

Roads Task Force – Technical Note 5

What are the main trends and developments affecting van traffic in London?

Introduction

This paper is one of a series of thematic notes, produced to contribute to the Roads Task Force Evidence Base. It provides an overview of trends affecting van traffic in London.

Summary

- Vans account for 13 per cent of motorised vehicle kilometres in London (3.8 billion of 29.1 billion in 2011). There are approximately four times as many van kilometres in London as HGV kilometres.
- Van traffic has grown, albeit slowed by the recent recession. There were 5 per cent more van kilometres in London in 2011 compared to 2000. By contrast, HGV traffic has fallen – being 11 per cent lower in 2011 compared to 2000.
- There is evidence that vans are being used as substitutes for HGVs – less regulation, fewer skills/lower pay for van drivers and greater flexibility (eg for home deliveries) being key reasons. These trends are expected to continue, although they may lead to less-efficient utilisation of road capacity.
- 221,000 vans are registered in London, 7 per cent of the GB total. 62 per cent of vans circulating in London are of the ‘panel’ body type, and 60 per cent are in the heaviest weight class for vans (2.6–3.5 tonnes gross).
- The van population of London is dominated by a relatively small number that are present frequently with a long ‘tail’ of infrequent visitors.
- 56 per cent of London-based vans are privately-owned, eg ‘own account’ trades people. 44 per cent are ‘company’ owned (eg delivery companies). 22 per cent of trips by privately-owned vans are ‘non-commercial’ (ie for personal use).
- Vans are relatively poorly-utilised – 39 per cent are less than one-quarter full with an average payload of just 300 kg.
- 50 per cent of vans fail their MOT first time (GB level), there is frequent contravention of maximum permissible weight regulations and parking availability and compliance are major issues – 838,000 PCNs are issued to vans in London per year – proportionately higher than their incidence in traffic.
- 92 per cent of vans registered in London are diesel-fuelled; however London’s Low Emission Zone requires Euro 3 emissions standard compliance for vans to operate in London – setting a basic minimum cleanliness standard for these vehicles.
- Van collision and casualty rates/severities are roughly in proportion to the share of motorised traffic and are not dissimilar in London compared to nationally.
- Peak van flows in central London occur between 7 and 8 am, with 24 per cent of daily van traffic in the congestion charging zone taking place between 7 am and 10 am, followed by a steady decline as the day progresses – just 12 per cent of daily van traffic takes place between 5 and 7 pm (average of 7 day week).

Definitions and sources

Vans are of increasing interest as they account for around 13 per cent of motorised traffic in London – and this share has been growing recently. However, there is a general lack of good information about vans. Much of the material in this note is drawn from a recent study by AECOM for TfL, which consolidated much of the available information, including new information on the ‘London van population’ arising from the enforcement arrangements for the London Low Emission Zone. The term ‘vans’ is used here to describe vehicles in the NI taxation class, having a gross weight not exceeding 3.5 tonnes. Vehicles in this class are extremely diverse and range from ‘car-derived’ types, which are essentially car bodies adapted to carry small payloads, through ‘Luton’ or ‘Transit’ type ‘panel vans’ to small ‘tipper’ or ‘box’ vans. Larger cars – Sports Utility Vehicles – are excluded from this categorisation.

Vans in traffic

- Vans comprise 13 per cent of motorised traffic (vehicle kilometres) in London, compared to 14 per cent of motorised traffic in Great Britain as a whole (2011).
- Approximately 3.8 billion van-kilometres are driven annually in London – about four times that for HGVs.
- Van traffic over the last 11 years has grown by 5 per cent in London in aggregate, and by 28 per cent at the GB level. However, van kilometres in London have fallen rapidly since 2007, reflecting the economic recession (Figure 1).
- At the same time, HGV traffic has fallen – down by 11 per cent in London and 9 per cent in GB (figure 1).
- The number of vans registered in the UK has increased by 32 per cent over the past 10 years to 3.2 million (Figure 2).

Figure 1 Trend for van traffic in London (with equivalent trend for Gross Value Added) and Heavy Goods Vehicles.

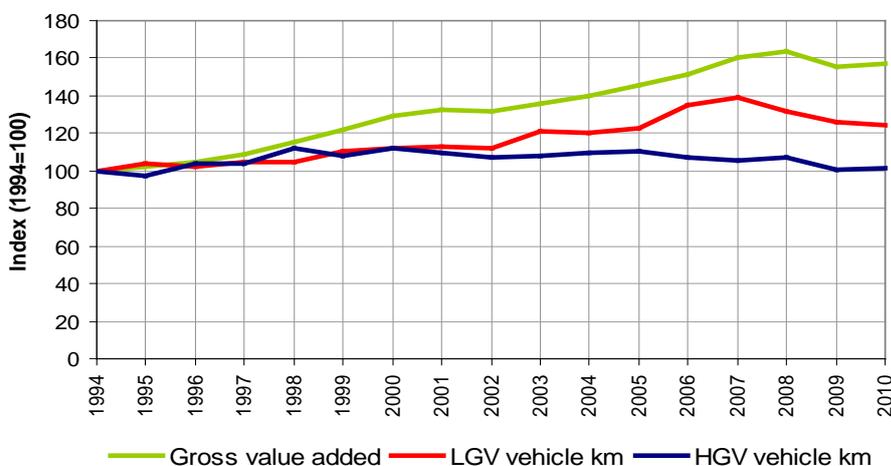
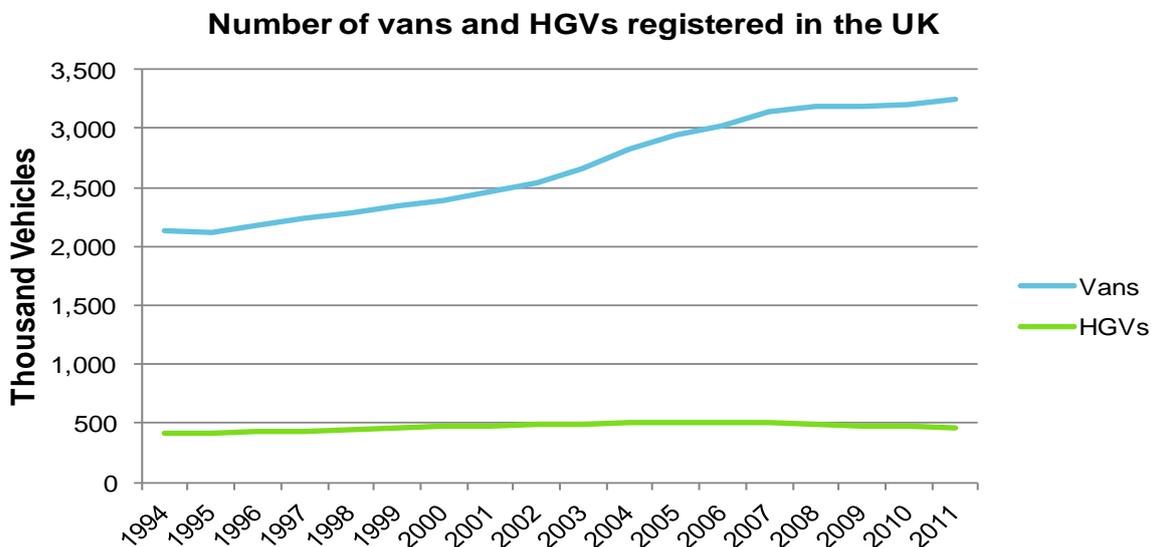


Figure 2 GB trend for van and HGV registrations.



Registrations and population profile

221,000 vans are registered to addresses in London (7 per cent of the national total of 3.2 million).

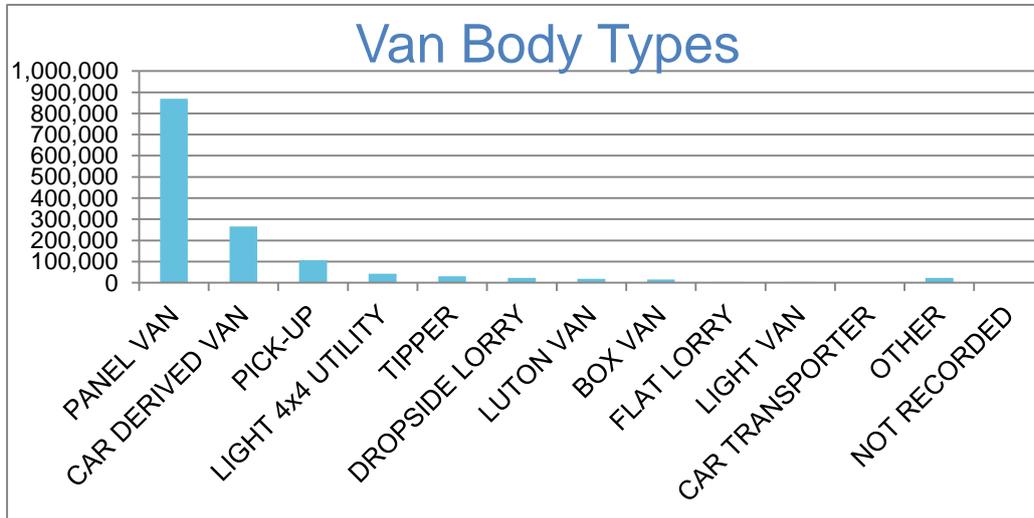
44 per cent of all vans registered in GB make a trip in London at least once a year. Almost half (49 per cent) of vans visiting London in any one year do so infrequently – four times a year or less. About a quarter of vans who are present in London at least once per year do so at least once a week, with about 10 per cent being present ‘almost every day’. London’s van population therefore comprises a relatively small number of unique vehicles that are present most days, and a long ‘tail’ of vehicles that appear infrequently.

Vans change hands rapidly – just over half of all van purchases are second-hand.

Types of van in London – body type

62 per cent of vans circulating in London are of the ‘panel’ body type. Nineteen per cent are car-derived vans, with pick up type vans comprising 8 per cent. All three types together account for 89 per cent of van traffic in London (Figure 3).

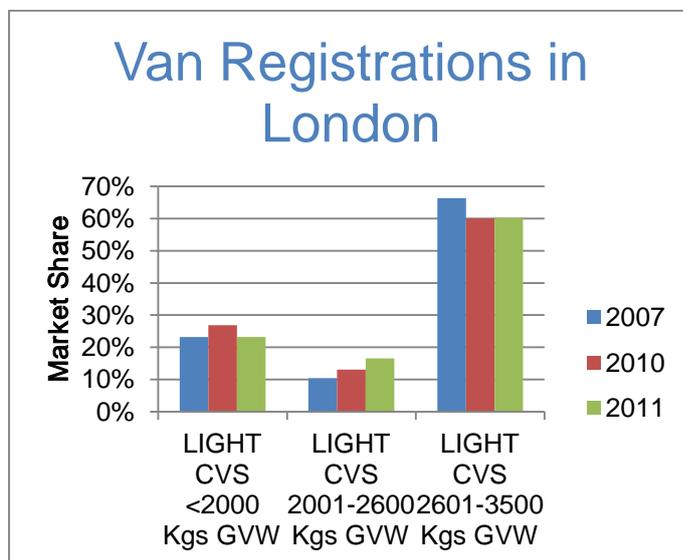
Figure 3 Vans – distribution of vans in London by body type (vehicle-kilometre equivalent).



Weight distribution of vans circulating in London

Figure 4 shows that around 60 per cent of vans circulating in London are in the heaviest van weight class (2.6–3.5 tonnes).

Figure 4 Vans – distribution of vans in London by gross vehicle weight (vehicle-kilometre equivalent).



Patterns of van ownership and utilisation

56 per cent of vans circulating in London were privately owned, with 44 per cent commercially owned (company fleets). Figure 5 shows different patterns of use for vans in company or private ownership. Privately-owned vans are used relatively more frequently for travelling to or from work, suggesting a close association with trades people. Company owned vans are, as might be expected, used relatively more frequently for collection and delivery of goods. 22 per

cent of trips by privately-owned vans are for ‘non-commercial’ use, this being 14 per cent for company-owned vans.

Figure 5 Vans – patterns of use (journey purpose).

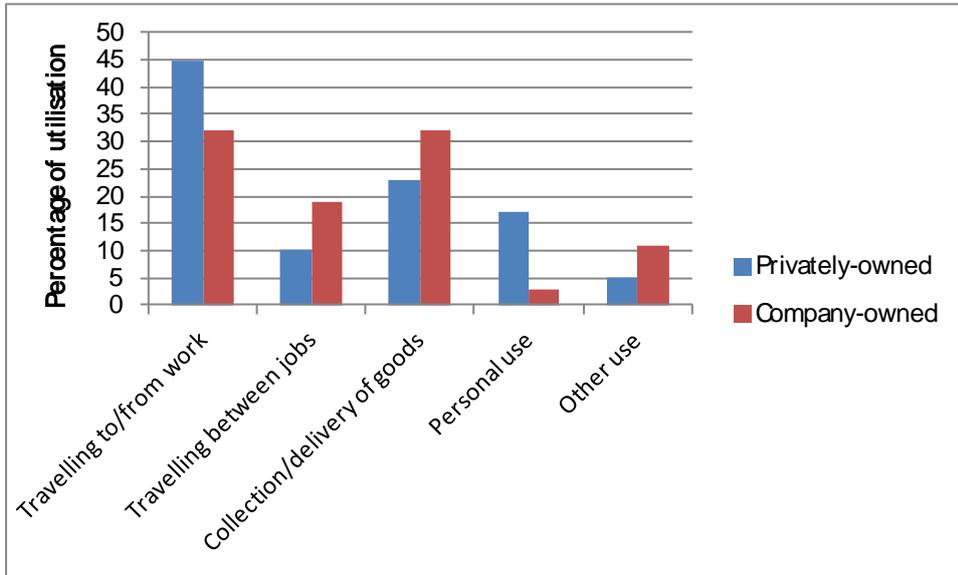
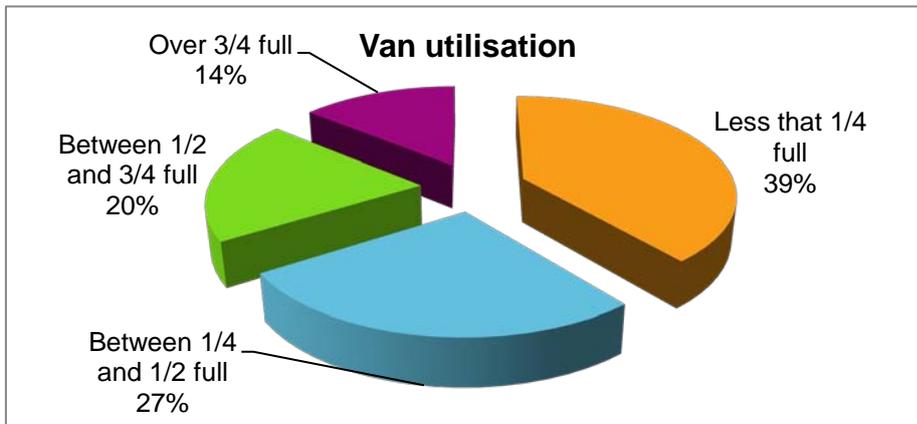


Figure 6 Vans – average load factor.



Many vans suffer from poor utilisation (as a commercial asset) as they are typically left idle on site after being used to transport a worker and their equipment. The average load factor for vans in London is 38 per cent (about 300kg payload). Thirty-nine per cent of vans are less than one quarter full (figure 6). However, vans are also notable for being driven overweight (see below).

Vans and the law

The van market has been described as ‘well developed, growing and likely to continue to grow, but one that is fragmented across many sectors’. Van users cover a wide spectrum - from

established large freight and logistics carriers through to individual trades people. It is therefore difficult to effectively regulate and gather consistent information about this diverse market.

Operating a van does not require an operator's licence. This means that a van driver does not need to undergo the high levels of training and compliance associated with HGV drivers. Correspondingly, rates of pay for HGV drivers are higher, although substituting several vans for a single HGV would require employment of more than one van driver. In London:

- 89 per cent of vans pulled over by VOSA were overweight.
- 50 per cent fail their MOT first time - indicating that a high proportion of vans are not roadworthy (GB level).
- About 16 per cent of all PCNs are issued to vans – higher than their representation in traffic. Vans received 838,000 Penalty Charge Notices in London in 2011.
- Lack of available parking and inconsistency of parking regulations between boroughs is cited as a major issue for van drivers/operators.

Coupled with less regulation there is a poor awareness among van drivers/operators of regulations that do apply – such as drivers' hours regulations. This apparently poor compliance situation does not however appear to be having an adverse impact on safety.

Vans – safety

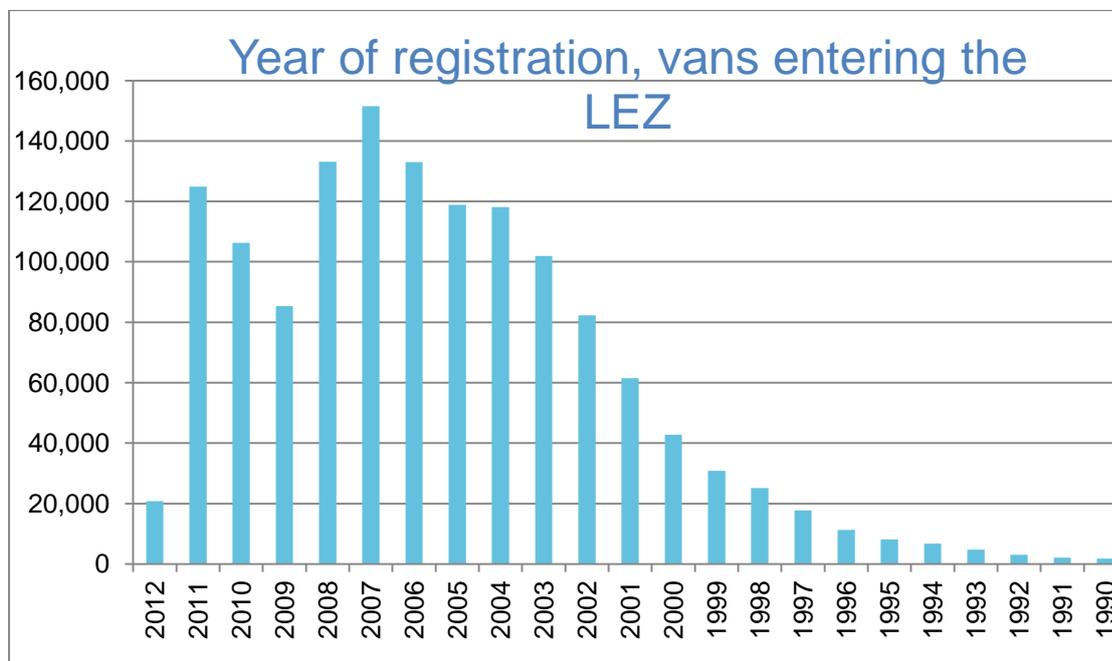
The involvement of vans in collisions is in similar proportion to their presence in motorised traffic. In 2011, vans were involved in 10 per cent of collisions in London (13 per cent of vehicle kilometres). The rate of 'serious' and 'slight' casualties involving vans in London is about the same as that of the rest of the UK, again indicating no van-specific safety issues, which is perhaps surprising given the characteristics reported above.

Vans and the environment

Vans typically have a more aged profile than other vehicles, meaning that (in the absence of regulation schemes such as the Low Emission Zone) their emissions performance is relatively poor. Figure 7 shows the age profile for vans circulating in London. Note that compliance with current LEZ regulations for older vans can be achieved by the fitment of abatement equipment.

Ninety-two per cent of vans are diesel fuelled, which is also associated with poor emissions performance for local air quality pollutants. Seven per cent are petrol fuelled, with hybrid/alternative fuel accounting for the remaining 1 per cent. 2,085 hybrid/165 electric vans were registered in London in 2011).

Figure 7 Age profile for vans circulating in London (vehicle kilometre equivalent).



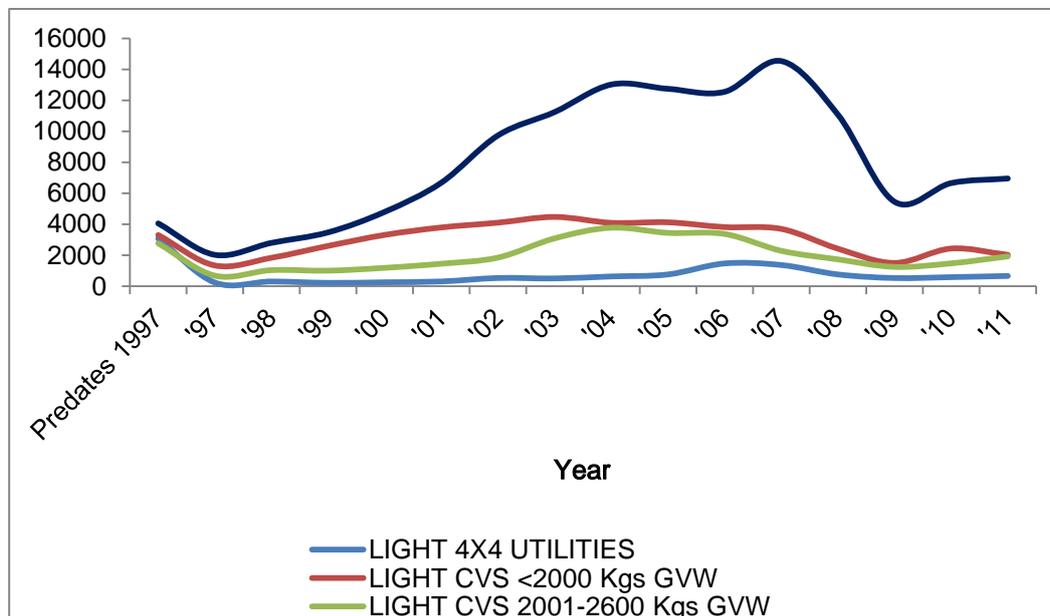
Are vans substituting for HGVs ?

There is evidence that vans are being used as substitutes for HGVs. Van traffic is increasing whereas HGV traffic has been more stable. There are several plausible reasons for this – including more regulation for HGVs compared to vans, the greater flexibility that they offer, particularly for the rapidly-increasing home-delivery market (eg residential roads), tied to a general increase in ‘just in time’ deliveries and reduced stockholding levels. Rates of pay for van drivers are lower than the (more skilled and regulated) job of HGV driver.

Figure 8 shows that, until the recession, new registrations for heavier vans were several times those for lighter vans, indicating a disproportionate rise in demand for these types of vehicle. However, such substitution is not necessarily optimal – vans are relatively less energy-efficient at moving tonnage compared to HGVs, use much more road space for an equivalent payload than a single HGV, and several van drivers may be required.

Van activity is expected by the Department for Transport to continue to increase – at approximately four times the rate expected for heavy goods vehicles. This reflects general economic growth and wider structural factors such as the continued growth of the internet for shopping in particular.

Figure 8 GB-level trend for new van registrations by weight class.



Vans – spatial pattern of road usage

Figures 9, 10 and 11 illustrate how vans use the London road network.

Figure 9 shows the percentage of motorised traffic flow that vans account for on the major road network. It is a measure of the relative density of vans in traffic. The highest densities – up to and exceeding 50 per cent of traffic – are found in central London, with other 'hot-spots' around key town centres in inner London.

Figure 10 shows the number of vans per hour per metre of road width. It is a measure of the absolute density of vans on the road network, and shows a different pattern to Figure 9. Highest densities are seen on the more major roads – such as the north/south circulars and major radial corridors, as would be expected.

Figure 11 shows the degree to which vans use the available junction capacity, expressed as a percentage of the available capacity. The pattern is indistinct, although vans use 20 per cent or more of the available junction capacity on many roads across Greater London. This compares to an average presence in motorised traffic of 13 per cent.

Figure 9 Percentage of motorised traffic accounted for by vans – weekday inter-peak.

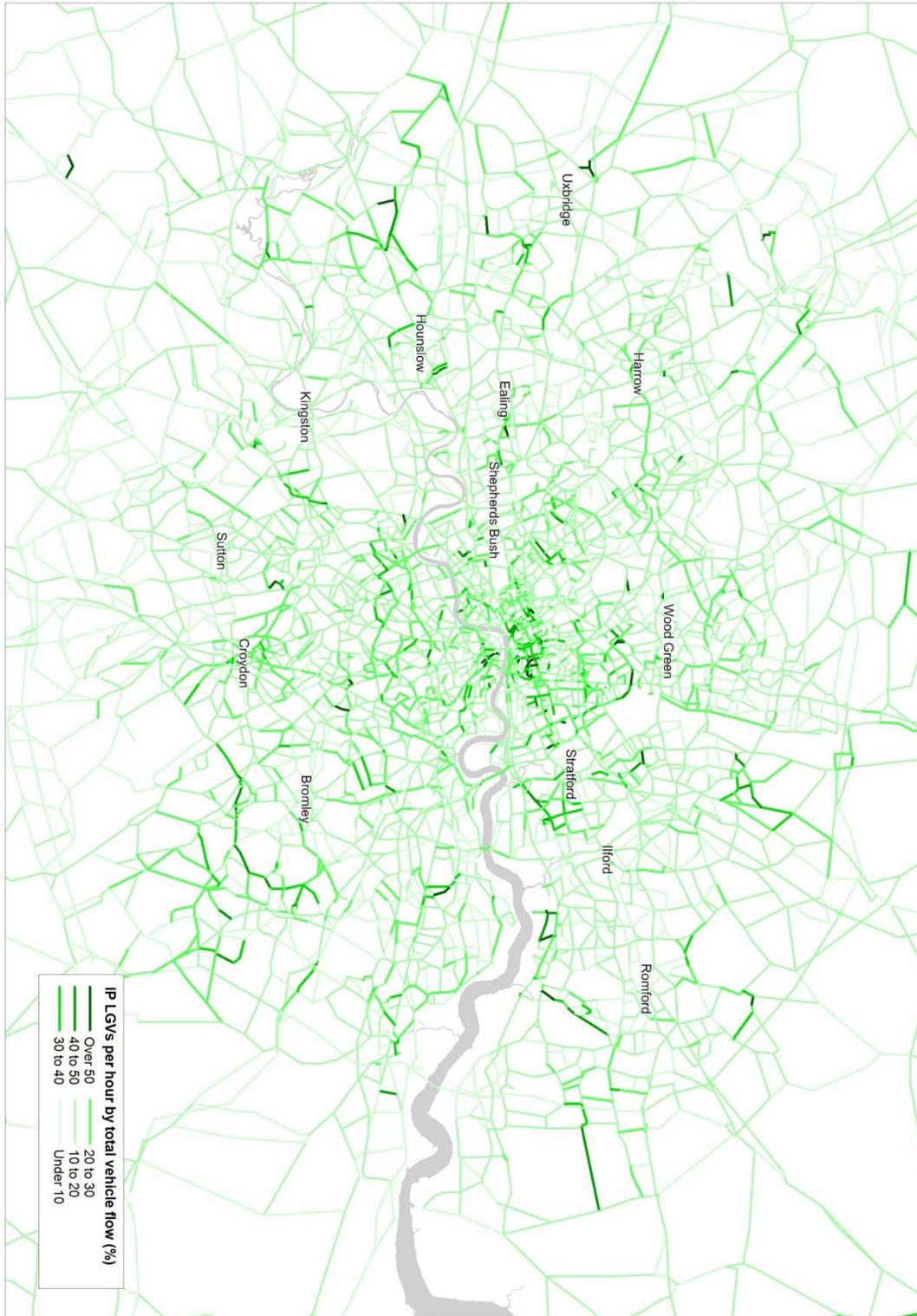


Figure 10 Number of vans per hour per metre of road carriageway width.

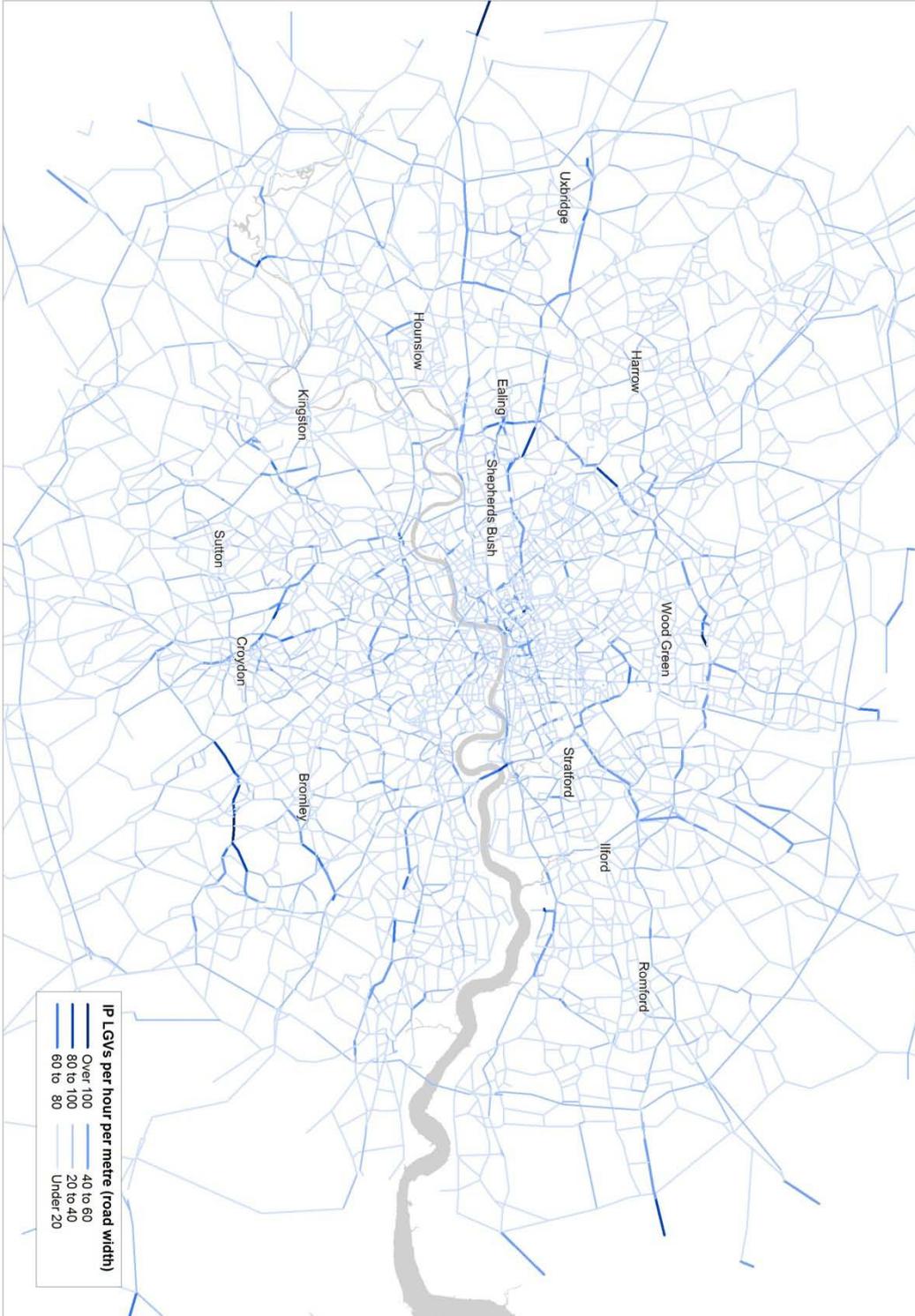
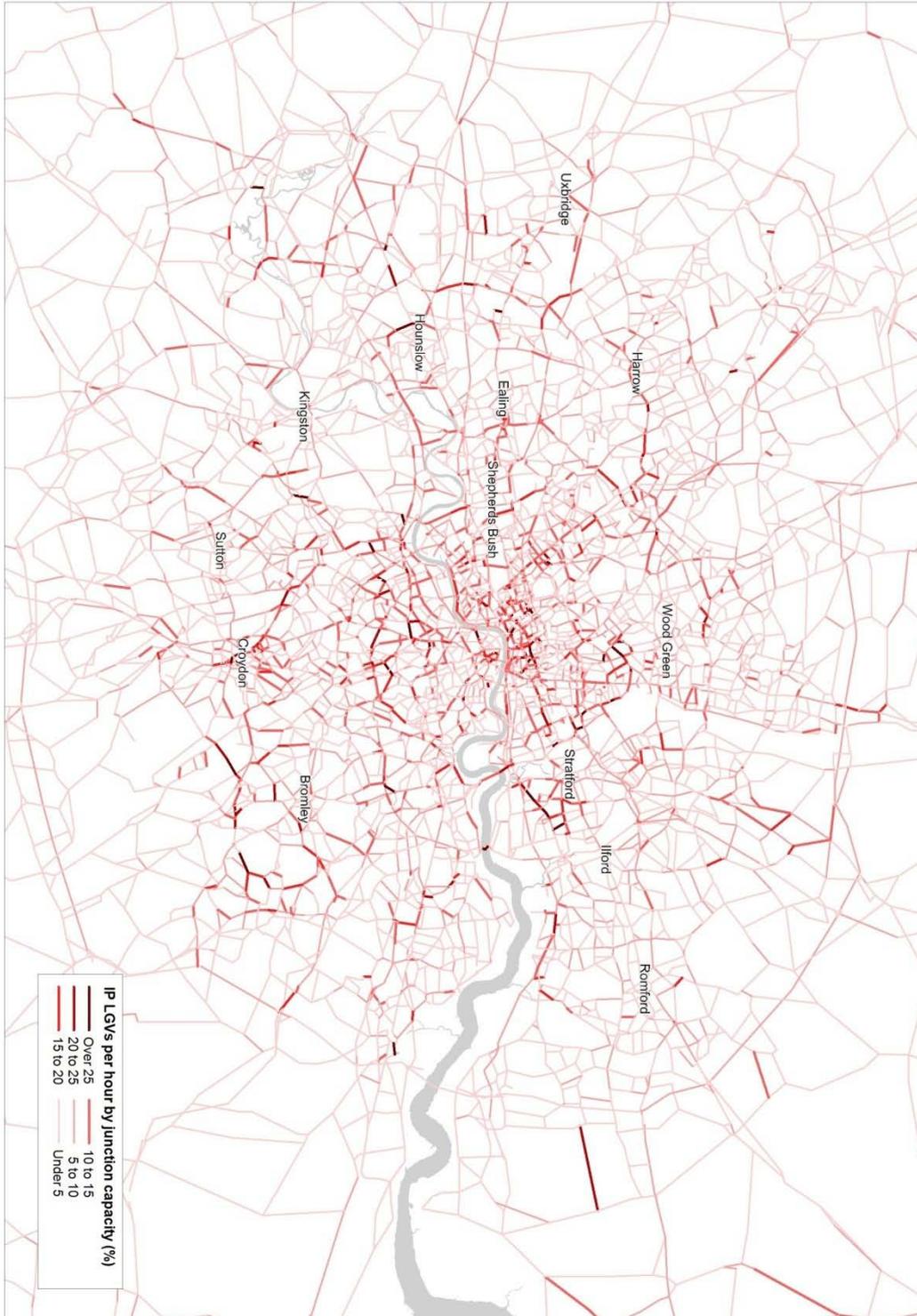


Figure 11 Number of vans per hour per metre of road carriageway width.



Vans: temporal pattern of road usage

Figure 12 shows an indicative temporal profile for the use of the road network by vans (relating to the central London congestion charging zone). Twenty-four per cent of vans entering/leaving the congestion charging zone on any one day do so during the hours of 7 am to 10 am, with 41 per cent between 10 am and 5 pm, with a marked drop in activity later in the day – just 12 per cent of the daily total between the hours of 5 and 7 pm.

Figure 12 Vans entering and leaving the central London congestion charging zone by hour of day. Percentage of hourly flow in given hour. Seven day week average.

