

Date: 16 October 2015

Item: London Overground and Docklands Light Railway Growth

This paper will be considered in public

1 Summary

1.1 This paper explains the demand growth that has occurred on London Overground (LO) and Docklands Light Railway (DLR) in recent years, as requested by the Panel. It describes the enhancements that are under development to increase capacity on the routes. These enhancement include night services on LO and DLR.

2 Recommendation

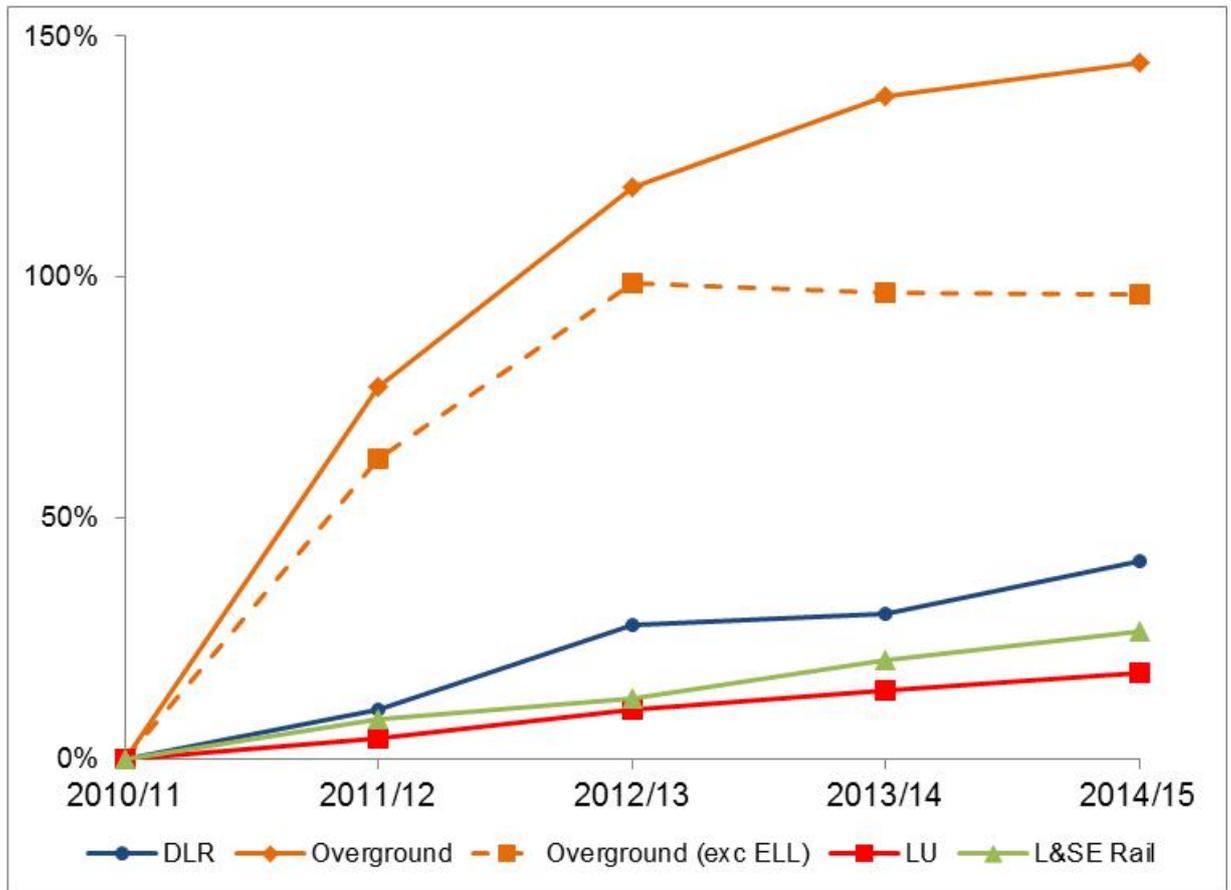
2.1 **The Panel is asked to note the paper.**

3 Background

London Overground

- 3.1 LO demand increased by 144 per cent between 2010/11 and 2014/15. New services continued to be introduced during that time with the extension of East London Line (ELL) services to Clapham Junction in 2012 and an increase in frequency on the core ELL from 12 trains per hour (tph) to 16tph. Even excluding ELL, LO demand increased by 96 per cent over four years compared with 27 per cent growth on London and South East rail services.
- 3.2 All trains on ELL have been lengthened from four car to five car formation in the last year, adding 25 per cent extra capacity on a crowded route. Trains on North London Line (NLL) and West London Line (WLL) are currently being lengthened to five cars and this work will be complete by the end of 2015. TfL is undertaking analysis to evaluate the impact of the train lengthening (LOCIP) project and initial results will be available at the end of the year for ELL and March 2016 for NLL..
- 3.3 Growth has been highest on the WLL and in East London. Key drivers of demand included growth in the economy and local population. Westfield shopping centres at Shepherd's Bush and Stratford have contributed to demand growth particularly at weekends and in the off peak. High service quality and operational performance also contributed to demand.
- 3.4 In addition, the West Anglia (WA) routes and Romford-Upminster were transferred to LO on 31 May 2015 and now form part of the LO network. Demand on WA grew by 10 per cent in 2014/15. TfL has begun a programme of station enhancements and train refurbishment.

Growth in Passenger Journeys 2010/11-2014/15



DLR

- 3.5 DLR demand has increased by 41 per cent over the same period. The period included the completion of lengthening to three cars, and the opening of the Stratford International extension. DLR experienced strong growth in demand with the London 2012 Games. The 2012 level of demand was maintained and growth continued at 8.5 per cent in 2014/15.
- 3.6 Seven stations have contributed 50 per cent of DLR's growth over the last four years. These are Woolwich Arsenal, Stratford, Bank, Canning Town, Shadwell, Heron Quays and Lewisham. Woolwich is a major generator and attractor of demand and accounts for around 10 per cent of DLR journeys. Stratford and Lewisham are also significant origins and destinations for DLR passengers. Growth has been strong on the Stratford-Canary Wharf/Lewisham route with demand spreading outwards from Canary Wharf to nearby stations of Heron Quays and South Quay.
- 3.7 The map shows the DLR network with stations categorised into employment hubs, leisure attractors, and mature local or young local stations. The new Pudding Mill Lane station was opened in 2014.



3.8 The new DLR franchise operated by Keolis Amey Docklands (KAD) began in December 2014. The franchisee has committed to introduce service enhancements and has already introduced a new timetable between Stratford and Canary Wharf, which has increased frequency by 50 per cent. Trains on this route are now two cars but overall capacity has increased by 20 per cent. In early 2015, frequency doubled in the late evenings on Bank-Lewisham and off peak on the Woolwich route.

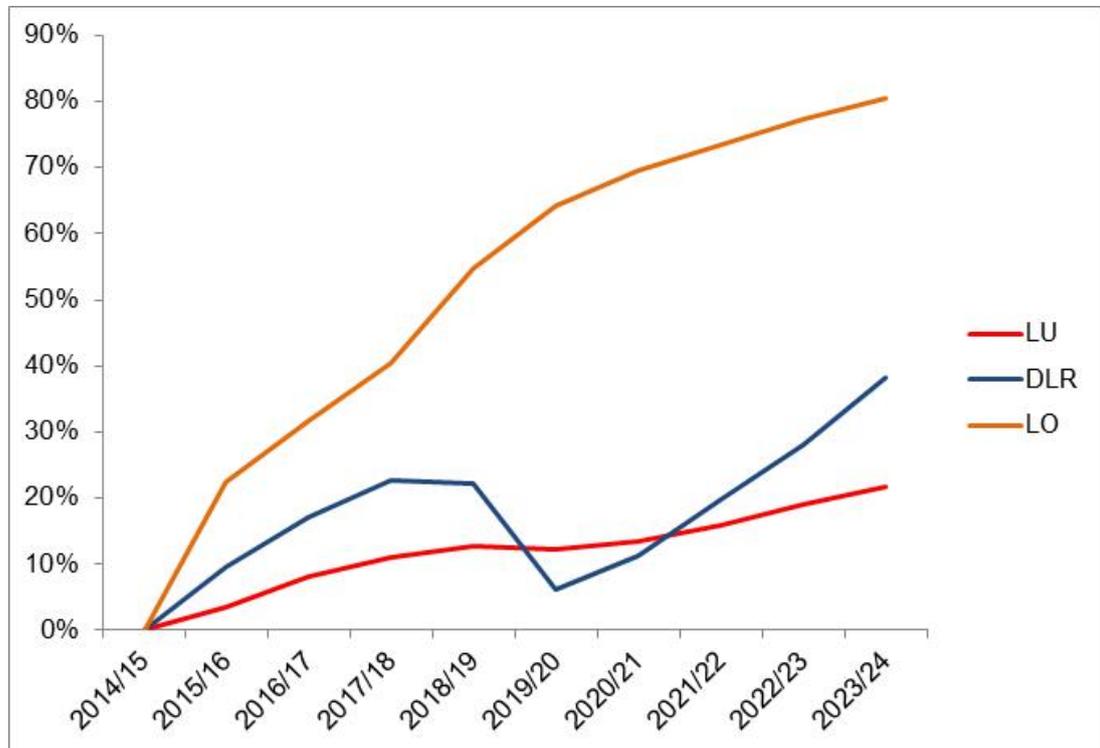
4 Future Plans to accommodate growth

London Overground

- 4.1 TfL has funded plans to deliver capacity enhancements on LO over the next three years. Gospel Oak – Barking (GOB) will be electrified by Network Rail in 2017, providing an opportunity to run electric trains on the route. TfL will lengthen platforms to four car capability and introduce four car electric trains in 2017. These trains will increase capacity by 80 per cent, reducing crowding and accommodating further growth.
- 4.2 West Anglia services currently operate with 30-year old four car trains. These have inappropriate layouts for metro services. TfL will replace them with modern stock with metro style layout, increasing capacity by 15 per cent in 2018.
- 4.3 In July 2015, TfL ordered 45 new four car trains from Bombardier for operation on the West Anglia, GOB and Watford Euston routes. The London Overground Train Procurement (LOTRAIN) order included options to procure additional trains if required.

- 4.4 TfL operates a peak service of eight tph on NLL and has funded plans to increase that to ten tph when new trains are available. It also plans to increase capacity on ELL by introducing a two tph Dalston-Crystal Palace service from 2018 subject to the availability of paths being confirmed by Network Rail.

Forecast growth in passenger journeys



- 4.5 The chart shows forecast growth in demand on LO, DLR and London Underground during the business plan period using figures produced for the Quarter 1 Forecast. LO demand is forecast to increase by 80 per cent over that period although this includes a step change in 2015/16 with the inclusion of West Anglia services. Strong growth is forecast in the period to 2019/20. The DLR is forecast to witness a dip in growth when Crossrail is introduced in 2018/19 but strong growth is forecast from 2019/20.
- 4.6 TfL would like to increase frequency from four tph to five tph on GOB to deal with growing demand. Spare capacity is constrained by freight paths on the route, many of which are not used. TfL is working with Network Rail to try and free up capacity. The Barking Riverside extension is not yet committed but could open in 2020, allowing TfL to extend its services to Barking Riverside.
- 4.7 TfL has an aspiration to increase frequency on Watford Euston from three tph to four tph to provide a 'turn up and go' service. The LOTRAIN order includes an option for two extra four car trains to run the increased frequency.



- 4.8 Station capacity enhancements are also required to deal with growing demand. Capacity schemes are planned and funded at stations including West Hampstead, Hackney Central and Dalston Kingsland through the LO Stations project. TfL is also developing proposals for a second tranche of station capacity enhancements.
- 4.9 Other options are also being considered to increase capacity. In the short term, frequency improvements may be brought forward by leasing additional trains before the LO train units are built.
- 4.10 Procurement is underway for the next LO concession (LO2) beginning in November 2016. The specification includes options for additional services including late evening services on several routes, Boxing Day and New Year's Eve services, and night services on ELL. It is proposed to operate Friday and Saturday night services on TfL infrastructure between Dalston Junction and New Cross Gate. Other LO services operate mainly on Network Rail infrastructure where maintenance is usually carried out on weekend nights. Routes are shared with freight trains which operate overnight during the week, limiting access to the network.
- 4.11 Appendix 1 summarises proposed capacity interventions by route.

DLR

- 4.12 DLR demand is forecast to increase by 38 per cent over the Business Plan period as shown in the chart at paragraph 4.4. Large scale residential and commercial development is planned on the DLR network. The Albert Business Port development is expected to support 15,000 jobs in addition to 12,000 jobs at Silvertown, leading to substantial additional demand on the Beckton route.
- 4.13 Introduction of Crossrail services is expected to lead to some reduction in demand into central London, enabling a recasting of services from 2019. DLR demand to the City is expected to reduce as passengers transfer to Crossrail but this will be offset by increasing demand to Stratford and new demand generated by the Royal Docks developments.
- 4.14 More than a third of DLR trains are being converted to longitudinal seating by mid 2016, increasing effective capacity by 10 per cent and easing passenger flow through the trains at busy times.

- 4.15 Further service enhancements are planned by KAD including increasing all day service frequency to Lewisham and off-peak Stratford-Beckton services.
- 4.16 Tranche 2 of double tracking of the section between Stratford and Bow Road is included in the Business Plan and will be completed by 2020 to enable an increase in frequency from 15tph to 20tph.
- 4.17 The B92 fleet was built in 1992 and will be life expired in the 2020s. The Business Plan includes funding for 33 new trains to replace the B92s and to provide an additional 10 trains for Royal Docks which will enable a doubling of capacity on the Beckton Line and a 20 per cent increase on the Woolwich Arsenal Line.
- 4.18 The Royal Docks development will require increased capacity on trains and at stations. Planned capacity enhancements include an additional 10 trains and four major station upgrades. Custom House station will provide an enhanced interchange with Crossrail. Custom House and Beckton Park station works are funded partly by third parties and partly by TfL. Enhancements at Royal Albert and Pontoon Dock stations require further contributions to be negotiated with developers.
- 4.19 Night services on DLR are planned for 2021 after the Bank station upgrade works are complete, and the current franchise and City Greenwich Lewisham Railway Lewisham route contract have ended. Night services are planned to operate from Bank to Lewisham and Bank to Canning Town/Woolwich with a four tph service operating on each route.
- 4.20 Proposed DLR enhancements are shown in Appendix 2.

5 Financial Implications

London Overground

- 5.1 The costs of train lengthening to five cars, 31 high capacity trains on West Anglia, four car trains on GOB, and two tph additional services on the North, West and East London Lines and the cost of operating night services are already included in the Business Plan. Other LO enhancements are not yet funded.

DLR

- 5.2 The costs of longitudinal seating, franchise service commitments, North Route double tracking, new trains and capacity works at Beckton Park and Custom House as well as operating costs of night services are funded in the Business Plan. Other schemes are unfunded.

List of appendices to this report:

Appendix 1: London Overground proposed service enhancements

Appendix 2: DLR proposed service enhancements

List of Background Papers:

None

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London Overground proposed service enhancements – includes committed and aspirational schemes

	North London Line	West London Line	East London Line	Gospel Oak - Barking	Watford - Euston	West Anglia
2016	Five car trains	Five car trains	Five car trains		Five car trains	
2017	Additional evening and weekend services	Additional evening and weekend services	Additional evening and weekend services Night Overground	Additional evening and weekend services New four car electric trains		
2018	+ Two tph Clapham to Stratford		+ Two tph Dalston Junction to Crystal Palace			
2019			+ Two tph Dalston Junction to Clapham Junction	Five tph peak	Four tph	New trains +Two tph Enfield Town Seven Sisters/Liverpool Street
2020				Barking Riverside extension		

DLR proposed service enhancements – includes committed and aspirational schemes

	New train programme	North Route	Royal Docks Capacity	Service planning	Station capacity
2016				Longitudinal seating Increased Stratford – Lewisham and Beckton services	Limehouse escalators, Royal Victoria canopies
2017					Blackwall secondary access
2018			Custom House, Beckton Park and Pontoon Dock station upgrades		
2019		Tranche 2 double tracking			
2020	First new trains in service				
2021				Night DLR	