TRAFFIC IN THE CITY 2018

Strategic Transportation

Department of the Built Environment

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Introduction

1 Introduction

Overview

This report provides an overview of the findings from the City of London Traffic Composition Surveys (TCS). These surveys – conducted every two years since 1999 – provide details of the number and types of vehicles using the City's streets.

In 2017 an additional TCS was undertaken. For the first time this included pedestrian counts, further enhancing the dataset ahead of the development of the City of London Transport Strategy.

This report considers the data gathered in the 2017 survey and examines longer term trends in the TCS dataset.

Uses and Limitation

While the TCS provides a comprehensive estimate of City-wide traffic composition, the surveys do not represent a 'cordon count' and should not be considered a comprehensive count of all City traffic. Instead, the data is used to identify trends across sample years and to compare proportions of different types of traffic between sites and between counts from different years.

Structure

This report is structured as follows;

- Chapter 2 visualises historical data gathered through the TCS from 1999 onwards alongside identifying significant trends in the dataset;
- Chapter 3 provides an in-depth analysis of 2017 TCS count data.

TCS Count Locations

- The Traffic Composition Survey began in 1999 and recorded vehicular traffic flows at the following fifteen sites:

- CC1 – New Bridge Street at Tudor Street
- CC2 – New Change at Festival Gardens
- CC3 – Queen Street south of Cheapside
- CC4 – Queen Victoria Street west of Bucklersbury
- CC5 – King William Street at Abchurch Lane
- CC6 – Gracechurch Street north of Lombard Street
- CC7 - Beech Street at Whitecross Street
- CC8 – London Wall at Bassishaw Highwalk
- CC9 – Gresham Street east of Basinghall Street
- CC10 – Poultry west of Grocers' Hall Court
- CC11 – Wallbrook at Dowgate Hill
- CC12 – Upper Thames east of Queen Street Place
- CC13 – Mark Lane south of Hart Street
- CC14 – Old Broad Street at Great Winchester Street
- CC15 – Long Lane east of Lindsey Street

These sites cover the four different classifications that make up the City street network (Transport for London Road network – TLRN Borough Road Network – BRN; Local Road Network – LRN; and Local Access Rod – LAR).

Historically, counts were conducted over a 12 hour period (07:00 to 18:59) in both directions at all sites. In 2016, the count period was extended to cover a full 24 hour period.

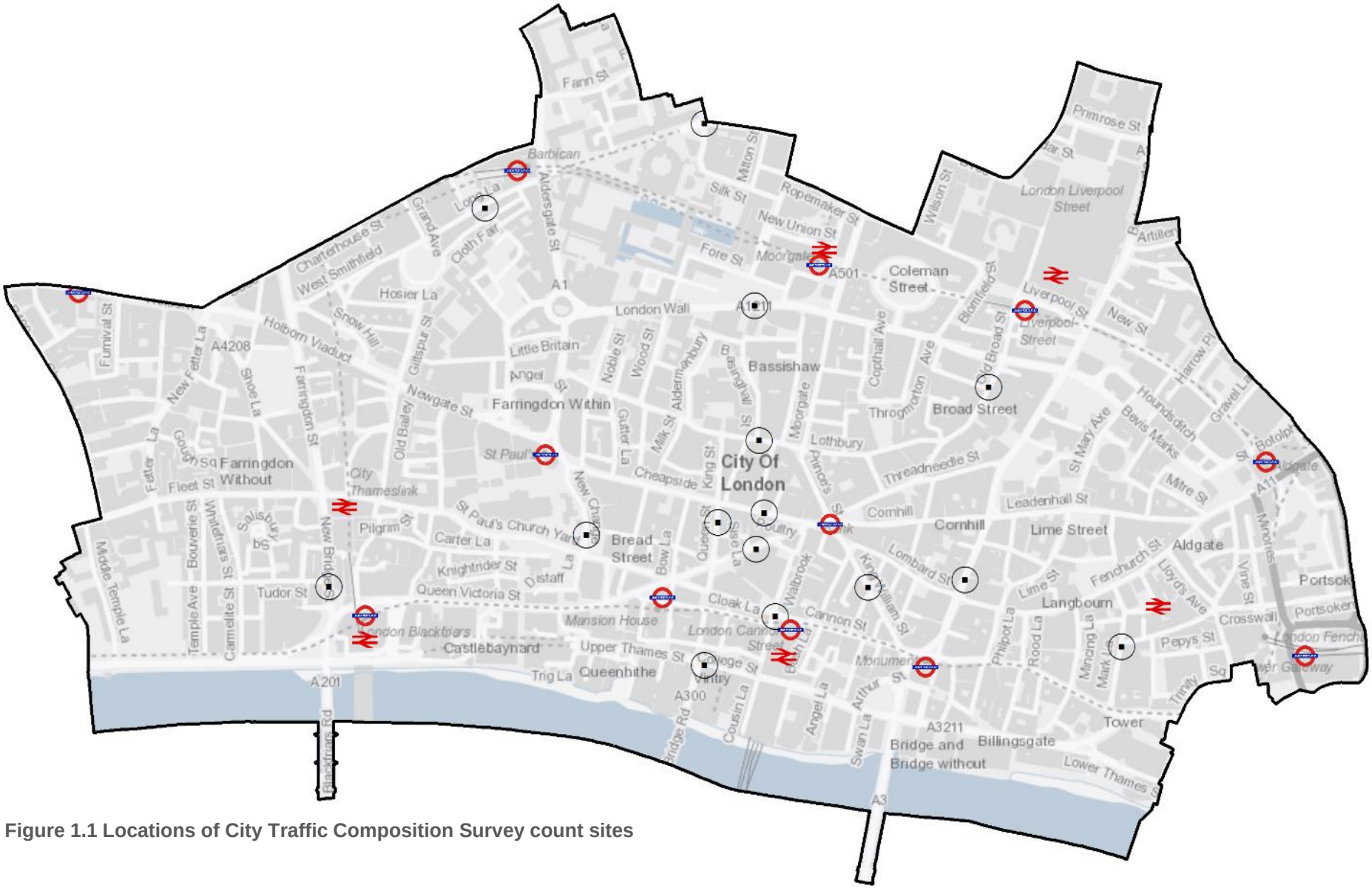


Figure 1.1 Locations of City Traffic Composition Survey count sites

1 Introduction

TCS Count Modes

Vehicular traffic was counted at all sites and recorded in a standard count database. Count data was recorded in 15 minute intervals by mode and direction. The modes counted are.

Private Car – includes both private hire/minicab vehicles (e.g. Uber and Addison Lee).

Taxi – 'Black Taxicabs'.

Motorcycle (MC) – includes motorcycles and mopeds. Does not include electric cycles.

Light Goods Vehicle (LGV) – includes all goods vehicles up to 3.5 tonnes gross vehicle weight, and all car delivery vans.

Heavy Goods Vehicle (OGV1 & OGV2) – Includes all rigid vehicles over 3.5 tonnes gross vehicle weight with two or more axels. OGV1 specifically refers to all rigid vehicles over 3.5 tonnes gross vehicle weight with two or three axles, and OGV2 specifically refers to rigid vehicles with four or more axles and all articulated vehicles.

Public Service Vehicle (PSV) – includes TfL buses, coaches, and tourist buses/open-top buses.

Cycle – includes all personal, dockless cycle hire (i.e. Ofo, Mobike), and TfL Cycle Hire (Santander) cycles.

Pedestrian counts were also undertaken in 2017 and distinguish between direction of travel and side of road used.

2

TCS Trend Data

2 Traffic Composition Survey Trend Data

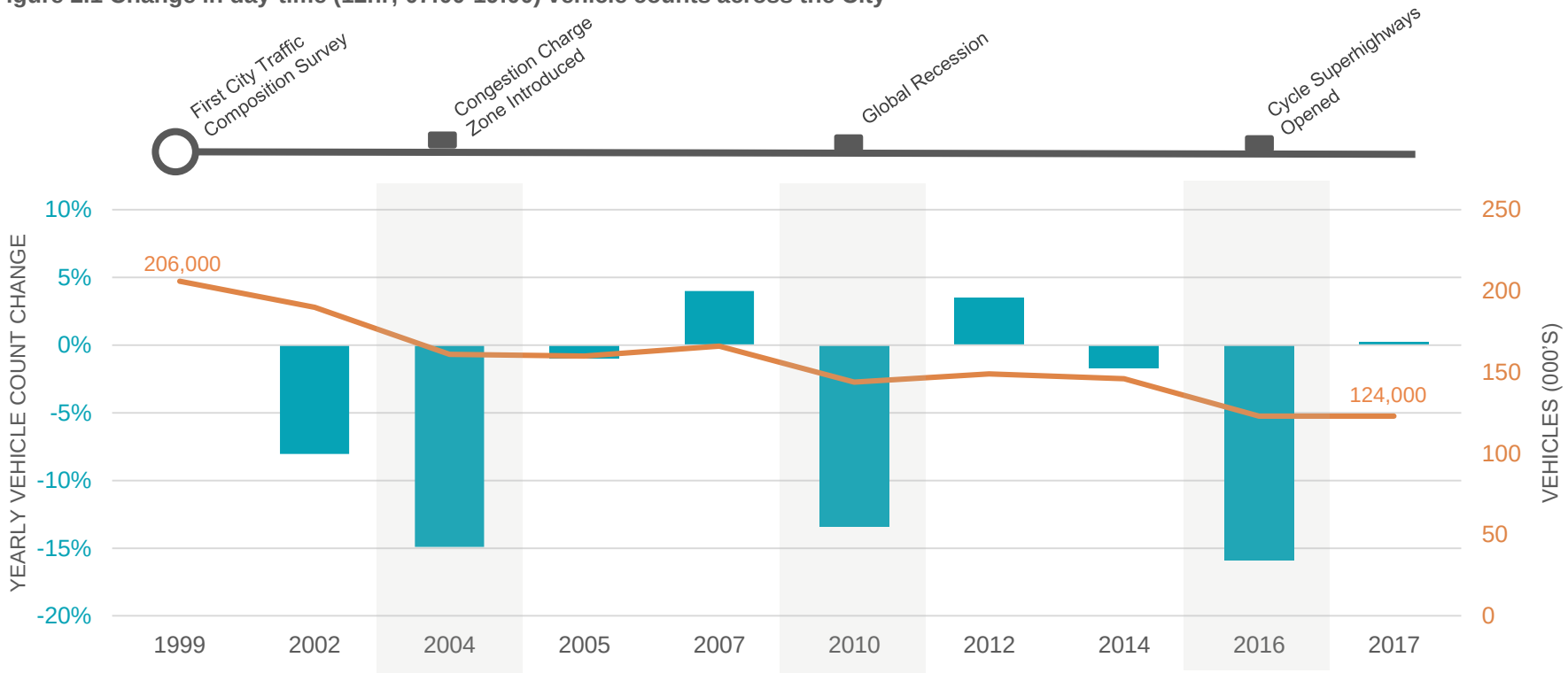
Historical Trends in Traffic Volumes

City traffic composition has changed significantly over the last two decades, both in terms of the total volume of traffic and the proportions of different vehicle types that make up that traffic. Figure 2.1 highlights the percentage change in total vehicle count (blue bars) and the absolute number of vehicles counted each year (orange line).

The total number of vehicles counted on the City's streets has declined overall since counting began in 1999* from a high of over 200,000 vehicles to just under 124,000 in 2017. This represents a 40 percent decrease in counted vehicle moments overall or approximately -2 percent a year. However, this decrease has occurred in bursts rather than gradually with greater drops in 2004, 2010, and 2016. These count years correspond with the introduction of the Congestion Charge Zone (2003), the Global Recession (2008), and the introduction of Cycle Superhighways (2016), alongside other ongoing factors such as national increases in rail travel and traffic space reallocations on City streets. Traffic volumes also climbed marginally in three count years (2007, 2012, and 2017).

*Historical trend data is representative of the twelve screenline count sites (CC1-12).

Figure 2.1 Change in day-time (12hr; 07:00-19:00) vehicle counts across the City



2 Traffic Composition Survey Trend Data

Historical Trends in Modal Volumes

Traffic volumes of all vehicular modes (except cycling) have decreased over the last two decades by at least one-third, with day-time car/taxi and motorcycle (MC) traffic declining 59 and 49 percent respectively since 1999 (Figure 2.2, right). Heavy goods vehicle (OGV) volumes have declined by similar amounts while light goods vehicle (LGV) volumes have seen their numbers remain relatively consistent since 2004 after dipping roughly a third from 1999 levels (Figure 2.3, below).

Some of the street capacity unlocked by these decreases in motorised vehicle traffic, alongside cycling infrastructure installations across the City, have facilitated a 292 percent increase in cycling volumes since 1999, with an additional 24,000 cycling journeys recorded on count day in 2017. These counts - taken in October and November – are representative of winter cycling rates. It is likely that cycling would make up an even greater share of vehicle movements during the spring and summer months.

Not shown here are counted bus and other public service vehicle (PSV) volumes. Count data from PSVs are included in upcoming sections.

Figure 2.2 Percentage change 1999-2017 in day-time time vehicle counts across the City (12hr)

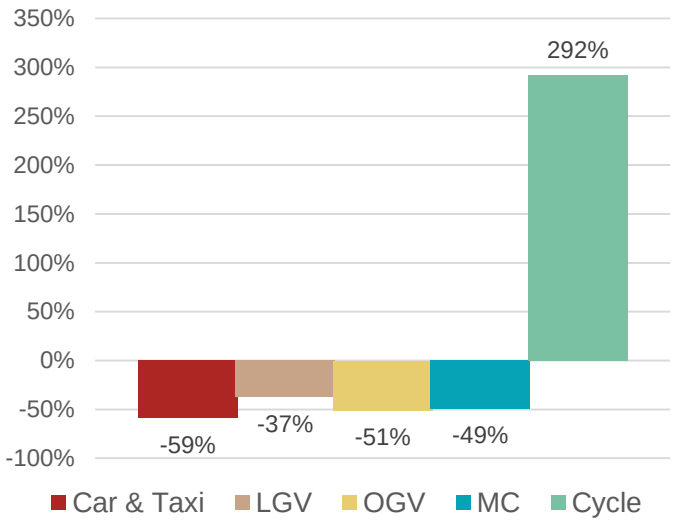
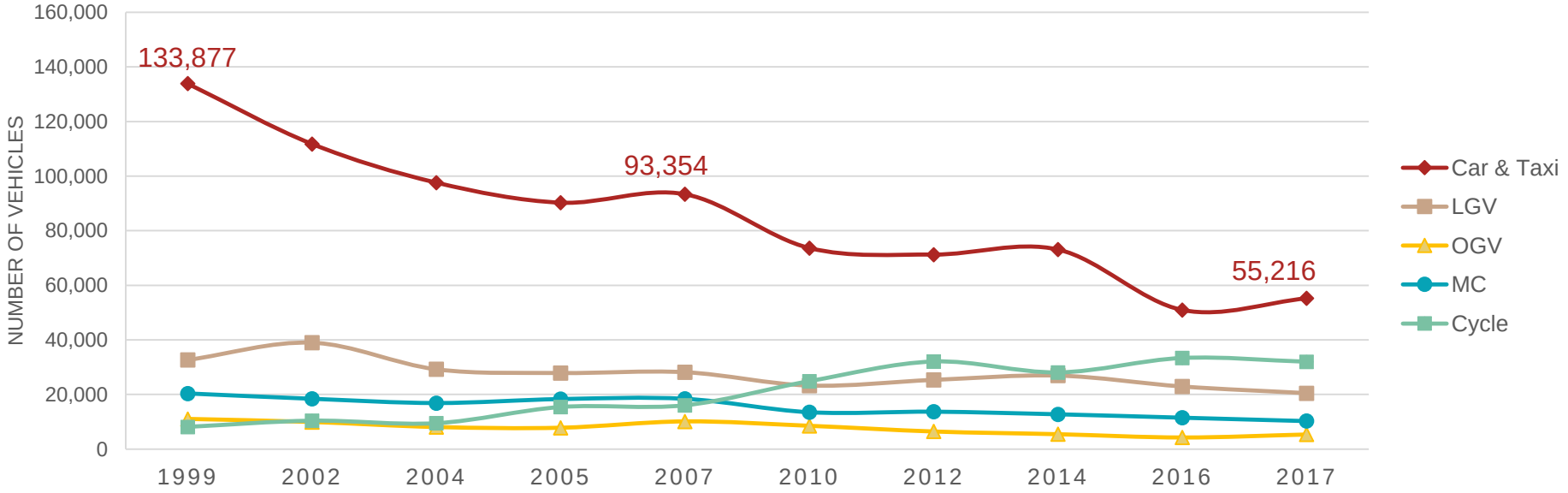


Figure 2.3 Absolute change in day-time vehicle counts across the City by year (12hr)



2 Traffic Composition Survey Trend Data

Historical Trends in Hourly Volumes and Peak Modal Split

Figure 2.4 (right) shows the percentage of total day-time traffic observed in each hour plotted as a line. The hashed orange line represents 2007 percentages and the hashed blue line represents 2017 percentages. Despite all vehicular traffic decreasing during the morning peak period (as seen in Figure 2.5), peak period traffic volumes as a proportion of all-day traffic volumes has increased since 2007, indicated by the higher peaks on the blue line. This is likely due to the combination of all-day motor vehicular traffic reductions and an increase in peak-time cycle commuting. This will be explored further in Chapter 3.

Figure 2.5 (below) compares changes in morning peak traffic volumes by mode. Traffic volumes during this period have declined since at least 2007* (albeit with a small increase observed in 2012). The number of cyclists counted during the morning peak has more than doubled since 2007, making it the single largest mode of transport counted on City streets from 07:00 to 09:00. Cars and taxi volumes counted during the morning peak have decreased since 2007 while goods and services vehicle volumes have remained relatively unchanged over the same period.

*Raw data from prior to 2007 is unavailable at this time.

Figure 2.4 Proportion of all day-time traffic by hour of day (measure of 'peakiness')

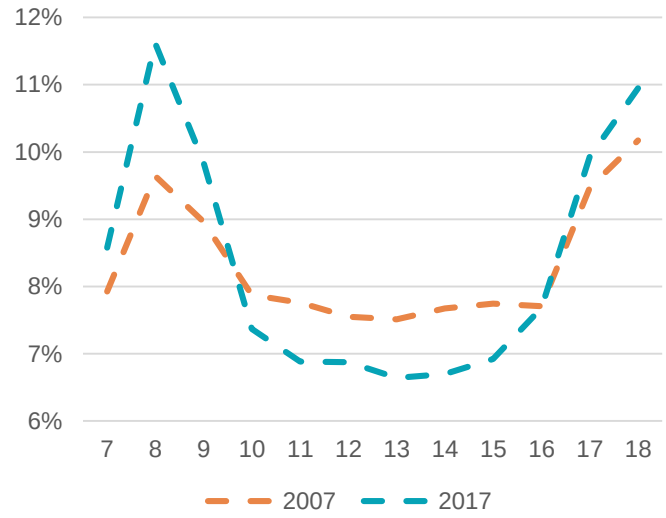
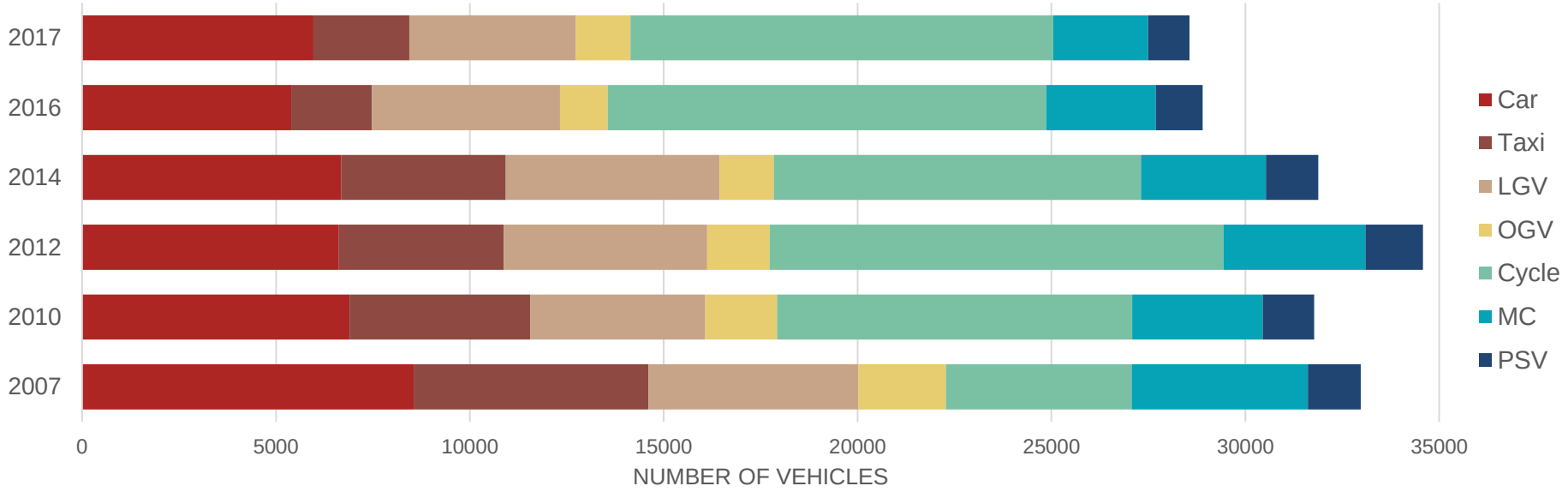


Figure 2.5 Morning peak hours (07:00-09:00) vehicle counts by mode and year



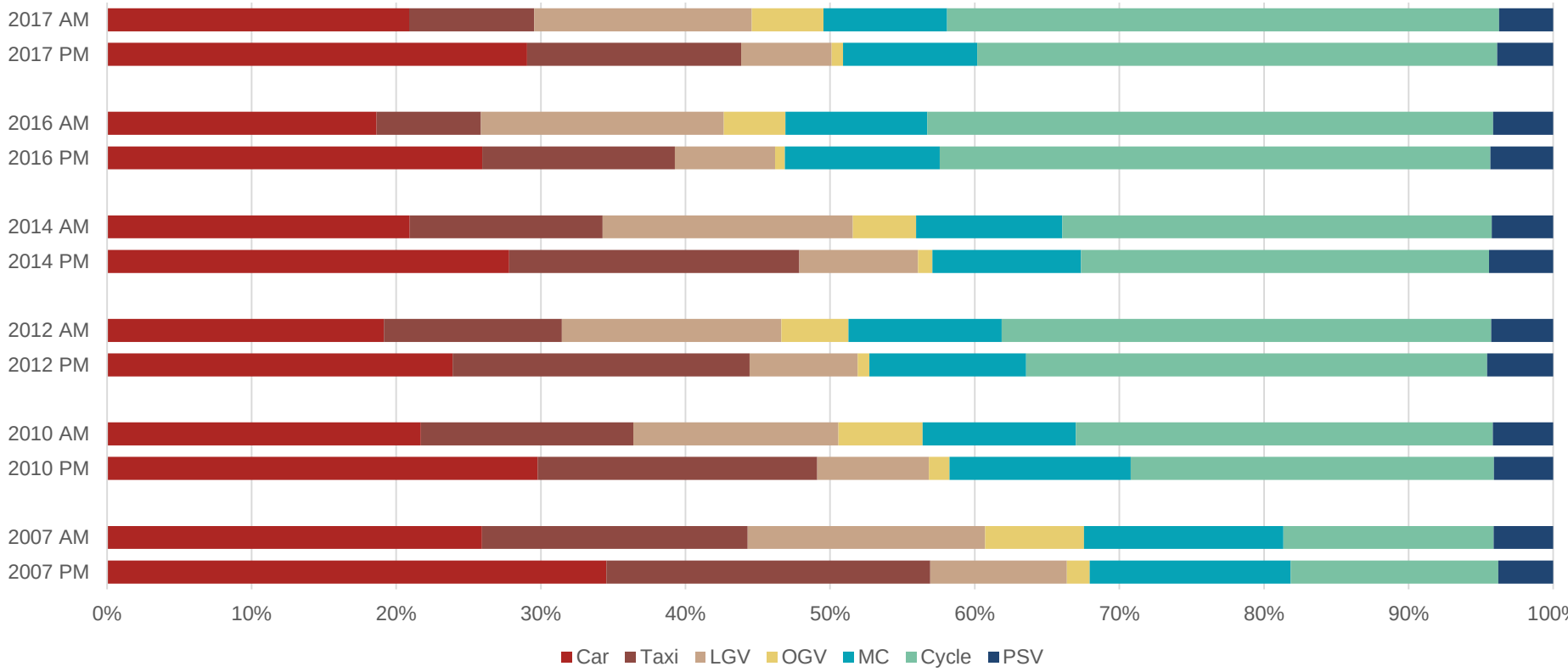
2 Traffic Composition Survey Trend Data

Historical Trends in Peak Modal Split - Comparison

Peak period traffic composition is significantly different when comparing between the morning and evening peak periods. Figure 2.6 below compares the modal split of morning peak (07:00-09:00) and evening peak (17:00-19:00) vehicular traffic by year since 2007. The morning (AM) peak period has had a significantly larger proportion of goods and services traffic (LGVs and OGVs) while the evening (PM) peak period has had a comparatively larger proportion of car and taxi traffic. This is in contrast to the relatively comparable proportions of cycles, motorcycles, and buses counted in the two peak periods.

These observations suggests that while the total volume of motor vehicle traffic has decreased year over year (as described in previous figures), the relative proportions of peak motor vehicle traffic have remained fairly consistent since 2007, with significantly more goods and service vehicles counted in the morning peak and more cars and taxis counted in the evening peak.

Figure 2.6 Comparison of AM peak (07:00-09:00) and PM peak (17:00-19:00) modal split by year



2 Traffic Composition Survey Trend Data

Trends in Traffic Composition

As discussed previously, cycling has seen a significant increase in volume over the last two decades. The rate of growth in cycling across the city between 1999 and 2012 was on average over 20 percent per year, with some years reaching over 50 percent year-on-year growth.

However, growth in cycling began to slow in 2012. Figure 2.7 (right) shows the yearly change in vehicle counts indexed to 1999 values. A curve of best fit added to the cycling curve (hashed green line) shows a plateau in 2016.

While this is not a extrapolatory exercise, it does appear that the City counts have reached a plateau over the last five years, suggesting that significant changes in cycling infrastructure provision and/or travel behaviour may be needed to spur further growth in cycling on City streets.

Figure 2.7 Change in day-time (12hr; 07:00-19:00) vehicle counts across the City, indexed to 1999 values

3

TCS 2017 Data Analysis

3 2017 Data Analysis

2017 Traffic Composition

The 2017 TCS counted more than 642,000 individual vehicle and pedestrian movements over the 24 hour ('all-day') observation period on November 16th across all 15 count sites. Approximately 185,000 motor vehicles, 44,000 cycles, and 413,000 pedestrians were counted (Figure 3.1, right). The 2017 TCS is the first time that pedestrians have been included in counts.

The breakdown of the count data of all 15 sites surveyed is presented in Figure 3.2 below (excluding pedestrians). The three busiest sites counted were Upper Thames Street, New Bridge Street, and Gracechurch Street. No incidents or severe weather conditions were observed on the count day and thus the results presented here are considered indicative of a neutral late-autumn day in the City.

Figure 3.1 2017 all-day traffic composition (without [above] and with [below] pedestrian counts)

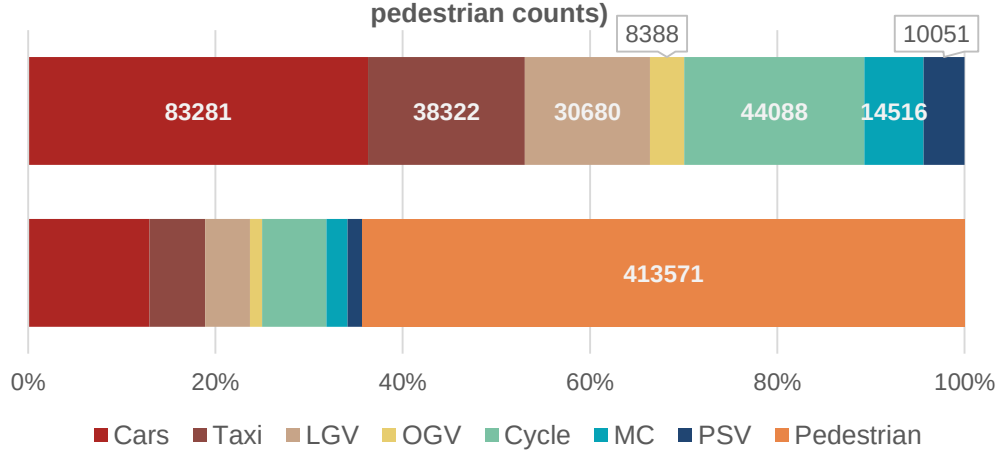
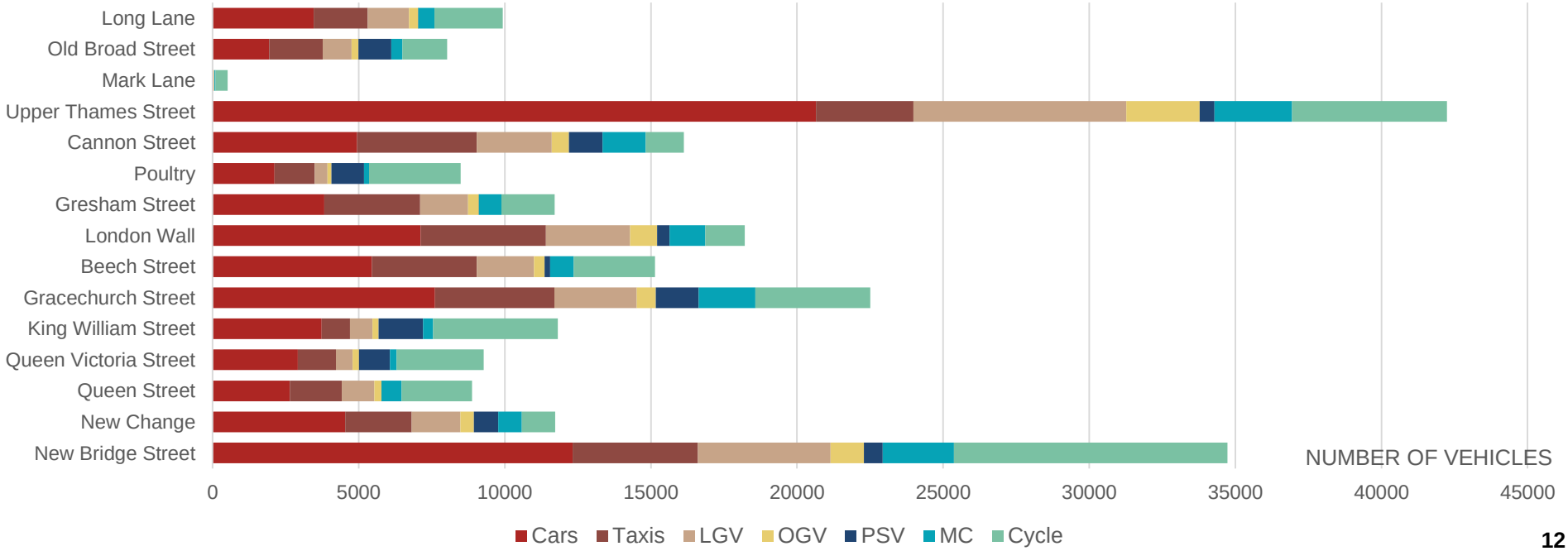


Figure 3.2 2017 all-day traffic composition by site (excluding pedestrians)



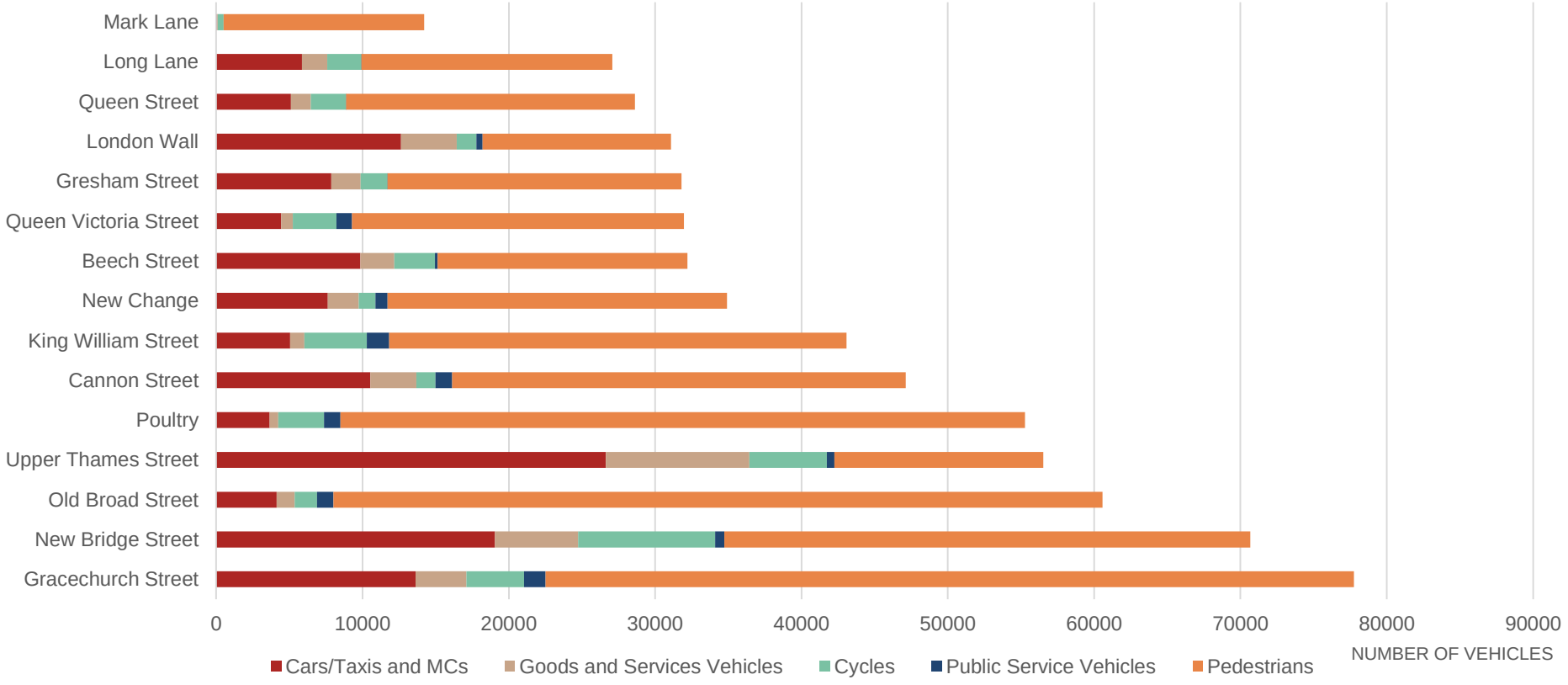
3 2017 Data Analysis

2017 Pedestrian Flows

Including pedestrian counts alongside vehicle counts allows a more comprehensive analysis of people movements on City streets by both motorised and non-motorised modes.

Figure 3.3 below compares the total number of counted motor vehicles (cars, taxis, LGVs, OGVs, motorcycles and mopeds, and PSVs), cycles, and pedestrians at each site (ordered by total movement counted) over the 24 hour period. At most sites the number of pedestrians counted was at least equal to the number of motor vehicles and cycles counted (with the exceptions of London Wall and Upper Thames Street). In some cases, the number of pedestrians counted was up to six times greater than the number of vehicles counted (excluding Mark Lane which is predominantly a pedestrian thoroughfare). Further analysis of the estimated number of people moving by different modes is explored at the end of this Chapter.

Figure 3.3 Comparison of motor vehicle, cycle, and pedestrian counts at each site



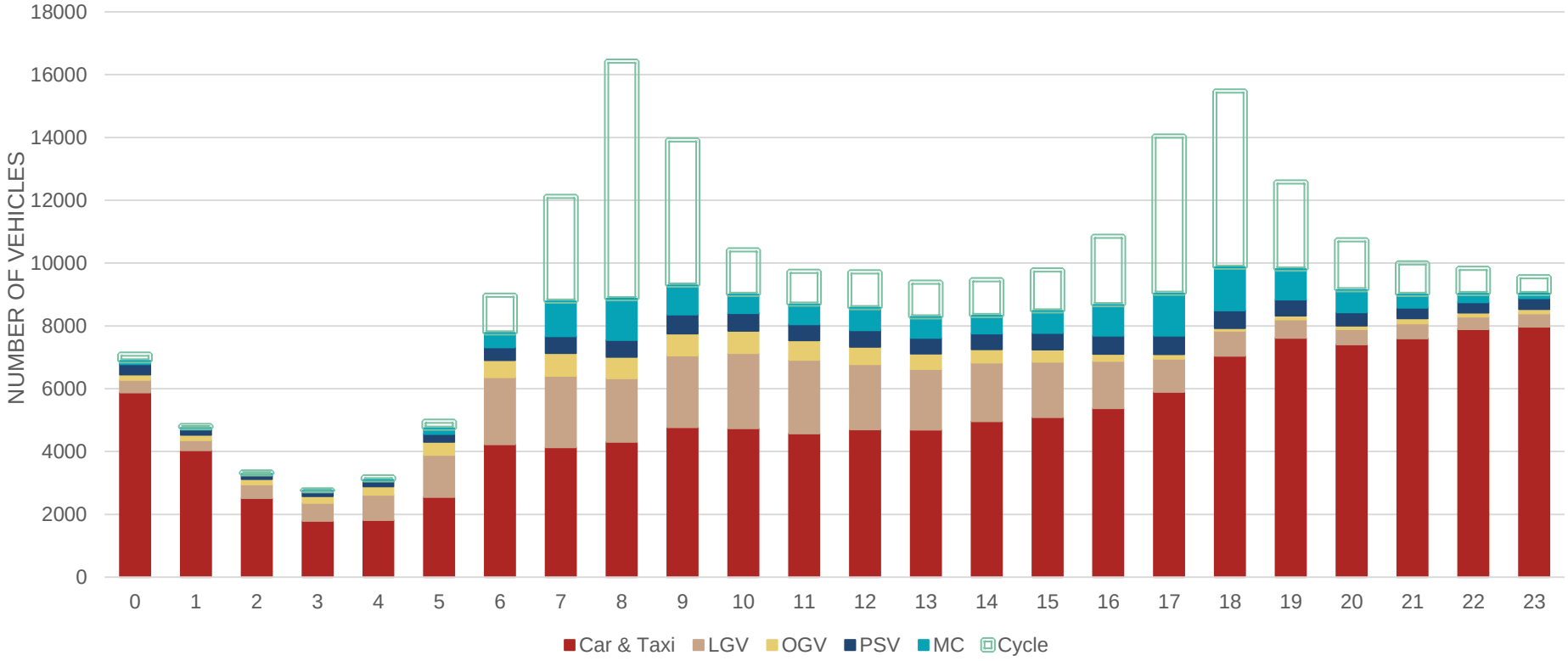
3 2017 Data Analysis

2017 Vehicular Counts by Hour of Day (Time Profiles)

The hour-by-hour profile of the 2017 vehicular counts (excluding pedestrians) is shown in Figure 3.4 below. Motorised modes (shown below in thick-coloured bars; includes cars, taxis, LGVs, OGVs, motorcycles and mopeds, and buses) are observed to reach a level of approximately 8800 counted movements altogether at 07:00 and remain at or around this level for the rest of the 'day-time' period (07:00 to 19:00) and through part of the night-time period (19:00-23:59). Goods and services vehicles make up a significant portion of motorised traffic during the morning and throughout the day and then begin to decline into the evening-time. The 'spare' capacity freed up by the gradual decline in goods and services vehicular traffic was largely utilised by the increasing number of cars and taxis observed on City streets, particularly in the evening hours.

Cycling, in contrast to motor vehicles, is observed to have two distinct peaks – from 08:00 to 10:00 in the morning and from 17:00 to 19:00 in the evening. These observations suggest that motor vehicle traffic is less related to 'peak-time' commuting and more associated with other purposes.

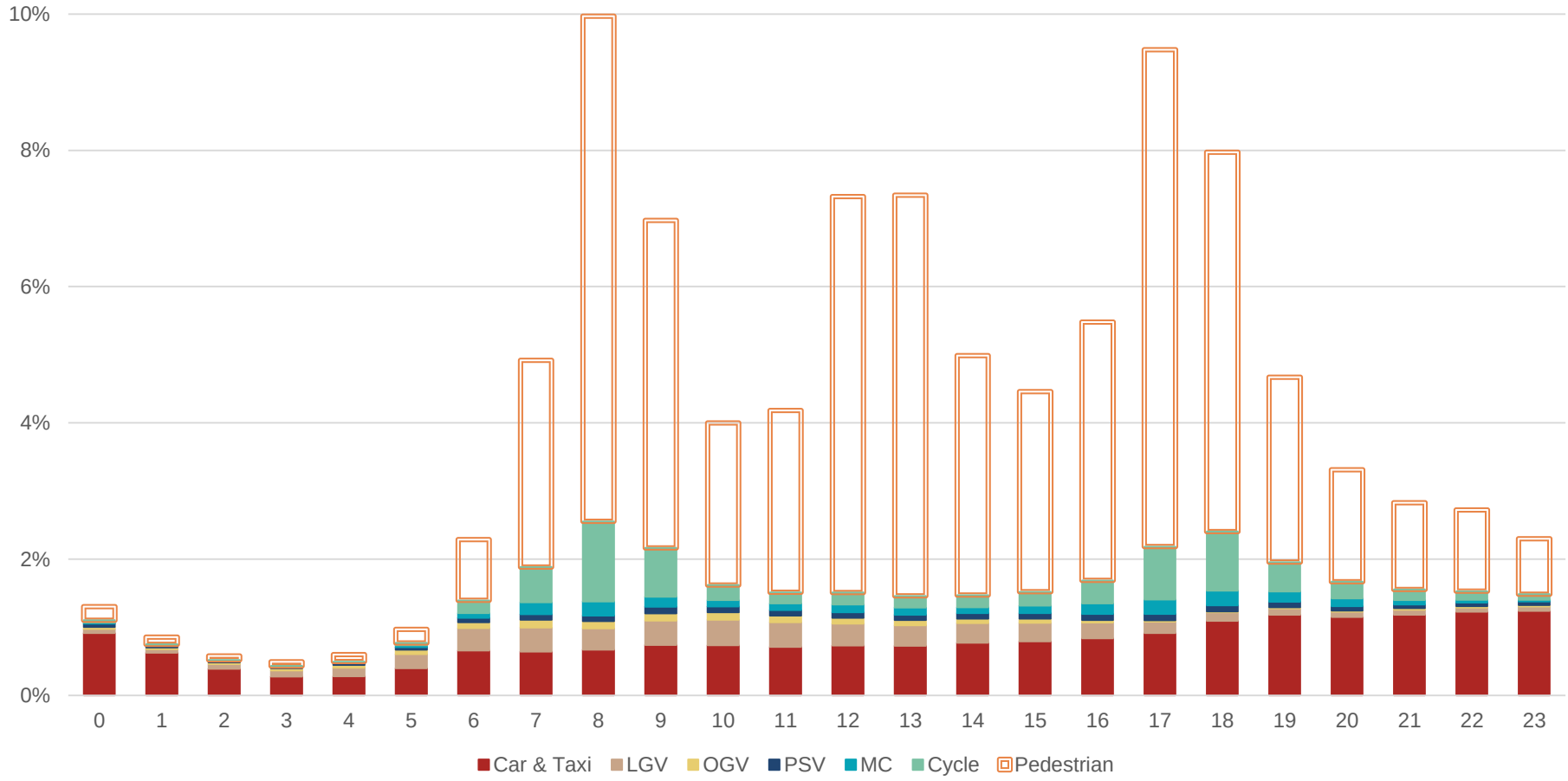
Figure 3.4 2017 vehicular counts by hour of day (excluding pedestrians)



2017 Vehicular and Pedestrian Counts by Hour of Day

Adding pedestrians to Figure 3.4 (previous page) significantly changes the hourly profile of counted traffic. Figure 3.5 below shows the percentage of all-day traffic counted by hour of day and includes all vehicular modes (thick coloured bars) and pedestrians (hollow bars). Three distinct peaks are now observed, corresponding to AM (08:00-10:00), lunchtime (12:00-14:00), and PM (17:00-19:00) pedestrian volume peaks. Significant pedestrian traffic is also observed outside of these periods and into the evening off-peak period (19:00-23:59) which will be looked at further later in this chapter. Overall, there was more pedestrian traffic than vehicular traffic counted for the majority of the day (07:00 to 20:00).

Figure 3.5 All modes counts by hour of day and percentage of daily traffic

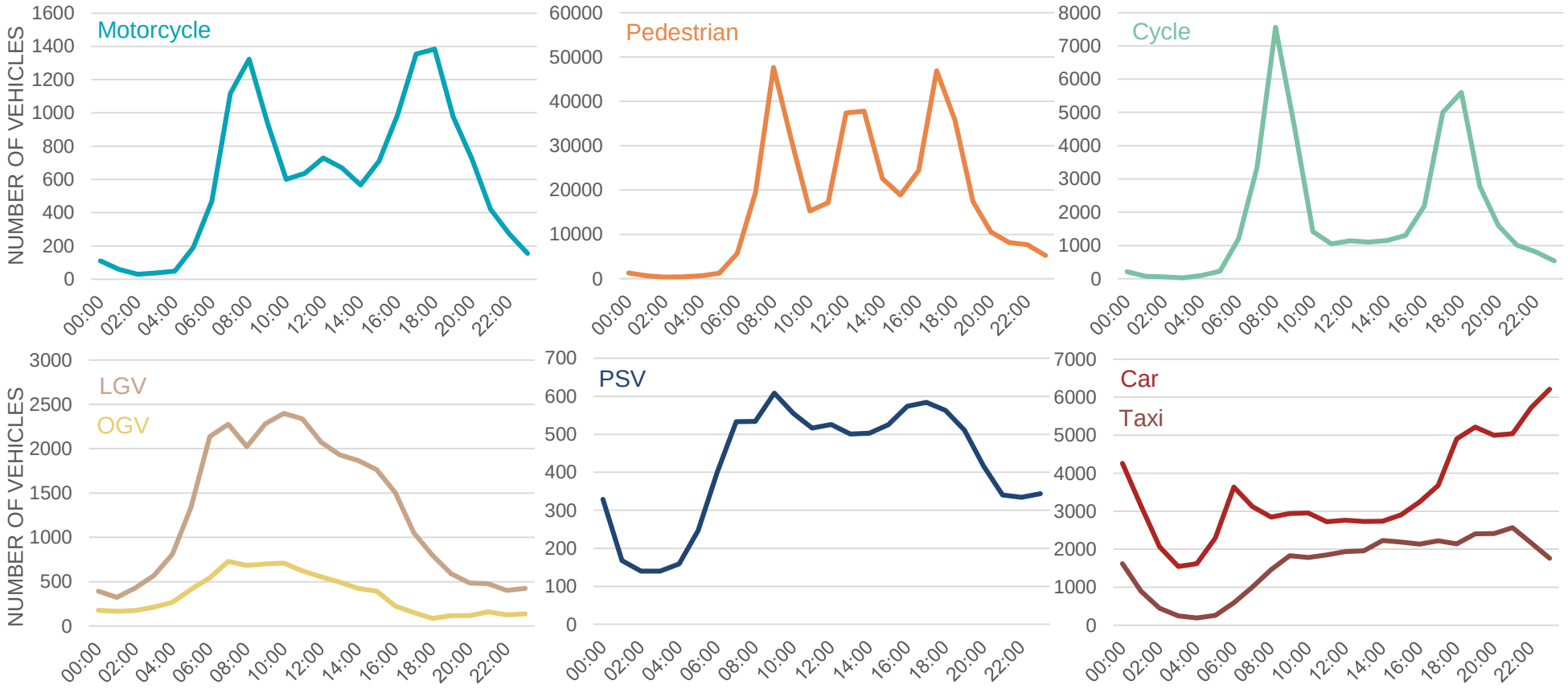


3 2017 Data Analysis

Time Profiles of Each Mode

Each mode of travel was observed to have a distinct time profile. Figure 3.6 below shows the all-day time profiles of each mode (note: different scales are used for each graph). Three modes – motorcycles, cycles, and pedestrians – were observed to have peaks during the commuter peak periods. Motorcycles were less 'peaky' than cycles, suggesting that many motorcycle movements were being made during daytime hours for non-commuting purposes. Goods and services vehicles, particularly LGVs, were shown to peak in the morning and afternoon and steadily decline over the day, reflecting the general profile of freight deliveries observed across London. Public service vehicles were shown to have a relatively flat profile during daytime hours. Finally, cars (including private hire vehicles) and taxis were observed to peak much later in the evening, suggesting these modes did not represent many traditional commuting trips.

Figure 3.6 24 hour time profiles of all modes (different scales used)



Daytime and Night-time Count Volume Comparisons

As the 2017 TCS was conducted over a 24-hour period it was possible to examine and compare 'daytime' (defined as 07:00-18:59) and 'night-time' (defined as 19:00-23:59 and 00:00-06:59) traffic.

Overall, approximately 38 percent of all counted vehicular traffic was recorded during night-time hours, suggesting there is still considerable travel demand in off-peak hours and particularly from 19:00 to 23:59.

The proportion of daytime versus night-time traffic varies considerably between modes. Cars have the greatest proportion of night-time to daytime traffic at over 55 percent. A significant number of buses were also counted during the night-time period across the City, with over a quarter of all bus movements recorded during this time (likely representing the significant number of night bus routes that pass through the City).

Further analysis of night-time journeys is made on the following two pages for cars, taxis, cycles, and pedestrians.

Figure 3.7 Comparison of daytime (light bar) and night-time (dark bar) traffic and pedestrian counts

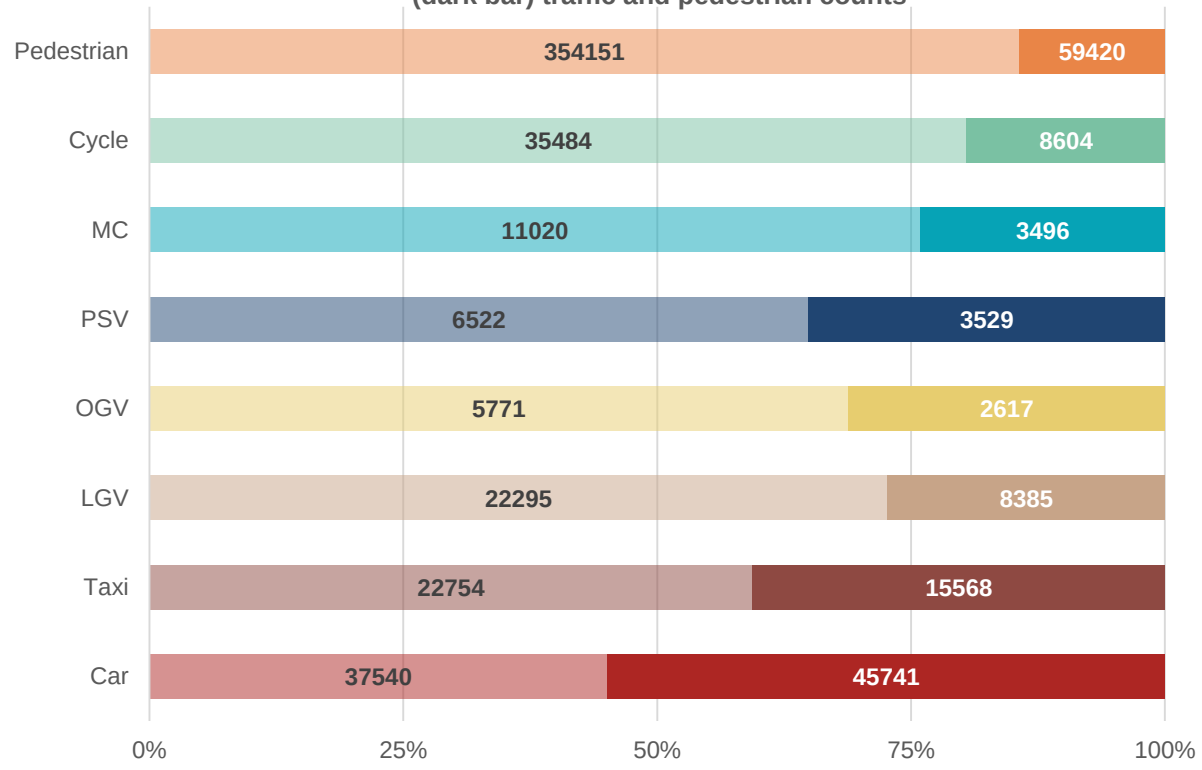
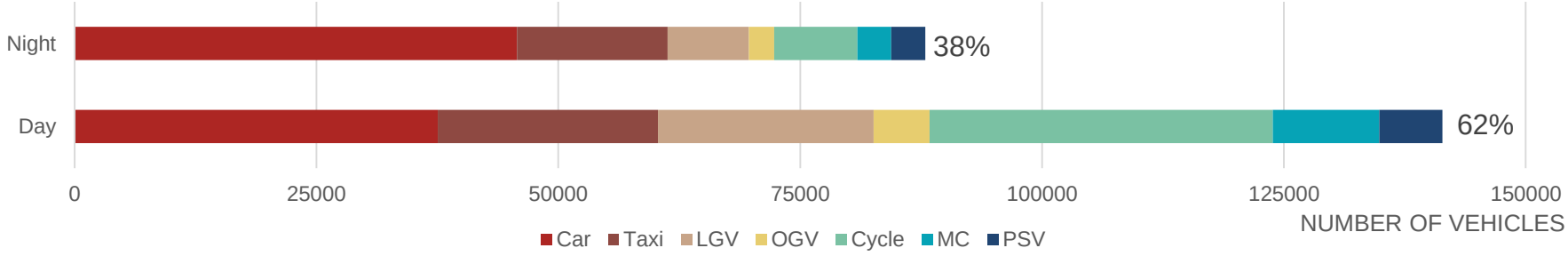


Figure 3.8 Comparison of total daytime and night-time vehicular traffic by mode (excl. pedestrians)



3 2017 Data Analysis

Night-time Count Volume Comparisons

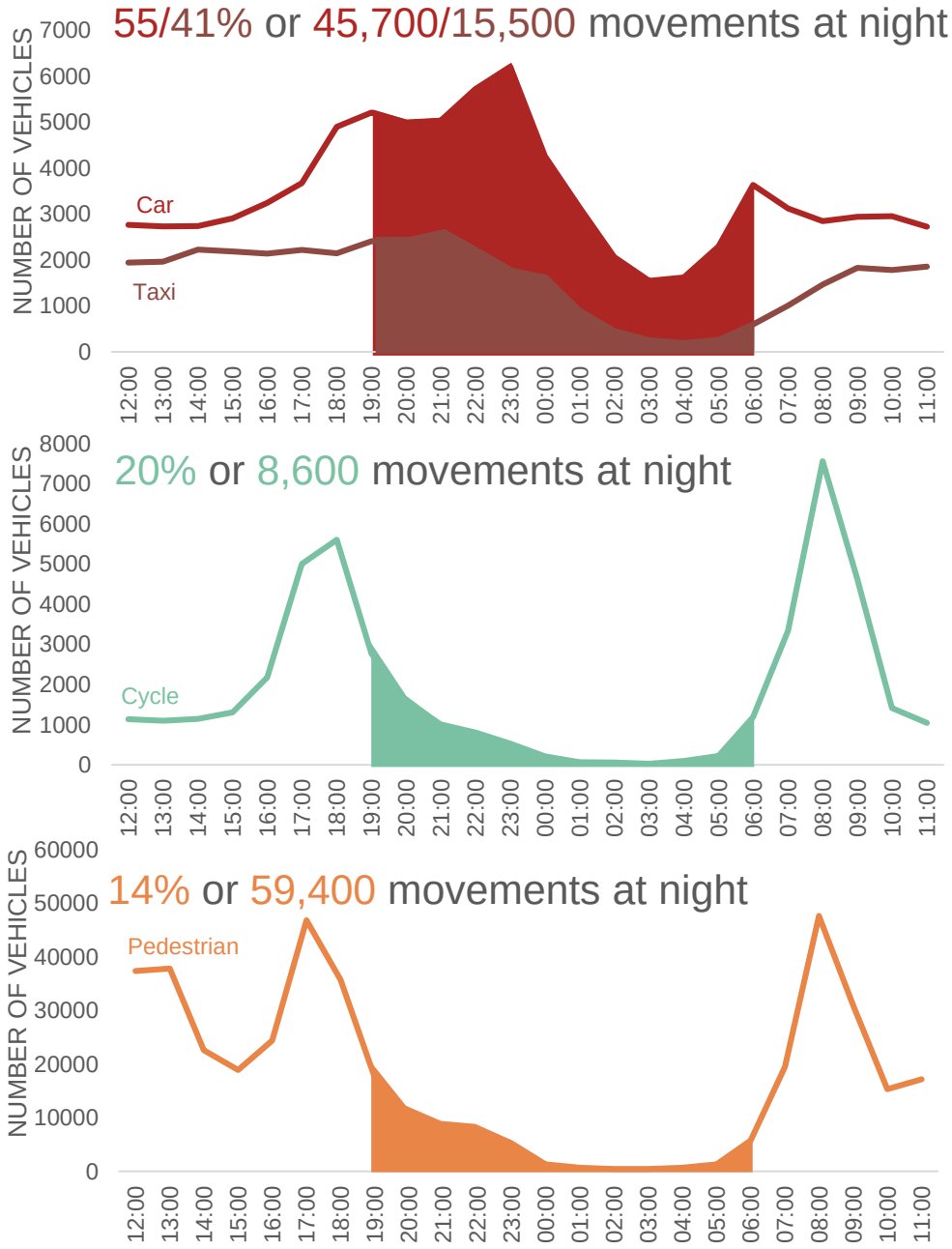
Figure 3.9 (right) shows the total night-time count volumes of cars, taxis, cycles, and pedestrians by hour. Above each chart is the proportion of night-time count volumes of all-day volumes alongside absolute night-time count volumes (also represented on the chart by the coloured area under each time profile line).

As mentioned previously, the majority of car trips and over 40 percent of taxi trips were made during the night-time period. Cars in particular peak at approximately 23:00. This suggests there could be significant private hire and taxi activity in the City in off-peak hours.

Despite the darker conditions, approximately 20 percent of all counted cycling trips were made during the night-time period, with cycling volumes staying relatively high until 22:00. There were approximately the same number of cyclists counted across the City from 21:00 to 22:00 as from 11:00 to 12:00. Excluding pedestrians, cyclists were the third most common street user in the night-time period.

Pedestrians were the single largest street user group in the night-time period, accounting for over 40 percent of all counted movement. While only 14 percent of total pedestrian traffic was observed in the night-time period the number of pedestrians counted was greater than the total number of taxis, LGVs, OGVs, PSVs, motorcycles and mopeds, and cycles counted combined.

Figure 3.9 Night-time time profiles of cars, taxis, cycles, and pedestrians (different scales)

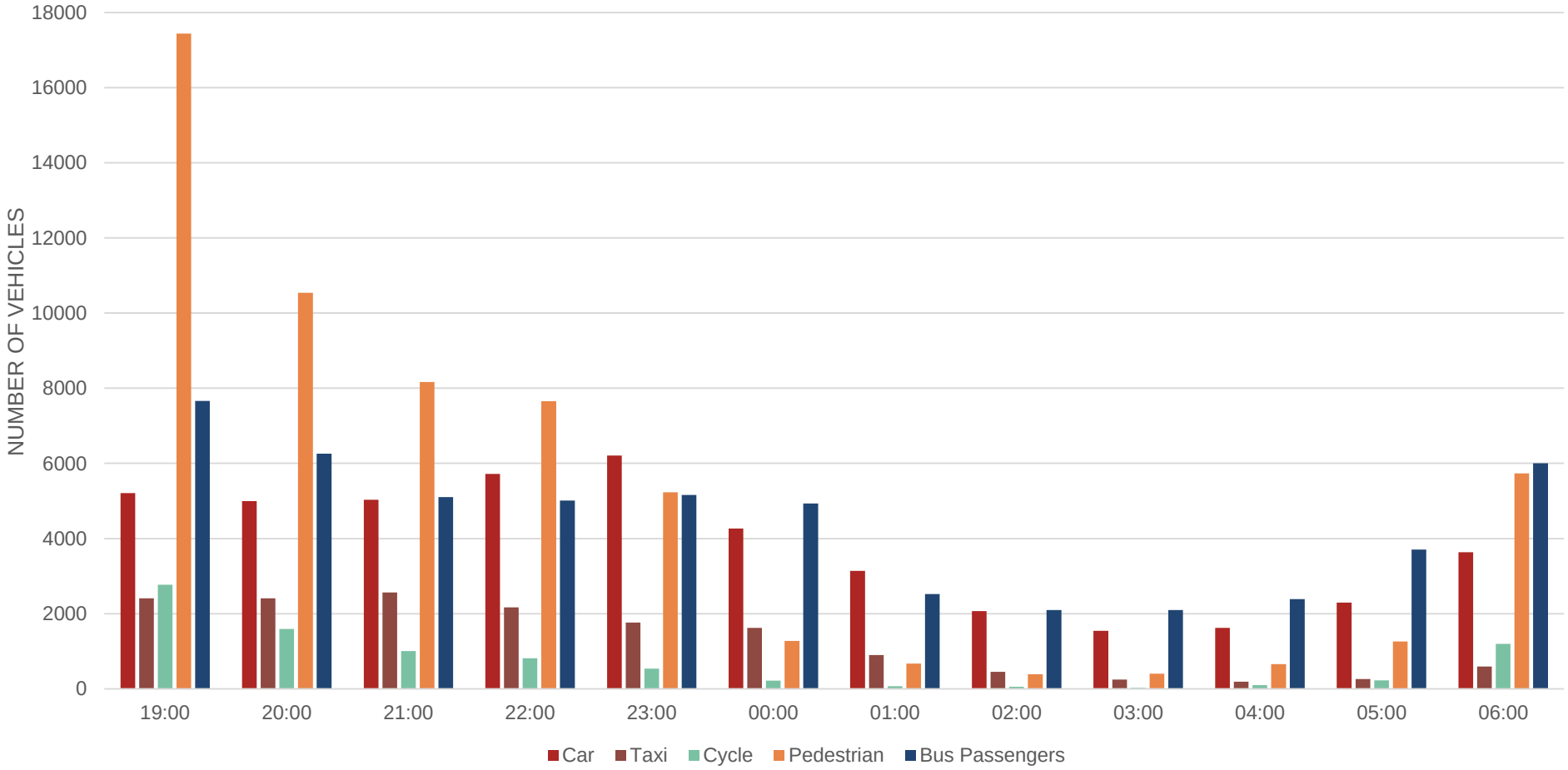


3 2017 Data Analysis

Night-time Count Volume Comparisons

Figure 3.10 (below) compares the volumes of counted car, taxi, cycle, and pedestrian traffic and estimated number of bus passengers (derived using Bus Origin Destination Survey data for City of London night bus routes, includes bus passenger through trips) over the night-time period. There are more pedestrians counted on City streets between 19:00 and 23:00 than any other single mode, suggesting that a significant proportion of people moving around the City at night are doing so on foot. There are also more cycles than taxis on City streets from 19:00 to 20:00, suggesting that cycle travel is also a significant off-peak travel mode on City Streets.

Figure 3.10 Night-time time profiles of cars, taxis, cycles, and pedestrians



People Moved and Space Utilised by Modal Group

The total street space taken and number of people moved by each mode were approximated using count data, Private Car Unit (PCU) conversions, and occupancy estimates (based on DfT, WebTAG, and NTS data). Figure 3.11 shows different modal groups' street space utilisation and estimated people movement as a proportion of all traffic.

Private vehicles – cars, taxis, and motorcycles/mopeds – utilised the most street space of any mode – over 53 percent – while only carrying an estimated quarter of all people travelling on City streets. While buses only made up two percent of all counted vehicles, they carried an estimated 19 percent of all people travelling on City streets (compared to 21 and 19 percent for private vehicles respectively). Buses and private vehicles carried approximately the same number of people in the City while making up an estimated 9 and 53 percent of total street space usage respectively.

People on foot also made up an estimated 9 percent of total street space usage while making up an estimated one-half of total people movements. This suggests that the City's pavements – which often make up less than 25 percent of total street space – move the majority of people travelling on City streets.

Figure 3.11 Comparison of estimated street space utilisation and estimated people moved by mode groupings