

**Mobile Phone and Seat Belt usage rates in London,
March 2006**

by J Broughton and G Buckle

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by J Broughton and G Buckle (TRL Limited)

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(J Devenport)

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Executive summary

TRL has been commissioned by Transport for London (TfL) to survey the use of seat belts and mobile phones by car and van occupants at a range of sites in London, applying the same observational techniques that TRL uses for a long running survey that is carried out on behalf of the UK Department for Transport (DfT). The survey was carried out in March 2006 at 33 sites across London, with one site per Borough and one in the City; 12 sites were on the TfL road network, 11 were on Borough principal roads and 10 on the remaining network of Minor roads. Each site was surveyed on a weekday during March 2006, and in addition 10 were surveyed at the weekend.

During the 43 days of observations, 27,638 cars and 1,497 taxis were observed in total, and details were recorded for all drivers and their 8,603 front seat passengers and 5,294 rear seat passengers in these cars. 4,709 vans were observed, and details were recorded for all drivers and their 1,252 passengers.

This report presents a range of results from the survey. A context for these results is provided by results from the latest survey carried out by TRL on behalf of DfT, which is representative of the average level of restraint use across England. Comparisons are restricted to the wearing rates found in urban areas since the DfT seat belt survey has found wearing rates to be lower in urban than in rural areas.

The following Table summarises the main seat belt wearing rates, and shows that the rates are appreciably lower in London than in the DfT survey. This is especially true for rear seat passengers of all ages and either sex; even among young children (aged 0-4 years), the rear seat wearing rate in London was found to be only 75% whereas the DfT survey has found a wearing rate of about 95% for some years. Note that taxi drivers are exempt from wearing seat belts while on duty (but not their passengers) although of course they face the same risks as car drivers when involved in accidents.

Overall proportion of vehicle occupants using restraints, Spring 2006

	Cars		Taxis	Vans	
	London	DfT	London	London	DfT
Drivers	82%	92%	14%	51%	64%
Front seat passengers	80%	94%		40%	47%
Rear seat passengers	49%	84%	17%		
Number of vehicles	27638	15405	1497	4709	2060

Very few rear seat passengers were observed in vans, so they have been combined with front seat passengers. No front seat passengers were observed in taxis

The seat belt wearing rate of car drivers varied widely across London, with a fairly systematic variation by Borough. The lowest rates were found at the sites in Westminster (39%) and the City (65%), followed by sites in East London. The highest wearing rates were found at the sites in South and West London, the highest being in Harrow (91%).

Since December 2003, it has been illegal to use a handheld mobile phone while driving. The proportion of drivers observed using handheld and hands-free mobile phones in the London survey is higher than the proportion found at urban sites in the DfT survey. The proportion of drivers using mobile phones is lower in taxis than in cars and, unlike seat belt wearing, the proportion of drivers using mobile phones does not vary systematically by Borough.

Overall proportion of drivers using mobile phones, Spring 2006

	Car and taxi drivers		Van drivers	
	London	DfT	London	DfT
handheld	2.6%	1.6%	3.8%	2.9%
hands-free	1.1%	0.7%	1.0%	0.6%
either	3.7%	2.2%	4.8%	3.5%

Percentages may not add up because of rounding

There is a correlation between drivers' use of handheld mobile phones and non-use of seat belts. Belted drivers are appreciably less likely than unbelted drivers to use handheld phones, although it is interesting to see that this is not true of hands-free phones. 2.2% of car and taxi drivers who wore seat belts were using a handheld mobile phone, compared with 3.6% of those who did not wear a belt, and a similar disparity was found for van drivers. This suggests that driving while using a handheld mobile phone and whilst unbelted are manifestations of a driver's general willingness to disobey traffic laws and take risks, or of indifference to these risks.

In spite of the relatively low level of seat belt wearing, the police in London issued relatively few fixed penalty notices for this offence during 2004, the latest year for which national data are available. The rate per million population in London was about one-third less than the rate outside London. In the case of handheld mobile phones, however, the rate of fixed penalty notices was consistent with the relatively high level of phone use by drivers in London: the rate in London was about two-fifths greater than the rate outside London. The rate of fixed penalty notices for both types of offence varied very widely between Boroughs.

The survey has revealed that levels of seat belt use in London are considerably lower than elsewhere in England, and that levels of mobile phone use by drivers are appreciably higher. In order to improve road safety in London and to contribute towards achieving the casualty reduction targets set for 2010, it will be important to raise seat belt use and reduce mobile phone use in London, in particular by increased publicity and enforcement activities.

There appears to be a widespread misconception in Great Britain that seat belts are particularly effective in high-speed accidents, as evidenced by the higher wearing rates observed on rural roads. The converse is true, however; wearing a seat belt will do less to improve the chances of survival of a car occupant in an accident occurring at 70mph than at 30mph. Raising seat belt wearing rates in London would have a disproportionately great effect in reducing casualties.

It is recommended that the survey be repeated regularly in order to monitor the results of efforts to raise seat belt use and reduce mobile phone use in London, and that the pattern of this survey should be followed as closely as possible to ensure consistency with the baseline results that have been achieved. It would probably be sufficient to repeat the survey annually, although if a specific campaign of publicity and enforcement were to be mounted then an additional survey would be able to monitor its short-term effects.

1 Introduction

The protection offered to car occupants by seat belts and other restraint systems became generally recognised in Great Britain in the 1970s, and front seat belt wearing was made compulsory in cars and vans in January 1983. A national survey of seat belt wearing by drivers and front seat passengers was begun in January 1982, and this was superseded in 1988 by a more comprehensive TRL survey that included rear seat passengers. This continues to be carried out by TRL on behalf of the Road User Safety Division of the UK Department for Transport (DfT). The survey has developed in various respects since 1988 to meet new requirements, for example drivers and passengers of vans have been included since 1995.

In 2000, as concern arose about drivers' use of mobile phones, the survey was expanded to record mobile phone use as well. A new survey including drivers in free-flowing traffic was begun in 2002 (Broughton and Hill, 2005) and this provided important evidence of drivers' response to the legislation which took effect in December 2003 to prohibit the use of handheld mobile phones when driving.

In March 2006, TRL was commissioned by Transport for London (TfL) to apply the same techniques to survey the use of seat belts and mobile phones at a range of sites in London. The objectives as stated in the brief were to:

- Provide a measure of seat belt use by drivers in London
- Provide a measure of mobile phone use by drivers in London
- Compare the London findings with those in the rest of England
- Establish a methodology capable of being used for periodic monitoring

This report is the principal output from the research. Section 2 describes the survey methodology and summarises recent trends in seat belt wearing and mobile phone use that have been revealed by the DfT¹ survey. Section 3 presents the results from the TfL survey for London and compares them with results from the DfT survey. Section 4 presents the conclusions that can be drawn from this research.

2 Survey method

The level of use of seat belts by vehicle occupants is likely to vary with personal factors such as age and sex. In addition to the familiar seat belts, other types of restraint such as booster cushions may be used. Hence, the TRL Survey records relatively detailed information about all occupants of the cars, taxis and vans that are observed in order to monitor the use of seat belts and other types of restraint. Consequently, only stationary vehicles are observed, which is achieved by conducting the survey at signal-controlled junctions.

The large number of signal-controlled junctions in London means that there was little difficulty in identifying suitable sites, in terms of good conditions for observations and security of the teams of observers. Wherever possible, sites were located near to permanent traffic counters. One site was selected in each Borough and one in the City of London; 12 sites were on the TfL road network (TLRN), 11 were on Borough principal roads and 10 on the remaining network of Minor roads. A list of the survey sites is provided in Appendix A.

Each site was surveyed on a weekday during March 2006, and in addition 10 were surveyed at the weekend. Each day of observation comprised 4 half-hour sessions in the morning, with half-hour intervals, followed by 4 half-hour sessions in the afternoon. Each survey team comprised two members, one who recorded observations verbally with a tape recorder for subsequent transcription and analysis and a second who counted passing vehicles. The survey is essentially a sample survey, and this traffic count allows the sampling fractions per site and session to be calculated.

¹ For convenience, the long-running TRL survey will be referred to as the 'DfT survey', in contrast to the 'TfL survey' in London.

Note that the survey is carried out during the hours of daylight, so that reliable observations can be made. This means, however, that no information is collected at night, and current (unpublished) TRL research has found evidence that seat belt wearing rates tend to be lower at night than during the day.

The same procedure was followed at each site. A single approach to the junction had been selected, and only vehicles using that approach were observed. Once traffic had stopped for the red signal, the occupants of the vehicle nearest the junction would be observed and the observations recorded. The observer would then proceed along the queue, observing the occupants of each vehicle in turn until the traffic began to move. The observer would then return to the junction and wait for the next red signal.

The data recorded for each vehicle occupant included:

Seating position	driver, front seat passenger, rear seat passenger (left, central, right); people seated on passengers' laps are recorded separately
Sex	male, female, n.k.
Age (estimated)	0, 1-4, 5-9, 10-13, 14-29, 30-59, 60-99, n.k.
Restraint used	seat belt, unrestrained, child seat, rear facing child seat, booster with seat belt, booster without seat belt, cheated (restraint not used properly), carrycot-strapped, carrycot-not strapped, n.k.
Mobile phone use	handheld, hands-free, none (drivers only)

The data recorded per vehicle included:

Vehicle type	car, van, taxi
Vehicle prefix	L and later registrations, H-K, E-G, C-D, Older, Other

While the age range for children is generally taken as 0-15, the seat belt regulations introduced in 1989 referred to children as being up to 13 years old, and this definition has been retained when collecting and analysing observations of restraint use. Similarly, cars with registration prefix E and later are required by law to be fitted with rear seat belts, so vehicle prefix was recorded so that rear seat wearing rates could be calculated for cars which were known to be fitted with rear seat belts. Very few older cars remain in use, so virtually all cars are fitted with rear seat belts and wearing rates will be calculated for all cars.

The data collection for this survey was carried out by the firm 'Count-on-Us' under contract to TRL. They compiled data files to the specification used to collect data for the DfT survey, and these files were analysed at TRL in accordance with the procedures applied to analyse the data collected by the DfT survey.

2.1 Data analysis

The survey is a sample survey, with the vehicles observed during a session being only a sample of those that passed during that session and the traffic that passed being only a sample of the traffic in London. In order that the survey results should be representative of London as a whole, overall results are estimated as weighted means of the results for each session. The weight per session is calculated from the traffic count for that session each site and published estimates of traffic volume by road type in London. The identical procedure is used to process the observations from the DfT survey.

The large number of observations in both surveys means that the estimated wearing rates are relatively precise. The 95% confidence intervals for the overall driver wearing rate in London, for example, is $\pm 0.5\%$, rising to $\pm 0.9\%$ for front seat passengers and $\pm 1.5\%$ for rear seat passengers. Where comparisons are made by Borough, the smaller numbers mean that differences might have occurred by chance, and the results of conventional significance tests are reported.

2.2 Trends in seat belt and mobile phone use in England

As mentioned in the Introduction, the main source of information about the use of seat belts and mobile phones in Great Britain is the survey conducted by TRL on behalf of the Department for Transport. The results from the TfL Survey will be compared with the results of this survey in Section 3, so it is useful to introduce them at this point and summarise recent results.

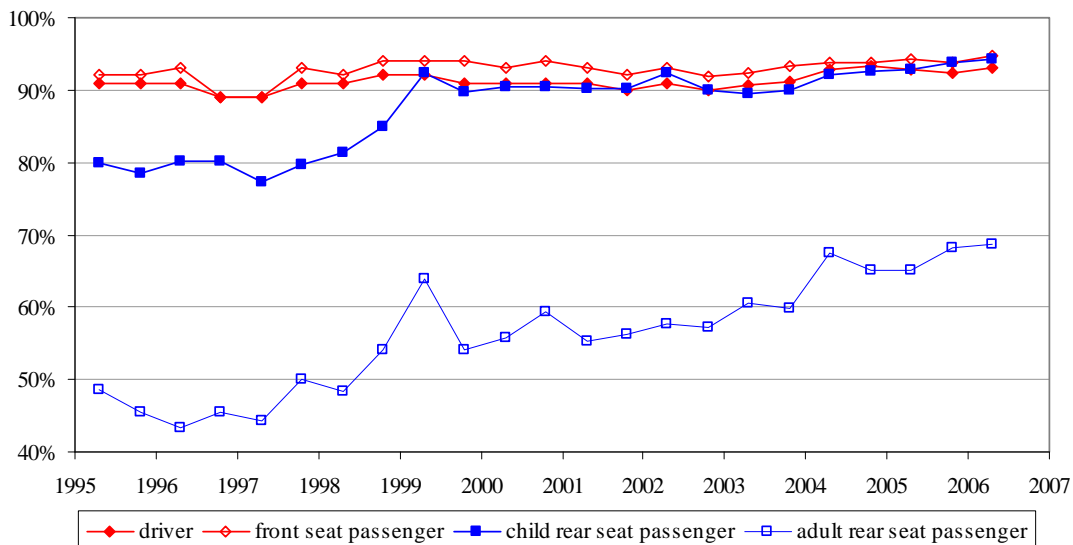
The main Seat Belt Survey is carried out by TRL's survey team in April and October of each year in 2 extensive survey areas centred on Crowthorne, Berkshire and Nottingham. Overall results are published annually in a leaflet (most recently TRL, 2005), and more detailed results have been published in 2 reports (Broughton, 1990 and 2003). The basic methodology was described above, and has not changed since the survey began in 1988 although the range of data and methods of recording have been adjusted regularly.

In addition to the regular surveys, additional surveys are carried out in 2 new areas each summer to extend the geographical coverage. This began in 1998, so 16 additional areas had been surveyed by 2005. The averages of the Crowthorne and Nottingham wearing rates are very close to the averages of the wearing rates that have been found in the 16 additional areas. This suggests that the main survey is representing reliably the average level of restraint use across England. The results for mobile phone use vary more widely among these areas, so this may not be true of the level of mobile phone use.

One of the areas surveyed in 2003 was a sector of North London; the wearing rates found for drivers and front seat passengers were lower than in any other survey area, while the rate for rear seat passengers was relatively low but higher than in 2 other survey areas.

Overall results from the main Seat Belt Survey are presented in Figure 2.1. Wearing rates for drivers and front seat passengers have remained slightly above 90% throughout the past decade, with a recent slight increase. The rear seat wearing rate for children has been similar to the front seat wearing rates since 1999; the rear seat wearing rate for adults (i.e. at least 14 years old) has risen reasonably steadily, but remains appreciably below the rate for children.

Figure 2.1: Trends in wearing rate in England, DfT survey



In order to monitor all types of road, the Seat Belt Survey has sites on Built-Up² and Non Built-Up roads, and the results are weighted to reflect the national proportion of traffic by road type. Wearing rates are higher on Non Built-Up than on Built-Up roads, as Table 2.1 indicates with recent survey data. As virtually all roads in London have speed limits of at most 40 mph, wearing rates in London

² Built-Up roads have speed limits of up to 40 mph, Non Built-Up roads have higher limits

would be expected to be lower than those shown in the Figure, so comparisons with the DfT survey will be restricted to wearing rates on Built-Up roads.

Table 2.1: Wearing rates by road type, DfT survey, April 2006

	Built-Up roads	Non Built-Up roads	Either
Drivers	91%	95%	93%
Front seat passengers	93%	96%	95%
Rear seat passengers	80%	88%	85%

As mentioned in the Introduction, the Seat Belt Survey was expanded in 2000 to record drivers' use of mobile phones, by simply increasing the range of data collected per driver. The survey sites are at signal-controlled junctions, however, and there were concerns that drivers' phone use at such locations might not be representative of their use over the whole network, as discussed by Broughton and Hill (2005). Consequently, a new survey was established to observe freely flowing traffic. The high density of signal-controlled junctions in London means, however, that observations at these junctions are far more likely to be representative of general traffic than in non-urban areas, so it was decided to observe drivers' phone use as part of the Seat Belt Survey rather than as a separate survey.

All comparisons of mobile phone use with the DfT survey will be based on observations at Built-Up sites as part of the seat belt survey in the Crowthorne and Nottingham areas.

3 Results of survey

During the 43 site observations (1 weekday at each of 33 sites plus Saturday or Sunday at 10 of these sites) carried out in March 2006, 29,135 cars and taxis were observed in total, and details were recorded for all drivers and their 8,603 front seat passengers and 5,294 rear seat passengers. 4,709 vans were observed, and details were recorded for all drivers and their 1,252 passengers. The average numbers of front and rear seat passengers per car in London were very similar to those found in the DfT survey. The fact that fewer passengers than drivers were observed means that the results presented below are less precise for passengers than for drivers. Table 3.1 shows that the cars observed were slightly older on average in London than in the Crowthorne and Nottingham survey areas.

Table 3.1: Distribution of car registrations

Registration prefix	L and later	H-K	E-G	C-D	Older
London	90.4%	5.8%	2.3%	0.5%	0.9%
Crowthorne/Nottingham	93.5%	4.3%	1.6%	0.3%	0.4%

Distribution excludes other registrations, e.g. military and diplomatic

The use of restraints and mobile phones are analysed in the following Sections. Results have been adjusted to take account of the relative volumes of traffic on the 3 road types in London, namely TLRN roads, Borough principal roads and Minor roads. Restraint use will be examined in greater detail for car occupants than for van occupants as there are far more observations of car occupants.

Taxi drivers are exempt from wearing seat belts while on duty (but not their passengers) although of course they face the same risks as car drivers when involved in accidents. The survey data collection distinguishes between cars and taxis, so separate results will be presented for cars and taxis.

Overall, taxis constituted 5.1% of the combined total of cars and taxis observed in London, rising to 6.3% on weekdays. They were concentrated at certain sites: 61% of vehicles observed at the site in the City, 44% in Islington, 30% in Camden, 24% in Kensington and Chelsea and 16% in Westminster, but less than 10% at all other sites.

3.1 Use of seat belts and other restraints

The overall wearing rates found in the TfL survey are compared in Table 3.2 with the results from the DfT survey carried out the following month in the Crowthorne and Nottingham survey areas (rates for Built-Up sites only). It can be seen that wearing rates in London are considerably below average, especially among rear seat car passengers. As far fewer taxis were observed in the DfT survey than in London, taxi occupant wearing rates are only shown for London. The large number of observations in both surveys means that it is virtually impossible for the differences between the London and DfT rates to have occurred by chance.

Table 3.2: Overall proportion of vehicle occupants using restraints

	Cars		Taxis	Vans	
	London	DfT	London	London	DfT
Drivers	82%	92%	14%	51%	64%
Front seat passengers	80%	94%		40%	47%
Rear seat passengers	49%	84%	17%		
Number of vehicles	27638	15405	1497	4709	2060

Very few rear seat passengers were observed in vans, so they have been combined with front seat passengers. No front seat passengers were observed in taxis

The DfT survey has found no consistent difference between wearing rates on A and minor roads. Table 3.3 shows that this is broadly true in London as well (TfL and Borough principal roads are all A roads), but the rear seat wearing rate on Borough principal roads is particularly low.

Table 3.3: Proportion of car occupants using restraints, by road type

Road type	London			DfT	
	TLRN	Borough principal	Minor	A	Minor
Drivers	82%	83%	82%	94%	92%
Front seat passengers	82%	77%	79%	94%	93%
Rear seat passengers	50%	39%	55%	83%	84%
Number of vehicles	10894	7726	9018	11405	4350

Observations were made at the weekend as well as on weekdays at 10 London sites, and Table 3.4 compares the wearing rates from the 2 sets of observations at these sites. There is no significant difference between weekday and weekend front seat rates, as with the DfT survey. The rear seat rate is lower in London at the weekend, the reverse of the finding of the DfT survey.

Table 3.4: Proportion of car occupants using restraints, on weekdays and at the weekend

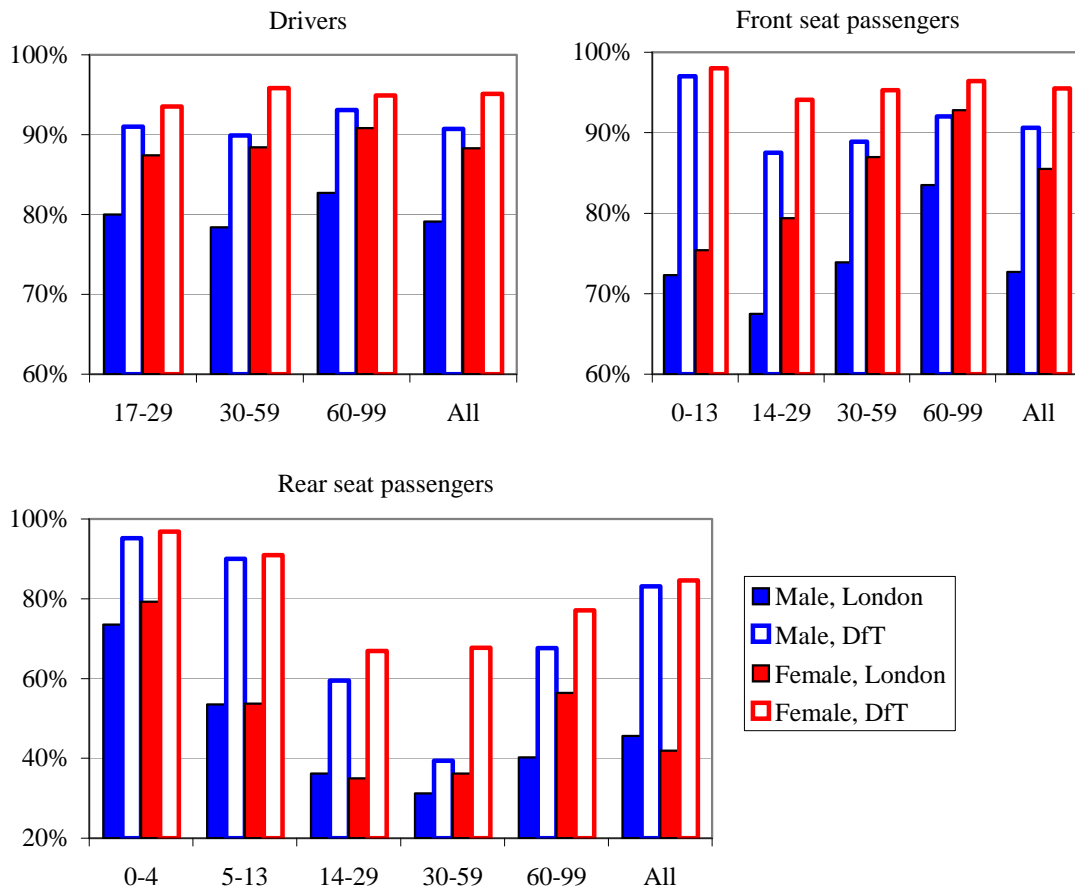
	London		DfT	
	Weekday	Weekend	Weekday	Weekend
Drivers	85%	85%	91%	92%
Front seat passengers	82%	81%	92%	94%
Rear seat passengers	55%	49%	77%	87%
Number of vehicles	6387	6929	2064	2325

Table 3.5 examines the variation of the wearing rate by age and sex. The results from London have the same general pattern as the results of the DfT survey, but all rates are considerably lower. The rates are displayed graphically in Figure 3.1.

Table 3.5: Proportion of car occupants using restraints, by age, sex and seating position

		London		DfT	
		Male	Female	Male	Female
Drivers	17-29	80%	87%	91%	94%
	30-59	78%	88%	90%	96%
	60-99	83%	91%	93%	95%
	All	79%	88%	91%	95%
Number observed		18438	9200	9686	6733
Front seat passengers	0-13	72%	75%	97%	98%
	14-29	68%	79%	88%	94%
	30-59	74%	87%	89%	95%
	60-99	84%	93%	92%	96%
	All	73%	86%	91%	96%
Number observed		3544	5059	1907	3420
Rear seat passengers	0-4	74%	79%	95%	97%
	5-13	54%	54%	90%	91%
	14-29	36%	35%	60%	67%
	30-59	31%	36%	39%	68%
	60-99	40%	56%	68%	77%
	All	46%	42%	83%	85%
Number observed		1863	2635	1202	1491

Figure 3.1: Proportion of car occupants using restraints, by age, sex and seating position



Adult seat belts are not designed to fit children, so they should travel in child seats or use booster seats or cushions. The survey records the type of restraint used by children, so it is possible to check whether appropriate restraints are being used. Table 3.6 presents the results from London. A child who is carried on someone's lap is clearly unrestrained, but they are shown separately from those who are travelling on a seat without using a restraint. The principal difference between the two sets of results is the high proportion of children in London who were travelling unrestrained or on a lap. Relatively many booster seats and cushions were being used in front seats without seat belts, although this is based on comparatively few observations.

Table 3.6: Use of child restraints in cars

Age		London		DfT	
		0-4	5-9	0-4	5-9
Front seat passengers	Seat belt	17%	57%	14%	95%
	Child seat	20%	8%	31%	1%
	Rear facing child seat	12%	0%	38%	0%
	Booster seat/cushion with seat belt	9%	8%	11%	0%
	Booster seat/cushion without seat belt	32%	1%	0%	0%
	Unrestrained	4%	26%	3%	4%
	Carried on lap	6%	1%	4%	0%
	Number observed	168	490	103	353
Rear seat passengers	Seat belt	32%	34%	7%	72%
	Child seat	25%	7%	69%	5%
	Rear facing child seat	6%	1%	13%	1%
	Booster seat/cushion with seat belt	13%	12%	8%	13%
	Booster seat/cushion without seat belt	4%	0%	0%	0%
	Unrestrained	13%	42%	2%	8%
	Carried on lap	7%	2%	2%	1%
	Number observed	902	867	910	568

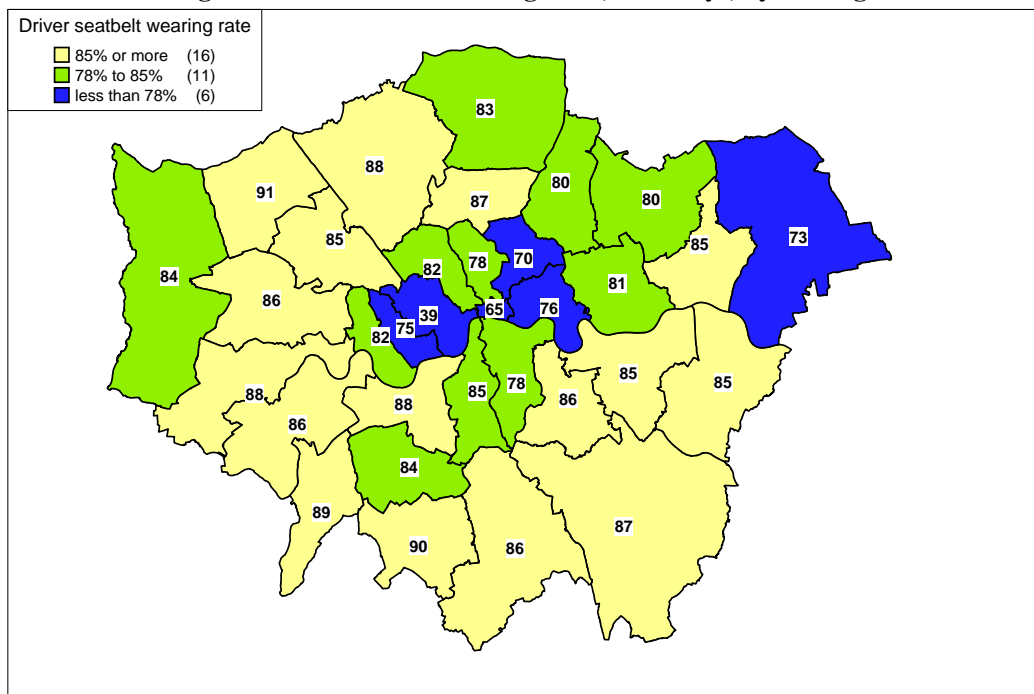
3.1.1 Variation by Borough

With only a single site per Borough, there is a real risk that the rate at that site will not be representative of the Borough as a whole. However, with this caveat Table 3.7 presents the wearing rates recorded for *car* drivers on weekdays (i.e. taxi drivers are excluded). The results are presented in increasing order of wearing rate, and they are presented graphically in Figure 3.2. The overall rate is 82%, and the Table shows those Boroughs where the rate differs significantly from this figure (i.e. the likelihood of the difference occurring by chance is less than 5%). The relatively low number of observations of passengers means that it would be potentially misleading to compare wearing rates for passengers.

Table 3.7: Car driver wearing rates, weekdays, by Borough

Westminster	39% *	Camden	82%	Croydon	86% *
City	65% *	Hammersmith & Fulham	82%	Richmond	86% *
Hackney	70% *	Enfield	83%	Ealing	86% *
Havering	73% *	Hillingdon	83%	Bromley	87% *
Kensington & Chelsea	75% *	Merton	84%	Haringey	87% *
Tower Hamlets	76% *	Lambeth	84%	Barnet	88% *
Islington	78%	Brent	85% *	Wandsworth	88% *
Southwark	78%	Bexley	85% *	Islington	88% *
Redbridge	80%	Greenwich	85% *	Kingston	89% *
Waltham Forest	80%	Barking & Dagenham	85% *	Sutton	90% *
Newham	81%	Lewisham	85% *	Harrow	91% *

* denotes Boroughs where the wearing rate differed significantly from the London average

Figure 3.2: Car driver wearing rates, weekdays, by Borough

3.2 Use of mobile phones

Since October 2000, information about the usage of mobile phones by car and van drivers has been recorded as part of the TRL Seat Belt Survey. Regulations took effect in December 2003 that prohibited the use of handheld mobile phones by drivers and the effect can be seen clearly in Figure 3.3. Generally, the usage rates of mobile phones have been higher for van drivers than for car drivers and handheld mobile phones are used more often than hands-free phones.

Figure 3.3: Trends in mobile phone use, DfT survey

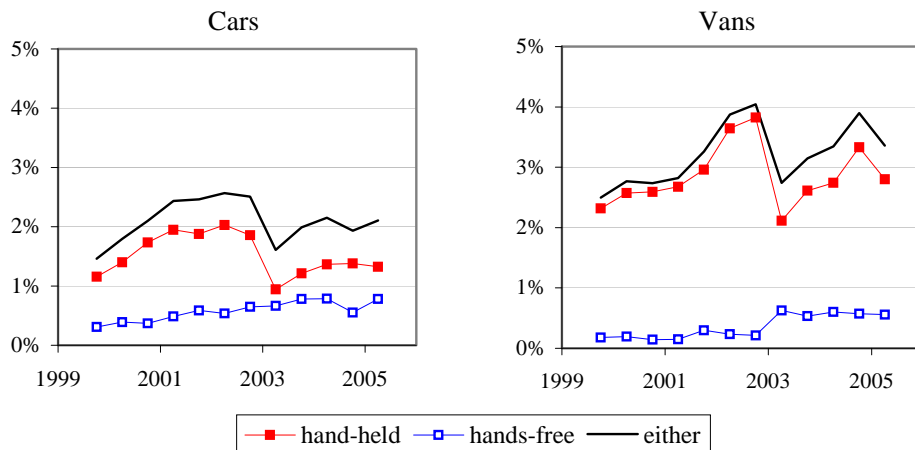


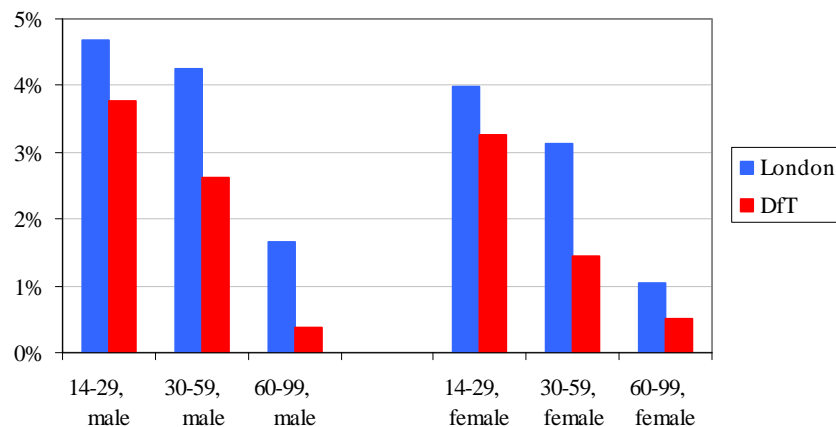
Table 3.8 shows that the proportion of drivers observed using mobile phones in the London survey is higher than the proportion found at the Built-Up sites in the DfT survey. The rate in London is significantly greater than in the DfT survey for 4 of the 6 comparisons, and is almost significant for van drivers using handheld and hands-free phones.

Table 3.8: Overall proportion of drivers using mobile phones

	Car and taxi drivers		Van drivers	
	London	DfT	London	DfT
handheld	2.6%	1.6%	3.8%	2.9%
hands-free	1.1%	0.7%	1.0%	0.6%
either	3.7%	2.2%	4.8%	3.5%
Number of vehicles	29135	15852	4709	2060

Percentages may not add up because of rounding

Figure 3.4 shows that the level of mobile phone use by car and taxi drivers is higher in London than in the DfT survey for drivers of all ages and both sexes. Nevertheless, both sets of results have the same pattern, being lower among women than men and falling with increasing age.

Figure 3.4: Mobile phone use by car and taxi drivers, by age and gender

The proportion of car and taxi drivers observed using a mobile phone on weekdays is shown by Borough in Table 3.9. The overall proportion is 4.0%, and the Table shows those Boroughs where the rate differs significantly from this figure (i.e. the likelihood of the difference occurring by chance is less than 5%). The results do not show a systematic pattern, in the way that the seat belt results do.

Table 3.9: Proportion of car and taxi drivers using mobile phones, weekdays, by Borough

Hillingdon	0.2% *	Wandsworth	2.9%	Sutton	4.2%
Islington	0.6% *	Bromley	3.0%	Havering	4.4%
Kingston	1.3% *	Waltham Forest	3.1%	Harrow	5.1%
Merton	1.4% *	Haringey	3.1%	Tower Hamlets	5.1%
Richmond	1.5% *	Enfield	3.3%	Hackney	5.6% *
Hounslow	1.9% *	Brent	3.4%	Newham	5.8%
Greenwich	2.2% *	Croydon	3.5%	Ealing	5.9% *
Bexley	2.6% *	Lewisham	3.6%	Southwark	6.3% *
Westminster	2.7%	Kensington & Chelsea	3.8%	Barnet	8.3% *
Barking & Dagenham	2.9%	Camden	3.8%	Lambeth	8.3% *
City	2.9%	Redbridge	4.1%	Hammersmith & Fulham	9.1% *

* denotes Boroughs where the proportion differed significantly from the London average

The use of a mobile phone and the non-use of a seat belt may be linked. Table 3.10 shows that belted drivers are less likely than unbelted drivers to use handheld mobile phones. It is interesting to see that this does not apply to drivers who use hands-free phones.

Table 3.10: Proportion of drivers using mobile phones, by restraint status

		Car and taxi drivers		Van drivers	
		London	DfT	London	DfT
Drivers wearing seat belts	handheld phone	2.2%	1.3%	2.3%	2.7%
	hands-free phone	1.1%	0.7%	1.2%	0.8%
	either	3.3%	2.0%	3.5%	3.5%
Drivers <i>not</i> wearing seat belts	handheld phone	3.6% *	4.0% *	5.3% *	3.0%
	hands-free phone	1.2%	0.5%	0.9%	0.3%
	either	4.8% *	4.5% *	6.2% *	3.3%

* indicates that proportion of drivers who were not wearing seat belts differs significantly from proportion of those who were

An alternative way of analysing these data is to calculate wearing rates according to whether or not drivers were using mobile phones. Table 3.11 confirms that wearing rates in London were lower for car and van drivers who were using handheld mobile phones than for drivers who were using hands-free mobile phones or were not using phones.

Table 3.11: Proportion of drivers wearing seat belts, by mobile phone use

	Car and taxi drivers		Van drivers	
	London	DfT	London	DfT
Drivers using handheld mobile phones	69% *	78% *	32% *	65%
Drivers using hands-free mobile phones	78%	94%	59%	86%
Drivers using mobile phones	72% *	83% *	38% *	69%
Drivers <i>not</i> using mobile phones	79%	92%	52%	67%

** indicates that proportion differs significantly from proportion of drivers not using mobile phones*

Table 3.12 compares the use of mobile phones by car drivers and taxi drivers, and shows that the level of use is much lower among taxi drivers than car drivers. This is also found in the DfT survey, albeit based on far fewer observations.

Table 3.12: Proportion of car and taxi drivers using mobile phones, London

	Car drivers	Taxi drivers	All drivers
handheld	2.6%	1.1%	2.6%
hands-free	1.2%	0.8%	1.1%
either	3.8%	1.9%	3.7%

3.3 Law enforcement

Most seat belt and mobile phone offences detected by the police are handled by issuing a fixed penalty notice. Table 3.13 shows the number of fixed penalty fines issued in London and in England & Wales in 2004 for these offences, from Home Office statistics (Home Office, 2006). These are the most recent published statistics, unfortunately statistics for offences in 2006 are unlikely to be published until 2008. There is no reliable count of drivers by region, so instead the Table includes population statistics and expresses the offence numbers as rates per million population.

Table 3.13: Fixed penalty notices issued by offence group and area, 2004

	London	England & Wales	Proportion in London	Rate per million adults:	
				within London	outside London
Use of handheld mobile phone while driving	13,718	73,976	19%	2.3	1.6
Seat belt offence	20,315	201,914	10%	3.3	4.9
Adult population (million)	6,073	43,409	14%		

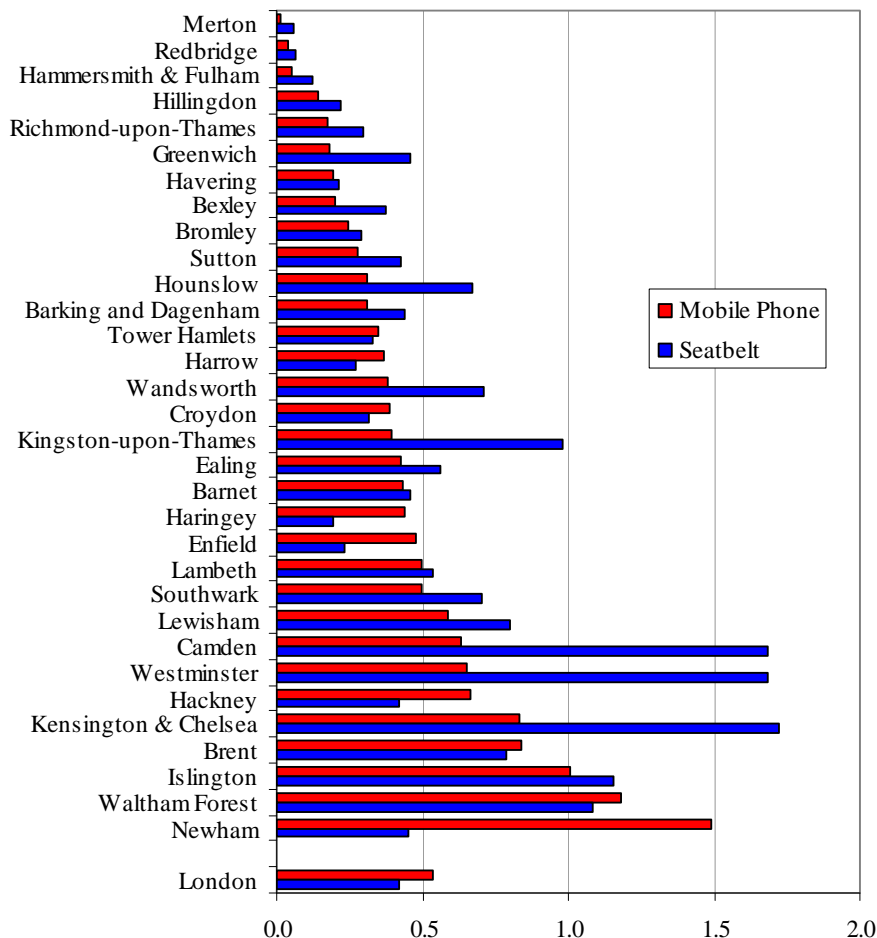
This study has found seat belt wearing rates to be lower in London than in the rest of the country, so it might be expected that the rate of penalty notices for seat belt offences would be relatively high in London, whereas the reverse has been found for 2004 offence data – 3.3 per million in London compared with 4.9 per million outside. In the case of handheld mobile phones, however, the relatively high usage rate in London is consistent with the relatively high rate of fixed penalty notices – 2.3 per million in London compared with 1.6 per million outside.

In order to examine variations within London, the Metropolitan Police kindly provided the number of fixed penalty notices issued in 2005 by Borough (no data for the City of London). The rate of notices

per million vehicle-km has been calculated in order to compare the number of offences per Borough (the traffic data are available from the DfT website). The rates are illustrated in Figure 3.5, with Boroughs in order of increasing rate of notices for seat belt offences. The rate of notices for seat belt offences in 2005 ranged from 0.01 per million vehicle-km in Merton to 1.49 in Newham. The rate of notices for mobile phone offences ranged from 0.06 per million vehicle-km in Merton to 1.72 in Kensington and Chelsea.

Table 3.14: Number and rate of fixed penalty notices in London, 2005

	Seat belt		Mobile Phone		Traffic volume (million veh-km)
	Number	Rate	Number	Rate	
Barking and Dagenham	177	0.31	248	0.44	567
Barnet	718	0.43	760	0.46	1656
Bexley	206	0.20	388	0.38	1031
Brent	848	0.84	798	0.79	1013
Bromley	342	0.25	407	0.29	1391
Camden	378	0.63	1008	1.68	599
Croydon	533	0.39	433	0.32	1373
Ealing	594	0.43	781	0.56	1387
Enfield	755	0.48	366	0.23	1585
Greenwich	217	0.18	554	0.46	1210
Hackney	366	0.66	232	0.42	553
Hammersmith and Fulham	30	0.05	74	0.12	615
Haringey	276	0.44	121	0.19	628
Harrow	242	0.37	179	0.27	663
Havering	280	0.19	310	0.21	1470
Hillingdon	323	0.14	494	0.22	2275
Hounslow	525	0.31	1140	0.67	1692
Islington	474	1.01	544	1.15	471
Kensington and Chelsea	484	0.83	999	1.72	581
Kingston-upon-Thames	398	0.39	999	0.98	1017
Lambeth	441	0.50	476	0.53	890
Lewisham	525	0.59	711	0.80	892
Merton	9	0.01	38	0.06	682
Newham	1376	1.49	419	0.45	925
Redbridge	40	0.04	65	0.06	1030
Richmond-upon-Thames	157	0.17	271	0.30	914
Royal Parks	150		388		
Southwark	428	0.50	608	0.71	862
Sutton	206	0.28	318	0.43	742
Tower Hamlets	340	0.35	324	0.33	983
Waltham Forest	876	1.18	801	1.08	741
Wandsworth	376	0.38	705	0.71	989
Westminster	679	0.65	1757	1.68	1043
London	13769	0.42	17716	0.53	32470

Figure 3.5: Rate per million vehicle-km of fixed penalty notices in London, 2005

4 Conclusions

This report has presented the results of a survey of the use of seat belts and mobile phones in London. The survey was carried out in March 2006 at a range of sites across London, with one site per Borough and one in the City, and sites representing each of the three types of road. To provide a context for the results, they have been compared with results from the latest survey carried out by TRL on behalf of DfT.

Previous surveys have found that seat belt wearing rates tend to be lower in urban than in rural areas. Nevertheless, the wearing rates found in London were well below the rates found by the DfT survey in other urban areas. 82% of car drivers observed in London were wearing seat belts, compared with 92% in the latest DfT survey. The difference was slightly greater for front seat passengers, 80% compared with 94%, and considerably greater for rear seat passengers, 49% compared with 84%. Even among young children (aged 0-4 years), where the rear seat wearing rate found by the DfT survey has been around 95% for some years, the wearing rate in London was only 75%. The wearing rate for car drivers varies considerably among survey sites, from 39% in Westminster and 65% in the City to 91% in Harrow.

Large numbers of taxis were observed in London: taxis constituted 5.1% of the total of cars and taxis observed. Taxi drivers are exempt from wearing seat belts while on duty (but not their passengers) although of course they face the same risks as car drivers when involved in accidents. 14% of taxi drivers and 17% of their passengers were observed to be wearing their belts.

It is illegal to use a handheld mobile phone while driving, but 2.6% of car and taxi drivers and 3.8% of van drivers observed in London were using handheld phones. In addition, 1.1% of car and taxi drivers and 1.0% of van drivers were using hands-free phones. These figures are higher than those found by the DfT survey in other urban areas: 3.7% of car and taxi drivers and 4.8% of van drivers were using phones of either type, compared with 2.2% and 3.5% respectively in the DfT survey.

There is a correlation between drivers' use of handheld mobile phones and non-use of seat belts. Belted drivers are appreciably less likely than unbelted drivers to use handheld phones, although it is interesting to see that this is not true of hands-free phones. 2.2% of car and taxi drivers who wore seat belts were using a handheld mobile phone, compared with 3.6% of those who did not wear a belt, and a similar disparity was found for van drivers. This suggests that driving while using a handheld mobile phone and whilst unbelted are manifestations of a driver's general willingness to disobey traffic laws and take risks, or of indifference to these risks.

In spite of the relatively low level of seat belt wearing in London, the police issued relatively few fixed penalty notices for this offence during 2004, the latest year for which national data are available. The rate per million population in London was about one-third less than the rate outside London. In the case of handheld mobile phones, however, the rate of fixed penalty notices was consistent with the relatively high level of phone use by drivers in London: the rate in London was about two-fifths greater than the rate outside London. The rate of fixed penalty notices for both types of offence varied very widely between Boroughs.

The final objective of this study was to establish a methodology that could be used for periodic monitoring. The methodology was developed originally for the DfT survey, and has proved successful over almost 2 decades. The only innovation when the methodology was applied in London was to subcontract the survey work to 'Count-on-Us', who have proved to be able to collect good quality observational data against a demanding schedule. It may be concluded that this objective has been fully achieved.

The survey has revealed that levels of seat belt use in London are considerably lower than elsewhere in England, and that levels of mobile phone use by drivers are appreciably higher. In order to improve road safety in London and to contribute towards achieving the casualty reduction targets set for 2010, it will be important to raise seat belt use and reduce mobile phone use in London, in particular by increased publicity and enforcement activities.

There appears to be a widespread misconception in Great Britain that seat belts are particularly effective in high-speed accidents, as evidenced by the higher wearing rates observed on rural roads. The converse is true, however; wearing a seat belt will do less to improve the chances of survival of a car occupant in an accident occurring at 70mph than at 30mph. Raising seat belt wearing rates in London would have a disproportionately great effect in reducing casualties.

It is recommended that the survey be repeated regularly in order to monitor the results of efforts to raise seat belt use and reduce mobile phone use in London, and that the pattern of this survey should be followed as closely as possible to ensure consistency with the baseline results that have been achieved. It would probably be sufficient to repeat the survey annually, although if a specific campaign of publicity and enforcement were to be mounted then an additional survey would be able to monitor its short-term effects.

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Appendix A. Survey sites

Site	Borough	Road Type	Road Name	Direction	At Junction	Weekend survey?
1	Barking & Dagenham	BPRN	Ripple Rd	EB	Goresbrook Int adjacent to Asda	no
2	Barnet	TLRN	A406 North Circular	EB	A1 Falloden Way	yes
3	Bexley	Minor	Westwood Lane	NB	A210 Blackfen Rd	no
4	Brent	BPRN	High Rd	WB	Ealing Rd	yes
5	Bromley	TLRN	A21 London Rd	SB	A21 Tweedy Rd	no
6	Camden	Minor	Guilford St	EB	Grays Inn Rd	no
7	City	Minor	Ropemaker St	EB	Moorgate	no
8	Croydon	TLRN	A232 Wickham Rd	EB	Hartland Way	yes
9	Ealing	TLRN	Hanger Lane	NB	Weat Ave	no
10	Enfield	Minor	Powys lane	SB	Bowes Rd	yes
11	Greenwich	Minor	Green Lane	SB	A20 Sidcup Jnc	no
12	Hackney	Minor	Ponsford St	NB	Homerton High St	no
13	Hammersmith & Fulham	BPRN	Uxbridge Rd	WB	Holland Rd	no
14	Haringey	TLRN	Seven Sisters Rd	NB	St.Annes Rd	yes
15	Harrow	BPRN	Greenford Rd	NB	Sudbury Hill	no
16	Havering	BPRN	New Rd to Marsh Way	SB	Marsh Way	no
17	Hillingdon	BPRN	A437 High St	SB	A4 Bath Rd	yes
18	Hounslow	TLRN	A312 Harl Rd East	NB	A24 Hounslow Rd	no
19	Islington	BPRN	Caledonian Rd	SB	Pentonville Rd	no
20	Kensington & Chelsea	TLRN	Cromwell Rd	EB	Exhibition Rd	no
21	Kingston	Minor	B283 High St	SB	Blagdon Rd	yes
22	Lambeth	TLRN	Brixton Rd	NB	A202 Camber New Rd	no
23	Lewisham	TLRN	A21 Bromley Rd	NB	A2015 Beckenham Hill Rd	no
24	Merton	BPRN	A218 Dunsford Rd	SB	Plough Lane	no
25	Newham	BPRN	Strat High St	EB	Abbey lane	no
26	Redbridge	Minor	Clayhill Ave		Woodford Ave	no
27	Richmond	BPRN	A3063 Wellington Rd South	SB	A314 Hanworth Rd	no
28	Southwark	Minor	Wyndham Rd		Camberwell Rd	no
29	Sutton	TLRN	A217 Reigate Ave	NB	Rose Hill RBT	yes
30	Tower Hamlets	Minor	Roman Rd	EB	Grove Rd	yes
31	Waltham Forest	BPRN	Forest Rd	WB	Hoe St	yes
32	Wandsworth	TLRN	A24 Tooting High St	SB	Longley Rd	no
33	Westminster	TLRN	Knightsbridge	WB	William St	no