

Date: 6 December 2023

Item: DLR Rolling Stock Replacement Programme

This paper will be considered in public

1 Summary

	Existing Financial Authority (£m)*	Estimated Final Cost (£m)	Existing Programme and Project Authority (£m)*	Additional Authority Requested (£m)	Total Authority (£m)
Gross Cost	809.5	907.0	882.2	0.0	882.2
Gross Income	344.8	245.2	244.7	0.0	244.7
Net Cost	464.7	661.8	637.5	0.0	637.5

Table 1: Summary of authority request

*existing Programme and Project Authority includes commitments beyond the timeframe covered by existing Financial Authority.

**previous updates to the Committee reported the Housing Infrastructure Fund (HIF) and base programme costs and incomes as separate authorities. These have now been merged to create a single authority to reflect how the programme is being delivered.

Authority Approval: The Committee is asked to note the paper and approve Procurement Authority to implement the revised contracting strategy for the Northern Sidings for the amount set out in the paper on Part 2 of the agenda.

Outputs and Schedule: The DLR Rolling Stock Replacement Programme (RSRP) will replace the life-expired B90/92 units, the oldest in the DLR fleet. This will support continued reliability of DLR services, optimise whole-life asset costs, and provide an improved customer offer including through greater capacity and service frequencies to support forecast growth in demand on the DLR network. We expect the first new train to enter passenger service from spring 2024, and to complete the full deployment of the new fleet during 2026.

- 1.1 This paper provides an update on the DLR RSRP (the Programme), including progress on train testing following delivery of the first new train in early 2023, depot upgrades, and other network infrastructure required for the introduction of the new trains. It also updates on next steps for managing remobilisation of the works to construct the Northern Sidings at Beckton depot, following our contractor, Buckingham Group Contracting Limited (BGCL), appointing administrators in September 2023.

- 1.2 Supplementary information is included in Part 2 of the agenda for Members. This information is exempt and is therefore not for publication to the public or press by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of Transport for London (TfL). Any discussion of this paper 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 and subject to approval of the revised TfL Business Plan to be considered by the TfL Board on 13 December 2023 approve additional Procurement Authority, for the amount set out in the paper on Part 2 of the agenda, to enable officers to progress the immediate next steps of a revised contracting strategy for the Northern Sidings prior to seeking further Authorities from the Committee in 2024.**

3 Background and Case for the Scheme

- 3.1 A significant portion of the existing DLR fleet, the B90/92 stock, has reached the end of its design life. This presents significant challenges to sustaining reliable service performance for our customers, with the Mean Distance Between Service Affecting Failures continuing to reduce. While options were explored to “patch and repair” or “life-extend” these trains, the Programme’s business case demonstrates the significant whole-life cost savings, revenue generation and customer benefits that we expect to deliver through a fleet replacement.
- 3.2 The DLR saw stronger recovery from the coronavirus pandemic than the wider rail network and average weekly passenger numbers now exceed 80 per cent of pre-pandemic levels. This has been further strengthened by our optimisation of DLR timetables alongside the introduction of the Elizabeth line. DLR passenger numbers are now three per cent higher than before the opening of the Elizabeth line, where previously we were cautious in forecasting that the Elizabeth line would, at least initially, reduce demand for the DLR.
- 3.3 Beyond the effects of the Elizabeth line, growth continues to exceed expectations on the DLR network. The DLR also runs through areas expected to accommodate significant growth in housing and employment in the coming years, including major Opportunity Areas in the Isle of Dogs, Olympic Legacy, and the Royal Docks. We therefore need to plan for continued growth across the DLR, and we forecast demand will grow by 40 per cent above today’s levels by 2031.
- 3.4 The Programme is key to planning for this growth and will deliver a new fleet of trains and associated infrastructure improvements, including expansion of the existing Beckton depot. The new walk-through, air-conditioned trains will improve reliability, provide greater capacity, and offer an improved customer experience. We will also expand the fleet, replacing the equivalent of 32 life-expired trains with a total of 54 new trains, allowing significant capacity uplifts and more frequent services across the network.

- 3.5 Recognising the contribution of the scheme in supporting housing growth, the Department for Levelling Up, Housing and Communities (DLUHC), via the Greater London Authority, is funding 11 of the trains and associated infrastructure through its HIF.

4 Rolling Stock Manufacture and Testing

- 4.1 The Committee approved Programme and Project Authority and Procurement Authority for the Programme in December 2018, to enable DLR Limited to enter into the Manufacture and Supply Agreement and the Fleet Support Agreement with Construcciones y Auxiliar de Ferrocarriles S.A. (CAF) on 11 June 2019 for the design, manufacture and supply of 43 new trains. This includes the provision of fleet technical support services and spares supply for 35 years. This contract also included options for the purchase of additional trains.
- 4.2 We subsequently confirmed an order for 11 additional trains, funded by DLUHC through HIF, in June 2023. This was reduced from 14 additional trains in our original agreement with DLUHC, in response to challenges forecasting future passenger demand in the post-pandemic environment.
- 4.3 Work on rolling stock was not paused during the coronavirus pandemic – given the likely significant prolongation costs from a pause in the manufacturing process – and we have continued to see strong progress in this area of the Programme. CAF has now completed manufacture of 22 trains and delivered the first two trains to Beckton depot in January and February 2023.
- 4.4 Assembly and initial testing of the first two trains was completed to plan within our existing facilities at Beckton depot and we subsequently began testing on the network. We have successfully completed nine of eleven planned closures during 2023, alongside engineering hours activities, without any issues encountered that are expected to delay planned entry into service of the new trains, or any overruns that impacted on operational service.
- 4.5 Overall, testing is progressing well in identifying the issues we need to resolve to allow us to commence reliability proving during operational hours in early 2024, and to support the first train entering passenger service during spring 2024.
- 4.6 We undertook an Equalities Impact Assessment, supported by engagement with our Independent Disability Advisory Group, as part of the new train design and incorporated significant new accessibility features. We are revisiting and updating this as we deploy the new trains into passenger service, including through operational procedures to ensure we support customers with any changes.

5 Beckton Depot Expansion

- 5.1 Unlike rolling stock manufacture, we paused all depot works between March and November 2020 as part of our “Safe Stop”, and in response to financial uncertainty, resulting from the coronavirus pandemic. During this time, 60 per cent of the project team were placed on furlough and, with remobilisation, this resulted in a significant delay to our plans for Beckton depot compared to the original schedule, and our critical path shifting from rolling stock to depot works.

- 5.2 To maintain the schedule and secure the early benefits of the scheme, including through our ability to begin retiring the B92 fleet, we developed plans for early assembly, testing and maintenance of the new trains using existing space at Beckton prior to the completion of the planned phases of depot expansion. We have fostered excellent collaboration between the project team, TfL Operations and our franchise operator, Keolis Amey Docklands (KAD), to allow efficient use of the existing depot facilities and maintain the overall train delivery programme.
- 5.3 We have completed significant depot works during 2023, including substation works for the new Northern Sidings, and installation of a new low voltage modular building to supply power to the new Maintenance Facility Building (MFB).
- 5.4 Works on the first major stage of the depot expansion, the Northern Sidings, are now substantially complete, however, these works have experienced significant delays which were compounded by the contractor, BGCL, filing a Notice of Intention to appoint Administrators and ceasing all works on site on 17 August 2023. BGCL subsequently appointed administrators on 4 September 2023 and we have since been engaging with the administrators, as well as confirming alternative arrangements for completing the Northern Sidings.
- 5.5 We anticipate significant additional cost and delay because of this event, both in terms of direct impacts to the Northern Sidings scope of works, and wider impacts across the Programme. To indicate the scale of the challenge in terms of schedule, we now forecast completion of the northern sidings no earlier than March 2024, eight months later than planned.
- 5.6 We are, therefore, replanning our works to mitigate, where possible, the impacts on cost and schedule. We remain heavily reliant on contingency measures and collaborative working with operations teams using the existing facilities at Beckton depot to maintain the overall train delivery schedule until new stabling areas and the new MFB can be brought into use.
- 5.7 In January 2023, we awarded Morgan Sindall Infrastructure Limited (MSI) a contract to construct the new MFB and Southern Sidings. We saw good initial progress with mobilisation, site clearance and enabling activities but further progress with the MFB is restricted by delays to the Northern Sidings; construction of the MFB cannot start until the Northern Sidings are operational.
- 5.8 Progressing the Southern Sidings remains critical but we are making good progress to ensure sufficient sidings are operational such that we can continue uninterrupted with the train delivery schedule.
- 5.9 Despite challenges with our works at Beckton depot, we have been pleased to see a positive safety record. This is supported by close working with KAD, MSI and other contractors on site, including through initiatives such as geo-fencing to improve safety around people, plant and the operational depot.

6 Overall Programme Status

- 6.1 We have responded positively to significant challenges across the Programme to maintain the train delivery schedule and so remain on track to deliver the planned benefits of the scheme. This is supported by other activities outside of the main depot and rolling stock workstreams described above. The table below provides a summary of each of area of the Programme, including a commentary on performance since the last update to the Committee in October 2022, and expectations for the year ahead.

Area	Commentary
Rolling Stock	Performance last 12 months <ul style="list-style-type: none"> - first two trains delivered to UK and assembled for testing two months ahead of schedule - additional 11 HIF option trains order confirmed - 22 trains manufactured and ready for delivery once testing milestones have been satisfied
	Lookahead next 12 months <ul style="list-style-type: none"> - Third train delivered to UK in December 2023 - First new B23 train in passenger service by spring 2024 - steady-state acceptance into passenger service of two trains per period following the first train - Scrappage of old B92 trains commences from following introduction of 2024
Depot	Performance last 12 months <ul style="list-style-type: none"> - contract awarded for MFB and Southern Sidings - de-scope of Temporary Fit-Out Shed confirmed - six-month delay to Northern Sidings pre-BGCL administration with knock on impacts to MFB and Southern Sidings start of construction - further delay from administration event currently estimated at a further six to nine months
	Lookahead next 12 months <ul style="list-style-type: none"> - Bringing into use Northern Sidings from March 2024 - Commence MFB construction from spring 2024 - Bringing into use Southern Sidings by autumn 2024
Stations	Performance last 12 months <ul style="list-style-type: none"> - contract awarded for design and build of Blackwall station second entrance in December 2022
	Lookahead next 12 months <ul style="list-style-type: none"> - Blackwall station second entrance brought into use during autumn 2024
Power	Performance last 12 months <ul style="list-style-type: none"> - contract awarded for negative reinforcement
	Lookahead next 12 months <ul style="list-style-type: none"> - electric track equipment upgrades rolled out on route-by-route basis to support deployment strategy
Signalling	Performance last 12 months <ul style="list-style-type: none"> - network testing proceeding to plan
	Lookahead next 12 months <ul style="list-style-type: none"> - final contingency software drop in early 2024 to support

	revenue approval of signalling system and support first train entering service during spring 2024
Telecoms	Performance last 12 months <ul style="list-style-type: none"> - contract for design of lineside communications infrastructure awarded to Telent in May 2023. This was delayed but is not expected to impact on bringing first train into passenger service
	Lookahead next 12 months <ul style="list-style-type: none"> - detailed design instructions before end of 2023 - installation and commissioning of new telecoms assets in Beckton Control Centre by end of 2024
HIF Sidings	Performance last 12 months <ul style="list-style-type: none"> - feasibility design completed during summer 2023
	Lookahead next 12 months <ul style="list-style-type: none"> - issue Invitation to Tender for design and build of HIF sidings in early 2024 before awarding contract by summer 2024

Programme Estimated Final Cost (EFC)

- 6.2 Our work over the past year has secured significant opportunities and efficiencies to save cost, including through;
- (a) de-scoping the planned Temporary Fit-Out Shed by developing plans to assemble and test the new trains using existing depot facilities. This secured an EFC reduction of £7m against our previous plans as well as carbon savings equivalent to 1,200 tonnes of carbon dioxide;
 - (b) review of the depot sidings to optimise the design and required number of berths and operational facilities, delivering an EFC reduction of £26m;
 - (c) effective management and mitigation of risks within the rolling stock manufacture and testing, allowing release of £5m of risk; and
 - (d) challenging power requirements for very low-likelihood degradation scenarios, mitigating £6m cost increases and maintaining EFC.
- 6.3 Despite this, we forecast our EFC would exceed existing Financial Authority and Programme and Project Authority because of the significant challenges seen across the Programme, not least the direct and indirect impacts of BGCL going into administration. We will, therefore, require additional funding to complete the Programme and secure the benefits of the scheme for our customers, our revenues and east London's sustainable growth. This is being considered in the context of developing our revised Business Plan.
- 6.4 We launched a deep-dive review of the EFC during August and September 2023, but there remain significant uncertainties, risks and opportunities across the Programme. This includes within the HIF Sidings which represent the largest element of "uncommitted" works on the programme and where we continue to review the scope required to deliver planned benefits. Our deep-dive has informed development of our draft Business Plan which will be submitted to the Board for approval on 13 December 2023.

- 6.5 Given the uncertainty as we continue to replan the works, however, we are not currently requesting approval of an increase in Financial Authority or Programme and Project Authority from the Committee. We expect to return to the Committee during the summer of 2024 to request the relevant additional Authorities once we have greater confidence in the required amounts including reconciliation of income as we finalise our payments under the Grant Determination Agreement with the Department for Levelling Up, Housing and Communities.

Procurement Authority

- 6.6 Prior to the next meeting of the Committee on 28 February 2024, we will need to enter into contractual arrangements to complete the Northern Sidings and therefore require additional Procurement Authority to progress this. This additional Procurement Authority will enable officers to progress the immediate next steps of a revised contracting strategy for the Northern Sidings but are an interim step, and we expect to seek further authorities from the Committee in 2024. Further information on these contractual arrangements, the Procurement Authority required, and the current EFC for the Programme is provided in the paper on Part 2 of the agenda. The Procurement Authority is aligned to the existing Programme and Project Authority headroom, and additional Financial Authority which will be provided through the revised Business Plan, subject to its approval by the Board on 13 December 2023

Benefits and Value

- 6.7 Despite the potential for continued cost increases, we remain confident in the significant benefits this Programme will deliver in terms of improved whole life cost outcomes for the DLR fleet, improved passenger journey times, better customer facilities, and increased capacity and more frequent services to support continued growth in east London. Sensitivity tests undertaken during development of the Programme Business Case demonstrate that, even with the expected increase in costs, the Programme will deliver a financially positive outcome. A benefit:cost ratio is less relevant in this situation but this outcome represents very high value for money.

7 Project Assurance

- 7.1 In support of this submission, an integrated assurance review was undertaken by TfL Project Assurance and the Independent Investment Programme Advisory Group. This did not identify any critical issues with the Programme and we are actively responding to the recommended actions.

List of appendices to this report:

Appendix 1: progress photographs

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

List of Background Papers:

Project Assurance Report and Management Response

TfL Project Assurance Report and Management Response

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Appendix 1: Progress photographs

B23 train at Canary Wharf station during testing in a planned closure



Northern Sidings construction progress – works substantively complete

