AGENDA ITEM 5

TRANSPORT FOR LONDON

ENVIRONMENT, CORPORATE AND PLANNING PANEL

SUBJECT: TRAVEL IN LONDON – REPORT NUMBER THREE

DATE: 10 FEBRUARY 2011

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1 PURPOSE AND DECISION REQUIRED

1.1 The purpose of this paper is to summarise the key content and insights from the recently-published Travel in London (TIL) report regarding progress with implementing the Mayor's Transport Strategy. This is the third in a series of annual reports, the format and content of which have been discussed at previous Panel meetings.

1.2 The Panel is asked to note the paper.

2 BACKGROUND – COVERAGE OF TRAVEL IN LONDON

2.1 A TIL report was published for the first time in April 2009. The current publication, (TIL3) is from this annual series, which has now become firmly established among stakeholders as an essential interpretative commentary and key reference source.

2.2 The TIL reports summarise and interpret trends and developments affecting how people travel around London – primarily from an analytical viewpoint and explicitly in relation to the objectives of the Mayor's Transport Strategy. This includes a set of 24 'Strategic Outcome Indicators', and requires reporting on related social and environmental topics (eg perceptions of aspects of travel, London-wide CO_2 emissions and air quality). This latest report also focuses on two topics of contemporary significance – early results from the 'Year of Cycling' and the impacts of London's Low Emission Zone.

2.3 TIL reports draw widely on data from across TfL and outside, and therefore provide a unique 'cross-modal' view and data resource. TIL3 was the first report following publication of the Mayor's Transport Strategy, and therefore offers some early insights into how recent trends and developments correspond to the desired transport outcomes.

3 SOME KEY FINDINGS FROM TIL3

3.1 The report takes a long-term view of trends where possible. This shows that, over the last decade, there has been an unprecedented seven percentage point increase in the mode share for travel in London towards public transport, cycling and walking. Without this, there would have been one million more car driver trips every day in London (other things being equal) than there actually are. Londoners now use public transport for 41 per cent of their journeys.

3.2 Among other key trends and developments over the past decade:

(a) There has been a six per cent fall in road traffic in London compared to an eight per cent increase nationally;

(b) There has been a very substantial increase in cycling (61 per cent growth in cycle journey stages; cycling on the TLRN has grown faster, by 117 per cent);

(c) Public transport capacity has also increased, with 32 per cent more bus kilometres and nine per cent more Underground train kilometres in 2009/10 compared to 2000/01, alongside the development of the Docklands Light Railway and Tramlink; and

(d) Alongside improved levels of service, the last decade has also seen a marked and sustained improvement in bus and Underground reliability. Service reliability indicators for 2009/10 were either at, or close to, their all-time highs, with 97 per cent of scheduled kilometres actually operated on both bus and Underground networks and sustained improvement to other reliability indicators such as service waiting times.

3.3 In the last year (to 2009 or 2009/10):

(a) Total trips in London fell by 0.4 per cent in 2009 (which included the depths of the recession). Since then, Tube, rail and bus ridership have bounced back;

(b) Cycling increased by a further five per cent in 2009;

(c) Reported crime on the bus and Tube networks continued to fall;

(d) Eight per cent fewer people (and 15 per cent fewer children) were killed or seriously injured on London's roads – the ninth consecutive year of improvement; and

(e) CO_2 emissions from ground-based transport fell by 3.6 per cent.

3.4 The report also includes two "Focus" topics. Early results from the Year of Cycling indicate that an average of 20,000 journeys a day are made using Barclays Cycle Hire, two-thirds of which were previously made by mechanised modes; and early results suggest there has been a 24 per cent increase in average cycle flows on the first two Barclays Cycle Superhighways.

3.5 A comprehensive assessment of the impacts of Phases 1 and 2 of the Low Emission Zone, also included in the report, indicates high compliance rates and a whole-year reduction of 28 tonnes of PM_{10} particulate matter, of which $PM_{2.5}$ (the smallest particles - and the most dangerous portion of PM_{10}) is reduced by 26 tonnes.

3.6 The report also shows the Mayor and TfL are making good progress towards delivery of his Transport Strategy in relation to his six key transport policies and 24 Strategic Outcome Indicators, and highlights the range of important developments to the transport system over the year, such as the re-opening of the East London Line.

3.7 The Travel in London report is available online at: http://www.tfl.gov.uk/travelinlondon

3.8 A copy of the Overview section of the report is Appendix 1 to this paper. Also appended is an example of press coverage of the report – from Local Transport

Today.

4 RECOMMENDATION

4.1 The Panel is asked to NOTE this paper.

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Overview

Travel in London summarises key trends and developments relating to travel and transport in Greater London. This third report uses the latest available data, usually referring either to the 2009 calendar year or the 2009/10 financial year, with historical context provided where available.

The Mayor's Transport Strategy (MTS) was published in May 2010. Transport for London's Travel in London reports will be the vehicle for tracking progress on implementing the MTS. A brief summary of progress towards MTS goals is given below.

The remainder of this Overview summarises highlights from the report. The MTS includes a set of Strategic Outcome Indicators (SOIs), and this year's Travel in London report updates and interprets these indicators in the wider context of developments affecting transport in London. A summary of progress with each of these indicators is provided in text-boxes throughout this Overview, with further material in the main text.

Overall summary of progress towards MTS goals

The year 2009 and into 2010 saw continued progress in improving many aspects of transport and travel in London, reflecting MTS strategic goals. In many cases this built on established positive trends over the decade since the year 2000.

Key developments over the decade to 2010 have been:

- A shift in mode share away from car towards more sustainable public transport modes, walking and cycling. There has been a 7 percentage point net shift in the journey stage based mode share between 2000 and 2009 towards public transport, walking and cycling (5 percentage points at the trip level). If the mode share in London had not changed in this way, and all other things had remained equal, this means that people in 2009 would have made 1 million more trips per day driving cars than they actually did.

- This shift in net mode share took place in the context of growing demand for travel, reflecting and supporting population growth and economic development. There were 8 per cent more trips made in London in 2009 than in 2000, reflecting an increase in population of 7.1 per cent since 2000 and 5.5 per cent more jobs.

- Substantial increases to the provision of public transport, with 32 per cent more bus kilometres and 9 per cent more Underground train kilometres operated in 2009/10 compared to 2000/01, and with the parallel development of the DLR and Tramlink light rail networks over the decade.

- Alongside highest ever levels of public transport service provision, there have also been sustained improvements to the service quality of public transport. Service reliability indicators for bus and Underground services in 2009/10 were either at, or close to their recorded highs, with 97 per cent of scheduled kilometres operated on both the Underground and bus networks.

Key indicators of public transport service provision and performance - 2000/01 to 2009/10 (summary – typical values).

Mode	Measure	Start of decade	Now
Service provision			
Buses	Kilometres operated	360 million	480 million
LU	Kilometres operated	65 million	70 million
DLR	Kilometres operated	2.9 million	4.6 million
Tramlink	Kilometres operated	2.4 million	2.6 million
Performance			
Buses	Excess Wait Time	2.0 minutes	1.1 minutes
LU	Excess Journey Time	8.5 min	6.5 min
DLR	Reliability	98%	98%
Tramlink	Reliability	99%	99%
National Rail	ORR L&SE PPM	80%	92%
Overground	ORR PPM	n/a	93%

- Road traffic volumes have reduced over the decade. There were 6 per cent fewer vehicle kilometres in London in 2009 compared to year 2000, while, by contrast, traffic in Great Britain as a whole increased by 8 per cent. However, there has also been a tendency for road congestion in London to have increased over the decade, only partially offset by initiatives such as Congestion Charging in central London. At the same time, cycling grew very substantially on all measures (see below in the Overview under Cycling, and Section 2.12 for more detail).

- Substantial improvements to the safety of London's travel environment, with 47 per cent fewer people being killed or seriously injured (KSI) on London's roads in 2009 compared to 2000 and, since 2006/07, reductions of 46 per cent and 25 per cent respectively in the number of reported crimes per million passenger journeys on the bus and Underground networks.

- For the environment, large strides have been taken to reduce emissions of local air quality pollutants, with emissions of NO_x and particles (PM_{10}) from ground-based transport 29 per cent and 36 per cent lower in 2009, respectively, than in 2004. (There are no comparable figures for the year 2000.) Although substantial progress has been made, comprehensively meeting air quality limit values for pollutant concentrations in the air in London remains a challenge.

- Carbon Dioxide (CO_2) emissions from ground-based transport have fallen by almost 10 per cent since 2003 (the earliest year for which comparable data is available). This net outcome, equating to reductions of just over 1 per cent per year (despite increases in London's population and employment over the decade) contrasts with the future requirement for an annual rate of reduction of approximately 3.5 per cent from 2008 to meet Mayoral emission reduction targets to 2025.

- There have also been many landmark changes to transport policy, the transport networks and transport operational practice over the past decade that have contributed to these outcomes. Alongside new policies and proposals in the Mayor's Transport Strategy, these will continue to contribute to the achievement of key transport goals for London.

Looking specifically at 2009 and into 2010:

- Transport trends were inevitably conditioned by the economic recession, which adversely impacted the London employment market and travel demand, and also, to a lesser extent, by the impact of upgrade projects on the Underground and the DLR.

- The recession led to a break in the decade-long established pattern of year-on-year growth in demand for travel - with total travel demand in 2009 being closely comparable to that of 2007 and 2008, albeit maintaining historically high levels and in the context of an overall 1 per cent increase in population between 2008 and 2009. Total trips fell by 0.4 per cent in 2009, the first fall (apart from 2005) since at least 1993.

- Overall mode shares in 2009 were similar to those of 2008, again retaining and reflecting the unprecedented shift towards more sustainable public transport, walking and cycling achieved in London over the preceding decade. Looking at the unrounded figures the shift continues – but by less than 1 percentage point.

- Volumes of road traffic in London fell by 3 per cent over just one year, undoubtedly reflecting a strong recessionary effect on top of the established trend towards less London traffic. There was a 1 per cent fall nationally, which represented a second successive year of decline.

- Volumes of travel on the public transport networks in 2009 increased marginally (by 0.3 per cent) contrasting with the historic trend of strong growth and reflecting the recession. Latest figures for 2010, however, do suggest that demand for public transport in London is now rebounding post-recession.

- Quality of public transport service provision has been maintained overall at historically high levels, despite the impact of upgrade projects which will bring longer-term benefits, such as on the Jubilee and East London lines, which re-opened in May 2010, and despite two relatively severe winters.

- There have been significant additions to the transport networks since the start of 2009, in the shape, for example, of the re-opened East London line (part of the London Overground network), the Woolwich Arsenal extension to the DLR and, most recently, the completion of the Kings Cross interchange project.

- More widely during 2009, TfL has developed a clear policy focus and priority to smooth road traffic and improve journey time reliability for road users, with statistics describing and quantifying this aspect available for the first time. These suggest that between 89 and 90 per cent of journeys on London's major roads are completed reliably.

- Road safety and crime on the transport networks have continued the recent trend of strong improvement, with comprehensive achievement of national targets for road casualty reduction in London. There were further reductions of 8 per cent in the number of KSIs and 15 per cent in the number of child KSIs in 2009 compared to 2008.

- For the environment, although there was a 3.6 per cent reduction to CO_2 emissions from ground-based transport in 2009. This largely reflected reduced road traffic associated with the recession, which may prove to be a temporary phenomenon, as opposed to improvements to the intrinsic carbon efficiency of the transport networks.

- 2010 was the Mayor's 'Year of Cycling' - seeing the successful launch of the Barclays Cycle Hire scheme in central London, and completion of the first two Barclays Cycle Superhighways. Almost 2 million cycle trips have now been made using Barclays Cycle Hire, and two thirds of these trips have replaced a trip by public transport, car or taxi. Early results suggest an average increase of 24 per cent in cycle flows along the first two Barclays Cycle Superhighways. Between two and three in ten of those cycling on these routes had switched to cycling their trip as a result of the scheme.

- The London Low Emission Zone scheme is estimated to have directly produced savings of 28 tonnes of PM_{10}, 26 tonnes of $PM_{2.5}$ (the most dangerous portion of PM_{10}), and 529 tonnes of NO_x (2008 whole-year-equivalent basis). The scheme has also been associated with observed reductions of between 40 and 50 per cent in concentrations of Black Carbon close to busy roads. These savings are comparable to those forecast by TfL prior to introduction of the scheme, and are a key contributor to London's projected ability to comply with limit values for PM_{10}.

Looking across the trends shown by the 24 Strategic Outcome Indicators that TfL uses to track progress with implementing the Mayor's Transport Strategy, and taking a 3 to 5 year view of these where available data permit, it is clear that London is broadly on track to achieve Mayoral transport goals. During 2009 these indicators record many positive developments, and no significant adverse ones. It is however evident that a continued strong focus on certain areas, such as public transport service quality, local air quality, road safety and - particularly - CO_2 emissions from transport will be necessary to ensure that historic progress is sustained and secured for the future.

Key highlights and developments - 2009 and 2009/10

Overall travel demand

Previous Travel in London reports have consolidated historic information on travel trends in the Capital over the last 20 years or so, and highlighted some clear long-term developments that have both shaped today's travel patterns and given rise to challenges to which the MTS responds. Principal among these developments have been:

- Sustained growth in demand for travel, reflecting population and employment growth but also wider social and economic factors.

- A shift in mode share away from the car towards more sustainable public transport, walking and cycling. There has been a net 5 percentage point shift at the trip level towards public transport, walking and cycling over the decade. Journey stages by public transport increased in share from 34 per cent in 2000 to 41 per cent in 2008 (a net shift in mode share of 7 percentage points), while cycling mode share increased from 1.1 to 1.7 per cent over the same period.

- Growth in demand for travel by bus and Underground, with Underground patronage in 2008/09 at an all-time high and strong growth in bus travel.

- Declining levels of London road traffic since 1999, particularly within central and Inner London, reflecting both the shift towards public transport but also a variety of factors specific to the road network.

Between 2008 and 2009 there was an evident break in the trend of growth in demand for travel – the first for at least 16 years apart from exceptional conditions in 2005 –as well as an acceleration of the established trend towards declining road traffic, both influenced by the economic recession.

- During 2009 as a whole, the number of **trips** made to, from or within London was 24.4 million per day. This is closely comparable to the preceding 2 years, representing a reversion to zero growth in travel following a sustained period of increase. The cause of this change, at least in part, reflects the impact of the economic recession on travel demand in London.

- Approximately 28.4 million **journey stages** were made in Greater London on an average day in 2009, a decrease of 0.5 per cent compared to the 28.6 million of 2008, and comparable to the level of 2007.

Key definitions

A **Trip** is a complete door-to-door movement by an individual to achieve a specific purpose (eg to go from home to work).
A **Journey Stage** is a part of a trip made on a specific mode of transport, eg a trip of 3 stages comprising a walk stage from home to a bus stop, a bus stage to central London, and a further walk stage to a place of work.

MTS Strategic Outcome Indicator 01: travel demand in London.

Values for 2009:

There were 24.4 million trips in London on an average day in 2009. This represents a reduction of less than half a per cent compared with the 24.5 million trips per day in both 2007 and 2008.

There were 28.4 million journey stages in London on an average day in 2009. This compares to 28.5 million in 2008, and 28.3 million in 2007.

Direction of change and assessment:

Overall trend is consistent with MTS expectation, albeit with a recent break in growth.

The number of both trips and journey stages in London grew consistently over recent years up until 2007. The values for 2008 and 2009 for both trips and journey stages were close to those of 2007. This reflects a break in the established pattern of year-on-year growth, at least in part reflecting the economic recession, with London's economy entering recession in the latter part of 2008.

Overall mode shares

- At the journey stage level, which is TfL's preferred measure for mode share, 41 per cent of all journey stages were made by public transport in 2009. This compared to 37 per cent made by private transport - principally private cars. Walk all the way trips accounted for just over one fifth of all journey stages, with bicycles accounting for 2 per cent of all journey stages.

- These 2009 mode shares are closely comparable to those of 2008. Journey stages by public transport modes (defined as bus, tram, Underground, Docklands Light Railway, rail, taxis and private hire vehicles) increased in share from 30 per cent in 1993 to 34 per cent by 2000, and to 41 per cent by 2009.

MTS Strategic Outcome Indicator 02: mode shares.

Value for 2009: Mode shares in 2009 were: public transport 41 per cent, private transport 37 per cent, walking 21 per cent and cycling 2 per cent. These shares are closely comparable to those of 2008.

Direction of change and assessment:

Long term trend is consistent with MTS expectation.

Mode shares in 2009 were similar to those of 2008. They maintain the trend of mode shift towards more sustainable public transport modes and walking and cycling achieved in London since 2000. Between 2000 and 2009, London achieved a 7 per cent net shift towards public transport and walking/cycling at the journey stage level, which is equivalent to a 5 percentage point increase in trip-based mode share for public transport, walking and cycling in London. This means that travel in London is becoming more sustainable. Looking at the unrounded figures this positive trend continued in 2009 – but by less than 1 percentage point.

Key public transport demand trends

Use of public transport in London has grown substantially in recent years, and this trend continued into 2008/09. However, the effects of economic recession beginning in the second half of 2008 depressed travel demand and this persisted throughout 2009.

- At 17.4 billion passenger kilometres, there was a marginal decrease of 0.4 per cent in passenger kilometres travelled on services operated by TfL in 2009/10 compared with 2008/09. Nevertheless, total passenger kilometres travelled on services operated by TfL were almost 40 per cent higher than in 2000/01, and more than 70 per cent higher than in 1991/92.

- There were 13 per cent more person-kilometres travelled by Underground in 2009/10 compared with 2000/01, and 65 per cent more person-kilometres travelled by bus. Between 2008/09 and 2009/10 there was an increase of 1 per cent in bus person-kilometres travelled, and a 2 per cent decrease in person-kilometres travelled by Underground.

- Person-kilometres travelled by DLR in 2009/10 were 87 per cent higher than in 2000/01, and 15 per cent higher than 2008/09, both figures reflecting the progressive extension of the network. The Tramlink and London Overground networks did not exist in 2000/01, but in 2009/10 carried 571 million passenger kilometres between them.

Cycling

Cycle activity can be measured in several different ways. All measures show a substantial increase in cycle activity over time, although the scale of this increase varies between the measures. This is due to the differences in the type of activity measured and also in the precision of the measurements themselves.

Key indicators of cycle trends include:

- There were an estimated 0.5 million journey stages made by bicycle in Greater London on an average day in 2009.
- The number of journey stages grew by around 5 per cent between 2008 and 2009.
- It is estimated that cycle journey stages grew by 61 per cent between 2001 and 2009, having been broadly unchanged between 1993 and 2001.
- TfL collects data through a set of permanent automatic cycle counters on selected sections of the TLRN. Average flows here were 117 per cent higher in 2009/10 than in 2000/01.
- The number of cyclists passing TLRN count points grew by 5 per cent (or 10 percentage points) between 2008/09 and 2009/10.
- The number of people entering central London by bicycle in the weekday morning peak more than doubled (an increase of 123 per cent) between 2001 and 2009. This included an increase of 15 per cent between 2008 and 2009.

Chapter 11 of this report provides information on the 2010 'Year of Cycling', including Barclays Cycle Hire and Barclays Cycle Superhighways.

Road traffic trends

The year 2009 saw an acceleration in the trend of falling levels of road traffic in London. Total vehicle-kilometres in London fell by 3 per cent between 2008 and 2009, to stand at an estimated 30.4 billion kilometres per year, having fallen by 2 per cent between 2007 and 2008 and by 1.4 per cent in the previous seven years between 2000 and 2007. The change over the most recent year undoubtedly is an impact of the economic recession. Over the longer term, this trend is thought to reflect a combination of improved public transport, together with capacity restraint resulting from the re-allocation of highway network capacity to other policy priorities, such as road safety and infrastructure replacement works.

Commuting to central London

Data in autumn 2009 from TfL's annual survey of people entering London during the morning peak period (7am to 10am), predominantly commuters, shows a 4 per cent fall against 2008, at 1.10 million, reflecting trends in central London employment. Mode shares were similar to recent years, with only 6 per cent of commuters using car and the overwhelming majority (78 per cent) using rail modes.

Travel by Londoners

TfL's London Travel Demand Survey (LTDS) provides information on the changing travel behaviour of London residents. Whilst this survey is not optimised to quantify detailed year-to-year changes, the following trends are evident from the latest data:

- Trip rates by London residents fell by 0.5 per cent in 2009/10, reflecting the economic recession.

- The estimated total number of trips made by London residents on an average day was 17.1 million in 2009/10, similar to 2008/09 but 7 per cent lower than the average of the preceding three years (18.3 million). This translates to an average of 2.4 trips per person per day.

- In terms of mode shares, 30 per cent of trips by Londoners in 2009/10 were made on foot – a proportion that has been stable since this survey started in 2005/06. Thirty-nine per cent of trips were made by car, either as driver or passenger, down from an equivalent value of 42 per cent in 2005/06.

- The time that Londoners spend travelling on average day continued to decrease slowly in 2009/10, to stand at just under 68 minutes per person per day. This compared to values of around 75 minutes in the two surveys from 2005/06 to 2006/07.

Freight transport

- Both road and rail freight fell significantly in 2009. The tonnage of road freight lifted in London in 2009 was 25 per cent lower than in 2008, compared to an 18

per cent reduction nationally. The overall tonnage figure for 2009 is 31 per cent below the historic peak of 2006, and 13 per cent below year 2000. These trends clearly suggest a dramatic impact from the economic recession.

- Total London rail freight lifted fell by 8 per cent to 6.7 million tonnes in 2009, down from 7.3 million tonnes in the previous year. However, air freight handled at London's airports totalled 1.76 million tonnes in 2009, an increase of 1 per cent on 2008.

Performance of the road network - traffic speeds, congestion and journey time reliability

Congestion on the road network is a complex phenomenon. Historically, average traffic speeds and delay have been used as a proxy for overall congestion levels. However, recent work in connection with the Mayor's smoothing traffic flow agenda is clarifying this. This includes a clear focus on the reliability of journey times and other factors which align with aspects that recent research suggests matter most to motorists.

There has been a long-term trend of increasing road congestion in London. Over the last decade congestion has been increasing despite static or falling traffic levels. This has reflected the removal of road network capacity for general traffic by an increase in utility and development works, and for other policy initiatives targeted at road safety, public transport and cyclist/pedestrian priority measures and urban realm improvements, among others.

However, recently-available GPS satellite tracking data covering the period from autumn 2006 to spring 2010 suggests some emerging stability in average traffic speeds over this period. Comparing the most recent two years for central and Inner London there has been a slight increase in speeds and corresponding reduction in delays. This is thought to reflect more significant recent falls in traffic levels as a result of the economic recession, but also a contribution from initiatives to manage the road network better, such as improved co-ordination of road works.

Journey time reliability is a primary concern of road users, alongside levels of disruption and volumes of road works. TfL has recently developed a monitoring system and indicator to measure journey time reliability.

Journey time reliability is defined, for this indicator, as the percentage of motor vehicle traffic which, for a 'typical' 30-minute journey, takes less than 35 minutes (the typical 30 minute journey time plus a five-minute 'allowance'). On this basis, TfL's journey time reliability indicator suggests that between 89 and 90 per cent of journeys on major roads in London are completed reliably - a value that can act as a baseline for future improvement initiatives.

MTS Strategic Outcome Indicator 04: road traffic journey time reliability.

Benchmark values for Quarters 1 & 2 2009/10 and 2010/11:

Q1 2009/10: 89.5 per cent of journeys achieved reliably.

Q2 2009/10: 90.3 per cent of journeys achieved reliably.

Q1 2010/11: 89.2 per cent of journeys achieved reliably.

Q2 2010/11: 89.1 per cent of journeys achieved reliably.

Direction of change and assessment:

There is currently insufficient data to allow an assessment against MTS goals.

The journey time reliability indicator has recently been introduced, and so it is not yet possible to establish trends in this indicator and set operational targets for journey time reliability. Nevertheless, the data so far available suggest that between 89 and 90 per cent of journeys on London's major roads are being achieved reliably.

Overall performance of TfL's public transport networks

Public transport in London continues to benefit from the longest run of sustained high performance ever recorded. All indicators of service performance have shown a marked trend of improvement over the last decade - alongside and complementary to often substantial enhancements to the level of service offered. Values for the most recent two financial years do inevitably reflect periods of severe weather in both winters, as well as specific upgrade projects, such as those affecting the DLR and the Jubilee line. When this is taken into account however it is clear that high levels of service performance are being sustained and improved upon wherever possible.

Performance of London Underground (LU)

Over the past 10 years LU has consistently increased its service offering, with general year-on-year increases in train kilometres scheduled and operated. However, the most recent two years have seen reductions in scheduled kilometres. This reflected, firstly, the temporary closure for upgrading work from December 2007 of the East London line, which ran approximately 0.7 million kilometres per year; and also the impact of the Underground upgrade programme which, for example, during 2009/10 necessitated several weekend closures of the Jubilee line. Consequently, in 2009/10, the number of train kilometres operated reduced to 69.4 million, 0.8 million less than 2008/09 - which itself was the highest ever level of service operated.

- In 2009/10 overall average journey time (scheduled journey time plus 'excess') averaged 44.1 minutes, a level only marginally higher than that of 2008/09 (43.9 minutes) and an improvement (ie reduction) of 0.4 minutes compared with 2007/08.

- Excess journey time is the average time added to journeys by delays, crowding and queuing, over and above the nominal scheduled journey time. Excess journey time in 2009/10 averaged 6.4 minutes, an improvement of 0.2 minutes

compared to the previous year and of 1.4 minutes compared to 2007/08, and the best performance since the measure was introduced 10 years ago.

Performance of London Buses

- In 2009/10, London Buses operated 482.9 million kilometres. A total of 497.2 kilometres was scheduled - both values reflecting a 10-year high point. This meant that 97.1 per cent of scheduled bus kilometres were actually operated - and this measure has been consistently above 97 per cent since 2003/04.

- In terms of reliability, both 'actual' and 'excess' waiting times for high frequency routes have consistently reduced over the decade - reflecting the introduction of Quality Incentive Contracts for operators, improved bus priority measures, Congestion Charging in central London, better service control and other measures designed to improve reliability. Values for 2009/10 were closely comparable to those for 2008/09, at 5.5 and 1.1 minutes respectively, again reflecting best 10-year performance.

Performance of DLR and Tramlink

- The DLR has shown strong and improving performance over the past 10 years, albeit that reliability in both 2008/09 and 2009/10 fell short of recent years. This largely reflects disruptions caused by major project works, and the commissioning of a new fleet of trains. In 2009/10, 97.2 per cent of scheduled services were operated and 94.8 per cent of trains were on time. This compares to values of 98.4 per cent and 94.7 per cent, respectively, for 2008/09.

- Tramlink has also been a success since opening in 2000, providing important links into Croydon and connections to neighbouring Outer London town centres. Kilometres scheduled and operated in 2009/10 were both down slightly on 2008/09 due to major engineering work which closed some central Croydon stops. However, the percentage of kilometres operated was the highest so far recorded - at 99.2 per cent.

Performance of London Overground

- London Overground recorded an all-service public performance measure of 93.1 per cent, for the year 2009/10, up from 92.6, and a peak-only public performance measure of 95.4, up from 94.6 the previous year. Both values are above-average among both UK and London and South East train operators.

Performance of National Rail in London

- As with public transport operated by TfL, National Rail services in London have also seen substantial improvement - in terms of service offered and reliability - over the past decade. However, this in part reflected the infrastructure and safety difficulties at the start of the decade. Although the pace of improvement slowed in 2009/10, in part due to the severe winter weather, key measures were at or about their 10-year highs.

- The moving annual average public performance measure for London and South East operators (all services) in the financial year 2009/10 was 91.5 per cent (up from 90.6 per cent for 2008/09). For peak services, the equivalent values were 88.8 and 88.7 per cent. These compare to values for all services by franchised operators in Great Britain of 91.5 per cent for 2009/10, and 90.6 per cent for 2008/09.

Public transport capacity

- The past decade has seen progressively-increasing average bus occupancy levels, reflecting the large increase in bus ridership and commensurate service enhancements. The 2009/10 network average of 16.6 people per bus was identical to that of the previous year and indicates the continued matching of demand and supply which occurs through the bus network review process.

- Average Underground train occupancy rates over the decade have been relatively stable, to stand in 2009 at an average occupancy of 121.9 people per train, compared to 117.1 people in 2000/01. Those for the DLR (79.3 people per train in 2009/10, compared to 67.3 people in 2000/01) and Tramlink (53 people per tram) reflect the progressive development of these networks, including train lengthening on the DLR, and, as average values, are generally commensurate with the respective vehicle capacities.

MTS Strategic Outcome Indicator 13: satisfaction of those travelling on the public transport network with the level of crowding inside the vehicle.

Value for 2009: A multi-modal composite measure of customer satisfaction with the level of in-vehicle crowding gave a value of 76 out of 100 for 2009/10. This value is identical to that for 2008/09.

Direction of change and assessment:

Recent trend consistent with MTS - sets baseline for future assessment.

Identical values for both 2008 and 2009 reflect, according to TfL's norms for interpreting customer satisfaction scores, a 'fairly good' level of performance.

MTS Strategic Outcome Indicators 05 & 06: public transport capacity and public transport reliability.

Values for 2009/10 and comparison with 2008/09 - public transport capacity (measured in terms of planning capacities for vehicles multiplied by vehicle kilometres operated, expressed below as 'place-kilometres'):

- **London Underground** operated 55,431 million place-kilometres in 2009/10. This was a 2 per cent decrease on 2008/09.
- **London Buses** operated 29,311 million place-kilometres in 2009/10. This was a 1 per cent increase on 2008/09.
- **Docklands Light Railway** operated 2,027 million place-kilometres in 2009/10. This was an 18 per cent increase on 2008/09.
- **London Tramlink** operated 543.92 million place-kilometres in 2009/10. This was a 2 per cent decrease on 2008/09.

Values for 2009/10 and comparison with 2008/09 - public transport reliability:

- **London Underground** (overall average generalised journey time): 44.1 min (up 0.5 per cent).
- **London Buses** (excess waiting time for high-frequency routes): 1.1 min (no change).
- **Docklands Light Railway** (per cent of trains running to time): 94.8 per cent (up 0.1 percentage points).
- **London Tramlink** (per cent of scheduled services operated): 99.2 per cent (up 0.7 percentage points).
- **National Rail** (Office of Rail Regulation Public Performance Measure): 91.5 per cent (up 0.9 percentage points).
- **London Overground** (Office of Rail Regulation Public Performance Measure): 93.1 per cent (up 0.5 percentage points).

Direction of change and assessment:

Overall trends for both indicators are consistent with MTS expectation.

The total **capacity** offered by TfL's public transport networks in 2009/10 was broadly comparable to that of 2008/09. A 2 per cent fall on the Underground, primarily reflecting upgrade projects, was partially offset by growth in the bus network. An 18 per cent increase in DLR capacity reflected the opening of the Woolwich extension.

Public transport **reliability** in London continues to benefit from the longest run of sustained high performance ever recorded. All indicators of service performance have shown a marked trend of improvement over the last decade - alongside and complementary to often substantial enhancements to the level of service offered. For example, bus excess waiting time improved dramatically from 2000/01 to 2003/04, when values were in the range 1.4-2.2 minutes, to a level of 1.1 minutes that has been sustained since 2004/05.

Operating costs for TfL services and asset condition

- TfL's gross operating expenditure on public transport services (only) in 2009/10 was £4,462 million, and the equivalent net expenditure was £1,367 million. Total passenger kilometres were 17,405 million. Therefore, the gross operating cost for TfL services per passenger kilometre in 2009/10 was 26 pence per kilometre. The net operating cost per passenger kilometre in 2009/10 was 8 pence per kilometre.

- There was little change in both measures between 2008/09 and 2009/10. The gross operating cost measure did however increase by one penny between the two years, an increase of 3.4 per cent at current prices.

- The overall condition of TfL's assets is measured through a composite multi-modal score, looking at the condition of 'core' assets (such as rolling stock and the road carriageway) against industry-standard benchmarks, and weighted according to the usage of the different modes. This indicator complements a range of asset condition indicators specific to individual modes.

MTS Strategic Outcome Indicators 07 & 08: operating costs for TfL services and asset condition.

Values for 2009/10 and comparison with 2008/09 - operating costs for TfL services:

- The gross operating cost in 2009/10 was 26 pence per passenger kilometre.
- The net operating cost in 2009/10 was 8 pence per passenger kilometre.
- The gross operating cost in 2008/09 was 25 pence per passenger kilometre.
- The net operating cost in 2008/09 was 8 pence per passenger kilometre.

Values for 2009/10 and comparison with 2008/09 - asset condition:

- In 2009, 89.13 per cent of in-scope asset was deemed to be in good condition.
- In 2008, 92.58 per cent of in-scope asset was deemed to be in good condition.

Direction of change and assessment:

Trends in both operating costs and asset condition are consistent with MTS expectation.

There was little change between 2008 and 2009 for **operating costs** for TfL services. The gross operating cost did however increase by one penny (3.4 per cent) between the two years.

For **asset condition**, the 2009 composite value was 89.13 per cent, meaning that 89.13 per cent of in-scope asset in 2009 was deemed to be in 'good' condition. This compared to an equivalent value of 92.58 per cent in 2008, primarily reflecting an increase in the average age of the bus and rail fleet.

London's population

The resident population of Greater London at mid-year 2009 was estimated to be 7.75 million, an increase of 85,000 or 1.1 per cent from 7.67 million in 2008. Between 2001 and 2009 London's population grew by 5.9 per cent or over 430,000 people - more than any other region in the UK. The population growth in the most recent year in London was driven mainly by natural change (excess of births over deaths), which added 79,000 people to London's population.

London's economy

The economic recession of 2008/09 was the worst for 70 years, with six quarters of negative economic growth. However, both London and the UK are now recovering. In quarter 2 2010 UK economic output or Gross Value Added (GVA) rose by 1.2 per cent compared to the previous quarter, marking three quarters of consecutive growth.

- Over the recessionary period, London GVA contracted by 5.2 per cent in comparison to a fall of 6.4 per cent in UK economic output.

- The recovery to date (to Q2 2010) has clawed back 2 per cent of lost output with UK GVA still some 4.5 per cent below pre-recession levels and broadly level with Q2 2006.

- In comparison to the UK London emerged from recession in Q1 2010 (the latest period for which data are available) with quarter on quarter GVA growth 0.7 per cent.

London's employment

There were 5.5 per cent more jobs in London in 2009 compared to year 2000, reflecting steady growth over the decade. The recent economic recession has, however, interrupted this growth.

- There were just over 4.7 million jobs in London in the fourth quarter of 2009, the low point of the recession for employment (workforce jobs) in London. Compared to a year earlier this represented a reduction in employment of 217,000 or 4.4 per cent.

- Annual workforce jobs growth in London remained negative for the fifth consecutive quarter in Q2 of 2010 at -0.7 per cent, compared to -2.4 per cent in the previous quarter. London workforce jobs totalled more than 4.75 million in Q2 2010 in London.

- In spite of the annual fall, this seasonally adjusted all-London workforce jobs series rose for the second time on a quarterly basis. Compared to the low point in the fourth quarter of 2009 London workforce jobs have risen by 74,000 to quarter 2 2010, although they remain 143,000 below the high of quarter 4 2008.

- In spite of the decline in employment during the recent recession, total employment in London in the third quarter of 2009 was still equivalent to 2007 levels.

MTS Strategic Outcome Indicator 03: people's access to jobs.

Benchmark value for 2006:

This indicator is benchmarked on a three-yearly cycle. The latest available data relates to 2006, reflecting the modelling base used for the MTS. The number of jobs accessible within 45 minutes travelling time by public transport to the average member of the London population was 844,000 in 2006.

Direction of change and assessment:

There is currently insufficient data to allow an assessment against MTS goals.

With no time series for this indicator yet available, it is not yet possible to assess a recent trend. Estimates for 2009 should be available for inclusion in Travel in London report 4.

The recession and travel demand

London's economy, and that of the wider UK, now seem to be emerging from the effects of the worst recession in 70 years. Latest available data for quarter 2 2010 shows central London employment rebounding with growth of 1.2 per cent year-on-year, whilst the rate of decline in employment has slowed in the rest of London. 2008 and into 2009 saw a break to the established pattern of growth for public transport in London, reflecting the recession. However, the latest figures suggest that this is also now recovering strongly.

- Growth in bus journeys weakened during the recession. Growth in journeys picked up soon after the recession ended. Latest figures to August 2010 show bus journeys growing at between 1 and 2 per cent year-on-year, despite the fares increase in January 2010.

- After falling significantly during the recession Underground journeys in the final three months of 2009 recovered robustly - coinciding with the end of recessionary conditions more generally. Underground passenger demand has grown throughout 2010 with journeys growth in August 2010 of around 5 to 6 per cent year-on-year - back to around pre-recessionary levels.

Road safety

London's roads have become considerably safer in recent years. During 2009, 8.5 per cent fewer people were killed or seriously injured (KSI) in road traffic collisions compared to 2008. This is 52 per cent lower than the 1994 to 1998 average, the baseline for both the Government and Mayoral casualty reduction targets which are for 40 and 50 per cent reductions by 2010, respectively. It continues recent progress to reduce the more severe road traffic casualties. The year 2009 was the ninth consecutive year that total casualties in London were the lowest recorded.

MTS Strategic Outcome Indicator 17: number of people killed or seriously injured (KSI) in road traffic collisions in London per year.

Value for 2009 and comparison with 2008: In 2009, there were 3,227 people killed or seriously injured on London's roads. This is an 8.5 per cent reduction over the 3,526 KSIs of 2008.

Direction of change and status:

Trends are consistent with MTS expectation (a continued reduction).

The year 2009 saw continued good progress in reducing the more severe road traffic casualties. The 8.5 per cent reduction between 2008 and 2009 compares to a 6.8 per cent reduction between 2008 and 2007, and is in-line with the general trend in these numbers since 2001. London had previously met the national target (a 40 per cent reduction over the 1994-98 average by 2010) in KSIs, and in 2009 also met the more-demanding London-specific Mayoral target (for a 50 per cent reduction). In 2009, total KSIs in London were 52 per cent below the 1994-98 average of 6,684 per year.

Crime on the public transport networks

Rates of reported crime on bus and LU/DLR networks continued to fall in 2009/10, building on the substantial year-on-year reductions achieved since 2005/06. There were 11.1 reported crimes per million passenger journeys on London's buses and 12.8 per million passenger journeys on LU and DLR during the 2009/10 financial year. These rates were down from 12.1 crimes per million journeys on buses in 2008/09 (a reduction of 8.2 per cent), and 13.1 crimes per million journeys on LU in 2008/09 (a reduction of 2.0 per cent). Reported crime rates on or near the bus network have almost halved since 2005/06, and those on the Underground have reduced by over one-quarter.

MTS Strategic Outcome Indicator 18: crimes per million passenger journeys by principal public transport modes.

Values for 2009/10: In 2009 there were 11.1 crimes per million passenger journeys on the bus network; 12.8 crimes per million passenger journeys on London Underground/DLR.

Direction of change and status:

Trends are consistent with MTS expectation (a continued reduction).

Rates of reported crime on both bus and Underground networks continued to fall in 2009/10, albeit at a somewhat slower rate than over the previous five years. Nevertheless, reported crime rates on or near the bus network have almost halved since 2005/06, and on the Underground have reduced by more than one-quarter.

MTS Strategic Outcome Indicator 19: perception of crime and safety whilst travelling.

Values for 2009: 95 per cent of London residents feel safe on the modes that they use regularly during the daytime. 78 per cent of London residents felt safe on the modes that they regularly use at night-time.

Direction of change and status:

There is currently insufficient data to allow an assessment against MTS goals.

This is a new indicator and is so far only available for 2009. It is not therefore possible to give an assessment of the recent trend at this point.

Climate change - Carbon Dioxide (CO_2) emissions from transport

Emissions of CO_2 from ground-based transport in London fell by 3.6 per cent between 2008 and 2009. This fall is commensurate with the scale of year-on-year reductions required as part of the Mayor's commitment to achieve an overall 60 per cent reduction in CO_2 emissions (across all sectors) by 2025 from a 1990 base. However, this reduction principally arises from reduced road traffic in 2009, reflecting the economic recession. This may therefore prove only to be a temporary feature as the economy recovers.

MTS Strategic Outcome Indicator 23: CO_2 emissions from ground-based transport.

Values for 2009: Total ground-based transport emissions (including ground-based aviation) were estimated at 9.56 million tonnes in 2009. This was a 3.6 per cent reduction from 2008, on a comparable basis. Following an adjustment to the electric rail emissions the total ground-based transport emissions for 2008 were re-estimated at 9.92 million tonnes.

Direction of change and status:

The achieved reduction between 2008 and 2009 is consistent with the MTS reduction trajectory.

Access to opportunities and services

MTS Strategic Outcome Indicator 20: access to opportunities and services.

TfL's ATOS indicator of Access To Opportunities and Services at the London-wide level is to be updated on a three-year cycle, to reflect the evolutionary pace of strategic change in London's transport and service infrastructure.

Values for 2008: In 2008, the average time for accessing employment and services in Greater London by public transport or walking was 17.4 minutes.

Direction of change and assessment:

There is currently insufficient data to allow an assessment of trends against MTS goals.

The indicator was first bench-marked, in terms of an MTS Strategic Outcome Indicator, for the 2008 calendar year, as published in Travel in London report 2. A further benchmarking is planned for 2011.

Physical accessibility to the transport system

It is important to have a transport system which is accessible to all members of the community. Efforts continue to be made to update the transport system in London to achieve that goal, with real progress over the past year.

MTS Strategic Outcome Indicator 21: physical accessibility to the transport system.

This a modal composite indicator based on indices of physical accessibility for each mode, weighted according to journey stage based mode share.

Value for 2009/10: The composite physical accessibility score for 2009/10 was 37 per cent. This is a re-benchmarked value based on more complete data and is not, therefore, strictly comparable to the value of 36 per cent previously given in Travel in London report 2 for 2008. However, the comparison does reflect specific additions to the accessible network between 2008 and 2009/10.

Direction of change and assessment:

Trends are consistent with MTS expectation (continued incremental improvements).

The increase in the composite physical accessibility value reflects improvements to accessibility over the period - most notably the opening of new fully-accessible stations on the East London line extension.

Transport affordability

Fares on public transport in London are set by the Mayor. Fares policy involves striking a balance between the fare levels charged for public transport to permit operation of and enhancement to services, while maintaining affordability to the maximum possible extent.

MTS Strategic Outcome Indicator 22: real fares levels.

The real fares level measures the actual average fare paid per kilometre travelled. It is a composite measure, covering bus and Underground only, calculated as the total actual adult fares revenue, adjusted for inflation and divided by total actual bus and Underground passenger kilometres.

Value for 2010: The actual average adult composite bus and Underground fare rose from a revised 19.8 pence per kilometre in 2009 to (a provisional value of) 20.2 pence per kilometre in 2010, representing an increase of 2.2 per cent between 2009 and 2010. This follows an increase of 5.3 per cent between 2008 and 2009.

Direction of change and assessment:

Recent trends are consistent with MTS.

As well as reflecting actual fares levels, this indicator is also sensitive to changes in modal usage and fares structures. The change between 2009 and 2010 reflected effectively static demand and stable balance between the different types of ticket.

Local air quality - emissions and concentrations of Nitrogen Oxides (NO_x and NO_2) and particulate matter PM_{10}

There have been substantial reductions to emissions of harmful local air quality pollutants in London over recent years. These reflect concerted action, and a range of specific initiatives such as TfL's London Low Emission Zone (LEZ) and the 'Euro' vehicle emissions standards, to work towards meeting limit values for NO_2 and particulate matter PM_{10}, as set out in the UK Air Quality Standards Regulations 2010.

The year 2009 saw further reductions to emissions, mirroring a mixture of falling road traffic, and ongoing vehicle technology improvements.

MTS Strategic Outcome Indicators 9 & 10: emissions of Nitrogen Oxides (NO_x) and Particulate Matter (PM_{10}) from ground-based transport.

Values for 2009 and comparison with 2008 - NO_x:

Total emissions of NO_x from ground-based transport sources in London in 2009 were 25,630 tonnes. This is a 9 per cent reduction on the value for 2008. These values exclude emissions from ground-based aviation, which are not available on a historically consistent basis.

Values for 2009 and comparison with 2008 - PM_{10}:

Total emissions of PM_{10} from ground-based transport sources in London in 2009 were 1,470 tonnes. This is a 5 per cent reduction on the value for 2008. These values exclude emissions from ground-based aviation, which are not available on a historically consistent basis

Direction of change and assessment:

Recent trends are consistent with MTS expectation (continued incremental reductions).

Emissions of both NO_x and PM_{10} from ground-based transport in London continued the recent trend of year-on-year reductions. These reflected both an element of reduced transport demand - primarily road traffic - and also a contribution from the ongoing renewal of the vehicle fleet with cleaner technology.

Local air quality - concentrations of NO_x and PM_{10}

Concentration of pollutants in the air is the basic measure of local air quality, and that against which compliance with limit values is assessed. Despite recent sustained and substantial reductions to emissions, London in 2009 still did not meet limit values for pollutants that were originally intended to apply from 2005, and the UK Government is in the process of applying to the EU to secure time extensions for compliance with limit values (which have been transposed into the UK Air Quality Regulations 2010) - to 2011 for PM_{10} and (up to) 2015 for NO_2. The recently-released Mayor's Air Quality Strategy projects that compliance with the limit value for PM_{10} should be achieved in 2011. However, compliance with the limit value for NO_2 before 2015 remains very challenging.

- Concentrations of NO_x, the principal contributor to atmospheric NO_2, have fallen consistently and significantly over the period. Typical contemporary concentrations are about 40 per cent lower than those of the late 1990s.

- Concentrations of PM_{10} fell sharply during the early part of the last decade, then tended to stabilise, before more recently resuming a reducing trend. Typical current concentrations are about 30 per cent lower than those of the late 1990s. On this basis, it is expected that London should be able to comply with both limit values for PM_{10} in 2011, albeit that compliance is expected to be marginal in a small number of heavily-trafficked locations in central London.

- Concentrations of NO_2 fell relatively sharply, in parallel with reductions to NO_x, during the late 1990s but then tended to stabilise – and have remained effectively stable since about 2004, despite ongoing reductions to concentrations of NO_x. Meeting the limit value for NO_2 by the possible time extension date of 2015 remains extremely challenging.

Transport and quality of life - customer satisfaction and perception

The Strategic Outcome Indicator set for MTS includes six that are based on surveys of customer satisfaction or customer perception with various aspects of the transport system. Four of these are considered under the heading of 'quality of life', and latest results for these are summarised in the text box below.

MTS Strategic Outcome Indicators 11, 14, 15 and 16: customer satisfaction with public transport; perception of journey experience; quality of the urban realm and satisfaction with transport-related noise.

Values for 2009/10 and comparison with 2008/09 - customer satisfaction with public transport:

The composite mean score for overall satisfaction of those travelling on the network with the operation of the principal public transport modes in London was 79 out of 100 in 2009/10. This compares to a score of 80 out of 100 in 2008/09. According to TfL's norms for interpreting customer satisfaction scores, a score of between 70 and 79 is considered to reflect a 'fairly good' level of satisfaction (see also section 10.2 of this report).

Values for 2009/10 and comparison with 2008/09 - perception of journey experience:

The mean score for satisfaction with travelling in London was 66 out of 100 in 2010, compared to an equivalent score of 64 out of 100 in 2009. In general TfL considers a score of between 65 and 69 in satisfaction surveys to reflect a 'fair' level of performance.

Values for 2009/10 and comparison with 2008/09 - perception of the urban realm:

The mean score for satisfaction with the quality of streets, pavements and public spaces in London was 64 out of 100 in 2010, compared to a score of 63 out of 100 in 2009. In general TfL considers a score of between 55 and 64 in satisfaction surveys to reflect a 'fairly poor' level of performance.

Values for 2009/10 and comparison with 2008/09 - perception of transport-related noise:

The mean score for satisfaction with transport-related noise levels in London was 70 out of 100 in 2010, identical to that for 2009. In general TfL considers a score of between 70 and 79 in satisfaction surveys to reflect a 'fairly good' level of performance.

Direction of change and assessment:

Marginal change across all four indicators, with insufficient data time-series to establish a clear trend.

Customer satisfaction and perception-based scores for all four aspects in 2009 or 2009/10 were very similar to those for the previous year, suggesting little significant change overall to these indicators during the year.

Spotlight on cycling

A cycling revolution is underway in London. The Mayor believes that cycling can bring significant social, environmental, health and financial benefits to London and is determined to turn London into a cyclised city. Consequently, he has set a target to deliver a 400 per cent increase (from 2000) in the number of cycle trips, alongside a 5 per cent mode share for cycling by 2026. The Mayor declared 2010 the Year of Cycling; throughout the year, a wide range of interventions to improve conditions for cyclists and to raise the profile of cycling in London have been delivered.

In particular, the summer of 2010 saw the launch of two major schemes for cyclists: Barclays Cycle Hire for trips within central London and the first two Barclays Cycle Superhighways, designed to provide an attractive alternative for commuters from inner to central London.

Summary: Barclays Cycle Hire

- Barclays Cycle Hire has delivered an average of 20,000 cycle journeys a day, the vast majority of which were not previously cycled. Two thirds of trips made by Barclays Cycle Hire bicycle would previously have been made by a mechanised mode.

- The scheme has encouraged new people to give cycling in London a try, and many have become frequent cyclists as a result of the scheme. There is evidence of wider benefits arising from the scheme, with many of those new to cycling saying that they have bought a bike for their private use as a result of using the scheme. The most popular reasons for using the scheme were that that it was quicker, healthier and more convenient than their previous mode.

- The scheme has recently been expanded to allow casual use (without membership) and further research will be carried out to understand the impact of this upon usage patterns and the profile of users. This will be reported in future Travel in London reports.

Summary: Barclays Cycle Superhighways

- The first two pilot Barclays Cycle Superhighways were launched in July 2010. These were Barclays Cycle Superhighway 3 (CS3), along the A13 from Barking to Tower Gateway, and Barclays Cycle Superhighway 7 (CS7), along the A24 from Merton to the City.

- Early results suggest an increase of 24 per cent in average cycle flows, based upon cycle counts carried out before and after the introduction of each scheme. The vast majority of trips (more than eight in ten) are for commuting purposes, although cyclists are using the route at other times and for other purposes as well.

- The Barclays Cycle Superhighways have also encouraged new cyclists onto the routes: 28 per cent of those cycling on CS3 and 20 per cent of those cycling on

CS7 had started cycling on the route as a result of the launch of the Barclays Cycle Superhighways, and more cyclists had switched route to travel on the Barclays Cycle Superhighways.

- The aspects of the route considered most influential on the decision of cyclists to use it were: the directness to their destination, the visibility of the blue road markings and the quality of the road surface. Those who were new to cycling saw benefits to health, cost and the quality of their journey, whilst those who had switched route found their journey safer and more enjoyable. People who were cycling on the Barclays Cycle Superhighways prior to launch have experienced an increase in the quality of their journey experience and are generally very supportive of the scheme; some have increased the amount they travel on the routes. More than three quarters said that the Barclays Cycle Superhighways had improved safety for cyclists.

- Wider benefits were seen amongst the target market, a third of whom had started cycling on the routes and many of whom had also increased the amount they cycle elsewhere in London. The wider cycling economy can be seen to be benefitting from the scheme as around three in ten of those cycling on the route had purchased a bicycle or cycle equipment since the launch.

Spotlight on London's Low Emission Zone (LEZ)

The first two phases of London's Low Emission Zone scheme were introduced during 2008 without significant operational problems, and all elements of the scheme continue to function effectively. The scheme operates 24 hours a day 365 days per year, and covers Greater London. The scheme targets, and has lead to valuable reductions to, emissions of toxic particulate matter (PM_{10}) – which are material to London's projected ability to meet limit values for PM_{10} in 2011.

- Consistently high levels of vehicle compliance with the requirements of the scheme are being achieved. Typically, 98 per cent of heavy goods vehicles (regulated by phase 1 of the scheme) and 96 per cent of medium goods vehicles (regulated by phase 2) are compliant on a daily basis. Operation of dirtier vehicles in the lower Euro emissions classes have been virtually eliminated, as operators have upgraded to vehicles that meet (or in many cases exceed) the basic minimum requirements for the scheme.

- These shifts in the emissions profile of goods vehicles operating in London have led to substantial savings in emissions of Particulate Matter (PM_{10}) and Oxides of Nitrogen (NO_x). On a basis equivalent to the whole 2008 calendar year, it is estimated that the scheme directly produced savings of 28 tonnes of PM_{10}, 26 tonnes of $PM_{2.5}$ (the most dangerous portion of PM_{10}), and 529 tonnes of NO_x. These savings are comparable to those forecast by TfL prior to introduction of the scheme, and are a key contributor to London's projected ability to comply with limit values for PM_{10}.

- For PM_{10} they represent a 3.6 per cent saving of road traffic exhaust emissions, and a 1.9 per cent saving of total road traffic PM_{10} emissions in London. For $PM_{2.5}$, they represent a 3.7 per cent saving of road traffic exhaust emissions, and

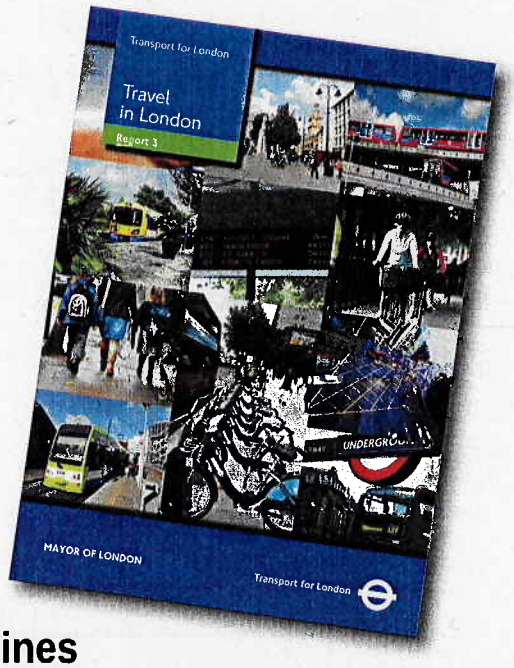
- These values exclude the dramatic reductions to particulate emissions from the TfL bus fleet achieved separately but as part of wider efforts to improve air quality in London (these vehicles are in-scope for phase 2 of the LEZ scheme). Exhaust emissions of PM_{10} from TfL's buses have reduced by around 90 per cent since year 2000, despite a 32 per cent increase in vehicle kilometres operated.

- In terms of concentrations of key pollutants in the atmosphere, reductions attributable to the scheme can reach 0.5 micrograms of PM_{10} at busy roadside sites - the very places where pollution is highest, reflecting diesel-engined road traffic, and these reductions are most needed. In this way, LEZ targets benefits at those areas that are most in need.

- LEZ also differentially targets the most toxic portion of particulate matter. This is demonstrated by looking at trends in concentrations of Black Carbon (a marker in urban areas for finer particles from road vehicle exhaust and one of the most toxic components of particulate). At roadside sites with heavy goods vehicle flows, these trends reflect the implementation of the first two phases of the scheme and the vehicle operator 'pre-compliance' associated with them. Reductions of between 40 and 50 per cent have occurred over the period 2006 to 2009.

Travel in London: how much, how often, by what mode, and by whom...

Probably almost everything you could ever want to know about travel in the capital is contained in Transport for London's new 300-page tome. *LTT* delved into the data and picked out some of the trends



MODAL SHARE: Public transport up as car use declines

PUBLIC TRANSPORT'S share of journeys in the capital has dramatically increased over the last 20 years at the expense of car travel.

The share of journey stages (the component parts of a trip) made by public transport grew from 30% in 1993 to 41% in 2009. At the same time, stages made by private transport (car or powered two wheelers) fell from 46% to just 37%.

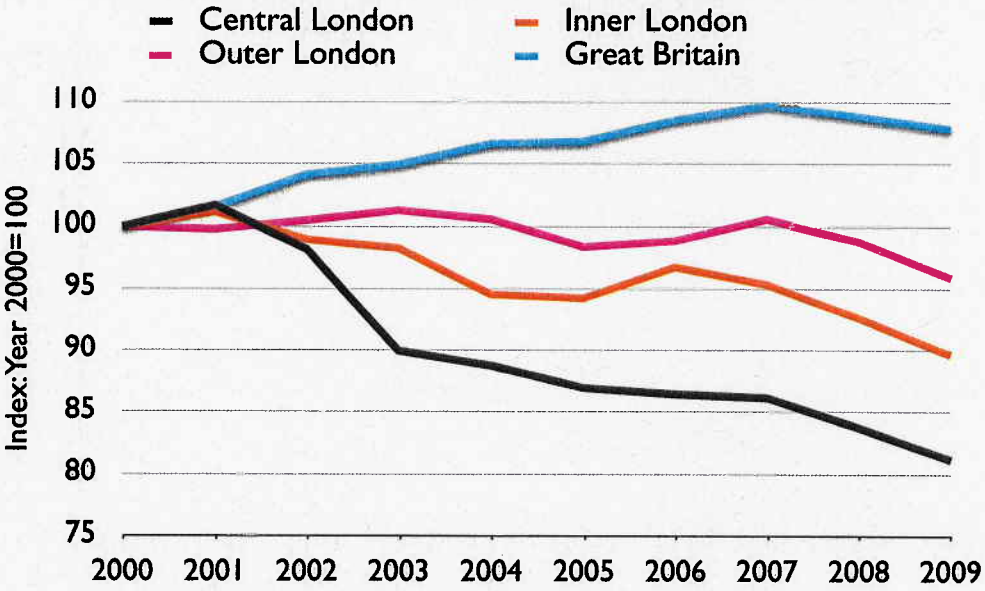
The percentage of stages made on foot has remained almost stable – dropping from 22% to 21% – and bicycle stages doubled but only from 1% to 2%.

In the last decade, total passenger kilometres on public transport have almost doubled – from 9.9bn in 1991/92 to 17.4bn in 2009/10. Within this, bus passenger kilometres have doubled, from 4 bn in 1991/92 to 8 bn in 2009/10. Underground passenger kilometres rose from 5.9bn to 8.5bn.

The increase is partly a consequence of demographic change. Greater London's population has climbed from 6.7 million in 1988 to 7.75 million today. The number of people commuting into Greater London has also grown, from 670,000 in 2003 to 810,000 in 2010.

But vehicle kilometres on the road network have not mirrored the rise in public transport use. Road traffic rose from 30.7bn vehicle km in 1993 to 32.7 in 1999. They then stabilised before falling back to 31.4bn in 2008 and 30.4bn in 2009.

Index of London road traffic (all motor vehicles)



CENTRAL LONDON: Nine out of ten commuters prefer public transport

PUBLIC TRANSPORT carried 90% of trips entering central London during the weekday morning peak (07.00-10.00) in 2009, up from 84% in 2000.

The number of people entering central London by car has halved in the last decade, to 70,000.

Bicycle trips have more than doubled in the last decade and trebled in the last 20 years. TfL records 27,000 people entering central London by bicycle in the weekday morning peak in 2009, compared with 12,000 in 2000 and just 9,000 in 1993.

The overall number of people entering central London during the morning peak fell 4% from 1.14 million in 2008 to 1.10 million in 2009. TfL attributes the decline to the recession.

The central London survey is conducted each autumn.

CAR OWNERSHIP: Londoners live without cars

THE NUMBER of households in London without a car appears to have stabilised in recent years, according to TfL.

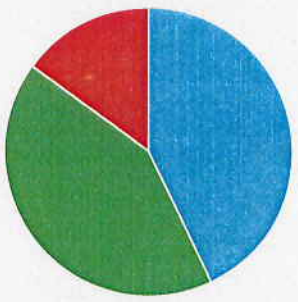
Households in London are much less likely to own a car than their counterparts elsewhere in the UK. The estimated proportion of households in the capital without a car was 42% in 2009/10, a figure that has remained unchanged since surveys began in 2005/06. The DfT's National Travel Survey suggests that nationally 23% of households do not own a car.

"The emerging picture for London is one of stable car ownership levels and declining car use – trends that have significant implications for transport policy development," says TfL.

Forty-three percent of London households own one car and 15% own more than one car.

The data shows a big variation in car ownership between inner and outer London. In inner London, 57% of households have no car whereas in outer London the figure is 32%.

Car Ownership in the Capital



42% households with no car

43% households with one car

15% households with more than one car

CONGESTION: Accidents the biggest source of jams

ROAD ACCIDENTS are a bigger source of serious delays on London's road network than utility streetworks or highway authority roadworks.

Accidents caused 902 hours of "serious and severe" congestion across London in 2009/10 – 28% of the total. Utility streetworks and highway authority roadworks each accounted for about 600 hours or 19% each. Breakdowns accounted for 9% of the delays.

Last January, TfL introduced a permit scheme for road and streetworks on the Transport for London road network (TLRN). In April, it toughened up its policy, imposing a cap on the number of works allowed to take place on the TLRN at any one time. TfL reports that in the first two quarters of 2010/11, it has recorded a 12% fall in the hours of serious and severe congestion across London compared to the same period in 2009/10.

TfL defines serious congestion as traffic being stopped for more than the red signal time.

Roadworks account for around 600 hours of road delays a year

PHOTO: LAURIE MAYWELL

AIR QUALITY: NOx continues to breach EU limit value

MANY PARTS of London continue to breach EU air quality standards that were supposed to be achieved by 2010.

EU limit values stipulate that, from 1 January 2010, nitrogen dioxide concentrations should not exceed 40µgm3 on an annual mean basis. But monitoring data shows this is exceeded for most of the monitoring site groupings *(see graph)*. "The degree of exceedance is considerable, and the prevailing trend ... is one of stability," says TfL. "The intractability of NO_2 concentrations to measures to reduce emissions of nitrogen oxides is now a widely-recognised feature of air quality management, not just in London but across the UK and Europe."

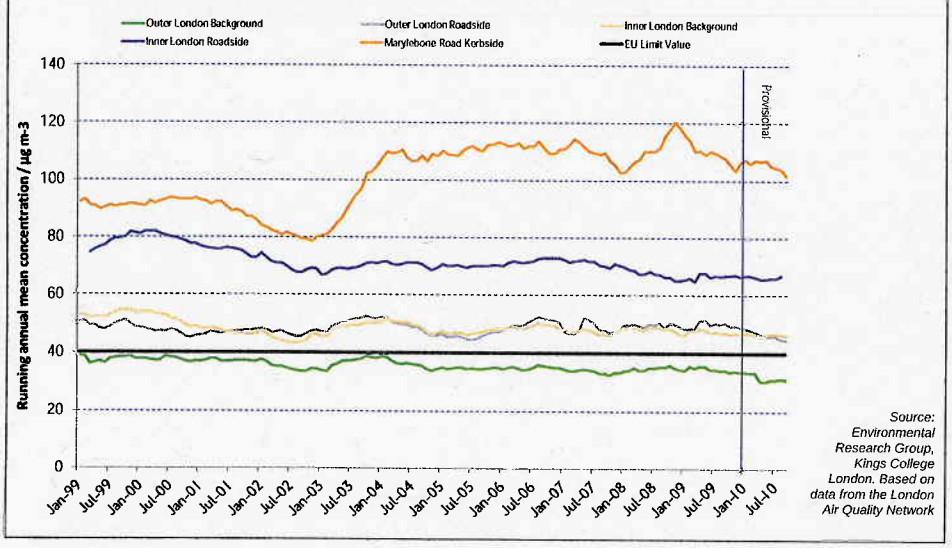
It identifies a number of contributory factors including the increased number of diesel engines in the vehicle fleet and the effect of emissions abatement equipment targeted at reducing particulates. TfL plans to drive down concentrations through changes to the Low Emission Zone (which currently targets particulates).

The UK Government is expected to apply to the EU for a time extension to extend the deadline for meeting the NO_2 limit values to 2015.

The picture is better for PM10 particulates. TfL says that only the Marylebone Road site has given cause for concern about meeting the EU limit value that there should be no more than 35 days in a 12-month period when concentrations of PM10 exceed 50µgm3. "Provisional data for 2010 suggest that the site should comply with the limit value – but by a relatively small margin," it says.

TfL says vehicle operators are achieving almost universal compliance with the Low Emission Zone. Drivers of non-compliant vehicles must pay a daily charge for driving within Greater London (£200, or £100 for vans and minibuses). TfL says that in 2009 about 100 charges were paid per week for UK registered vehicles and 20-40 for foreign-registered vehicles.

Running annual mean NO_2 concentrations at selected air quality monitoring site groups in London



Source: Environmental Research Group, Kings College London. Based on data from the London Air Quality Network

ROAD SAFETY: Casualties break records for ninth successive year

2009 WAS the ninth successive year that the total number of casualties recorded on London's road network was the lowest recorded.

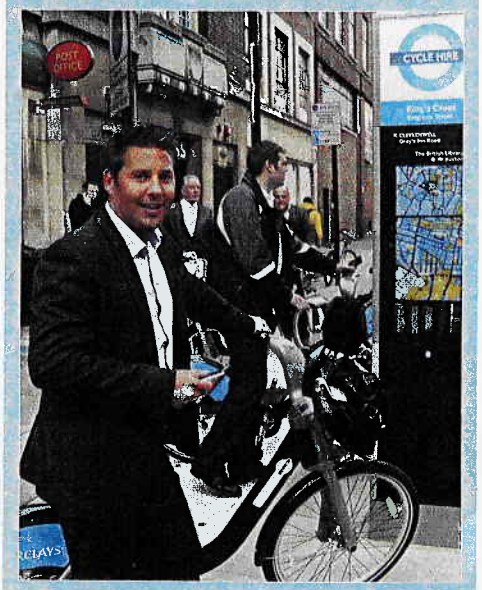
In 2009, total killed and serious injuries were 52% below the 1994-1998 baseline. Child KSIs were 72% below the baseline.

Slight casualties were 37% below the baseline but actually rose 0.5% in 2009, with rises recorded for pedestrians, pedal cyclists and powered two wheeler riders.

For vulnerable road users, the number of KSI casualties in 2009 were:

- Pedestrians – 51% below the 1994-1998 baseline
- Pedal cyclists – 24% below baseline

BIKE HIRE: A white, male, middle-class pursuit?



WHITE MEN from higher-income earning households are the biggest users of London's cycle hire scheme launched last summer.

A survey of a few thousand users of the Barclays cycle hire scheme found that 68% of respondents were aged 25-44, three-quarters were men, and 88% were White. About a third of London residents are from ethnic minority backgrounds.

Users are also disproportionately from better off households. "Six in ten scheme users have a household income over £50,000 per year, compared to around a quarter of London residents, and only 5% of users have a household income of less than £20,000 per year, compared to four in ten London residents," says TfL.

"Cyclists tend to be white, male, young professionals and the profile of Barclays Cycle Hire users is fairly typical of this," it adds.

TfL says the introduction of casual use of the bicycles last month could broaden the scheme's appeal.

Asked how they would have previously made their selected bike hire trip, 35% of respondents said they would have used the Underground, 29% would have walked, 23% would have used the bus, 5% would have used their own bicycle, 3% taxi, and 1% car or van.

Travel in London is available is available at: www.tfl.gov.uk/assets/downloads/corporate/travel-in-london-report-3.pdf