## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction by Stephen Knight AM</td>
<td>2</td>
</tr>
<tr>
<td>What’s the problem?</td>
<td>4</td>
</tr>
<tr>
<td>The impact of Crossrail</td>
<td>7</td>
</tr>
<tr>
<td>Pedestrian Experience and Road Safety</td>
<td>8</td>
</tr>
<tr>
<td>Air Pollution</td>
<td>11</td>
</tr>
<tr>
<td>Retail Trends</td>
<td>12</td>
</tr>
<tr>
<td>Bus Capacity and Reliability</td>
<td>15</td>
</tr>
<tr>
<td>The Solution</td>
<td>17</td>
</tr>
<tr>
<td>Indicative Timescale</td>
<td>18</td>
</tr>
<tr>
<td>Recommendations</td>
<td>19</td>
</tr>
<tr>
<td>Endnotes</td>
<td>20</td>
</tr>
</tbody>
</table>
Introduction

It’s hard to believe the Romans ever set out to create one of the most famous shopping streets in the world when they had the idea to connect Hampshire with Colchester via their adopted capital, Londinium. Yet almost two millennia later the old Roman road known as the via Trinobantina, which today we know as Oxford Street, has grown to become one of the busiest shopping centres in the world – attracting over 200 million visitors and generating spending in excess of £5 billion annually.

Despite this commercial success the road continues to fulfil its original function as an east-west thoroughfare, with no fewer than 24 bus routes running along the street in addition to thousands of taxis each day. The result has been for the road to become severely congested, highly polluted and dangerously crowded.

So notorious has the area become for congestion, that a number of attempts have been made to improve the situation in recent years, from the introduction of a diagonal crossing at Oxford Circus, to the widening of footways, removal of street clutter and marginal reduction in bus flows.

Welcome though all these initiatives are, they are unlikely to provide more than a temporary solution to the long-term problem of overcrowding – with the arrival of Crossrail in 2018 set to bring thousands of additional visitors to the area, increasing demand for pavement space still further. At the same time Oxford Street faces increasing competition from new retail destinations, both at home and abroad.

Where once the size and range of shops on Oxford Street stood almost unparalleled among global cities, today a similar selection can be found in New York, Paris and others too. Meanwhile at home a range of new purpose built shopping centres, such as those at White City and Stratford, continue to attract domestic consumers lured by the prospect of a ‘stress-free’ shopping experience.
The threat to Oxford Street’s reputation is greater than ever before, and the future prosperity of London is no less affected. There is a growing feeling that if Oxford Street is to retain its position as a world class retail centre, it must finally resolve the conflict between its role as both a retail centre and transport link.

In the short-term, this report argues that the time has come to close Oxford Street to all current traffic and in its place introduce a high frequency, zero emission shuttle bus (fitted with the latest road safety sensors) together with a modern ‘one hour’ ticketing system. The benefits would include faster journey times, cheaper travel, cleaner air, safer streets and greater visitor satisfaction as well as making the street more accessible for those, young and old, who are currently put off visiting the area.

In the long-term, as demand for bus services accessing the road reduces, this report argues that the Mayor should fully pedestrianise Oxford Street, creating the longest pedestrian shopping street in Europe. Opening up the street to pedestrians would not only offer the chance to improve the look and feel of the street – increasing its attraction as a visitor destination and supporting the local economy – but also allow shoppers to enjoy an area free of traffic hazards and pollution.

Of course, such a plan would not be without its challenges, chief among them the practicalities of re-routing much of the bus network in central London. However, this is an issue which could easily be tackled if there was the political will to do so: a comprehensive review of our bus network is long overdue and urgently needed to address rising demand for bus travel across London as a whole.

Above all, it is hoped that this report will prompt further discussion of how we can make the best use of the finite space available on our streets to ensure that London can continue to accommodate its growing population whilst remaining a key destination for domestic and international visitors.

Stephen Knight AM
Liberal Democrat London Assembly Environment Spokesperson
What’s the problem?

The problems of modern-day Oxford Street may seem obvious to anyone who has visited the area, but the cumulative impact of traffic congestion, air pollution and overcrowding is often overlooked – seen by many Londoners as a necessary, if unpleasant, experience of visiting Oxford Street.

However, a recent wave of negative publicity has brought home the need for a fundamental rethink of how the limited space available on Europe’s busiest shopping street is shared between motorised vehicles and pedestrians. Even a cursory glance at newspaper headlines appearing in recent weeks is enough to confirm that maintaining the status quo is no longer an option:

Arab tourists warned to avoid West End

The Times, 20 August 2014

Emirati tourists warned to avoid 'dangerous' Oxford Street

It’s a mile-long shopping destination known for chain stores, traffic jams, air pollution and crowds of meandering tourists, but London’s Oxford Street has gained an unwelcome accolade after the UAE Ministry of Foreign Affairs listed it on a map of the most “dangerous areas” for Emirati tourists in the capital....

The Independent, 20 August 2014
Wealthy UAE visitors warned to steer clear of ‘danger areas’ of Oxford Street and Soho

UAE posts ‘London danger map’ telling tourists to avoid busiest shopping areas in the capital.

Oxford Street and Piccadilly are among the areas identified in maps published by the UAE foreign ministry as having high rates of pickpocketing, theft and fraud….

Man taken to trauma unit after being hit by bus on Oxford Street

Shocked shoppers saw a man hit by a bus on the busy Oxford Street this morning.
A man in his 40s was taken for treatment at a major trauma centre outside Selfridges’ flagship central London branch….

Shoppers watch in horror as elderly woman is hit by bus on Oxford Street and dies hours later

London Evening Standard, 21 August 2014

The Daily Mirror, 19 August 2014

London Evening Standard, 19 September 2014

London Evening Standard, 10 June 2014
Oxford Street worst in the world for diesel pollution

Oxford Street has the world’s highest concentration of a toxic pollutant that can trigger asthma and heart attacks, scientists have found.....

The most polluted street in the world is in LONDON: Oxford Street has highest levels of nitrogen dioxide, claims expert

- Scientist from King’s College London recorded peak levels of 463 micrograms of nitrogen dioxide per cubic metre of air on Oxford Street
- Shopping destination has an average of 135 milligrams of NO2 per cubic metre - over three times the higher than the EU’s safety limit
- Pollutant’s created by diesel fumes and can trigger asthma and heart attacks

Welcome to London – the most toxic town on the planet

Oxford Street's more polluted than Beijing and the sky's alive with cranes. Just what kind of city is Boris Johnson creating?

Crossrail report says London's pavements may have to be widened to cope with commuter numbers

Transport officials are considering widening London’s pavements and pedestrianising Oxford Street as new report suggests the number of Crossrail commuters has been massively underestimated....
The impact of Crossrail

Despite stretching for only two kilometres (or just over 1.2 miles), Oxford Street contains four of the busiest London Underground stations in the city – with around 180 million passengers entering or exiting the Tube network via Marble Arch, Bond Street, Oxford Circus and Tottenham Court Road stations each year.¹

The number of passengers using these stations is set to increase further with the introduction of Crossrail services from 2018, which will provide direct links for the first time from Reading (Berkshire) and Shenfield (Essex) to the West End and beyond.

While the construction of a new underground tunnel through much of central London is expected to ease congestion and overcrowding on the rail network (adding some 10 per cent to London’s existing rail capacity), not enough thought has been given to the impact of new Crossrail stations at Tottenham Court Road and Bond Street on pedestrian conditions in the surrounding area.

Although some have suggested that the impact of Crossrail on Oxford Street may be limited – primarily due to the fact that a number of ticket halls are to be located away from the main street itself – this ignores recent growth in London’s population and higher-than-forecast demand for Crossrail services, both of which seem likely to increase demand for pavement space far beyond the level that was predicted when plans were first approved.²

Already the city is growing at roughly twice the rate of the rest of the country, with recent analysis suggesting that by 2025 an extra 500,000 people a day will be traveling into the West End alone.³

One thing is clear: if nothing is done to significantly increase the usable space for pedestrians along the street within the next decade, the sheer volume of people travelling into, out of and through the area could well push Oxford Street to breaking point.
Pedestrian Experience and Road Safety

While for some the crowds on Oxford Street are part of the area’s vitality and attractiveness, to others they represent a serious obstacle, with Oxford Street attracting a lower share of older people and families with children than other comparable shopping centres.⁴

More seriously still, three crossings remain inaccessible to blind and partially sighted shoppers, despite long standing national accessibility standards designed to ensure that every pedestrian crossing has either an audible sound or a rotating cone to assist blind and partially sighted people.⁵

However, perhaps the most tragic consequence of overcrowding on Oxford Street is the number of pedestrians that are injured each year after coming into conflict with moving vehicles. The death of a 78-year-old woman in June 2014, who died after being hit by a bus, provides a tragic reminder of the dangers posed by traffic on Oxford Street.⁶ Transport for London figures show over 700 pedestrians have been killed or injured on Oxford Street in the last decade alone (see figure 1). This equates to roughly one pedestrian collision every five days.

While the overall trend shows a welcome reduction in the number of injuries occurring in recent years, a breakdown of the vehicles involved in these incidents reveals a worrying increase in the number of buses involved in collisions over the last four years (see figure 2). This increase is all the more concerning given the number of buses travelling along the street has actually fallen by almost 200 vehicles per day over the same period (see figure 3).

Even taking wider improvements into account, the annual collision rate on Oxford Street remains worryingly high, with 29.5 pedestrian collisions per kilometre, compared to 0.36 collisions per kilometre across ‘all London Roads’.⁷ With a collision rate over 80 times higher than the London average, it is almost unthinkable that the volume of additional people expected to visit the area over the coming years could be safely accommodated without making major changes to the road layout and/or significantly reducing the number of vehicles entering the street.

The introduction of a ‘Very Important Pedestrian’ (VIP) Day – which took place annually until 2012 and saw Oxford Street pedestrianised for one day each year in the run up to Christmas – has shown what can be achieved when traffic is removed from the street, with increased visitor numbers, greater satisfaction levels and higher retail sales all contributing to make the event “an essential part of London’s shopping calendar”.⁸ Meanwhile the use of public streets for recreation and leisure-time activities has been growing across the world, with over 90 cities having hosted ‘Open Streets’ initiatives in the United States alone last year.⁹ The opportunity to expand the number of traffic-free events in London should not therefore be dismissed.

“On average one pedestrian collision occurs every five days on Oxford Street”
Figure 1: Injuries sustained by pedestrians on Oxford Street, by year and severity.\textsuperscript{10}

![Figure 1](image1.png)

<table>
<thead>
<tr>
<th>Casualty Severity</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatal</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Serious</td>
<td>20</td>
<td>24</td>
<td>22</td>
<td>14</td>
<td>11</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>7</td>
<td>8</td>
<td>139</td>
</tr>
<tr>
<td>Slight</td>
<td>75</td>
<td>87</td>
<td>69</td>
<td>58</td>
<td>52</td>
<td>48</td>
<td>32</td>
<td>42</td>
<td>54</td>
<td>51</td>
<td>568</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>111</td>
<td>93</td>
<td>73</td>
<td>64</td>
<td>63</td>
<td>43</td>
<td>52</td>
<td>61</td>
<td>59</td>
<td>714</td>
</tr>
</tbody>
</table>

Source: TfL

Figure 2: Pedestrian casualties by year, severity and vehicle they came into conflict with on Oxford Street.\textsuperscript{11}

![Figure 2](image2.png)

Source: TfL
Figure 3: Average annual daily flow (AADF) of traffic on Oxford Street.

Source: DfT
Air Pollution

Of all the problems currently facing Oxford Street, it is the poor quality of its air that is among the most pressing. It’s estimated that more than 4,000 Londoners die prematurely every year because of long-term exposure to airborne pollution in the city. In addition, the UK now faces the prospect of substantial fines from the European Commission as a result of its failure to meet air pollution limits – making it all the more urgent that we reduce the dangerous levels of toxic pollutants found in many parts of London, including Oxford Street.

A large part of the problem on Oxford Street stems from restrictions placed on general traffic, which, whilst successful in reducing the number of vehicles entering the area, has left the street almost entirely dominated by highly polluting diesel vehicles (e.g. buses and taxis).

Even after a recent attempt to reduce the flow of buses travelling along Oxford Street, up to 300 buses an hour still pass along the road at peak times – among the highest flow of buses anywhere in the UK. The result has been for Oxford Street to become one of the most polluted roads in the UK, with the highest known concentration of nitrogen dioxide (NO₂) recorded anywhere in the world.

In 2013, the London Air Quality Network – which takes continuous measurements of air pollution across the capital – recorded peak levels of 489 micrograms of nitrogen dioxide (NO₂) per cubic metre of air (μg/m³) along Oxford Street. Even the annual average – of 135 milligrams of NO₂ per cubic metre – is still over three times the EU legal limit (see figure 4).

**Figure 4:** Average (mean) daily concentration of nitrogen dioxide (NO₂) on Oxford Street

![Graph showing concentration of nitrogen dioxide (NO₂) on Oxford Street](image)

Indicates the legal annual limit value of 40 micrograms of nitrogen dioxide per cubic metre of air (μg/m³)

“Oxford Street has the highest known concentration of nitrogen dioxide (NO₂) recorded anywhere in the world”
Retail trends

As the UK’s premier shopping street, Oxford Street continues to play a major role in supporting London’s economy, employing almost 50,000 people and generating spending in excess of £5 billion annually.\(^\text{17}\) Taken together with neighbouring streets, it’s estimated that the West End generates around 15 per cent of London’s Gross Value Added (GVA) annually.\(^\text{18}\) But the area faces increasing competition from abroad.

Where once the size, range and quality of shops on Oxford Street was almost unmatched across the world, today a similar selection can be found in many global cities. A comparison of rental prices charged in prime retail locations across the world reveals that while Oxford Street remains among the most valued shopping districts in the world, demand for retail space in other cities is growing fast, with many rents now well above those charged in Oxford Street (see figure 5).

While, of course, high rental prices are not in themselves an indication of commercial success, they provide a useful measure of the demand for retail space from global investors as well as the value placed on trading in a particular location. It is clear that a growing number of global brands are seeking to expand their retail offer in new and emerging markets. It follows that if Oxford Street is to continue to be an attractive retail destination for overseas tourists, it must compare favourably with other international retail areas.
Figure 5: Comparison of prime retail rental performance across the world

<table>
<thead>
<tr>
<th>City</th>
<th>Location</th>
<th>Price per square foot, per year ($)</th>
<th>% Change (2004-2013)</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>Oxford Street,</td>
<td>517</td>
<td>538</td>
</tr>
<tr>
<td>Berlin</td>
<td>Tauentzienstraße (south)</td>
<td>231</td>
<td>229</td>
</tr>
<tr>
<td>London</td>
<td>New Bond Street</td>
<td>508</td>
<td>627</td>
</tr>
<tr>
<td>Paris</td>
<td>Avenue des Champs-Élysées</td>
<td>711</td>
<td>745</td>
</tr>
<tr>
<td>New York</td>
<td>5th Avenue</td>
<td>950</td>
<td>1,300</td>
</tr>
<tr>
<td>Rome</td>
<td>Via del Corso</td>
<td>175</td>
<td>191</td>
</tr>
<tr>
<td>Zurich</td>
<td>Bahnhofstrasse</td>
<td>223</td>
<td>326</td>
</tr>
<tr>
<td>Milan</td>
<td>Via Montenapoleone</td>
<td>220</td>
<td>242</td>
</tr>
</tbody>
</table>

Source: Cushman & Wakefield, ‘Main Streets Across the World’
Within London, Oxford Street and the wider West End remain by far the largest retail centre, with more than three times as much floorspace as the largest purpose built shopping centre (see figure 6). However, the emergence of new retail centres outside central London has increased the competition facing the West End, with domestic consumers now having more choice over when and where to shop than ever before.

Previous surveys have shown that those aged 34 and over, those with children and pensioners are increasingly likely to visit outer London retail centres in preference to the West End. Ease of access, convenience and a better overall shopping environment are all cited as reasons for visiting these locations. With plans for a new Westfield shopping centre in Croydon recently approved, the degree of consumer choice looks set to expand even further.

**Figure 6:** Floorspace in various retail centres across London
Bus Capacity

It seems obvious that major changes to the road layout are needed if Oxford Street is to remain a world class retail centre. However, the need to review the wider road network presents an opportunity to do much more than simply improve the public realm along Oxford Street: a comprehensive review of our bus network is long overdue and urgently needed to address rising demand for bus travel.

Like much of our transport system, London’s bus network has seen a huge rise in demand in recent years, with the number of passenger journeys increasing by over 600 million (or 37 per cent) in the last decade alone.23

Unlike other forms of transport, however, there are no major plans to expand London’s bus network – a situation which the Commissioner of Transport for London (TfL) has recently conceded may have drastic consequences for London’s economy and society.24,25

The case for reconfiguring London’s bus network to make better use of existing capacity is therefore stronger than ever before. Indeed, many of the bus routes in operation today have seen little, if any, change since the earliest days of regular bus operation in the capital.26

Perhaps surprisingly, TfL only generally review bus services on a route-by-route basis, as and when they are retendered, typically every five to seven years. However, in a period of rising demand and reduced subsidy, it cannot be right for buses to follow the same route as their horse-drawn predecessors simply because of the history of our contracting and tendering process: a comprehensive review of the bus network is needed urgently to match spare capacity with growing demand.
Bus Reliability

Despite a small reduction in the flow of buses travelling along Oxford Street in recent years (see figure 3), the road remains one of the most congested spaces in central London, with average bus speeds frequently reduced to a walking pace (see figure 7).

At the same time bus reliability continues to suffer, with excess waiting times (i.e. the time that customers have to wait over and above what would be expected were the service to run exactly to schedule) up to 40 per cent higher than the London average. 27

Figure 7: Average bus speeds on Oxford Street (mph). 28

Source: London Assembly Liberal Democrat Group
The Solution

If Oxford Street is to maintain its standing as a retail centre of international significance, radical solutions are needed. The option below sets out a two-stage process, leading ultimately to full pedestrianisation, which would transform the area from a traffic-choked corridor into a world-class public outdoor space capable of competing with other retail locations for years to come.

Stage 1: Removal of traffic and introduction of shuttle bus service

In the first instance the removal of all bus routes from Oxford Street, and replacement with a dedicated high frequency, zero emission shuttle service (fitted with the latest road safety sensors), would enable TfL to reconfigure the wider bus network, making better use of existing capacity while at the same time improving reliability and reducing journey times. This would also remove diesel exhaust pollution, giving Oxford Street clean air.

The introduction of a dedicated ‘end-to-end’ bus service running between Marble Arch and Tottenham Court Road also increases the necessity to reform our fares and ticketing structure to ensure that bus passengers are not penalised financially. A ‘one hour’ bus ticket would enable passengers to transfer between buses as many times as they wished, within an hour of their journey beginning, without having to pay an additional fare.

As well as accommodating the 43,000 daily bus passengers who currently travel the length of Oxford Street in order to reach their final destination (and whose journey would otherwise be broken by the introduction of a shuttle service) a ‘one hour’ bus ticket would assist those on low incomes or living further afield who are currently disadvantaged by journeys that cannot be made by one direct bus.

Other European cities have long recognised the benefits of time limited bus tickets, and passengers on the Tube have always been able to change trains without being charged again – it’s time this benefit was enjoyed by bus passengers too.

Stage 2: Full Pedestrianisation

As travel patterns change and demand for bus services accessing Oxford Street reduces following the introduction of Crossrail services, the chance to fully pedestrianise the street should be seized. Opening up the street to pedestrians would not only offer the chance to improve the look and feel of the street – increasing its attraction as a visitor destination and supporting the local economy – but also allow shoppers of all ages to enjoy an area free of traffic hazards. The street would become a focal point for entertainment, exhibitions and other public events – ensuring the area remained a vibrant destination – whilst finally giving London the high street it deserves.
**Indicative Timescale**

**January 2015**

**December 2015**
VIP [Very Important Pedestrian] Day reintroduced. Oxford Street fully pedestrianised for one day in the run up to Christmas.

**January 2016**
Introduction of ‘one-hour’ bus ticket.

**Early 2016**
Mayor of London instructs Transport for London to investigate options for significantly increasing usable space for pedestrians on Oxford Street, while allowing for the introduction of a shuttle bus service.

**Summer 2016**
Launch of London ‘Summer Streets’ programme, with trial closure of Oxford Street to traffic on consecutive weekends during June, July and August.

**2017**
Launch of a new, zero emission ‘shuttle bus’ service running between Marble Arch and Tottenham Court Road.

**By 2020**
Full pedestrianisation achieved.
Recommendations

**Recommendation 1**
The Mayor should work with the New West End Company, Westminster City Council and local traders to reinstate VIP [Very Important Pedestrians] Day as a priority.

**Recommendation 2**
The Mayor should launch a New York-style ‘Summer Streets’ programme, beginning by closing Oxford Street to traffic on consecutive weekends during June, July and August.

**Recommendation 3**

i) The Mayor should instruct Transport for London (TfL) to carry out a comprehensive review of the bus network in central London, with a view to removing all current bus routes from Oxford Street by 2017.

ii) The Mayor should introduce a ‘one-hour’ bus ticket to enable passengers to transfer between buses as many times as they wish, within an hour of their journey beginning, without further charge.

**Recommendation 4**
As an interim solution, the Mayor should close Oxford Street to all current traffic and introduce a zero emission ‘shuttle bus’ service running between Marble Arch and Tottenham Court Road, with the aim of increasing the amount of space available to pedestrians. This would deliver cleaner air and a safer environment for shoppers.

**Recommendation 5**
As travel patterns change and demand for bus services accessing the road reduces following the introduction of Crossrail services, the Mayor should look to fully pedestrianise Oxford Street by 2020, creating the longest pedestrian shopping street in Europe. Wider benefits would include safer streets and improved pedestrian accessibility.

For more information about this report, or any comments relating to Oxford Street, please contact Stephen Knight on 0207 983 4921, or email: stephen.knight@london.gov.uk.
Endnotes


2 For further information see ‘Assessing the impact of underground railway stations on busy pedestrian streets’ [Peter Alan Kerr], Association for European Transport, 2008: http://abstracts.aetransport.org/paper/download/id/2920


5 As of October 2014, the following junctions failed to meet Department for Transport guidance on pedestrian crossings:
   (1) Junction of Oxford Street with Rathbone Place and Soho Street;
   (2) Junction of Oxford Street with Davies Street and Stratford Place; and


9 In addition, the New West End Company (NWEC) estimated that sales were £17.6m higher than a normal trading Saturday with £100m taken through West End till points in the first three hours of the event. See answer to Mayor’s Question No.3879/2012: http://questions.london.gov.uk/QuestionSearch/searchclient/questions/question_44182.


14 See the following statement from Dr. David Carslaw (Principal Air Quality Scientist, King’s College London): http://www.londonair.org.uk/london/asp/news.asp?NewsId=OxfordStHighNO2

15 See the following presentation given at the 21st Anniversary meeting of the Environmental Research Group at King’s College London: http://www.londonair.org.uk/london/asp/LAQNSeminar/pdf/June2014/David_Carslaw_Recent_findings_from_comprehensive_vehicle_emission_remote_sensing_measurements.pdf

16 Measurements of NO² concentrations recorded at the Oxford Street roadside air pollution monitoring can be found at the following link: http://www.londonair.org.uk/london/asp/publicdetails.asp?region=0&site=WM6&details=photos&mappview=all&la_id=33&network=All&MapType=Google


Figures for Oxford Street, Regent Street and Bond Street are taken from the City of Westminster’s ‘High Street Health Checks’: [https://www.westminster.gov.uk/high-street-health-checks](https://www.westminster.gov.uk/high-street-health-checks).


All other figures can be found in the following list of the largest shopping centres in the United Kingdom: [http://en.wikipedia.org/wiki/List_of_UK_shopping_centres](http://en.wikipedia.org/wiki/List_of_UK_shopping_centres).

As things stand TfL is planning to increase the number of bus kilometres operated in the period up to 2021/22 by just 20 million (or four per cent) to 510 million. See the following report for more information: London Assembly Transport Committee, ‘Bus Services in London’, 2013: [http://www.london.gov.uk/sites/default/files/Bus%20Services%20in%20London%20Report%20Transport%20Committee_0.pdf](http://www.london.gov.uk/sites/default/files/Bus%20Services%20in%20London%20Report%20Transport%20Committee_0.pdf).


For a comparison of historic bus routes and timetables visit the following website created by Ian Armstrong: [http://www.londonbuses.co.uk/](http://www.londonbuses.co.uk/).


In order to determine average bus speeds a series of journeys were timed (at two hourly intervals between 8am – 8pm) across three separate weekdays in August 2014. In total, five bus routes were used (Nos. 7, 10, 73, 98 and 390) which operate the length of Oxford Street. The process was repeated over a weekend to compare speeds. Average walking speeds are taken from the following urban walking route planner: [http://walkit.com/](http://walkit.com/).