

Subject: Proposal to Examine Overcrowding on the Underground and the Impact of the Upgrade Programme

Report Number: 5

Report to: Transport Committee

Date: 8 July 2009

Report of: Executive Director of Secretariat

1. Recommendations

- 1.1 That the Committee carries out an investigation into overcrowding on the Underground and the impact of the upgrade programme with terms of reference as outlined at paragraph 3.22.
- 1.2 That the Committee notes this report as background to putting questions to the guests at its meeting on 8 July.
- 1.3 That the Business Management and Administration Committee (BMAC) be recommended to approve expenditure of up to a maximum of £18,000 to commission external contractors to facilitate focus groups with a number of specific types of users of the London Underground.
- 1.4 That the Committee notes that the Executive Director of Secretariat will commission external contractors to carry out the work, subject to BMAC approving recommendation 1.3 above.

2. Background

Overcrowding

- 2.1 Transport for London (TfL) recently presented figures for the average number of passengers per bus and per train on the Underground between 1991/92 and 2007/08 (see Figure 1 below). The average number of passengers on an Underground train has remained relatively stable over the period, which TfL said "indicates that increased service provision is generally keeping pace with increased demand".¹
- 2.2 However, overcrowding at peak times is a well-known problem for Underground passengers, and it is not captured by average train occupancy figures. Initial information from London Underground for this investigation (Appendix 1) shows that during the busiest hour in the

¹ TfL, *Travel in London*, April 2009, pp. 86-87

morning there can be more than four people per square metre in trains on certain parts of the network in central London.

- 2.3 Passengers also experience overcrowding at peak times at London Underground stations. ‘Station control measures’, such as temporary closures of ticket gates or entire stations, are frequently required at some stations to manage congestion.

The Underground upgrade programme

- 2.4 The London Underground upgrade programme, which began in 2003 and is scheduled to run until 2020, is primarily designed to renew the Underground’s ageing line infrastructure – for example, track and signalling systems. These “line upgrades” are due to deliver nearly 30 per cent more capacity on the Underground network by 2020.² A series of projects to refurbish and modernise stations is also ongoing, although, in its recent report on the funding of the upgrade programme, the Transport Committee highlighted delays, increasing costs and a potential funding shortfall.³
- 2.5 Much of the work to upgrade the Underground is undertaken overnight so as not to disrupt passengers. However, so that the programme can be delivered more quickly, some lines and stations are also closed at weekends, early in the morning and/or during the evening.

This investigation

- 2.6 Members have agreed that the Committee should consider the service provided by TfL from the perspective of its users. This investigation would focus on the experience of passengers on the London Underground. Taken with previous and planned work by the Committee – including *The Big Squeeze*, which looked at overcrowding on national rail services⁴, and a forthcoming examination of TfL’s review of London Buses – the Committee is building up a broad picture of the passenger experience across the transport network in the capital.
- 2.7 This report provides a proposal for an investigation into overcrowding on the London Underground network and the management of overcrowding, as well as the impact of the upgrade programme on passengers. The investigation would also consider the ways in which overcrowding is managed on other modes, including national rail services, the Docklands Light Railway (DLR) and the Croydon Tramlink, to see whether lessons can be learned for the Underground.
- 2.8 Tube passengers have long experience of overcrowding at peak times so, as well as requesting peak train overcrowding and station congestion data from London Underground, the Committee would seek to understand from passengers the effects of overcrowding on the network and gather suggestions to better manage the situation in the short term.
- 2.8 It is proposed that the investigation would also look at the ongoing programme of line and station closures (for example, the current weekend suspensions of the Jubilee line) to inform plans for the future. It is intended to highlight good practice (including from other metros around the world) and, where possible, make recommendations to ensure that the forthcoming upgrades of the other lines and stations, in particular the Piccadilly line upgrade, are undertaken with minimum disruption. The implications of Underground closures for other modes of transport (for example, the DLR when the Jubilee line is suspended), and the coordination of Underground works with works on other modes (for example, Network Rail engineering), would also be explored.

² <http://www.tfl.gov.uk/corporate/projectsandschemes/10127.aspx>

³ Transport Committee, *Delays possible: Maintaining and upgrading the London Underground*, March 2009

⁴ Transport Committee, *The Big Squeeze: Rail overcrowding in London*, February 2009

3. Issues for Consideration

Overcrowding

- 3.1 The Underground carries more than 1 billion passengers a year – as many as the entire national rail network – and was recently judged to be the best metro system in the world.⁵ There has been a steady growth in the use of the Underground and in 2007/08 the Underground carried 5.7 per cent more passengers than the previous year.⁶
- 3.2 Scheduled train kilometres on the London Underground have increased by around 25 per cent since 1995/96. The reliability of the network has also improved, with around 95 per cent of scheduled train kilometres operated and excess journey time⁷ estimated at about 17 per cent – down from a peak of over 20 per cent in 2002/03.⁸
- 3.3 These improvements to service provision have meant that the average number of passengers per train on the London Underground has remained relatively stable at around 110-115 (see Figure 1) even though the overall number of passengers has been rising.

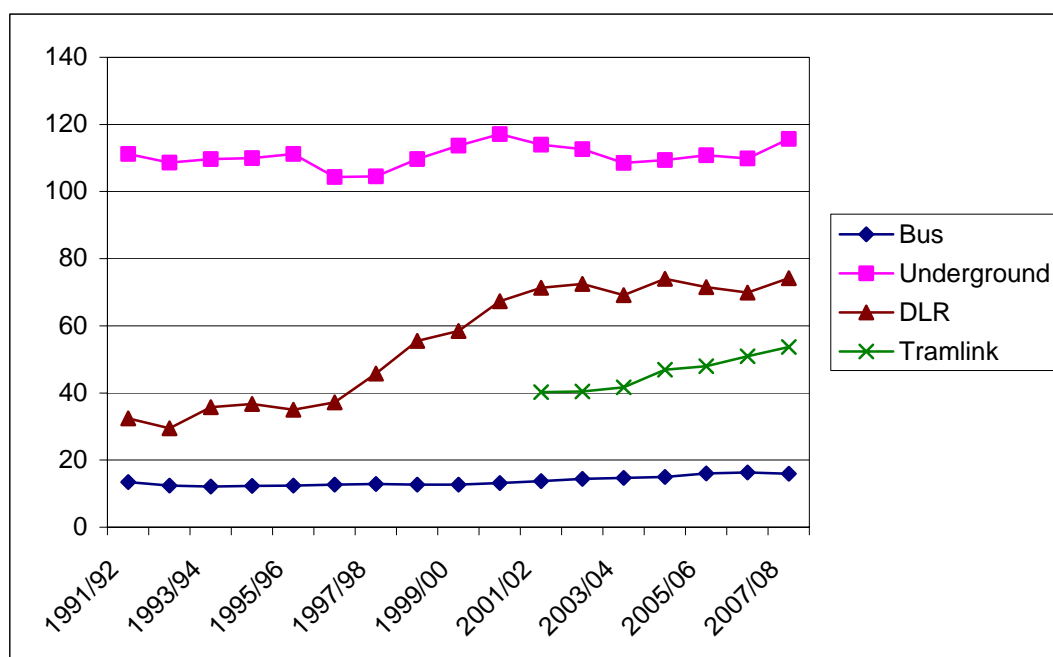


Figure 1: Average number of passengers per bus or train 1991/92 – 2007/08

- 3.4 However, during the busiest hour in the morning peak, train in parts of the central London network have more than four passengers per square metre (see Appendix 1 for a map from London Underground showing crowding during the busiest hour in the morning for Autumn 2007). Sections particularly badly affected by overcrowding in the morning peak include:
- Central line – westbound from Mile End to Chancery Lane
 - Victoria line – southbound from Highbury & Islington to Oxford Circus and northbound from Victoria to Green Park
 - Northern line – both directions on the Bank branch through central London
 - Jubilee line – southbound from Baker Street to Bond Street and Eastbound from London Bridge to Canary Wharf

⁵ <http://news.bbc.co.uk/1/hi/england/london/8020042.stm>

⁶ [http://www.tfl.gov.uk/corporate/modesoftransport/london/The The Underground/1608.aspx](http://www.tfl.gov.uk/corporate/modesoftransport/london/The%20Underground/1608.aspx)

⁷ The additional time taken for a journey over what would be expected if all services ran as scheduled.

⁸ TfL, *Travel in London*, April 2009, pp. 84-85

3.5 The Committee does not yet hold data on overcrowding at stations but, for example, over 70,000 passengers use Victoria station during the morning peak resulting in congestion in the platform concourse, up the escalators and into the ticket hall and frequent closures of the station until congestion has cleared.⁹ The Committee has previously identified station congestion associated with football matches – for example, at Arsenal’s Emirates Stadium – as an ongoing concern.¹⁰

3.6 In his final meeting with the Committee, the outgoing Managing Director of London Underground, Tim O’Toole, said the following about station pinch points:

One of the areas where we will discover, after we get these new train systems in, that is going to need more work is the expansion of some of the key stations. [...] Unless the stations are big enough so that you can clear those people off the platforms quickly, you cannot fire the trains through as fast as you want. So I do believe that there is going to be strain on the system and in the delivery of projects like Bond Street, Tottenham Court Road, Victoria, Highbury & Islington, Finsbury Park, Vauxhall; all of these pinch points that have to be addressed. I would hope that there is a way to find funding to accelerate some of those programmes over time.¹¹

3.7 Customer satisfaction surveys indicate that passengers have generally felt gradually more satisfied with the Underground, with an overall score in 2008 of 79 out of 100 (up from 65 in 1990). Customers are most satisfied with information, safety, staff, journey time and ticketing, and least satisfied with platform and train crowding and train cleanliness.¹² The Committee has previously reported that curtailments or delays to works to increase capacity on the Underground would result in overcrowding worsening and increasing numbers of people unable to make their journeys.¹³

The upgrade programme

3.8 A number of lines have been subject to suspensions as part of the upgrade programme. For example, over the past year there has been a series of weekend suspensions on all or parts of the Jubilee line. The Jubilee line upgrade is scheduled to be completed by the end of 2009. However, London Underground recently granted Tube Lines (the company undertaking the work) additional weekend suspensions to enable them to finish on time.¹⁴

3.9 On the Victoria line, passengers have experienced both weekend suspensions and extended periods of early closures on Monday to Thursday evenings. Also there have been suspensions on the Bakerloo, Central, Circle, District, Northern and Piccadilly lines.

3.10 Separate from the main line upgrade programme, the East London line has been closed since December 2007 to enable works to extend the line prior to re-opening in 2010 as part of the London Overground network. Parts of the Docklands Light Railway (DLR) have also been closed at weekends to allow work to lengthen platforms.

3.11 Over the coming six months, weekend closures to parts of most London Underground lines are planned.¹⁵ However, the longer-term timetable (see Table 1) indicates that there will be an intensification of the line upgrades over the next few years. Although the Jubilee line upgrade is nearing completion, the subsurface lines (Circle, District, Hammersmith & City and Metropolitan lines) are due for completion between 2012 and 2018 and the Piccadilly,

⁹ TfL, Victoria Station Upgrade Design and Access Statement, 15 November 2007, p. 1

¹⁰ Transport Committee, *A questions of sports travel*, October 2007

¹¹ Transport Committee, transcript 22 April 2009, pp. 3-4

¹² London Underground, *LU Customer Satisfaction Survey – Trends*, 6 February 2009

¹³ Transport Committee, *Delays possible*, March 2009, p. 12

¹⁴ <http://www.tfl.gov.uk/corporate/media/newscentre/archive/11760.aspx>

¹⁵ <http://www.tfl.gov.uk/assets/livetravelnews/realtime/tube/track-closures.pdf>

Victoria and Northern line upgrades by the end of 2014. An intensification of the line upgrade programme could result in an increase in the number of suspensions to services.

Line	Eventual peak capacity increase	Contractual completion date	Proportion complete (end 2007/08)
Sub-surface lines	48%	2012-18	13%
Victoria	19%	2013	39%
Bakerloo	38%	2020	0%
Waterloo & City	25%	2007	100%
Jubilee	33%	2009	61%
Northern	20%	2012	34%
Piccadilly	25%	2014	19%

Table 1: Underground line upgrade programme and progress

- 3.12 Station modernisations also result in the closures of stations – for example, Hyde Park Corner is closing early and opening late between Sunday and Thursday until the end of September 2009 and Warren Street is due to be closed all weekend a number of times over the coming months.¹⁶ Works by Network Rail also affect Underground stations. For example, Blackfriars Underground station will be closed until late 2011 for works associated with Thameslink.

Planning and coordination of line suspensions

- 3.13 In planning the programme of suspensions, London Underground has taken into account major events, including the London Marathon, FA Cup Final and Notting Hill Carnival. However, there have been reports of problems arising as a result of suspended services – not least associated with the additional closures of the Jubilee line, which were announced at short notice.¹⁷ The Committee’s investigation into sports travel highlighted the responsibility of venue owners to take engineering works into account when planning their programmes.¹⁸
- 3.14 London Underground also attempts to coordinate line closures to minimise disruption to passengers in particular geographical areas when more than one line is closed at the same time. However, Assembly Members have recently highlighted that passengers in East London constituencies felt unnecessarily cut off when, in particular, the eastern ends of the District line and the Jubilee line have been closed at the same time and the Jubilee line has been closed at the same time as the DLR.¹⁹
- 3.15 Coordination by London Underground with Network Rail to avoid Tube closures coinciding with national rail suspensions has also been raised as an important issue, particularly in the context of lengthy closures such as those associated with the Thameslink programme.

Plans to minimise disruption

- 3.16 When lines are suspended, London Underground makes arrangements for alternatives for passengers. For example, during the long-term closure of the East London line, dedicated replacement bus services have been operated along the route.²⁰ Similar arrangements have been put in place for the weekend suspensions of the Jubilee line. In other locations, London Underground has determined that existing bus services in the area would be adequate or has arranged for temporary enhancements to the local bus network.

¹⁶ <http://www.tfl.gov.uk/assets/livetravelnews/realtime/tube/station-closures.pdf>

¹⁷ For example, clashes between weekend closures of the Jubilee line and events at the O2 and Wembley Stadium.

¹⁸ Transport Committee, *A questions of sports travel*, October 2007, recommendation 9

¹⁹ See, for example, Mayor’s Question 0763/2009 (<http://www.london.gov.uk/mqt/public/question.do?id=25499>).

²⁰ <http://www.tfl.gov.uk/assets/downloads/east-london-line-alternative-routes.pdf>

- 3.17 The effectiveness of the alternative options in mitigating inconvenience for passengers is not clear. Additionally, the implications of suspensions for other modes of public transport and for other road users are not fully apparent. In some areas, including central London, disruption as a result of long-term programmes of works – such as Thames Water’s replacement of water mains and the construction of Crossrail – has the potential to decrease the attractiveness of surface alternatives such as rail replacement buses.

Future line suspensions

- 3.18 Tim O’Toole suggested that it might be necessary to undertake future upgrades, particularly on the Piccadilly line, with fewer weekend suspensions. He explained that new signalling systems were installed on the Madrid metro system without the need for closures:

I just do not believe you can upgrade the Piccadilly line the way you have done the Jubilee line, because the Piccadilly line is the central artery of the Underground on weekends in the city. When you think of Harrods, the West End, the football, Hyde Park, the Piccadilly line is heaving all weekend when you use it. I think the idea of closing that is unthinkable and we have got to go to something more like Madrid in order to both get the upgrade.²¹

- 3.19 As an indication of the potential disruption which could be caused by weekend suspensions to the Piccadilly line relative to those as a result of the ongoing Jubilee line suspensions, an average of around 23,000 passengers exited North Greenwich station (which serves the O2) in 2008; equivalent figures for stations on the Piccadilly line include: Piccadilly Circus 68,000, Leicester Square 64,000, Covent Garden 40,000 and Knightsbridge 33,000.²²

This investigation

- 3.20 It is proposed that the Committee investigates overcrowding on the London Underground network and the management of overcrowding. It could examine:
- The effects for passengers of overcrowding on trains and at stations on the London Underground network
 - The management of overcrowding, including station control measures
 - Lessons for managing overcrowding on the Underground from passengers, other metros around the world and other modes of transport in London, e.g. buses, the DLR, Tramlink and the national rail network
 - The implications of overcrowding on the Underground for other modes of transport
- 3.21 It is proposed that the investigation should also look at the ongoing programme of line and station closures to inform plans for the future. It could examine:
- The impacts to passengers of closures, including to the accessibility of the public transport network
 - Plans to minimise disruption as a result of closures and the potential to reduce the necessary number of closures
 - The planning and coordination of planned engineering work to minimise disruption for particular events and in particular geographical areas
 - The implications of closures for other modes of transport

²¹ Transport Committee, transcript 22 April 2009, p. 15

²² Figures from London Underground’s performance update website (<http://www.tfl.gov.uk/tfl/corporate/modesoftransport/tube/performance/>).

Terms of reference

- 3.22 The following terms of reference are proposed for this investigation:
- To highlight the effects of current levels of overcrowding on the London Underground network and examine the ways in which it is managed and suggestions for improvements
 - To examine the impact of the Underground upgrade programme on passengers and London Underground's plans to ensure disruption is minimised
 - To make recommendations to the Mayor, TfL and relevant partners to mitigate current overcrowding on the London Underground network and help minimise disruption while the rest of the upgrade programme is undertaken

Methodology

- 3.23 It is proposed the Committee should invite views from passengers and a range of organisations, as well as having two formal meetings with stakeholders as outlined below. Relevant data, particularly on current overcrowding and station congestion, would be requested from London Underground. Information would also be requested from London Overground, the DLR and Croydon Tramlink about ways in which overcrowding is managed on those modes in order that potential lessons for London Underground can be explored.
- 3.24 The following have been identified as key stakeholders for the investigation:
- London Underground passengers, including passengers with mobility impairments
 - Representatives of key locations served by Underground lines and stations included in the upgrade programme
 - The Mayor and TfL (including London Underground, London Overground, the DLR and Croydon Tramlink)
 - Tube Lines
 - CoMET – a group consisting of the world's nine largest metro systems (London, Berlin, Hong Kong, Mexico City, Moscow, New York, Paris, Sao Paulo and Tokyo)
 - Experts, particularly in relation to reducing the number of necessary suspensions
- 3.25 The investigation could make use of a variety of means to enable passengers to tell the Committee about their experiences of overcrowding, including new media such as relevant blogs. Passengers who use lines and stations affected by closures could be asked about how they have affected their journeys, the effectiveness of London Underground's alternatives (including rail replacement bus services), and how planning, coordination and alternatives could be improved. Representatives of affected passengers and key locations served by Underground lines and stations included in the upgrade programme could also be invited to a Transport Committee meeting.
- 3.26 A meeting with representatives from London Underground and Tube Lines would enable the Committee to understand plans for managing congestion and the scale of future closures associated with the upgrade programme. Richard Parry and Dean Finch were recently appointed as Interim Managing Director of London Underground²³ and Chief Executive of Tube Lines respectively. The Committee could also discuss with them the lessons learned from closures to date and the extent to which they have informed plans for the future. The Committee could look at the ways in which plans are coordinated across TfL and with other organisations to prepare for closures.

²³ The Chair of the Transport Committee wrote to Mr Parry with a number of questions concerning the Underground upgrade programme (<http://www.london.gov.uk/assembly/scrutiny/docs/ppp-richard-parry.pdf>).

Commissioned research

- 3.27 To gather information from passengers most effectively, it is proposed that external contractors are commissioned to facilitate focus groups with a number of specific types of users of the London Underground:
- Users of particularly overcrowded parts of the network and very congested stations
 - Users of lines undergoing suspensions because of the upgrade programme (for example, the Jubilee line)
 - Users of lines which are to be subject to closures in the future (for example, the Piccadilly line)
- 3.28 London Underground's regular Customer Satisfaction Survey offers quantitative information relating to perceptions of the service of a representative sample of passengers across the network. It is particularly useful for identifying network-wide trends. London Underground have said some limited data could be made available for individual lines but urge caution over the robustness of the data if the sample is broken down to the level of individual lines.
- 3.29 The results of focus groups with users of particularly overcrowded parts of the network and very congested stations would provide qualitative information about the effects of overcrowding for passengers and impacts to their journeys. This information is not currently available. Focus groups would also provide an opportunity for passengers to discuss potential ways to reduce overcrowding.
- 3.30 The results of focus groups with users of lines undergoing suspensions because of the upgrade programme would provide qualitative information about the effects of line closures, the effectiveness of the alternatives which are offered and other measures to reduce inconvenience for passengers. Focus groups with users of lines which are to be subject to closures in the future could provide qualitative information about the likely effects of future closures. This information is not currently available.
- 3.31 Professionally run focus groups would provide reliable evidence about the types of experiences of passengers who use particular parts of the Underground network, rather than the averaged out data which London Underground's Customer Satisfaction Survey produces. Because focus groups result in qualitative analysis rather than statistics, the results would be a rich source of information about the complex effects of overcrowding and line suspensions.
- 3.32 If BMAC approves a recommendation to approve expenditure on this commissioned research at its meeting on 21 July, the contract would be let during the summer so the work could be undertaken during September and reported by the end of October 2009.
- 3.33 Initial enquiries have indicated the work would cost no more than £18,000 but, before making a recommendation to BMAC to approve the expenditure, officers would draw up a more detailed specification and obtain quotations.

Timetable

3.34 The proposed timetable for this review is:

8 July 2009	Committee meeting: <ul style="list-style-type: none">• Consider the terms of reference of the investigation• Gather information from passengers, representatives of key locations and technical expert(s) in relation to overcrowding and closures
21 July	BMAC meeting where the request to approve expenditure for externally commissioned work would be considered.
July – August	Prepare specification for externally commissioned work, obtain quotations and let the contract
Sept – Oct	Externally commissioned work carried out and reported
July – October	Collect written views and information from stakeholders; set up means for passengers to contribute
3 September	Committee meeting: <ul style="list-style-type: none">• Invite representatives from Transport for London (including London Underground) and Tube Lines
Oct – Nov	Report drafting, agreement
December	Report publication

4. Strategy Implications

4.1 The Committee may make recommendations relating to the Mayor’s Transport Strategy.

5. Legal Implications

5.1 Section 59 GLA Act 1999 requires the Assembly to keep under review the exercise by the Mayor of his statutory functions. Section 54(1) GLA Act enables the Assembly to arrange for any of its functions to be discharged by a committee or sub-committee of the Assembly or by a single member of the Assembly.

5.2 The Contracts Code enables the Executive Director of Secretariat to procure technical support. Under the Assembly’s decision making framework the Executive Director of Secretariat can award consultancy contracts up to £50,000.

5.3 The procurement process must comply with the Authority Contracts Code of Practice. The Contracts Code requires that, for contracts with an estimated value of between £5,000 and £24,999, a minimum of 3 written quotes are sought. Officers are required to demonstrate that value for money has been achieved.

6. Financial Implications

6.1 All costs arising from the appointment of external contractors to facilitate focus groups for the Transport Committee would be met from the 2009/10 scrutiny programme budget.

6.2 The contract would be let and managed in accordance with relevant GLA policies and procedures. As this project is consultancy based, the requirements of the GLA’s Expenses and Benefits Framework and the Financial Regulations would also be adhered to.

Background papers: As set out in footnotes to the report.

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Crowding with Scheduled Train Service - Autumn 2007 Busiest AM Hour



	Seats Free:	zero to 50% of seats taken		Crowded:	2 to 3 pax / sq m
	Seats Taken:	50% to 100% seats taken		Very Crowded:	3 to 4 pax / sq m
	Some Standing:	0 to 1 pax / sq m		Maximal:	4+ pax / sq m
	Busy:	1 to 2 pax / sq m			