

elementenergy

Cycle Logistics Study

Final report

for



**on behalf of the
Central London Sub-
Regional Transport
Partnership
(CLSRTP)**

20/05/2019

Element Energy Limited
Suite 1, Bishop Bateman Court
Thompson's Lane
Cambridge, CB5 8AQ
Tel: 01223 852499

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Authors

For comments or queries please contact:

Sarah Clements, Consultant, sarah.clements@element-energy.co.uk

Reviewers

Celine Cluzel, Director, celine.cluzel@element-energy.co.uk

Katherine Orchard, Senior Consultant, katherine.orchard@element-energy.co.uk

Acknowledgments

The authors would like to thank all those who contributed to our research and that gave the time to participate in interviews. Namely the City of London, City of Westminster, and the London boroughs of Camden, Islington, Richmond, Southwark, and Wandsworth; Business Improvement Districts (BIDS): Team London Bridge and Better Bankside and Industry: UPS, City Sprint, Zedify, Pedivan, E-cargo bikes, Champagne Lasseaux, Carry Me Bikes, Les Boîtes à Vélo. We would also like to thank those who reviewed and provided feedback on the initial recommendations, including Cross River Partnership, CLS RTP boroughs and the Central London Freight Quality Partnership.

Acronyms

B2B	Business-to-business
B2C	Business-to-customer
BID	Business Improvement District
C2X	Customer-to-customer or customer-to-business
CLS RTP	Central London Sub Regional Transport Partnership
CLFQP	Central London Freight Quality Partnership
CoC	Code of Conduct
CoL	City of London
CRP	Cross River Partnership
DfT	Department for Transport
EAPCs	Electrically Assisted Pedal Cycles
ECLF	European Cycle Logistics Federation
GVW	Gross Vehicle Weight
HGV	Heavy Goods Vehicle
LGV	Light goods vehicle (up to 3.5t)
MAQF	Mayor's Air Quality Fund
MTS	Mayor's Transport Strategy
P2P	Point-to-point
PCN	Penalty Charge Notice
PUDO	Pick-up/drop-off
SME	Small and medium sized enterprise
TfL	Transport for London
UKCLF	UK Cycle Logistics Federation
ULEV	Ultra-low emission vehicle
ULEZ	Ultra-low emission zone
ZEN	Zero emissions network
ZEZ	Zero emission zone

Executive Summary

Cycle freight – whereby deliveries are carried out by bike rather than by van – is a new sector which has the potential to decrease emissions and congestion in London, subsequently improving overall air quality within the city centre. The Boroughs that make up the Central London Sub-Regional Transport Partnership (CLSRTP) currently experience the most acute negative impacts of freight but also have some of the conditions that are ideal for fostering cycle logistics (high business density, Ultra Low Emission Zone, etc.).

CLSRTP is a collective of transport officers from central London’s local authorities. The partnership, which Cross River Partnership (CRP) manages and provides strategic direction for, on behalf of TfL, provides a borough-level focus on sub-regional transport priorities. CRP focuses on delivering innovative pilot projects with its borough and private sector partners (including Business Improvement Districts (BIDs)), collaboratively. CRP has been active in the fields of sustainable transport, last mile logistics, inter-modal freight management and air quality impacts since 2008.

The CLSRTP boroughs are City of London Corporation, City of Westminster, London Borough of Camden, London Borough of Hackney, London Borough of Islington, London Borough of Lambeth, London Borough of Lewisham, London Borough of Southwark, London Borough of Wandsworth and Royal Borough of Kensington & Chelsea.

On behalf of CLSRTP, CRP has therefore commissioned this research on cycle logistics to assess the best practices and develop a set of recommendations designed to increase the uptake of cycle logistics.

Cycling freight overview

There is currently a range of cargo bikes available on the market to suit an array of cycle freight needs – see figure below. Market trends in the past two years are for cargo bikes to get bigger, with maximum payload volumes now up to 2,500 L. Bikes and trikes are also available with new functionalities to cater for different requirements, such as a hot or cold box for the transport of food and beverages, and some manufacturers are offering unique customisation of the vehicle and box to cater for specific needs. Electrically Assisted Pedal Cycles (EAPCs) are now common: 42% of cargo bikes, 50% of cargo trikes and all quadracycles are offered with electric assistance.



In the UK, cargo bikes are used for logistics in at least 25 towns and cities, and within London specifically there are currently 31 logistics companies providing cycle freight services. The Mayor of London and TfL recognise the importance of alternative solutions for freight transport and have unveiled plans to make land available for cargo bike micro-distribution centres in the Draft New London Plan¹.

The government has recently (October 2018) announced a new £2 million government fund to support the uptake of e-cargo bikes within the UK². The full details of the scheme are yet to be announced, but boroughs should be prepared for the resultant increase in cargo bikes across central London.

Boroughs are interested in cargo bike uptake due to the environmental benefits the sector offers, such as the reduction in local air pollution (reduction in NOx and PM) and carbon emissions. For example, for every LGV replaced in central London, 6 tonnes of CO₂ and at least 14.1 kg NOx and 21 g PM per year would be saved (based on 80 km/day in central London).

Learnings from the industry

There are broadly three market segments within the cycling freight industry: the large and established logistic companies switching to cargo bikes for the last mile section (e.g. UPS, DHL, City Sprint); new logistic companies that focus on the last mile sector and solely or mostly use bikes (e.g. PedalMe, Pedivan, e-cargo bikes) and finally SMEs or sole traders using bikes to deliver their products or carry the equipment needed for their services (e.g. bakers, plumbers). The main barriers for industry for adoption are summarised below.

1) Lack of space	
<p>Logistics sector</p> <ul style="list-style-type: none"> Difficulties with locating appropriate space for micro-distribution and/or bicycle storage Option for using underutilised car parks is becoming more apparent, however expensive rates can be prohibitive in making a business case for cycle freight 	<p>SMEs and service providers</p> <ul style="list-style-type: none"> Cargo bikes/trikes are bulky and for SMEs, space on premises (or at home) may be limited Option to share storage sites with logistics operators, or encourage councils to install appropriate cargo bike parking at on-street residential or business locations
2) Infrastructure/Accessibility	
<ul style="list-style-type: none"> Some organisations have entire fleet made up of cargo bikes because cargo trikes take up too much space and therefore can't make effective use of cycle lanes or efficient cut-throughs London infrastructure often inhibits use of cargo bikes e.g. presence of gates and bollards, also canal pathways are too narrow 	
3) Changes in operation for commercial viability – Logistics sector	
<ul style="list-style-type: none"> Separating last mile deliveries and/or transferring them to cycle freight is a disruptive to operations At a minimum, additional sorting and handling procedures are required, which reduces efficiency. For a company implementing their own cycle freight, the additional cost of vehicles, recruitment of riders and setup of a distribution centre adds to the complexity 	
4) Regulation	
<ul style="list-style-type: none"> More clarity is needed regarding the power rating for electric bikes. All e-quad bikes are capable of doing 1kW peak load but the law says 250 kW 'rated' (steady state), recommend regulating speed not power Also discussion on potential for using walker trailer solution with power devices on pavements is needed 	

¹ <https://road.cc/content/news/257467-mayor-and-tfl-announce-plans-encourage-more-last-mile-deliveries-cargo-bike>

² <https://www.gov.uk/government/news/reformed-plug-in-car-grant-extended-into-next-decade>

5) Maintenance – Logistics sector

- Cargo bikes/trikes have high annual mileage which results in issues with brakes, electric motor (if EAPC) etc. and requires downtime of the vehicles, thus significantly impacting operations (and operating cost)
- Organisations are also finding difficulties with outsourcing maintenance – different costs and wait times, and as such they are often moving to conducting maintenance (and sometimes manufacture) in-house
- Trikes are a particular issue as they are a newer industry

6) Awareness and capability

- Challenges convincing consumers that cargo cycles are a viable option, particularly with delivery security
- Difficulties in pricing – some consumers are willing to pay more for the service, and some less,
- For traditional logistics organisations, also challenges with convincing internal staff that a change in operation to cycle freight is financially beneficial in some cases

7) Lack of councils leading by example – Logistics sector

- Some new logistics companies are focusing on encouraging boroughs to use their services for their own procurement to help get the critical mass of utilisation of cycle freight, which is required for the economically sustainable operation
- Changing internal processes within boroughs takes time

Recommendations for Boroughs

In order to help facilitate cycle freight uptake within London, 8 recommendations have been developed, summarised below. These recommendations have been tailored to suit boroughs at different stages of cycle freight engagement:

- **Stage 1** – No (or little) current activity
- **Stage 2** – Some small to medium cycle freight initiatives
- **Stage 3** – Cycle freight is a priority, embedded into transport strategy

Borough Stage	Recommendations
<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div>	<p>1) Identify opportunities for cycle freight within your borough Potential for BID assistance</p> <ul style="list-style-type: none"> • Based on the types of industries/employment/retail density within the area, boroughs should identify cycle freight opportunities and understand the customer base: <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; background-color: #e0e0e0;">Large offices with high concentration of parcel deliveries</div> <div style="font-size: 20px;">OR</div> <div style="border: 1px solid black; padding: 5px; background-color: #e0e0e0;">High number of SMEs making deliveries e.g. food produce</div> </div> • Identify the local conditions which favour cycle freight – e.g. congestion, motor vehicle restrictions, narrow streets and low motor vehicle parking available <p><small>Note, organisation type and conditions may differ significantly even within the borough</small></p>
<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto; margin-top: 10px;">2</div>	<p>2) Engage with Industry Key Case Study: The ZEN</p> <ul style="list-style-type: none"> • If office focused, engage with customers to understand delivery needs– what is important for those organisations requiring parcel delivery/courier services • If SME focused, raise awareness of the use of cycle freight <ul style="list-style-type: none"> • This may be through questionnaires, door to door targeting, social media or promotional ‘pop-up’ events • Set-up cargo bike hire scheme / grants for purchase of cargo bikes • Also if feasible, boroughs could provide training for these SMEs • Collaborate with BIDs to apply for upcoming Healthy Streets Funding – there is considerable interest in cargo bikes funding
<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto; margin-top: 10px;">2</div>	<p>3) Lead by Example Key Case Study: Camden</p> <ul style="list-style-type: none"> • Consider purchasing own cargo bikes for council activities e.g. promotional events, park maintenance, internal delivery or any other activity, where a car/van can be replaced • When outsourcing delivery services, procurement practises for choosing cycle freight should be promoted where possible e.g. Include a requirement for approved suppliers to offer cycle freight and tenders should allow for partnerships where only part of the procurement can be met by cycle freight

Borough Stage	Recommendations			
<p>2</p>	<p>4) Making space for logistics hubs and bike parking Potential for BID assistance</p> <ul style="list-style-type: none"> Once assessment of organisations has been completed (Recommendation 1), start to look for appropriate space for cargo bikes within the borough <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p style="text-align: center; background-color: #004a99; color: white; padding: 2px;">Dedicated cycle logistics hubs</p> <ul style="list-style-type: none"> Evaluate potential for use of underutilised car parks for micro-distribution hubs and secure bike storage If the council doesn't own much land, engage with private car park operators to see if they would be interested renting out their space to cargo bikes Opportunity for cycle logistics operators and SMEs to share the space </td> <td style="width: 10%; text-align: center; vertical-align: middle;">OR</td> <td style="width: 40%; vertical-align: top;"> <p style="text-align: center; background-color: #004a99; color: white; padding: 2px;">Residential/business cargo bike parking</p> <ul style="list-style-type: none"> Assess space outside SMEs/local market places to see whether there is potential for cargo bike parking spaces Also consider asking SMEs if they would prefer parking spaces near their homes in residential areas Council could provide lockable cargo bikes stands (potentially in those spaces that are currently for cars/vans) </td> </tr> </table>	<p style="text-align: center; background-color: #004a99; color: white; padding: 2px;">Dedicated cycle logistics hubs</p> <ul style="list-style-type: none"> Evaluate potential for use of underutilised car parks for micro-distribution hubs and secure bike storage If the council doesn't own much land, engage with private car park operators to see if they would be interested renting out their space to cargo bikes Opportunity for cycle logistics operators and SMEs to share the space 	OR	<p style="text-align: center; background-color: #004a99; color: white; padding: 2px;">Residential/business cargo bike parking</p> <ul style="list-style-type: none"> Assess space outside SMEs/local market places to see whether there is potential for cargo bike parking spaces Also consider asking SMEs if they would prefer parking spaces near their homes in residential areas Council could provide lockable cargo bikes stands (potentially in those spaces that are currently for cars/vans)
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<p>2</p>	<p>5) Continue to implement cycle friendly infrastructure and create Healthy Streets</p> <ul style="list-style-type: none"> Assess current cycling infrastructure within the borough and potential to create more cargo bike friendly routes. Recommended infrastructure includes: segregated and unsegregated cycle paths and Quietways, LENs and ZEZ areas, and 20 mph speed limits Review any street furniture or access restrictions such as bollards and gates that prevent cargo bike access and potentially remove or change to make the routes more accessible for cargo bikes 			
<p>2</p>	<p>6) Develop cycle freight strategy Case Study: City of London and Camden</p> <ul style="list-style-type: none"> Engage with different departments within the borough to develop a dedicated cycle freight strategy, outlining future plans and clear targets for the borough Incorporate specific cycle freight plans into new developments and ensure that developments are future-proofed to favour sustainable delivery and servicing Where suitable, boroughs should ensure that consideration is given to the inclusion of micro-consolidation centres, Pick-up Drop-off (PUDO) points, cycle friendly environments and restricted vehicular access in new developments 			
<p>2</p> <p>3</p>	<p>7) Engage with other novel modes of transport Case Study: DHL River Freight</p> <ul style="list-style-type: none"> Boroughs can help to facilitate the use of other low carbon modes of transport for freight when cycle freight is not the optimum solution for a given freight case For example, incentivise the use of electric and other zero tailpipe emissions vehicles where cycle freight is not an option, and potentially help to provide sufficient charging/refuelling infrastructure Also, as plans for river freight in central London develop, it is important for boroughs along the river to consider how cycle freight logistics could be integrated with river transport and the land available for distribution hubs 			
<p>3</p>	<p>8) Bigger Picture: Support London-wide cycle freight activity</p> <ul style="list-style-type: none"> Raise standards of cycle freight by contributing to the development of an industry-wide Code of Conduct which establishes responsibility and accountability during operations Also, conduct monitoring using defined metrics to evaluate the effectiveness of promotional measures and to quantify the wider benefits and impacts of cycle freight Facilitate new research on cycle freight on areas such as regulation changes required and integration with other freight measures Share key learnings of experiences with other, less advanced boroughs to help support the wider uptake of cycle freight across London. For example, attendance at relevant workshops or conferences to present current activities and successes 			

Note: The CRP has applied for MAQF3 funding for a Clean Air Thames project, which includes the shift of more light freight onto the river.

1 Introduction

1.1 Background

The Mayor’s Transport Strategy (MTS) puts Londoners’ health and quality of life at the centre of transport planning. Through the Healthy Streets Approach, the Mayor aims to promote ‘good growth’ by encouraging sustainable transport choices, improving air quality, using road space more efficiently and creating safe and attractive environments for active travel.

Delivery and servicing activities are essential for London’s economy. However, 90% of freight and servicing in London is done by road. Most delivery and servicing trips are made by vans and heavy goods vehicles (HGVs), which are major contributors to poor air quality. For example, in 2013, light goods vehicles (LGVs) and HGVs accounted for 33% of road transport NO_x emissions in Greater London³.

Freight also contributes to congestion, with freight vehicles currently making up a third of traffic in the central London morning peak. Additionally, as the economy grows, so will the demand for freight, and van traffic is expected to increase by 26% by 2041⁴. To mitigate the adverse impacts of this growth, the necessary freight activity must be carried out in a clean, safe, sustainable and efficient way on the road network.

One type of sustainable freight activity acknowledged in the MTS is cycling freight. The term ‘cycle freight’ or ‘cycle logistics’ refers to the transportation of goods using pedal (bi/tri/quad)cycles and electrically-assisted pedal cycles (EAPCs), sometimes referred to as ‘cargo bikes’. Throughout the remainder of this report the term ‘cargo bikes’ is used to describe all types of cargo bikes, trikes and quadracycles within the cycle freight sector, apart from in the vehicle overview section (2.1), where the characteristics of these specific vehicles are explored more detail.

Cycle freight is a quiet, low cost, zero emission option for transporting goods. Shifting deliveries from motorised vehicles to cycles can reduce congestion, reduce the impact of interactions with vulnerable road users, reduce noise, improve air quality and lower carbon emissions (Table 1), while saving money and increasing journey time reliability for operators.

Table 1 Annual emission savings achieved by replacing road goods vehicles, based on 80 km/day in central London

Freight vehicle replaced (diesel)	Emissions saved		
	CO ₂	NO _x	PM
7.5 tonne HGV	9.8 tonnes	7.4 kg	60 g
LGV	6 tonnes	14.1 kg	21 g

Cycle freight is a growing sector with significant potential in London. This topic was investigated by Element Energy for Transport for London (TfL) in 2017 (report entitled ‘Strategies to Increase Cycle Freight in London’, not published). Vehicle displacement projections in this research found that, with support from all partners, cycle freight could replace up to 14 per cent of vans in areas with high delivery density. Across the entirety of Central London, a reduction in ~11,500 LGVs is possible under a high uptake scenario (see Appendix for more information). Achieving this vehicle replacement, however, requires several enablers to be put in place by boroughs.

³ London Atmospheric Emissions Inventory (LAEI) 2013 update

⁴ Mayor’s Transport Strategy: Supporting Evidence Outcomes Summary Report (2017)

1.2 Objectives

The Central London Sub-Regional Transport Partnership CLSRTP is a collective of transport officers from central London's ten local authorities. The partnership, which Cross River Partnership manages and provides strategic direction for, on behalf of TfL, provides a borough-level focus on sub-regional transport priorities.

The CLSRTP boroughs are City of London Corporation, City of Westminster, London Borough of Camden, London Borough of Hackney, London Borough of Islington, London Borough of Lambeth, London Borough of Lewisham, London Borough of Southwark, London Borough of Wandsworth and Royal Borough of Kensington & Chelsea.

The Boroughs that make up CLSRTP experience the most acute negative impacts of freight but also have some of the conditions that are ideal for fostering cycle logistics (high business density, Ultra Low Emission Zone, etc.). Therefore, CLSRTP and Cross River Partnership have a pivotal role to play in enabling the MTS in terms of cycling freight.

In this context, CRP has commissioned this research on cycle logistics to assess the best practices and to develop a set of recommendations designed to increase the uptake of cycle logistics in central London boroughs.

The assessment draws on the views and experiences of London boroughs, Business Improvement Districts (BIDs) and industry stakeholders gathered through direct engagement. The evidence provides a baseline for the best practice use of cycle logistics and identifies opportunities to expand its adoption in London boroughs. This final report aims to give the CLSRTP boroughs a deep evidence-based understanding of the potential cycle logistics applications (for private operators and public sector fleets) and clear recommendations to support and accelerate the uptake of cycling among London freight/logistics operations, including key partnerships to realise the vision.

1.3 Approach

Best Practice Review

Desk-based research was carried out in order to provide a wide knowledge base on cycle logistics. In particular, this review aimed to identify developments in the sector. The research involved:

- Building a comprehensive overview of the cycle logistics market offer, including the manufacturers that exist and technologies they offer
- Presenting best practice examples of where cycle logistics solutions have been employed, with a focus on both private fleet/logistics operators and Local Authorities

London Borough engagement

Face-to-face interviews were conducted with 6 out of the 10 boroughs that make up the CLSRTP (Table 2), in order to:

- Identify potential applications for cycle logistics solutions in their fleets and examples of existing, successful cycle freight applications in their boroughs
- Assess the barriers to cycle logistics uptake that exist in their boroughs
- Discuss policies that could encourage and enable uptake
- Establish ways in which boroughs can implement supporting measures

Table 2 List of CLSRTP boroughs interviewed

Boroughs Interviewed
City of London
City of Westminster
Islington
Camden
Southwark
Richmond and Wandsworth

The boroughs interviewed are listed in Table 2. Interviews were requested from other boroughs within the CLSRTP, however they were not available within the timeframe identified.

External stakeholder engagement

A total of 10 guided interviews were conducted with a selection of industry players in order to find out more about current cycle freight activity within London and to provide an insight into the sector from a variety of industry perspectives, which is used to help guide London recommendations (Table 3).

Table 3 List of industry players interviewed

Category	Organisations interviewed
BIDs	Team London Bridge
	Better Bankside
Logistics operators	UPS
	City Sprint
Cycle freight operators	Zedify
	Pedivan
	E-cargo bikes
SME	Champagne Lasseaux
Social Enterprises	CarryMe Bikes
	Les Boites à Vélo

Interpretation and recommendations

Finally, the findings of the previous tasks were brought together to develop key recommendations for Central London boroughs which will enable them to facilitate the uptake of cycle freight within their local area. These recommendations have been tailored to three stages of current level of borough engagement, as identified during the interview stage.

1.4 Structure of the Report

Section 2 presents an overview of the current cycle freight industry in the UK, including an update to the market offer, compared to the findings in the Strategies to Increase Cycle Freight in London report for TfL, 2017. **Section 3** considers the potential for cycle freight within London from an industry perspective, drawing on learnings from the industry identified in the desk-based study and interviews. **Section 4** concludes the report by outlining recommendations for boroughs to help facilitate the uptake of cycle freight, based on findings in the previous sections. These recommendations are specifically tailored for boroughs, depending on their current stage of cycle freight engagement.

The Appendix contains additional supporting information.

2 Cycle Freight Overview

2.1 Vehicle Overview

Size and Payload Capacity

There is currently a range cargo cycles available on the market to suit an array of cycle freight needs. These range from standard messenger bikes, with a basket/box at the front above the wheel, to large quadracycles (a relatively new addition to the market offer), with rear-load boxes which have large payload capacity (see Figure 1, below).



Figure 1 Summary of the different types of cargo bikes that make up the current market offer

Each cycle freight type has a range of payloads and sizes available, from the smallest standard pushbikes carrying relatively low loads (under 10kg) up to cargo trikes and quadracycles capable of carrying up to 300 kg (for comparison, a 3.5 tonne GVW van can carry up to ca. 1,300 kg and up to 13,000-20,000 L), see Table 4. Cargo bikes and trikes both have the option of either front-load or rear-load boxes, with rear-load typically offering a larger payload volume and weight. Trailers can be used to extend the capacity of pushbikes and front-loading cargo bikes and trikes.

Cargo bikes and trikes are longer than standard pushbikes, requiring more care in overtaking, cornering and parking, however the London Cycling Design Standards provide recommendations for including these vehicles in infrastructure planning. Cargo bikes are generally more manoeuvrable than cargo trikes, they have a similar width to a pushbike so they can easily move around congestion, whereas cargo trikes cannot. Although both cargo bikes and trikes are allowed to use cycle lanes, trikes typically need wider lanes and access routes in order to not cause obstruction for other cyclists.

Table 4 Typical payload capability and width of cycle freight vehicles

<i>Range / typical</i>		Payload (kg)		Payload (L)		Width (cm)	
		<i>R</i>	<i>T</i>	<i>R</i>	<i>T</i>	<i>R</i>	<i>T</i>
Pushbike		20 – 150	25	30 – 80	30	50	–
Cargo bike		100 – 275	100	200 – 800	300	50 – 90	70
Cargo trike	Front loaded	100 – 300	100	200 – 2500	300	80 – 90	85
	Rear-loaded	200 – 300	300	500 – 1700	1000	80 – 120	100
Trailer		60 – 150	60	200 – 2100	300	80 – 110	100
Quadracycle		100 – 300	150	500 – 2000	1000	80 – 90	86

Electric Assist

The Electrically Assisted Pedal Cycles (EAPCs) market has grown considerably over the past 10 years. Electric-Assist is available as an option or included as standard in 40% of the load carrying cycles surveyed (pushbikes were not included in the survey). Of these only 1 messenger bike is offered with electric assist, compared to 42% of cargo bikes and 50% of cargo trikes. All quadracycles and one trailer (Carla Cargo) are offered with electric assistance.

There are a number of advantages of EAPCs for cycle freight riders. They are easier to ride on hilly terrain and with heavy loads. Also, they widen the pool of potential employees, by lowering the required fitness level. EAPC uptake is increasing among cycle logistics operators, especially for cargo trikes, with 28% of companies owning at least one EAPC trike in 2016 compared with 12.5% in 2014 (Cycle Logistics Industry Survey, 2016).

UK EAPC regulations were amended in 2015 to bring them in line with EU regulations (EN 15194)⁵. This included: increasing the allowed motor power up to 250 W; increasing the assisted speed up to 15.5 mph; and the removal of weight restrictions which allowed EAPC cargo bikes and trikes to be used without requiring a motor vehicle license. Note, EAPCs do not require a public charging network; they are charged at the depot or at the employee’s home using mains electricity.

Vehicles with a power rating over 250 W e.g. the Loadster (with 1,300 W peak) are classified as an ‘L category vehicle’. These vehicles therefore require a license, insurance and safety equipment. They also cannot ride in UK’s cycle lanes. As a comparison however, in the Netherlands electrically assisted bikes have no specific status with regards to traffic rules and therefore they must follow the same rules as mopeds. In some cases, mopeds are allowed on the cycle paths and therefore EAPCs can also use these paths⁶. In terms of the vehicles currently available on the market (Table 4), no pushbikes are classed as category L vehicles (the bike doesn’t require this high power). For cargo bikes and trikes, no example of category L vehicles have been found, however there may be some in the future. One L category quadracycle currently exists, see section 2.2.1 for more detail.

⁵ Cycles - Electrically power assisted cycles - EPAC Bicycles. Available at: https://standards.cen.eu/dyn/www/f?p=204:110:0:::FSP_PROJECT,FSP_ORG_ID:39396,6314&cs=11F7BD044C0C7BEB4971C304FC3CD855E

⁶ Rules & Regulations on Electric Cycles in the European Union, BIKE Europe (2017)

Cost

Prices of cycle freight vehicles were obtained from manufacturer and supplier websites⁷. Vehicle prices vary widely (from £500 to over £11,000) but broadly correlate with the payload capacity of the vehicle (see [Figure 2](#) and Figure 11 in Vehicle costs 5.2).

Without electric assist: The average price for a **cargo bike** is £1,900 (ex. VAT; range £1,600–2,450) and the average price for a **cargo trike** is £4,250 (ex. VAT; range £1,000–6,500).

With electric assist: The additional cost of electric assist (EAPC) for cargo cycles is largely dictated by the quality of the battery and EAPC system, but is typically in the region of £2,000 (range £700–£5,300). The average price for an **EAPC-cargo bike** is £4,100 (ex. VAT; range £3,600–4,500). The average price for an **EAPC-cargo trike** is £7,500 (ex. VAT; range £4,800–11,700).

In contrast to the case of vans, there is not a large second-hand market for cargo cycles and leasing is not available from manufacturers; however, financing options are available from some cycle shops (for example, London Green Cycles) which may help small businesses. Cycle logistics companies can also benefit from price reductions through bulk orders. In order to encourage businesses to switch over to cargo bikes the Department for Transport have recently announced a new £2 million dedicated fund that will contribute up to 20% of the purchase price of the cargo bike, for more details see section 2.3.1.

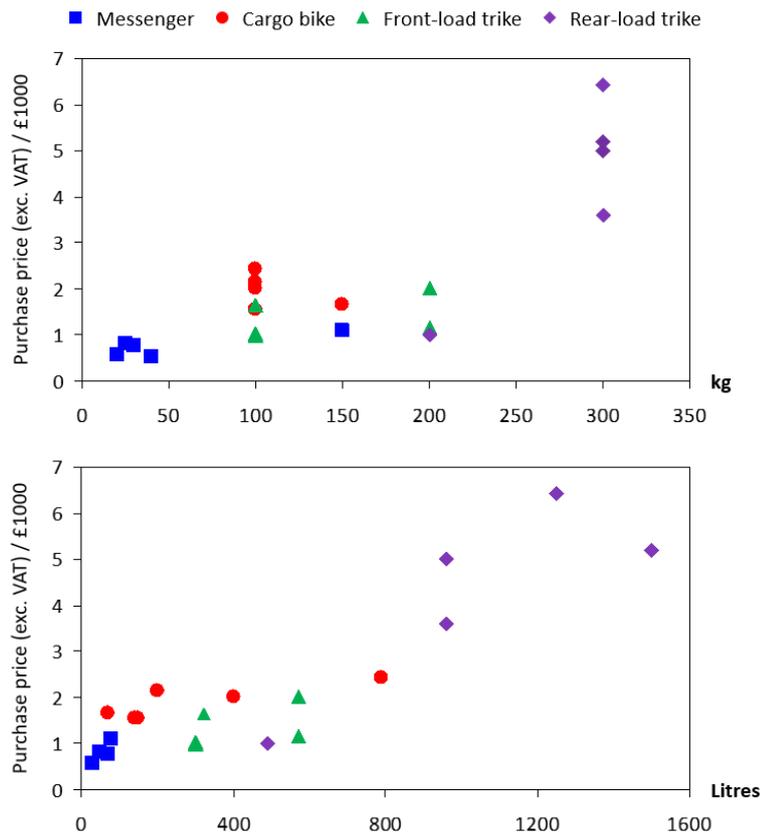


Figure 2 Vehicle purchase cost (exc. VAT) vs. maximum payload for non-EAPC vehicles. Source: Strategies for Cycle Freight Uptake, Element Energy, 2017. See Appendix for equivalent figure for EAPC vehicles

⁷ Prices were obtained during the study conducted for TfL, therefore correct as of July 2017

2.2 Update to Market Offer

There are a number of new technologies on the market to cater for different logistics requirements. This indicates a growing sector, with increased demand for cycle freight vehicles.

2.2.1 Innovations

Quadracycle

Quadracycles have recently been introduced to the market offer. Whilst there are two models currently available – the Armadillo (by Velove) and the Loadster (by CitKar), the Armadillo is the only one present in the UK market, with the Loadster being available in Berlin, Germany. DHL are currently trialling the use of the Armadillo – they call it the ‘cubicycle’ - in a number of European cities, including London, as part of their new last-mile logistics delivery system (see Case Study 9 for more details).

The payload capacity of a quadracycle is not any larger than that of a typical cargo trike (see Table 4), but the Armadillo has the advantage that the rear cargo box is the same size of a standard European pallet (i.e. ~1m³ / 1,000L), which offers seamless integration into the logistics system. The Loadster offers advantages of weather proof canopy/doors and electric range of up to 400 km but, as an L category vehicle, it is subject to more restrictions with regards to use of cycle lanes (in the UK) and licensing requirements.

Armadillo, by Velove



Loadster, by CitKar



BicyLift Trailer

Another recent innovation is the BicyLift trailer by FlexiModal which doubles up as a forklift and used to lift and transport a packaged load base on the standard Euro pallet. The trailer has a drawbar with 3 different angles that means it can be used for transporting by hand, by bike or, in its lowest horizontal position, resting. FlexiModal also supply an urban container to deliver parcels which can easily be lifted and transported by the BicyLift trailer.

BicyLift trailer, by Fleximodal



Royal Mail Solar Powered e-Trikes

In March 2019, Royal Mail launched their 6-month trial of e-Trikes in Stratford, Cambridge and Sutton Coldfield⁸. The e-Trikes represent a novel innovation as pedal power is assisted

⁸ Royal Mail roll out e-trike pilot Available at: <https://ebiketips.road.cc/content/news/royal-mail-roll-out-e-trike-pilot-scheme-1818>

by power from a combination of solar panels on the roof, regenerative braking and a battery. They are manufactured by an Italian company who have proven performance of vehicles with other logistics companies.



2.2.2 Market Trends

There are an increasing number of cargo cycles available on the market. In general, manufacturers are increasing the size and number of vehicles they offer, including offering new hot/cold box capabilities. These trends are discussed in more detail below.

1) Cycles are getting bigger

Many manufacturers are increasing their range of vehicles, to include bikes and/or trikes with bigger payload capacity. For example, Urban Arrow have recently introduced an XXL trike – the ‘Tender 2500’ with a payload capacity of 2,500 L, which can accommodate more than 2 Euro pallets.

There are now 2 quadracycles on the market which facilitate large payload volumes and weight, which offer more stability due to the 4 wheels.



Tender 2500, by Urban Arrow
Payload Capacity: 2,500 L

2) Increased functionality

Manufacturers are generally offering a range of ‘functional’ boxes for various applications. These include hot/cold boxes for transporting of food and medicine. For example, The Cargo Bike company has trikes suitable for the selling of ice cream or coffee.

Additionally, there are some ‘high-security’ boxes which have a central locking system and are ideal for servicemen such as plumbers e.g. Cycles Maximus with the ManVanTrike.

Finally, Pedal Me recently (Feb 2019) used their bikes to transport construction loads to a Cross Rail site at Whitechapel, a type of load previously considered unmanageable with bikes.



Traditional Ice Cream Tricycle, by the Cargo Bike Company



ManVanTrike, by Cycles Maximus

3) Opportunity for customisation

Increasingly, manufacturers are offering the option of custom-made bikes/trikes to suit individual needs.

This includes customisation of the length/width and battery size (if EAPCs) as well as the functionality of the cargo box itself. For example, WorkCycles custom make the boxes for their Kr8 delivery bicycle. Christiana bikes also offer customisation.



Custom made Kr8 Cargobike for Molly Malone’s sausages in Dublin, by WorkCycles

2.3 Current Cycle Freight Activity

2.3.1 Europe/UK Overview

The number of cycle freight companies operating in Europe has increased significantly over the past 10 years, see Figure 3 below. Based on the Cycle Logistics Industry Survey (2016), cycle freight is now used in at least 93 towns and cities across 17 countries in Europe. In the UK, cargo bikes are used for logistics in at least 25 towns and cities and within London specifically, there are currently 31 logistics companies providing cycle freight services (14 excluding the ones using pushbikes only). The Mayor of London and TfL recognise the importance of alternative solution for freight transport and have unveiled plans to make land available for cargo bike micro-distribution centres in the Draft New London Plan⁹.

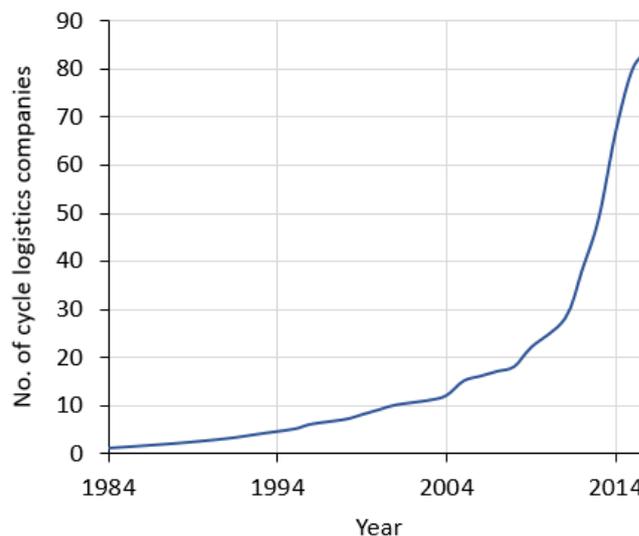


Figure 3. Historical increase in companies operating cycle logistics in Europe (based on year company was founded). Source: EE analysis of ECLF data

Car manufacturers are starting to include cargo bikes to their offer. For example, Volkswagen have recently demonstrated an e-cargo bike as part of their solution to sustainable goods transport in urban regions.

⁹ Mayor and TfL announce plans to encourage more last mile deliveries by cargo bike Available at: <https://road.cc/content/news/257467-mayor-and-tfl-announce-plans-encourage-more-last-mile-deliveries-cargo-bike>

The European Standardization Committee for bicycles (CEN/TC 333 'Cycles') has started to consider the need for a standard describing the safety requirements and test methods for cargo bikes to be developed.

New national grant in the UK

This year (2019) a new £2 million central government fund will be launched to support the uptake of e-cargo bikes. The full details of the scheme are yet to be announced, but the Department for Transport have stated that the funding will contribute 20% of the purchase price of new e-cargo bikes, up to the first £5,000 of any purchase price. Also, funding 'will be conditional on individual businesses following a code of cycle safety good practice'¹⁰. The scheme will be open for 12 months, in which period an increase in the number of cargo bikes across London and other UK cities is expected.

This scheme is a response to the Department for Transport's last mile call for evidence (July to September 2018) which aimed to improve the government's knowledge and understanding of the opportunities available to deliver goods more sustainably. The call for evidence included specific questions on how e-cargo bikes (as well as e-vans and micro vehicles) can provide better service to customers in comparison to light commercial vehicles, as well as the barriers to sustainable last mile delivery.

2.3.2 London Focus

Current cycle freight activity within London has been identified through desk-based research and interviews with CLSRTP boroughs, BIDs and cycle freight operators (listed in Section 1.3).

The map on the next page (Figure 4) shows a summary of London cycle freight activity as of February 2019. In general, cycle freight activity is clustered in some CLSRTP boroughs, with those North of the river experiencing more activity than those South. Cycle hubs are not cycle freight specific, they are hubs for general bikes, and are shown as a proxy for areas with high cycling activity. In total there are 33 SMEs, 31 Cycle logistics companies (14 excluding the ones using pushbikes), 1 supermarket and 2 restaurants are using cargo cycles in their daily operations (see Appendix 5.4 for a full list of organisations). It is important to note that the locations marked for the cycle logistics companies are not necessarily where they are operating from (or where their distribution hub is), often it is where the headquarters are located.

There is a high concentration of SMEs located in the North Eastern boroughs due to the presence of the Zero Emissions Networks (ZEN) in Hackney, Islington and Tower Hamlets (Case Study 16 and Case Study 17). The ZEN provides incentives to encourage the uptake of cycle freight within the region by initiatives such as cargo bike hire, cycle training and provision of grants towards cargo bike purchase. Other borough led initiatives are the Zero Emissions Delivery service in Waltham Forest with funding from the Mayor's Air Quality Fund, and a similar scheme in Greenwich as part of the Low Emission Neighbourhood (LEN).

¹⁰ Reformed Plug-In Car Grant extended into next decade. Available at: <https://www.gov.uk/government/news/reformed-plug-in-car-grant-extended-into-next-decade>

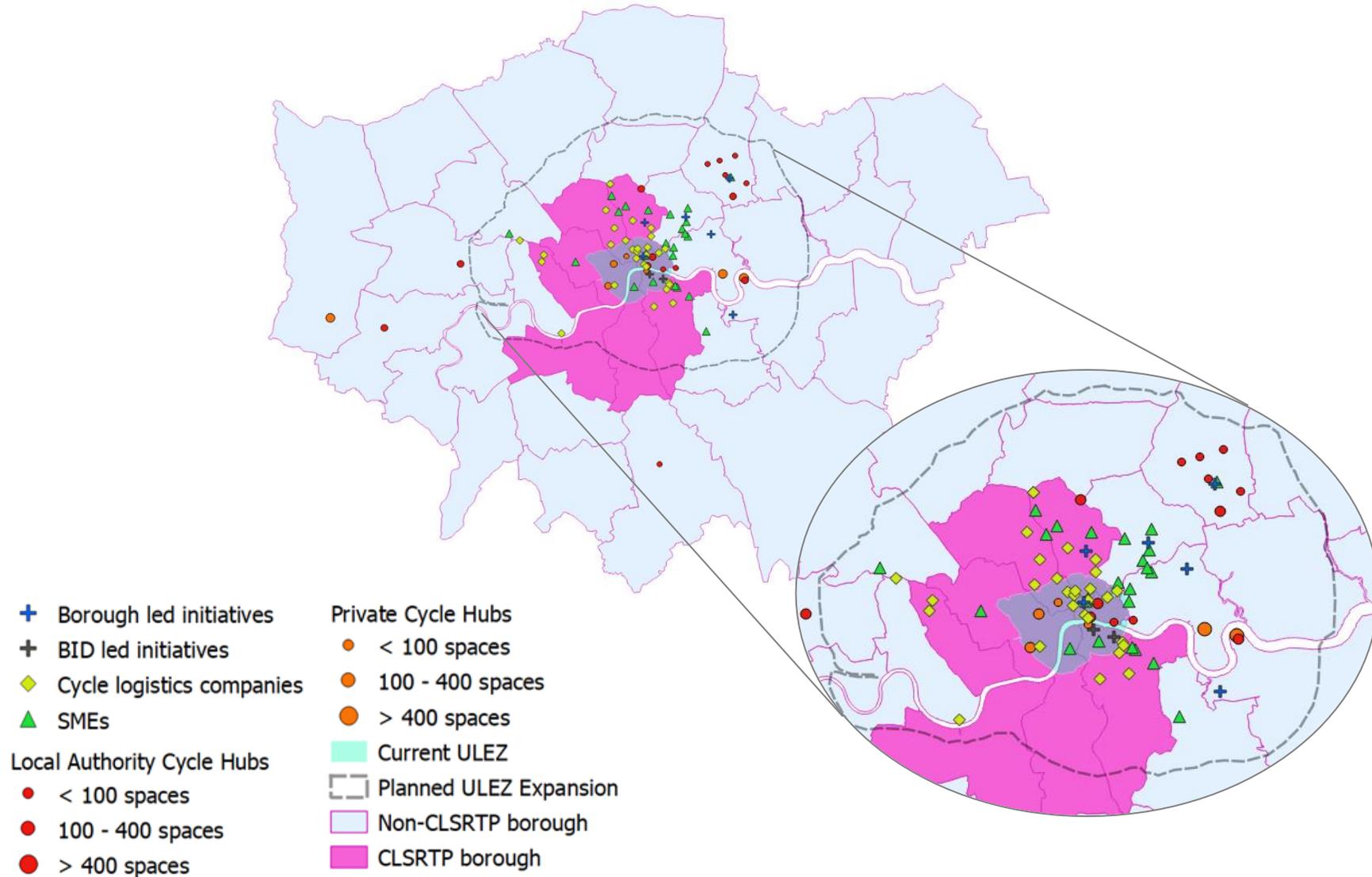


Figure 4 Cycle Freight Activity within London (as of January 2019)

Alternative zero emission delivery for short distances – walking

Whilst the focus of this report is on the potential for cycle freight within London, it is also important to recognise another prominent delivery method for the last mile of delivery is via walking. As noted by Will Norman, London’s first Walking and Cycling Officer, in CRP’s [Walkable London Best Practice Guide](#): “Walking offers an affordable solution to some of our most complex challenges.”

In a congested and parking-constrained city such as London, there are some local areas where cycles will also experience access difficulties and therefore walking can be used for the last part of the journey. Gnewt cargo are currently trialling Ford’s new digital parcel courier delivery service (Figure 5), which identifies optimum locations for van drivers to park near multiple drop-off points, and pedestrian couriers (potentially cycle in future) perform the last leg of the delivery using wheeled cases¹¹.

The transport of goods on footways needs to be acknowledged and supported by government. Specifically, a discussion for the use of a powered trailer on pavements whilst walking is needed. One logistics operator previously proposed the use of walking an electrically assisted trailer on pavements once the bikes have reached a high concentration of deliveries within walking distance. These powered vehicles however were not granted an exemption to be used on the pavement. For more information, see Appendix 5.3.



Figure 5 New digital courier service trial - operating with electric vans and walkers

In addition, the reduction of the number of deliveries entering central London, increased delivery efficiency, making the remaining delivery vehicles less polluting and avoiding exposure to local air pollution will remain pivotal in reducing the logistics impact on London’s liveability. CRP works with its partners and stakeholders on all of these aspects through, for example, the [Smart Electric Urban Logistics](#) project, the [Marylebone LEN Deliveries and Servicing](#) work, the [Clean Air Route Finder](#) for walking and cycling, development of the [West End Freight and Servicing Strategy](#), membership of the [Mayor’s EV Infrastructure Taskforce](#) and many more.

¹¹ Ford Partners with Gnewt by Menzies Distribution to Trial New Digital Parcel Courier Service Designed to Help Reduce Congestion and Offer Faster Deliveries. Available at: <https://www.gnewtcargo.co.uk/news/ford-partners-with-delivery-company-gnewt-by-menzies-distribution-to-trial-new-digital-parcel-courier-service-designed-to-help-reduce-congestion-and-offer-faster-deliveries>

3 Learnings from Industry

3.1 Market Summary

Cycle freight is most prevalent in urban areas, providing transport of goods over short distances. There are two main services that cargo bikes offer: Point-to-Point and First mile/ Last mile delivery, see Figure 6 below. Point-to-point (P2P) services collect items from one party and deliver them to another party at a different location, including business-to-business (B2B), business-to-customer (B2C) and customer-to-customer or customer-to-business (C2X) within a local area. First mile/last mile services carry deliveries from a local distribution centre to a customer, or vice versa. Dedicated cycle logistics companies typically do both services, either as sub-contractors to national businesses or point-to-point for local businesses.

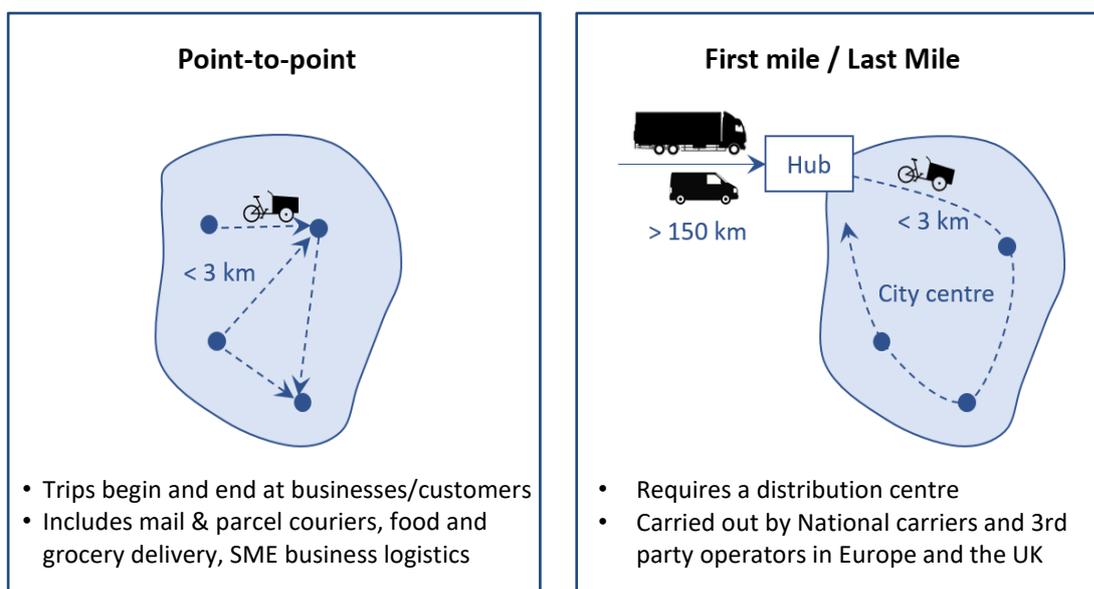


Figure 6 Summary of the two main cycle freight services

Previous work done by Element Energy on cycling freight involved the assessment in suitability for the modal shift from vans to cycle freight in each sector (Figure 7). This assessment is still valid: cycle freight is generally most suitable for all deliveries of light, low volume goods. In terms of fleet vans, those with the highest potential for cycle freight uptake are in the mail and parcel sector, as well as the public sector, particularly for inter-departmental mail due to its point-to-point (P2P) nature. Within the self-employed and small business sector, courier services and business logistics organisations have the highest potential for the use of cycle freight.

The use of cargo bikes is still strongly focused on the logistics sector as opposed to SMEs and services. However, our recent market review shows that the number of SMEs using cargo bikes for their operations (such as the delivery of their own produce) is growing, with 33 currently using cycle freight within London.

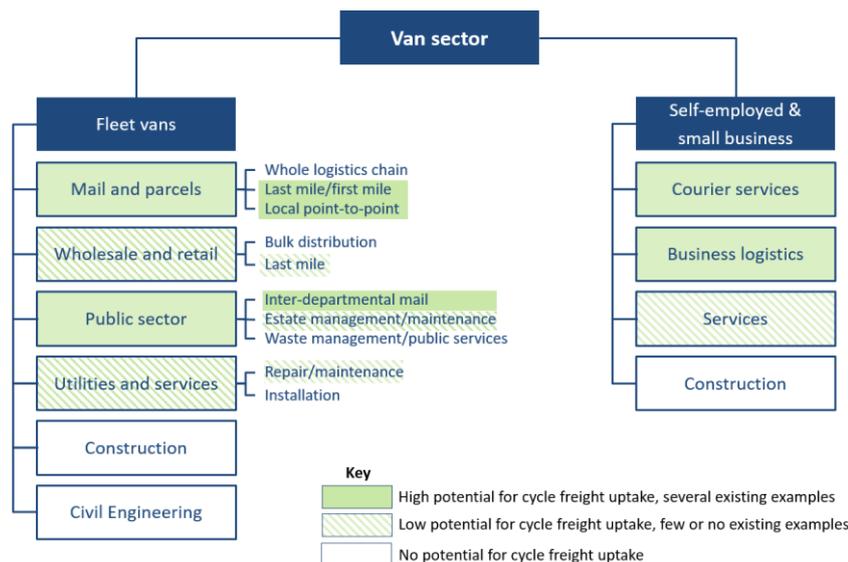


Figure 7 Overview of van-based freight sectors and their potential for modal shift to cycle freight. Freight sectors adapted from Commission for Integrated Transport (2011)

Market Segmentation

A review of the current market has shown that, in general, there are 3 types of organisations currently using cycle freight within London, each with unique characteristics and requirements.

1) Logistics Sector – Traditional

This segment type involves established delivery companies/national carriers that are switching some of their fleet to cycle freight for either last mile/first mile or (express) point to point delivery services.

Last mile and first mile services require a facility within, or on the edge of the delivery area to facilitate the transfer of goods from an HGV or LGV to cargo bikes, referred to as a distribution hub or microconsolidation centre (Figure 6). Distribution hubs typically involve one organisation driving pre-sorted containers to the facility, where packages are then transferred onto cargo cycles, whereas a microconsolidation centre involves multiple logistics companies delivering to one hub, from which point one logistics company takes over the sorting of packages and distribution via cargo bike. Example formats for distribution hubs include company depots, shipping containers and pick-up/drop-off (PUDO) lockers.

In addition to facilities for sorting packages, hubs also need sufficient space for securely storing bikes, as well as (in some cases) providing facilities for cyclists such as electricity for charging bike batteries, changing rooms and showers.

Some key players in the traditional logistics sector are identified in Figure 8. National carriers can either carry out these services internally or, in some cases (e.g. TNT), they will subcontract these services out to dedicated cycle freight delivery companies – those described in Segment 2, below.



Figure 8 Key ‘traditional’ logistic companies currently operating cycle freight in London

2) Logistics Sector – New

The ‘new’ logistics sector includes dedicated cycle freight logistics companies that, either entirely or mostly, use cargo cycles for their point to point and express delivery services. Their business model is based on the increased convenience and flexibility of bikes. As they are not large national carriers, delivery is localised and therefore if last mile/first mile are also included in the service offer, traditional logistics operators will be responsible for the rest of the delivery chain (i.e. inter-city or international delivery). Some traditional logistic operators subcontract the last mile delivery to these new logistics companies.

A recent addition to the market offer is the fast delivery of groceries for supermarkets. Sainsbury’s have previously trialled this (see Case Study 1), and Co-op have launched a new online delivery service in March 2019 using e-cargobikes.com to delivery to shoppers in a 4 km radius of the Co-op’s Kings Road shop in Chelsea¹².

These companies originate in cities where there is a high density of deliveries i.e. they require the identification of a large number of customers within a relatively small radius (mostly within a ~5 mile range) in order to begin operation. Whilst the traditional logistics sector also requires this high density for the switch to cargo bikes, they already have an established logistics system and so this high concentration of customers is already identified, whereas in the new sector, these customers need to be identified before operation can commence.

Most companies require space to securely store bikes overnight and potentially provide facilities for riders, unless they use self-employed riders, who will likely take their bike home. Like the traditional logistics sector, this segment will also need distribution hubs for operation if they are providing last mile services, however the implementation of these hubs will come after an initial customer base has been identified. New logistics companies are likely to share hubs with traditional, larger organisations in the future.



Figure 9 Key ‘new’ logistics companies currently operating cycle freight in London

3) SMEs and Service Providers

This third and final sector incorporates a range of different small businesses that use cargo bikes for their own deliveries, or to carry their own service equipment. They are the traditional ‘one-man-van’ companies such as plumbers and electricians, as well as bakeries, alcoholic beverage companies, audio-visual equipment hire, florists, and even hairdressers (see Figure 10). The nature of their work means that these businesses generally operate a point to point service, where they originate from their shop/home and then visit a number of customers throughout the day (often coming back to the original location in between).

¹² Co-op launches a new e-cargo bike online delivery service. Available at: <https://ebiketips.road.cc/content/news/co-op-launches-a-new-e-cargo-bike-online-delivery-service-1821>

Each company has unique requirements for their cargo cycle. This may be specific box dimensions, in order to fit in particularly sized equipment or tools, or box functionalities e.g. secure lock to protect expensive tools or a hot/cold box for transporting food produce.



Figure 10 Examples of SMEs currently operating cycle freight in London

3.2 Advantages of cycle freight

While there are limitations to cycle freight in terms of payload and distance of travel, using bikes for delivery has strong advantages in certain conditions, particularly cities with congestion and high customer density. The main advantages of cycle freight for operators are summarised in Table 5, below. These were compiled as a result of interviews in the initial study completed for TfL, and were confirmed as still relevant in interviews conducted as part of this study.

Environmental benefits such as the reduction in local air pollution (reduction in NO_x and PM) and carbon emissions are also an obvious advantage of cycle freight not included in the table. For example, replacing one 7.5t HGV in central London would save 9.8 tonnes of CO₂ emissions and at least 7.4 kg NO_x and 60 g PM per year. For each LGV replaced in central London, 6 tonnes of CO₂ and at least 14.1 kg NO_x and 21 g PM per year would be saved (based on 80 km/day in central London). Removing these vehicles from central London represents a damage cost saving of over £700 and £270 per year per vehicle for HGVs and LGVs, respectively¹³.

Based on these environmental credentials, businesses delivering goods and services by cargo bike are promoted in CRP's Ultra-Low Emission Supplier Directories that are being developed as part of the [Clean Air Villages](#) project.

Whilst these environmental advantages are important for cycle freight companies, they are not a key reason for uptake of cargo cycles. Uptake is more generally due to the avoidance of the resultant congestion charges implemented to reduce the presence of heavily emitting vehicles, such as the Ultra Low Emission Zone (ULEZ) which will be introduced in April 2019.

Table 5 Advantages of the use of cycle freight within Industry

Benefits
<p>Speed and reliability</p> <ul style="list-style-type: none"> • The ability to bypass traffic using cycle lanes and more direct routes, and with fewer parking restrictions, results in a 25-50% reduction in journey time¹⁴ • Cycles are less prone to traffic disruption resulting from accidents and roadworks, offering more reliable journey times • Cycles have more freedom to park, and can park closer to their destination, reducing travel time and improving reliability

¹³https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/460398/air-quality-econanalysis-damagecost.pdf

¹⁴ From interviews with cycle freight operators. See also: <http://www.av2hire.com/about.html> and Case Study 5

<p>Flexibility of service</p> <ul style="list-style-type: none"> • Greater speed and reliability allow for more flexibility in when deliveries can be made and the range of delivery services offered • In some cases, using a cycle freight company can help businesses expand. For example, when Pedal and Post took over deliveries for an SME, two cycle routes replaced one van per day. The flexibility of service allowed the SME to offer different delivery timeslots and to easily expand their business – now serving 6 times the number of clients as with the van
<p>Low running cost</p> <ul style="list-style-type: none"> - Cycle freight eliminates the risk of parking issues such as penalty charge notices (PCNs), which on average cost a fleet £1,500 per year per van¹⁵ - No or low fuel costs, depending on whether EAPC is used - No access charges, such as congestion, T-charge or ULEZ charge - Lower staff costs, where cycle freight replaces HGV drivers (with C1 licence requirements)
<p>Low capital cost</p> <p>As a low emissions vehicle, cargo bikes and trikes are a cost-effective option (for example, compared to an electric van); however, the capital cost benefit depends on the logistics model. For example:</p> <ul style="list-style-type: none"> - Where one cargo bike can replace one van, the capital cost is lower - For a large carrier replacing one van with 3 cargo vehicles, the cost may be higher
<p>Employee health benefit</p> <p>Cycle logistics offers much more active travel for staff</p>
<p>PR benefit: Cycle freight is viewed positively by the public</p>
<p>Reduced noise</p> <p>Cycle freight deliveries are inherently quieter than deliveries made by vans, since there is no engine noise and generally no heavy doors to open/close. Unloading also does not require equipment that itself can be noisy, such as tail lifts and metallic trolleys. Therefore, cycle logistics is suited to deliveries in areas and at times of the day that are unsuitable for motorised vehicles (e.g. residential areas, night time).</p>

3.3 Barriers to Uptake

Whilst the cycle freight industry has grown significantly within London in the past few years, there are still several issues and barriers to uptake that operators face, described below in Table 6. Some of the barriers - such as issues with vehicle longevity and maintenance requirements and customer awareness - are representative of any new industry/sector and will gradually improve over time. However, other barriers such as lack of space, appropriate infrastructure and councils leading by example are direct areas which boroughs can help to influence by recommendations suggested in Section 4.2.2.

Some barriers are specific to the logistics sector only, whereas others apply to all cycle freight companies (including SMEs and service providers). Those without specification in the table below apply to all organisations.

¹⁵ Calculated based on *FTA PCN Survey 2012*, and van fleet sizes from *Van travel trends in Great Britain*, RAC Foundation, 2014.

Table 6 Barriers to uptake for cycle freight - Industry perspective

Issue or barrier to uptake	
<p>Lack of space – Logistics sector</p> <ul style="list-style-type: none"> • Difficulties with locating appropriate space for micro-distribution and/or bicycle storage • Option for using underutilised car parks is becoming more apparent, however expensive rates can be prohibitive in making a business case for cycle freight 	<p>Lack of space – SMEs and service providers</p> <ul style="list-style-type: none"> • Cargo bikes/trikes are bulky and for SMEs, space on premises (or at home) may be limited • Option to share storage sites with logistics operators, or encourage councils to install appropriate cargo bike parking at on-street residential or business locations
<p>Changes in operation for commercial viability – Logistics sector</p> <p>Separating last mile deliveries and/or transferring them to cycle freight represents a disruptive change in operations.</p> <p>At a minimum, additional sorting and handling procedures are required, which reduces efficiency. For a company implementing their own cycle freight, the additional cost of vehicles, recruitment of riders and setup of a distribution centre adds to the complexity.</p>	
<p>Infrastructure/Accessibility</p> <ul style="list-style-type: none"> • Most organisations have entire fleets made up of cargo bikes because cargo trikes take up too much space and therefore can't make effective use of cycle lanes or efficient cut-throughs. Those that use trikes often have training schemes which focus on when it is appropriate to use a cycle lane and when not – they want to make sure that riders can make dynamic assessments • London infrastructure often inhibits use of cargo bikes e.g. presence of gates and barricades, also canal pathways are often too narrow • Some riders have also found that car drivers are not very happy with the presence of cargo bikes on roads 	
<p>Regulation</p> <ul style="list-style-type: none"> • More clarity is needed regarding the power rating for electric bikes. All e-quad bikes are capable of doing 1kW peak load but the law says 250 W 'rated' (steady state). It would be better to regulate the speed, not the power rating, as the power is not a good proxy for speed in the case of cargo bikes 	
<p>Maintenance requirements – Logistics sector</p> <ul style="list-style-type: none"> • Cargo bikes/trikes have high annual mileage which results in issues with high component turnover, such as brakes, and electric motors (if EAPC). This results in downtime of the vehicles, significantly impacting operations (and operating cost) • Some companies switch to vans (or smaller pushbikes) for deliveries when cargo bikes are out of service • Organisations are also finding difficulties with outsourcing maintenance, experiencing varying costs and wait times. As such they are often moving to conducting maintenance (and sometimes even manufacture) in-house • Trikes are a particular issue as they are a newer technology (meaning fewer part suppliers) • Cargo bikes are expected to last 5 years, but sometimes can be written off in only 18 months <p>This issue is relevant to the logistics sector due to their high use of the bikes (i.e. mileage); it might become relevant to some SMEs if they use bikes intensely too.</p>	

Awareness and capability

- Operators face challenges in convincing consumers that cargo bikes/trikes are a viable option for delivery, particularly in terms of security of delivery
- Some operators face difficulties in their pricing strategies - some consumers are willing to pay more for the cycle freight service, and some less, depending on consumer perception
- For traditional logistics organisations, there are also challenges with convincing internal staff that a change in operation to cycle freight is financially beneficial in some cases

Lack of councils leading by example – Logistics sector

- Some new logistics companies are focusing on encouraging boroughs to use their services for their own procurement to help get the critical mass of utilisation of cycle freight, which is required for the economically sustainable operation
- Changing internal processes within boroughs takes time
- Industry believes that boroughs leading by example is important – it will help cycle freight companies to win over the market and then provide services at competitive rates

3.4 London Case Studies

Case Study 1 – Sainsbury’s, Supermarket Delivery

Sainsbury’s are the first UK supermarket to trial grocery delivery by cargo bike



Sainsbury’s Cycle Freight Trial – May 2018

- Sainsbury’s was the first grocery delivery service to use cargo bikes in the UK, with its trial in May 2018
- 5 cargo bikes operated in South London (from the Streatham Common store) delivering up to 100 orders per day for 2 weeks
- Bikes were provided by e-cargobikes.com, with a capacity of 480 litres and payload of 125 kg
- Sainsbury’s routing technology determined which mode of transport was most appropriate for deliveries

Results of trial

- 96.7% of Sainsbury’s grocery orders could be fulfilled in a single cargo bike delivery
- Shorter delivery times and journey times (use of cycle lanes and bus lanes and greater road speed)
- Shorter ‘doorstep’ times by ability of e-cargo bikes to park at or closer to delivery locations



x 5



**x 100
Per Day**



Despite the trial being successful, Sainsbury’s have not yet released any plans to fully implement the scheme

Case Study 2 – UPS, Global Logistics Operator, London Cycle Freight Trials

UPS completed a cycle freight logistics trial in Camden in 2017 and are trialling the full delivery system in City of London in 2019



UPS Cycle Freight Trial – November to Dec 2017

- UPS has a long-standing low emissions policy for their fleet vehicles. In Hamburg and Dublin, UPS have setup cycle freight delivery models
- In November 2017, UPS launched their cycle freight trial in London, operating directly out of the London Depot in Camden
- Partners included: Fernhay, Skotkonung, Outspoken! Delivery and the University of Huddersfield
- The project aimed to develop a system that fully replaces a 7.5t van at scale for last mile delivery
- In 2019, UPS will launch their new logistics system in the City of London trial. A vehicle trailer will be loaded with 6 pre-loaded delivery boxes at the depot and then towed to the city centre and parked at an under-utilised location provided by the council
- Electric assist cycle freight solutions will then operate from this central location. Each vehicle holds 1 delivery box per bicycle, with each bike delivering 3 boxes per operator per shift

Holds x 1 pre-sorted box

Holds x 6 boxes



The new UPS last mile cycle freight delivery system is the first of its kind within London, launching in 2019

Case Study 3 - City Sprint, National Logistics Operator

City Sprint have recently increased their cargo bike fleet in London and are keen to expand further



City Sprint Increase Cargo Bike Fleet – Trial in 2017, over 30 bikes added to fleet since Feb 2018

- City Sprint is a courier service, offering P2P service with self-employed couriers
- In Aug 2017 City Sprint added 5 non-EAPC bikes to their fleet, following successful trials – bikes were crucial to maintaining high service levels during the pre-Christmas peak
- Since then they have added over 30 EAPC cargo bikes to their fleet, with each bike completing up to 20 jobs/day
- Inner London time trials showed that bikes complete jobs 50% faster than a van at peak times on week days
- City Sprint are keen to further expand their zero emission fleet in London (currently at 120 vehicles, including zero emission vans), mainly due to the introduction of the ULEZ in 2019, and outside of London in cities such as Brighton, Leeds and Bristol
- They are also trialling a hydrogen van to complete same day deliveries within London

x 40

x 800 Per Day



City Sprint are a leading cycle freight courier service within London, completing a high number of jobs/day via bike

Case Study 4 – Zedify, Cycle Logistics Operator

Zedify, the newly formed cargo bike logistics company, provides services to 6 cities within the UK



Zedify – June 2018

- Zedify is a new cargo bike company that formed as a merger of Recharge Cargo and Outspoken! Delivery, in 2018
- Zedify has a network of zero emission delivery operators with depots in London, Cambridge, Brighton, Norwich, Waltham Forest and Glasgow
- Their fleet consists of EAPC bikes and trikes, as well as electric vans to support the bike fleet as mobile warehouses or for heavier and bulkier deliveries
- They are partnered with Skotkonung technology company to provide end-to-end tracking of deliveries, and enable clients book deliveries online as well as see real-time delivery status
- Zedify has a range of customers
 - Local authorities e.g. City Of London
 - Traditional logistics carriers e.g. TNT
 - Local businesses: Cambridge Cheese Company, Perky Blenders, Edgar’s Fruit, Abcam Plc

x 9 Central London

x 6

Zedify are hoping to expand their fleet further, with new microconsolidation hubs opening this year

Case Study 5 - AV2 Hire, SME

AV2 Hire is a unique SME who provide audiovisual equipment hire by cargo bike



AV2 Hire – 2018

- SME based in Bloomsbury, providing audiovisual equipment hire including projectors, PA systems, TVs and loudspeakers etc. throughout London – approx. 14km radius around Central London
- Staff carry out 5-6 deliveries of equipment to customers (B2C) per day using non-EAPC cargo bikes. Riders handle 40-50 kg per trip but up to 100 kg is possible. Most (~80%) journeys are 2-5 miles but up to 10 miles is possible.
- **Motivations and benefits:** Environmental benefit, operational cost, speed and flexibility of service compared to a van. Journey times can be reduced by up to 50% compared to a van.
- **Main barriers:** Payload capacity when handling multiple items. If they were to use a trike to increase capacity, storage space on-premises would be limiting and speed in traffic would be reduced

x 3

x 5-6 Per Day

AV2 Hire demonstrate that transport of heavy/large items is possible by cargo bike

Case Study 6 - Champagne Lasseaux, SME

Champagne Lasseaux purchased a cargo bike using a Zero Emissions Network grant and now use it for most deliveries



Champagne Lasseaux – 2018

- Champagne Lasseaux is a Champagne company based in Hackney that delivers all over London using an electrically-assisted cargo bike
- The bike has a 200 kg payload capacity and the cargo box can fit 72 bottles of champagne in cases
- Champagne Lasseaux wanted to make their company more sustainable and so purchased a bike using a grant from the Zero Emissions Network
- **Motivations and benefits:** Avoidance of parking/bus lane tickets/congestion charge, parking is much more convenient and routes are often more direct, generated good PR – customers enjoy seeing deliveries being made by bike
- **Main barriers:** Capital cost (without grant wouldn't have been possible), some deliveries (12+ miles) take a long time, issues with accessibility due to presence of gates and narrow canal paths



x 1



Most deliveries



Champagne Lasseaux is a successful example of an SME using a cargo bike

Case Study 7 – Pedivan, Cycle Logistics Operator

Pedivan, a new cycle freight company, are partnered with the Archway ZEN and offer delivery discounts to members



Pedivan – 2018

- Pedivan are a new start-up B2B courier service, providing a delivery service to customers within a 5 mile radius of Central London
- They operate 2 electrically assisted trikes, with a max payload capacity of 300 kg
- Pedivan are partnered with the Archway ZEN – offering ZEN members two free deliveries (up to the value of £50) and 15% off thereafter, and are launching a new hub with Archway ZEN this year
- Currently they have 7 regular clients including a café, toy shop, and bike shop. They have also helped transport equipment for pop-up ZEN events
- **Motivations and benefits:** Environmental benefit efficiency of vehicles, health benefit, cheaper running costs (introduction of the ULEZ, avoiding congestion charge and parking fees), reduction of the speed limit
- **Main barriers:** Lack of space for distribution and bike storage, high concentration of customers required



x 2



x 7-8
Per Week



Pedivan are an example of a new cycle freight company with large potential once they get access to a central London hub

Case Study 8 – Carry Me Bikes, Social Enterprise

Carry Me Bikes is an East London social enterprise, offering cargo bike hire/purchase as well as leading many community projects



Carry Me Bikes – 2011

- Carry Me Bikes is a social enterprise operating in Hackney, East London since 2011 that aims to encourage families & businesses switch to bikes for their everyday needs
- They offer private hire of their cargo bikes and trikes (both electric assist or not) as well as outright purchase
- Customers can trial the bike for a week for free
- They also offer training with a national qualified cycle instructor if desired
- Pesky Fish are a startup currently hiring bikes – they get fish from Cornwall on the train and then use bikes for deliveries
- Carry Me Bikes have also participated in several community projects such as the Hackney family cycling projects, that involves providing a library of family cycling items and leading family bike rides

	x 10	For Hire
	x 3	Family projects



Carry Me Bikes is a unique socially-focused East London Case Study, that could be replicated across the city

3.5 Best Practice Examples Outside of London

Case Study 9 - DHL, Global Logistics Operator, Cycle Freight Activity Worldwide

DHL are leading globally in the provision of last mile logistics via cargo bikes



DHL Express Cycle Freight Logistics

- DHL have been using cargo bikes for its last mile logistics for several years, and as such have a large fleet of 26,000 cargo bikes and trikes (~9000 of which are electrically assisted)
- In 2015, they added a 'Cubicycle' to their bike fleet in the Almere, Netherlands – a quadracycle with a removable container the size of a standard pallet (1m³) and max payload of 125 kg manufactured by velove (the Armadillo), which integrates more seamlessly into the DHL logistics system
- The cubicycle's container is preloaded at a DHL express operational facility, which is then delivered to the city centre, where the bike is used for last-mile delivery
- More recently, in 2017, DHL launched 2 pilots of their 'City Hub' project in Utrecht and Frankfurt. The City Hub is a customized trailer which can carry up to four containers for the DHL Cubicycle to the city centre
- Each City Hub can replace up to two standard delivery vehicles, with a CO₂ saving of over 16 tonnes per year.
- DHL Express has introduced bicycles in more than 80 European cities in 13 European countries to date, including 14 Cubicycles in seven cities.



x 26,000



x 80



DHL are an example of a global operator that are successfully trialling new cycle freight innovations in their logistics systems

Case Study 10 - DHL, Global Logistics Operator, Using multi-modal delivery

DHL have a novel multi-modal way for delivering their parcels in the city of Amsterdam



DHL boat-bike Logistics Chain, Amsterdam

- In Amsterdam, DHL have an interesting multi-modal transport service for the delivery of their parcels
- Once the parcels reach the edge of the city they are transferred onto a canal boat to travel into the centre. The parcels are then loaded onto bikes for the last mile of their delivery
- DHL began using the boat to deliver the parcels in 1997, following a successful 18 month trial
- Initially they started with a fleet of 6 bikes, which has now grown to 9
- The boat acts as a multipurpose sorting and distribution hub as well as a storage space for the bikes overnight
- Approximately 2000 packages are sorted and delivered by this method each week
- This multi-modal delivery is also reversed for the collection of parcels, with bikes taking on the first mile and then delivering them to the boat at the dock



x 9



**x 2000
Per Week**



This case study could provide guidance for a similar model in London, in-line with Mayor's plans to maximise river freight

Case Study 11 - UPS, Global Logistics Operator, *Cycle Freight Activity Worldwide*

UPS have implemented a number of cycle freight logistics systems worldwide, which have received very positive response



UPS Cycling Logistics Worldwide

- UPS use cycle freight to provide last mile delivery in 3rd party logistics. Parcels are delivered by truck which doubles as an on-street city centre storage container for onward delivery by electric-assist trikes and/or on foot.
- In Dublin and Hamburg, several delivery routes have been replaced by cargo bikes, replacing: 7 vans in Hamburg, 4 vans in North Dublin
- UPS ran a cycle freight trial in London in 2017 and have recently announced (Oct 2018) that they will be setting up an e-cargo bike delivery system in Seattle, the first in the US (apart from one previous bike in Pittsburgh)
- The company also operates inner-city delivery projects on foot and by bike in more than 30 major cities worldwide including: Leuven, Mechelen, Paris, Toulouse, Frankfurt, Munich, Rome and Verona
- **Employee's perspective:** The main benefit has been increased exercise of cycling and walking. Easier parking means that more deliveries can be carried out from one location (on foot). Public reception has been overwhelmingly positive, with the trikes regularly photographed by pedestrians. Other road users, such as bus drivers, are supportive.

Low emission vehicles x 9000



x 30



UPS are keen to expand their cycle freight operations within London, with the launch of a new trial in the City of London in 2019

Case Study 12 - The KoMoDo project, Berlin

The KoMoDo project is a unique collaboration between several freight operators



KoMoDo, Berlin

- In June 2018 a new depot for last mile deliveries was launched in central Berlin – in Mauerpark, Prenzlauer Berg
- The one-year pilot project 'KoMoDo' is unique as it involves 5 major logistics operators working together: Hermes, DHL, DPD, UPS and GLS, each with access to a 14m² shipping container within the facility
- Packages are delivered to the hub by trucks, then distributed by cargo bike within the city centre (5 km radius). Overall project management is by BEHALA – a neutral provider.
- The project has been supported by funding of €400k, the funding was from the Ministry for the Environment, Nature Conservation and Nuclear Safety within the framework of the National Climate Initiative
- A German Consultancy will coordinate, monitor and report the results of the pilot. If the model of cooperative use of micro-depots proves successful, the plan is to implement other depots in large cities across the country



x 5 operators



x 1



This unique initiative could be replicated worldwide – sharing of sites between operators means less competition for valuable micro-depot space in cities

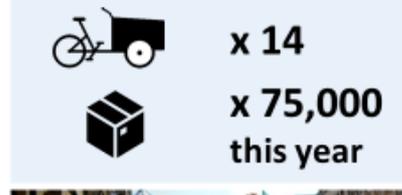
Case Study 13 - Pedal & Post, Cycle Logistics Operator, Oxford

Pedal and Post have recently expanded their bike fleet to include electrically assisted bikes and trailers



Pedal and Post, Oxford

- Pedal & Post offer last mile and P2P deliveries using cargo bikes (both electric and non-electric) and trailers. Additional services include storage for businesses and residents, pick and pack, and fulfilment.
- Customers include national carriers (such as Yodel, TNT and Hermes), small businesses, and a pharmacy. Operating out of shipping containers on the edge of Oxford, deliveries and collections are conducted over a 5-mile radius.
- In 2018, they delivered over 50,000 'last-mile' of parcels for Yodel, as well as worked with 55 local businesses
- In taking over deliveries for an SME, two cycle routes replaced one van route. The flexibility of service allowed the SME to offer different delivery timeslots and to easily expand their business – now serving six times the number of clients than with van



Pedal and Post is a key example of how cycle freight can successfully replace vans for last mile delivery – providing flexibility in service and increasing client base

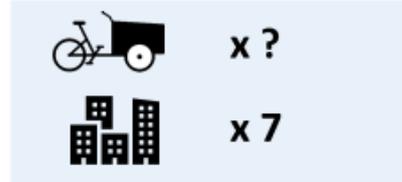
Case Study 14 - Les Boîtes à Vélo, Social Enterprise, France

Les Boîtes à vélo community group encourages a diverse range of commercial uses for cargo bikes



Les Boîtes à vélo, France

- Les Boîtes à vélo is a community group of cargo bike entrepreneurs that help promote use of cycle freight within the service sector e.g. electricians, plumbers, painters, mobile bike repairers, yoga and hair dressing etc. as well as traditional delivery and last mile services
- It acts as a platform for businesses to gain advice and support on using cargo bikes, with a monthly meeting to share ideas. The group also has a strong influence in lobbying local government
- The concept initially started in Nantes, France in 2012, and has now been replicated in many other cities including Grenoble, Paris, Angers, Lyon, Bordeaux, Lille and Tours
- This group demonstrates that cargo bike functionalities are expanding above and beyond parcel delivery – exemplified also by the several models of bike now available by manufacturers



This is a very interesting case – started by likeminded individuals. In order to replicate something similar in London there needs to be a critical mass of cycling entrepreneurs

4 Barriers and recommendations for Boroughs

4.1 Barriers to Uptake

Boroughs have the ability to significantly support the uptake of cycle freight within Central London. They have direct influence over infrastructure and local planning and can often help to fund new projects. Despite this however, boroughs face a number of barriers to uptake that need to be managed before they can confidently assist this new sector (Table 7).

Each borough has their own unique characteristics – comprised of the road infrastructure, congestion levels, building types, economic activity and population density. As such, not all barriers are relevant for all boroughs, and some are unique to certain areas within London. Appropriate infrastructure and accessibility requirements for cargo cycles is the only barrier which all boroughs felt was particularly important.

Out of the barriers listed below, the first two are the most critical. They are the most likely to persist if no concerted action is taken. This is reflected in the recommendations made later; noting that the leading Boroughs in terms of cycling freight activity are tackling these issues.

Table 7 Barriers to uptake for cycle freight identified by interviewed CLSRTTP boroughs

Issue or barrier to uptake	No. of boroughs
<p>1 - Infrastructure/Accessibility</p> <ul style="list-style-type: none"> Lack of cycle-appropriate infrastructure, such as cycle lanes (or wider cycle lanes) is a major barrier identified by all boroughs. Poor cycle infrastructure means that bikes aren't necessarily faster than vans, thus impacting the business case Some boroughs are engaging with TfL to implement Quietways or are including dedicated plans for cargo cycles in their transport strategies, including planning wider cycle lanes A number of boroughs identified the presence of gates, barricades and other physical obstructions used for controlling traffic flow as major obstructions for cargo cycles, and as such are trying to replace these measures with bollards instead, which are easier to navigate with bikes 	6/6
<p>2 - Providing space for microconsolidation locally</p> <ul style="list-style-type: none"> Boroughs recognise that securing the space within the local operating area is key in supporting cycle freight, but some noted that it was often challenging to accommodate this in required locations Parking stress, impact on parking revenues and limited scope for use of bays are key challenges for on-street sites Some boroughs, such as City of London, have transformed this barrier into an opportunity and are now well advanced in their plans to use underutilised car parks as distribution/consolidation hubs. See Case Study 19 for more information. Wandsworth also see space as an opportunity – particularly with new developments within the borough that will facilitate new businesses within the ULEZ Other boroughs highlighted the high cost of land within central London and noted that cycle freight operators would have to pay high rent for this space 	4/6

<ul style="list-style-type: none"> Finally, lack of ownership of sites is an issue for some boroughs and therefore engagement with private landlords is required to help facilitate the development of hubs 	
<p>3 - Scope for Financial Support</p> <ul style="list-style-type: none"> Several boroughs emphasised the need for cycle freight schemes to operate commercially, as boroughs do not have the resources to support them directly Others do not find this a major barrier as they have access to appropriate funding, or there are ongoing internal discussions regarding financial support for cycle freight City of London have developed a commercially viable solution and therefore financial support is not needed It is also important to note that as regulation tightens e.g. with the introduction of the ULEZ and zero emission zones, cargo bike delivery will become increasingly attractive from a financial perspective for organisations 	<p>4/6</p>
<p>4 - Pedestrian conflict/Bike congestion issues</p> <ul style="list-style-type: none"> Some boroughs are concerned about potential issues regarding parking congestion from bikes, resulting in access issues, such as lack of wheelchair access on pavements, particularly in areas which already have high footfall. The potential for illegal parking in loading bays outside of allowed hours was raised as a concern. Councils feel pressure as they do not have the power to enforce this parking unless they implement dedicated bike parking bays for cycles Having experienced conflict issues with pedi-cabs, several boroughs emphasised that they would want to be able to contact the operator if problems of pedestrian conflict and inconsiderate cycling or parking were arising. There is low awareness of a code of conduct (currently being developed by Team London Bridge in conjunction with TfL), which will help to address these issues. This is discussed later in Case Study 15. Other boroughs who have experience with cycle freight are not concerned with this issue as bikes are only on pavements for a short period of time and have so far had no issues 	<p>2/6</p>
<p>5 - Governance/Internal politics</p> <ul style="list-style-type: none"> Some boroughs identified competing priorities for transport within departments as a barrier for cycle freight uptake Lack of human resources to manage cycle freight-friendly schemes was also raised by one borough 	<p>2/6</p>
<p>6 - Lack of knowledge of the sector</p> <ul style="list-style-type: none"> Some boroughs lack awareness of the cycle freight sector and as such cannot make informed decisions about freight solutions Two CLS RTP boroughs declined interviews entirely based on their lack of knowledge/awareness. This report aims to directly tackle this barrier. 	<p>1/6</p>

Further barriers were raised during consultation with the Central London Freight Quality Partnership (CLFQP) on the 26th February 2019. Attendees had additional concerns regarding conflict with cyclists and safety:

- Boroughs are worried about the displacement of other cyclists. The presence of cycle freight on roads and cycle lanes may become unsafe due to the bulkiness/width of the vehicles and the high speeds possible with electric assist, which may encourage cyclists to move back to motorised vehicles. However, some boroughs, such as Camden, do not see this as an issue as they already implement 'adapted cycle lanes' that accommodate larger vehicles for those with disabilities.
- Electrically-assisted vehicles can travel fast (up to 15.5 mph) and therefore boroughs are keen to make training a requirement for cycle freight operators. Cycle freight operators are generally aware that training is an important aspect and research conducted by Team London Bridge (Case Study 15) shows that 40% of the 12 cycle logistics companies surveyed so far perform specific cargo bike rider training (equivalent to Bikeability level 3 training and/or specific training in cargo bike handling). All bar one company provide rider training of some sort (basic cargo bike maintenance training and/or a CoC as a minimum). Note that this research is currently in draft form, not all cycle logistics organisations have yet responded to the survey. A final report will be published later this year once all survey responses have been analysed.
- Some boroughs are concerned that regulation is not keeping up with vehicle developments and would like more safety aspects to be included, such as requiring an annual MOT.
- Additionally, as insurance is not required by law, some boroughs are concerned about what happens if accidents take place. Research from Team London Bridge shows that all cycle logistics companies currently surveyed (draft results) have insured cargo to protect against damage.
- Finally, TfL is encouraging a reduction in same day deliveries for offices¹⁶, however the nature of cycle freight means that it helps to provide same day delivery. This results in a competing agenda for organisations. This is suggested as an area for additional study in the future.

4.2 Recommendations

4.2.1 Borough categorisation

Based on the current cycle freight activity within the interviewed CLSRTP boroughs, 3 stages of borough engagement have been identified:

Stage 1 – No (or little) current activity

These boroughs generally have little knowledge/awareness of the potential for cycle freight within their area, and/or may perceive the barriers to cycle freight to be too high to implement initiatives. Additionally, these boroughs are likely to have less of the enabling conditions for cycle freight.

Stage 2 – Some small-medium cycle freight initiatives

Boroughs at this stage have implemented some cycle freight schemes – ranging from owning their own cargo bikes, to providing cycle hire or grants towards the purchase of

¹⁶ Reducing deliveries and service visits, TfL: <https://tfl.gov.uk/info-for/deliveries-in-london/delivering-efficiently/consolidating-deliveries>

a cargo bike for SMEs. Whilst boroughs have good knowledge and some options for future plans, cycle freight is not fully integrated into borough policy.

Stage 3 – Cycle freight is a priority, embedded into transport strategy

In this stage, cycle freight is well established within the borough, with larger schemes operating such as micro-distribution hubs and storage for bikes. The borough is generally aware of the significance of cargo bikes for the future of freight and has integrated cycle freight activities into wider transport strategy.

In general, boroughs fall into one of these stages, however some straddle two stage types as they are in the process of transitioning from one to the other, with some indication of activities at a higher stage.

Those boroughs at Stage 2/3 typically have more appropriate conditions to help encourage the uptake of cycle freight. These conditions fall into two categories:

- The makeup of local freight traffic – if this features more parcels, post and courier activity, which is more readily transferable to cycle freight e.g. high-density office or retail dominated areas, the area’s potential for cycle freight may be higher.
- Local conditions that are conducive to cycle freight such as the level of congestion, access restrictions, van parking availability and the presence of congestion charge zones/ULEZ. (this can be in addition to, or instead of, the first condition)

It should be noted that not all boroughs will necessarily have the conditions suitable to enable cycle freight and therefore some of those at Stage 1 may remain at Stage 1 even once they have evaluated the potential for cycle freight activity in their area.

4.2.2 Specific recommendations for boroughs

Recommendations of actions to support the uptake of cycle freight depend on the current stage of cycle freight engagement within the borough. A total of 8 key recommendations have been identified, in order of increasing level of cycle freight engagement.

1) Identify opportunities for cycle freight within your borough

Borough Stage 1 (Early Stage)	Key Case Study 15: Team London Bridge
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Based on the types of industries and employment/retail density within the local area, boroughs should identify opportunities for cycle freight and understand the local customer base – for example, identify whether the borough has more large offices with high concentration of parcel deliveries, or whether there are a high number of SMEs making deliveries, such as food produce. **They should also evaluate the location conditions which favour cycle freight**, such as congestion, motor restrictions, narrow streets and low motor availability of vehicle parking.

This information will typically be readily available within the borough itself (no new study needs to be commissioned), but **a review of the borough characteristics from a cycle freight perspective is required**. Note, organisation type and conditions may differ significantly even within the borough and these different conditions need to be catered for.

There is the potential for BID assistance with this recommendation as BIDs represent the industry within the area and can help with the analysis of cycle freight conditions. Case Study 15 (below) highlights the type of business engagement activities that BIDs can conduct.

Case Study 15 - Team London Bridge, Business Improvement District

Team London Bridge are conducting business engagement to identify recommendations for cycle freight uptake



Team London Bridge – Cycle freight recommendations

- Team London Bridge has an ambition to make the London Bridge area a leader in cycle freight deliveries
- They are currently conducting a review of cycle freight services offered as well as engaging with 100 businesses in the area to review their deliveries and identify where cargo bikes could successfully be used in their operations
- The key output of the project will be a preferred cycle freight suppliers list and a list of recommendations for businesses to facilitate cargo bikes and change their procurement process
- Team London Bridge aim to have 60 companies signed up to use cargo bikes for their delivery services after as a result
- Additionally, they are in the process of developing a cycle freight Code of Conduct with TfL and are open to feedback from businesses/operators and boroughs

Planned business engagement **x 100**
Businesses currently using bikes for delivery **25%**



Team London Bridge are leading with their level of engagement with cycle freight – other BIDs should replicate this

2) Engage with Industry

<p>Borough Stage 1/2 (Early to Mid Stage)</p>	<p>Key Case Study 16 and 17: The City Fringe and Archway Zero Emissions Networks</p>
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If the borough has a high concentration of offices, it is important to engage with these customers of freight services to understand their delivery needs. **Boroughs should conduct research to find out more about activities that would help these offices switch to using cycle freight**, such as an industry-wide code of conduct, or a list of suitable providers. Additionally, **discussions around the potential for cycle freight microconsolidation for large office buildings within the area should be initiated**. There should also be engagement with logistics companies and businesses already trying to establish cycle freight in the area to identify specific needs.

If a borough has a high concentration of suitable SMEs, boroughs should raise awareness of the use of cycle freight among these businesses. This could be via a variety of methods, such as: questionnaires, door to door targeting, social media or promotional ‘pop-up’ events. Cycle freight engagement (both with large organisations, cycle freight operators and SMEs) can be incorporated into existing business engagement activity within the borough to reduce the human resources requirement.

In order to encourage SMEs to switch to cargo bikes, a number of initiatives could be implemented by the borough. The Zero Emissions Networks (ZENs) in Hackney, Islington and Tower Hamlets are examples of such successful schemes (see Case Studies 16 and 17 below). The City Fringe Zen started in 2013, costing £600k (£300k funded by the Mayor’s Air Quality Fund (MAQF) and match funded by £100k from each borough) for 3 years, and has been extended for a further 3 years (until 2019) with £100k funding from the MAQF. The

Archway ZEN started later, in 2016, again costing £600k, with £300k from the MAQF and £300k match funded by Islington (the only borough involved). Both ZENs include initiatives such as the following:

- **Set-up cargo bike hire schemes:** providing vehicles for local businesses to use, either as a regular delivery solution or as a trial before buying their own vehicles.
- **Provide grants for the purchase of cargo bikes,** to encourage local businesses to buy their own vehicles. This may be less of a priority for boroughs now the government has announced new e-cargo bike funding for 2019 (see Section 2.3.1).
- **Set up a cargo bike training scheme** for SMEs within the borough – this could be an extension of existing scheme for residents, if applicable.

Another option is to **establish a local cycle freight delivery service**, such as the zero emission delivery schemes in Waltham Forest and Greenwich, (see boxes below). In establishing a delivery service, **the following steps are recommended:**

- **Carry out a survey of local businesses** to gauge interest and build contacts for prospective operators.
- If interest exists, **run a short trial.** If the trial is successful, tender for a cycle logistics provider to establish a local cycle freight operation.

<p>Waltham Forest, Zero Emissions Delivery Service, 2016</p> <ul style="list-style-type: none"> • Funded by £400k over 3 years from the Mayor’s Air Quality Fund • Phase 1: Christmas Courier Trial (2016), where free delivery was offered to businesses over a 2-week period • Phase 2: Full scheme launched in 2017, funded for 2 years with the aim of being commercially sustainable at the end of this time 	<p>Greenwich, Zero Emission Delivery, 2017</p> <ul style="list-style-type: none"> • Budget of £10k as part of the Greenwich Low Emission Neighbourhood • Procured a cycle freight operator for the provision of a zero emission delivery option for local businesses and residents • Scheme launched in September 2017 with 3 electric assist cargo cycles operating a 4 km radius
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Finally, **boroughs should take up the opportunity to collaborate with BIDs to apply for Healthy Streets Funding** as there is considerable interest in cargo bikes from TfL. The Healthy Streets Programme is the main investment programme for delivering the Healthy Streets Approach and the vision set out in the MTS for a healthier, sustainable city, with an initial budget of £2.1 billion¹⁷.

TfL now operates a scheme called Healthy Streets for Business (formerly known as Deliveries Reduction Fund) within the Healthy Streets Approach. Funding is available for BIDs and Partnerships to implement initiatives which exemplify best practice in reducing the number of vehicle trips, with examples in the 2019 guidance including using cargo bikes for last mile deliveries, and delivering recommendations made in BID cycle strategies. (Healthy Streets Fund for Business Bidding Guidance, TfL (2019)).

Cross River Partnership is well placed to advise current BID initiatives and available funding in many of the central London boroughs and identify possible collaborative partnerships that unlock additional sources of funding to increase impact.

¹⁷ Healthy Streets for London, TfL (2016)

Case Study 16 - The City Fringe Zero Emissions Network

The Zero Emissions Network is a successful collaboration between boroughs that could be replicated



City Fringe Zero Emissions Network – 2012

- The City Fringe Zero Emissions Network (ZEN) is an air-quality business cooperation initiative set up by the London Boroughs of Hackney, Islington and Tower Hamlets (funded by the Mayor’s Air Quality Fund)
- The network offers free advice and services to switch to low emission energy and travel, including a number of initiatives specifically related to cycling:
 - Cycle training
 - Cargo/E-cargo bike trial
 - Workplace grants (applications closed) that can go towards cargo bikes, cycle parking or cycle repair toolkits – 22 cargo bikes purchased in total
- Several local businesses have signed up to these initiatives, and as a result many are successfully using cargo bikes as part of their daily operations (slide 26)
- This initiative is a great example for other central boroughs to replicate

Since 2012 the initiative has gained:

Business members x 1200

Residential members x 700



The Zero Emissions Network is an example of a wide reaching initiative – with successful replication (Archway ZEN in 2016)

Source: <https://zeroemissionsnetwork.com/>

Case Study 17 - The Archway Zero Emissions Network

Archway have a number initiatives supporting cycle freight as part of the ZEN/Healthy Streets funding



Archway Zero Emissions Network and Healthy Streets for Business – 2017

- The Archway ZEN led by Islington council, aims to help businesses switch to lower emission energy and travel
- They offer a travel grant, cargo bike trials and training and a Dr Bike maintenance service
- Currently 3 businesses have switched, or are in the process of switching to the use of their own cargo bikes in their daily operations. 2 businesses have also switched delivery/collection supplier to Pedivan following Archway ZEN support
- Additionally, Healthy Streets for Business funding from TfL is being used in conjunction with the Archway Town Centre Group to convert 8 empty parking spaces close to Archway Underground Station to a parking & storage hub for cargo bikes
- The plan is to have one cargo bike available to all Archway businesses who want to use the hub. Additionally, businesses that wish to have their own cargo bikes can use the facility

Since 2017 the initiative has gained:

Business members x 97

 x 3



Archway ZEN was launched after the success of the City Fringe ZEN, with similar initiatives

3) Lead by Example

Borough Stage 1/2 (Early to Mid Stage)	Key Case Study 18: Camden
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London boroughs should consider purchasing their own cargo bikes for their own vehicle fleet which can be used for some council activities or services where appropriate, such as promotional events, park maintenance, or any other activity where a car or van can be replaced.

Measures should also be put in place to favour cycle freight for their own delivery logistics where possible. Recommended measures include:

- **Carry out a mapping exercise of operations** to identify where movement of goods is the appropriate weight, volume and distance to be carried out by cycle freight
- **Promote procurement practices for choosing cycle freight.** This could include a requirement for approved suppliers to demonstrate their sustainable credentials by offering cycle freight as part of their delivery options. In addition, tenders should allow for part fulfilment or partnerships between organisations where only part of the procurement need can be met by cycle freight
- **Encourage more cross-working and better communication across departments** and sites regarding delivery coordination and using cycle freight for deliveries, led by the management or procurement teams
- **Consider whether supplier frameworks can be adapted** to include cycle freight operators.

Camden is an example of a borough that is leading in this respect. They have 5 cargo bikes which they use for a range of activities, including promotional events and bike training. The use of bikes saves money and time for the council. Additionally, they have plans to switch to cargo bikes for their own delivery logistics – see Case Study 18 below.

Case Study 18 - Camden

Camden provide cargo bike training, own their own bikes and are integrating cycle freight into their transport strategy 

Camden – Leading by example with training schemes

- Since 2017 Camden have been operating a community cycle training scheme and promotional bike events. They recently provided training to staff at UCL that will be switching to bikes for last mile delivery as part of a new pilot microconsolidation centre around Bloomsbury
- The council also own 5 cargo bikes which are used for a combination of activities. One is used for carrying training bikes, another opens as a table and carries an inflatable marquee and leaflets for events
- WEGO consolidation with electric vans is currently used within Camden and Islington for internal mail, however there is a push to switch to bikes (part of the MAQF bid)
- Cycling is part of the Draft Transport Strategy – Objective 6J, which includes the following measures:
 - Working with local BIDs to conduct a full audit of suitable areas for potential consolidation hubs
 - Also investigate opportunities for last mile deliveries by cycle freight and dedicated loading and unloading space
 - Investigate the potential for a scheme to loan cargo bikes to businesses (and deliver if feasible)



Internal delivery

x 5 Council owned





Camden council are leading by example – with a combination of training schemes and own bikes for promotional activities

4) Make space for logistics hubs and bike parking

Borough Stage 2 (Middle Stage)

Key Case Study 19: City of London

Once an assessment of local organisations has been completed (Recommendation 1), **boroughs should look for appropriate space for cargo bike storage and operations.** There are 2 different types of space requirements:

Dedicated cycle logistics hubs (for cycle logistics operators)

- **Boroughs should evaluate the potential for use of underutilised car parks** and other available land for micro-distribution hubs and secure bike storage – both Council's and private land
- The inclusion of hubs in new building developments should also be considered
- **If the council doesn't own much land, engage with private car park operators** to assess the possibility of renting their space to cargo bikes. Archway ZEN are currently exploring this option, however they are at an early stage so no more information on this mechanism is currently available.
- Where there is opportunity for cycle logistics operators and SMEs to share the space, this engagement can be facilitated by the council during the procurement process
- **If space for distribution is not required, on-street parking spaces could potentially be rented to one or more operators**, as is currently done for car clubs. There is not yet an example of using on-street spaces for cargo bikes.

The City of London (CoL) is currently in the process of providing several micro-distribution hubs within underutilised car parks as they want to reduce congestion and air pollution within the borough. They completed their own loading bay survey to assess the level of LGV displacement that can be achieved within the borough and found that a large portion of deliveries are small packages (e.g. letters for the city) that could easily be switched to cargo bikes. In order to facilitate this switch, the City of London realised they have a role to play in the provision of infrastructure for cargo bikes.

There is overall agreement within the CoL council that the implementation of micro-distribution hubs is a good idea, reflected in the inclusion in their Draft Transport Strategy (under Proposal 38). The challenge, however, comes from governance and how they implement the strategy. The hubs involve renting of public land and so required a complicated process involving a tender for cycle freight company to provide services to CoL. For more information on the activities within the CoL, see Case Study 19.

Residential/business cargo bike parking (for SMEs/services)

- **Boroughs should assess space outside SMEs/local market places** to see whether there is potential for dedicated cargo bike parking spaces
- They should also **consider consulting SMEs as to whether cargo bike parking spaces near to their homes would be helpful.** If so, the council could potentially provide (pop-up) lockable cargo bikes stands, or bike hangars for more security (with priority access for SMEs) in residential bays that were previously for cars or vans

There is the **potential for BID assistance with the identification of suitable logistics hubs and bike parking spaces.** For example, Better Bankside have operated a cycle parking hub in Southwark for the past 3 years (although this is not dedicated to cargo bikes)

and have recently secured funding from TfL for a consolidation and retiming centre for Borough Market, where they hope to contract the delivery service to one cycle freight operator.

5) Continue to implement cycle friendly infrastructure and create Healthy Streets

Borough Stage 2 (Middle Stage)

Boroughs should assess the current cycling infrastructure within the borough and the potential to create more cargo bike friendly routes. In-line with the MTS and Healthy Streets agenda, recommended infrastructure measures for supporting cycle freight include:

- Segregated and unsegregated cycle paths and Quietways
- Filtered permeability (e.g. narrow access points) and other types of full or part-time access restrictions to motorised vehicles.
- Low Emission Neighbourhoods, local ULEZ and Zero Emission Zone (ZEZ) areas
- 20mph speed limits and other cycle friendly traffic calming measures

Cycle freight opportunities should also be identified and included when submitting funding bids for these initiatives. A preferred partner or supplier can develop a behaviour change programme to support the realisation of the scheme benefits.

Note that some filtered permeability may also restrict cycle freight access due to the width of large bikes and/or trikes. Therefore, a review of any street furniture or access restrictions such as bollards and gates that prevent cargo bike access should be considered and potentially removed or changed to make the routes more accessible for cargo bikes.

6) Develop a cycle freight strategy

Borough Stage 2 (Middle Stage)

Key Case Study 19: City of London
Key Case Study 18: Camden

It is key for boroughs to engage with different departments within the borough to develop a dedicated cycle freight strategy, outlining future plans and targets. The cycle freight strategy could form a section within a wider strategy document, such as a low emissions delivery strategy, or within a more general transport strategy, or it could be a stand-alone document. Regardless, it would need to **include a clearly defined strategy for promoting a shift from van deliveries to cycle freight, with defined targets, actions and timescales.** For example, both Camden and City of London have specific proposals related to cycle freight within their Draft Transport Strategies (see Case Studies 18 and 19). **Early collaboration with relevant stakeholders such as landowners and BIDs can help facilitate implementation** of these strategies.

New developments present good opportunities to incorporate specific cycle freight plans and to **ensure that developments are future-proofed to favour sustainable delivery and servicing.** Where suitable for large master planning schemes, or as part of wider spatial planning, **boroughs should ensure that consideration is given to the inclusion of micro-consolidation centres, Pick-up Drop-off (PUDO) points, cycle friendly environments and restricted vehicular access.**

Case Study 19 - City of London

The City of London are well advanced in their cycle freight strategy, with several micro-distribution hubs planned



City of London – Cycle freight strategy and launch of micro-distribution hubs

- The City of London realised they have an important role to play in the shift to cycle freight by providing appropriate infrastructure (they already use City Sprint for own deliveries)
- They conducted a review of council owned assets and are now in the process of preparing for the build of 3 micro-distribution hubs within underutilised car parks
- Engagement with cycle freight operators is ongoing – want to accommodate their needs e.g. chargers for e-cargo bikes, good Wifi access, understanding space requirements
- The hubs will operate commercially – cycle freight operators will pay market rent for the space
- Plans for UPS to use one hub are already underway, others are out for tender late 2019
- Cycle freight is included in the CoL Draft Transport Strategy under Proposal 38 which aims to reduce the number of motorised freight vehicles in the Square Mile
- In the Local Plan (under consultation in Feb 2019), cycle freight must be considered as an option for underutilised car parks. Also, land for storage/distribution in basements must be included in new developments

Proposed bike hubs

x 3

Internal delivery

The City of London is a key example of the level of engagement boroughs can have with cycle freight

7) Engage with other novel modes of transport e.g. River freight

Borough Stage 2/3 (Mid to Late Stage)	Key Case Study 10: DHL River Freight
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Whilst cycle freight has many advantages, it is not the best solution for all freight transport cases. Therefore, other modes of transport will be more suitable for transporting goods over longer distances and between cycle freight operating areas. For example, Zedify use electric vans for the movement of parcels between their depots in Greenwich and central London (Case Study 4). **Boroughs should incentivise and facilitate use of electric and other zero emissions delivery methods where cycle freight is not an option, and potentially help to provide sufficient recharging/refuelling infrastructure.**

Another method of transporting freight is via vessels on the river, which the Mayor of London is keen to explore on the Thames in Central London. The Port of London Authority (PLA) is also supportive of river freight distribution, with a number of dedicated staff advising operators on the development of river freight projects and associated land development issues¹⁸. There was a 40% increase in the volume of freight moved on the river Thames between 2015 and the end of 2017, representing progress towards delivering the Thames Vision (an ambitious plan to maximise use of the river)¹⁹. In order to help encourage this increase in river freight, The CRP has applied for MAQF3 funding for a Clean Air Thames project, which includes the shift of more light freight onto the river.

As plans for river freight in central London develop, **it is important for boroughs along the river to consider how cycle freight logistics could be integrated with river transport and the land available for distribution hubs**, thus helping to create a novel multi-modal

¹⁸ <http://www.pla.co.uk/Port-Trade/Moving-freight-by-water-on-the-River-Thames>
¹⁹ <https://pla.co.uk/Thames-freight-increases-as-Thames-Vision-strategy-starts-to-bear-fruit>

system for freight distribution. See Case Study 10 for a key example of how a river and cycle logistics system has been successfully operating for years in Amsterdam.

8) Bigger picture: Support London-wide cycle freight activity

Borough Stage 3 (Late Stage)

Key Example: Mini-conference

To help support the uptake of cycle freight across London, **boroughs should help to raise standards of cycle freight by contributing to the development of an industry-wide code of conduct**, which establishes responsibility and accountability during operations. This is particularly crucial for the mass uptake of cycle freight services, as it will help the industry gain a professional reputation and give confidence to organisations in procuring delivery services.

Also, as cycle freight in London is still in relatively early stages, **it is important that effective monitoring is in place to learn from the effectiveness of measures to promote cycle freight uptake and to quantify the wider benefits and impacts of cycle freight**. Defined metrics should be used, including the following:

- Number of businesses using cycles
- Number of cargo bikes in operation
- Number of items delivered
- Motorised vehicle trips avoided
- Reduction in van numbers and vehicle km
- Impact on traffic flows and congestion
- Emission reductions and air quality improvements

In addition to monitoring, **boroughs should also independently conduct, or help to facilitate, new research on cycle freight**. This can cover a variety of aspects, such as:

- **Research related to technology innovations and needed regulation changes** (for example, the use of electrically assisted walker trailers on the pavement as discussed in Section 3.3). With a growing population and an unabated appetite for goods delivery, the shared use of pavements will however need to be considered, whether with pedestrians pulling a trailer, or autonomous robots delivering boxes. Research on the topic is advisable.
- **Research on potential secondary impacts of cycling**. There is still little evidence on this topic as the sector is relatively young. Examples of potential impacts, such as whether cycle freight is encouraging the uptake of express delivery services and therefore adding pressure to the freight sector (discussed as a barrier for boroughs in Section 4.1), could be one such focus area.
- **Research into the integration with other freight measures**. Cycling freight, like re-timing or consolidation centres is one of several solutions to address some of freight negative impacts. A better understanding on how to combine measures would be beneficial to the sector.

All research will help to develop this new sector and provide evidence for new initiatives or policies.

Finally, leading boroughs should endeavour to share key learnings of their experiences with other, less advanced boroughs in order help support the wider uptake of cycle freight across London and to integrate into their future plans. This can

include attendance at relevant workshops or conferences, to present their current activities and successes, which will particularly help to guide those at an earlier stage of engagement.

An example of such an event is a mini-conference on cycling freight that could facilitate shared learnings between boroughs. This idea has been proposed to CLSRTP boroughs and most are keen to attend and present their experiences if required. A proposed agenda for such a conference is shown in Table 8. CRP will discuss this option with CLSRTP partners taking into account various other cycle and cycle logistics events taking place in 2019.

Table 8 Proposed agenda for mini conference on cycling freight

Time	Agenda Item
10.00-10.15	Introduction – CRP
10.15-10.45	Case Study Presentation: Making space <i>City of London present ‘How to implement a micro-distribution hub’</i>
10.45-11.15	Case Study Presentation: The role of BIDs <i>Team London Bridge present their Code of Conduct and research findings</i>
11.15-11.30	Comfort Break
11.30-12.00	Case Study Presentation: Engagement with Industry <i>Islington Council present ZENs</i>
12.00-12.30	Case Study Presentation: Leading by Example <i>Camden Council present own initiatives/cycle training schemes</i>
12.30-13.00	Q&A on general aspects of cycle freight

4.2.3 Summary and Collaboration Required

Cycle freight is a credible part of the transport mix for the future of sustainable freight logistics within congested city centres. The recommendations described in this section aim to help boroughs to facilitate cycle freight, with actions appropriate to the borough’s local conditions and the feasibility for businesses to use cargo bikes. Whilst boroughs are inevitably at different stages of cycle freight engagement, and some will not have suitable conditions to engage at all, this report aims to maximise the overall uptake of cycle freight across London, with boroughs committing to dedicated actions and sharing learnings to help the city progress with this new sector.

Whilst the recommendations in this report are borough-led, it is worth noting that a collaborative approach between a range of organisations is needed. Collaboration between the CLSRTP boroughs is required to create a cohesive London-wide strategy – particularly relevant for those recommendations which involve cross borough boundaries such as recommendations 4 (making space), 5 (implementation of cycle friendly infrastructure) and 7 (engaging with other novel modes of transport e.g. river freight).

Collaboration with BIDs, industry, wider government and landowners is also required within several of the recommendations. The first recommendation, to identify opportunities for cycle freight within the borough, should involve engagement with BIDs as they represent the industry and the potential to offer a coordinated and targeted approach, which engages with several industry players at once. The recommendation to make space for cycle logistics hubs or cargo bike parking can also involve BIDs, particularly to help secure funding for these initiatives. Landowners (especially private car park owners) should also be targeted

within this recommendation 4, when boroughs do not own much land for the development of logistics hubs.

Finally, the implementation of the recommendations should be monitored and discussed regularly as an agenda item at the CLSRTP meetings. This will provide an opportunity for boroughs to compare initiatives and share key learnings. Discussion of cycle freight with the Central London Freight Quality Partnership (CLFQP) members would also be valuable, to gain industry perspective on proposed actions, and to ensure that any concerns are raised early on.

CRP will integrate the recommendations made in this report in its forward programme planning for CLSRTP. CRP and CLSRTP boroughs will also apply the learnings from this report to wider programmes, such as the Defra-funded [Clean Air Villages](#) project that is working with businesses and local communities to reduce emissions from deliveries and servicing vehicles. Examples of the solutions created based on this work include the shared use of cargo bikes by local business groups as well as the promotion of businesses delivering by cargo bike in local Ultra-Low Emission Supplier Directories.

5 Appendix

5.1 Vehicle displacement projections

In our previous study, we developed a forecast for uptake of cycle freight that focuses on the displacement of LGVs in London in the near-term (out to 2025).

Two uptake scenarios were used:

- **Low (1% displacement):** A business-as-usual scenario where few provisions are made for cycle freight and little change in business practice occurs beyond that which is already underway
- **High (6% displacement):** A best case scenario in which distribution spaces are provided and motor vehicle access restrictions are in place in suitable, high density urban areas across London. Major operational change is assumed for the parcel sector, with some operational change in low uptake sectors

The study found that displacement is not homogenous. In areas where there is a high concentration of LGV delivery and collection activity, as much as 14% of van displacement could be possible. Also, since vans often park in multiple locations within a short distance of each other in their duty cycle, removal of one van removes a much higher proportion of vehicle km and kerbside activity.

Estimated impact on the reduction in number of LGVs and their annual km mileage is shown in Table 9 below.

Table 9 Estimated cycle freight uptake potential for London under High and Low uptake scenarios

Scenario	Reduction in daily number of LGVs crossing cordon		Reduction in annual LGV vehicle km (millions)	
	Central London	Inner London	Central London	Inner London
Low (1%)	1,500	2,500	0.9	6.8
High (6%)	11,500	19,000	6.5	42.6

5.2 Vehicle costs

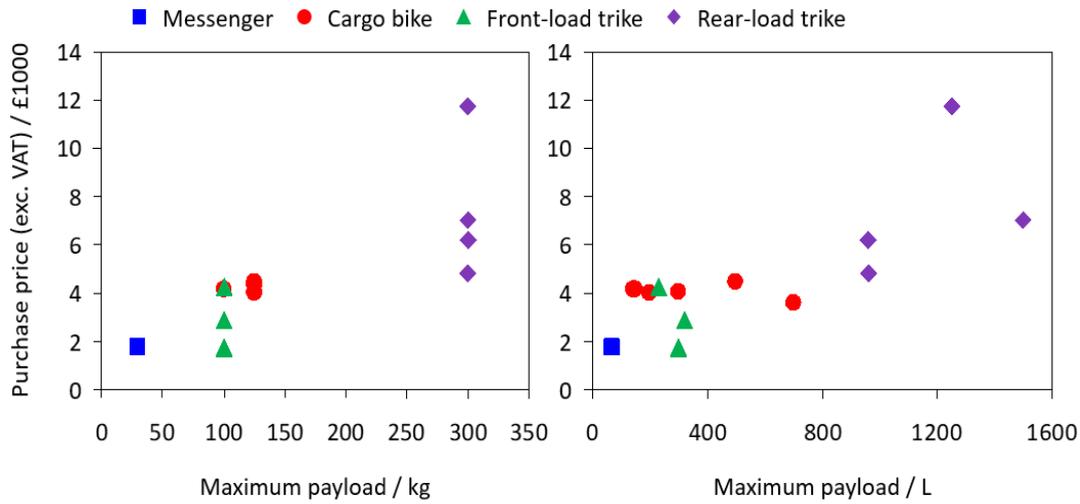


Figure 11 Vehicle purchase price vs maximum payload for electric assist vehicles. Source: Strategies for Cycle Freight Uptake, Element Energy, 2017. A review of market (19 brands, 21 vehicle/cargo box combinations reviewed), prices correct as of July 2017)

5.3 Regulation for powered walker trailers

Powered vehicles are not able to be used on pavements (stated in section 300 of the Highways Act 1980). The only powered vehicles that are exempt from riding on footpaths and footways are those used by local authorities for maintaining footpaths, or ‘invalid carriages’ i.e. mobility scooters. However, Councils can grant exemptions, in the context of a research trial. An exemption for the powered freight trailer has not previously been granted as councils were concerned with congestion on pavement, which could deter residents from walking, thus the proposed solution could not be researched.

5.4 Cycle freight activity within London

The table below lists those organisations plotted on the map showing cycle freight activity in London, Table 10). In addition to those in the table, there are 2 Restaurants (Pret a Manger and Pure) and 1 Supermarket (Co-op) using cargo bikes for their food delivery. These are not plotted on the map.

Table 10 List of organisations currently involved in cycle freight activity in London

SMEs	Cycle Logistics Companies	Borough/BID-led initiatives
Zig Zag Tea	DX	Royal Borough of Greenwich
Cooper's Bakehouse	Absolutely	City of London
Elysia Catering	WeGo	Zero Emissions Network
Dude's Doughnuts	e-cargobikes	Waltham Forest
Snapery Bakery	eCourier (formerly Courier Systems)	Team London Bridge (BID)
Al Desco	World's End Couriers	Better Bankside (BID)
Lant St Wine	DPD	
Cycle Sparks	Pack & Send	
AV2HIRE	Bycaboy	
Bread by bike	Santis	
First Mile	GOPHR	
Theatre of wine	Mango	
Green workforce handyman	Quiqup	
PIXXA	Addison Lee	
Icefront	Parcelforce	
Fin and Flounder	Pedivan	
e5 bakery	PedalMe	
The Dusty Knuckle	GLH	
Petalon	Stuart	
Bikeworks	City Sprint	
Calverts Co-operative	Pedals	
Perky Blenders	Rush	
Fika	Zedify	
Black Box Coffee	UPS	
Champagne Lasseaux	DHL	
Coffee Bike	Hermes	
Velo Ads	Brisqq	
Dabba Drop	Oscar	
Edgar's Fruit	parcelhero	
Enrique Tomas	Trakpak P2P	
GAIL's Bakery	Tuffnells	
Oriental Food		
Sandwichman		