

# Freight Consolidation: Supporting evidence for Draft Revised Lambeth Local Plan



**Future City Logistics & Lambeth Council**

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## Foreword

The purpose of this document is to act as evidence in support of the Draft Revised Lambeth Local Plan (DRLLP) Proposed Submission Version, specifically in relation to proposed policy T8 to increase freight consolidation within the borough. This document sets out the justification for the proposed policy approach and demonstrates its deliverability.

Freight consolidation has been proven to reduce the total number of goods vehicle trips generated by premises or wider areas. Reduced goods vehicle trips mean reduced operating costs, reduced risk of conflict with vulnerable road users, reduced fuel consumption, reduced vehicle emissions and reduced congestion, particularly in busy urban environments. These potential benefits are all important considerations in terms of the borough's local environment and amenity.

This document:

- Explains the concept of freight consolidation;
- Presents the potential benefits to be derived from effective freight consolidation using real-world examples of freight consolidation in use;
- Presents the policy justification for freight consolidation at national, regional/sub-regional and local levels;
- Assesses the need for freight consolidation in London and Lambeth; and,
- Assesses the deliverability of freight consolidation within the context of wider initiatives to promote sustainable freight.

## 1. What is freight consolidation?

Freight consolidation aims to reduce the number of trips required to service a particular delivery point or a wider area, by aggregating delivery consignments.

Consolidation of deliveries occurs naturally in many supply chains. If access to a supermarket or local convenience store were continually blocked by separate deliveries from different suppliers everyone would question the logic of this. Instead, each of these different suppliers delivers to a retailer's distribution centre and the retailer then organises for the goods to be transported on a single delivery vehicle to the supermarket.

As a result, we may notice the supermarket delivery vehicle and question why a large HGV is used to make the delivery but, compared to literally hundreds of separate vehicles delivering small quantities of multiple items, it makes perfect operational and environmental sense. It also makes economic sense for the retailer who can hold stock in a central warehouse and ensure the shelves are always full of the required products, whatever the time of day or weather.

There is a range of consolidation solutions available, including:

- procurement led solutions, including shared supplier lists for multiple business tenants in a large office building;
- supply chain solutions, where consignments are grouped at national or regional distribution centres for onward movement to the destination;
- infrastructure led solutions, including micro and urban consolidation centres; and,
- construction phase solutions, where off-site facilities are used for storage and handling of construction materials, which are then released for planned onward delivery to the construction site, avoiding stockpiling at the point of build.

Effective freight consolidation can deliver significant benefits in the following areas:

- Operational; making better use of available vehicle load space by grouping consignments which would otherwise be transported individually, sub-optimally,
- Commercial; using less fuel, vehicle and driver resources to move greater volumes makes commercial sense, when calculated at transport cost per item moved,
- Less congestion; allowing space to be reallocated for cyclists and pedestrians
- Reduced road danger; reducing the total number of goods vehicle trips to a site or within an area reduces the risk of conflict between goods vehicles and vulnerable road users,
- Local amenity; fewer goods vehicle trips results in improved local amenity with reduced noise intrusion, and,

- Environmental; fewer goods vehicle trips as a result of consolidated loads from a single aggregation point to final delivery destinations results in less fuel consumed and, correspondingly, reduced vehicle emissions.

## 2. Policy context

*(NB in the following sections wording in italics is from the quoted policy. The most relevant policy wording for consolidation has been highlighted in **bold**)*

### 2.1. National freight policy

In terms of government departmental responsibility, urban freight management sits between both the Department for Transport (DfT) and the Ministry of Housing, Communities and Local Government. Inter-departmental cooperation has traditionally been weak and there is limited policy from national government to reduce the impact of freight activity, including in urban areas.

#### Department for Transport

Previous initiatives from the Department for Transport (such as Freight Best Practice 2005 – 2009) have closed and recent announcements have been limited. There is no clear recent proposal or policy on consolidation, although we understand the issue of freight, and especially urban freight, is one the DfT is currently reviewing in response to the National Infrastructure Commission (NIC) [freight report](#).<sup>i</sup>

However, two recent announcements may be relevant:

- The 2018 clean air funding package suggested that Local Authorities could adopt consolidation centres as a proposal in bidding for funds; and,
- The University of Southampton Hospital study outlined in Section 4 below was funded and fully supported by the DfT.

#### Other government policy and activity

The [National Planning Policy Framework](#) <sup>ii</sup> mentions freight only in relation to intermodal rail freight facilities as they are seen as problematic. This may be relevant for deliveries of aggregates to construction sites.

This lack of government policy was identified in the NIC report (above) published in April 2019. One of the 6 recommendations from the NIC was that:

*to help manage peak time congestion on the urban transport network, local authorities should include a plan for urban freight within the infrastructure strategies they are developing. These plans should review local regulations to incentivise low congestion operations, **consider the case for investments in infrastructure such as consolidation centres**, and identify the land and regulatory requirements of new and innovative low congestion initiatives.*

One specific inter-departmental collaboration of note is the work of the Joint Air Quality Unit (JAQU), drawn from both the Department for the Environment, Food and Rural Affairs and DfT. This work is designed to address air quality issues in 71 local authorities, although the role specified is being addressed in London by the Mayor through the Ultra-Low Emission Zone.

### Summary

National freight policy guidance is rather limited. Government policy is that issues should be resolved at the regional/sub-regional and local levels, with clear implications for local boroughs to find solutions to their own local freight management issues.

## 2.2. Regional/Sub-regional

### London Plan

The Draft New London Plan, [Consolidated Suggested Changes Version](#)<sup>iii</sup> has recently completed the examination process with no significant changes required in the area of freight policy. For the Examination in Public additional detail on matter 62 (Land for Industry, Logistics and Services) was published, strengthening the Plan commitment to retain logistics sites for consolidation and other distribution needs.

The relevant freight policy and components are identified below, with key terminology relevant to freight consolidation highlighted:

#### **Draft London Plan: Policy T7 Deliveries, servicing and construction**

*A. Development Plans, Opportunity Area Planning Frameworks, Area Action Plans and other area-based plans should include **freight strategies**. These should seek to:*

- 1) **reduce freight trips** to, from and within these areas*
- 2) coordinate the provision of infrastructure and facilities to manage freight at an area-wide level*
- 3) reduce road danger, noise and emissions from freight, through the use of safer vehicles, **sustainable last-mile schemes** and the provision of rapid electric vehicle charging points for freight vehicles.*

*Such strategies should be developed through policy or through the formulation of a masterplan for a planning application.*

*B. To support carbon-free travel from 2050, the provision of hydrogen refuelling stations and rapid electric vehicle charging points at logistics and industrial locations is supported.*

*C. Development Plans should safeguard railheads unless it can be demonstrated that a railhead is no longer viable or capable of being made viable for rail-based freight handling. The factors to consider in assessing the viability of a railhead include:*

- o Planning history, environmental impact and its relationship to surrounding land use context – recognising that the agent of change principle will apply*
- o Location, proximity to the strategic road network and existing/potential markets*
- o Existing and potential contribution the railhead can make towards catering for freight movements by non-road modes*
- o Location and availability of capacity at alternate railheads, in light of current and projected capacity and market demands.*

*D. Consolidation and distribution sites at all scales should be designed to enable 24- hour operation to encourage and support **out-of-peak deliveries**.*

E. Development proposals for new **consolidation and distribution facilities** should be supported provided that they do not cause unacceptable impacts on London's strategic road networks and:

- 1) **reduce road danger, noise and emissions from freight trips**
- 2) **enable sustainable last-mile movements**, including by cycle and electric vehicle.
- 3) deliver mode shift from road to water or rail where possible (without adversely impacting existing or planned passenger services)

F. Development proposals should facilitate safe, clean, and efficient deliveries and servicing. Provision of adequate space for servicing, storage and deliveries should be made off-street, with on-street loading bays only used where this is not possible.

Construction Logistics Plans and **Delivery and Servicing Plans** will be required and should be developed in accordance with Transport for London guidance and in such a way which reflects the scale and complexities of developments.

G. **Developments should be designed and managed so that deliveries can be received outside of peak hours and in the evening or night-time. Appropriate facilities are required to minimise additional freight trips arising from missed deliveries** and thus facilitate efficient online retailing.

H. At large developments, **facilities to enable micro-consolidation should be provided**, with management arrangements set out in **Delivery and Servicing Plans**.

I. Development proposals must consider the use of rail/water for the transportation of material and adopt construction site design standards that enable the use of safer, lower trucks with increased levels of direct vision on waste and landfill sites, tip sites, transfer stations and construction sites.

IA. During the construction phase of development, inclusive and safe access for people walking or cycling should be prioritised and maintained at all times.

In addition, the London Plan recognises the need for different types of logistics land across London to support an efficient and more sustainable logistics industry, where low and zero emission vehicles can make the final delivery without, so called, range-anxiety.

*London Plan Policy E4 - Land for industry, logistics and services to support London's economic function*

A - A sufficient supply of land and premises in different parts of London to meet current and future demands for industrial and related functions should be maintained, taking into account strategic and local employment land reviews, industrial land audits and the potential for intensification, co-location and substitution (see Policy E7). This should make provision for the varied operational requirements of:

- 1) light and general industry (Use Classes B1c and B2)
- 2) **storage and logistics/distribution (Use Class B8) including 'last mile' distribution close to central London and the Northern Isle of Dogs, consolidation centres and collection points**

### *Summary*

The above Policy T7 and its components introduce the concept of freight strategies in local area plans – prompting boroughs to proactively consider the nature of freight movement locally and to consider options to solve local freight management issues and to ensure freight movement is duly considered in scheme design.

The components also explicitly reference consolidation and micro-consolidation (along with support for off-peak activity and, more broadly, other last mile solutions).

### Mayor's Transport Strategy (MTS)<sup>iv</sup>

The Mayor's strategic target for freight is clearly stated in Proposal 15:

*The Mayor, through TfL, will work with the boroughs, businesses and the freight and servicing industry to reduce the adverse impacts of freight and service vehicles on the street network. The Mayor aims to **reduce the number of lorries and vans entering central London in the morning peak by 10 per cent by 2026.***

In addition, relevant freight policy and components are identified below, with key terminology relevant to freight consolidation highlighted.

Proposal 9: *The Mayor, through TfL, the boroughs and enforcement partners, will seek to **reduce danger posed by vehicles.***

Proposal 16: *The Mayor, through TfL, and working with the boroughs and the Freight Forum, will **improve the efficiency of freight and servicing trips** on London's strategic transport network by:*

- a) Identifying opportunities for moving freight by rail where this will not impact passenger services and where the benefits will be seen in London*
- b) Increasing the proportion of freight moved on London's waterways*
- c) Reviewing the potential **benefits of a regional freight consolidation and distribution network, and completing the network of Construction Consolidation Centres** in London*

Proposal 17: *The Mayor, through TfL, working with the boroughs and the Freight Forum, will work with landlords and all parts of the supply chain, including the freight industry, BIDs and individual businesses, to **improve the efficiency of last-mile deliveries and servicing.***

### *Summary*

The Proposals in the MTS above clearly place a responsibility on the London Boroughs to consider ways of improving the safety, efficiency and environmental impact of goods vehicle movements within their areas. They prompt the consideration of multiple measures, including retiming of delivery & servicing activity and the use of freight consolidation.

### TfL's Freight and Servicing Action Plan<sup>v</sup>

The Freight and Servicing Action Plan produced by TfL in March 2019 does not form part of land use policy, but does provide some further guidance for London boroughs to identify solutions to freight issues. However, there is evidence within the plan that supports a more proactive interventionist policy than sits in the London Plan or Mayor's Transport Strategy.



Since 2009 there has been an overall increase in freight traffic of 25 percent which varies across London (Figure 1 below). However, with a 10 – 15 percent increase in Central London (CCZ) and a +20 percent increase in inner London the trend in Lambeth is for more, not less freight traffic.

Similarly, there is clear road danger and air quality evidence to support additional management of freight traffic. Figure 2 highlights the locations of Killed and Serious Injury incidents between 2015 and 2017. While the density of incidents does not appear to be the highest in Lambeth, it is clear that inner London boroughs are over-represented.

The Action Plan highlights the contribution of freight traffic to city-wide NOx levels as 20 percent from HGVs and 13 percent from LGVs/minibuses.



Figure 1: LGV kilometres in London by area, indexed against 2000 levels (TfL Freight and Servicing Action Plan)

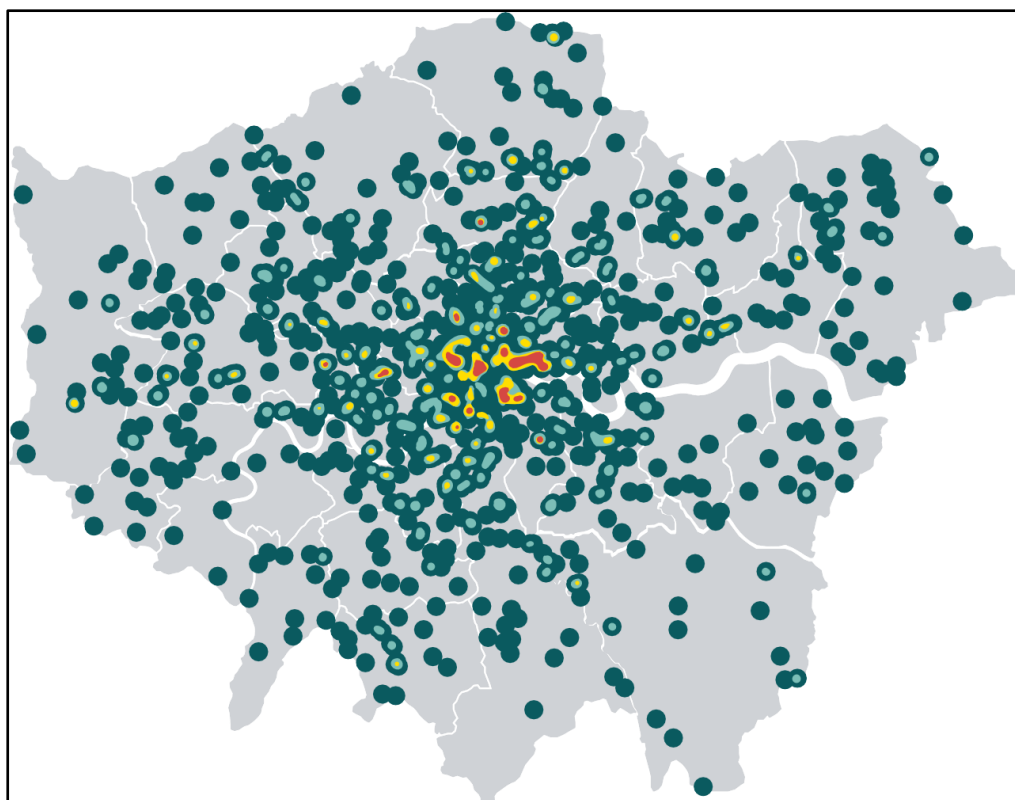


Figure 2: Locations of collisions involving goods vehicles resulting in deaths or serious injuries in London, 2015-2017, Source: TfL Freight and Servicing Action Plan

In addition to being supported throughout the Plan (e.g. Action 9 states support for Construction Consolidation Centres) consolidation is identified as a key solution for freight management. Pages 114 to 119 highlight global and local projects and demonstrators and Action 13 states:

*“We will promote consolidation as one of a combination of measures that support safe, clean and efficient freight by:*

- a. Completing the demonstrator projects and sharing results by mid-2019*
- b. Continuing with further pilots to refine the most efficient consolidation models*
- c. Promoting and up-scaling proven successful consolidation models, such as collective procurement*

#### *Summary*

While there are no specific actions or proposals that compel Lambeth to adopt measures outlined in the London Plan or Mayor's Transport Strategy, there is clear evidence and support for greater action to be taken by Boroughs and businesses.

### **2.3. Local - Lambeth policy framework**

Lambeth have outlined land use policies that fully support and, in some instances, go beyond the London Plan and Mayor's Transport Strategy.

Draft Local Plan policy T8 states *“The council will apply London Plan policy T7 to promote sustainable freight and servicing”*. The policy (provided in full in the appendix) identifies

a package of solutions for urban freight management rather than relying on any single measure, with consolidation highlighted:

*T8, b) New development, and in particular non-residential and mixed-use development, will only be permitted where adequate provision is made for servicing appropriate to the scale, form and location of the proposed development, including provision for commercial vehicles, ensuring that it is appropriate and acceptable in terms of impact on amenity of adjacent properties and road and traffic conditions of the location. **Off-site consolidation to reduce the number of deliveries should be considered for larger developments or where access to the site is constrained.** Innovative local delivery and last mile logistics approaches should also be considered to further reduce traffic impacts and emissions, and minimise potential conflict with vulnerable road users.*

Draft Local Plan policy ED3 (Key Industrial and Business Areas – KIBAs) states “Development in KIBAs will be permitted only for business, industrial, storage and waste management uses, including green industries and other compatible industrial and commercial uses (excluding large scale retail) ancillary to, or providing for, the needs of the KIBA..” Supporting text specifies that such uses include consolidation and related freight reduction initiatives: “KIBAs...are a vital part of the local economy representing the borough’s strategic supply of land for industry, logistics and services to support London’s economic function. This includes light and general industry including emerging industrial-related sectors; storage and logistics/distribution including ‘last mile’ distribution close to central London, wholesale, consolidation centres and collections points..”

The Lambeth Transport Strategy 2019 considers freight consolidation under the Efficient and Connected ‘guiding principle’, with the associated priority action “We will trial innovative measures to reduce the impacts of freight trips in Lambeth.” The Strategy states that there will be a particular focus on growth areas in this respect. Consolidation is also referenced as part of the traffic reduction strategy under the Clean Air and Carbon Reduction principle. The Sustainable Growth principle commits to a requirement for freight consolidation through the Development Management process.

## 2.4. London boroughs

### City Of London

The City of London Draft City Plan 2036 addresses delivery and servicing activity through Policy VT2: Freight and Servicing which states that “Developments must minimise the need for freight trips and seek to manage freight and servicing on an area-wide basis. **Major commercial development must provide for freight consolidation**” and “Developers will be encouraged to identify **opportunities for last mile logistic hubs where appropriate.**”

The City has also developed a Transport Strategy<sup>vi</sup> that supports the local plan policies and provides a wholesale approach to freight management that seeks “to reduce the number of motorised freight vehicles in the Square Mile by 15% by 2030 and by

30% by 2044 and facilitate the transition to ultra-low emission and zero emission delivery vehicles.”

The proposal then states:

*To achieve this target, we will work with businesses, suppliers, the freight industry and other relevant partners to deliver an integrated freight programme that incorporates retiming, **consolidation**, last mile logistics, **construction logistics**, better use of the river and **smarter procurement practices**. These solutions are not uniformly applicable to all types of deliveries and we will work with the freight industry to target interventions at the most appropriate types of delivery.*

### **Consolidation**

***Using established best practice, we will work with a partner haulier to provide a consolidation service for the Square Mile by 2022. A major engagement exercise with City businesses will promote and encourage the use of this consolidation service. This will include developing a consolidation toolkit for City businesses, informed by monitoring of the benefits arising from consolidating deliveries to the Guildhall complex.***

***We will also continue to use the planning process to require all new major developments to use a consolidation service to reduce deliveries to their buildings.***

*In the longer term we will develop a commercially sustainable approach to **consolidation** for the Square Mile and establish a sustainable logistics centre to serve the City by 2030. This centre will co-locate major suppliers in a single warehouse, alongside consolidation, waste collection and couriering services.*

### **Last mile logistic hubs**

*We will enable more deliveries within the Square Mile to be made by cargo cycles, on foot and by small electric vehicles by:*

- *Delivering two last mile logistic hubs in underutilised City Corporation assets by 2022. A further three hubs will be delivered by 2025*
- *Establishing additional last mile logistics hubs if appropriate underutilised assets are identified*
- *Exploring opportunities to acquire new sites within or adjacent to the Square Mile for last mile logistic hubs*
- *Working with developers and landowners to integrate last mile logistic hubs as part of major City developments*

The City of London is also seeking to reduce the impact of construction logistics, increase the retiming of deliveries, influence city businesses through procurement and look towards greater use of the river for delivery activity.

### Other boroughs

The City is the only authority to-date to develop a transport strategy with a defined percentage reduction of freight traffic to support delivery of the City land use plan. However, while the Camden Local [plan](#)<sup>vii</sup> does not specify any required reduction on freight traffic it does provide clear policy to promote consolidation in policy T4 ‘Sustainable movement of goods and materials’.

*The Council will promote the sustainable movement of goods and materials and seek to minimise the movement of goods and materials by road. We will:*

- a. encourage the movement of goods and materials by canal, rail and bicycle where possible;*
- b. protect existing facilities for waterborne and rail freight traffic and;*
- c. promote the provision and use of freight consolidation facilities.***

*Developments of over 2,500 sqm likely to generate significant movement of goods or materials by road (both during construction and operation) will be expected to:*

- d. minimise the impact of freight movement via road by prioritising use of the Transport for London Road Network or other major roads;*
- e. accommodate goods vehicles on site; and*
- f. provide Construction Management Plans, Delivery and Servicing Management Plans and Transport Assessments where appropriate.*

#### *Summary of policy and application*

The City of London and Camden have clear policies to reduce the impact of freight, including use of consolidation. In addition, evidence is available that the City's land use policy and supporting Transport Strategy is actively used in current planning decisions.

The City granted planning permission to the 22 Bishopsgate development on the condition that deliveries are sent to an offsite consolidation centre (16/00849/FULEIA - 11/09/2016). This had been in discussion for some time prior and it is believed that this was the first time that such a planning requirement was stated. The development is under construction and is not yet complete, so the consolidation centre is not currently live.

However, the Corporation's actions are now being reflected in other local City of London planning applications. For example, the developers of the 1 Undershaft<sup>viii</sup> proposal, have also agreed "to establish a freight consolidation operation for the development that would include a freight consolidation centre" as outlined in the planning recommendation (16/00075/FULEIA 08/11/2016).

### **3. Lambeth context**

Like all London's boroughs, Lambeth faces challenges relating to, air quality, CO<sub>2</sub> emissions, road safety and congestion.

#### **3.1. Air quality and CO<sub>2</sub>**

The Lambeth Air Quality Action Plan (AQAP, 2017)<sup>ix</sup> identifies the serious issues with air quality within the borough. As an example, it identifies NO<sub>x</sub> exceedance and PM 10 and 2.5 levels and the spatial distribution of the problem.

The AQAP is committed to ensuring that actions to address air quality issues cannot increase CO<sub>2</sub> emissions and vice versa.

While many of the key problem areas are focused on the strategic route network (TfL responsibility) the Plan highlights key focus areas for air quality interventions. All these areas intersect with the borough roads and borough actions are designed to address all traffic, regardless of road ownership.

The total emission levels of NO<sub>x</sub> and PMs in the borough have decreased, but the percentage attributable to freight vehicles has remained stable or, in the case of LGV contribution to NO<sub>x</sub>, increased. This implies that changes to the freight fleet are at best in parity with, or potentially lagging behind, cars and other motor traffic. Given that there are no current fossil fuel free alternatives for HGV traffic motive power, options need to be found to reduce the number of HGV trips into and through the borough.

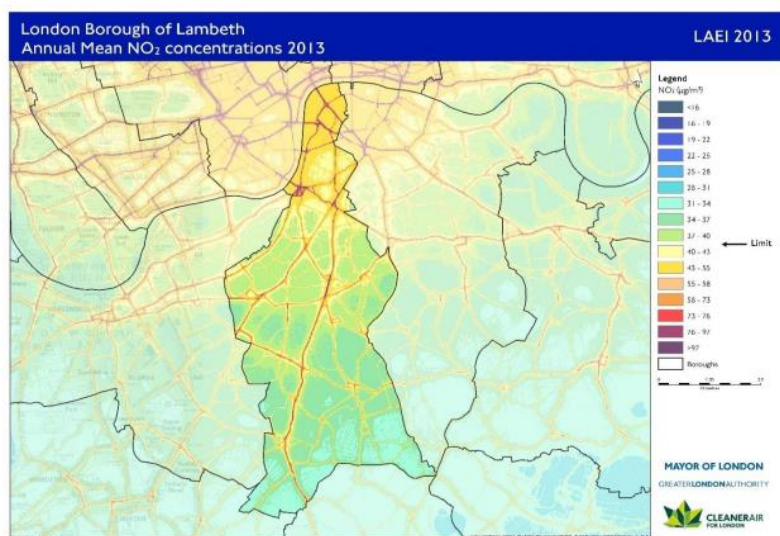


Figure 1 Annual mean NO<sub>2</sub> concentrations in 2013 (from the LAEI 2013)

Figure 3: NO<sub>2</sub> concentrations: Air Quality Action Plan 2017

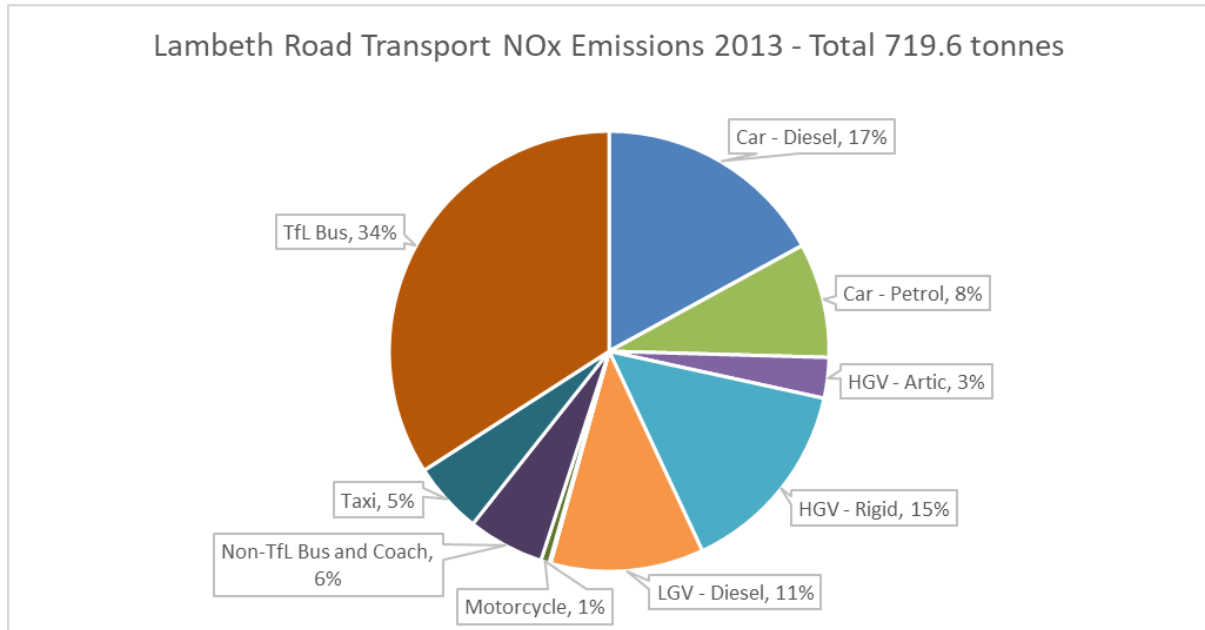


Figure 4: NOx emissions by mode 2013: Air Quality Action Plan 2017

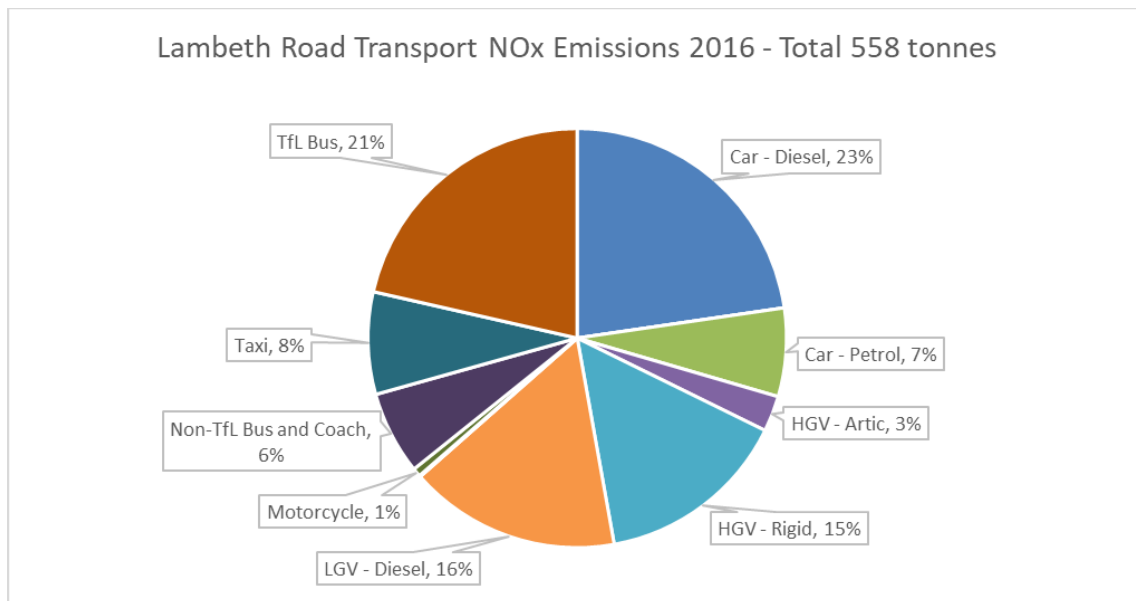


Figure 5: NOx emissions by mode 2016: Air Quality Action Plan 2017

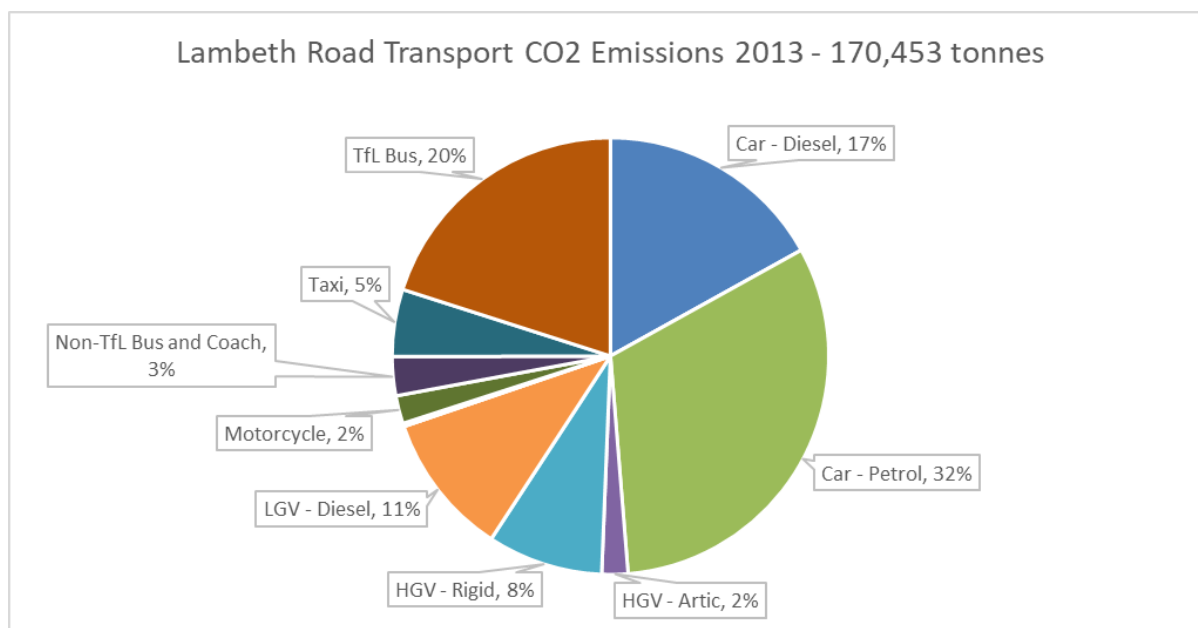


Figure 6: CO<sub>2</sub> emissions by mode 2013: Air Quality Action Plan 2017

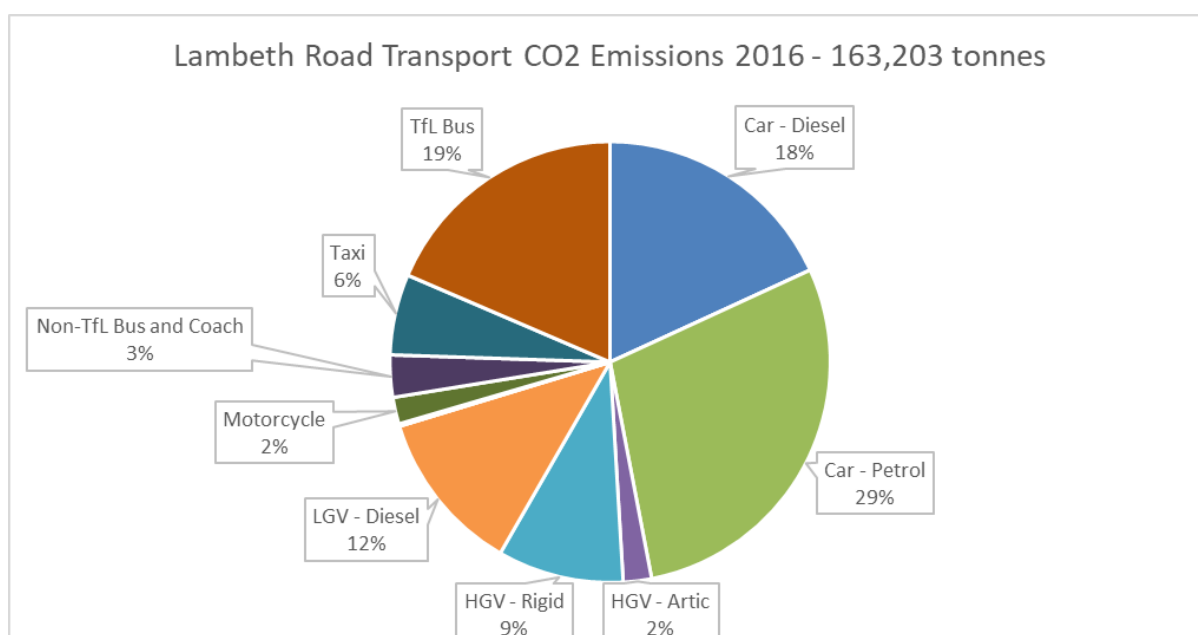


Figure 7: CO<sub>2</sub> emissions by mode 2016: Air Quality Action Plan 2017

### 3.2. Road safety

Road safety incident rates in urban areas in the UK are lower than the EU average according to the [European Transport Safety Council](#). However every incident is one too many, and the Mayor's [Vision Zero Action Plan](#) reports that, while HGVs make up between 3 and 4 percent, they were involved in 50 percent of cycling fatalities and 23 percent of pedestrian fatalities in 2016. Construction vehicles are involved in a disproportionate number of these incidents.



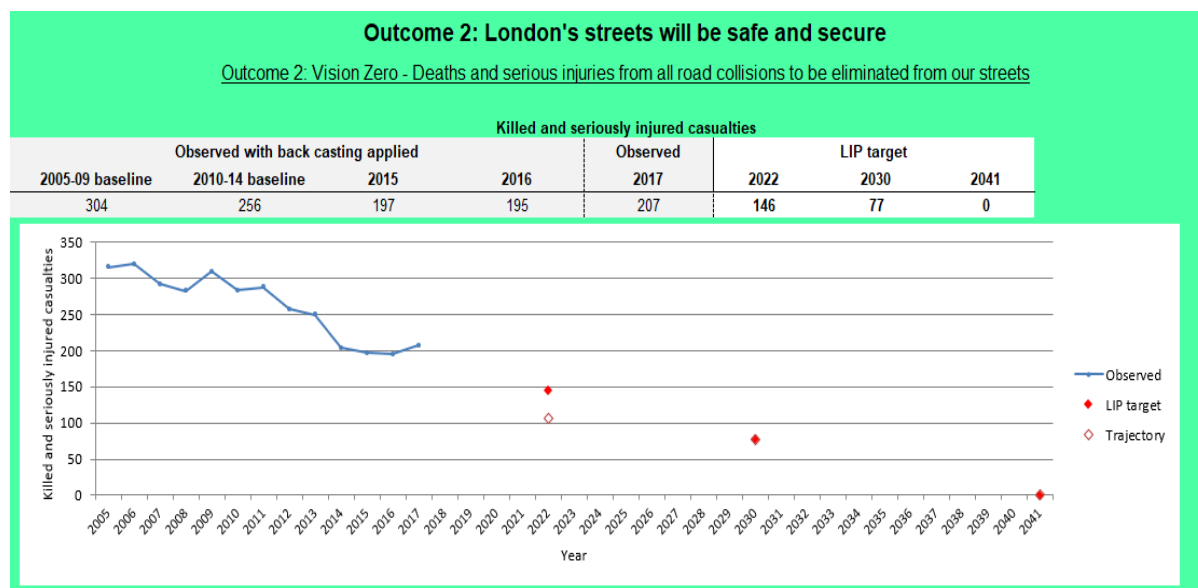


Figure 8: Vision Zero: LIP3 MTS outcomes borough data pack v4 – July 2019

Lambeth specific data on overall numbers of Killed and Seriously Injured are reported in Figure 8 above, but it is not possible to identify freight related incidents easily. Borough specific information suggests Goods Vehicle incidents in Lambeth are lower than many central London boroughs. However, looking at the data from the perspective of vulnerable road users, the situation is less positive. Figure 9 (below) uses the TfL generic borough data for pedestrian and cyclist KSIs involving all vehicle types. This shows the rate to be similar to other Central London boroughs.

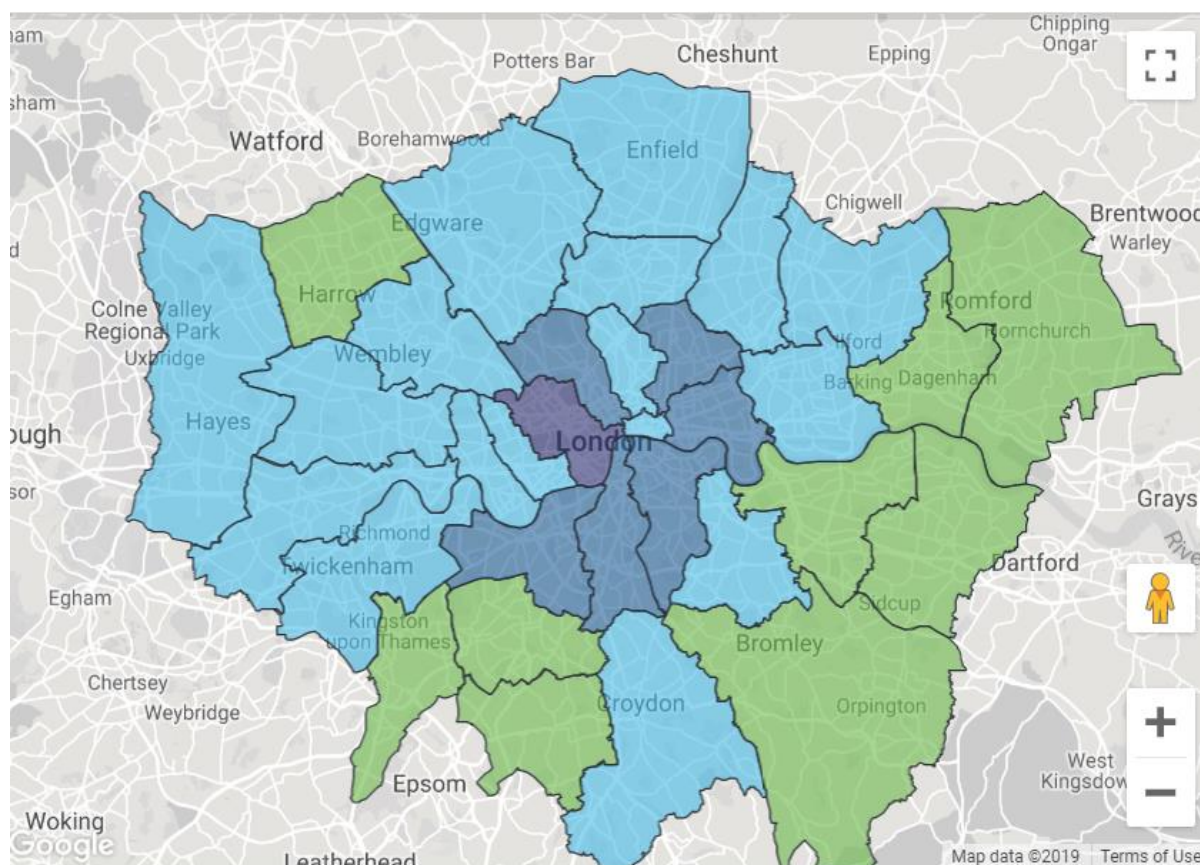


Figure 9: VRU safety 2018 Source: London Collision Map

The TfL borough data [factsheet](#) for 2017 report goods vehicles being involved in 17 percent of borough killed or seriously injured incidents.

### 3.3. Congestion

The LIP3 MTS outcomes data from July 2019 identifies a small decrease in overall traffic volumes in Lambeth between 2014 and 2017. Information on freight volumes in the same report are London-wide, and the evidence is more mixed. Freight volumes (if not necessarily freight traffic) respond to population and business demands, but there is current discussion as to likely trends due to longer-term economic trends in London and the UK.

There appears to be an overall reduction in HGV volumes across London but a rapid increase in van traffic. Localised figures are unavailable, however UK [figures](#)<sup>x</sup> show a 59 percent increase in vans since 2000. Less than 10 percent of vans nationwide are involved in parcel distribution (e.g. e-commerce) with the biggest percentage related to construction, general distribution and servicing.

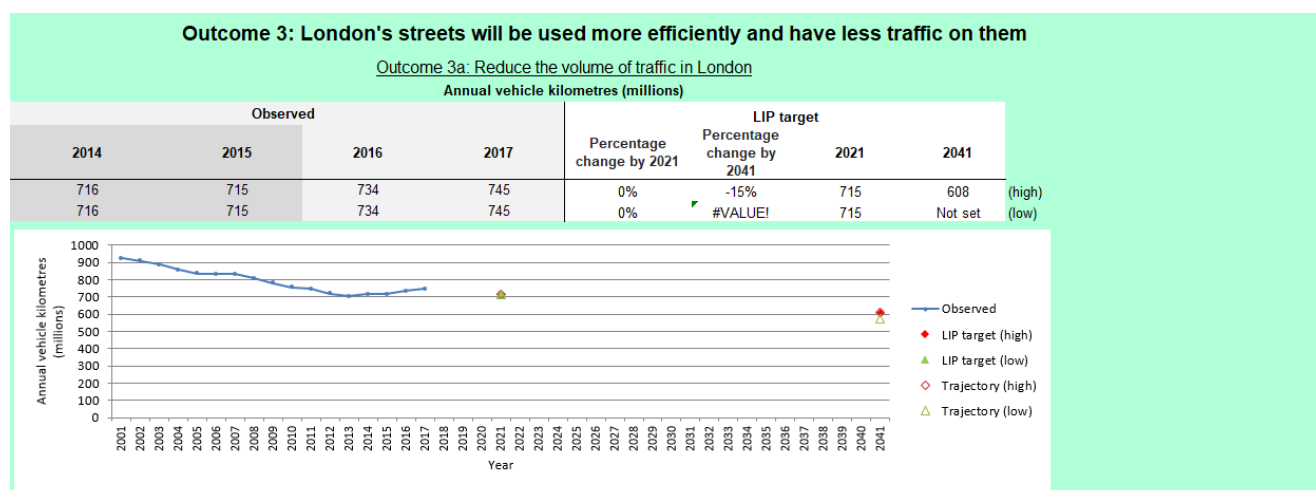


Figure 10: Traffic volumes: LIP3 MTS outcomes borough data pack v4 – July 2019

### Summary

Measurement of congestion at different times of day, precise analysis of road safety data and localised air quality monitoring could improve the levels of evidence, but the general trends are very clear. Across London and specific to Lambeth, goods vehicles contribute significantly to air quality, road safety and congestion.

The Mayor’s stated target is to reduce goods vehicles numbers in central London, as outlined in the Transport Strategy (Section 6). This means that Lambeth needs to deliver a 10 percent reduction in freight traffic within the CCZ that falls within the borough. This will require coherent policy for managing freight across the borough that tackles congestion, as well as air quality and road safety. It needs to be focused on the northern part of the borough, closest to Waterloo, although other freight hotspots exist at Vauxhall Nine Elms and local centres such as Brixton and Streatham.

## 4. Is freight consolidation deliverable?

### 4.1 Consolidation in practice

LB Lambeth are keen to promote consolidation of freight vehicles to reduce motor traffic and road danger associated with the growing numbers of servicing vehicles on Lambeth’s roads.

However, in order to justify and demonstrate the deliverability of the proposed policy approach, it is critical to understand both the barriers and benefits of freight consolidation, as well as the growing evidence of success and positive outcomes now being achieved.

A variety of urban freight management measures exist to help improve the efficiency, economy, safety and sustainability of goods movements into, through and out of London’s boroughs. There is no single solution guaranteed to succeed in all areas and the right mix of measures for each situation needs to be assessed based on specific local needs.

Consolidation is a proven, effective measure to minimise trips generated and optimise vehicle utilisation – essentially carrying more, using fewer vehicle trips.

Consolidation has been proven to work in many locations and in many forms, as referenced in the case studies presented below.

In recent times, freight consolidation has been encouraged by the public sector as one of a package of solutions to reduce the negative impacts of freight traffic. This has been based on greater understanding of logistics and supply chains and has coincided with rapid changes occurring in the logistics industry.

Changes in retail and consumer behaviour are driving this rapid change, requiring warehousing and cross-dock facilities to be located closer to the end customer.

In addition, there is now a track record of success for bespoke consolidation activity. If 'value added' services are required (such as security screening) or shuttle movements between buildings (e.g. schools, hospitals, local authority premises), the processes that can be provided through consolidation (e.g. unit rather than case picking, additional labelling etc.) can reduce costs and move the operation away from frontline activity.

This has been demonstrated by previous high-profile studies, including the Heathrow Consolidation Centre case study. This drew on data from when the centre was first established in 2000 and was published in 2009 by the Department for Transport's Freight Best Practice programme. The centre is still in operation, has moved site and changed scope, but is now the 'go to' model for UK airport operators.

The benefits of freight consolidation have been proved on numerous occasions over the last 10 to 15 years in Greater London. As mentioned above, Heathrow Airport UCC has reported vehicle trips being over 70 percent lower and the London Construction Consolidation Centre (operable between 2005 and 2007) estimated a 70-80 per cent reduction of CO<sub>2</sub> emissions as a result of the reduction in vehicle movements.

## 4.2 Successful approaches to freight consolidation

A range of successful and cost-effective consolidation-based solutions now exist. Consolidation is now one of several well-understood, cost-effective solutions to reducing the impact of freight.

Consolidation works in the following ways:

### Procurement-led consolidation

Where a group of businesses jointly purchase goods and services from a defined set of carefully selected suppliers, or one business buys in bulk on behalf of multiple internal departments, to reduce the number of deliveries (for example in a multi-tenanted building).

For example, the order of stationery for one organisation is combined with those of other businesses, so deliveries arrive together, on a single vehicle, at a shared site. This is appropriate when the businesses share a building or are in the same area. It is also relevant for single large organisations with multiple departments

ordering separately. A major benefit of collective procurement is that it increases buying power and can result in lower prices.

- Nottinghamshire Fire and Rescue Service saved £289,000 in stationery costs, between 2011 and 2018 compared to the spend in 2010. This was achieved by appointing a single supplier, specifying a list of essential core items for all departments, consolidating orders, and limiting the number of staff with authority to raise purchase orders.
- The Camden Council-led Borough Consolidation [Centre<sup>xi</sup>](#) (originally working with Enfield, Islington and Waltham Forest) was established in 2015, led to a 46% reduction in the number of vehicle trips delivering to council sites and a 45% reduction in the total distance travelled by delivery vehicles. This resulted in a decrease of 41% in CO<sub>2</sub> emissions, a 51% reduction in NOX emissions and 61% reduction in PMs.  
Other benefits identified by the Camden scheme were a reduction in procurement costs (through using a reduced number of suppliers, combined with bulk procurement with other boroughs) and a lower burden on receptions and post rooms through more scheduled deliveries.
- The first phase of the 2018 Defra-funded Clean Air Village [project<sup>xii</sup>](#) encouraged businesses to reduce their emissions from deliveries. In Lambeth, the project saw 14 Brixton butchers work together to negotiate with their existing suppliers, reducing the number of suppliers servicing the area from 11 to 5. This allowed them to reduce congestion and idling and make financial savings, it also had a benefit on the area's vehicle emissions.  
Overall, the butchers achieved a 55% reduction in the number of meat vans delivering to Electric Avenue and an 8-10% saving in their product costs following consolidation. It also led to a 55% reduction of PM2.5 and a 61% reduction in NOx, as well as a saving of 1,587kg of CO<sub>2</sub> emissions.
- An [evaluation study<sup>xiii</sup>](#) modelled the business benefits of a Consolidation Centre for the University Hospital Southampton to freight operators, the hospital trust and wider society. This demonstrated limited air quality benefits but substantial safety benefits (monetised as in excess of £1m/pa) and potential overall operational cost benefits (compared to previous standard practice) by 2030 of £0.5m/pa, which could be shared between the Hospital Trust and logistics operators.

This study suggests that the similar, London Healthcare Hub will provide cost and societal benefits to Guy's and St Thomas' Trust and Lambeth residents. The London Healthcare Hub which was launched on 1 October 2019 will consolidate and centralize storage operations allowing for a significant reduction of 90% per day in the overall number of deliveries to three major central London hospitals – Guy's Hospital, St Thomas' Hospital and the Evelina London Children's Hospital.

### Supply chain solutions

Effectively where goods for a single business, usually a retailer (such as a supermarket chain), uses a dedicated facility to receive stocks of different branded products from a number of different suppliers. These goods are then sorted and combined on one vehicle for onward delivery out to their stores.

Another example of supply chain collaboration is a pallet network, where multiple shippers and suppliers channel their palletised consignments through a network of freight operators (e.g. the [Palletline](#) and [Pallex](#)). The individual consignment is collected and transported to a central hub, where the pallets are sorted by destination area and are then grouped with those from other suppliers/shippers for onward distribution across the country. The final delivery is then made by the network's local operator.

The [Multi Carrier Consolidation Central London trial<sup>xiv</sup>](#) (GLA 2017) was conducted over a 10-month period from August 2014. The trial consisted of 3 case studies and some generic studies based on the data collected. While the precise data varied, the overall impact was reported as a 19 percent reduction in NOx and PMs and a 12 percent reduction in CO<sub>2</sub>. It also reported a 7 percent increase in the number of staff employed.

### Infrastructure led solutions

Urban Logistics Hubs, including micro-consolidation centres. The renewed consideration of logistics facilities closer to the final consumer has been driven by the rapid increase in e-commerce and the requirement for shorter lead times (often due to business competitiveness, rather than a real customer requirement).

Success has been clear where the centres are local and focused, but is often confused by the plethora of technology, new business start-ups and terminology. It can be simplified as:

- a) Urban consolidation centres (UCC): vehicles from multiple suppliers drop off their goods, which are then sorted into mixed deliveries to multiple end users. While a UCC is not strictly a warehouse, it can provide short-term storage until goods are required by the customer. This allows users to increase service levels for customers and to take advantage of bulk buying discounts when space is limited on their own premises. While the Bristol/Broadmead centre referenced in Section 4 below has now closed, the [Regent Street Consolidation Centre<sup>xv</sup>](#) based in Enfield has proved very successful in reducing delivery trips to Regent Street.
- b) Micro-consolidation centres: where the consolidation of goods occurs at a facility much closer to the delivery point. These centres usually serve very compact areas, handling small and lightweight goods, often delivered by couriers. e.g. [DPD all electric depot in Caxton Street](#), Westminster.

For both UCCs and micro-consolidation centres, zero emissions 'last mile solutions', such as cargo bikes and small electric vans, can be used to

provide additional environmental benefits. In April 2018 Sainsbury's [trialled](#)<sup>xvi</sup> cargo-bike deliveries from their store in Streatham. These trials exceeded expectations with 96.7% of orders able to be fulfilled in a single bike run.

- c) Pick up drop off (PUDO): where the principle is to bulk deliver to a single location and then enable the customer to collect. Two basic types of PUDO exist: locker boxes/locker banks (e.g. InPost lockers at Texaco, Albert Embankment) and click and collect at store, in either a dedicated retailer or at a local delivery point/hub (e.g. UPS Access Point in Methu Convenience, Telford Avenue)

#### Construction and new development consolidation solutions

Construction sites generate significant volumes of goods vehicle trips, delivering materials for build and removing waste products, particularly in the enabling works phase. As construction is a relatively short-term operation (typically 1 to 5 years) construction-related trips need to be effectively coordinated to minimise heavy vehicles queuing to access sites, creating congestion issues on the adjacent road network, and generating emissions, noise and other impacts on local amenity and the wider environment.

Construction consolidation ensures that materials are released in a phased, coordinated programme, thereby reducing the peaks in goods vehicle arrival at the construction site, reduce construction costs and wastage generated at site.

- The original London Construction Consolidation Centre identified that approximately 3000 goods vehicles did not enter the London Congestion Charging Zone over the two-year pilot as a result of the Centre. Construction consolidation centres, similar to the London CCC, report up to 70 percent reduction in freight traffic to site, 6 percent productivity gain based on increased workforce activity of 30 minutes per day and 7-15 percent reduction in waste
- TfL's [Construction Logistics](#) programme promotes efficiency and construction consolidation is accepted as best practice across many London boroughs, demonstrated by [The Directory of London Construction Consolidation Centres](#)<sup>xvii</sup> (2017 but due to be updated 2019).

In addition to the construction phase itself, there is a growing acceptance from developers of large sites in central London that managing freight traffic is part of the Development Management process. The City of London has had success in this area with consolidation being necessary to secure planning permission (see section 4 vi) below).

Lambeth has also demonstrated that freight consolidation is necessary for the increased density of developments now coming forward. The council secured a high level of freight consolidation for the Elizabeth House scheme in Waterloo for non-food retail and office supplies due to the site constraints at the location ([permission](#)).

When	Where	Vehicles	KMs	CO2	NOx	PMs	Other
2005	Broadmead, Bristol (based at Avonmouth)	70% fewer journeys to participating stores	Approx. 4,000 HGV kms fewer per month	Reduced by up to 600kg per month	Reduced by up to 1.2kg per month	Reduced by up to 100g per month	Better service at store level for those involved
2008	London Construction Consolidation Centre, Wilson James, Silvertown for TfL	60 to 70% reduction in <b>relevant</b> vehicle numbers (leading reduction of 40% at Unilever House) Reduction of 3,000 vehicles over 2 years	n/a	70 - 80% reduction (est)	n/a	n/a	increase in employment, site productivity and delivery reliability, decrease in on-site wastage
n/a	Regent Street Consolidation Centre, based at Brimsdown LB Enfield	74% reduction in trip rate	n/a	less pollution'	less pollution'	less pollution'	78% peak time trip reduction
2017	Camden Borough Consolidation Centre (Based at Brimsdown)	46% reduction in vehicle trips	45% reduction in distance travelled	41% reduction	51% reduction	61% reduction	Reduction in suppliers and bulk procurement led to lower procurement costs, "lower burden on receptions and post rooms through more scheduled deliveries"
2018	Brixton, LB Lambeth (DEFRA/CRP clean air villages)	55% reduction		1,587kg	61% reduction	55% reduction	8-10% reduction in product costs

Table 1: Case study summary

Evidence of successful practice elsewhere and recent development in Lambeth suggest that sustained roll-out of freight consolidation in the borough could be successfully implemented in the near future.

#### 4.3 Overcoming barriers to uptake of consolidation

A review of the challenges that need to be overcome in order to make consolidation work successfully has been conducted based on general information<sup>xviii</sup> and specific case studies. This is summarised below:

##### Business model:

Where consolidation is adopted by private businesses, the costs and benefits are rarely publicised. However, where public funding has been used to support a consolidation start up or operational set up it has been identified that:



- There are issues around how consolidation solutions are operated and financed. Clarity is required about who pays to run the service, whether it needs to be subsidised and whether the usage costs are a fair market value that incentivise the use; and,
- There is a fine balance between incentivising the use, covering operational costs and clarifying who carries the financial risk if the scheme is not used.

Implementation challenges:

- Infrastructure solutions, such as stand-alone consolidation centres, have significant set up costs;
- Consolidation solutions need to be able to support just-in-time and lean freight operations; delays and less flexibility in the supply chain cannot be tolerated within certain business models;
- Confidentiality issues exist around security or insurance with businesses sharing data and/or loads (including those associated with the double handling of goods);
- Some market sectors carry goods that have special requirements and cannot easily be consolidated without high levels of logistics industry involvement e.g. chilled, frozen, time sensitive, high value etc;
- Controlled/ regulated environment: There is a variety of issues to consider around how the additional costs associated with consolidation will be funded in a sustainable way; and,
- The right communications and engagement with the right people within businesses to attract users of the scheme is essential. There needs to be a strong core group of 'early adopter' users (in the case of open-access consolidation), to ensure initial traffic volumes are sufficient and to provide a platform for growth.

Some of these challenges could be relevant if public funding is required or suggested. There could be issues about the types of commodities being consolidated and the restrictions developers may need to place upon future tenants. However, these challenges are not insurmountable and freight consolidation works effectively in many operational environments.

## 5 Complementary measures

Consolidation has been shown to be an effective freight management solution in numerous scenarios, but it is important to consider how complementary solutions and supplementary measures can enhance the positive impact of single solution.

A great understanding of these solutions can be seen in the framework for freight management (Table 2) which is as applicable for day-to-day freight operations as it is for policy development. This approach mirrors that taken for carbon reduction (avoid, shift, improve) and waste reduction (reduce, reuse, recycle).

For policy development, a city or local authority that is addressing freight management would need to incorporate freight into all land use and transport

strategies and plans, and adopt a hierarchy of approaches to reduce the impacts of freight. These are:

- minimise the number of road freight trips by changing the mode, consolidating loads and ensuring effective land use planning;
- match the road freight movements to the space available on the road network; considering the time and place the delivery occurs and the route between the origin and destination; and,
- mitigate the impact of each road trip that remains, with safer and low or zero-emission vehicles, well trained drivers and quiet delivery equipment.

This hierarchy effectively underpins the approach adopted in the London Plan and Mayor’s Transport Strategy.

Further detail of the solutions and individual measures are presented below, with consolidation highlighted:

<b>Minimise road freight trips</b>	Modal Shift	Rail, water, bike, foot
	Land Use Planning	Built-in logistics space, positive conditions (e.g. overnight deliveries, waste) <b>Construction Logistics Plans (CLPs)/Delivery &amp; Servicing Plans (DSPs)</b>
	<b>Consolidation</b>	<b>Procurement, Supply Chain, Urban Logistics hubs,</b>
<b>Match demand to network and location</b>	Retime	24/7 access in certain locations. Changing planning conditions so that, rather than banning out of hours deliveries, the conditions instead enable quiet deliveries and prioritise out of hours deliveries, where these would not disturb residents
	Re-route	Routing and scheduling systems, pre-booking and preferred routes
	Change location	Kerbside management, agreed delivery locations available 24/7 and clear and consistent management between local areas (incl. across boroughs were appropriate).
<b>Mitigate impact</b>	Safer	Covering the driver, vehicle and operations. Some London wide policy provides basic control (including schemes such as Direct Vision Standard (DVS) due for implementation 2020). Local control and leadership from Lambeth BC and others on safety issues through Fleet Operator Recognition Scheme (FORS) and Construction Logistics and Community Safety

		(CLOCS) implemented in procurement and planning controls as appropriate.
	Cleaner	Euro 6 and zero emission vehicles as appropriate. Some London wide policy provides basic control (including Low Emission Zone and Ultra Low Emission Zone, which will be extended from CCZ to South Circular in 2021). Local control and leadership from Lambeth BC and others on procuring cleaner vehicles, and through FORS implemented in procurement contracts as appropriate.
	Quiet	Equipment, vehicle and training. Soundscape. London Boroughs currently controls potential noise sources through planning controls and local environmental health enforcement. The output from TfL's <a href="#">Retiming Deliveries Consortium</a> <sup>xix</sup> which involved LB Camden, RBK&C and LB Richmond, demonstrated that out of hours deliveries, often prevented by current planning conditions, could be made without disturbing residents and could have a positive impact on reducing congestion during peak periods.

Table 2: Freight solutions matrix (source ©FCL 2019)

Different actions are available to implement these solutions, from on-street regulations through to providing information in the form of case studies and online information. Technology is also developing quickly and can assist in many of these solutions (e.g. vehicle routing), but no technological solution has yet come to light that replaces the need for goods and services to move from one place to another; even adaptive manufacture (3D printing) will still require deliveries of raw materials.

This framework demonstrates the range of solutions that are available for implementation but, obviously, these can be combined as a package and then implemented in a local area.

To simplify implementation this could be done using a [Delivery and Servicing Plan](#)<sup>xx</sup> (DSP) approach, either for an individual site or for a wider area. The DSP approach (as required by London Plan policy T7) is designed to generate a suitable package of freight management measures. While the resulting package would be bespoke for the needs of the site or area under consideration, it requires good quality data to understand exactly what the issues are that need to be resolved. Ongoing management may also be required.

## 6 Conclusion - demonstrating soundness

When selecting freight management solutions, in a package or individually, it is essential to build a case for their selection and implementation. The principles of 'demonstrating soundness', as identified in the *National Planning Policy Framework 2018*, can be applied to determine that encouraging consolidation is suitable for Lambeth.

The four tests of soundness are:

### **i) Positively prepared**

Lambeth has responded to the challenges identified in the London Plan and Mayor's Transport Strategy through a clear and consistent approach to management of freight activity in the borough.

This is outlined in Lambeth draft Local Plan Policy T8, Servicing, which supports the London Plan policy T7 in full. The policy also outlines a range of potential freight management solutions that are necessary in the borough, including consolidation, to meet the overall Plan objectives and outcomes.

Delivery consolidation has been promoted for over 15 years through a variety of public sector policies, as evidenced by case studies. The public sector now understands where consolidation works, with the need for a clear business case for shippers, freight operators and/or receivers. There is also significant pick up from the private sector, driven by the demand for increasing levels of customer service and shorter lead-times.

Consolidation works. It can contribute to reducing the negative externalities of freight and be beneficial for businesses, operators and developers, particularly through construction consolidation, procurement and local and focused Urban Logistics Hubs.

### **ii) Justified**

There are demonstrable issues with vulnerable road user safety, air quality and congestion in Lambeth. These problems vary in different part of the borough and freight traffic will contribute disproportionately in different parts of the borough.

The success of consolidation in general, and specifically that achieved across central London and in Lambeth, all demonstrate a resulting reduction in the number of freight trips and environmental impact. Consolidation of deliveries and the use of the land use planning system, are two of the most effective ways to reduce the negative externalities of freight.

In addition, policies that encourage forward-thinking solutions are welcomed by the freight industry, which is changing rapidly and needs certainty of future policy direction to make the right investment decisions in property and vehicles to remain competitive.

### **iii) Effective**

Consolidation has been proven to be effective at reducing CO<sub>2</sub> and other harmful emissions and to improve local amenity and potentially road safety. The range of consolidation types (procurement, supply chain, infrastructure and construction) also prove it can be delivered in different locations and can be beneficial to businesses and operators.

The City of London is the most advanced in specifying the need for consolidation solutions to reduce the impact of new developments. However, both they and Lambeth can demonstrate the acceptability to developers of the policy through the developments at 1 Undershaft and Elizabeth House.

The evidence strongly suggests consolidation can provide a contribution to reducing the impacts of freight traffic. The precise level of this contribution will vary, depending on the commodity, the location, and the levels of public and private support. In addition, the consideration of complementary measures alongside consolidation could enhanced outcomes in particular locations.

### **d) Consistent with national policy**

There is limited national policy, but there is clear conformance with what exists. More importantly, the draft policy is in general conformity with the London Plan approach to freight and as it is further elaborated in the Mayor's Transport Strategy and other TfL documents.

Regional policy does provide a clear direction, but also very much relies on the boroughs adopting suitable approaches for their local areas. The Lambeth policy effectively 'picks up the baton' by outlining further measures to address local congestion, air quality and safety concerns.

## Appendix A Lambeth Draft Local Plan Policy T8

- a) The council will apply London Plan policy T7 to promote sustainable freight and servicing.
- b) New development, and in particular non-residential and mixed-use development, will only be permitted where adequate provision is made for servicing appropriate to the scale, form and location of the proposed development, including provision for commercial vehicles, ensuring that it is appropriate and acceptable in terms of impact on amenity of adjacent properties and road and traffic conditions of the location. Off-site consolidation to reduce the number of deliveries should be considered for larger developments or where access to the site is constrained. Innovative local delivery and last mile logistics approaches should also be considered to further reduce traffic impacts and emissions, and minimise potential conflict with vulnerable road users.
- c) Servicing should take place off-street within the development site. Where evidence is presented that this is not possible and it is demonstrated that servicing can take place from the public highway the council will seek planning obligations in the form of a commuted sum, considering both the cost of implementation and maintenance of any loading bay, as well as the opportunity cost of lost kerbside space, for example in terms of parking revenues. The approach to calculating commuted sums is set out in Annex 10.
- d) Planning applications for developments where the delivery/servicing requirements are of a nature where the type or number of trips generated is considered to be likely to have a significant impact on the adjoining public highway should be supported by a delivery and servicing plan.
- e) Planning applications for major development, and other development where construction related activities may lead to a significant impact on the surrounding public highway, should include a construction logistics plan or a construction management plan that is appropriate to the scale of the development demonstrating arrangements for construction traffic and how environmental, traffic and amenity impacts will be minimised.
- f) Planning obligations will be used to help secure and enforce appropriate arrangements.
- g) Developers and their contractors will be expected to adhere to the Construction Logistics and Community Safety (CLOCS) standard and required to demonstrate in a construction logistics plan that they have considered the impacts of other construction activities in the vicinity of the site and where appropriate have co-

ordinated construction activities with the developers and/or contractors of adjoining sites.

- h) 24-hour servicing operations should be considered where appropriate to encourage and support out-of-peak deliveries in order to reduce motor traffic and road danger, minimising the impact of servicing at the busiest times, particularly in areas of high footfall. In these cases quiet delivery agreements should be considered.
- i) New development should make use of existing consolidation and distribution facilities in order to minimise the number of trips required to service the site. Smart or joint procurement measures should be considered to reduce the numbers of deliveries and servicing trips as should the use of micro-consolidation centres. New micro-consolidation centres should be provided within developments where appropriate. Lambeth will also support applications for new standalone micro-consolidation centres within the borough.
- j) Zero emissions vehicles should be used for servicing wherever possible and consolidated deliveries are expected to be of this type. Any on-street loading bay required for a development should be supplied with an electric vehicle rapid charge point to allow zero emissions vehicles to operate from the bay.

### **Supporting text**

- 8.43. Servicing provision is essential to the viability of commercial developments. Servicing, including waste collection facilities, must be provided on-site and vehicles must be able to pull clear of the public highway without causing obstruction, unless it is clearly demonstrated that this cannot be accommodated and adequate justification is provided for this. If servicing is to be undertaken on street, it must be demonstrated that it would not lead to obstruction of traffic including buses, or lead to adverse safety implications for vehicles and/or pedestrians.
- 8.44. This is particularly important in mixed-use developments where adequate areas for servicing must be designed in a way which does not conflict or cause adverse amenity impacts where residential accommodation is included as part of the scheme. Therefore, servicing should be integrated into the development at the early design formulation stages and not after the scheme has been designed. Last mile logistics schemes enable goods for a town centre to be delivered to one local consolidation centre and then distributed to businesses by local, less polluting modes such as bikes and electric vehicles. Lambeth will support such schemes where they reduce the number of vans and lorries and cut costs for businesses.
- 8.45. The need to reduce the number of freight vehicles on Lambeth's roads is growing. The movement of goods vehicles in the capital has increased by

approximately 20 per cent since 2010, contributing to poor air quality, congestion and road danger. Lorries and vans currently account for around 20 per cent of road traffic in London and around one third in central London during the morning peak, when more people use public transport, walk and cycle. The Mayor's Transport Strategy includes an objective to reduce the number of lorries and vans entering central London in the morning peak by 10 per cent, by 2026. Developers must therefore minimise the need for freight trips and seek to manage freight and servicing, demonstrating through transport assessments, construction logistics plans and delivery and servicing plans, how the environmental impacts and road danger resulting from servicing vehicles will be minimised. Servicing at off-peak times of day and night can reduce impacts on road congestion and air quality, and potential conflict with vulnerable road users.

- 8.46. Cycle safety measures should be included in construction logistics plans for new developments, particularly to provide safe routes for cyclists during the construction period, and construction vehicles should be fitted with cycle safety equipment, including side bars, blind spot mirrors and detection equipment to reduce the risk of collisions on the borough's roads.



## Appendix B: References

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