space at Surrey Quays station. Signalling

control design is now underway and is due to be commissioned in early 2026.

Canada Water Bus Station:

- (iv) We commenced construction on site at Canada Water on 5 March 2024, closing the bus station to enable us to refurbish the station, provide new bus standing facilities and strengthen the station canopy. Works successfully completed to schedule and the bus station reopened on 13 April 2024.

5.1.6 DLR Royal Docks Programme

- (a) The Royal Docks programme originally consisted of infrastructure improvements at seven DLR stations to support local regeneration plans and accommodate increasing demand on the network. Due to funding constraints and changes to development plans, work has been deferred on all projects except Pontoon Dock and Thames Wharf.

Pontoon Dock:

- (i) We are providing new escalators to the station's elevated platforms and making urban realm improvements beneath the station. This will improve station accessibility, capacity and unlock around 6,000 new homes.
- (ii) Since our last update to the Committee, we have undertaken additional feasibility and value-engineering assessments of post-pandemic passenger demand forecasts. The outcome was to simplify the design and reduce the estimated cost. In January 2024, we undertook a series of public engagement events to seek feedback on our emerging proposals. An updated concept-level design was completed in April 2024.
- (iii) We are now working with the GLA, Homes England and local developers to secure a full funding package for the improvement and, subject to the confirmation of this funding, plan to return to the Committee later this year to secure the necessary approvals to proceed to the next stages of detailed design and delivery.

Thames Wharf:

- (iv) Following completion of feasibility-level design and value engineering assessments in 2023, TfL-funded work on this project has now been paused. We are currently in discussions with potential delivery partners and funding contributors to secure a full funding package for these works. Subject to the availability of this funding package, we will return to the Committee for the necessary Programme and Project Authority to proceed to the next stages of design.

5.1.7 Trams Enhancements

- (a) The scope of the trams enhancements work includes the Trams Replacement Rolling Stock (TRRS) Programme and the Sandilands Programme.

TRRS Programme:

- (b) Our oldest trams have now reached the end of their design life. They have become increasingly unreliable, and this has resulted in regular gaps in the timetable due to the lack of available trams for service. The impact has been overcrowding, lower patronage and poor reliability. Although we are in the process of procuring new trams, this has a long timescale to completion. To mitigate the issues in the shorter term and minimise the impact on passengers, we are working with the operator to provide as reliable a service as possible.
- (c) Replacement of the tram fleet was endorsed in January 2023 as the preferred single option. The programme team issued the contract notice in January 2024 and is currently reviewing pre-qualification responses. There was good interest from the supply chain and the refined invitation to tender will be issued later this year. In parallel we will continue discussions with the DfT about funding of major rolling stock and signalling programmes.
- (d) Design development continues for the depot stabling and network power upgrades to support the introduction of the new trams. Most of these upgrades will need to be in place in advance of the delivery of the new trams.
- (e) The additional Programme and Project Authority request of £4.9m includes programme costs to support the procurement process of the trams and the contact award value of the depot stabling design and build contract and power upgrades concept design. Provision has been made to procure additional trams under the same Manufacture and Supply Agreement, subject to affordability.

Sandilands:

- (f) The outstanding initiatives from the Sandilands Programme were due to be completed in 2023/24. However, final elements of this programme were delayed due to technical problems with the trams power supply and long lead items which led to a change in delivery strategy. The final scope item to be delivered is the tunnel lighting which is substantially complete and will be commissioned in late 2024. Programme and Project Authority of £1.42m is requested to complete the tunnel lighting.
- (g) The I-tram system has been installed. This improves operational reporting by providing real-time performance, accurate tram geographical location data and providing tram drivers with an overspeed alert. This will be brought into use pending approval of the data user agreement between TfL and the tram operators. The EFC has increased from £21.5m to £23m due to programme prolongation and additional power requirements.

Tram crossing minor works:

- (h) A third party funded project will be completed in 2024/25 to upgrade a pedestrian crossing on the tram network. Programme and Project Authority for income and expenditure of £0.2m is requested for these works which is third party funded by the Department for Education.

5.1.8 London Overground Capital Investment Programme:

- (a) LOCIP is a collection of asset improvements which are due to be closed out and handed over to Network Rail (NR) and LU. The projects include the London Overground Train Correct Side Door Enabling, a Willesden Power Supply Plant Unit Shelter, CCTV improvements at Highbury and Islington and works at West Hampstead station. Programme and Project Authority of £0.37m is being requested to complete all handover requirements. All works are expected to complete by the end of this summer.

5.1.9 Rail and Sponsored Services Initiation Projects:

- (a) During 2023/24, several rail and sponsored services enhancement projects were initiated. These were an intelligent camera system trial at Shadwell station, the roll-out of defibrillators across the network and improved signage, wayfinding and customer experience.
- (b) Pan-TfL work is ongoing to produce a pipeline of opportunities across the Programme for which we can provide initial support and development with activities including scoping, requirements gathering, planning and estimating. Programme and Project Authority of £0.1m is being requested to develop these projects over 2024/25 and 2025/26.

6 Performance against milestones

- 6.1 Table two below reports progress against the Scorecard Milestones in 2023/24 and 2024/25.

Scorecard Milestone	Target Date	Progress Update
Stratford SW Entrance open	11 March 2024	Expected by July 2024
Colindale's Existing station is available to re-open in a temporary state following 27 week closure	13 December 2024	On track
Release of Invitation to Tender for new Trams rolling stock	3 Oct 2024	On track

Table two: project milestones and progress

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 is delivered in accordance with the Equality Act 2010. Each project undertakes an Equality Impact Assessment on the impacts of proposals on each of the groups with protected characteristics. Schemes may have a temporary impact during delivery, but in the long term all enhancements have positive impacts on addressing equality issues across the network, including the provision of SFA.

8 Financial Implications

8.1 As a result of the income requests detailed in this paper, TfL will receive up to £0.3m from Network Rail to support Network Rail works at Stratford station, £0.2m from the Department for Education for construction of a public tram crossing, and £4.8m from HS2. Table three shows the summary of the additional income to be received and the adjustments in existing authority to receive Income.

Additional Income	£m	Commitment
Network Rail works at Stratford	0.3	This work is to relieve congestion in the southern ticket hall and construct a new south-eastern ticket hall that LU will operate.
Tram Crossing	0.2	This work is to construct a new crossing of tram lines, and is funded by Department for Education
HS2 income	7.9	
SFA income	0.2	
Total:	5.3	
Existing uncommitted income authority	0	
Total additional income authority requested	8.6	

Table three– Summary of additional Income

8.2 The Programme's Financial Authority and forecast summary for future years' requests for Financial Authority by year is outlined in Table four below:

Rail and Stations Enhancements		TfL Budget		Business Plan		Additional years referenced			Total forecast	Authority - Years to 26/27
		Prior Years	2024/25	2025/26	2026/27	2027/28	2028/29	Future Years		
Financial authority	Budget or Business Plan	£'m	£'m	£'m	£'m	£'m	£'m	£'m	£'m	£'m
	<i>Gross Cost</i>	784.0	101.6	80.1	103.0	111.5	76.1	224.0	1480.4	1068.8
	<i>Net Total</i>	430.4	102.8	56.9	72.5	86.5	74.0	217.2	1040.2	662.6
	<i>Gross Income</i>	-423.5	-56.5	-58.2	-47.9	-25.0	-2.2	-6.7	-620.0	-586.1
Forecast	<i>P2 24/25 Forecast</i>									
	<i>Gross Cost</i>	784.8	107.6	85.4	95.1	93.9	96.6	229.5	1493.0	1073.0
	<i>Net Total</i>	368.2	16.4	9.8	61.3	67.1	86.9	223.6	833.4	455.7
	<i>Gross Income</i>	-416.6	-91.2	-75.6	-33.9	-26.8	-9.7	-5.9	-659.7	-617.3
Authority Request (Gross)	<i>Programme and Project Authority</i>									
	<i>PIC Approved</i>	1036.2	0.0	0.0	0.0	0.0	0.0	0.0	1036.2	1036.2
	<i>Additional authority requested</i>	0.0	30.7	0.0	0.0	0.0	0.0	0.0	30.7	30.7
	<i>Future Authority Requests</i>	0.0	0.0	0.0	27.2	41.2	44.0	67.7	180.1	27.2

Table four: Financial authority by year

9 Risks and opportunities

9.1 The top risks associated with delivery of the Programme are shown in Table five below.

Risk No	Risk Description	Mitigation Actions
1	Cost overrun in a constrained budget environment	Costs are monitored in project review meetings and programme level reporting, with an early warning notice process in place. Prioritisation of budget at the Rail Stations Enhancements Programme meeting to manage emerging challenges, and prioritisation as part of the TfL Business Planning process.
2	Cost overrun on projects with capped third-party funding	Going forward project risk assessments will include an allowance for such eventualities, and work is underway on how to address this at programme level. The RSE Programme meeting takes place on a periodic basis to consider any specific cost pressures with adjustments made to the wider programme to ensure overall expenditure is in line with authorities.
3	Achieving expected value for money from contracts	Leveraging the existing delivery model to maximise supply chain performance and value to TfL
4	The end of the LU Civils and Tunnels framework and the procurement of a replacement framework is delayed, leading to additional cost	The notice for the replacement framework was issued in May 2024. This is on target for an April 2026 award. An extension of the current framework is being considered, together with alternative external frameworks. In the interim, projects will maximise use of the framework through a staged tendering approach prior to expiry.

Table five: Programme level risks

9.2 The Programme does not include an overall high-level risk allowance. It is comprised of many individual schemes that, experience has shown, enable risk to be effectively managed across the programme using the workbank approach described. Periodic reviews of the Programme risks are held with escalations reported.

List of appendices to this report:

Appendix 1: Table of schemes with financial information

Appendix 2: Key projects' Estimated Final Cost, expected output and achieved output

Appendix 3: 2024/25 authority allocations and outputs

List of Background Papers:

Programmes and Investment Committee papers:

London Underground Enhancements Programme: 1 March 2023

Network Development and Third Party Pipeline Programme: 28 February 2024
(showing SFA £9.5m uplift and move to RSE portfolio)

Rail and Station Enhancements Programme: 19 July 2023

High Speed 2 resources paper: 6 December 2023

[May 2024 Stratford paper](#) showing re-allocation of £0.41m PPA

Independent Investment Programme Advisory Group Report and Management Response

TfL Project Assurance and Management Response

Contact Officer: David Rowe, Director of Investment Planning

Email: davidrowe@tfl.gov.uk

Appendix 1: Table of schemes with financial information

Project	Existing Gross Financial Authority	Gross EFC	Existing Programme and Project Authority	Requested Programme and Project Authority	Total Programme and Project Authority
	£'m	£'m	£'m	£'m	£'m
Elephant and Castle	£82.2	£185.4	£86.7	£0.0	£86.7
Western Entrance	£19.1	£19.8	£23.0	£0.0	£23.0
HS2	£61.0	£71.4	£43.0	£7.9	£50.9
ELL Enhancement Programme (HIF)	£89.9	£88.8	£90.9	£0.0	£90.9
Tram Replacement Rolling Stock	£41.6	£172.0	£14.9	£4.9	£19.8
Royal Docks Station Upgrade Programme	£28.9	£37.7	£9.9	£0.0	£9.9
Other Enhancements	£169.1	£316.4	£151.5	£2.0	£153.5
Colindale SFA and capacity increase	£42.7	£48.2	£44.7	£3.5	£48.2
Leyton SFA and capacity increase	£23.1	£25.3	£25.3	£0.0	£25.3
Knightsbridge SFA and capacity increase	£33.0	£33.2	£33.7	£0.0	£33.7
Paddington SFA and capacity increase	£15.9	£16.6	£16.6	£0.0	£16.6
South Kensington SFA and capacity increase	£5.3	£5.3	£39.0	£0.0	£39.0
Stratford (Southwest Entrance)	£9.1	£9.2	£8.7	£0.9	£9.60
Tottenham Hale ticket hall and entrance	£49.9	£49.9	£50.8	£0.0	£50.8
Works undertaken on behalf of Crossrail (LUCT)	£198.5	£198.5	£198.5	£0.0	£198.5
Thameslink enabling works	£37.6	£37.6	£37.6	£0.0	£37.6
Tower Hill	£8.3	£8.6	£8.9	£0.0	£8.9
Baker Street PTI	-£1.8	£0.0	£0.0	£0.0	£0.0
Moorgate OSD	£8.0	£8.1	£8.4	£0.0	£8.4
West Ham Stephenson Street	£1.8	£1.8	£2.6	£0.0	£2.6
North Greenwich Knight Dragon	£0.3	£0.3	£0.6	£0.0	£0.6
Waterloo Shell	£4.4	£4.4	£4.5	£0.0	£4.5
Waterloo International Terminal	£0.0	£0.0	£0.1	£0.0	£0.1
White City St. James	£2.3	£2.3	£2.4	£0.0	£2.4
King's Cross (Belgrove House)	£1.0	£0.9	£3.4	£0.0	£3.4
Ladbroke Grove option selection	£0.1	£0.1	£0.1	£0.0	£0.1
London Bridge (New City Court)	£0.7	£0.6	£0.5	£0.0	£0.5
Hounslow West option selection	£0.3	£0.5	£1.0	£0.0	£1.0
Finsbury Park Additional Work Items	£0.4	£0.6	£0.5	£0.0	£0.5
Paddington (Enstar House) SFA and Capacity	£1.5	£0.2	£0.5	£0.0	£0.5
Borough minor works	£1.3	£1.3	£1.3	£0.0	£1.3
Walthamstow Central	£0.0	£0.0	£0.0	£0.0	£0.0
Waterloo Elizabeth House	£0.0	£0.4	£0.5	£0.0	£0.5
Acton Works AC02 Demolition & Rebuild	£6.0	£6.0	£5.9	£0.0	£5.9
SFA Close out	£103.7	£104.0	£108.7	£0.0	£108.7
SFA Development	£23.3	£37.6	£11.5	£11.1	£22.6
Stratford (Network Rail/Southern/South Eastern Ticket H	£0.0	£0.0	£0.0	£0.3	£0.3
Total	£1,068.8	£1,493.0	£1,036.2	£30.7	£1,066.9

Appendix 2: Key projects' Estimated Final Cost, expected output and achieved output

Programme	Sub-programme	Value for Money Category	EFC July 2023 (£m)	EFC June 2024 (£m)	Reason for change	2023/24 expected output	2023/24 actual output
LU Step-Free Access (SFA) and station enhancements	Step-Free Access Programme	Medium	2	22.6	Increased scope for additional feasibility studies at a number of locations, and progression to concept design for a number of locations	Completion of 8 feasibility studies on priority strategic locations and refreshing of cost and programme for two stations paused at the start of the [covid 19 pandemic]	6 out of eight feasibility studies complete, refreshing of cost for two stations complete.
	Leyton and Colindale	Medium	70.1	73.6	Increase in Colindale construction contract cost from historical estimate, and increased cost of additional bus services during station and track closures	Submit DfT business case for approval, commence on site at Colindale, complete detailed design for Leyton	DfT business case approved, Colindale commenced and on target
	Stratford station	High	8.7	9.2	Unforeseen ground conditions and water ingress increased construction cost and caused project delays	Completion of the works and opening of the entrance to the public (not achieved)	Site at practical completion, opening expected by July 2024
	South Kensington station	Low to Medium	5.3	5.3	Project recently re-commenced in Jan 2024	None	Completion of concept design validation for the in-station work
	Knightsbridge SFA and Capacity Enhancement	Medium	30.9	33.5	Design change requirements, dual power supply requirements for lifts, delay arising from these factors and from change in supplier following insolvency of previous supplier	Open the dedicated SFA entrance and complete the project	Planned works completed, additional scope to address excessive heat in the tunnels and to provide dual power supply to the lifts ongoing

High Speed 2	High Speed 2	N/A	68.1	71.4	Ongoing annualised third-party programme that requires TfL support. All costs recoverable by TfL	Continued support for moving from design to delivery at Euston, surface interchange and Elizabeth line detailed design at Old Oak Common and handover activities and fit out of new traction sub-station	Changes to governance and design at Euston necessitating significant change to TfL outputs. OOC and TSS remain as per expected
Elephant and Castle	Elephant and Castle	High	86.2	185.4	Incorporation of Fit Out work to bring into use a new Northern Line Ticket Hall and decommission existing.	Continue with new ticket hall civil works. Issue of tunnelling tender and completion of Pre-Tunnelling Ancillary works	Archived completion of transfer beam cast and basement lev 5 slab in full for civil works. Successfully issued tunnelling works tender and completed Pre-Tunnelling Ancillary works in full
Battersea Power Station Western Entrance	Battersea Power Station Western Entrance	N/A	19.9	19.8	No change	Complete concept and detailed design for the station, and start on site	Completed concept and detailed design for the station, and start on site
East London Line (ELL) Enhancements Programme	Surrey Quays	High	82.0	88.8	Most significant factor in this EFC change was the discovery of an unrecorded large Thames Water asset which required diversion and introduced additional cost of c. £6m. Other factors leading to increase include emergence of ground condition issues at Canada Water and a series of lower value cost changes associated with supply chain delay.	Commencement of works to upgrade Surrey Quays Station, providing a new station entrance, platform extensions and improved accessibility to platform level.	Works commenced on site in June 2023
	Traction Power	Medium				Commencement of works to upgrade traction power on core sections on East London Line, facilitating a future increase in train frequencies to 18 trains per hour.	Works commenced on site in November 2023.
	Canada Water	Medium				Completion of bus station upgrade works to enable new bus services to be operated to and from Convoys Wharf.	Successfully completed in early April 2024

DLR Royal Docks Programme	Pontoon Dock	Very High	38.9	42.0	Minor design changes and increased estimated cost of construction related to indexation. Costs to be further verified through procurement processes.	Completion of Feasibility level design and commencement of Concept design.	Feasibility designs successfully completed and Concept designs completed in May 2024. Planning application submitted in April 2024.
	Thames Wharf	Very High	N/A	56.0	Feasibility level design completed during 2023/24 and initial cost estimates developed.	Completion of Feasibility level designs.	Completion of Feasibility level designs. Work now paused pending availability of funding or alternative delivery options
Trams Enhancement	TRRS Programme	High	80.4	172	Market engagement completed on the tram procurement which resulted in significant changes to EFC.	Commencement of procurement process and design development of depot stabling and network power upgrades	Contract notice was issued in January 2024 in line with planned activities. Depot concept design started, and power feasibility scope prepared.
	Sandilands	High	21.5	23	EFC increased due to additional power requirements for tunnel lighting and programme prolongation.	Complete track and tunnel lighting improvements. Complete I-tram system installation.	Tunnel lighting is substantially complete and will be commissioned in late 2024. The I-tram system has been installed and will be brought into use pending approval of the data user agreement.
	Tram crossing minor works	High	N/A	0.2	New project for 2024/25	N/A	N/A
London Overground Capital Investment Programme (LOCIP):	LOCIP	N/A	3.77	4.14	Additional requests made by NR for H&S File handover.	In 2023/24, further survey works will be completed to allow works to be delivered. NR will be provided with spares and equipment, as-built drawings and handover documents and the programme will be closed. An additional £612k of Programme and Project Authority was requested to cover these activities over 2023/24.	LOCSDE survey works are now 95% complete, with as-builts being compiled and expected to finalise by July 2024. Procurement of spares and equipment has been executed, and options for handover are under re-consideration due to some stakeholder changes. Willesden PSP works and Highbury and Islington have reached 90% completion, with the projects targeted for completion by June 2024.

Rail and Sponsored Services Initiation Projects	RSS Project initiation	N/A	1.74	1.75	No change	<p>During 2023/24, the initiation of a pipeline for rail and sponsored services enhancements projects planned, responding to opportunities that are arising. Many of these are fully or partially third-party funded but required initial support and development. These activities include scoping, requirements gathering, planning and estimating. £40k Programme and Project Authority was requested to develop these projects over 2023/24 and 2024/25.</p>	<p>A number of rail and sponsored services enhancement projects were initiated. Predominantly in the DLR space, these were an intelligent camera system trial at Shadwell Station, the roll-out of defibrillators across the network, and improved signage to enhance wayfinding and customer experience. £0.07m Programme and Project Authority is being requested to develop these projects over 2024/25 and 2025/26.</p>
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Appendix 3: 2024/25 authority allocations and outputs

Programme	Sub-programme	2024/25 authority requested (£m)	2024/25 expected output
LU Step-Free Access (SFA) and station enhancements	Step-Free Access Programme	11.1	Completion of design update and start of construction at Northolt. Start of concept design at five stations. Start of feasibility at a further five stations.
	Leyton and Colindale	1.5	Completion of detailed design at Leyton and start of construction Colindale to complete an extended closure with enhanced bus services throughout the closure up to Christmas 2024
	Stratford station	0.6	Completion of the works and opening of the entrance to the public
	South Kensington station	0	Completion of concept design for capacity enhancement and step free access throughout the station
	Knightsbridge SFA and Capacity Enhancement	0	Completion of the works and opening of the entrance to the public
High Speed 2	High Speed 2	7.9	Completion of handover and BIU for new traction sub-station at Euston, GRIP 4 sign off at Old Oak Common. Continued engagement on station design for Euston
Elephant and Castle	Elephant and Castle	0	Completion of all new ticket hall civil works. Complete tender evaluation and award the Tunnelling work contract and commencing of design works. Business case updated to reflect latest demand estimates and minimum scope for station fit out. Meet the Committee submission target date for full project authority.
Battersea Power Station Western Entrance	Battersea Power Station Western Entrance	0	Complete construction and open to public
East London Line (ELL) Enhancements Programme	Surrey Quays	0	Continued delivery of station upgrades at Surrey Quays, including construction of extended platforms and overbridge between platforms. New station entrance remains on track to open in 2026.
	Traction Power		Completion of traction power upgrades due in late 2024.

	Canada Water Bus Station		Works to upgrade Canada Water Bus were completed in mid-April 2024. The works provided additional bus standing capacity within the station, improved staff and customer facilities and a strengthened roof canopy. These works enable us to operate an additional bus service to new developments around Convoys Wharf and were fully funded by third party contributions.
DLR Royal Docks Programme	Pontoon Dock	0	Invitation to tender documents planned for 2024. Subject to the relevant approvals, we plan to award contract in early 2025.
	Thames Wharf	0	Feasibility level designs completed in 2023. Further work on this project remains subject to additional funding.
Trams Enhancements	TRRS Programme	4.9	Release of ITT for the new trams. Completion of the power feasibility study. Completion of the depot concept design and procurement for the detailed design and delivery of the depot works.
	Sandilands	1.42	Completion of the commissioning of the tunnel lighting. This is the final activity for the project.
	Tram crossing minor works	0.2	Design and completion of upgrades to tram crossing to improve pedestrian safety.
London Overground Capital Investment Programme (LOCIP)	N/A	0.37	<p>LOCSDE: An options paper will be produced and reviewed to determine the most suitable approach for addressing faults and maintenance of the beacons. Resolution of this matter will be completed in 2024/25.</p> <p>Willesden PSP works are at 90% completion, with efforts focused on resolving remaining snags in collaboration with all stakeholders. The project is on track to achieve completion in 2024/25.</p> <p>The Highbury & Islington handover project has progressed to the stage where Health and Safety files have been issued to LUL for review. The project is targeting completion in 2024/25.</p>
Rail and Sponsored Services Initiation Projects	N/A	0.35	A number of RSS Initiation projects which began in 2023/24 will continue, in DLR an intelligent camera system trial at Shadwell Station will be continue, there will be a roll-out of defibrillators across the network, and improved signage to enhance wayfinding and customer experience. At Woolwich Ferry solar panels are being commissioned as part of the terminal and office infrastructure at the site office, allowing the ferry operation to make a further significant step towards delivering a net zero service.

			Further initiation work is being developed to produce a pipeline of opportunities across the portfolio to provide initial support and development with activities including scoping, requirements gathering, planning and estimating. £0.07m additional Programme and Project Authority is being requested to develop these projects over 2024/25 and 2025/26.
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Programmes and Investment Committee

Date: 26 June 2024

Item: Asset Management Strategy Update

This paper will be considered in public

1 Summary

- 1.1 The presentation included at Appendix 1 provides the Committee with an overview of our assets and our approach to asset management. This addresses a request from the Chair of the Customer Service and Operational Performance Panel for a full, up to date register of the condition of our operational assets.
- 1.2 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

2 Recommendation

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

List of appendices to this report:

Appendix 1: Asset Management Strategy Update

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

List of Background Papers:

None

Contact Officer: Stuart Harvey, Chief Capital Officer
Email: StuartHarvey@tfl.gov.uk

Contact Officer: Isabel Coman, Director of Engineering & Asset Strategy
Email: IsabelComan@tfl.gov.uk

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Asset Management Strategy Update



An overview of our assets and our approach to asset management

36
IFS Cloud Cable Car cabins

70
Elizabeth line trains

2,400km
of footways

1,700
road structures
(including bridges)

107
highway pump stations

60km
of Elizabeth line track

1,549
London Underground power
sub-stations and equipment

5
London Underground
signalling systems

400+
Tube, rail and
bus stations

100,000
London Underground
network fire assets

303
London Underground
engineering vehicles

28,000
PC devices

7
Dial-a-Ride depots

37,000
street lights

1,200km
of TfL-operated rail and
London Underground track

619
London Underground trains

12
road tunnels

12,000
cycle hire cycles/docking points

580km
of TfL-operated highway

2,834sqm
of highway sustainable drainage systems

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149
DLR trains

20,000
cameras, including CCTV
and body-worn cameras

76km
of DLR track

9,330
buses on TfL network

3 terabytes
of digital data

28,000
trees (green estate)

6,500
servers operated and maintained

791
lifts and escalators

567
heating boilers

12,000
bus shelters

22,000
bus stops

6,300
traffic signal sites

8
piers

2
Woolwich Ferry boats

12,000
bus shelters

22,000
bus stops

6,300
traffic signal sites

36
trams

49km
of tram track



LEADERSHIP AND GOVERNANCE



ASSET LIFECYCLE



Strategy and
Planning



Funding and
Decision
Making



Delivery
Planning



Delivery



Operation



ENABLERS



Risk Management



Information
Management



Value and
Outcomes

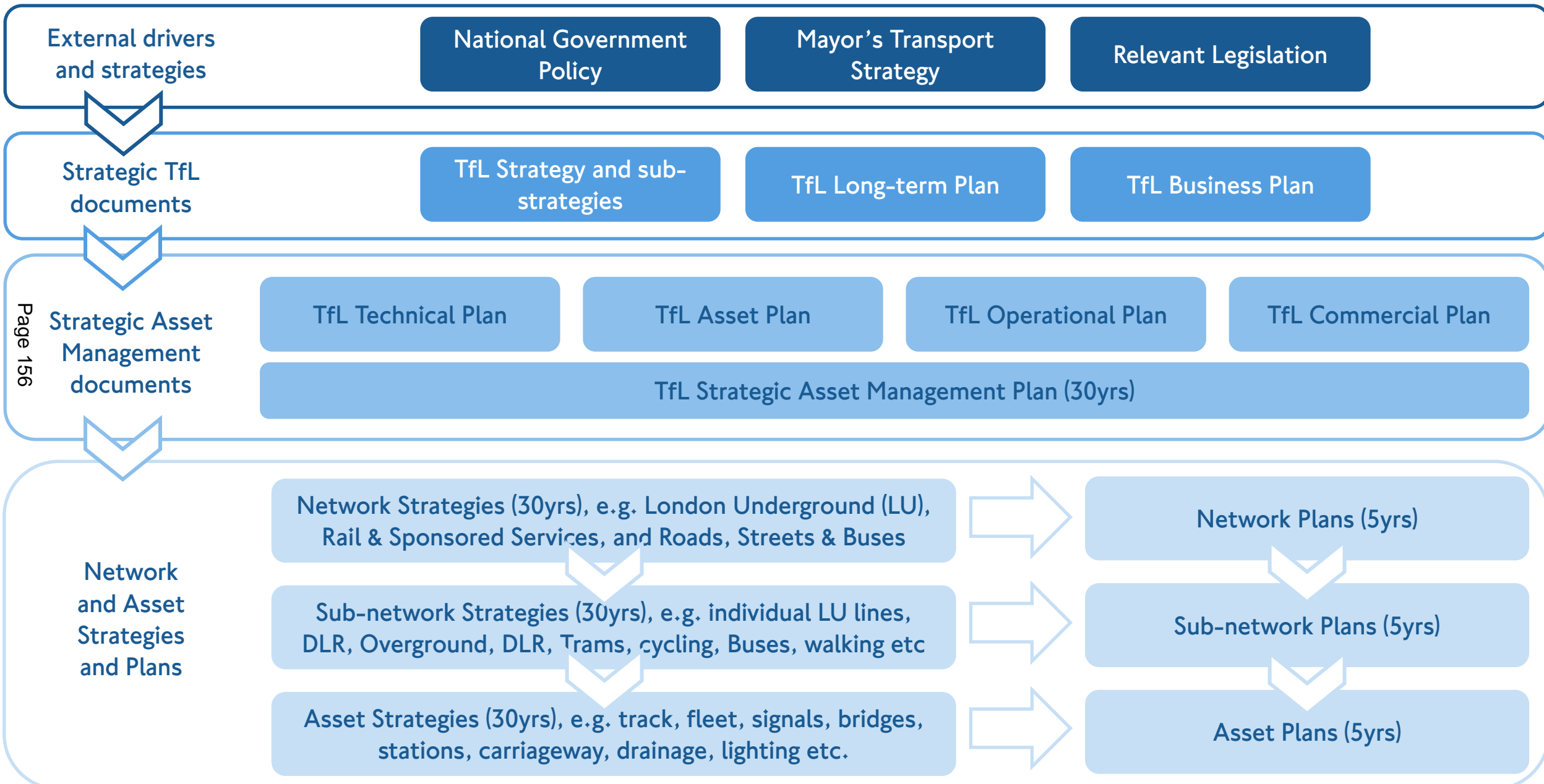


Review and
Continual
Improvement

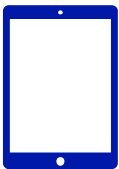


ORGANISATION AND PEOPLE

Our assets line-of-sight: linking asset plans to strategic outcomes



Renewals prioritisation: an established and standardised process



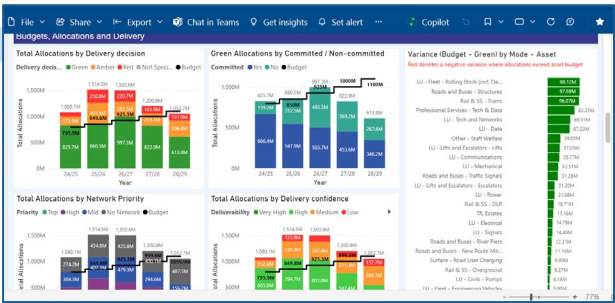
Step 1: Asset data and inspections
Carry out asset inspections, close data gaps and validate data quality



Step 2: Data review
Identify asset condition and other concerns, e.g. ORR commitments

	Impact			
Probability	High	Medium	Low	Very Low
	Medium	High	Medium	Low
	Low	Medium	High	Medium
	Very Low	Low	Medium	High

Step 3: Risk assessment
Risk assess all assets or needs that trigger a concern using a common set of quantified risk matrices aligned to the TfL outcomes



Visibility throughout
Via a live PowerBI dashboard that is shared and accessible to everyone in TfL



Step 4: Risk validation
Review and validated risks and their respective priorities via Guiding Mind Groups and other forum



Step 6: Business priorities & constraints

Apply business priorities and constraints to the prioritised risks, i.e. TfL outcomes, network priorities, delivery efficiency and financial

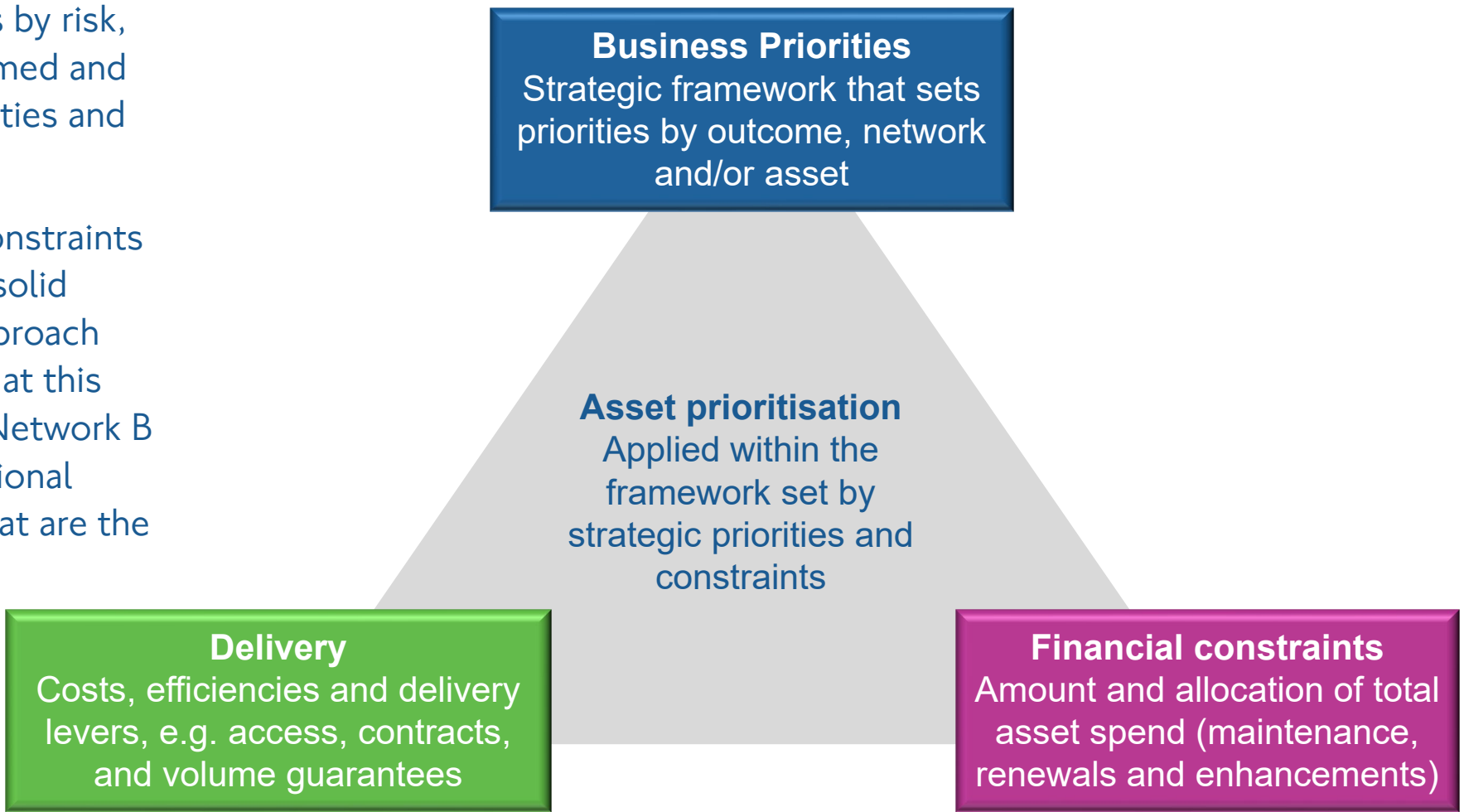


Step 5: Deliverability & costs
Review deliverability of works and assign outline costs - to evaluate Benefit:Cost ratio

The business drivers and constraints that shape renewal allocations

- We initially prioritise renewals by risk, however this is ultimately framed and steered by the business priorities and constraints
- The business priorities and constraints can flex and change, and the solid foundation of a risk based approach means we can understand what this means, i.e. if Outcome A or Network B is prioritised, then what additional projects get delivered and what are the impacts elsewhere

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Programmes and Investment Committee

Date: 26 June 2024

Item: Forthcoming Key Procurement Activities

This paper will be considered in public

1 Summary

- 1.1 This paper sets out a summary of the major new procurements or contract extensions planned over the next two years and those that will be required from the Committee by way of Chair's Action over the next six months. It also highlights significant forthcoming procurements that require approval at officer level during that period.
- 1.2 A paper is included on Part 2 of the agenda which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the financial and business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from the meeting.

2 Recommendation

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

3 Background

- 3.1 There is a recognised need to provide this Committee and other decision makers in TfL with a forward look on the pipeline of major procurements and those requiring decisions.
- 3.2 The Procurement and Commercial (P&C) function within TfL has worked to improve its forward planning, for example by consolidating multiple sources of data regarding the plans for contract renewals and new procurements. This has enabled P&C to establish a pipeline of activities over the next two years.
- 3.3 P&C's ability to plan the necessary governance and approval timescales, in conjunction with meetings of relevant Committees where appropriate, is, and will continue to improve. This will not entirely remove the possible need for out of cycle approvals to be sought by way of Chair's Action, either because of the conclusion of a procurement which falls naturally in timing between meetings, or because of an urgent requirement. The data sets are accurate as of 28 May 2024 and may be subject to change.

- 3.4 This paper sets out the approvals anticipated to be required from the Committee over the next six months and highlights significant forthcoming procurements that require approval at officer level during that period.

4 Two year look ahead

- 4.1 The two year look ahead is summarised below, including only those projects with an estimated value of £1m or over. The pipeline for strategy approvals and contract awards covers 271 contracts with an estimated total value of £18bn, and equivalent annual spend of £3.1bn, when prorated by the length of the contracts. This is broken down as follows:

P&C Division/Team	No	Estimated Value (£m)	Equivalent Annual Spend (£m)
CAPITAL	85	6,734	1,331
Places for London	8	525	326
Technology	35	2,078	301
Capital Systems	17	227	66
Capital Infrastructure	25	3,902	638
OPERATIONS	186	11,426	1,854
Fleet	46	243	79
Operations Infrastructure	61	1,893	259
Partnerships	10	85	16
Rail and Sponsored Services	17	622	106
Track	21	1,520	221
Indirects	21	5,704	955
Facilities Management	10	1,356	214
Grand Total	271	18,161	3,186

5 Planned procurement activity ahead of the next meeting

- 5.1 There are two business units within the P&C function, and the key forthcoming procurement activities for both are summarised below. Further details of these procurement activities are provided within the related paper on Part 2 of the agenda.
- 5.2 In Operations and Professional Services, most decisions for contracts related to operational expenditure are routed through the Finance Committee rather than to this Committee although all Members will receive the paper.
- 5.3 In Capital and Technology, we are currently forecasting that three contract awards will require Committee approval by Chair's Action in the next six months.

List of appendices to this report:

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

List of background papers:

None

Contact Officer: Luke Jarvis, Interim Director of Procurement & Commercial,
Capital
Email: LukeJarvis@tfl.gov.uk

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Programmes and Investment Committee



Date: 26 June 2024

Item: Members' Suggestions for Future Discussion Items

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 Recommendation

- 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

List of Background Papers:

None

Contact Officer: Andrea Clarke, General Counsel
Email: AndreaClarke@tfl.gov.uk

Programmes and Investment Committee Forward Plan 2024/25

Membership: Dr Nelson Ogunshakin OBE (Chair), Peter Strachan (Vice-Chair) Seb Dance, Mark Phillips, Dr Lynn Sloman MBE

Government Special Observer: David Coles

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), CTO (Chief Technology Officer) D-EL (Director Elizabeth line)

Standing Items		
Use of Delegated Authority	General Counsel	Standing item
Forthcoming Key Procurement Activities	Chief Finance Officer	Standing item
Quarterly Investment Programme Report	CCO and D IDP	Standing item
Independent Investment Programme Advisory Group Quarterly Report	General Counsel	Standing item
TfL Project Assurance Update	General Counsel	Standing item
Regular programme annual reviews		

20 September 2024		
Silvertown Tunnel	CCO	Annual
Piccadilly Line Upgrade	CCO	Annual
London Underground Renewals	D IDP	Annual
Bakerloo line Upgrade Stage 1	CCO and D IDP	Annual
Bank Station Capacity Upgrade (to be confirmed)	CCO and D IDP	Update
Capital Efficiencies Report 2023/24	CCO	Annual

Lessons Learned from Recently Completed Projects	CCO	Update
Edinburgh Trams Inquiry - Lessons Learned Application	CCO	Update

11 December 2024

DLR Rolling Stock Replacement Programme	CCO and D IDP	Annual
Safe and Healthy Streets Programme	D IDP	Annual
Enterprise Risk Update - Delivery of TfL Key Investment Programmes and Projects (ER08)	CCO	Annual
London Underground Lifts and Escalator Contracts	D IDP	Update
Network Development and Third-Party Pipeline Programme	D IDP and D-SP	Update
Road User Charging Re-let	D IDP	Update

5 March 2025

Environment Programme – Air Quality and Environment	D IDP	Annual
Technology Programme 2025/26 and 2026/27	D IDP and D CTO	Annual

Regular Items:

- London Underground Four Lines Modernisation (4LM) Annual Update (CCO) (June)
- Streets, Bus and Rail and Sponsored Services Renewals Programme (D IDP) (June)
- Technology Programme (D IDP) (June)
- Rail and Station Enhancements Programme (D IDP) (June)
- Capital Efficiencies Report (CCO) (June)
- Silvertown Tunnel Annual Review (CCO) (September)
- Piccadilly Line Upgrade (CCO) (September)
- London Underground Renewals (D IDP) (September)

As at 18 June 2024

- Bakerloo line Upgrade Stage 1 (CCO and D IDP) (September)
- DLR Rolling Stock Replacement Programme (CCO and D IDP) (December)
- Safe and Healthy Streets Programme (D IDP) (December)
- Enterprise Risk Update – Delivery of TfL Key Investment Programmes and Projects (ER08) (CCO) (December)
- Environment Programme – Air Quality and Environment (D IDP) (March)
- Technology Programme (D IDP and D CTO) (March)
- Lessons Learned from Recently Completed Projects (CCO)

Items to be scheduled:

- Elephant & Castle

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