

# WHITE VAN CITIES



**QUESTIONS, CHALLENGES  
AND OPTIONS ON THE GROWTH  
OF URBAN VAN TRAFFIC**



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## Executive Summary

Van traffic is the fastest growing sector of road traffic and the growth is forecast to continue. Van traffic has grown by 71% over the last 20 years, compared to growth of 13% for cars and 2% for HGVs<sup>1</sup>. However, the evidence on what is driving growth in van traffic is limited and under researched. Possible explanations for increased van use include growth in online shopping deliveries and lighter regulation for vans in comparison to HGVs.

This report explores the scale and nature of the growth in van traffic and the impacts on city regions across a range of policy areas, each of which play a key role in determining whether our cities are the kinds of places that people want to live, work, invest and spend time in:

- **Air quality and carbon emissions:** van traffic makes a significant contribution to air pollution and carbon dioxide (CO<sub>2</sub>) emissions, harming the environment and public health. Despite these issues, take-up of low emission vans has been slow. Options such as Clean Air Zones or incentives to make cleaner vehicles more affordable could help remove the most polluting vehicles from city streets.
- **Congestion:** increasing urban van traffic can exacerbate congestion problems, especially where deliveries coincide with peak hours of traffic flow. Reducing, retiming, re-routing or re-modifying journeys can offer options to minimise negative effects.
- **Urban realm:** cities are seeking to improve their urban realm and prioritise space for people over traffic. Challenges around van access, drop-off and pick-up points, noise, air pollution and intrusion could become more acute in this context.
- **Employment:** van driving, and the wider logistics sector, is a significant source of employment. Vans also facilitate a wide range of tradespeople and business activities beyond the logistics sector. Current trends around the 'gig economy' are affecting the sector, raising concerns around employee rights and levels of safety and training.
- **Safety:** there are significant levels of illegal operation but vans have a lower rate of accidents per mile than other road vehicles. Accreditation schemes such as the Fleet Operator Recognition Scheme (FORS) can help ensure safe operation. The use of vans as weapons in terror attacks represents a further safety issue of concern to cities. Training is available to assist in preventing such acts.
- **Data and technology:** transformative technological change could help to maximise efficiency and reduce the negative impacts of the van sector. There may be potential for the introduction of autonomous logistics vehicles.

The report includes case studies of how companies and local and regional authorities have approached management of van traffic in order to mitigate the negative impacts and maximise their contribution to economic activity.

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<sup>1</sup> DfT(2017) Road Traffic Estimates Great Britain 2016  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/611304/annual-road-traffic-estimates-2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/611304/annual-road-traffic-estimates-2016.pdf)



## 1. Introduction

Van traffic is the fastest growing element of road traffic and growth is forecast to continue.

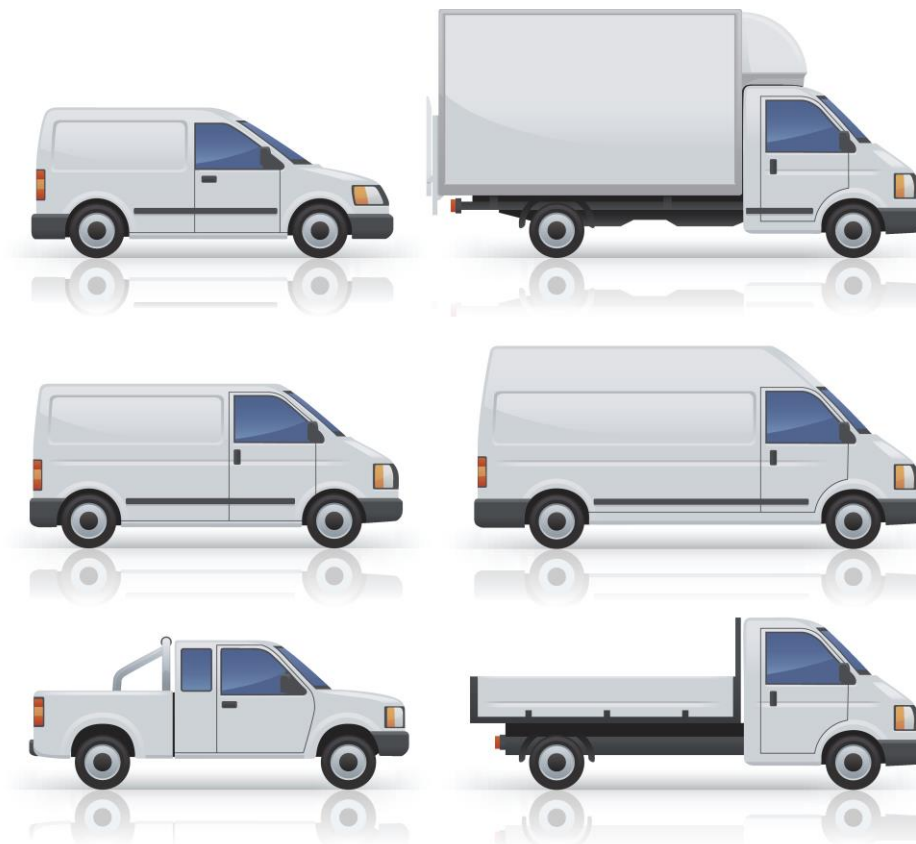
However, the evidence base on what is driving growth in van traffic (including journey purpose and how well loaded vans are) is limited and under researched. Some possible explanations include growth in online shopping deliveries and lighter regulation for vans when compared to HGVs.

Evidence suggests that efficiency (in terms of load factors) can be low. Greater consolidation could therefore play a part in reducing the volume and impact of van traffic.

### How do we define 'a van'?

- 1.1. The Department for Transport (DfT) defines vans (or Light Goods Vehicles, LGVs) as:  
*'goods vehicles below 3.5 tonnes in weight including the payload'<sup>2</sup>.*
- 1.2. This includes a wide range of vehicles, from small commercial vans, not much bigger than a car, to traditional 'transit' type vans and 'Luton Vans' like the largest ones in Figure 1, which have the appearance of a small lorry.

Figure 1 - Different types of vans (Image source: iStock).



<sup>2</sup> DfT(2017) Road Traffic Estimates Great Britain 2016

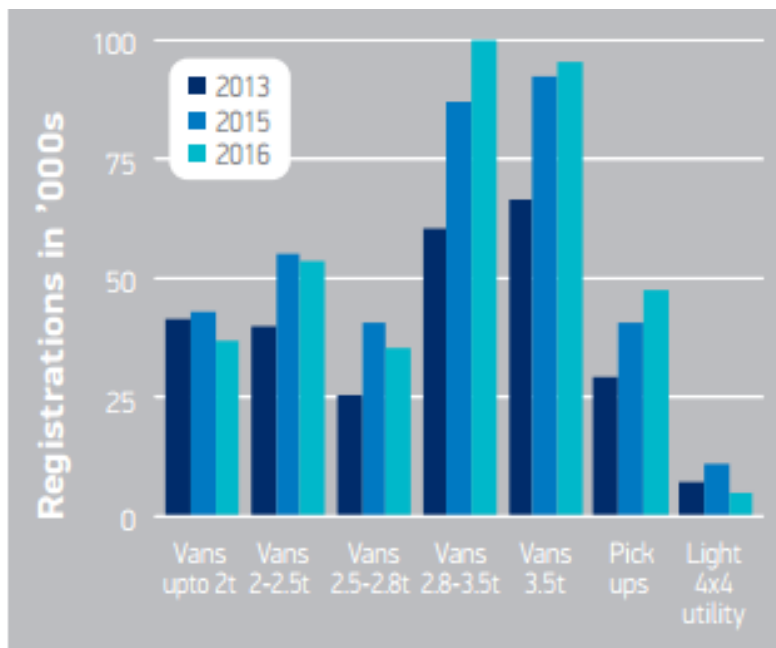
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### How many vans are there?

- 1.3. Some 3.8 million vans are registered in the UK and this has increased 74% since 1996. 47% are registered to a company, with the rest either privately registered (51%) or between owners (2%)<sup>3</sup>, and this has stayed fairly steady over time. Whilst the largest portion of vans are privately owned, it is likely that many of these are used for business purposes.
- 1.4. Figure 2 shows that there has been a growth in the number of larger vans being registered, particularly those between 2.8 and 3.5 tonnes (t), and a decline in the smallest vans since 2013<sup>4</sup>. This could suggest that people are choosing to use larger vans as an alternative to HGVs, perhaps, for example, to facilitate easier access to city streets or as a response to increasing regulation of HGVs.

Figure 2 – New van registrations by segment (Image source: SMMT)<sup>5</sup>



- 1.5. Figure 3 shows the number of licensed vans registered in England's city regions since 2009. Over this period, UK van registrations have grown 18%. There has been growth in the number of vans in most city regions, with the exception of Tyne and Wear and Greater Manchester, where there have been small declines. The largest growth has been in the West Midlands, which has seen a 21% increase in licensed vans between 2009 and 2016.

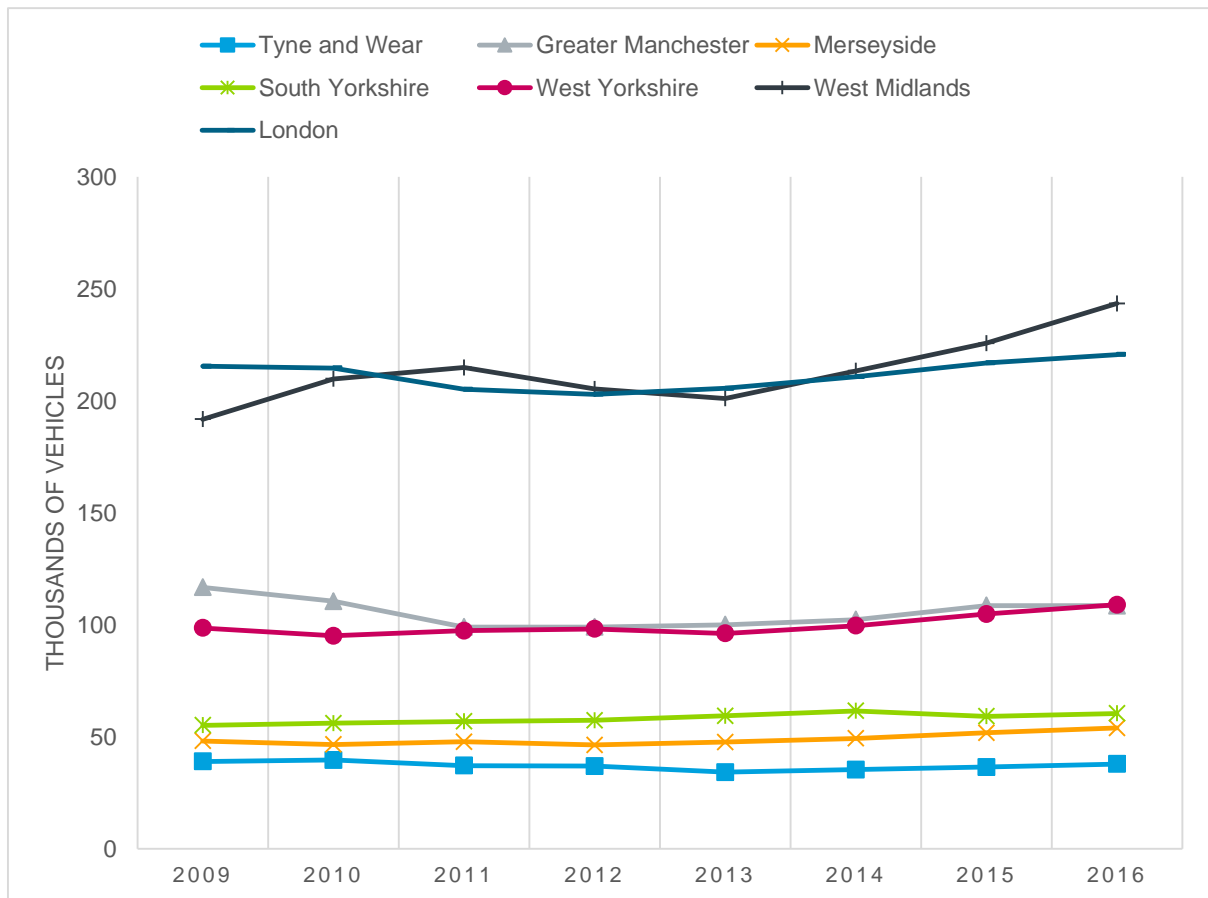
<sup>3</sup> DfT (2017) Vehicle Licensing Statistics [online] <https://www.gov.uk/government/collections/vehicles-statistics> VEH0402

<sup>4</sup> Ibid.

<sup>5</sup> SMMT (2017) New Car CO<sub>2</sub> report [online] <https://www.smmt.co.uk/wp-content/uploads/sites/2/DEF571-SMMT-Co2-report-2017.pdf>



Figure 3 - Number of vans licensed in England's city regions<sup>6</sup>



### What do vans contain and why are they travelling?

- 1.6. There is little up-to-date information about the contents of the vans on our roads. The journey purpose data, set out in Figure 5, suggests that at least 20% of van mileage is for carrying goods for collection and delivery. A survey carried out by DfT in 2008 found that a further 50% of mileage is for carrying tools and equipment (e.g. by plumbers)<sup>7</sup>. In more recent years, the balance may have shifted towards goods for delivery and collection with the rise of e-commerce and on-demand delivery.
- 1.7. Whilst we cannot say for certain what the vans on our roads are carrying, research in London has found that the space inside vans is generally under-utilised, with an average van 38% full<sup>8</sup>. As Figure 4 illustrates, the largest proportion of vans are less than one quarter full. However, understanding the loading of vans is difficult, as tradespeople may be operating vans fully loaded with equipment, and delivery drivers may have few or many parcels.

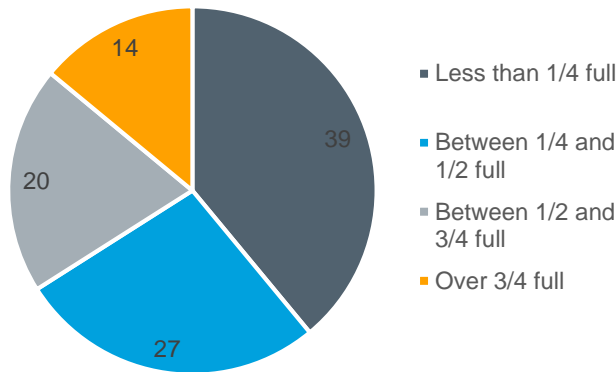
<sup>6</sup> DfT (2017) Vehicle Licensing Statistics [online] <https://www.gov.uk/government/collections/vehicles-statistics> VEH0105

<sup>7</sup> DfT (2008) Van activity baseline survey cited in Cabinet Office (2009) An analysis of urban transport

<sup>8</sup> TfL Roads Task Force (2013) Technical Note 5 – What are the main trends and developments affecting van traffic in London? [online] <http://content.tfl.gov.uk/technical-note-05-what-are-the-main-trends-and-developments-affecting-van-traffic.pdf>

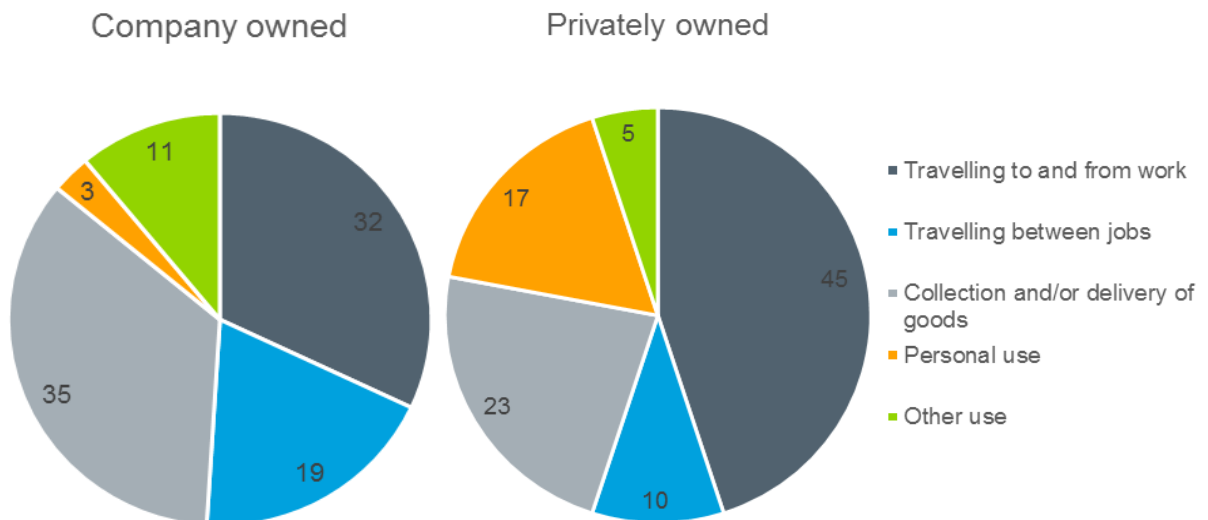


Figure 4 – Van Utilisation in London<sup>9</sup>



1.8. Again, there is a lack of recent data as to the purpose of van trips. As Figure 5 shows, data collected by DfT in 2003/04 found that for company owned vans, most journeys (35%) were to collect and/or deliver goods. For privately owned vehicles, the most common journey purpose was travelling to and from work (45%)<sup>10</sup>.

Figure 5 - Van mileage by purpose of travel (2003/04)<sup>9</sup>



1.9. It is important to note that ‘collection and/or delivery’ of goods will cover a wide range of journey purposes. For example, some of these journeys will be delivery of parcels to homes and businesses, others will be delivery of stock to retailers.

1.10. A major development since the above data was collected in 2003/04 has been the growth of e-commerce and rising consumer expectations for on-demand, next day, same day or even next hour deliveries. The RAC Foundation examined the question of how much online

<sup>9</sup> Ibid.

<sup>10</sup> DfT (2003/04) cited in RAC Foundation (2014) Van travel trends in Great Britain

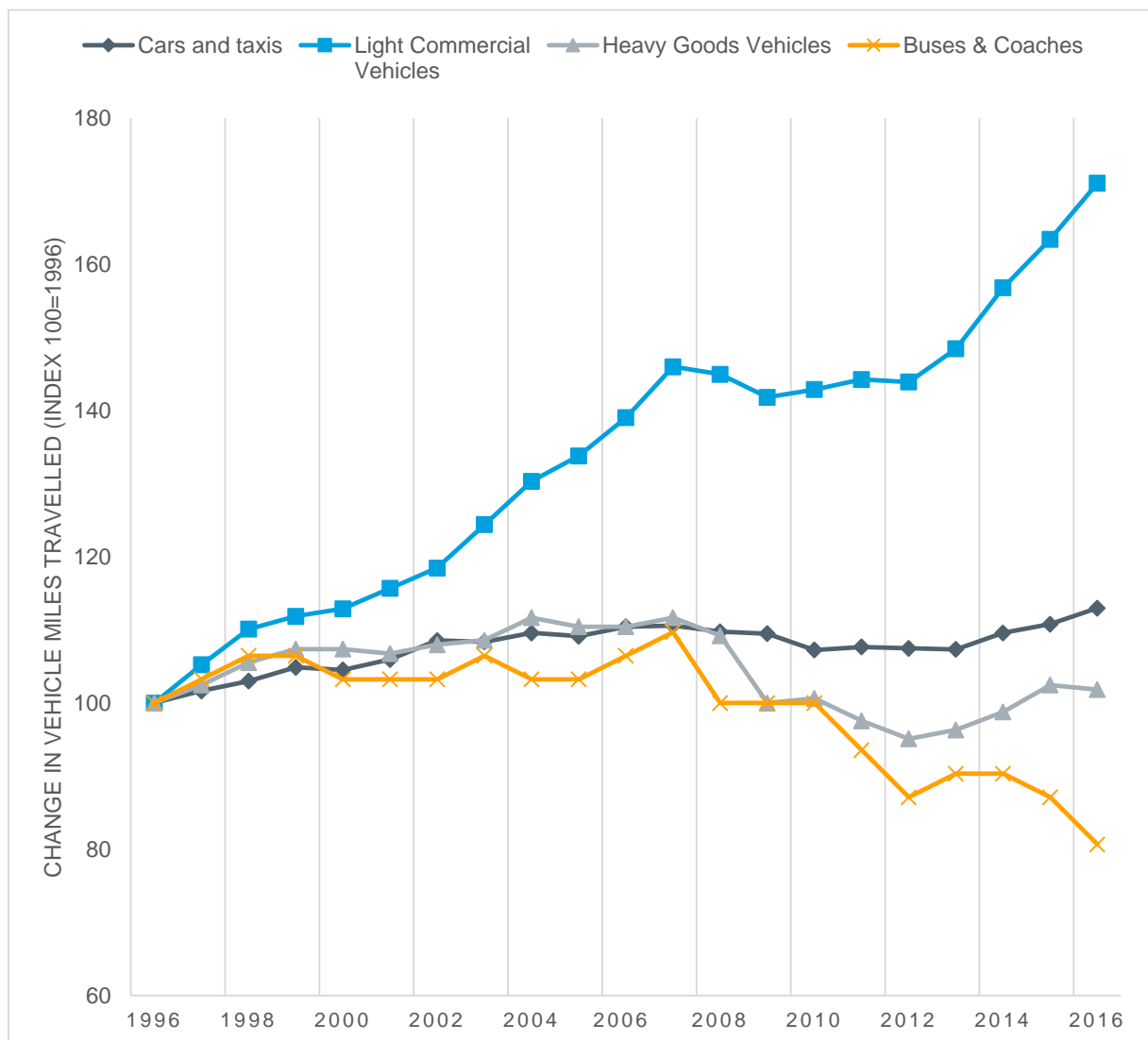


shopping is contributing to van traffic. They found that vans used for package and grocery e-commerce deliveries make up around 4% of the van fleet and around 10% of van traffic<sup>11</sup>.

### Growth in van traffic

1.11. Vans are the fastest growing segment of road traffic in Great Britain, as Figure 6 illustrates. Van traffic has grown by 71% over the last 20 years, compared to growth of 13% for cars and 2.1% for HGVs<sup>12</sup>. Between 2015 and 2016 alone, van traffic grew 4.7% to reach a record high of 49.1 billion vehicle miles; the fastest growth in percentage terms of any motor vehicle type.

Figure 6 – Change in road traffic miles in Great Britain since 1996 for different modes<sup>13</sup>



<sup>11</sup> Braithwaite (2017) The implications of internet shopping growth on the van fleet and traffic activity, report for the RAC Foundation, [online] [http://www.racfoundation.org/assets/rac\\_foundation/content/downloadables/The\\_Implications\\_of\\_Internet\\_Shopping\\_Growth\\_on\\_the\\_Van\\_Fleet\\_and\\_Traffic\\_Activity\\_Braithwaite\\_May\\_17.pdf](http://www.racfoundation.org/assets/rac_foundation/content/downloadables/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf)

<sup>12</sup> DfT(2017) Road Traffic Estimates Great Britain 2016 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/611304/annual-road-traffic-estimates-2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/611304/annual-road-traffic-estimates-2016.pdf)

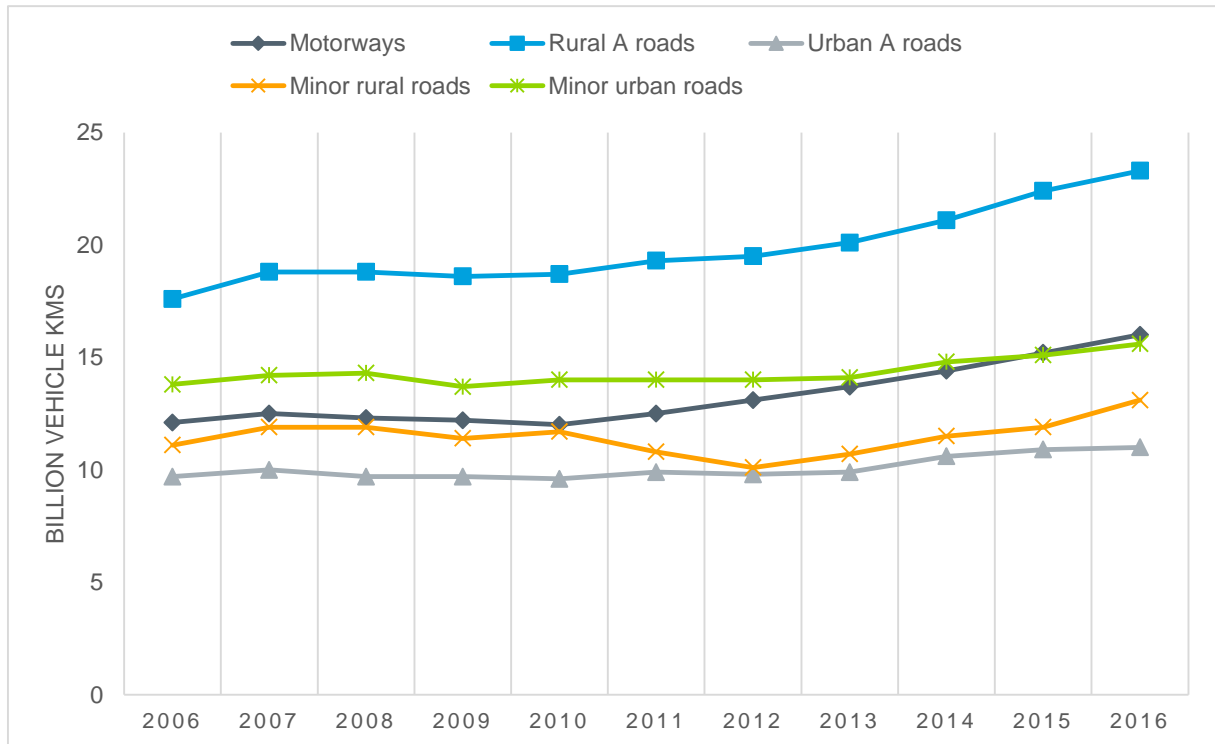
<sup>13</sup> Ibid TRA0101





- 1.12. Vans now represent 15% of all motor vehicle traffic, compared to 10% 20 years ago<sup>14</sup>.
- 1.13. As Figure 7 shows, van mileage has increased to some degree across all road types over the last three years, particularly on rural A roads where the largest number of miles are completed. Interestingly, van mileage is significantly higher on these rural A roads than on motorways. Urban A roads account for the smallest portion of mileage, equating to 14% of all van miles travelled in 2016.

Figure 7 - Van traffic on different road classes in Great Britain<sup>15</sup>



- 1.14. Data on van growth for individual cities is not readily available, however, DfT data shows the number of miles travelled by vans in London between 2012 and 2014 increased by 13 per cent. During the same period, miles travelled by HGVs remained the same<sup>16</sup>. In London, vans now make up one fifth of vehicles during peak hours<sup>17</sup>.
- 1.15. The growth in van traffic is set to continue for the foreseeable future. DfT's Road Traffic Forecasts project van mileage growth of 79% between 2010 and 2040, compared to 9% for cars and 22% for HGVs<sup>18</sup>.

<sup>14</sup> Ibid TRA0101

<sup>15</sup> Ibid TRA0204

<sup>16</sup> London Assembly (2015) Investigation into light commercial traffic <https://www.london.gov.uk/moderngov/documents/s52363/Appendix%201%20-%20Light%20Commercial%20Traffic%20views%20and%20information.pdf>

<sup>17</sup> Ibid.

<sup>18</sup> Braithwaite (2017) The implications of internet shopping growth on the van fleet and traffic activity, report for the RAC Foundation, [online] [http://www.racfoundation.org/assets/rac\\_foundation/content/downloadables/The\\_Implications\\_of\\_Internet\\_Shopping\\_Growth\\_on\\_the\\_Van\\_Fleet\\_and\\_Traffic\\_Activity\\_Braithwaite\\_May\\_17.pdf](http://www.racfoundation.org/assets/rac_foundation/content/downloadables/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf) and DfT (2015) Road Traffic Forecasts 2015 [online] <https://www.gov.uk/government/publications/road-traffic-forecasts-2015>



1.16. This projected growth has significant implications for our cities. Urban areas are frequently the destination for vans and are the places where these vehicles complete the 'last mile' of their journey. Indeed, vans make up a greater share of traffic in cities than the national average, for example, at present vans make up 15% of traffic in London, and this could rise to 23% by 2040<sup>19</sup>.

#### **What is causing the growth in numbers of vans and van traffic?**

1.17. Data on the reasons for the growth in van traffic is limited, but there are some suggestions for the causes.

1.18. An inquiry by the London Assembly Transport Committee into light commercial traffic put forward a number of possible explanations for van growth in the capital<sup>20</sup>:

- Economic growth;
- The rapid growth in e-commerce;
- Lighter regulations around vans compared to HGVs (particularly in London);
- The flexibility vans offer compared to HGVs;
- Rises in the number of self-employed people; and
- Reduction in stock space on business premises.

1.19. DfT suggests similar reasons for growth in van traffic including<sup>21</sup>:

- Growth in internet shopping and home deliveries;
- Changes to company car taxation and vehicle excise duty which have made vans a cheaper alternative and incentivised people to switch from cars to vans; and
- Less strict regulations on driver training, hours and roadworthiness for vans than for lorries, thus encouraging their use for businesses.

1.20. The RAC Foundation estimates that around 10% of van traffic is associated with e-commerce<sup>22</sup>. Therefore other factors, such as those highlighted above, are also playing a key role in the growth. The RAC Foundation suggests further research is need to understand these factors<sup>23</sup>.

1.21. Subsequent sections of this report explore the implications of growing van traffic in relation to a range of policy areas: air quality and carbon emissions; congestion; urban realm; employment; safety; and data and technology. Best practice case studies demonstrate ways that transport authorities and van fleet operators have tackled some of the challenges that arise.

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<sup>19</sup> Ibid.

<sup>20</sup> London Assembly (2015) Investigation into light commercial traffic  
<https://www.london.gov.uk/moderngov/documents/s52363/Appendix%201%20-%20Light%20Commercial%20Traffic%20views%20and%20information.pdf>

<sup>21</sup> DfT (2017) Road Traffic Estimates Great Britain 2016  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/611304/annual-road-traffic-estimates-2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/611304/annual-road-traffic-estimates-2016.pdf)

<sup>22</sup> Braithwaite (2017) The implications of internet shopping growth on the van fleet and traffic activity, report for the RAC Foundation, [online]  
[http://www.racfoundation.org/assets/rac\\_foundation/content/downloadables/The\\_Implications\\_of\\_Internet\\_Shopping\\_Growth\\_on\\_the\\_Van\\_Fleet\\_and\\_Traffic\\_Activity\\_Braithwaite\\_May\\_17.pdf](http://www.racfoundation.org/assets/rac_foundation/content/downloadables/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf)

<sup>23</sup> Ibid.



## 2. Air quality and carbon emissions

Van traffic makes a significant contribution to air pollution and carbon dioxide (CO<sub>2</sub>) emissions, harming the environment and public health.

Despite these issues, take-up of low emission vans has been slow. This may reflect the cost and availability of alternatively fuelled vehicles. Options such as Clean Air Zones or incentives to make cleaner vehicles more affordable could help remove the most polluting vehicles from city streets.

- 2.1. Van traffic makes a significant contribution to air pollution and carbon dioxide (CO<sub>2</sub>) emissions, harming the environment and public health.
- 2.2. Vans make up 15% of road traffic<sup>24</sup> but contribute:
  - 30% of nitrogen oxide (NO<sub>x</sub>) emissions from road transport (the second biggest road transport contributor after cars)<sup>25</sup>
  - 16% of carbon dioxide (CO<sub>2</sub>) emissions from road transport<sup>26</sup>
  - 14% of airborne particulates from road transport measuring less than 2.5 micrometres in diameter (PM<sub>2.5</sub>)<sup>27</sup>
  - 10% of airborne particulates from road transport measuring less than 10 micrometres in diameter (PM<sub>10</sub>)<sup>28</sup>
  - 8% of carbon monoxide (CO) emissions from road transport (the second biggest road transport contributor after cars)<sup>29</sup>
- 2.3. Almost all vans are diesel fuelled, accounting for 96% of registered vans in 2016<sup>30</sup>. Whilst lower in CO<sub>2</sub> emissions and more fuel efficient than petrol equivalents, diesel vehicles produce higher levels of NO<sub>x</sub> and particulate matter which contribute to air pollution and are harmful to public health. These emissions are particularly problematic when vehicles pass through densely populated urban areas, as the risk of people being exposed to harmful pollutants is higher.

### Air quality

- 2.4. The pressing need to cut emissions from road traffic in urban areas is recognised at European, national and industry level. At European level, the UK is the subject of legal proceedings for failing to reduce what the European Commission describes as 'excessive' levels of NO<sub>2</sub>. The majority of air quality infractions are in urban areas. The continuing growth in diesel powered vans poses a challenge for urban areas trying to improve air quality.

<sup>24</sup> DfT Transport Statistics table TRA0101 (2015)

<sup>25</sup> DfT Transport Statistics table ENV0301 (2015)

<sup>26</sup> DfT Transport Statistics table ENV0202 (2015)

<sup>27</sup> DfT Transport Statistics table ENV0301 (2015)

<sup>28</sup> DfT Transport Statistics table ENV0301 (2015)

<sup>29</sup> DfT Transport Statistics table ENV0301 (2015)

<sup>30</sup> DfT (2017) Vehicle Licensing Statistics, table VEH0105



- 2.5. The UK Government's Air Quality Strategy sets out the measures that will be used to reduce nitrogen dioxide<sup>31</sup> (NO<sub>2</sub>) emissions from UK towns and cities in order to mitigate the harmful impacts on human health<sup>32</sup>. Some 29 local authorities are required to take action to achieve NO<sub>2</sub> limit values in the shortest possible time under the Strategy<sup>33</sup>.
- 2.6. Clean Air Zones (CAZs) are one option available for improving air quality. Five cities (Birmingham, Derby, Leeds, Nottingham and Southampton) are required to introduce a CAZ. These aim to address all sources of pollution, including NO<sub>2</sub> and particulate matter, and reduce public exposure through a range of measures. A CAZ can be charging or non-charging (although the strategy suggests that where other measures are available, a charging CAZ should be avoided). In a charging CAZ, drivers will be charged to enter the zone if they fail to meet required environmental standards. For vans covered in a CAZ, this would mean meeting Euro 6 standard for diesel and Euro 4 standard for petrol<sup>34</sup>. In a non-charging CAZ, other measures would be used to improve air quality, such as retrofitting vehicles and reducing vehicle idling.
- 2.7. The UK Government has said that it will end the sale of new conventional diesel and petrol cars and vans by 2040<sup>35</sup>. Alternative fuelled, low emission vans are available but take up has been slow, with 1,000 new registrations in 2016 (0.3% of the van market)<sup>36</sup>. Almost all of these were electric vans. Factors such as cost and confidence in the technology may play a part in this low take-up. A number of measures have been taken, or are planned, to increase take-up of low emission vans including improved information provision, incentives and penalties. For example:
- The Low Carbon Vehicle Partnership (LowCVP) produce a 'Low Emission Van Guide'<sup>37</sup> to help van operators understand how low emission vans could help them to cut costs and emissions. This showcases some of the alternative fuelled vehicles available and demonstrates the time it takes to recoup the additional initial cost<sup>38</sup>.
  - The UK Government is taking steps to make it easier for van drivers to switch to electric vehicles<sup>39</sup>. Electric vans tend to be heavier than conventional diesels due to the battery they carry. The changes will allow motorists to drive low emission vans which weigh up to 4.2t without having to apply for a new licence<sup>40</sup>. Currently, 3.5t is the heaviest van that can

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<sup>31</sup> NO<sub>2</sub> is the component of NO<sub>x</sub> that threatens human health.

<sup>32</sup> Joint Air Quality Unit (Defra and DfT) (2017) UK plan for tackling roadside nitrogen dioxide concentrations – Detailed plan, [online]

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/633270/air-quality-plan-detail.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/633270/air-quality-plan-detail.pdf)

<sup>33</sup> Ibid.

<sup>34</sup> Ibid.

<sup>35</sup> Joint Air Quality Unit (Defra and DfT) (2017) UK plan for tackling roadside nitrogen dioxide concentrations – Detailed plan, [online]

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/633270/air-quality-plan-detail.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/633270/air-quality-plan-detail.pdf)

<sup>36</sup> DfT Transport Statistics table VEH0453 (2016)

<sup>37</sup> LowCVP (2016) The Low Emission Van Guide, [online] <http://www.lowcvp.org.uk/Hubs/lev.htm>

<sup>38</sup> LowCVP (2016) The Low Emission Van Guide, [online] <http://www.lowcvp.org.uk/Hubs/lev.htm>

<sup>39</sup> DfT (2018) Regulatory changes to support the take-up of alternatively-fuelled light commercial vehicles – Government response [online]

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/695984/cat-b-driving-licence-derog-gov-response.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/695984/cat-b-driving-licence-derog-gov-response.pdf)

<sup>40</sup> DfT (2017) Vans to go greener and cleaner under new plans, [online]

<https://www.gov.uk/government/news/vans-to-go-greener-and-cleaner-under-new-plans>



be driven on a standard driving licence. The Government is also to consult on changes to Vehicle Excise Duty (VED) to incentivise low emission vans<sup>41</sup>.

- The Plug-in Van Grant offers 20% off the purchase price of an electric or hybrid van, up to a maximum of £8,000<sup>42</sup>.
- Cities across the UK will be introducing Clean Air Zones by 2020. London already has a Low Emission Zone where vehicles are charged if they do not meet emission standards. An Ultra Low Emission Zone will follow in the capital from April 2019 (see case study box below).

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<sup>41</sup> HM Treasury (2018) Spring Statement 2018: Philip Hammond's Speech [online]

<https://www.gov.uk/government/speeches/spring-statement-2018-philip-hammonds-speech>

<sup>42</sup> Office for Low Emission Vehicles (2016) Plug-in van grant [online]

<https://www.gov.uk/government/publications/plug-in-van-grant-extension-to-larger-vans/plug-in-van-grant-extension-to-larger-vans>



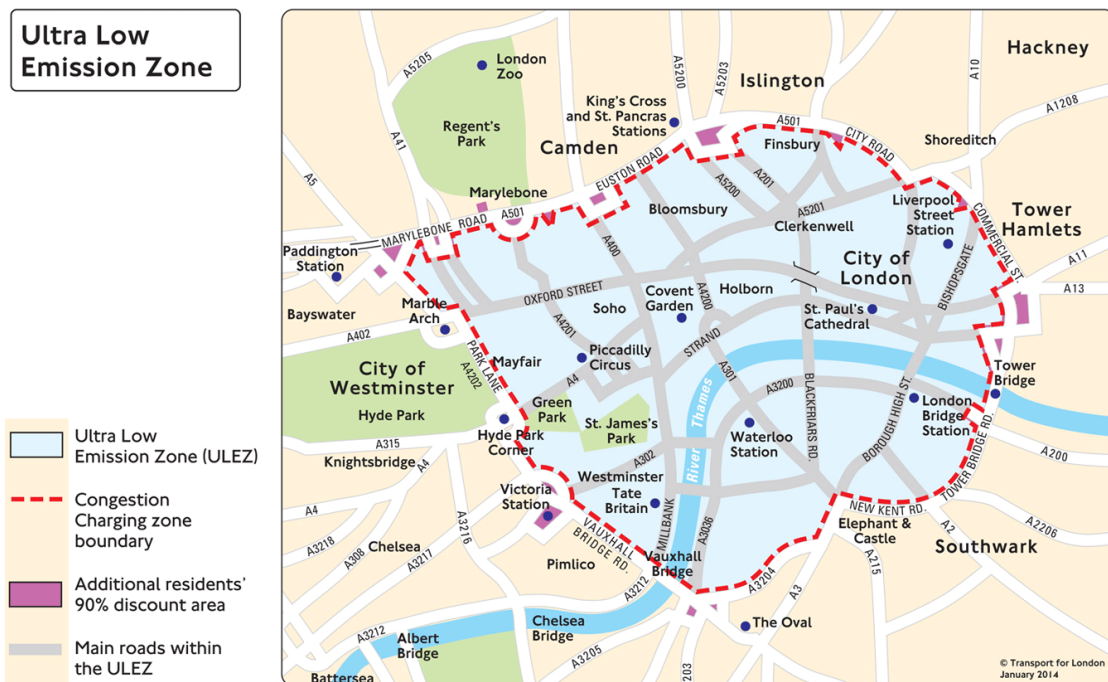
### Case Study – London’s T-charge, LEZ and ULEZ

A Congestion Charge has been in place in London since 2003 and includes vans operating within the zone. At present the charge is £11.50 a day<sup>43</sup>.

This has recently been supplemented by an emissions surcharge known as the T-Charge, which is levied on the most polluting vehicles. Vans earlier than Euro 4 (first registered before 2006) must pay an additional £10<sup>44</sup>.

A wider Low Emission Zone (LEZ) covers the whole of Greater London, and applies to larger vans, those between 1.2 and 3.5t, registered as new before 1 Jan 2002. The charge to enter the LEZ if a van is non-compliant is £100 a day<sup>45</sup>.

A new Ultra Low Emission Zone (ULEZ) is being introduced from 2019 and will cover the congestion charge zone (see map below). Petrol vans must be Euro 4 or newer, and diesel must be Euro 6 or newer, otherwise there will be a £12.50 charge to enter the zone, in addition to congestion and T charges<sup>46</sup>.



<sup>43</sup> TfL (2017) Congestion Charge [online] <https://tfl.gov.uk/modes/driving/congestion-charge>

<sup>44</sup> TfL (2017) T-Charge [online] <https://tfl.gov.uk/modes/driving/emissions-surcharge/t-charge-costs-discounts-and-payments?intcmp=49135>

<sup>45</sup> TfL (2017) Low Emission Zone [online] <https://tfl.gov.uk/modes/driving/low-emission-zone/check-if-your-vehicle-is-affected>

<sup>46</sup> TfL (2017) Ultra Low Emission Zone [online] <https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/complying-with-ulez>



### Case study: LoCity<sup>47</sup>

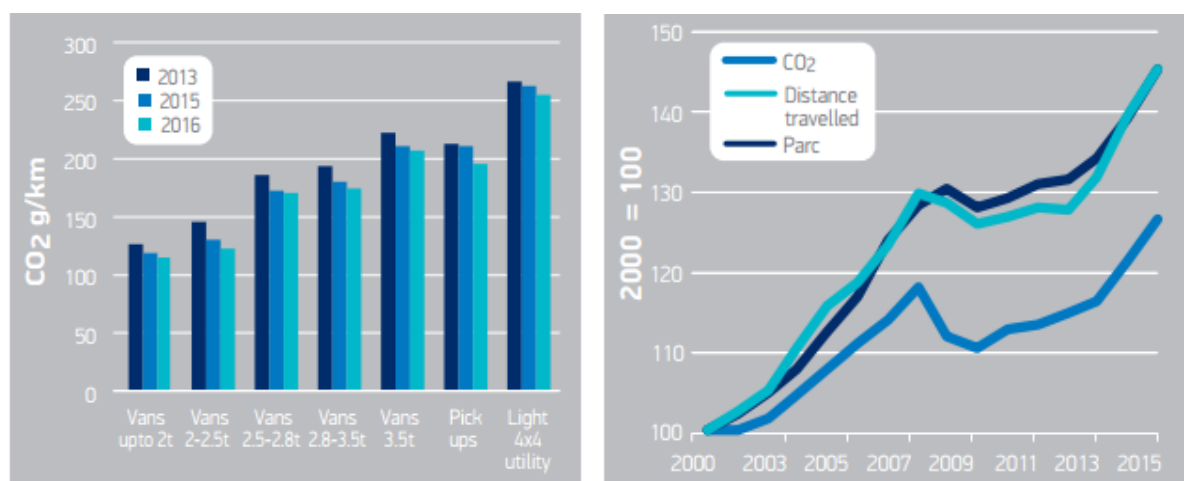
LoCity is a programme which aims to improve the emissions performance of commercial vehicles in London through the following objectives:

- Engage with freight and fleet operators, vehicle manufacturers and infrastructure providers to increase the availability and take up of low emission commercial vehicles operating in London;
- Prepare the freight industry for the introduction of ULEZ;
- Support public and private fleets with upgrading to cleaner vehicles and alternative fuels;
- Improve London's air quality and deliver health benefits to Londoners;
- Help meet London's targets on reducing carbon dioxide emissions; and
- Support the Ultra Low Emission Vehicle (ULEV) Delivery Plan for London.

### Carbon emissions

- 2.8. Transport accounts for around a quarter of CO<sub>2</sub> emissions in the UK and vans contribute a growing share as their use increases. In 2015, vans accounted for 16% of road transport CO<sub>2</sub> emissions.
- 2.9. Figure 8 (left) shows the CO<sub>2</sub> performance of different segments of the van market, and demonstrates that the efficiency of vans has improved since 2013<sup>48</sup>.
- 2.10. However, van efficiency improvements are being outstripped by the growth in van use and mileage, and the trend to larger vehicles. Thus CO<sub>2</sub> emissions from van traffic as a whole are increasing as shown in Figure 8 (right).

Figure 8 - CO<sub>2</sub> performance of vans by segment (left) and total CO<sub>2</sub> emissions from all vans in use (right)<sup>49</sup> (Image source: SMMT)



<sup>47</sup> LoCity (2018) Programme Objectives [online] <https://locity.org.uk/programme-overview/>

<sup>48</sup> Ibid.

<sup>49</sup> SMMT (2017) New Car CO<sub>2</sub> report [online] <https://www.smmt.co.uk/wp-content/uploads/sites/2/DEF571-SMMT-Co2-report-2017.pdf>



- 2.11. Moving away from diesel and petrol vans can dramatically cut carbon emissions, as well as bring considerable knock-on benefits, as the case studies below demonstrate.

### Case Study – UPS in Hamburg

In Hamburg, Germany, UPS is adopting a novel approach to deliveries in the city centre. It places four containers at central locations in the city for interim storage of packages. ‘Last mile’ deliveries are then conducted by foot or electronically-assisted tricycles called “Cargo Cruisers”. This alternative delivery solution represents a more efficient and environmentally sensitive approach to deliveries in the urban core, and moves away from ever increasing numbers of vans required to undertake deliveries.

Figure 9 - UPS Hamburg Cargo Cruisers (image used with permission from UPS)



### Case study – Gnewt Cargo and TNT Express

Operating in London, logistics company Gnewt Cargo delivers three million parcels per year using their all zero-emission fleet of cargo bikes and electric minivans. Analysis found that as a result, CO<sub>2</sub> emissions were cut by 67% per parcel on like-for-like deliveries<sup>50</sup>. Use of bikes also helped cut congestion, whilst both bikes and electric minivans are quiet, reducing noise pollution.

- 2.14. In online grocery ordering, shoppers can choose a green delivery slot when a van will already be in the neighbourhood (see Figure 9). This ‘nudge’ type approach results in more efficient deliveries and can reduce delivery van mileage. Pricing can also be used to avoid vehicles travelling during peak hours and encourage customers to select a delivery slot at less congested times.

<sup>50</sup>Gwent Cargo (2018) <https://www.gnewtcargo.co.uk/>





Figure 9- Green delivery slots (indicated by the green van) are available when ordering online groceries from Sainsburys.com<sup>51</sup>

### Sainsbury's

Groceries ▾ Favourites Great Prices Discover Recipes Delivery Pass Christmas

Show:  [Week1](#) [Week2](#) [Week3](#)

Time	Wed 27 Dec	Thu 28 Dec	Fri 29 Dec	Sat 30 Dec	Sun 31 Dec	Mon 1 Jan	Tue 2 Jan
Morning delivery							
7:00am - 8:00am	—	—	£7	£7	—	—	£5
7:30am - 8:30am	—	—	£7	£7	—	—	£5
8:00am - 9:00am	—	£5	£7	£7	£7	—	£5
8:30am - 9:30am	—	£5	£7	£7	£7	—	£5
9:00am - 10:00am	—	£5	£7	£7	£7	—	£5
9:30am - 10:30am	—	£5	£7	£7	£7	—	£5
10:00am - 11:00am	£3	£4	£8	£8.50	£8.50	—	£4
11:00am - 12:00pm	£2	£4	£8.50	£8.50	£8	—	£3.50
Afternoon delivery							
12:00pm - 1:00pm	£2	£4	£5.50	£5.50	£5	—	£3
1:00pm - 2:00pm	£1.50	£4	£5.50	£5	£5	—	£3
2:00pm - 3:00pm	£1	£3.50	£5	£4.50	£4	—	£2
3:00pm - 4:00pm	£1	£4	£5	£4	£4	—	£1.50
4:00pm - 5:00pm	£1	£4	£5	£4	£4	—	£1.50
4:30pm - 5:30pm	£1	£4	£5	£4	£4	—	£1.50
Evening delivery							
5:00pm - 6:00pm	£1	£4	£4.50	£3.50	£3.50	—	£1
5:30pm - 6:30pm	£1	£4	£4.50	£3.50	£3.50	—	£1
6:00pm - 7:00pm	£1	£3	£5	£3	£3	—	£1
6:30pm - 7:30pm	£1	£3	£5	£3	—	—	£1
7:00pm - 8:00pm	£1	£3	£4	£3	—	—	£1
7:30pm - 8:30pm	£1	£3	£4	£3	—	—	£1
8:00pm - 9:00pm	£1	£2	£3.50	£2	—	—	£1
9:00pm - 10:00pm	£1	—	£2.50	£1.50	—	—	£1

<sup>51</sup> [www.sainsburys.com](http://www.sainsburys.com), date accessed 20/12/2017



### 3. Congestion

Increasing urban van traffic can exacerbate congestion problems, especially where deliveries coincide with peak hours of traffic flow.

Reducing, retiming, re-routing or re-modelling van journeys can offer options to minimise negative effects.

- 3.1. In 2013, congestion cost the UK economy £20.5 billion. 60% of this cost fell on households, through increased fuel use and lost time, and the remainder fell on businesses<sup>52</sup>. In urban areas alone, congestion has been estimated to cost over £11bn each year, with the highest costs experienced during peak times of the day<sup>53</sup>.
- 3.2. Cabinet Office research found that 50% of urban traffic increases experienced in the ten years leading up to 2008 were due to van traffic<sup>54</sup>. Fast forward another ten years and the rapid growth in van mileage is contributing to traffic volumes on already congested urban roads. Traffic delays have been found to be eight times greater on local authority 'A' roads in urban areas than on the Strategic Road Network<sup>55</sup>.
- 3.3. A study using TomTom data found that congestion increases the average time a van spends on the road by 129 hours a year, costing businesses £915 million a year<sup>56</sup>. The worst impacts are in London, Manchester and Birmingham<sup>57</sup>.
- 3.4. In looking at ways to reduce congestion, it is helpful to consider the four Rs:
  - Can we **reduce** the number of journeys that are needed? More click and collect locations near where people live and at public transport hubs offer the opportunity to reduce van journeys – rather than making multiple stops across a city, a van can drop off multiple deliveries at one collection point, such as a Doodle facility or Amazon locker. Locating these near public transport hubs or in the heart of residential areas makes it less likely that the customer will use their car to pick-up the delivery. Pooling and consolidating deliveries can also help reduce the number of journeys made (see case study box below).
  - Can we **retime** journeys so that they are made outside of the busiest times?
  - Can we **re-route** journeys to relieve the pressure on congested areas? Improved use of advanced technology, using real time traffic data, can help drivers find more efficient

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<sup>52</sup> Centre for Economics and Business Research (2014) The future economic and environmental costs of gridlock in 2030 – An assessment of the direct and indirect economic and environmental costs of idling in road traffic congestion to households in the UK, France, Germany and the USA, [online] [https://www.cebr.com/wp-content/uploads/2015/08/INRIX\\_costs-of-congestion\\_Cebr-report\\_v5\\_FINAL.pdf](https://www.cebr.com/wp-content/uploads/2015/08/INRIX_costs-of-congestion_Cebr-report_v5_FINAL.pdf)

<sup>53</sup> Cabinet Office (2009) An analysis of urban transport.

<sup>54</sup> Cabinet Office (2009) An analysis of urban transport.

<sup>55</sup> Department for Transport (2017) Road congestion and travel times – dataset [online] <https://www.gov.uk/government/collections/road-congestion-and-reliability-statistics>

<sup>56</sup> TomTom (2017) Cost of traffic to UK business approaches £1bn [online] [https://telematics.tomtom.com/en\\_gb/webfleet/company/updates/press/2017/12/12/](https://telematics.tomtom.com/en_gb/webfleet/company/updates/press/2017/12/12/)

<sup>57</sup> Ibid.



routes in order to minimise negative impacts<sup>58</sup>. This report explores the potential role for data and new technology in Section 7.

- Can we **re-mode**? Could a different transport mode be used to make the journey (e.g. deliveries on foot/by bike/by rail/by water)? The extent to which an alternative mode can be selected will depend on what the van is being used for. For example, packages could be delivered on a cargo cycle but a tradesperson would usually be unable to transport the tools they need to do their job in anything other than a van.

### Case Study: Freight Consolidation

Understanding the loading levels of vans is challenging but research suggests that the average load factor for vans is 38%<sup>59</sup>. Consolidation offers one approach to improving the efficiency of urban freight operations:

- The London Boroughs Consolidation Centre brings together deliveries for Enfield, Waltham Forest and Camden Councils, in order to reduce the volume and frequency of deliveries. It is used for 41 council suppliers and has reduced vehicle trips by 46%<sup>60</sup>.
- The Southampton Sustainable Distribution Centre which consolidates urban freight deliveries is run by Meachers on behalf of Southampton City Council. The initiative began with council subsidy but no longer requires support. Their clients include New Forest District Council, Southampton City Council, the NHS and the University of Southampton amongst others<sup>61</sup>.
- Regent Street in London has cut delivery traffic by almost 80% since firms started combining deliveries in 2008<sup>62</sup> (for more see Case Study in the Urban Realm section, below).

There is also a role for consolidation within procurement practices of organisations. Individuals and teams do not need to have separate orders for supplies, rather these can be integrated, and deliveries can be made more effective and efficient.

These consolidation initiatives could help to make more efficient use of the vans on our roads, reducing vehicle mileage and improving emissions and air quality.

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<sup>58</sup> Ibid.

<sup>59</sup> TfL Roads Task Force (2013) Technical Note 5 – What are the main trends and developments affecting van traffic in London? [online] <http://content.tfl.gov.uk/technical-note-05-what-are-the-main-trends-and-developments-affecting-van-traffic.pdf>

<sup>60</sup> Urban Transport Group (2015) Delivering the future – new approaches to urban freight [online] <http://www.urbantransportgroup.org/system/files/general-docs/Delivering%20the%20future%20FINAL%20020315.pdf>

<sup>61</sup> Druce C (2017) Meachers' winning formula makes Southampton consolidation pay, *Freight in the City* [online] <http://freightinthecity.com/2017/02/meachers-winning-formula-makes-southampton-consolidation-pay/>

<sup>62</sup> The Economist (2017) 'Pooled delivery services are cutting traffic in British cities', 06/09/17 [online] <https://www.economist.com/news/britain/21728596-co-ordinating-dispatches-has-reduced-lorry-traffic-much-80-some-areas-pooled>



### Case Study – Can we use water more?

Water freight can offer a valuable alternative option for freight movements in specific circumstances.

Some international cities make greater use of water for freight traffic and deliveries. In Utrecht, The Netherlands, the 'Beer Boat' makes deliveries to waterside bars and restaurants<sup>6364</sup>.

The Freight Transport Association (FTA) conducted a study into the policy and regulatory barriers to inland water freight and suggested that:

- Planning authorities should require water freight as part of planning consent where suitable;
- Local and regional authorities should improve coordination and develop a regional strategy for water freight;
- National governments should champion water freight; and
- Planners, authorities and water freight promoters should develop water freight as part of the urban supply chain<sup>65</sup>.

Figure 10 - Utrecht 'Beer Boat' (Image credit: Hans Dinkelberg)



<sup>63</sup> Urban Transport Group (2015) Delivering the future – new approaches to urban freight [online] <http://www.urbantransportgroup.org/system/files/general-docs/Delivering%20the%20future%20FINAL%20020315.pdf>

<sup>64</sup> Dinkelberg (2008) Utrecht Beer Boat

<https://www.flickr.com/photos/uitdragerij/3098313602/in/photolist-5HMEG3-2AZHh4>

<sup>65</sup> FTA (2016) Growing the UK inland water freight sector: lessons from the Thames, [online] [http://www.fta.co.uk/export/sites/fta/\\_galleries/downloads/water-freight/UK-inland-water-freight.pdf](http://www.fta.co.uk/export/sites/fta/_galleries/downloads/water-freight/UK-inland-water-freight.pdf)



## 4. Urban realm

Cities are seeking to improve their urban realm and prioritise space for people over traffic. Challenges around van access, drop-off and pick-up points, noise, air pollution and intrusion could become more acute in this context.

- 4.1. The movement of freight traffic has an impact on the look and feel of our cities. As we seek to deliver improved urban realm, and potentially take space away from motorised traffic, we will need to consider how deliveries are made in our urban areas.

### **Case Study – Regent Street urban realm improvements<sup>66</sup>**

Visited by over 7.5 million tourists annually, Regent Street in London is home to over 700 small and medium sized businesses and over 150 retail and food outlets. As such, it experienced heavy road congestion resulting in an unpleasant environment for visitors.

As part of a £750 million regeneration programme, the Crown Estate drew up a public realm strategy to create a better experience for visitors, workers, residents and shoppers. A key component was providing more footway space which meant traffic needed to be reduced. Delivery vehicles, which accounted for 35% of all peak hour traffic, were targeted for action.

To reduce delivery vehicles and improve urban realm, a retail consolidation centre was developed allowing retailers to consolidate deliveries from all suppliers to one easily accessible point. Deliveries are then consolidated into one consignment and delivered at a pre-arranged time via an electric truck.

Since the scheme began in 2008, there has been an 80% reduction in delivery traffic.

- 4.2. Increasing numbers of cities are looking to reduce or ban vehicles in key city centre areas in order to create a safer, cleaner, more pleasant experience centred around people rather than cars, vans and lorries.
- 4.6. Schemes like these require businesses to think differently about how they organise and receive their deliveries and transport planners to ensure that appropriate loading and unloading facilities are built in to schemes.
- 4.7. A lack of suitable locations can lead to vans being parked in inappropriate places causing increased congestion and conflict with other road users, including risks to pedestrians and cyclists. Considering how deliveries will be made, and locations for tradespeople to park vans, should be incorporated into the design of urban realm schemes.

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<sup>66</sup> Arup (2018) Regent Street delivery and servicing reduction scheme, London - Driving footfall, increasing sales and addressing environmental targets [online] <https://www.arup.com/projects/regent-street-delivery-and-servicing-reduction-scheme>



### Case Study - Barcelona Superblocks

The city of Barcelona, Spain, is seeking to improve urban realm and manage traffic flow through developing 'Superblocks'. This approach sees the majority of traffic being restricted to peripheral roads, while the streets within the superblock are reserved for pedestrians, residential traffic and emergency or exceptional access<sup>67</sup>. The image shows how it works, with the majority of traffic remaining on the grey coloured roads around the edge of the block.

Clearly, Barcelona's urban design is based on a grid system, which is unlike most British cities. However, the approach to removing through traffic from some streets could offer opportunities for improving urban realm.



<sup>67</sup> BCNecological (2017) Superblocks <http://www.bcnecologia.net/en/conceptual-model/superblocks>



## 6. Employment

Van driving, and the wider logistics sector, is a significant source of employment. Current trends around the 'gig economy' are affecting the sector, raising concerns around employee rights and levels of safety and training. Vans also facilitate a wide range of tradespeople and business activities beyond the logistics sector.

- 6.1. According to the FTA, the logistics sector as a whole employs over 1.7 million people<sup>68</sup>. Over 251,000 people were employed as van drivers in the UK in 2016 and around 11% of van drivers are non-UK nationals<sup>69</sup>.
- 6.2. Van driving offers valuable employment opportunities and facilitates the work of many others, who use their vans to support their trades and businesses. However, there are concerns about the growing number of van drivers forming part of what is known as the 'gig economy'.
- 6.3. This has seen the growth of companies engaging self-employed 'partners' rather than employees. This has been most noticeable in the taxi and Private Hire Vehicle (PHV) sectors<sup>70</sup> as well as in vans and other vehicles performing courier and delivery services. While some would argue that this model is creating additional, flexible employment opportunities, there are problems and issues with the gig economy model including:
  - Reduced treasury revenue from national insurance employer contributions;
  - A lack of employee rights including paid holidays and sick leave;
  - Whether 'partners' are being paid the hourly minimum wage; and
  - Safety concerns around the maintenance of vehicles used by partners working for these organisations and the impact of long working hours.
- 6.4. In 2015, when delivery company City Link collapsed, 1,000 self-employed van drivers and agency workers received no redundancy notification, unlike City Link employees<sup>71</sup>.
- 6.5. The GMB union has backed a legal claim from employees of delivery company Hermes, who claim they are wrongly classified as self-employed<sup>72</sup>. This follows a similar claims bought against Uber and food delivery company, Deliveroo<sup>73</sup>.

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<sup>68</sup> RepGraph (2016) The Driver Shortage: Issues and Trends, prepared for the FTA, [online] <http://www.repgraph.co.uk/files/reports/The%20driver%20shortage%20report.pdf>

<sup>69</sup> Ibid.

<sup>70</sup> Urban Transport Group (2017) Taxi! Issues and options for City Region Taxi and Private Hire Vehicle Policy [online] <http://www.urbantransportgroup.org/resources/types/reports/taxi-issues-and-options-city-region-taxi-and-private-hire-vehicle-policy>

<sup>71</sup> Rankin and Butler (2015) City Link's army of self-employed workers count cost of business failure, *The Guardian*, [online] <https://www.theguardian.com/business/2015/jan/01/city-link-army-self-employed-count-cost-failure>

<sup>72</sup> Booth (2017) Hermes facing legal challenge from its self-employed workers, *The Guardian* [online] <https://www.theguardian.com/business/2017/jan/26/hermes-facing-legal-challenge-from-its-self-employed-workers>

<sup>73</sup> BBC (2017) Deliveroo claims victory in self-employment case [online] <http://www.bbc.co.uk/news/business-41983343>



- 6.6. Concerns about the human cost of the gig economy increased further in early 2018<sup>74</sup> when a courier for parcel company DPD died from diabetes having been fined for attending a medical appointment to treat the disease. The courier had missed appointments with specialists because he faced £150 daily penalties if he could not find cover for his round. The company delivers parcels for Marks and Spencer, Amazon and John Lewis but only pays couriers per parcel delivered. The company treats its couriers as self-employed franchisees who receive no sick or holiday pay.
- 6.7. The Taylor Review into modern working practices suggested that ‘we should be clearer about how to distinguish workers from those who are legitimately self-employed’<sup>75</sup>.
- 6.8. The employment opportunities provided and facilitated by the van sector support economic growth in city regions. However, cities are increasingly pursuing goals of inclusive growth<sup>76</sup>. Therefore it is important to ensure that those employment opportunities associated with the vans sector promote equality and inclusivity, providing quality jobs and encouraging employee wellbeing.

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<sup>74</sup> ‘DPD courier who was fined for day off to see doctor dies from diabetes’ *The Guardian*, 05/02/18

<sup>75</sup> Taylor M, Marsh G, Nicol D and Broadbent P (2017) Good Work: The Taylor Review of Modern Working Practices, [online]

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/627671/good-work-taylor-review-modern-working-practices-rg.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/627671/good-work-taylor-review-modern-working-practices-rg.pdf)

<sup>76</sup> Urban Transport Group (2016) Consultation Response – Inclusive Growth Commission [online]

[http://www.urbantransportgroup.org/system/files/general-docs/UTG%20Inclusive%20Growth%20response%20final\\_0.pdf](http://www.urbantransportgroup.org/system/files/general-docs/UTG%20Inclusive%20Growth%20response%20final_0.pdf)





## 7. Safety

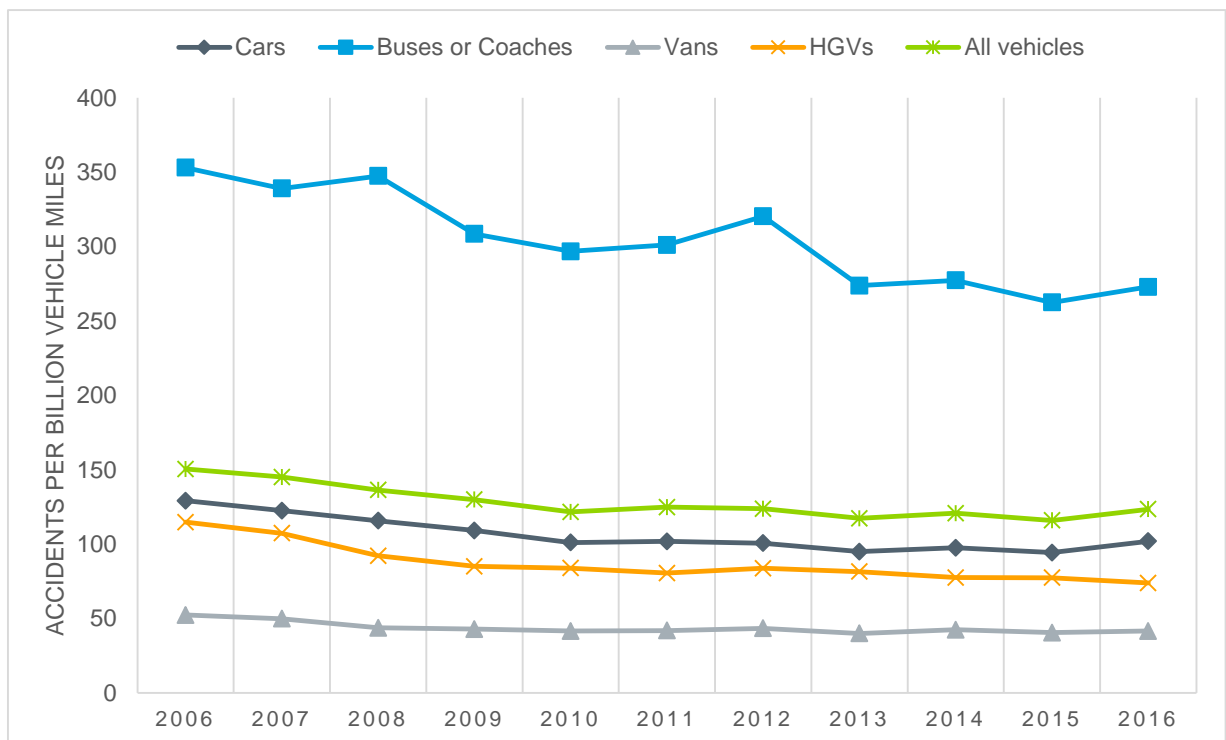
There are significant levels of illegal operation but vans have a lower rate of accidents per mile than other road vehicles.

Accreditation schemes such as the Fleet Operator Recognition Scheme (FORS) help fleet operators to work towards best practice in safe operations as well as in other areas.

The use of vans as weapons in terror attacks represents a further safety issue of concern to cities. Training is available to assist in preventing such acts.

- 7.1. Road safety, and reducing the numbers of people involved in traffic accidents, remains an important goal within transport policy. Vans were involved in around 2,000 fatal or serious accidents in 2016. However, the rate of accidents per mile travelled is much lower than for other motorised modes of transport, and has fallen over the last decade<sup>77</sup> (see Figure 11).

Figure 11 - Fatal or serious accident rate for motorised transport (excluding motorcycles)<sup>78</sup>



<sup>77</sup> DfT (2017) Reported Road Casualties Great Britain: 2016 Annual Report [online] [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/668504/reported-road-casualties-great-britain-2016-complete-report.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/668504/reported-road-casualties-great-britain-2016-complete-report.pdf)

<sup>78</sup> DfT (2017) Vehicles involved in reported road accidents Table RAS20001 [online] <https://www.gov.uk/government/statistical-data-sets/ras20-drivers-riders-and-vehicles-in-reported-road-accidents>



**Case study: Van Smart**

The North East Freight Partnership offers a one-day course called Van Smart under the Fleet Operator Recognition Scheme banner (see next case study box). The course is developed specifically for drivers of commercial vans to raise professional standards and improve van safety. The course focuses on the skills needed to improve driver behaviour to operate safely, reducing the risk of vans being involved in collisions and enabling van drivers to share the road safely with other road users.

7.3. Of the 10,800 vans stopped at the roadside each year:

- **88.5% are overloaded**<sup>79</sup>: If vans are overloaded, load securing can also become an issue. In 2013, the DVSA issued 2,000 prohibitions to vehicles which posed a road safety risk because of insecure loads<sup>80</sup>. The Highways Agency reported 22,000 road impact incidents caused by objects falling from vehicles in 2013<sup>81</sup>. These incidents can result in the closure of a single lane or the full carriageway and take on average 20 minutes to deal with, causing increased congestion and damage to infrastructure<sup>82</sup>. The DVSA produces guidance for vehicle fleet operators to ensure safe and secure loading of vehicles<sup>83</sup>.
- **63% have serious mechanical defects**<sup>84</sup>: The DVSA recommends that drivers should check the condition of their vans every day and deal with any problems as soon as possible<sup>85</sup>. Its walk-around checklist includes general vehicle conditions, such as wipers, tyres, fluids and van specific checks, such as security of load and tail lifts<sup>86</sup>.
- **50% fail their MOT**<sup>87</sup>.

7.4. In addition to the vehicle itself, the person driving the van must also be safe to operate it. For example, van drivers must abide by UK Domestic Drivers' Hours rules which state that the maximum amount of driving permitted in a day is 10 hours and the maximum amount of duty is 11 hours<sup>88</sup>.

7.5. Accreditation schemes such as the Fleet Operator Recognition Scheme (FORS) can help van (and other vehicle) operators work towards achieving best practice in safety and a range

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<sup>79</sup> SMMT (2017) Van Safety [online] <https://www.smmt.co.uk/industry-topics/safety-security/van-safety/>

<sup>80</sup> DVSA (2017) Load securing: vehicle operator guidance [online]

<https://www.gov.uk/government/publications/load-securing-vehicle-operator-guidance/load-securing-vehicle-operator-guidance>

<sup>81</sup> Ibid.

<sup>82</sup> Ibid.

<sup>83</sup> Ibid.

<sup>84</sup> SMMT (2017) Van Safety [online] <https://www.smmt.co.uk/industry-topics/safety-security/van-safety/>

<sup>85</sup> DVSA (2015) Van driver's daily walkaround check [online]

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/447183/van-driver-daily-walkaround-check.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/447183/van-driver-daily-walkaround-check.pdf)

<sup>86</sup> Ibid.

<sup>87</sup> SMMT (2017) Van Safety [online] <https://www.smmt.co.uk/industry-topics/safety-security/van-safety/>

<sup>88</sup> TfL (2015) Van Smart – Driver Handbook [online] [http://www.fors-online.org.uk/cms/wp-content/uploads/2015/10/TfL\\_Driver\\_Handbook.pdf](http://www.fors-online.org.uk/cms/wp-content/uploads/2015/10/TfL_Driver_Handbook.pdf)



of other areas. It can also help organisations select the best operators and suppliers to work on their contracts.

### Case Study – Fleet Operator Recognition Scheme (FORS)<sup>89</sup>

FORS is a voluntary accreditation scheme for operators of vehicle fleets (including vans) encompassing safety, management, vehicles, drivers, operations, emissions and efficiency.

FORS helps fleet operators to measure and monitor their performance and alter their operations in order to work towards best practice, progressing through the framework to achieve Bronze, Silver or Gold accreditation.

Organisations (including city region authorities) can also sign-up as FORS Champions, specifying FORS accreditation as a condition in supplier contracts or actively promoting the scheme.



- 7.6. A further safety issue of concern to cities following recent terrorist incidents is the theft of vehicles and loads and the use of vehicles - particularly vans and trucks, but also cars - as weapons in terror attacks.
- 7.7. In response, the professional training programme accompanying FORS now includes a 'Security and counter terrorism' online training resource<sup>90</sup>. The resource aims to better focus a driver's attention to personal and vehicle safety and to the potential threat of terrorism. It also aims to improve driver identification and reporting of suspicious activity. Free to FORS members, it is relevant to drivers, their managers and other transport professionals.
- 7.8. The Government is also exploring whether drivers attempting to rent vans could be subjected to additional security checks<sup>91</sup>.

<sup>89</sup> Fleet Operator Recognition Scheme (2018) <https://www.fors-online.org.uk/cms/>

<sup>90</sup> 'FORS launches 'Security and counter terrorism' training', Press release, FORS 29/01/18 <https://www.fors-online.org.uk/cms/news/press-release-fors-launches-security-counter-terrorism-training/>

<sup>91</sup> 'UK considering extra checks for van hire to deter terrorist attacks' *The Guardian*, 20/08/17 <https://www.theguardian.com/uk-news/2017/aug/20/uk-extra-checks-for-van-hire-to-deter-terrorist-attacks-watch-list>



## 8. Data and technology

Transformative technological change could help to maximise efficiency, and reduce the negative impacts, of the van sector. There may be potential for the introduction of autonomous logistics vehicles.

- 8.1. New technology and data offer opportunities to improve the efficiency of deliveries and make more effective use of vehicles. Advanced algorithms coupled with routing data, allow deliveries to be optimised, making the best use of resources and avoiding congestion.
- 8.2. In the USA, UPS developed ORION (On-Road Integrated Optimization and Navigation) which uses expansive fleet telematics and advanced algorithms to organise and optimise the routes of their drivers, who make on average 100 stops a day. They calculate that it now saves 100 million miles a year and reduces CO<sub>2</sub> emissions by around 100,000 metric tons<sup>92</sup>.
- 8.3. The Global Service Group reduced their fleet mileage for florist deliveries by 20% through the use of Route Monkey software, which optimises delivery routes and scheduling<sup>93</sup>.
- 8.4. Driverless technology could transform the way deliveries are made and many companies are exploring how autonomous vehicles could offer commercial opportunities. The case study below shows how grocery company Ocado is developing driverless deliveries in the UK.
- 8.5. There will be wide ranging impacts from automation of deliveries, which could be both positive and negative, potentially including:
  - Increases in the number of vehicles on the roads and the resulting congestion;
  - Greater efficiency of deliveries through automation;
  - Improved road safety for vulnerable road users through autonomous vehicles; and
  - Unemployment impacts if drivers are replaced with autonomous technology.

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<sup>92</sup> UPS Pressroom (2017) ORION Backgrounder [online]

<https://pressroom.ups.com/pressroom/ContentDetailsViewer.page?ConceptType=FactSheets&id=1426321616277-282>

<sup>93</sup> Pink H (2016) London operator shaves 20% off its road miles after fleet optimisation, *Freight in the City* [online] <http://freightinthecity.com/2016/04/london-operator-shaves-20-off-its-road-miles-through-fleet-optimisation/>



### Case Study – Ocado’s driverless deliveries

UK grocery company Ocado has been trialling driverless deliveries in London, using a vehicle developed by Oxbotica, as part of wider autonomous vehicle testing taking place in Greenwich, London<sup>94</sup>. The vehicles are small, electric vans, which can carry eight crates, and are ideal for areas where larger vehicles are unsuitable. Unlike regular grocery deliveries, customers are required to go to the van to collect their shopping, rather than having it delivered to the door<sup>95</sup>. Ocado and Oxbotica hope that their driverless deliveries will be ready for commercial launch in 2019<sup>96</sup>.

Figure 12 - Ocado's driverless delivery vans  
(Image source: BBC)



<sup>94</sup> Hern A (2017) Ocado's self-drive vehicle makes deliveries in first UK trials, *The Guardian* [online] <https://www.theguardian.com/business/2017/jun/27/ocados-self-drive-vehicle-makes-deliveries-in-first-uk-trials>

<sup>95</sup> Kleinman Z (2017) Ocado trials driverless delivery van in London, BBC News [online] <http://www.bbc.co.uk/news/technology-40421100>

<sup>96</sup> Hern A (2017) Ocado's self-drive vehicle makes deliveries in first UK trials, *The Guardian* [online] <https://www.theguardian.com/business/2017/jun/27/ocados-self-drive-vehicle-makes-deliveries-in-first-uk-trials>



## 9. Conclusion


- 9.1. The growth in van traffic is clearly creating considerable challenges for cities in relation to a range of public policy goals. This report has set out a number of ways that companies and authorities have approached management of van traffic in order to mitigate the negative impacts and maximise their contribution to economic activity.
- 9.2. There are opportunities for local and city region authorities to lead by example when it comes to vans. Leeds City Council has converted much of its van fleet to run on compressed natural gas (CNG)<sup>97</sup> and purchased a number of electric vans and cars<sup>98</sup> (see right). This reduces the environmental impact of the councils' activities and builds public awareness of the low emission vehicles as they are visible on the city's streets.
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- 9.3. However, many questions remain unanswered and there are a great deal of unknowns surrounding the growth in van traffic. Gaining a better understanding of how and why van traffic is growing, who owns, manages and uses these vehicles and journey purpose, would allow policy makers to better grasp the issues and develop responses.
- 9.4. More research, data and analysis is needed to explore the growth in van traffic, minimise the challenges this poses to cities and maximise the economic contribution they offer. Technology and data may offer opportunities to improve understanding of van fleet usage<sup>99</sup>.
- 9.5. Research questions which could help city region transport authorities to understand the van sector better could include:
- Who owns, operates and uses vans in city regions?
  - What kinds of activities are being supported by van use?
  - For vans making deliveries, to what extent are these efficiently loaded and routed?
- 9.6. On the basis of the evidence we have, questions and issues for urban transport policy include:
- To what extent can the public sector reduce the volume and impact of van traffic through greater consolidation on-site (for example, the way that large public sector institutions order goods and services) or via public sector led off-site consolidation (for example,

Figure 13 – Leeds City Council low emission van

<sup>97</sup> Commercial Fleet (2015) Leeds Council to save £1.5m with switch to CNG, [online] <https://www.commercialfleet.org/news/latest-news/2015/07/27/leeds-council-to-save-15m-with-switch-to-cng>

<sup>98</sup> Middleton N (2016) Leeds City Council goes live with first of 42 new electric vehicles, Fleetworld [online] <https://fleetworld.co.uk/leeds-city-council-goes-live-with-first-of-42-new-electric-vehicles/>

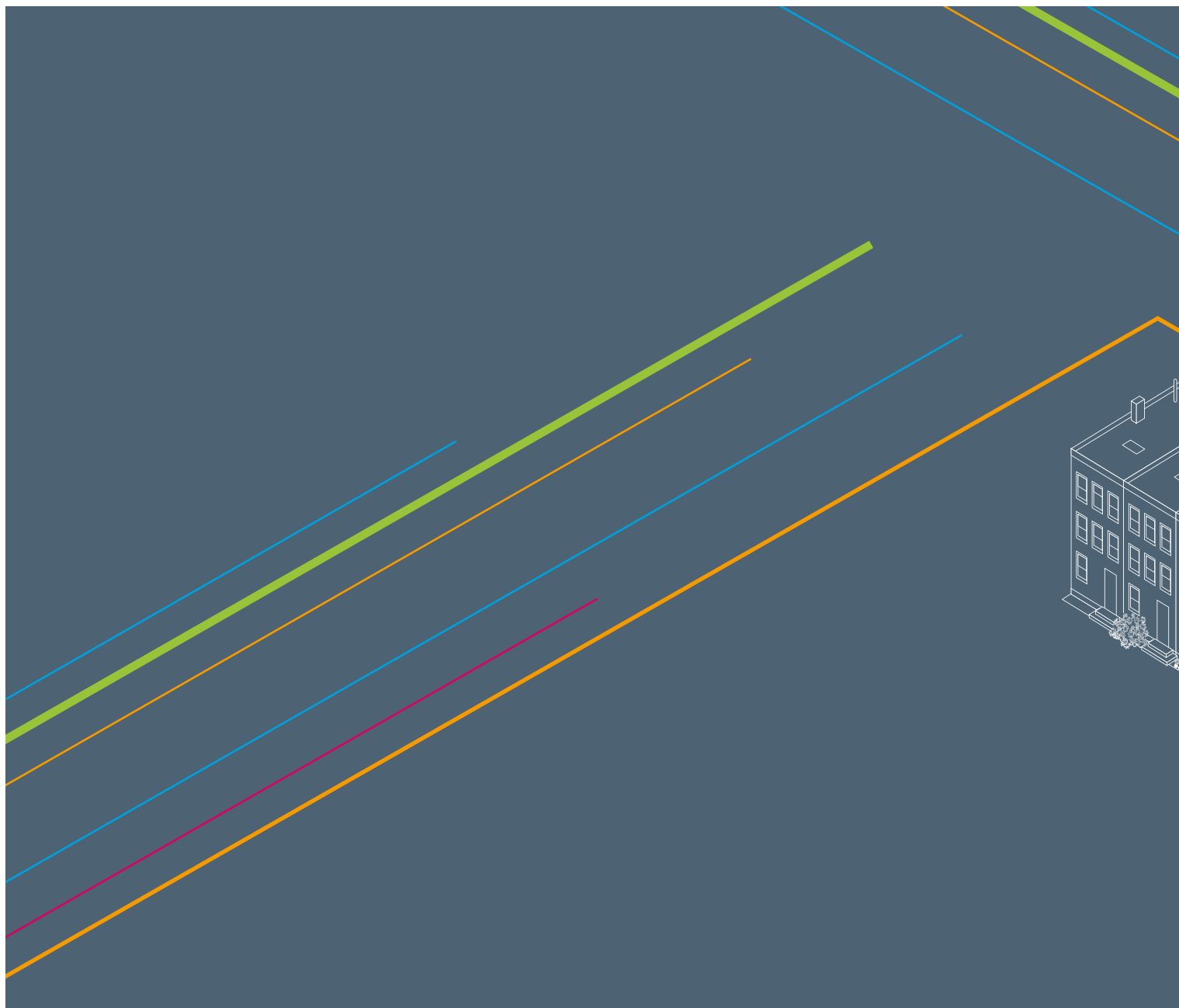
<sup>99</sup> Braithwaite (2017) The implications of internet shopping growth on the van fleet and traffic activity, report for the RAC Foundation, [online] [http://www.racfoundation.org/assets/rac\\_foundation/content/downloadables/The\\_Implications\\_of\\_Internet\\_Shopping\\_Growth\\_on\\_the\\_Van\\_Fleet\\_and\\_Traffic\\_Activity\\_Braithwaite\\_May\\_17.pdf](http://www.racfoundation.org/assets/rac_foundation/content/downloadables/The_Implications_of_Internet_Shopping_Growth_on_the_Van_Fleet_and_Traffic_Activity_Braithwaite_May_17.pdf)



consolidation hubs like those in Southampton and London, mentioned elsewhere in this report)?

- To what extent should other measures be taken to reduce the volume and impact of van traffic? Options could include fiscal measures, working with the private sector to promote greater on-site consolidation and retiming of orders for goods and services.
- To what extent can public sector procurement policies promote the use and take up of safe, appropriate and low impact urban logistics vehicles?
- Do national and city region initiatives for reducing pollution and carbon need to give greater attention to accelerating the take up, affordability and availability of ultra-low emission vans?
- Does greater attention need to be given to how goods and services are delivered to retail, businesses and homes as part of wider urban realm and traffic reduction schemes?

9.7. All of these questions offer a potential starting point for mitigating the negative effects of van traffic growth, while still allowing them to contribute to valuable economic activity in our cities.



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