SGL Unpacked:
The London Light Freight Walking Trial

CROSS RIVER PARTNERSHIP
SMARTER GREENER LOGISTICS

Department
for Environment
Food & Rural Affairs

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1. Project Partners & Definitions

Table 1. List of Project Partners & Stakeholders.

PARTNER	ROLE
Department of Environment Food and Rural Affairs	Provided funding through umbrella programme, Smarter Greener Logistics, which ran through December 2024.
The Department for Transport	Provided clear guidance on the relevant stakeholders to be involved in the trial.
The Fitzrovia Partnership	The Fitzrovia Partnership identified suitable host organisation for the trial.
The London Borough of Camden	The Local Authority who provided permissions and authorised the trial to take place.
The Metropolitan Police	Provided clear guidance on motor vehicles, under Section 189 of the Road Traffic Act 1988.
HEAL's	Provided the trial space as the car park owner and hosted the eWalker.
United Parcel Service (UPS)	The trial operator and last mile delivery partner for the eWalker.
Cross River Partnership	Managed the overall trial, facilitating collaboration between the project partners.

Table 2. List of frequently used logistics terms and their definitions.

TERM	DEFINITION
eWalker	A delivery tool designed to support walking porters with their deliveries.
Last Mile Logistics	The process of moving freight from a hub or logistics centre to its final destination, typically a residential address or retail establishment. The aim of last mile delivery is to deliver the item to the end user as effectively as possible.
Logistics	The process of planning and executing efficient transportation and storage of goods from point of origin to the point of consumption
Low Emission	Transportation of goods using modes of travel that do not produce tailpipe emissions (such as a cargo bike, walking freight or electric vehicles).
Walking Freight	A mode of logistics where foot-based porters play a key role in deliveries and collections

Table 3. List of abbreviations and their definitions

ABBREVIATION	DEFINITION
CAZ	Clean Air Zone
CALL	Clean Air Logistics for London
CO2	Carbon dioxide
HGV	Heavy goods vehicle
LGV	Light goods vehicle
MET	Metropolitan Police
NOx`	Nitrogen oxide
PM	Particulate matter
SGL	Smarter Greener Logistics
ULEZ	Ultra-Low Emission Zone
WCC	Westminster City Council

2. Executive Summary

Introduction

Cross River Partnership (CRP), The Fitzrovia Partnership, The London Borough of Camden, UPS and Heal's launched the London Light Freight Walking Freight Trial on the 5th of May 2023 to support low emission last-mile deliveries in the London Borough of Camden.

This marked the first time such a trial has taken place on public land, setting a ground-breaking precedent for future initiatives aimed at improving urban sustainability. By testing low-emission last-mile deliveries in a high-density area, the trial provided valuable insights into the potential for integrating eco-friendly logistics solutions within public spaces and urban infrastructure.

The trial formed part of the Smarter Greener Logistics Programme, funded by the Department of Food and Rural Affairs (Defra). The trial, initially scheduled to conclude in May 2024 after a 12-month duration, ended after 10 months in March 2024, due to unforeseen works taking place at the host site, Heal's.

Aims of the Walking Freight Trial

The London Light Freight Walking Trial aimed to assess the feasibility of walking freight couriers with electric assisted trolleys as a sustainable alternative for last mile deliveries in dense urban areas and pedestrianised zones. The trial focussed on reducing congestion, lowering emissions and improving air quality by replacing light goods vehicles with a zero-emission solution.

The trial also highlights the economic and operational advantages of walking freight such as minimising noise pollution and better use of urban spaces. By gathering data on efficiency and scalability, the trial supports the development of future sustainable urban logistics, encouraging a wider adoption of low-impact delivery methods in London. The Cross River Partnership launched this trial to support London's sustainability goals and explore innovative ways to improve urban logistics.

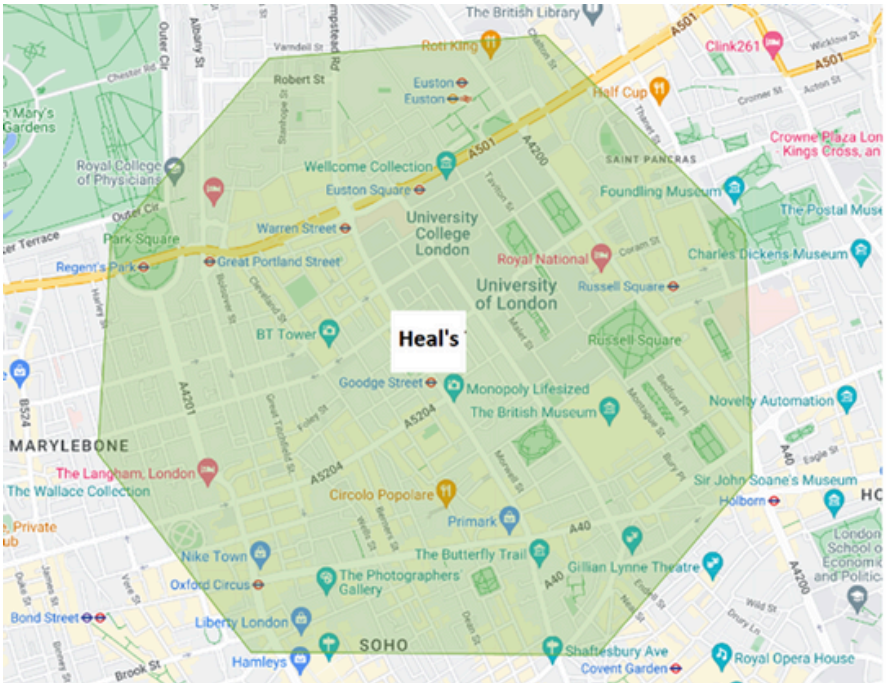

Figure 1: Fitzrovia delivery area

Walking Freight Trial Results

Within an estimated 2 km delivery radius of Heal's (see figure 1 above), a total of 12,135 parcels were delivered by the eWalker over the 10-month project period. This is equal to an average of 81 parcels delivered each day. CRP's Transport Emissions Calculator captured emissions saving of 43.16 g of Particulate Matter Size 10 and 22.93 g of Particulate Matter Size 2.5.

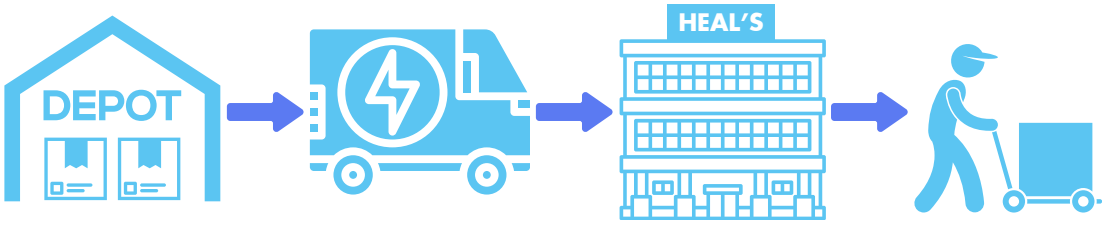

Figure 2: eWalker delivery cycle

Walking Freight Process

Based in the Heal's underground car park, the Walking Freight Trial involved receiving parcels in the morning from an electric UPS delivery vehicle, and then making deliveries to businesses and residents in the local Fitzrovia area using the eWalker on pavements rather than on the carriageway. Operating for approximately 5 to 6 hours per day, and dependent on the number of parcels scheduled to be delivered, on average the UPS eWalker would be replenished twice a day with additional parcels during its delivery round. Once all deliveries had taken place, the eWalker would return to the Heal's underground car park to be stored and charged overnight, and the electric UPS delivery vehicle would return to the Kentish Town depot for overnight storage, charging and re-loading with parcels.

The London Light Freight Walking Trial identified that while the 'helper' method, (which involves an on foot assistant supporting an electric delivery van), offers the lowest actual cost per stop and eliminates equipment or rental fees, factors such as higher delivery densities and increased electric vehicle costs in Central London could very easily shift the balance in favour of eWalkers and eQuads.

Additionally, in areas with road restrictions or pedestrianised zones, the eWalker may provide a more efficient delivery solution compared to traditional vehicles. Feedback from the UPS staff member who took part in the trial using the eWalker was that they had had a very positive experience.

Walking Freight Partners

Table 4: List of Project Partners & Stakeholders.

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Cross River Partnership	Managed the overall trial, facilitating collaboration between the project partners.

Learnings from the Trial

This trial highlights the huge potential for delivery modes such as Walking Freight to enable air quality improvements by reducing noise and on road traffic across London.

The London Light Freight Walking Trial has provided a unique proof of concept for walking freight in Central London. The trial focussed on consolidation-based walking freight to supplement traditional delivery operations. Consequently, there is the opportunity for future walking freight trials to explore other forms of operation, as well as to target new areas and technologies. The benefits of using Walking Freight to support traditional delivery operations, could be further developed in relation to modes including river or rail freight.

The success of this walking freight trial was due to various factors, including the high density, commercial location in which the eWalker operated. Guidance documents such as CRP's Walking Freight Feasibility Study have already highlighted additional locations in London that may also be suitable for Walking Freight, including the Isle of Dogs, Croydon and the whole of the Central Activity Zone (CAZ).

Recommendations

Careful consideration needs be given to the following when setting up a trial:

- Operational setup of the trial.
- Operational costs of the trial.
- Rental fees for storing the eWalker.
- Geographical area of operation.
- Early business and supplier engagement.
- And any additional resources needed to maintain the eWalker and host location.

For further information on this Walking Freight Trial, please contact CRP Programme Manager Fiona Coull in the first instance.

3. Introduction

3.1. Trial Overview

Cross River Partnership (CRP) is a partnership delivering impactful environmental, economic and community focused projects. We support public, private and community organisations with expert guidance, collaboration and innovation. We believe in a fair and equitable transition towards good and green growth in London.

During 2023 and 2024, CRP worked in collaboration with The Fitzrovia Partnership, the London Borough of Camden, UPS and Heal's to deliver the London Light Freight Walking Trial; the first electrically assisted walking freight trial delivered on public land.

The trial aimed to support low emission last mile deliveries, reduce carbon emissions and reduce congestion on the streets of Fitzrovia.

Figure 3: Fernhay eWalker

The trial, which originally planned to run for 12 months, officially began on the 5th May 2023. However, due to works being undertaken inside Heal's car park, it was concluded after 10 months in March 2024.

This report will discuss the impacts and learnings that were gained from the trial, including an in-depth analysis of the data collected. It will also outline the process for setting up the trial, key performance measures and emissions savings, lessons learned, and prospects for walking freight as a viable sustainable logistics solution.

3.2. CRP Funding

The London Light Freight Walking Trial was funded by the Department of Rural Affairs (DEFRA) through CRP's Clean Air Logistics for London (CALL) and Smarter Greener Logistics Programmes (SGL)

3.2.i. Clean Air Logistics for London

Clean Air Logistics for London was a £1 million Defra-funded project led by Westminster City Council in collaboration with 10 project partners. The project aims to move more freight into London via river rather than road, supported by low emission delivery methods in Central London, including electric vehicles, cargo bikes and walking freight.

3.2.ii. Smarter Greener Logistics

Smarter Greener Logistics (SGL) is a Defra-funded project led by Westminster City Council in collaboration with 25 project partners. The project aims to minimise the impact of freight on noise, air quality, traffic and pavement space in London by making improvements across 14 London boroughs and two London Business Improvement Districts (BIDs). SGL builds upon the success of CALL and forms part of CRP's wider activities to encourage sustainable logistics across London.

3.3. What is Walking Freight

Walking Freight is a mode of last mile logistics, where foot-based porters play a key role in deliveries and collections. This model has significant potential to expand within London, as it has advantages over other logistics modes which make it an efficient and commercially viable choice in specific circumstances such as dense delivery areas (1).

Goods that are most suited to walking freight include small consumer goods and personal deliveries as they are light, small, and easily handled by porters. They also comprise a substantial proportion of overall volumes of packages delivered by major operators within inner-cities (1).

Walking Freight has the potential to generate benefits for London, mainly due to reductions in vehicle distances travelled (1).

3.4. Tackling Air Quality with Walking Freight

According to the Mayor of London's Freight and Servicing Action Plan 2019 (2), 90% of all goods are transported by road, mostly by use of light goods vehicles (LGVs) and heavy goods vehicles (HGVs). The busiest times for other road users coincide with the busiest times for freight and servicing vehicles, increasing the possibility of collisions, and increasing air pollution and road congestion (3).

Walking Freight offsets these issues, helping to reduce noise pollution, limit road danger and reduce the number of vehicle miles travelled. For example, walking freight could eliminate up to 0.4% of vehicle kilometres driven by light goods vehicles across Greater London (i.e. one in every 250 kilometres). This in turn could reduce London's carbon emissions by up to 4.7 kilotons (1).

Consequently, moving towards more active, sustainable, and efficient delivery modes (such as Walking Freight) will provide more suitable long-term solutions.

3.5. Supporting Local Policy

The Walking Freight Trial made a great contribution to the following policies and strategies, showcasing innovative approaches to sustainable urban logistics.

Table 5: Regional and Local Policy Overview

Policy	Description and Context
Camden Climate Action Plan 2020-2025	In November 2019, Camden Council formally declared a Climate and Ecological Emergency, recognising the threat of on-going climate change and the impact of irreversible damage to ecosystems. Consequently they have committed to comprehensive actions to reduce carbon emissions and make Camden net zero by 2030 as part of their Climate Action Plan.
Camden's Road Safety Action Plan 2019	Camden's Road Safety Action Plan supports the promotion of more consolidation and micro distribution centres to reduce the amount of delivery vehicles on the road. It states that more than 90% of London's freight is transported by road, and delivery and servicing vehicles account for more than a third of all traffic. The action plan aims to establish clear objectives to support the reduction of transport related accidents, incorporate policies to improve road safety, and to encourage behaviour change and smarter travel programmes.
Healthy Streets, Healthy Transport, Healthy Lives: Camden's Transport Strategy 2019-2041 (CTS)	Camden's transport strategy provides a clear vision to respond effectively to the complex challenges of climate change. It includes objectives on incorporating sustainable forms of transport, motor vehicle restrictions, electric vehicle uptake, borough-wide cycling networks, improving air quality and promoting active travel.

Table 5: Regional and Local Policy Overview Continued

Policy	Description and Context
London Mayors Transport Strategy 2018	This strategy includes policies to make freight in London safer, cleaner, and more efficient. Under proposal 17, the Mayor, through Transport for London (TfL), together with the London boroughs and the Freight Forum, aim to work with landlords and all parts of the supply chain, including the freight industry, Business Improvement Districts (BIDs) and individual businesses, to improve the efficiency of last mile deliveries and servicing. It mentions the goal of establishing "a network of micro distribution services and facilities served by zero emission vehicles and walking and cycling deliveries".

4. What is an eWalker

4.1. Fernhay eWalker Overview

The Fernhay eWalker (which was used in this trial) is a delivery tool designed to support walking porters with their deliveries. It is particularly useful in dense delivery areas such as on campuses or high streets with limited kerb space. The eWalker is powered, meaning that walking deliveries can be carried out quickly and efficiently, with porters also being able to deliver larger volumes of goods.

4.2. Dimensions and Volumes

The Fernhay eWalker is 153 cm high, 74cm wide and 220 cm in length - this ensures that the user can see over it.

It can carry volumes of 280kg, which also includes the weight of the cargo box. Excluding parcels, the total weight of the eWalker is 130kg.

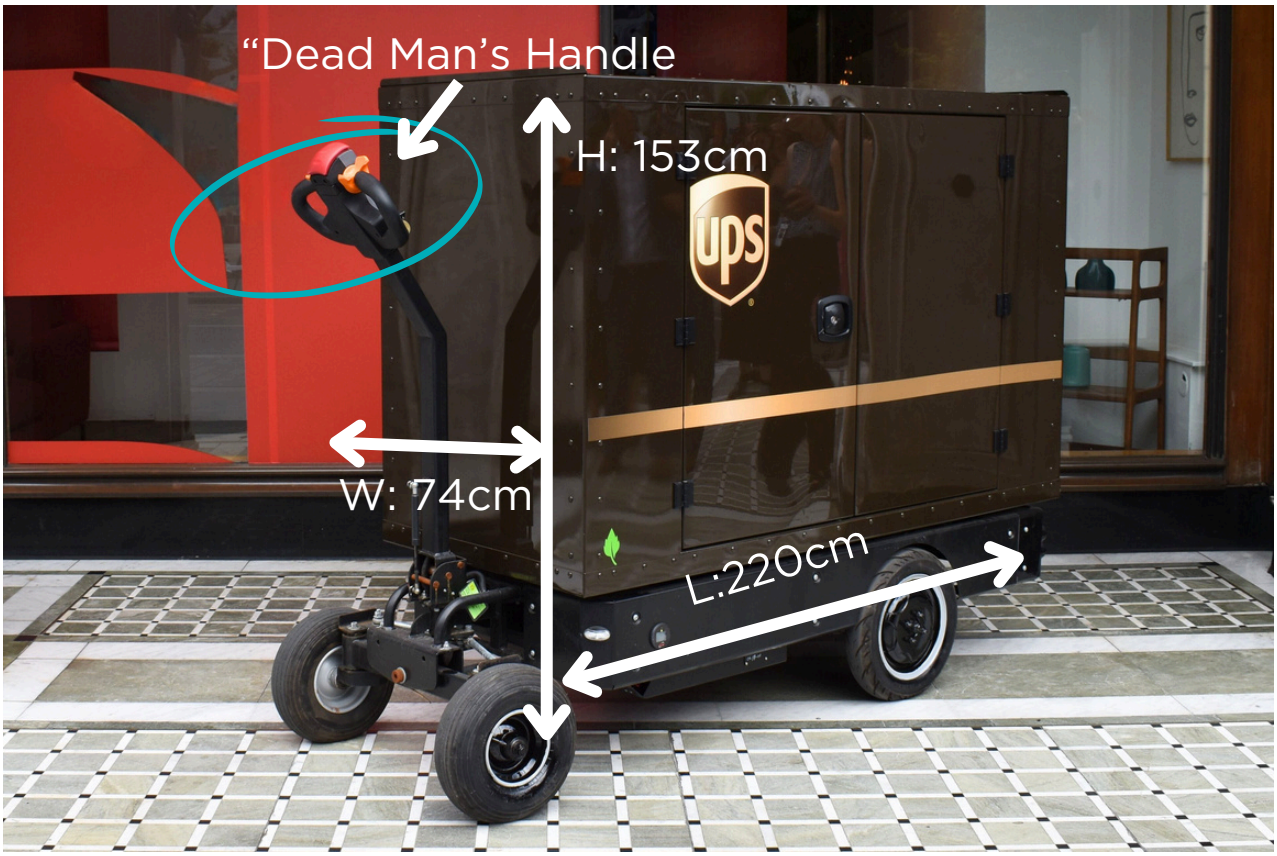


Figure 4: Fernhay eWalker dimensions

4.3. Operating the eWalker

The eWalker is operated by trained personnel, who receive a 30-minute familiarisation session facilitated by trained Fernhay & / or UPS staff. It also has several features that ensure safety for both the operator and general public.

To operate the eWalker, the porter is required to use a key to start the vehicle – without this, the unit is disabled as the rear drive is completely locked. For additional security, the eWalker also operates using a 'dead man's handle', meaning that the 'arm' (see diagram) must be down, and a handle pulled for movement to occur. If the handle is released the eWalker will stop immediately.

In terms of movement, the Fernhay eWalker is front wheel steered. Steering is achieved by lowering the handle and pointing it in the direction of travel. It is also reversible – a sound is played for safety purposes when reversing occurs, as well as hazard lamps that will flash. The hazard lamps are also activated when the handle of the eWalker is in a raised/upright position.

Finally, the cargo box containing the parcels is secured with a key.

Figure 5: Fernhay eWalker cargo box

4.4. Storage

The eWalker is engineered for durability and is fully waterproof, making it suitable for outdoor storage when necessary. However, it is important to note that the onboard batteries are non-removable, and that the charging equipment is not waterproof. As a result, charging the eWalker must be done indoors. Nevertheless, the charging process is simple, requiring a three-point plug to an appropriate power source.

Additionally, while the eWalker can be stored outside, prolonged exposure to outdoor elements may compromise its lifespan and increase the risk of vandalism or theft. To ensure optimal performance and longevity, it is highly recommended to store the eWalker in a dry, secure environment. This storage area should have reliable access to power for charging and should be spacious enough to facilitate loading if needed. Taking these precautions will help maintain the eWalker's functionality and ensure its safe operation.

4.5. eWalker Specifications

Table 6 below shows the full specification of the Fernhay eWalker used in the trial.

Table 6: Ferhay eWalker Specifications

Detail	Specification
Height	153cm
Width	74cm
Length	220cm
Volume without parcels	130kg
Volume with parcels	280kg
Min Speed	2km/h
Max Speed	5km/h
Turning Circle	500cm
Charging requirements	3-point plug (the batteries in the eWalker have a 2.5kW capacity
Electricity Requirements / Fees	£25-30 a month (approximately)

5. Setting Up the London Light Freight Walking Trial

5.1. Project Timeline

The project timeline (detailed on the following page) highlights the key milestones associated with the development of the London Light Freight Walking Trial. Information associated with trial conceptions, development and conclusion are provided in the following sections.

5.2. Trial Conception

Following research and recommendations highlighted within CRP's Walking Freight Feasibility Study (1), the Fitzrovia area was identified as an ideal location to trial walking freight. This was due to the dense number of businesses and various restrictions on roads in the area.

Consequently, CRP contacted The Fitzrovia Partnership and Camden Council with a proposal for a walking freight trial to be delivered in the area. As both organisations indicated they were supportive of the trial, CRP approached UPS to establish if they would be willing to act as the delivery partner. This was due to UPS's experience of delivering walking freight trials on private land, and their ability to provide the technology (i.e. the eWalker) training, goods and the methodology needed for the trial.

Once UPS indicated that they were interested, a project group was formed and discussions on how best to facilitate the scheme began. This resulted in the following key steps being identified to enable the trial to take place:

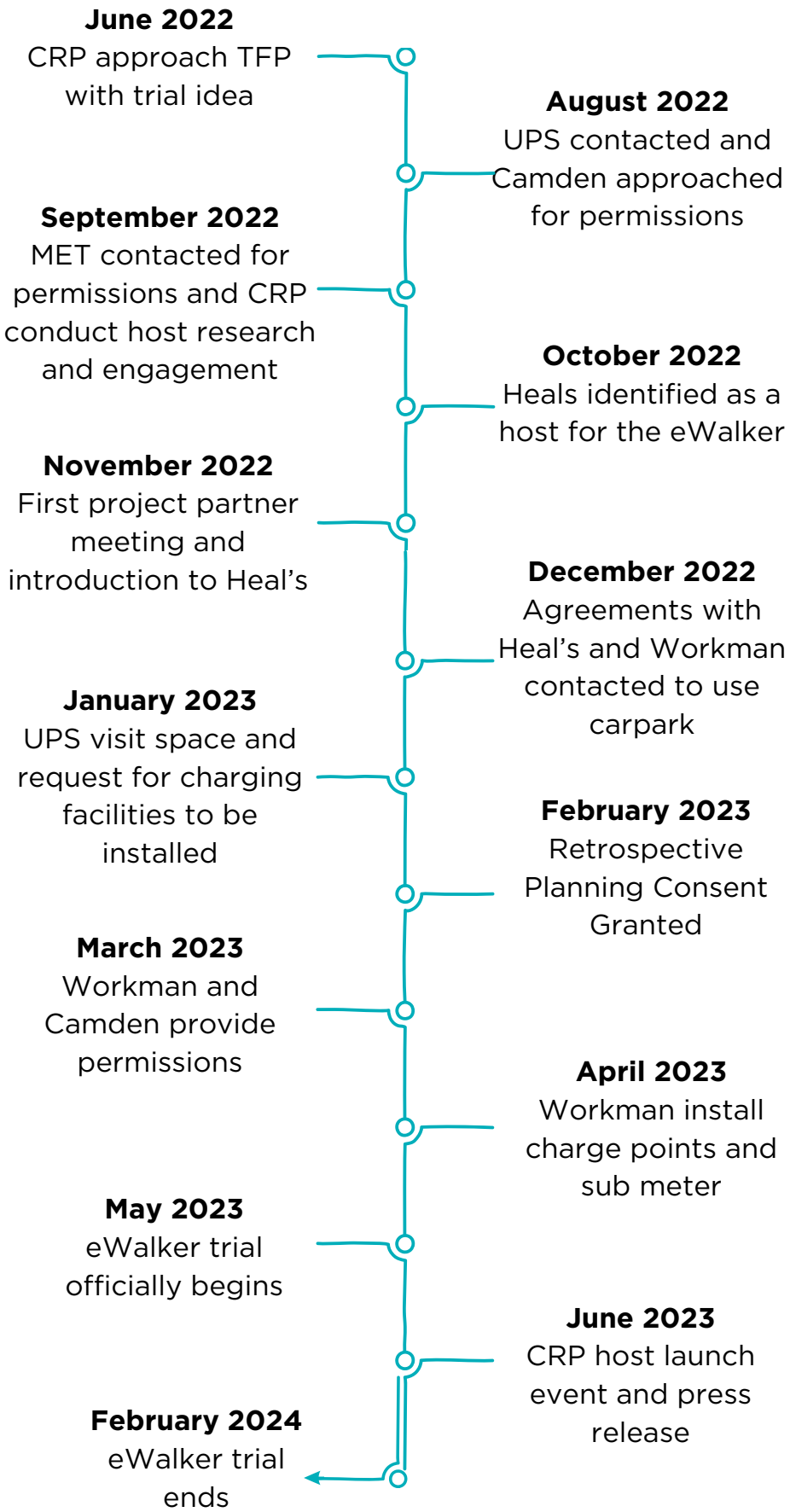
- Finding a site to store the eWalker
- Confirming permissions for the trial
- Upgrades made to carpark to include power sockets.

5.3.i. Site Specifications

For the trial to take place, a suitable space had to be identified in The Fitzrovia Partnership area where the eWalker could be stored and operated from. Discussions with UPS highlighted that the site would need the following key requirements:

- The site would need to be secure and covered
- Provide 1-2 car parking spaces worth of usable space
- Have access to electricity / a 3-point plug socket to charge the eWalker overnight
- Provide easy and suitable access to the road network
- Provide space for a larger UPS delivery vehicle (e.g. EV van) to offload parcels and packages to the eWalker.

Figure 6: Project Timeline



5.3.ii. Site Identification

To narrow down potential options, CRP carried out extensive desktop research to identify potential sites which might be able to meet these requirements. This included landowners and organisations such as Arup, UCL, CitiPark, the University of London and Raddison Blu. These sites were then plotted on a map which was also used to document progress associated with each location (see Figure 4).

However, despite several weeks of online research, site visits and communications with various organisations, finding a suitable location proved very difficult. This was due to the Central London location of the area and lack of publicly accessible car parking space.

Nevertheless, after several weeks of searching, a huge step forward was made at The Fitzrovia Partnership's Christmas Party / networking event - the BID had flagged this as an opportunity to speak to their business members and identify ways that they could support the trial. This resulted in the Heal's Car Park, Torrington Place, being identified as a suitable location to store and operate the eWalker.

5.3.iii. Site Location

Heals is located on Tottenham Court Road, diagonally opposite to Goodge Street Station (see Figure 5). Through conversations with Heal's, it became clear that the car park on their site was underutilised and would provide an ideal location to store and operate the eWalker from efficiently.

The site offered secure, off-street, covered parking with an electricity source and was also situated in an ideal position for UPS to operate from; as Heals is located in the centre of Fitzrovia, UPS could easily target dense delivery areas between the A501 and A40, as well as the western and southern areas of Fitzrovia, particularly along the Tottenham Court Road.

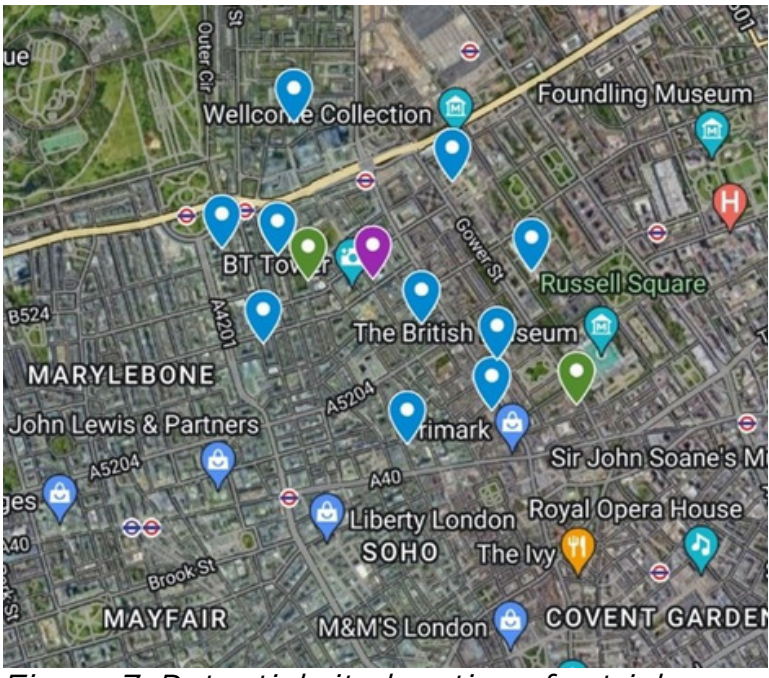


Figure 7: Potential site locations for trial

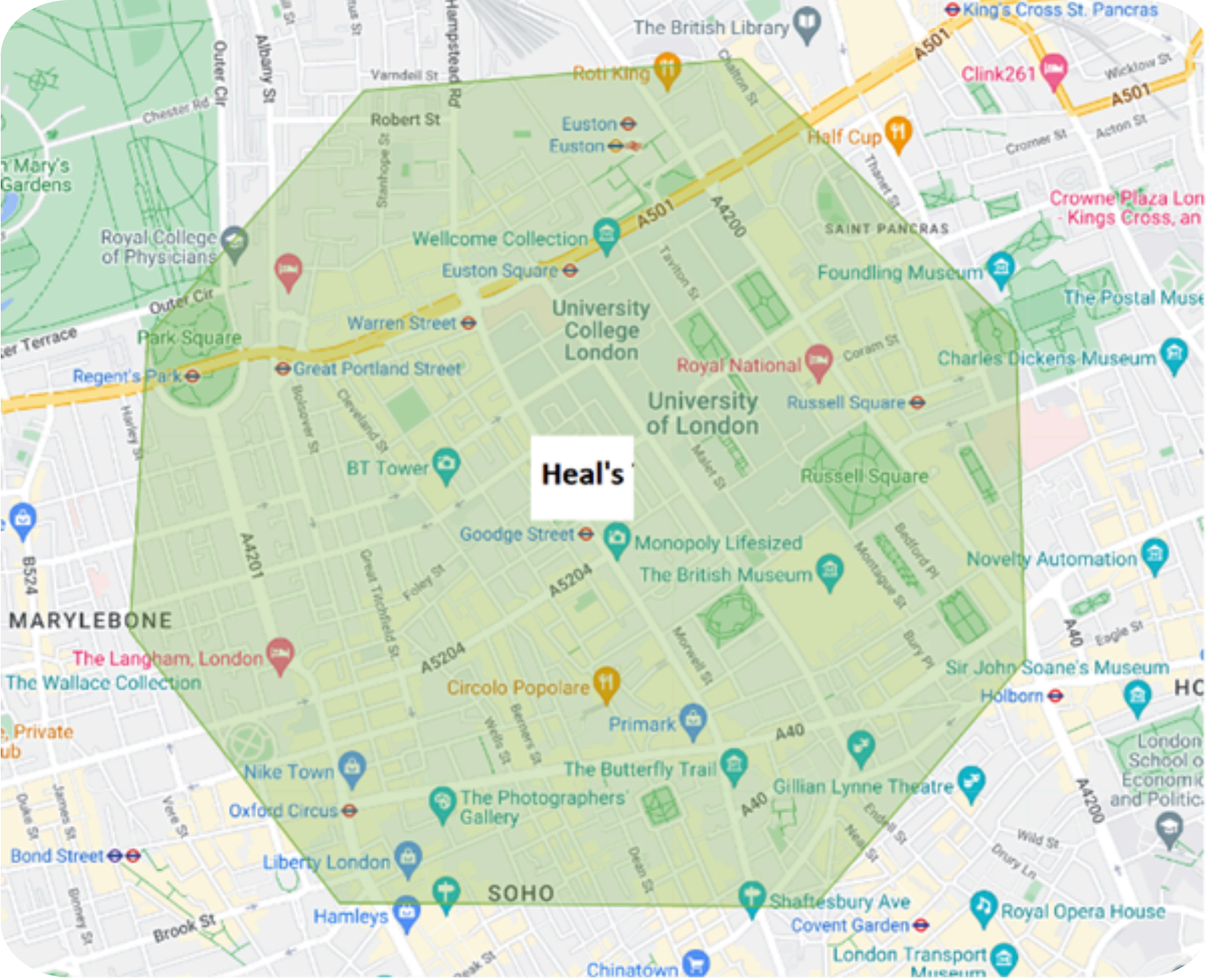


Figure 8: Heal's car park location

Additionally, the location had good road connections to the UPS Kentish Town depot (approximately 2.5 miles away) meaning that the eWalker could be easily stocked by an electric van each morning, and also restocked with deliveries when / if required.

5.3.iv. Preparing the Site

Once the car park at Heal's had been identified, a site visit took place with the various project partners to assess the space in more detail. This resulted in a few measures being identified to enable the trial:

- A submeter needed to be installed to measure the electricity being used by the eWalker so UPS could cover this cost
- A license fee needed to be created and agreed to allow UPS to operate from the site for the trial duration.

These measures were subsequently agreed to by all parties, with CRP also agreeing to cover the costs of the measures as part of the trial (totalling £7,595).

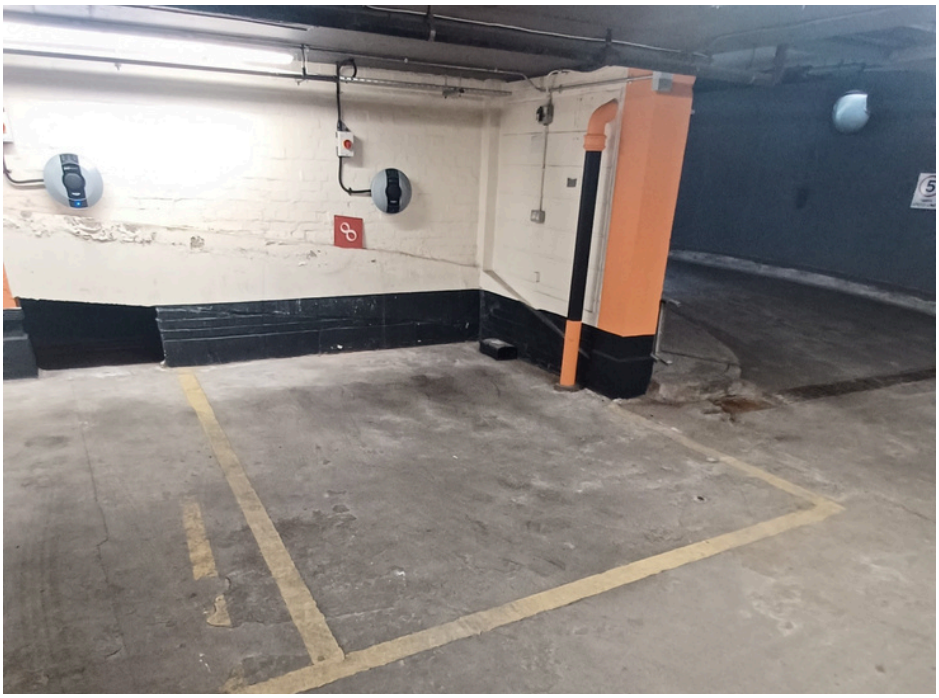


Figure 9: Heal's car park bay

5.4. Confirming Permissions

The other key step that was required to enable the trial involved confirming (and then gaining) the various permissions needed to allow the eWalker to be used on public land. To understand what permissions, rules and regulations might be required, Camden Council suggested that CRP reached out to the Metropolitan Police (MET) and the Department for Transport (DfT) to inform them of the project and to seek further advice. This resulted in the following information:

- The MET: The MET advised that the eWalker did not fall within the category definition of a motor vehicle, under Section 189 of the Road Traffic Act 1988, and therefore would not require any licensing, insurance or construction to operate. Instead, they recommended that Fernhay should seek legal advice alongside 3rd party insurance for any injury that may be caused by the eWalker.

They also advised that Camden Council would ultimately be responsible for providing permissions for the trial as it was operating within their jurisdiction.

- DfT: The DfT advised CRP to discuss the trial with the MET and Camden Council to understand the requirements and permissions required for the trial.

Based on the above information, Camden Council agreed to provide authorisation for the trial to take place as they were satisfied that no additional permissions were required. UPS were also supplied with a formal letter of permissions which allowed them to obtain internal sign off for the trial.

5.5. Trial Operations

The London Light Freight Walking Trial officially began on 5th May 2023. However, data collection from the trial started from 1st July 2023 once the eWalker had been upgraded to include a new cargo box to enable more efficient deliveries (the new cargo box could carry more volume and provided better manoeuvrability for the operator navigating small streets).

Each morning, the eWalker would receive parcels from an electric UPS vehicle in the Heals car park at between 08:30 and 09:00 am. It would then make deliveries to businesses etc. In the local area for approximately 5 to 6 hours per day, depending on the number of parcels being delivered.

As the Heal's car park is about 2.5 miles from the UPS Kentish Town depot, the eWalker could be replenished with additional parcels during its delivery round, helping it to complete more deliveries throughout the day and supplementing other UPS delivery activities. Consequently, the eWalker was replenished on average twice a day, however depending on the size of the packages this could reach 3 times per day. The electric vehicle making the replenishments would then continue to carry out deliveries in surrounding areas making the process more efficient.

Finally, once all the deliveries had taken place, the eWalker would return to the Heal's car park to be stored and charged overnight. Similarly, the electric vehicle that had both filled and replenished the eWalker would return to the Kentish Town depot for overnight storage and charging. This process would then be repeated each day.

Although the eWalker was not equipped with a telematics device to track the total distance travelled, we estimate that the delivery routes remained within a 2 km radius of Heal's based on postcode delivery data collected during the trial.

5.6. Trial Costs

The costs of the trial are detailed in the table below. However, please note that this does not include any costs associated with the operation of the trial, or any costs that were incurred by UPS in terms of changing their delivery methods to incorporate the eWalker.

It is also worth noting that the price of the eWalker will increase for additions such as the custom cargo box, or with any branding requirements.

5.7. Unforeseen Works

As stated at the beginning of the report, the London Light Freight Walking Trial was originally intended to run for 12 months. However, the trial had to be reduced to 10 months due to construction works in the Heals car park that required the eWalker to be removed.

Table 7. Trial Cost Summary

Costs incurred for the trial	Detail
£5,800	eWalker cost
£7,595	Cost of using the site at Heals (including sub meter installation, licence, and legal fees)
£240	Electricity fees
£0	Maintenance costs (UPS indicated that maintenance costs are fairly small compared to a traditional vehicle).
£13,636	**Total Cost**

6. Communications and Public Relations

6.1. Trial Launch

Following the trial start date on Friday 5th May 2023, CRP organised a launch event to promote the trial to stakeholders and local businesses in the Fitzrovia area. The event, which occurred on Tuesday 29th June 2023, coincided with the upgrades made to the eWalker meaning that the improved cargo box design could be shown to the various attendees and partners involved.

The event, which was hosted by Heal's at their site on Torrington Place, was attended by 25 people and included organisations such as TfL, GRID Smarter Cities, Lyreco and Speedy Services. There were also speeches from the following key partners involved in the project:

- UPS International Sustainability Director, Artur Drenk;
- The Fitzrovia Partnership's Head of Environment and Place, Mick Atkinson;
- Fernhay Founder, Robin Haycock; and
- CRP's Senior Programme Manager, Fiona Coull.

Following the speeches, a short demonstration of the eWalker was provided and photos and further networking then took place. Additionally, an interview with UPS International Sustainability Director, Artur Drenk, was also undertaken as part of the event and can be viewed via CRP's YouTube channel here or by clicking on the thumbnail below

Figure 10: London Light Freight Walking Trial Launch event

A press release was also issued following the event, which included testimonials from the various partners (details of which can be seen in the subsequent sections).

Camden Council spokesperson said: "This innovative trial with e-walker trolleys is a further example of how the council is embracing new technology and approaches to reduce motor vehicle traffic and the related air pollution, in line with its transport policies. The e-walkers allow for the prompt delivery of packages to the residents and businesses of Fitzrovia without the associated increase in traffic in this busy area of the borough."

Artur Drenk, International Sustainability Director, said: "We are continuing to expand our alternative fuel fleet as we work towards reducing emissions per package. We are excited to introduce the electric-assisted walkers, developed by Fernhay, to the streets of Fitzrovia as part of our efforts to serve our customers in urban areas in a more sustainable way."

6.2. Testimonials

In addition to the speeches and interview that were conducted at the launch event, the project partners also provided the following testimonials which were promoted as part of the trial launch communications:

Mick Atkinson, Head of Environment and Place, The Fitzrovia Partnership said: "We're delighted that Fitzrovia is being used as a trial for UPS's first walking freight trial on public land. The demand for next-day deliveries is now a part of life and programmes that reduce the environmental impact of the cost of doing business are fully supported by The Fitzrovia Partnership and its' business community. This exciting initiative changes the nature of deliveries to minimise their impact on the environment by reducing congestion and emissions on Fitzrovia's streets"

Fiona Coull, Senior Programme Manager, Cross River Partnership, said: "Walking freight has real potential to reduce congestion and improve air quality, particularly in central, high-density locations such as Fitzrovia. We look forward to understanding the impacts of the trial, as it's really important to explore these innovative logistics solutions and share any learnings gained."

6.3. Trial Communications and Press Coverage

CRP also carried out several other engagement and communication approaches to promote the London Light Freight Walking Trial and its learnings.

This included:

- An initial press release to announce the launch of the trial
- Dissemination and promotion of interview videos via social media
- Several social media campaigns were undertaken via LinkedIn and Twitter / X. This included a campaign at the start of the trial, as well as one after 6 months to share initial data and learnings
- Communications about the trial were also circulated via various e-news and sustainability forums
- CRP presented on the trial at several Air Quality and Sustainability events including the Sustainable Supply Chain Conference on 25th June 2024.

Additionally, the press release and social media assets detailing the trial were shared by participating project partners as well as various news outlets, including:

- The logistics Point
- Logisticsbusiness.com
- Logistics Manager
- Internetretailing.net
- CiTTi Magazine
- Interchange-uk.com
- Logistics Business
- Fleet News

UPS also created a video of the eWalker being used around Fitzrovia which was shared on social media and LinkedIn: UPS LinkedIn post.

Figure 11: London Light Freight Walking Trial Launch

6.4. Post Trial Communications

Following the completion of the eWalker trial, further quotes were provided by the partners that reflected the learnings and outcomes of the trial. These were shared by CRP on social media to celebrate the trial's completion.

> **Artur Drenk, International Sustainability Director, said:** "As cities worldwide adopt eco-friendly transportation measures, UPS is committed to aligning our operations with more sustainable solutions. We find trials such as the eWalker project in Fitrovia very useful as it allows us to utilise our 'Rolling Laboratory' model of testing equipment and operations in real world settings. We can see what works and what conditions we need to incorporate it into our operations to roll out more sustainable final mile solutions."
> ."

> **Kentish Town Depot Management, UPS, said:** "The eWalker is definitely one of a range of solutions for delivering in congested city centre areas as it provides more flexibility and manoeuvrability than a traditional delivery vehicle."

> **Sarah Bell, Public Affairs, UPS said:** "UPS is grateful to CRP for bringing together partners to make this project happen. From support in finding a suitable location, to working with Camden Council and The Fitzrovia Partnership to get agreement for the trial, CRP has been instrumental in bringing the project to life. We believe these types of private/public partnerships are essential to finding solutions to urban logistics challenges."

7. Monitoring the Trial

7.1. Data Collection and Monitoring

CRP and UPS monitored the impact of the trial using data collected by UPS's operational team. This included detailed data on:

- eWalker delivery data (including the number of delivery stops per day, the number of operational hours, and the number of packages delivered);
- Geographical data (post code data for the eWalker deliveries);
- Comparative data (data on different UPS delivery modes); and
- Qualitative information from UPS about the use of the eWalker and general feedback on the trial.

CRP then analysed this data to understand the impact of the trial, including the potential benefits to UPS.

Operational efficiency and the air quality impact associated with the trial.

However, it is worth noting that data from the first month of the trial (June 2023) has been excluded, as the eWalker was operating with reduced capacity. Data has been analysed from 1st July 23 onwards once the upgraded cargo box was installed.

7.2. Data Analysis and Impacts

Table 8 (overleaf) shows the eWalker delivery data that was collected throughout the trial. It shows data on the number of delivery stops made by the eWalker, as well as information on the number of packages delivered and hours / days that the eWalker was in operation.

Table 8: Trial Delivery Data

Trial Month	Total Stops per Month	Average Stops per day	Average Stops per hour	Total Packages	Average Packages Per Day	Average packs Per Stop	Average Hours Per Day	Working Days
July 2023	714	45	11	1,220	76	2	6	16
August 2023	618	34	8	1,117	62	2	4	18
September 2023	724	52	9	1,246	89	2	6	14
October 2023	1,151	55	9	1,915	91	2	6	21
November 2023	1,030	52	9	1,837	92	2	6	20
December 2023	789	44	9	1,484	82	2	5	18
January 2024	937	45	10	1,574	75	2	4	21
February 2024	957	46	9	1,742	83	2	5	21
Averages	**865**	**47**	**9**	**1,517**	**81**	**2**	**5**	**19**
Totals	**6920**	**373**	**74**	**12,135**	**650**	**16**	**42**	**149**

7.2. i. Delivery Data - Overview and Key Findings

Typically, deliveries via the eWalker were made between 09:00 / 09:30 and 13:30 / 15:00 dependent on the number of parcels being delivered and stops made. Consequently, the eWalker was used on average 5 hours per day over the duration of the trial.

Table 8 shows that between July 23 and February 24, 12,135 parcels were delivered by the eWalker, which carried out 6,920 delivery stops across 149 working days. This averaged out as 81 parcels being delivered per day across 46 delivery stops.

A detailed breakdown of the monthly parcel data can be found in Appendix 1.

Table 8 shows a notable increase in the number of parcels being delivered during the autumn months, with October (1,915 parcels) and November (1,837 parcels) having the highest number of deliveries. This could be associated with the lead up to Christmas, with an increase in demand for delivery services associated with higher volumes of online purchases. For example, a report by 1WorldSync indicated that there was a significant move towards online purchases for holiday shopping in 2024, with 42% of consumers planning to complete more of their holiday shopping online (6). Additionally, major shopping events, such as Black Friday occurred during this period (29th November 2024), which likely increased the number of deliveries.

In comparison August experienced the lowest number of parcels, with 1,117 packages being delivered across 618 delivery stops. This could be due to the impact of the school summer holidays, with many people taking time off work or potentially choosing to work from home due to childcare arrangements. This suggests that much of the delivery activity in the Fitzrovia area is associated with deliveries to business premises, rather than to residential addresses. Data from the Fitzrovia neighbourhood supports this assumption, indicating that there are roughly 8,000 residents in Fitzrovia compared to 50,000 people who work in the area (7).

Figure 12: Fernhay eWalker

7.2. ii. Delivery Data - Total Packages vs Number of Stops

The table and graph below show the total packages delivered compared to the total delivery stops made each month.

Month	Total Packages	Total Stops/Month
July	1220	714
Aug	1117	618
Sept	1246	724
Oct	1915	1151
Nov	1837	1030
Dec	1484	789
Jan	1574	937
Feb	1742	957
Totals	**12135**	**6920**

Table 9: Total Packages and Delivery Stops made per Month

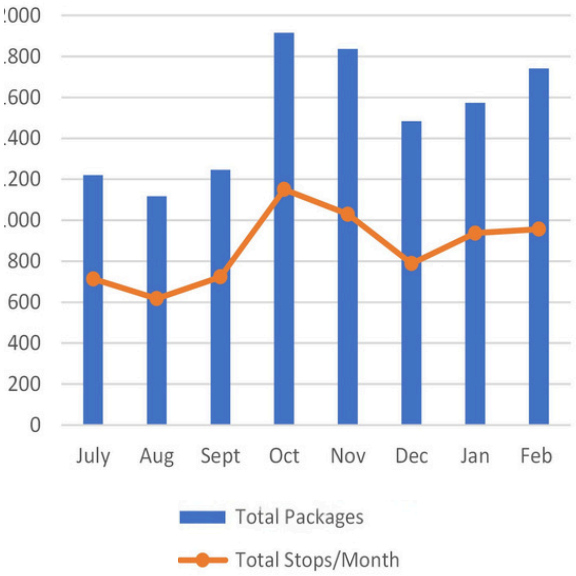


Figure 13: Graph showing Total Packages and Delivery Stops made Per Month

The data shows that there is a strong correlation between the number of packages delivered each month and the total number of delivery stops made. For example, across the trial duration, there were approximately 1.8 parcels delivered for every delivery stop, highlighting that residents and businesses are receiving multiple parcels at once, and that there could be a number of multi-tenanted buildings that see parcels delivered to different residents or businesses in the same building.

In fact, throughout the course of the trial, the average number of packages delivered per delivery stop never fell below 1.5 packages per stop.

7.2. iii. Delivery Data - eWalker Working Days

Table 10 below shows the number of working days that the eWalker operated per month throughout the trial, as well as the total working days available per month. As the eWalker was only operated during the working week, and was not operational over public holidays, the percentage time that the eWalker was used per month has also been calculated to give a better comparison.

Table 10, shows a clear increase in the percentage of total working days that the eWalker was used as the trial progressed.

In fact, during the last month of the trial (February 2024), the eWalker was operational on every working day of the month. Additionally, the eWalker was used on over 90% of working days from October onwards. The lowest usage occurred in the first three months of the trial, potentially due to the bedding in process of the trial itself, with usage potentially increasing as confidence in the walking freight operation also increased. Interestingly, September saw the lowest usage compared to potential working days despite not having the lowest number of packages delivered.

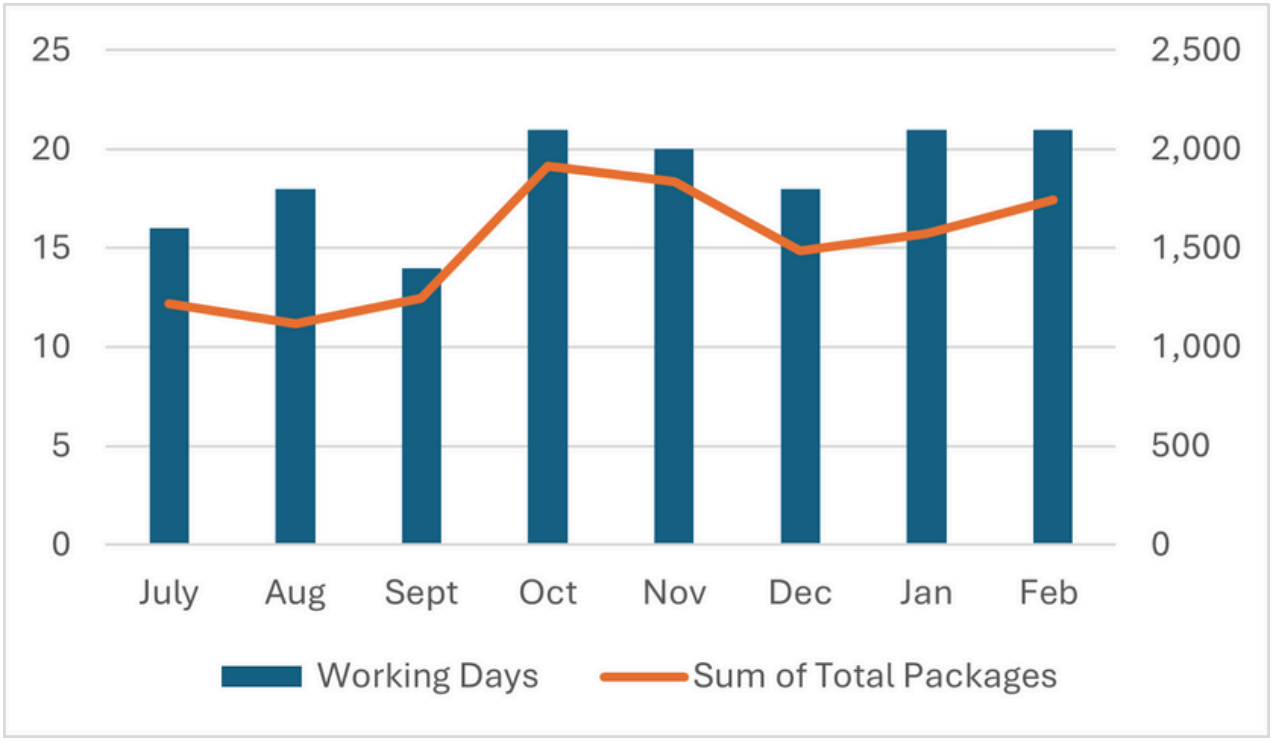
Table 10: eWalker Working Days vs Total Working Days per Month

Month	eWalker Working Days	Total Working Days	Percentage Time
July	16	21	76%
August	18	22	82%
September	14	21	67%
October	21	22	95%
November	20	22	91%
December	18	19	95%
January	21	22	95%
February	21	21	100%
Total	**149**	**170**	**88%**

In addition to Table 10, Figure 13 shows the number of eWalker working days in comparison to the number of parcels delivered. This shows that the months where there eWalker had slightly lower usage did not always coincide with months that experienced less deliveries.

For example, September saw the fewest working days for the eWalker (only operating on 14 out of the possible 21 working days i.e. 67% of the total possible time), yet this was not the month that saw the fewest packages delivered. On the contrary, August, when the least packages were delivered (1,117 packages), coincided with 18 working days for the eWalker, which was 82% of the possible working time. This indicates that the use of the eWalker was potentially based on further factors, such as wider UPS delivery operations, in addition to the total number of packages being delivered in the Fitzrovia area.

Figure 14: eWalker Working Days Vs Total Packages Delivered per Month



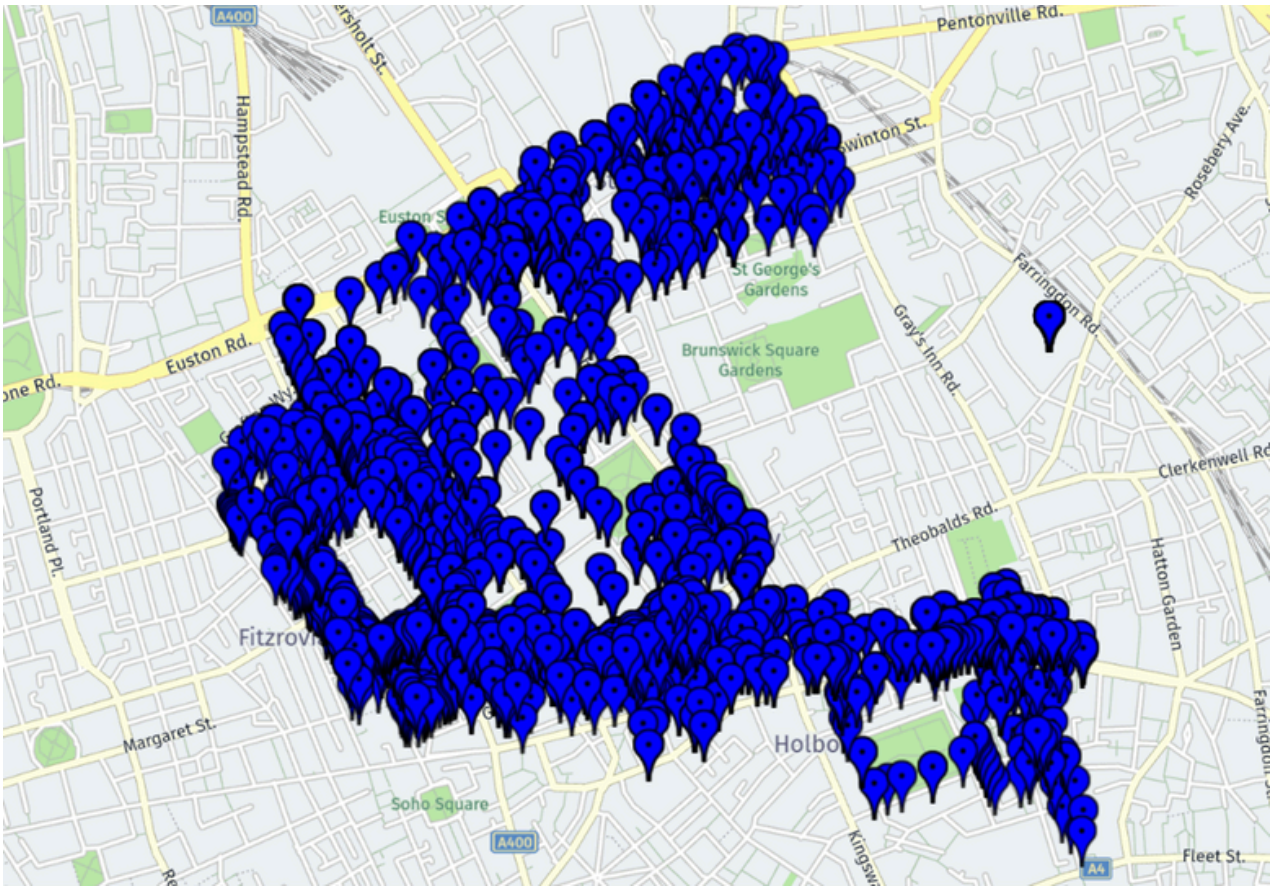
7.2. iv. Geographical Data - Postcode Analysis

The eWalker was not equipped with a telematics device to accurately record the distances it travelled over the course of the trial. However, postcode data was provided as part of the delivery information, and this can be mapped to demonstrate the distances the eWalker was likely to be travelling throughout the trial. This is shown below in figure 16.

Figure 15 shows the total postcodes that the eWalker delivered to throughout the duration of the trial. It shows a clear concentration of deliveries in the North East, West and South of Fitzrovia, particularly along Tottenham Court Road and the A40. This is likely due to the higher density of businesses in these areas, allowing for more clustered deliveries. Clustered deliveries are particularly well supported by the eWalker, as it enables a more efficient delivery schedule and therefore more effective use of resources and time. (8)

The postcode data also clearly demonstrates the extent of the geographic area in which the eWalker is making deliveries. Based on the postcode data, the eWalker was able to operate within a 2km radius of the Heal's car park.

Figure 15: Total Trial Postcode Data



7.2. vi. Comparative Data - Walking Freight vs Other UPS delivery modes

To help with analysis, UPS provided delivery information for their electric delivery van so that a comparison could be made with the eWalker.

Table 11 shows delivery data (including average stops per day and average packages per day) for both the electric van and eWalker in the Fitzrovia area from February 24 as part of the trial.

7.2. vii. Qualitative Data - Overview and Key Findings

As well as the delivery data, UPS provided qualitative data on their experience of the trial. This included details on the operation of the eWalker, barriers to usage, comparisons with other UPS delivery methods and future plans for walking freight. The data was provided as part of feedback discussions and dialogue with CRP.

Table 11: UPS Electric Van Vs eWalker Deliveries

Month	Mode	Postcode	Average Stops per Day	Average Packages per Day	Average Operational Hours
February 24	Electric UPS Van	WC1	83	201	8-9 hours
February 24	eWalker	WC1	47	84	5-6 hours

Based on the average number of parcels that the eWalker can deliver in comparison to an electric UPS van, we were able to assume that 1 electric UPS van equates to approximately 2.4 eWalkers. (This information is used for the emissions calculations that are detailed in the subsequent sections).

Overall, UPS had a positive experience as part of the London Light Freight Walking Trial and highlighted the benefits of using the eWalker to support their electric vehicle deliveries in the Fitzrovia area. For example, the eWalker was able to carry out higher volumes of deliveries than if UPS had deployed a helper to work alongside a delivery driver, and it was also more efficient as it didn't require time for parking or entering and exiting a vehicle as part of the delivery process.

More details on the qualitative data are provided in the sections overleaf.

7.2. viii. Qualitative Data - Operational Feedback

UPS reported no difficulties in carrying out deliveries using the eWalker as part of the trial, and provided the following feedback about the operational experience:

- Using the eWalker was overall a very positive experience for the UPS staff member who participated in the trial.
- The eWalker has made deliveries in the area more efficient especially as there are vehicular restrictions on Tottenham Court Road. For example, UPS's electric vehicles can experience difficulties due to road works and traffic/congestion as well as challenges finding places to park and load/unload.
- Replenishing the eWalker was simple and there were no issues experienced during the trial. All that was required was for the driver and eWalker operator to agree a suitable place and time for the replenishment.
- Although a traditional vehicle can take larger, heavier items and can be helpful if there are a lot of packages going to one address, the eWalker can be quicker if there is a high level of dense deliveries in a small area. This is because the user is not having to park the vehicle or take time entering and exiting the vehicle at different stops. Consequently, the eWalker works best in a denser area with high package volumes.
- The eWalker is a fairly simple design so there have been no maintenance issues, and the running costs are also small compared to a traditional vehicle.
- The eWalker is a fairly simple design so there has been no maintenance issues, and running costs are small compared to traditional vehicles.

7.2. ix. Qualitative Data - Supporting Traditional Delivery Methods

A key theme from UPS's feedback was the importance of using the eWalker as a supplementary delivery tool rather than as a standalone operation. For the trial, the eWalker did not replace traditional delivery vehicles operating in the area, but instead was used to make their operations more efficient and to access areas where vehicular deliveries may have been more challenging.

For example, during peak delivery times, or when parcel numbers are high, UPS often deploys a 'helper' to support the delivery driver with their deliveries. The 'helper' makes deliveries on foot and is continually working alongside the driver, essentially providing 'another pair of hands'.

The eWalker is a much more effective version of the 'helper' as it allows the operator to take more volume in one go, but also allows them to work independently of the driver. This means that the eWalker can target areas where traditional vehicular deliveries are more difficult, such as in pedestrianised or restricted access areas (as demonstrated by Tottenham Court Road). It is also more effective than a delivery vehicle in dense delivery areas, and on larger less accessible premises (such as campus locations). This is because it does not have limitations in terms of parking or rely on the road network to provide direct access to the final delivery location.

7.2. x. Qualitative Data - Potential Barriers

UPS also provided insight on the potential barriers to using the eWalker. These mainly involved concerns around finding suitable space in Central London to operate the eWalker, the cost in comparison to other delivery options, and challenges with securing permissions.

Finding Suitable Site

UPS highlighted that to make eWalkers more viable, they would need micro logistics space and / or storage areas in Central London to operate and charge them from. This was why finding a space in Fitzrovia was essential for the trial to take place. Despite the relatively close proximity of Fitzrovia to the UPS Kentish Town depot, it would be very difficult and impractical to transport the eWalker from the depot in Kentish Town to Fitzrovia each day.

Cost Efficiency

Another potential barrier that UPS highlighted in their feedback was the cost per stop associated with the eWalker compared to other delivery methods. Based on salary rates and delivery efficiency, the cost per stop for each UPS delivery method is shown in Table 12 below.

As can be seen, the 'Helper' (who assists a driver on foot) comes out with the lowest cost per stop. Given that this delivery method also does not require equipment or rental space, this offers a better price model than the eWalker.

However, if policies are introduced that make the cost of using electric vehicles in Central London more expensive, this could change, making eWalkers and eQuads more price competitive. Similarly, if the delivery area incorporates areas with road restrictions and / or pedestrianisation, then supplementing (or even replacing) a traditional vehicle with an eWalker may be more beneficial.

Table 12: Delivery Methods Cost Per Stop

Delivery Method	Cost per Stop
Van Driver	£2.47
eQuad	£1.67
eWalker	£2.05
Helper (alongside Van Driver)	£1.92

Gaining Permission

A final challenge that UPS highlighted was the uncertainty around the permissions required to use the eWaker. As highlighted in the Chapter 5, there was a lot of uncertainty around who was responsible for providing UPS with permissions to use the eWalker for the trial. As a result, UPS noted that changes to regulations would be needed to allow the eWalker to be used more widely, as this would also provide more confidence to invest in walking freight technology and to operate in this way more commonly.

7.2. x. Further Considerations

Although UPS provided operational and qualitative data as part of the trial, there was some information that we were unable to ascertain. This included:

- Safety information, such as accident / collision data, to understand whether using the eWalker was safer in comparison to other delivery methods (please note that the eWalker was not involved in any accidents as part of the trial).
- PCN (penalty charge notice) data to determine whether using the eWalker resulted in a decreased likelihood of receiving parking / driving fines.
- Health related data, such as sick leave information, to understand whether using the eWalker had health related benefits in comparison to other delivery methods.

7.3. Air Quality Benefits

CRP has used its in-house Transport Emissions Calculator to estimate the impact of the London Light Freight Walking Trial on local air quality. This involves comparing the impact of the original delivery methods used before the trial, to those associated with the trial.

Calculations have been made based on the following assumptions:

- Based on the average number of parcels that the eWalker can deliver in comparison to an electric UPS van (see Table 10), we assumed that 1 UPS van equates to roughly 2.4 eWalkers.
- As the eWalker was able to service postcodes within a 2 km radius of the Heals building, we have assumed this is the approximate distance that the eWalker is travelling each day.
- To calculate the distance a UPS van would be travelling, we have scaled the eWalker delivery radius using the same factor associated with the average number of parcels (i.e. 2.4). This results in a radius of 4.9 km for the electric van, which we have also assumed is the approximate distance travelled by the electric van.
- Journeys were made at peak traffic times (Weekdays: 7am – 10am, 4pm – 6pm).

Using these assumptions, CRP were able to calculate the emissions impact of using the eWalker instead of the UPS Electric vehicle for one day. This was then multiplied by 149, which was the number of working days that the eWalker was used as part of the trial. This resulted in the following emissions savings for the trial:

Table 13: Trial Emissions Savings

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
0.00	28.21	14.99	0.00

Additionally, if the trial had run for 1 whole year, this would have resulted in the following emissions savings. (Please note that this assumes an average number of working days per month for the eWalker, which is 19).

Table 14: Trial Emission Savings for 1 Year

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
0.00	43.16	22.93	0.00

Table 13 and 14 indicate that the emissions savings from the trial were associated with PM10 and PM2.5 emissions. This is because UPS are already using a fully electric fleet to carry out Central London deliveries. Therefore, their original delivery methods are already zero tailpipe emission. Consequently, the beneficial air quality and health benefits will be felt through reduced particulate matter from tyre wear, braking and driving behaviour, particularly from heavier vehicles.

Despite this, diesel vans are still the most common freight vehicle across London, so operations that involve switching diesel vans for eWalkers would result in much higher emission savings. For example, if we calculate the emissions savings of the trial comparing with a diesel van, the following emission savings are generated.

Using CRP's Clean Air Tool, which aims to help provide a better visualisation of the emission savings, it is estimated that the NOx emissions savings of using the eWalker for one year instead of a diesel van are equivalent to:

- The emissions from 2 football pitch-sized forest fires
- Or the amount of Nox that 16 people emit in one day.

Similarly, the CO2 savings are equivalent to:

- The emissions from 6 football pitch-sized forest fires
- Or the equivalent of 0.89 square metres of artic ice being saved.

This highlights the huge potential for delivery modes such as Walking Freight to enable air quality improvements across London.

A detailed methodology of the emissions calculations can be found in the Appendix at Section 12 of this report.

Table 15: Trial Emissions Savings for Diesel Van

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
344.54	31.04	17.83	191.18

Table 16: Trial Emissions Savings for Diesel Van for 1 Year

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
527.22	47.51	27.28	297.14

7.4. Trial SWOT Analysis

Based on the data analysis and insights gained from the trial, CRP conducted a SWOT analysis to help assess the opportunity for walking freight as a viable delivery model. This can be seen in Table 17 below.

Table 17: The London Light Freight Walking Trial SWOT Analysis

Strengths	Weaknesses
• Sustainable delivery methods • Flexibility and manoeuvrability • Effective in areas with road restrictions and or pedestrianised zones • Effective in dense areas with high density of deliveries / clustered deliveries • Not reliant on road access to final delivery locations • Not impacted by congestion, road closures or parking demand • Able to supplement traditional delivery modes • Able to take more packages than a traditional 'helper'. • Able to act independently of a traditional delivery vehicle	• Cost of equipment • Requires packing / storage / charging space • Finding suitable space in central London was challenging • Cost per stop is less competitive than traditional delivery methods / the eWalker has a lower cost efficiency • Need for regulatory approval to operate on pavements and public spaces. • Gaining permissions for the trial required a lot of back and forth with different authorities due to uncertainty around who was responsible • Is not suitable for deliveries in all environments (requires dense delivery area / clustered deliveries)
Opportunities	**Threats**
• Air quality and emissions reductions benefits • Health benefits for operator due to higher activity levels • Potential increase in cost effectiveness if policy that penalises diesel vehicles and / or vehicular access to urban centres is implemented • Potential increase in cost effectiveness if more pedestrianisation / road restrictions are implemented • Technological improvements to make walking freight technology more effective • Growing interest in walking freight from the logistics sector • Supports organisational ESG / sustainability targets	• Establishing effective / high density areas that are suitable for the eWalker to operate • Finding suitable space to pack, store and recharge the eWalker (particularly in central City locations) • Finding affordable / cost effective space to pack, store and recharge the eWalker (particularly in central City locations) • Less cost effective than traditional delivery methods • No updates to regulations / permissions

Table 8 highlights that walking freight is a highly effective solution in areas with road restrictions, pedestrianised zones, and densely populated neighbourhoods with a high volume of deliveries. This was highlighted by the trial, with the area having high volumes of clustered deliveries, particularly along the Tottenham Court Road where there are vehicular access restrictions. This made the eWalker an effective option to service businesses in the Fitzrovia area. The trial also highlighted the strengths of using walking freight to supplement traditional delivery operations, whilst contributing to sustainability goals by reducing emissions and noise pollution, making it an environmentally friendly option for urban logistics.

However, there are also several challenges to implementing walking freight, particularly around the cost of using this model, and the ability to find suitable space in central urban locations where the eWalker is most beneficial. This was a key challenge associated with the trial, as finding the space in the Heals Car Park took a lot longer than anticipated. Additionally, the lack of clarity on permissions is also a weakness as it prevents operators from considering the model with more certainty - obtaining regulatory approval to operate in public spaces is crucial for operators as they need to comply with legal requirements. The process to gain permissions for the trial required speaking to several authorities as there was a lack of clarity on who was ultimately responsible for providing permission.

Despite these challenges, there are clear opportunities to integrate walking freight as part of wider freight operations, particularly if policy changes to restrict vehicular access in cities are implemented. As more emphasis is being placed on governments to address the climate emergency, walking freight may become more cost competitive with traditional vehicle-based delivery modes, whilst offering a sustainable alternative. Furthermore, technological improvements and innovations that support walking freight may also enable lower costs making the logistics model more competitive.
Nevertheless, threats associated with finding suitable centrally located space and gaining permissions are still paramount for walking freight to become truly viable.

8. Learnings and Recommendations

8.1. Learnings from the London Light Freight Walking Trial

Drawing from the unique experiences and timeline of events during this project, CRP acknowledges areas where adjustments could have been made for future walking freight trials.

Firstly, it would have been helpful to have identified potential spaces for the eWalker earlier on in the trial process as this led to a slight loss in momentum following the trials inception. Additionally, more could have been done to share responsibility for finding a site amongst partners, which may have helped in terms of providing local context and insight into areas / businesses were suitable premises may be present.

Secondly, more could have been done to raise awareness and explain the Walking Freight Trial to businesses and suppliers. As UPS were delivering the trial, it would be up to the sender to change their delivery methods to incorporate the eWalker. Particularly as it was a relatively short trial, it would have been difficult for businesses to change their delivery practices and communicate these changes to their suppliers to embrace the new delivery approach.

Furthermore, there was no way for UPS to guarantee that the delivery would occur by the eWalker, as it was supplementing other UPS deliveries in the area. Nevertheless, if delivering the trial again, it would be beneficial to engage more with local businesses and suppliers to demonstrate the benefits of using the eWalker. This could raise awareness and encourage a shift to more sustainable delivery methods.

Finally, collecting further information on accidents / collisions, PCN's and health related data would have made the trial even more insightful. As stated in Section 6, there are several other potential benefits of using the eWalker over traditional delivery models, such as health benefits, safety benefits and economic benefits. Being able to confirm and quantify these would help to give a more rounded picture of walking freight in practice.

8.2. Future Walking Freight Trials

The London Light Freight Walking Trial has provided the initial proof of concept for walking freight in Central London. However, the trial focused on consolidation-based walking freight to supplement traditional delivery operations. Consequently, there is an opportunity for future walking freight trials to explore other forms of operation, as well as to target new areas and technologies. The key opportunities that this trial has helped identify are summarised below.

8.2. i. Identifying Suitable Locations

The London Light Freight Walking Trial was partly successful due to the location in which the eWalker operated. Consequently, there is a big opportunity to identify other areas across London where walking freight could be used as an effective delivery mode. CRP's Walking Freight Feasibility Study has already highlighted locations in London that may be suitable, for example Isle of Dogs, Croydon and the Central Activity Zone (CAZ). Trialling walking freight in these areas could help further define the characteristics required for walking freight, as well as build the proof of concept for the logistics model.

8.2. ii. Supporting Multi-Modal Delivery Operations

Another key learning from the trial was the benefits of using walking freight to support traditional delivery operations. However, walking freight could also be considered alongside other sustainable delivery operations such as river and rail freight. For example, river freight operations require offloading of goods to destination piers in central urban locations, which are then taken to their final delivery destinations or to a consolidation centre. Walking freight could be used as a last mile delivery mode for the former scenario, particularly as the destination piers are often located in areas with limited vehicular access or with no vehicular access at all. Similarly, rail terminals are also often located in dense urban areas where walking freight is most effective. Therefore, there is a major opportunity for trials that incorporate walking freight for the last mile as part of a wider multimodal delivery operation.

8.3. Recommendations to Enable More Walking Freight

Reflecting on the London Light Freight Walking Trial unveils valuable insights that could support walking freight to become a viable sustainable logistics model. 10 key recommendations to enable this have been summarised below.

1.Update regulation to enable electrically assisted trollies to operate on public land

2. Deliver more walking freight trials in dense urban delivery areas to further define the characteristics required for walking freight

3. Undertake additional analysis of walking freight benefits through trials that compare health benefits, safety implications, PCN data and so on to understand the breadth of walking freight potential

4. Trial walking freight as part of multimodal freight operations i.e. in conjunction with river and rail freight

5. Trial different (and / or combinations of) walking freight models as well as new / supporting technology

6. Prioritise more central urban space for sustainable logistics

7. Implement policy and / or initiatives that encourage reasonable rates for central urban logistics space that allows operations like walking freight to become cost competitive

8. Implement policy and / or initiatives that discourage traditional road based logistics (such as pedestrianisation or timed road closures) to encourage sustainable logistics operations such as walking freight

9. Encourage knowledge sharing and transparency so operators can understand the potential of walking freight

10. Continue to raise awareness of the benefits of low emission logistics modes, such as walking freight, for public health, the economy and the environment.

8.4. The London Light Freight Walking Trial Outcomes

Although UPS has not announced any immediate plans to deploy the eWalker as part of its wider operations, the company has acknowledged the benefits of integrating the eWalker alongside its electric vehicle fleet. This decision is in part due to lack of clarity with regulations and permissions, as well as a general decrease in parcel volumes in the Fitzrovia area. Nevertheless, UPS will continue to consider walking freight as a logistics model as it aligns with their commitment to sustainability and reflects their proactive strategy to improve last-mile delivery services.

8.2. iii. Using New Technologies

Although the London Light Freight Walking Freight used an eWalker to carry out deliveries, trials could also be carried out that integrate other technology, or that use different technology entirely. For example, if the eWalker had been tracked using telematics, we would have a much better understanding of the distance travelled and therefore the potential reach of walking freight operations. Similarly, there may be different eWalker designs that could be trialled to understand differences in operational efficiencies.

8.2. iv. Trialling Different Forms of Walking Freight

As well as different walking freight technology, there are also other walking freight models that could be trialled either in conjunction or separately. For example, traditional shoulder slung bags could be trialled alongside an eWalker to understand differences in operational efficiency and whether the two models could in fact be complementary. For example, wheeled trolleys (like the ewalker) have higher capacity than shoulder-slung bags but are less flexible for carrying goods into restricted access areas and up steps. Using them in conjunction could therefore have potential benefits. Similarly, trials that build on the consolidation-based walking freight model could look to use multiple eWalkers to service an area from a central hub, negating the need for a traditional delivery vehicle entirely.

9. Acknowledgements

CRP would like to thank the Department for Environment, Food and Rural Affairs (Defra) for funding of the London Light Freight Walking Freight Trial.

CRP would also like to thank The Fitzrovia Partnership, the London Borough of Camden, Heals, Workman and UPS as partners for this trial. The London Freight Walking Trial would not have been possible without their invaluable support, collaboration and commitment.

Together, we are proud to have contributed to the development of walking freight as a sustainable logistics solution and we hope this report supports other to consider walking freight as a cleaner, greener and fairer delivery opportunity.

10. Additional Resources

Please find a list of relevant resources below:

10.1. Guidance Documents

- Steer, Walking Freight Report Summary: here
- Steer, Walking Freight Feasibility Study: here
- Installing Infrastructure to Support Micro Logistics: here
- How to Support a Micro Logistics Hub in your Borough: here

10.2. Online Tools

- CRP's Urban Logistics Hub Map: here
- CRP Clean Air Tool: here

10.3. Project Overviews

- SGL Cargo Bike and Walking Freight Cheat Sheet: here
- London Light Freight Walking Trial Snapshot: here

10.4. Press Releases

- London Light Walking Trial Freight Press Release: here
- Courier Fair Press Release: here

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12. Apendices

12.1. Emissions Calculations Methodology

UPS indicated that prior to the eWalker (and in conjunction with the trial), deliveries in the Fitzrovia area were serviced by electric vans. To compare the impact of the trial, UPS provided delivery information for both the eWalker and a UPS Electric Van for the month of February during the trial. This is provided in the table below.

Table 18: UPS Electric Van Vs eWalker Deliveries

Month	Mode	Postcode	Average Stops per Day	Average Packages per Day	Average Operational Hours
February 24	Electric UPS Van	WC1	83	201	8-9 hours
February 24	eWalker	WC1	47	84	5-6 hours

This information was used to estimate the likely distances that the electric van may have covered if the eWalker had not been used for the trial.

Based on the average number of parcels that the eWalker can deliver in comparison to an electric UPS van, we were able to assume that 1 electric UPS van equates to roughly 2.4 eWalkers. (201 / 84 = 2.39).

As the eWalker was able to service postcodes within a 2 km radius of the Heals building, we have assumed that this is the approximate distance that the eWalker is travelling each day.

Therefore, to calculate the distance a UPS van would be travelling under the same circumstances, we have scaled the eWalker delivery radius using the same factor associated with the average number of parcels (i.e. 2.4). This results in a radius of 4.8 km. This has been assumed as the approximate distance travelled for a UPS Van.

CRP's in-house emissions calculator is a tool that provides key insights into how transport choices affect air quality. Therefore, to calculate the emissions savings from 1 day of the trial using the eWalker, compared to 1 day of the trial using an electric UPS van, the following inputs were used:

Table 19: Emissions Calculator Input Table

Input Type	EV Van Assumption
Vehicle Type	Battery EV LGV
Borough Visited	Camden (Central)
Time Period	Peak
How Often	Daily
Distance (km)	4.8

This resulted in the following emissions savings from one day of replacing the EV Van with the eWalker:

Table 20: Daily Emission Savings for eWalker

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
0.00	0.19	0.10	0.00

To calculate the impact of the whole trial, the daily emission savings were multiplied by the number of working days that the eWalker was used for the trial (149 working days) this resulted in the following emissions savings:

Table 21: Trial Emissions Savings

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
0.00	28.21	14.99	0.00

Additionally, to calculate the impact of the trial for a year, the average number of working days per month for the eWalker was multiplied by 12 (19 * 12 = 228). This resulted in the following emissions savings being calculated:

Table 22: Trial Emission Savings for 1 Year

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
0.00	43.16	22.93	0.00

However, as diesel vans are still the most common freight vehicle across London, we also wanted to compare the eWalker to a normal diesel delivery vehicle (10). We therefore repeated the above process but using the following inputs:

Table 23: Emissions Calculator Input Table

Input Type	EV Van Assumption
Vehicle Type	Battery EV LGV
Borough Visited	Camden (Central)
Time Period	Peak
How Often	Daily
Distance (km)	4.8

This resulted in the following daily, trial and yearly emissions savings:

Table 24: Daily Emission Savings for Diesel Van

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
2.31	0.21	0.12	1.30

Table 25: Trial Emissions Savings for Diesel Van

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
344.54	31.04	17.83	191.18

Table 26: Trial Emissions Savings for Diesel Van for 1 Year

NOx (g)	PM10 (g)	PM2.5 (g)	CO2 (kg)
527.22	47.51	27.28	297.14

If you would like further information about anything that has been included in this guidance, please get in touch:

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