

## Programmes and Investment Committee



Date: 13 October 2017

Item: Additional New Rolling Stock for London Overground

---

This paper will be considered in public

### 1 Summary

<b>LR-PC303 Additional New Rolling Stock for London Overground</b>
<b>Authority Approval:</b> The Committee is requested to approve in principle the exercise of options for up to nine new class 710 trains for London Overground and delegate authority to the Committee Chair to approve the number to be purchased and grant additional Procurement Authority as appropriate.
<b>Outputs and Schedule:</b> Additional new class 710 trains to serve the Barking Riverside Extension and to increase services on the East London Line to 20 trains per hour. Delivery of the additional new trains will begin in the 2018/19 financial year.

- 1.1 A paper is included on Part 2 of the agenda, which contains exempt supplementary information. The information is exempt by virtue of paragraph 3 of Schedule 12A of the Local Government Act 1972 in that it contains information relating to the business affairs of TfL. Any discussion of that exempt information must take place after the press and public have been excluded from this meeting.

### 2 Recommendations

- 2.1 **Following delegation from the TfL Board, the Committee is requested to note the contents of this paper and the related paper on Part 2 of the agenda and**
- (a) **approve in principle the exercise of options for up to nine new class 710 trains for London Overground as described in this paper; and**
  - (b) **authorise the Chair of the Committee to approve the number of new class 710 trains to be purchased, by exercising one or more options, having considered their affordability in the context of preparing TfL's Business Plan, and grant additional Programme and Project Authority and Procurement Authority as appropriate, with reference to the sums set out in the paper on Part 2 of the agenda.**

### 3 Background

- 3.1 In June 2015 the Finance and Policy Committee granted approval for the award of a contract for new rolling stock on the London Overground (the LOTRAIN project). The project comprises the design, manufacturing, commissioning and entry into service of a fleet of 45 new electric multiple unit trains to support the

expanding London Overground network, including replacement of life expired rolling stock on the West Anglia routes, plus replacement of two car diesel multiple units on the current Gospel Oak – Barking route, and additional stock to increase capacity on existing Overground routes. The 45 trains form the base order with Bombardier.

- 3.2 The contract includes priced options for additional units. To avoid interruption costs and indexation, any options would need to be exercised by 26 October 2017. These options provide an opportunity to serve the new Barking Riverside Extension (BRE) and to enhance frequencies on the East London Line (ELL) to improve passenger satisfaction and release suppressed demand.
- 3.3 After completion of the manufacturing competition and award of the Manufacturing and Supply Agreement (MSA) and Train Services Agreement (TSA) contracts, a financing competition was run to seek a lessor to finance the manufacturing of the trains and lease them to TfL. A lessor, London Rail Leasing Limited (LRL) – a joint venture between Sumitomo Mitsui Banking Corporation and Lombard – was appointed in early 2016.
- 3.4 Under the terms under which LRL was appointed, if RfL exercises any purchase option in respect to ‘Option Units and Spares’, an option notice must be signed by both TfL and LRL.
- 3.5 Procuring these trains now will avoid additional costs by securing the option trains at the best price and taking advantage of current financing arrangements. These trains are not required immediately but there are opportunities to generate revenue by using them elsewhere on the network until they are. There may also be opportunities to sub-lease the rolling stock to other operators.

### **Barking Riverside Extension**

- 3.6 Transport for London (TfL) is delivering a 4km extension of the Gospel Oak to Barking line, from its current terminus at Barking to a new station in the heart of the Barking Riverside development. Barking Riverside is the largest brownfield development site in east London, with planning permission for 10,800 new homes. Planning permission for the full build out of the site is dependent on the construction of the BRE. TfL submitted an application for a Transport and Works Act Order (TWAO) in March 2016 for the powers to build and operate the extension. The TWAO was confirmed by the Secretary of State on 4 August 2017.
- 3.7 Four trains per hour would operate from Barking station along the existing Tilbury Loop Line and then via a new section of railway, heading south towards Barking Riverside.

### **East London Line**

- 3.8 The East London Line (ELL) currently operates 16 trains per hour, connecting inner South London with the major employment centres at Canary Wharf and the City fringe. The line currently suffers severe levels of crowding during peak periods and demand for these services is forecast to grow by 50 per cent over the next 15 years.

- 3.9 There is an urgent need to expand the capacity of this route - without this, performance and customer experience is expected to decline and suppressed demand will not be released.
- 3.10 In the 2016 Autumn Statement the Chancellor announced a £450m Digital Railway fund for trialling digital signalling technology, expanding capacity, and improving reliability. The strategic outline business case for the ELL 20 trains per hour project has been shortlisted to receive funding from this fund. Funding of £6m has been received to develop the project to outline business case but a final decision is not expected until spring 2018. Funding will be shared with Network Rail who will also be using it to develop their wider plan to implement Traffic Management technology on the South East Route.
- 3.11 A signalling update would be required along with modifications at Norwood to provide additional stabling. This is due to be delivered as part of the Brighton mainline works but it may be necessary to accelerate the works. The cost of any such acceleration would need to be shared with Network Rail's Brighton Main Line Upgrade project or covered through track access charges
- 3.12 A bid has been made for infrastructure works, which are not included in the Digital Railway fund bid, to the Department of Communities and Local Government (DCLG) Housing and Infrastructure fund. This forms part of a wider package of ELL improvements. DCLG are not due to make a decision until summer 2018.

### **West London Line**

- 3.13 There is an opportunity to use the rolling stock on the WLL in the interim period before the enhanced service on the ELL commences in May 2021. An enhanced frequency, to provide congestion relief, would be operated between Clapham Junction and Willesden Junction and/or Shepherd's Bush. A plan will need to be developed to maintain services on this line when the trains are required for the ELL.

### **Sub Leasing**

- 3.14 Consideration will also be given to whether trains could be subleased to another operator during any period that they are not required to defray some of the additional leasing and maintenance costs that would otherwise be incurred.

### **Strategic Context**

- 3.15 The additional rolling stock will address the key Mayoral objective, as set out in the Draft Mayor's Transport Strategy, of increasing the capacity of the public transport network and using this to support and densify development across the capital. The additional trains will also improve the quality of the journey experience by improving operational performance, another key Mayoral objective. Appendix 1 illustrates the opportunity areas which the additional new trains would serve.
- 3.16 In supporting the BRE and providing additional capacity on other lines, the proposal aligns to the Mayoral vision of "A City for All Londoners" because it is an

example of how a strong connection between investment in transport infrastructure can support housing development and accommodate sustainable population and employment growth.

## **4 The Proposal**

### **Preferred Option**

- 4.1 The proposal is to exercise the option for up to nine additional Class 710 trains (six 5-car and three 4-car trains) through the existing contracts with Bombardier. This will support the delivery of the planned service level on the BRE and an enhanced service level on the ELL. The trains are assumed to be delivered from November 2018 and can be deployed on the WLL in the interim period, with some possibly being sub leased to other operators.
- 4.2 A plan will need to be developed to replace any trains that are being used to provide enhanced service levels on the WLL to ensure that capacity on that route is maintained once the trains are transferred to deliver the ELL service enhancement.

### **Benefits (and Value)**

- 4.3 The business case covers both the BRE and proposed frequency enhancements on the ELL with the assumption that trains will be used on the WLL in the interim. This approach has been taken because the rolling stock that is proposed to be ordered supports the value delivered by both these projects so it needs to be considered in this context.
- 4.4 The business case for the BRE has been set out in detail elsewhere so is not covered further in this paper. The original assumptions made for the rolling stock costs remain valid based on the option that is planned to be exercised so there is no material change to the business case for the BRE.
- 4.5 The business case for the proposed frequency enhancements on the ELL includes capex elements for the infrastructure modifications required to deliver this. The business case includes the full opex required to operate the additional services, covering costs incurred by the Concessionaire and costs for the leasing, maintenance and stabling of the additional trains required.
- 4.6 Additional capex is required to enable the delivery of the changes to rail infrastructure and systems required to deliver a 20 tph service on the ELL. This may be funded through third party sources (the National Productivity Improvement Fund and the Housing Infrastructure Fund) but this is not guaranteed at this point, so the capex funding requirement is included in the Business Case. The implications of this funding not being secured are discussed in Part 2 of this paper.
- 4.7 The benefits generated represent the journey time savings delivered on the ELL, and WLL in the interim, compared to the do nothing option, where new services are provided and existing services enhanced. The Benefit:Cost Ratio (BCR) for the preferred option is 10.59:1.

- 4.8 The preferred option (Do Something) has been chosen because it delivers a short term increase on the WLL whilst also facilitating the medium term objective on increasing the service level on the ELL to 20 tph. It does this in a manner that generates a lower net cost than either the Do Maximum Option or the BRE and WLL Only Option.

### Options Analysis

- 4.9 For all of the options being considered it has been concluded that procuring additional new trains before 26 October 2017 offers better value than leasing either modern or older trains or incurring the additional charges for remobilisation and commercial financing under the LOTRAIN deal if the trains are ordered at a later date. Affordability considerations are, however, relevant and it is considered prudent to authorise the Chair to consider affordability in the context of the development of TfL's new Business Plan before a final decision is made on the number of trains to be purchased.
- 4.10 The options are set out below:
- (a) **Do nothing** - trains would need to be procured for BRE in 2021 when they are more expensive and the existing finance deal has expired. Additional new trains for the ELL would also need to be obtained at a later date. The do nothing option includes the permanent loss of the additional train that currently runs on the Gospel Oak to Barking Route during peak periods, raising the frequency offered from four to five tph at the busiest time. The impact of this will be mitigated by the doubling of capacity on all trains on this route as a consequence of the introduction of 4-car trains under the original LOTRAIN order. This change is already planned to take place during 2018, and supports the other options described below. **Not recommended**
  - (b) **Do minimum** - an option for two additional new trains (eight extra vehicles) would be exercised for use on the BRE. Trains would arrive earlier than required and could be used on the WLL in the interim to offset some of the sunk leasing and maintenance costs. Additional trains for the ELL (including an engineering spare) would need to be obtained at a later date. **Not recommended**
  - (c) **Do something** - an option for nine additional trains would be exercised (six 5-car units and three 4-car units making 42 vehicles in total) to enable delivery of the ELL 20 tph and BRE services. One additional Class 315 train would be retained within the broader rolling stock fleet under this option to enable the provision of the planned service level. The steps required to deliver the enhanced services on the BRE and the ELL under this option are described below:
    - (i) the six additional 5-car units ordered would be used to deliver the NLL/WLL service, releasing six 5-car Class 378 units to deliver the enhanced service level of 20 tph on the ELL;
    - (ii) one of the additional 4-car units ordered would be used to deliver the Watford to Euston service. Another 4-car unit would be released for use on the same service by leasing an additional unit to run the Romford to

Upminster service. A further two 5-car Class 378 units could then be released to deliver the enhanced service level of 20 tph on the ELL;

- (iii) eight additional 5-car Class 378 units would therefore be released to the ELL, enabling the 20 tph service enhancement to be operated. This enhancement has to be run using Class 378 units due to the operational and safety constraints imposed by operation through the ELL Core; and
- (iv) the remaining two additional 4-car units would be used to deliver the BRE service. The unit availability required under this option would be underpinned by the withdrawal of the additional peak service on the Gospel Oak to Barking route that is referred to above.

During the period prior to the introduction of the enhanced service on the ELL and the BRE the trains could be used on the WLL and potentially elsewhere on the network to help defray any sunk leasing or maintenance costs.

**Recommended**

- (d) **Do maximum** - an option for 11 additional trains would be exercised (six 5-car units and five 4-car units making 50 vehicles in total) to deliver the ELL 20 tph service and the BRE service. Until required, trains could be used on the WLL and potentially elsewhere on the network. Sub leasing would also be considered under this option. **Not Recommended**
  - (e) **BRE and WLL only option** - Eight extra units would be required, six 5-car units and two 4-car units. This option would be used to deliver an enhanced service level on the WLL on an ongoing basis, together with the BRE service. **Not recommended**
- 4.11 The preferred option will allow TfL to take advantage of the competitively favourable terms for option units ordered before 26 October 2017 and financing arrangements to obtain additional trains, saving money in the longer term. It will also provide a firm basis for the development and implementation of the ELL 20 tph service, the case for which is described in Section 3 above. In the interim trains could be used to enhance other services.

## **5 Financial**

### **Commercial**

- 5.1 The financial position is described in the Part 2 paper.

## **6 Assurance**

- 6.1 The project has been reviewed by TfL Project Assurance.

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

Appendix 1: Growth area map

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

**List of background papers:**

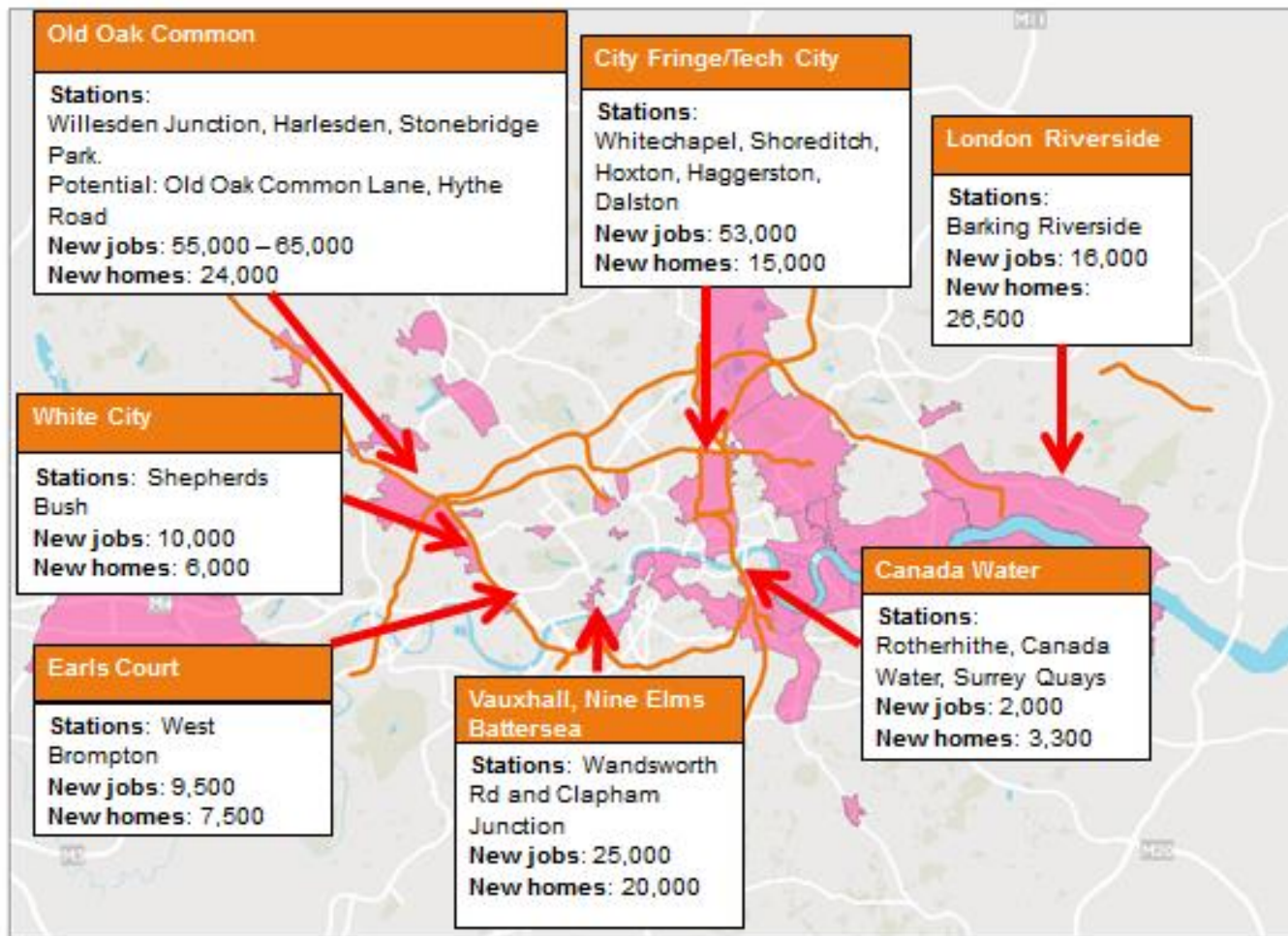
Barking Riverside Extension Business Case

Contact Officer: Gareth Powell, Director of Strategy and Contracted Services  
Number: 020 3054 8196  
Email: [GarethPowell@tfl.gov.uk](mailto:GarethPowell@tfl.gov.uk)

[page left intentionally blank]



## Appendix 1: Growth Area Map



[page left intentionally blank]