

**Date:** 19 July 2023

**Item:** Streets, Bus and Rail and Sponsored Services (RSS)  
Renewals Programme

**This paper will be considered in public**

## 1 Summary

	Existing Financial Authority (to 2025/26)	Forecast to 2027/28	Existing Programme and Project Authority	Additional Authority Requested (to end 2025/26)	Total Programme and Project Authority (to end of 2025/26)
<b>Gross Cost</b>	£1,195.3m	£1,626.3m	£936.1m*	£201.0m	£1,137.1m
<b>Gross Income</b>	(£48.2m)	(£65.3m)	(£42.2m)	(£0.5m)	(£42.8m)
<b>Net</b>	£1,147.1m	£1,571.0m	£893.9m	£200.4m	£1,109.3m

**Table 1: Streets, Bus & Rail & Sponsored Services Programme**

**\*Existing Authority reduced by £3.6m to reflect transfer of Ticket Vending Machine (TVM) project to Technology**

- 1.1 This paper provides an update to the Committee on the achievements and progress of the newly formed Streets, Bus and Rail and Sponsored Services (RSS) Renewals Programme (the Programme).
- 1.2 The Programme groups together renewals that were split across the Surface Assets and Public Transport Programmes. These Programmes share a common approach to work-bank management and through joining together associated activities such as bus-focussed renewals, improved investment prioritisation and efficiencies can be applied. The previous Surface Assets Programme that forms part of this new Programme was last considered by the Committee in May 2023. This paper therefore focuses on the renewals activities which were previously contained within the Public Transport Programme.
- 1.3 The Programme is made up of multiple projects that deliver essential asset renewals, managing the state of good repair (SOGR) to provide safe and operable networks. This part of the Programme known as Bus and RSS Renewals, supports investment needed to maintain the safety, operability and reliability of the Docklands Light Railway (DLR), London Trams, London Overground (LO), cable car, cycle hire, New Routemaster (NRM) buses and Woolwich Ferry assets through a prioritised programme of planned and reactive renewals.

- 1.4 The level of investment planned has increased since the coronavirus pandemic but remains significantly lower than required. Around 30 per cent more expenditure would be required to maintain the networks and services in a steady state and remove the backlog of renewals. As a result, it has been necessary to defer certain works which will result in further asset deterioration and the introduction of additional network restrictions. The impact of the current levels of investment will place additional pressure on future years budgets as the assets deteriorate further and so require more extensive, and therefore more expensive repairs.
- 1.5 In July 2022, the Committee approved the extension, and re-phasing, of existing Programme and Project Authority through to the end of 2023/24. A total of £42m additional Programme and Project Authority was approved for the continuation of the Bus and RSS Renewals through to the end of 2023/24. This request seeks approval for increased Programme and Project Authority of £201m. This will cover the full delivery planned in 2023/24 and commitments in the years through to the end of 2025/26<sup>1</sup>.
- 1.6 The focus of this paper is to:
- (a) present the Programme's achievements since the previous submission in July 2022;
  - (b) summarise the financial allocations by main asset types and projects for 2023/24 and the associated outputs; and,
  - (c) provide assurance to the Committee on the progress of the Programme;
  - (d) note that a request for Programme and Project Authority for Tram replacement rolling stock, DLR Thames Wharf and DLR Royal Docks and other rail enhancement projects which were previously part of the Public Transport Programme in 2022/23 are presented as part of the Rail and Station Enhancements Programme paper elsewhere on the agenda; and
  - (e) note that a request for Programme and Project Authority for Bus Customer Action Plan (BCAP) and Bus Safety that were previously part of the Public Transport programme in 2022/23 are presented as part of the Safe and Healthy Streets Programme paper elsewhere on the agenda.
- 1.7 At the meeting of the Committee on 17 May 2023, approval was granted for the amalgamation of the renewal activities in the Public Transport Programme with other renewal activity (e.g. Surface Assets Renewals and River Services etc) to form the new Streets, Bus RSS Renewals Programme. The emerging deliverables for the proposed new Superloop bus routes related to asset renewals also form part of this Programme.
- 1.8 The Programme will return annually to the Committee for authority approval.

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<sup>1</sup> With the exception of DLR Station Controllers which requires commitment for delivery in 2023/24 to the end of 2028/29.

## **2 Recommendations**

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

- (a) approve the additional Programme and Project Authority of £201m for the Streets, Bus and Rail and Sponsored Service Renewals Programme bringing the total Programme and Project Authority to £1,137m;**
- (b) approve unbudgeted Financial Authority of £44.3m for DLR Station Controllers as described in this paper, Programme and Project Authority for which is included in the approval requested at paragraph (a) above;**
- (c) note that matters for which Authorities are sought above include commitments that extend beyond the period of the 2023/24 Budget and provision will, therefore, need to be made for those commitments in future Budgets; and**
- (d) note that Procurement Authority in respect of the various initiatives of the Streets, Bus and RSS Programme will be sought at officer level in accordance with Standing Orders.**

## **3 Background**

### **Strategic Context**

- 3.1** The Mayor's Transport Strategy (MTS) has three key themes: healthy streets and healthy people; a good public transport experience; and new homes and jobs. Maintaining the asset health of our Streets, Bus and RSS assets is essential to delivering all these themes as almost all journeys on London's transport system interact with it. This 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, finance, capacity and growth. Current levels of service against the AMOs are established and future forecasts are established through the investment modelling using the scenarios outlined in section 5 below.
- 3.3** The Programme's budget for 2023/24 is £59m. This is affordable within the overall £725m allocation from the budget for capital renewals across all of TfL.

### **Bus and RSS Renewals**

- 3.4** The Programme consists of the following transport modes: the DLR, London Overground (LO), London Trams, Cable Car, Cycle Hire renewals, Woolwich Ferry and specific projects in London Buses (NRM refurbishment).

## **Environmental objectives**

- 3.5 The nature of the renewals programme brings environmental benefits to the business, as it seeks to prolong the life of assets and avoiding asset failure. Across RSS this leads to extended life of assets before major interventions are required. Where possible when renewals are being planned, wider activities to minimise environmental impacts are integrated. Nevertheless, the core objective of the Programme is to support a safe and operable network. Due to constrained budgets, where environmental benefits are identified and can be delivered as part of a renewal, but would require additional funding, we are looking to secure support through third party funding sources. Examples of where we are already successfully delivering environmental benefits include:
- (a) all lighting renewals will now use LEDs;
  - (b) Therapia Lane tram depot, will be TfL's first carbon net zero depot. Over the next two years we are replacing the existing gas boilers, the heating circuits; installing new piping, pumps, control panels, LED lighting and making building fabric improvements. Furthermore, the installation of solar panels will support local power generation. This work is being funded by Central Government's 'Public Sector Decarbonisation Scheme<sup>2</sup>' and the 'Building De-carbonisation Programme' which is part of TfL's Environment Programme, and
  - (c) carbon modelling has commenced for track renewals, this is expected to be expanded to other assets and we are anticipating following this up with a study looking into the circular economy and local sourcing of materials (subject to resource availability).
- 3.6 To ensure the business continues to look at investment prioritisation with the environment as a key driver, the AMOs have been reassessed. These now include a pan-TfL objective for the environment which will feed into the subsequent long term capital planning and funding of work.

## **Asset duties and responsibilities**

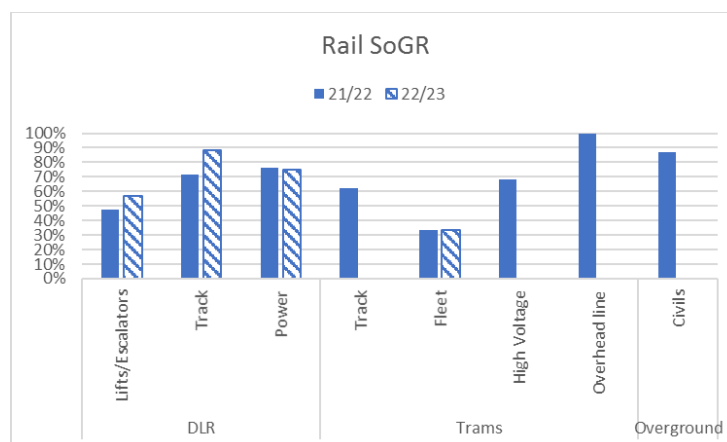
- 3.7 Renewals are planned through 25-year work-banks that are maintained and refreshed annually by TfL's Engineering, Asset Operations and Asset Strategy teams. Schemes in the first three years are consistently prioritised using a value model that is agnostic to asset type or engineering discipline. The prioritisation process ranks schemes in order of importance to the mode. The outputs from the prioritisation process are peer-reviewed by TfL's Engineering, Asset Operations and Asset Strategy teams.

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<sup>2</sup> Public Sector Decarbonisation Scheme provides grants for public sector bodies to fund heat decarbonisation and energy efficiency measures from the Department of Energy Security and Net Zero and Department for Business, Energy & Industrial Strategy.

## Maintaining assets in a State of Good Repair

- 3.8 SOGR is a measure of the current state of the asset TfL seeks to describe the optimum SOGR to maintain assets (i.e. safety reliability and minimising Whole Life Cost). We are in the process of developing a full suite of SOGR metrics for this portfolio and whole life models to inform the optimum SOGR. 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. The percentage of assets in these categories is used to calculate SOGR. Safety is maintained through appropriate inspections, minor repairs and operating restrictions.
- 3.9 SOGR measures 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:
- 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; and
  - 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.
- 3.10 Target ranges across TfL typically score between 85 and 95 per cent. Figure 1 below illustrates key asset areas where SOGR measurements are in place for the whole asset group and demonstrates key areas where we are well below comparable condition scores. DLR scores have improved in both Lifts and Escalators and Track, while Power has declined slightly due to difficulties experienced in the renewals programme with a fire at a UK Power Networks substation contributing to a lack of capacity for the programme. The ‘Poor’ score obtained by the London Trams fleet is reflected in declining service availability. At the time of writing, updated SOGR information for some asset groups for 2022/23 is still awaited.



**Figure 1: State of Good Repair where in place for key asset groups.**

## **Obsolescence concerns**

- 3.11 Obsolescence is an increasing concern, especially on assets which contain software such as the DLR signalling system. The equipment was the forerunner to later systems installed on the London Underground. We are working with the supply chain to identify how best to keep these systems in an operational condition as parts and software become increasingly difficult to support.
- 3.12 DLR Station Controllers are a fundamental part of the DLR signalling system and are one of the most expensive signalling subsystems to replace. The system is obsolete but performing well and will be supported until 2024. Replacement takes a significant time (up to five years) and therefore will need commitment for its whole delivery duration.

## **Impact on Operations**

- 3.13 There are now regular shortfalls in the availability of trams for passenger service. The passenger service is always maintained and operated in a safe condition. The original tram fleet of Bombardier CR4000s are around 24 years old and are reaching the end of their design life and are becoming less reliable. This has meant that it has not always been possible to operate a full timetable. The impact has been an increase in short notice cancellations, until trams are fixed and returned back to service.
- 3.14 Another asset group that has declined below standard due to under investment are DLR's lifts and escalators. Over the next two years a substantial programme of renewals and overhauls is planned. Figure 1 above shows that although there is an improvement in the overall SOGR compared to 2021/22 it still remains at 60 per cent which is under TfL's target range of 85 to 95 per cent.

## **4 Programme Delivery in 2022/23**

- 4.1 The total investment for Bus and RSS Renewals in 2022/23 was £60m. At the time of the last update to the Committee the investment was planned to be £62m. The level of investment has reduced through the year due to constraints in resources and procurement activities. This has resulted in some delivery slipping into 2023/24 in addition to net cost savings achieved. Where possible investment has accelerated through progressing additional design work for priority renewals to enable delivery and utilising budget availability from the wider TfL Investment Programme. An example of this is in DLR Renewals Track delivery.
- 4.2 The Bus and RSS Renewals Programme consists of over 300 renewals projects (including one project for London Buses). Table 2 below sets out the in-year performance for renewals in 2022/23 for this programme.

Renewals Programme	2022/23 Programme and Project Authority Request July 2022 (£m)	2022/23 Actual Spend (£m)	Variance (£m)	Performance Update	Variance Commentary
Bus	3.9	4.2	-0.2	The NRM mid-life refurbishment programme completed 278 refurbishments.	200 refurbishments were proposed, however there was an opportunity to deliver more therefore 278 refurbishments were completed, hence the additional spend.
Cable Car	1.0	0.5	0.5	Replacement of the haul rope was completed as well other essential cableway renewals. All the lighting in the terminals was upgraded to LED lights. Refurbishment of an empty space was completed making it into revenue generating experience.	The planned maintenance shutdown for March 2023 was deferred until November 2023 due to resource constraints. This included the replacements of the gearbox and motor.
Cycle Hire Projects	2.5	3.1	-0.6	Replacement bikes purchased to mitigate lost and stolen assets, including delivery of e-bikes which have been deployed in the scheme for the first time. Ongoing station repairs and relocations were delivered.	Additional bikes were purchased in the year, this included e-bikes hence an additional spend.
DLR	39.4	32.0	7.4	Good progress with design and delivery in the DLR Asset Renewals Programme. Completed as planned a number of projects: track re-railing, arch refurbishments, lift and escalator refurbishments, baseplate replacement, shoe gear protection and rolling stock renewal.	Slippage of some projects was due to a shortage of resourcing in engineering and commercial teams.  Key areas of variance were: Lifts and Escalators – delayed material procurement due to European market; High Voltage Traction – due to a fire at Beckton in Summer 2022.
London Overground	10.4	5	5.4	A high level of maintenance completeness and a comprehensive renewals programme culminated in 'best ever' performance on the core underpinning the TfL/ Arriva Rail London / Network Rail line of route.	The stop/start nature of funding in 2022/23 made it challenging to deliver the full programme with the available resources, remobilisation, lead to some delays.  The delivery of asset renewals by the Maintenance Contractor has fallen short of expectations. Future works have been allocated to other avenues of delivery.

Renewals Programme	2022/23 Programme and Project Authority Request July 2022 (£m)	2022/23 Actual Spend (£m)	Variance (£m)	Performance Update	Variance Commentary
Woolwich Ferry	4.1	1.1	3.0	The first service stoppage to enable renewal works to take place was successfully carried out in 2022/23. Multiple projects were carried out simultaneously in order to minimise user disruption.	South Layby Berth project remains at feasibility stage to identify a value for money proposal. There was slower progress than anticipated with the North Terminal project following increased requirements agreed with local stakeholders.
Trams	19.9	13.8	6.1	Good progress in procurement, design and delivery of projects in the tram asset renewals programme, spending on renewal of track, civil, power, systems and Fleet/depot projects including vehicle incursion mitigations, and renewing the flooring and roofing on the fleet. In Track, renewal of 550m of ballasted track and points between Mitcham and Mitcham Junction.	There were procurement delays therefore it took longer to award key contracts along with resource constraints in engineering and commercial  Some slippage affecting the delivery of the Mitcham Junction drainage and track renewal works due to poor asset information leading to significant cable diversion work.
<b>Gross Total*</b>	<b>81.3</b>	<b>59.7</b>	<b>21.5</b>		

**Table 2: Renewals Full Year Performance against plan by mode**

\* Excluding Overprogramming and Value Engineering

4.3 Appendix 2 provides a summary of 2022/23 allocations, actual spend and outputs for the Programme. 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.

4.4 Challenges in 2022/23 for DLR delivery included supply chain challenges such as steel-related components delivery problems related to the conflict in Ukraine, baseplate components from China were delayed due to ongoing lockdowns, resources (where suppliers cannot compete because of high inflation), a fire at Poplar Depot, rolling stock replacement delayed due to design approval, securing network access to complete works and some projects were delayed as a result. These challenges were mitigated by accelerating priority schemes within the work-bank of projects when required. In other areas the supply of raw materials such as sand for trams continued to challenge. The shortage of key resources across TfL remained one of the biggest challenges, with high staff turnover in all areas and slow recruitment process to replace and train staff to continue delivery.



- 4.5 The previous Public Transport Programme had an efficiency target of £3.7m for 2022/23, which was successfully exceeded, with a total £4.2m of efficiency savings made. The savings came from contract agreements across a number of assets, savings declared on several project final accounts and moving Woolwich Ferry roadworks to be delivered during a service shut down.
- 4.6 Appendix 4 shows examples of delivery in 2022/23.

## 5 Programme Delivery for 2023/24

### Option assessment

5.1 The following strategic options have been considered:

- (a) **Budget Constrained (funded scenario):** This means to remain within TfL budget allocations for the next 10 years and forecasting condition and levels of service against the AMOs. The current constrained funding is below required funding to maintain steady state which will lead to service restrictions and decreasing reliability.
- (b) **Base:** This means to Achieve the 'Base' level of service for the AMOs. Declining SOGR and increasing asset defects/faults; the 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 be more likely to decline, with negative press coverage of London's transport network also more likely.
- (c) **Average:** This means to achieve the 'Average' level of service for the AMOs. A mix of planned and reactive renewals depending on risk exposure. In control of SOGR 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:** This means to achieve 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, that delivers the ambition of the MTS and caters for on-going passenger growth/demand.

- (e) **Good in five years:** This means to achieve 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.
- 5.2 Option 5(a) Budget Constrained represents the current position. To manage the Programme efficiently, a work-bank management approach is applied. This is where potential critical renewals in 2023/24 have been identified to the value of £96m (i.e. £26m above the £70m budget). This work-bank approach, applied to all of the Bus and RSS Programme, allows for the acceleration of priority schemes should further funding become available, or if delivery on other schemes is slower than anticipated. Periodic reviews will be used, together with quarterly investment decision points to assess the level of delivery achieved, the planned outputs and determine whether additional commitments can be made. This will include ongoing review of asset priorities to ensure the best value for money investment. This approach gives maximum flexibility to ensure safe and operable networks are maintained.
- 5.3 This paper requests approval of additional Programme and Project Authority to continue Programme delivery to 2025/26. An overview of the planned programme of renewals projects is presented in Table 3 below by mode. On DLR, a high proportion of the planned expenditure reflects the issues raised in section 3 relating to the obsolescence of equipment. The situation on LO shows a focus on civils, track and signalling works. On London Trams, the investment is dominated by track and fleet investment that reflects the age and condition of these assets as they reach the end of their design lives.
- 5.4 Appendix 3 shows the 2023/24 forecast expenditure and outputs and contains the list of works in this programme for 2023/24, which is summarised in Table 3 below by sub-programme.

Programme	Number of Projects	Value (£m)
<b>DLR</b>	<b>96</b>	<b>40.4</b>
<b>Trams</b>	<b>55</b>	<b>23.5</b>
<b>LO</b>	<b>105</b>	<b>13.7</b>
<b>Woolwich Ferry</b>	<b>13</b>	<b>5.2</b>
<b>Cycle Hire</b>	<b>7</b>	<b>4.0</b>
<b>Cable Car</b>	<b>13</b>	<b>1.0</b>
<b>Bus</b>	<b>1</b>	<b>8.4</b>
<b>Total</b>	<b>290</b>	<b>96.3</b>

**Table 3: Summary of Project Volumes by mode for 2023/24 (excludes elements of the programme which were subject to separate consideration and approval by the Committee in May 2023).**

#### **Delivery in 2023/24**

- 5.5 Key activities planned for each of the modes in 2023/24 include:
- (a) **DLR:**
- (i) Signalling – Station Controllers design and build contract awarded;
  - (ii) Communications – transmission network design and build contract awarded and commencement of works, Long Line Public Address (PA)

Phase 4 in delivery, commencement of Long Line PA Phase 5 procurement;

- (iii) Electrical and Mechanical – commence design and delivery of 59 lifts, commence delivery of 18 escalators;
- (iv) HV Traction – delivery of six HV and DC switch gear renewals;
- (v) Rolling Stock – commence procurement of B2007 fleet mid-life refresh;
- (vi) Track – Re-railing around 300m and install 16 Structural Expansion Joints; and
- (vii) Civils - refurbishment of final arch at Limehouse;

(b) **London Overground:**

- (i) Signalling – WestCAD<sup>3</sup> replacement – Design and install a new signalling control system with that will address deficiencies in the existing system; remote condition monitoring of axle counters;
- (ii) Premises – Roof, canopies and stairs renewals across West Anglia route stations, viaduct arch water ingress remediation;
- (iii) Lifts and Mechanical and Electrical systems – Lift obsolescence renewals programme, Saft<sup>4</sup> 48V rectifier renewal;
- (iv) Civils – Wall 642 remediation and reinforcement;
- (v) Track – Replace three thousand (3,000) Baseplates in the Thames Tunnel;
- (vi) Telecoms – Deliver the design for the replacement of 11 Global Systems Mobile Communications-Railway (GSM-R) Base Stations and five repeaters, deliver the design for the replacement of the transmission equipment on the East London Line (ELL) core route; and
- (vii) Fleet – Deliver the updated 378 train cab simulator;

(c) **Trams:**

- (i) Track – 120m of embedded track at Church Street, completion of drainage renewal at Mitcham Junction, design and delivery of drainage at Sandilands;
- (ii) Civils – carriageway resurfacing and crossing safety improvements within Croydon town centre, renewal of step-free access ramp at Birkbeck retaining wall;
- (iii) Fleet/ Depot – progress detailed design for renewal of control room at Therapia Lane Depot, renewing the cab doors and flooring on the CR4000 tram fleet; and
- (iv) Power and Systems – completion of replacement of life-expired depot lineside power isolators, completion of design for new digital tram radio system.

(d) **Woolwich Ferry:** Completion of the five-yearly dry docking of Woolwich Ferry vessels, rolling asset maintenance on the ferry terminal Linkspan, implementation of ferry service customer information improvement projects;

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<sup>3</sup> WestCAD - a signalling product originally developed by a supplier known as Westinghouse Rail Systems.

<sup>4</sup> Saft – a company that provides high technology batteries used in the railway system

- (e) **Buses:** New Routemaster Refurbishment – programme to deliver a further 335 refurbishments, over 50 per cent NRM fleet will have been refurbished; in addition, the emerging deliverables for the new Superloop bus routes are also part of the programme;
  - (f) **Cycle Hire:** E-bike renewals to deliver against contractual bike numbers, docking station repair and relocation projects, asset condition survey and follow-on works; and
  - (g) **Cable Car:** Cableway Maintenance – gearbox and sheave assembly overhaul, replacement of defective air conditioning unit and CCTV upgrades.
- 5.6 Due to the reduced funding available in 2023/24 lower prioritised projects are deferred causing impacts on service and reliability. Examples of this include:
- (a) no activity will be progressed on the DLR for permanent way spares resilience, system obsolescence, or friction management measures;
  - (b) no activity will be progressed in LO for ELL tenant renewals, ELL relay replacements, fencing replacements;
  - (c) no activity will be progressed on Woolwich Ferry – South Terminal works and maintenance shed.

#### **Expected Activities beyond 2023/24**

- 5.7 Many activities will continue beyond 2023/24, such as DLR Station Controllers. Replacement takes a significant time (up to five years) and therefore this project will need commitment for its whole duration. This authority request therefore includes commitment for DLR Station Controllers until 2027/28.
- 5.8 Some activities will continue into 2024/25 any expenditure will be subject to scope and commitments developed in 2023/24 and therefore future commitments will be subject to available funding.

## **6 Programme risks and milestones**

### **Programme Risks**

- 6.1 The top risks associated with delivery of the Programme are shown in Table 4 below:

**Table 4: Top risks from RSS Renewals Programme**

Risk ID	Risk Description	Mitigation
1	<p>There is a risk that in certain areas we are committed to suppliers for the long-term (e.g. signalling and control systems and raw materials e.g. sand for trams), end of life support and renewals costs are defined by the Original Equipment Manufacturer (OEM)</p>	<p>Understand the costs supplied by OEM by using benchmark information (historic costs and previous costs on similar) and challenge those costs where possible</p>
2	<p>There is a risk of forecasting inaccuracies and over-optimistic planning</p>	<p>New estimation process for large (&gt;£0.5m) projects prior to going to market. Planner joining and on-board to support LO Renewals. Examine the scope maturity and embed this into LO (as per DLR and Trams). Re-iterate a consistent approach and shared learning</p>
3	<p>There are several elements to the Resource risk.            There are shortages of key resources including PMU / PM / Engineering and Commercial, Cost Management and IDP area.            This is partly due to market supply limitations and other larger programmes drawing resources away.            This also applies to staff moving internally to other areas of the business due to higher pay.            Also the financial climate and TfL's current fiscal difficulties may hinder recruitment opportunities.            Even if staff are obtained it is possible that they lack the sufficient skills sets to provide effective support and professional guidance and opinions.</p>	<p>Succession planning and developing our staff: This includes the creation of a robust plan to cover illness, leave, and staff who move on from the Programme. In addition, work is progressing on role families and a more consistent rewards framework across similar roles. However, these challenges will persist for the foreseeable future.</p>
4	<p>There is a risk that the schemes that emerge are not developed and accurate enough to enable effective delivery of objectives. Projects need to be developed enough to be submitted for Gate 1</p>	<p>Asset Strategy to produce an Initial Proposition Document and hand over to IDP prior to Gate 1. Format of that document and key information to be agreed with IDP in advance. Engineering, maintenance and project delivery are all to be consulted and contribute</p>
5	<p>There is a risk that CAPEX funding limitation or CAPEX uncertainty could lead to reduced quality, planning and forecast difficulties, resource limitations, abortive works, lower staff morale.</p>	<p>CFO instruction places the highest priority on safety of current operations and preserving service levels and connectivity for London and ensure we have customer base to drive future revenues.</p>

6	There is a risk that changes to Organisational Structure (move to Capital model) may lead to breaks in continuity or complex reporting and governance in the short-term. Roles and responsibilities and accountabilities are not yet clear	A big bang approach has been cancelled in favour of progressive role out of new changes.
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## Programme Milestones 2023/24

6.2 The strategic milestones are shown in Table 5 below:

**Table 5: Strategic Milestones**

Mode	Project	Milestone	Tier	Target Date
Trams	Church Street Embedded Track Renewal (Achieved 17 April 23)	Bring into use	CCO RSS Scorecard	27 April 2023
DLR	DLR Lift Car Renewals V3 – 2019/20 (Achieved 12 April 23)	All 30 Lift Car Renewals Complete – Brought into use	CCO RSS Scorecard	10 May 2023
DLR	S&C Renewal/ Replacement Programme 2022-27 (Achieved 02 May 23)	2023/24 South Route Installation – Bring into use – Replacement of 1181 A/B points	CCO RSS Scorecard	12 May 2023
DLR	Plain Line Renewals Programme (2021-24)	Stratford International Ballast Track Renewal; between West Ham and Star Lane – Bring into use	TfL Scorecard	08 September 2023
LO	Cab Simulator for LO Rolling Stock	Testing and commissioning complete	CCO RSS Scorecard	29 January 2024

## 7 Commercial Strategy

7.1 The Programme is predominantly delivered by contractors using existing frameworks. Where this is not the case procurements are planned and conducted in accordance with TfL governance and procurement regulations. Each procurement will be managed by a Procurement and Commercial specialist assigned to the respective asset area. A standard set of contracts are used, based on the NEC3 contract form, these are amended for TfL use.

7.2 Procurement commitments are managed in accordance with the current TfL funding constraints and prioritisation. To account for the funding constraints and changing priorities procurements may consider contract break points which permit

TfL to regulate commitments; as well as contractual mechanisms and specifications which allow for flexibility of workload and delivery methodologies.

## **8 Financial Implications**

- 8.1 The 2023 TfL Budget provides the Financial Authority needed to deliver the scope of the works set out in this request, save as described below. Of this, the Programme and Project Authority request for Bus and RSS renewals includes £44.3m for multi-year commitment to 2028/29 for the DLR Station Controller contract, which is not included within the financial authority.
- 8.2 This request seeks an unbudgeted Financial Authority of £44.3m for the DLR Station Controllers described at paragraph 3.12 above, commitment for delivery of which is needed before the next planned Budget approval. Any future funding constraints will require reprioritisation of the renewals work bank to accommodate this commitment.
- 8.3 The existing Project and Programme authority was granted under the legacy Public Transport Programme. The Bus & RSS Renewals programme in addition to other enhancements delivered under Public Transport have been transferred following the approval of the May 2023 P&IC Programme Structure paper to new programmes as reflected in Appendix 1.
- 8.4 The Programme's Financial Authority and the Programme and Project Authority is shown in Table 6 below.

**Table 6: Summary of the Programme’s Financial Authority and Programme and Project Authority**

Transport Activity		Actuals	Actuals	Actuals	Actuals	Actuals	Prior Years	TfL Budget	TfL Plan				Total	Total to 25/26
		2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28		
<b>Bus and Rail &amp; Sponsored Services Renewals</b>														
<b>Financial authority</b>														
	<b>Programme Total</b>	34	31	45	57	50	60	66	74	79	84	94	673	495
	<b>Budget or Plan</b>													
	<i>TfL Element</i>	34	28	42	57	50	59	66	74	79	84	93	665	488
	<i>Third Party Funding</i>	0.0	3.0	3.1	0.2	-0.2	1.1	0.0	0.3	0.3	0.3	0.3	8.3	7.8
<b>Authority Request</b>														
	<b>Programme Total</b>	34	31	45	57	50	60	65	70	123	65	82	681	534
	<b>Forecast</b>													
	<i>TfL Element</i>	34	28	42	57	50	59	65	70	122	65	81	673	526
	<i>Third Party Funding</i>	0.0	3.0	3.1	0.2	-0.2	1.1	0.0	0.3	0.3	0.3	0.3	8.3	7.8
	<i>Authority request</i>													
	<b>Programme and Project Authority</b>												333.2	333.2
	<i>PIC Approved</i>													
	<i>Additional authority requested</i>												201.0	201.0
	<i>Future Authority Requests</i>												178	

\*Above reflects Bus and RSSs (excludes legacy “Assets Portfolio”)

\*\*All values in £m unless stated otherwise.

\*\*\* Existing Authority reflects transfer of £3.6m Project and Programme Authority for TVM to the Technology Portfolio

\*\*\*\* For 2025/26 Additional Project and Programme Authority reflects a significant increase in renewals signalling investment (DLR Station Controllers). To reflect the full commitment which includes the unbudgeted Financial Authority of £44.3m for the DLR Station Controllers which needs delivery commitment (2023/24 until 2028/29).



## **9 Equality and Inclusion**

9.1 Section 149 of the Equality Act 2010 (the Public Sector Equality Duty) provides that, in the exercise of their functions, public authorities must have due regard to the need to:

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

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

## **10 Assurance**

10.1 TfL Project Assurance conducted an Integrated Assurance Review (IAR) on the Programme in May 2023. An independent review was also undertaken by the Independent Investment Programme Advisory Group (IIPAG). The review had no critical issues and identified ten general recommendations.

10.2 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: Public Transport Portfolio transfer to New Programmes and Investment Committee Programme

Appendix 2: 2022/23 actuals and outputs

Appendix 3: 2023/24 forecast expenditure and outputs

Appendix 4: Examples of Delivery in 2022/23

### **List of Background papers:**

IIPAG and TfL Project Assurance Reports

Programmes and Investment Committee papers: Public Transport Programme 20 July 2022, Programme Structure 17 May 2023, Surface Asset Renewals Programme 17 May 2023

Management response to IIPAG and TfL Project Assurance Reports

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## Appendix 1: Legacy Portfolio transfer to New Programmes and Investment Committee Programme

Legacy <b>Public Transport</b> Portfolio Transfer to New Programmes and Investment Committee Programme	Existing Financial Authority (to 2025/26)	Existing Programme and Project Authority 2022/23 and future years	Additional Authority Requested 2023/24 to 2025/26	Total Authority	Prior Years	Forecast 2023/24 to 2027/28	Total Forecast	May Programmes and Investment Committee Transfer of Existing Authority	Change since May
Streets, Bus Rail and Sponsored Services*	£495.3m	£333.1m	£200.8m	£534.0m	£276.6m	£404.5m	£681.2m	£336.7m	(£3.6m)
Rail & Station Enhancement Programme	£285.3m	£268.5m	(£1.4m)	£267.1m	£171.9m	£200.6m	£372.5m	£268.5m	0.0
Safe & Healthy Streets Programme	£80.3m	£35.4m	£43.9m	£79.3m	£21.3m	£103.1m	£124.4m	£35.4m	0.0
Technology Programme	£1.8m	£3.6m	£0.0m	£3.6m	£0.1m	(£0.1m)	£0.0m	£0.1m	£3.5m

\* TVM noted in May Programmes and Investment Committee transfer paper as £0.1m, this has been corrected to reflect the full authority being transferred of £3.6m.

Legacy <b>Surface Assets Portfolio</b> Transfer to New Programmes and Investment Committee Programme	Existing Financial Authority (to 2025/26)	Existing Programme and Project Authority 2022/23 and future years	Additional Authority Requested 2023/24 to 2025/26	Total Authority	Prior Years	Forecast 2023/24 to 2027/28	Total Forecast	May Programmes and Investment Committee Transfer of Existing Authority	Change since May
Streets, Bus Rail and Sponsored Services	£700.0m	£603.0m	£0.0m	£603.0m	£334.0m	£621.0m	£955.0m	£603m	£0.0m

Overall New Programmes and Investment Committee Programme: Streets Bus and Rail & Sponsored Service Renewals	Existing Financial Authority (to 2025/26)	Existing Programme and Project Authority 2022/23 and future years	Additional Authority Requested 2023/24 to 2025/26	Total Authority	Prior Years	Forecast 2023/24 to 2027/28	Total Forecast	May Programmes and Investment Committee Transfer of Existing Authority	Change since May
Streets, Bus Rail and Sponsored Services*	£1,195.3m	£936.1m	£201.0m	£1,137.1m	£610.6m	£1,025.5m	£1,636.3m	£939.7m	(£3.6m)

## Appendix 2: 2022/23 actuals and outputs

Programme	Sub-programme/ Asset	2022/23 allocations (£m)	2022/23 spend (£m)	2022/23 expected output	2022/23 outputs
DLR	Civils	39.40	32.03	Platform resurfacing (incl. copers) at three stations	Completed
				Refurbishment of four arches at Limehouse (including drainage)	Completed
				Stairs and landing replacements at three stations	Completed
	Communications			Ten intrusive surveys of hidden critical elements	Completed
				Long line Public Address replacement at three stations	Completed
				Automatic people counters replaced at 30 stations	Completed
	Electrical & Mechanical			Eight escalators mid-life refurbishment	Completed
				15 lifts mid-life refurbishment	Completed
				Lighting designs approved and commence works at two stations	Completed
	HV Traction			High Voltage weather protection installed at two sites	Completed
	Rolling Stock			Two trials completed for door nosing rubber trial and wheel slip protection	Completed
				Manufacture and delivery of 130 bogie frames	Completed
	Signalling			Four loop cables replaced	Two Loop cables replaced
	Track			Renewal of six switch and crossing units (point ends)	Renewal of two switch and crossing units (point ends)
				Install 16 structural expansion switches	Sixteen structural expansion switches installed, and re-railing around 1200m
5,000 baseplates changed		6,500 baseplates changed			
5,000m shoe gear protection installed		Completed			
Installation of wheel stops and removal of turntables at Poplar Depot		Completed			
London Overground	Civils	10.43	5.02	Renewal of deck waterproofing and protection of footpath supports of EL31 footpath structure	Design only completed

	Comms			Design and build of new lineside and station supervisory control and data acquisition Supervisory Control and Data Acquisition (SCADA) system at 10 stations and one depot (control room) Phase 1 like for like alarm monitoring Phase 2 additional PA monitoring	Phase 1 completed. Phase 2 planned for 2023/24
	Electrical & Mechanical			Thirteen lift refurbishments across the East London Line	Completed
	Fleet/ Depot			Operational Building Complex (OBC) refurbishment – deliver a combination of upgrades to driver welfare and office capacity	Completed
				Cab Simulator – procure and award contract	Completed
	Premises			Surveys and report for eight year refurbishment at two stations	Completed
	Power			Substation battery charger replacement – design and build at two sites	one site completed
				Fire alarm installation design and build at Dalston Track Paralleling Hut / Transformer Room	Delayed until 2023/24 due to performance issues with supplier
				Power Remote Terminal Unit Renewals – complete site survey, configuration download	Completed
	Signalling			Design at four sites completed	Completed
Track	Procure baseplates and main works contractor	Delayed to 2023/24			
<b>Trams</b>	Civils	19.90	13.82	Replace staircase serving Morden tram stop	Completed
				Installation of vehicle restraint system (VRS) at Gravel Hill	Completed
	Survey and renew 2,300m of drainage assets along the tramway between Therapia Lane and Wimbledon			Completed	
	Fleet/ Depot			Concept design for renewal of the control room at Therapia Lane	Completed
Power and Systems	Detailed design for replacement of life-expired depot lineside power isolators	Completed			

	Track			550m of ballasted track and two sets of points between Mitcham and Mitcham Junction tram stops	Completed
				Contract award for the embedded track renewals contract	Completed
<b>Woolwich Ferry</b>	Woolwich Ferry Programme	4.14	1.10	Ferry terminal two guiderail replacement	Completed
				North terminal highways works	Completed
				Terminal staff welfare renewal	Completed
				Competitive tender for five-yearly linkspan maintenance/renewals	Completed
				Finalise project and technical requirements for the procurement of vessel drydocking (time critical project that must be completed by October 2023)	Completed
<b>Cycle Hire</b>	Bike and Docking station renewals	2.47	3.11	Replacement bikes purchased to mitigate lost and stolen assets	Completed
<b>Buses</b>	New Routemaster Refurbishment	3.94	4.16	200 refurbishments	278 refurbishments completed
<b>Cable Car</b>	Cableway Maintenance	0.99	0.48	Replacement of the haul rope	Completed
				Replacement of all lighting in terminals with LED lights	Completed
				Refurbishment of an empty space to making a revenue-generating experience	Completed
				Sheave assembly overhaul	Delayed to 2023/24
<b>TOTAL</b>		<b>81.27</b>	<b>59.72</b>	<b><i>Excluding Overprogramming and Value Engineering</i></b>	





### Appendix 3: 2023/24 forecast expenditure and outputs

Programme	Sub-programme/ Asset	Forecast Expenditure (£m)	2023/24 expected output
<b>DLR</b>	Civils	40.44	Refurbishment of final arch at Limehouse
	Communications		Transmission Network design and build contract awarded and commencement of works, Long Line PA Phase 4 in delivery, commencement of Long Line PA Phase 5
	Electrical & Mechanical		Commence design and delivery of 59 lifts, commence delivery of 18 escalators
	HV Traction		Delivery of six HV and DC switch gear renewals
	Rolling Stock		Commence procurement of B2007 mid-life refresh
	Signalling		Station Controllers design and build contract award
	Track		Re-railing 300m and install sixteen structural expansion joints
<b>London Overground</b>	Civils	13.74	Wall 642 remediation and reinforcement
	Comms		Deliver the design for the replacement of 11 Global Systems for Mobile Communications-Railway (GSM-R) base stations and five repeaters, and the design for the replacement of the transmission equipment on the East London Line core route
	Electrical & Mechanical		Lift obsolescence renewals programme. Saft 48V rectifier renewal.
	Fleet		Deliver the updated 378 Train Cab Simulator
	Premises		Roof, canopies, and stairs renewals across West Anglia Route Stations; Viaduct Arch water ingress remediation
	Power		Fire alarm installation design and build at Dalston Track Paralleling Hut / Transformer Room
	Signalling		WestCAD Replacement – design and install a new Signalling Control system; remote condition monitoring of Axle Counters
	Track		Replace 3,000 baseplates in the Thames Tunnel

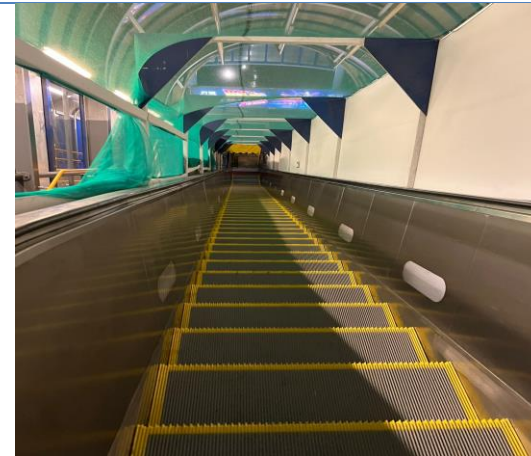


Programme	Sub-programme/ Asset	Forecast Expenditure (£m)	2023/24 expected output
<b>Trams</b>	Civils	23.50	Carriageway resurfacing and crossing safety improvements within Croydon town centre, renewal of step-free access ramp at Birkbeck retaining wall
	Fleet/ Depot		Progress detailed design for renewal of Control Room at Therapia Lane Depot, renewing the cab doors and flooring on the CR4000 tram fleet
	Power and Systems		Completion of replacement of life-expired depot lineside power isolators, completion of design for new digital tram radio system
	Track		Embed 120m of track at Church Street, complete drainage renewal at Mitcham Junction, design and delivery of drainage at Sandilands
<b>Woolwich Ferry</b>	Woolwich Ferry Renewals Programme	5.23	Completion of the 5-yearly dry docking of Woolwich ferry vessels, rolling asset maintenance on the ferry terminal Linkspan, implementation of ferry service customer information improvement projects
<b>Cycle Hire</b>	Bike and Docking Station renewals	4.03	Deliver against contractual bike numbers, docking station repair and relocation projects, asset condition survey and follow-on works
<b>Buses</b>	New Routemaster Refurbishment	8.40	Deliver a further 335 refurbishments, over 50 per cent New Route Master fleet will have been refurbished
<b>Cable Car</b>	Cableway Maintenance	1.01	Gearbox and sheave assembly overhaul, replacement of defective air conditioning unit and CCTV upgrades.
<b>TOTAL</b>		<b>96.35</b>	

# Appendix 4: Examples of Delivery in 2022/23

Mode Project	Before	After
<p><b>DLR</b></p> <p><b>Limehouse waterproofing</b></p>	 A photograph showing the interior of a brick tunnel under a bridge. The ground is uneven and appears to be in need of waterproofing. There are some graffiti tags on the wall.	 A photograph showing the same tunnel after waterproofing. The ground is now smooth and finished, and the graffiti has been removed.
<p><b>DLR</b></p> <p><b>Gallions Reach points and crossing renewals</b></p>	 A photograph showing a railway track at night. The track is covered in gravel and there are some lights visible in the background.	 A photograph showing the same railway track during the day. The track has been renewed and is now covered in gravel. Several workers in orange safety gear are visible on the track.

**DLR  
Tower Gateway  
Escalators**



**Trams  
Gravel Hill  
vehicle incursion  
works**



**Trams**

**Morden Road  
staircase  
replacement**



**London  
Overground**

**OBC  
(Operational  
Building  
Complex)**



**Woolwich Ferry**

North terminal  
approach road  
reconfiguration

