

SGL Unpacked: Urban Logistics Hubs

Pimlico Micro Logistics Hub Trial



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1. Definitions

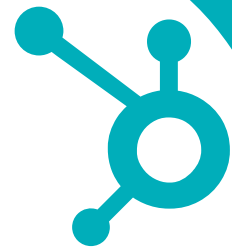


Table 1. List of frequently used logistics terms and their definitions.

TERM	DEFINITION
Freight	Goods, cargo, products, or merchandise that are transported or carried from one place to another whether by land, water, or air.
Hub Manager	The managing agent of the newly converted hub site, acting as the go-between and point of liaison between the landowner, leaseholder and zero emission courier / operator that will be operating and running deliveries from the site. Duties include, but not limited to, collating and verifying standard operational procedure information, relevant health & safety and risk assessment documentation, site inductions, condition assessments, carrying out regular site checks, assessments and reviews with the operator and landlord, and assisting to resolve any issues that may arise.
Landowner	Someone that owns land, usually large amounts of land. This could be a local authority, a strategic agency or a private landlord.
Last-Mile Delivery	Last-mile delivery refers to the very last step of the delivery process when freight is moved from a hub to its final destination, typically a residential address or retail establishment.

Leaseholder	Someone who owns a property on a lease, typically for 99, 125 or 999 years. The length of the lease decreases year by year until it eventually runs out. A leaseholder is also called a tenant, but this should not be confused with short-term agreements.
Logistics	Logistics refers to the overall process of managing how goods are acquired, stored, and transported to their final destination.
Logistics Real Estate and Retrofit Partner	A specialist organisation with a logistics background that will identify and qualify locations then in-turn design and transform an underutilised space in an area (e.g. a car park, service yard) into a suitable location for a micro logistics hub. They may do this with activities such as installing power and secure fencing and may even manage liaise with the landowner and/or leaseholder.
Low-Emission Courier / Operator	A company or employee of a company that transports goods on modes of transport that do not produce any tailpipe emissions. Examples include cargo bike couriers, walking porters and deliveries made by couriers with electric vans.
Micro Logistics Hub	A small site that couriers use for their day-to-day deliveries as a place to receive, sort and then send deliveries to their destination by cargo bikes, walking porters or a small electric van.

Nitrogen Oxide	NOx is the collective term for the nitrogen oxides NO and NO2, which are significant components of harmful air pollution. NOx is formed in combustion processes of fossil fuels, such as (vehicle) engines, power plants, and boilers, as well as industrial processes with very high temperatures (e.g., in smelters).
Particulate Matter	<p>Particulate matter (PM) consists of microscopic solids or liquid droplets and poses health risks when inhaled. These particles vary in size from a few nanometres (similar to a virus) to around 100 micrometres (about the thickness of a human hair). This airborne matter comprises both primary components, released directly into the atmosphere, and secondary components, formed through chemical reactions in the atmosphere. It originates from both human-made and natural sources.</p> <p>PM2.5 is fine particulate matter which is defined as particles that are 2.5 microns or less in diameter, which includes soot and smoke.</p>
Tenancy at Will	A tenancy that allows a tenant to occupy a property indefinitely and which either the landlord or tenant can terminate at any time.
Tenant	A person who occupies land or property rented from a landlord.

Table 2. List of abbreviations and their definitions.

ABBREVIATION	DEFINITION
CO ₂	Carbon dioxide
CRP	Cross River Partnership
dB	Decibel
Defra	Department for Environment, Food & Rural Affairs
DLS	Decarbon Logistics Solutions
DM	Delivery Mates
FSD	Freight, Servicing and Deliveries
HGV	Heavy goods vehicle
ILS	Infinium Logistics Solutions
LGV	Large goods vehicle
NO _x	Nitrogen oxide

PM	Particulate matter
SGL	Smarter Greener Logistics
TAW	Tenancy at Will
ULEZ	Ultra Low Emission Zone
WCC	Westminster City Council

2. Executive Summary



Cross River Partnership (CRP) is a partnership delivering environmental, economic and community focused projects that address challenges around Air Quality, Transport, Placemaking and Wellbeing.

2024 marks a major milestone for Cross River Partnership as the organisation celebrates **30 years of delivering London's future together**. CRP was originally formed to deliver the Millennium and Hungerford Footbridges across the River Thames. However, CRP's role has evolved over time and has since been supporting public, private and voluntary organisations to collaboratively work on various sustainability initiatives in the capital.

Westminster City Council (WCC) and CRP launched this micro logistics hub trial in Pimlico on **17th April 2023** to support **low-emission last-mile deliveries** in the City of Westminster. This was a CRP and WCC-funded trial, supported by Infinium Logistics Solutions, which later closed its urban logistics hub arm and was succeeded by a company called Decarbon Logistics Solutions, and carried out by Delivery Mates low-emission couriers. The successful trial, initially scheduled to conclude in September after a six-month duration, was then extended for an additional three months until the end of December.

On 28th December 2023, DLS informed CRP that following negotiations with the

relevant parties, an agreement had been reached between Delivery Mates and Q-Park and the micro logistics hub will **remain in operation** at Q-Park Pimlico **after the 9-month trial** ends at the end of December. This is an agreement with a minimum commitment period of 12 months.



Based in the Q-Park Pimlico parking facility, the micro logistics hub receives goods from an **electric delivery vehicle** and then distributes them by **electric cargo bikes** in Westminster and the surrounding area.

Loading and unloading takes place within a specific demised area of the car park to avoid disruption to other car park users and to **respect residents' wellbeing** and keep **noise levels at minimum**. CRP also funded an EMSOL noise and video monitor to capture any noise events and likely causes for six months. The WCC team who manages residents' noise complaints was also informed about this micro logistics hub trial, in case any nearby residents report loud noise originating from the car park and likely caused by the courier's staff and operations.

The **EMSOL noise sensor** near Q-Park Pimlico captured an average noise spike level of 74.78 decibels (dB) throughout the monitoring period between July 2023 and December 2023. This noise level can roughly be compared to, for example, the noise level in a crowded restaurant or a loud conversation. Busy street traffic usually causes noise of approximately 70 - 85 dB in urban areas.

The 800 square feet micro logistics hub has been **used strategically** by Delivery Mates. The courier has allocated space to park their e-cargo bikes and charge their batteries, store goods, sort deliveries, as well as dispose of any waste. This micro logistics hub site in Pimlico was valued at around £51 per square foot during the trial period by Q-Park.

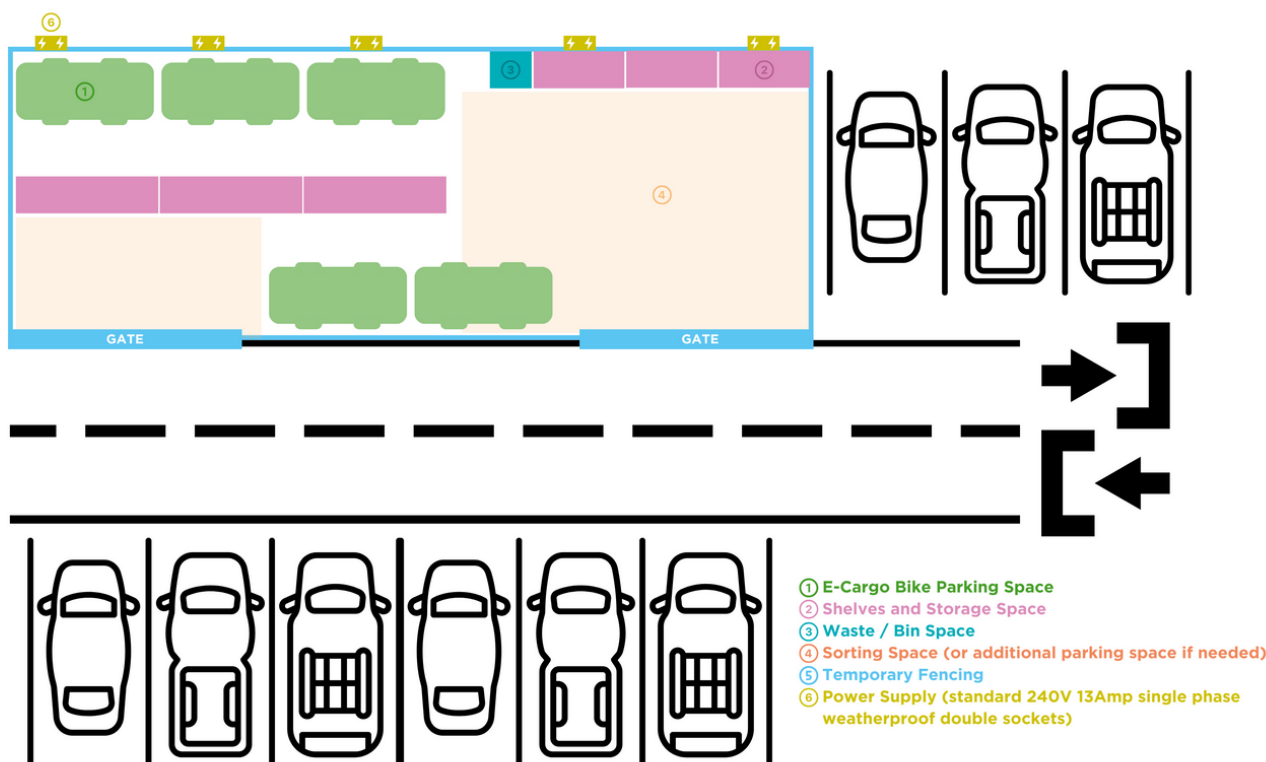


Diagram of the most recent Pimlico micro logistics hub site layout.

There are **4 main types of deliveries** taking place from the hub, which are parcels and laundry shipments (“network deliveries”), food, fresh flowers as well as battery swaps.

A **total of 111,236 deliveries** were sent via the hub throughout the entire 9-month period. This equates to an average of around 431 deliveries per day or 3,006 deliveries per week.

The e-cargo bikes travelled a combined

total of 22,578 km (14,029 miles) in the 9-month period, which is more than halfway around the Earth. This was an average of 88 km per day or 2,509 km per trial month.

After 9 months of operations, CRP’s Transport Emissions Calculator captured emissions savings of 9,523 kg of CO₂, 16,897 g of NO_x, 794 g of PM_{2.5}, and 1,372 g PM₁₀ when comparing the e-cargo bikes to polluting van deliveries. However, this

does not take cargo weight, total travel time, nor emissions associated with the electricity required to charge the e-cargo bikes' batteries into account.

Delivery Mates' in-house algorithm was able to calculate emissions reductions of 4,186 kg of CO₂, 15,141 g of NO_x, and 303 g of PM_{2.5} when comparing the e-cargo bikes to polluting van deliveries on the last mile.

Translated into more **tangible examples** by using the [CRP Clean Air Tool](#), this would mean:

- CO₂ emissions from 85 football pitch-sized forest fires 🔥
- NO_x emissions equivalent to what 459 people emit in one day 🙌
- 6.8 sycamore maple trees required to filter out these PM_{2.5} emissions 🌳

The trial received **public recognition** as a finalist in the 'Last Mile Delivery' category of the CiTTi Awards 2023, and its press releases were shared by around 22 press and online channels upon launch and extension.

The courier reported that the model reached a **break-even point** after 8 months. While some customers are willing to pay somewhat extra for sustainability measures, many of them are still hesitant to pay significantly more. Hence, the micro logistics hub's rental and running costs must be distributed across all shipments. While deliveries via the hub contribute to offsetting the operational expenses, achieving economies of scale is crucial to breaking even.

Delivery Mates have confirmed that the **overall delivery cost** from the Pimlico micro logistics hub is now **3% cheaper**

than from their Acton and SE15 hubs, including any transport of goods to the micro logistics hub.

Reflecting on the Pimlico micro logistics hub trial's journey unveils **valuable insights** for future projects in sustainable urban logistics. The most important one has been highlighted in the following paragraph:

Unlocking Logistics Space: One significant lesson learnt is the importance of identifying and qualifying suitable spaces for logistics operations. Landowners of private and common land, including businesses and local authorities, should be aware of feasible spaces on their land and consider unlocking these for sustainable logistics operations, like micro logistics hubs. These can include finding underutilised spaces, locate potential meanwhile spaces, or spot any permanent spaces that could generate income for the landowner. This trial demonstrated that not a lot of space is required to run a similar hub and that micro logistics hubs can work in dense, urban areas with a high level of commercial activity. Offering spaces on shorter-term leases, between 6 months to a year, would also significantly benefit couriers in establishing micro logistics hubs. Removing the burden of having to commit to longer leases, such as 2 to 5 years, would alleviate financial and operational pressure.

Generally, micro logistics hubs are quite **scalable models** and can be applied to different geographic areas if the overarching guidelines are considered. CRP has developed an additional

comprehensive guidance document for local authorities which serves as a step-by-step guide for opening a new micro logistics hub in their borough. Many of the Pimlico micro logistics hub trial's learnings significantly contributed to the development of this guidance document.

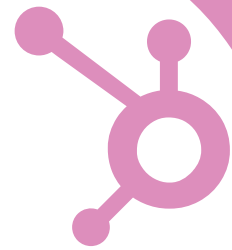
However, early engagement with couriers is also crucial, as finding the ideal location for micro logistics hubs involves more than just theoretical suitability. The **success of a hub trial depends on various factors**, including the courier's existing and potential customer base in the hub's vicinity, their existing hub network, as well as suitable cargo bike and road infrastructure to carry out the low-emission last-mile deliveries. Additionally, careful consideration must be given to the set up, rental and operational costs of the

hub, and the additional resources needed by the courier to manage the site effectively. It is important to recognise that simply opening a hub does not always guarantee courier participation. The hub design, specific courier needs and requirements must be taken into account as well.

CRP's **in-depth report** on the Pimlico micro logistics hub trial provides an **overview** of the project partners and broader context, details the **set-up process** of the hub site and its requirements, analyses the **collected data** to draw insights, features **testimonials** from partners, and concludes by **summarising key learnings** as well as offering **recommendations** for future micro logistics hub trials.



3. Introduction



3.1. Trial and Partners

Cross River Partnership (CRP) is a partnership delivering environmental, economic and community focused projects that address challenges around Air Quality, Transport, Placemaking and Wellbeing.

Westminster City Council (WCC) and Cross River Partnership (CRP) launched this micro logistics hub trial in Pimlico on 17th April 2023 to support low-emission last-mile deliveries in the City of Westminster. This was a CRP and WCC-funded trial, supported by Infinium Logistics Solutions, which later closed its urban logistics hub arm and was succeeded by a company called Decarbon Logistics Solutions, and carried out by Delivery Mates low-emission couriers. The successful trial, initially scheduled to conclude in September after a six-month duration, was then extended for an additional three months until 31st December 2023, totalling in 9 months of trial operations.

Delivery Mates then came to an agreement with Q-Park and the micro logistics hub has remained in operation at Q-Park Pimlico, since the trial ended at the end of December 2023. This is an agreement between both parties with a minimum commitment period of 12 months.

Based in the Q-Park Pimlico parking facility, the micro logistics hub receives goods from an electric delivery vehicle

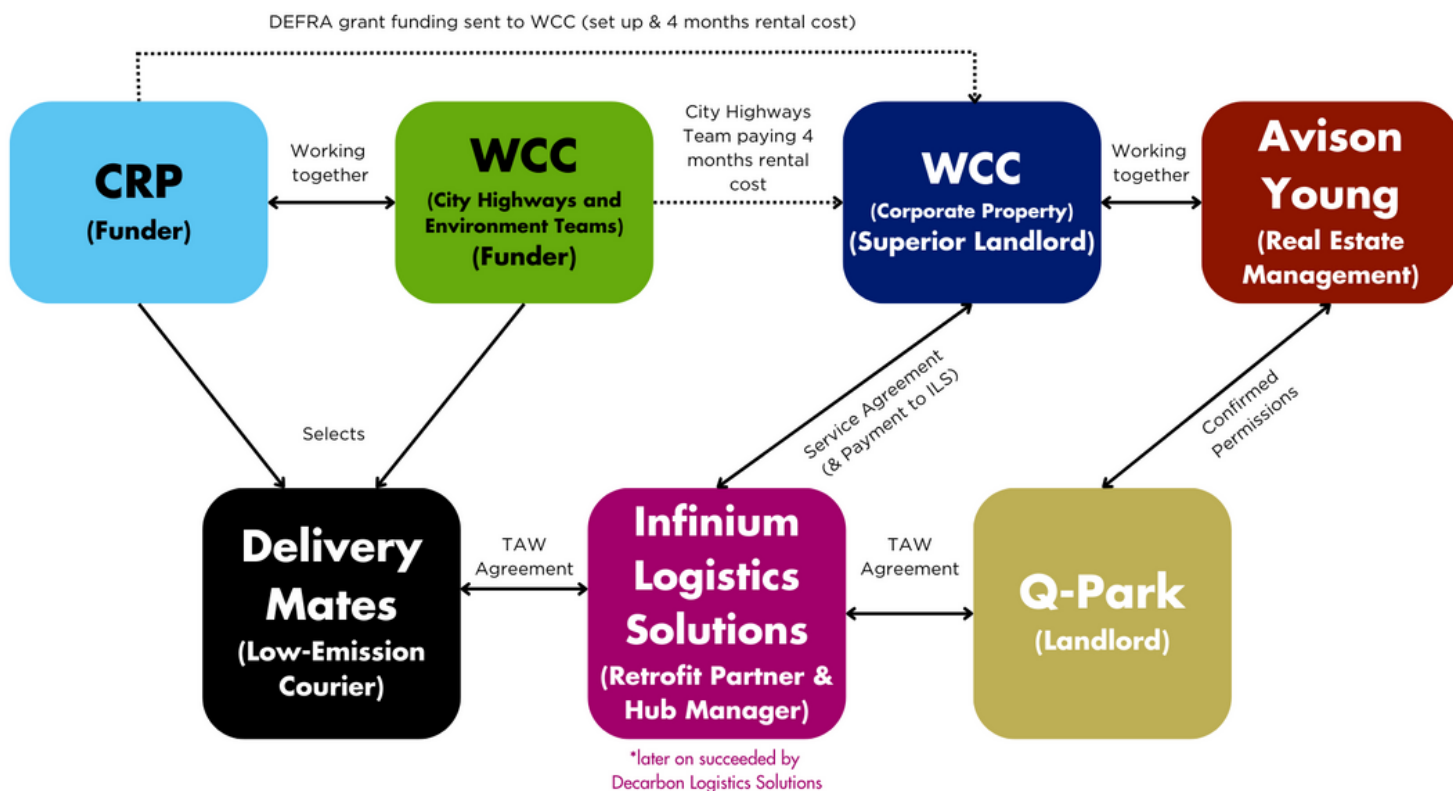
and then distributes them by electric cargo bikes in Westminster and the surrounding area. Loading and unloading takes place within a specific demised area of the car park to avoid disruption to other car park users and to respect residents' wellbeing and keep noise levels at minimum.

Micro logistics hubs, also sometimes referred to as urban logistics hubs or micro consolidation hubs, are small, secure spaces that couriers and operators can use to receive, sort, and send deliveries in central locations, ideally by cargo bike or walking porters, to support low-emission last-mile deliveries. The micro logistics hub acts as a crucial step for consolidating deliveries, bulk-buying, and a place to sort deliveries, which can reduce the number of polluting vehicle trips, congestion, and air pollution.



The stakeholder diagram below shows the different parties involved in the trial and their relationships.

WCC & CRP Pimlico Hub Trial - Stakeholders & Relationships



3.2. CRP Funding

The micro logistics hub trial in Pimlico was mostly funded by CRP’s Clean Air Logistics for London programme and monitored through the Smarter Greener Logistics programme.

CRP’s Clean Air Logistics for London programme, under which this project mostly falls under, was funded by Defra’s Air Quality Grant 2021-22 under Lot 1. Defra’s Air Quality Grant scheme provides funding to eligible local authorities to help improve air quality.

CRP’s current Smarter Greener Logistics (SGL) programme is also funded by Defra’s Air Quality Grant and led by

Westminster City Council in collaboration with 25 project partners. SGL runs from July 2023 until December 2024 and is building on the success of the previous CALL programme. The SGL programme aims to minimise the impact of freight on noise, air quality, traffic, and pavement space in London.

3.3. Tackling Air Pollution

In London, roughly 4,000 annual premature deaths are attributed to poor air quality and a social cost of around £10.32 billion a year. Social costs are costs affecting welfare and

comprise both direct health care expenditures (e.g. for hospital admissions) and indirect health impacts (e.g. diseases or reduced life expectancy due to air pollution). With continued changes to shopping behaviour that have been exacerbated by the pandemic, the number of parcels delivered in London is expected to double by 2030. A Centre for London [report](#) from 2021 highlighted, that while freight constitutes only 15% of the total vehicle miles travelled in London, it contributes to 34% of nitrogen oxide

(NOx) and 27% of fine particulate matter (PM2.5) emissions in road transport. Freight and delivery activities additionally contribute to a quarter of London's overall carbon emissions from transport.

The aim of the Pimlico micro logistics hub is to reduce LGV (van) and HGV (lorry) vehicle miles, thereby cutting down the number of polluting vehicle trips, alleviating congestion and fuel combustion, and consequently reducing air pollution levels.



3.4. Supporting Local Policy

Westminster City Council Policy	Description and Context
<p>WCC's <u>Climate Emergency Action Plan</u></p>	<p>Westminster has some of the highest carbon emissions and worst air pollution in the UK. In response, WCC have set an emissions target for the City of Westminster to reach net zero by 2040. WCC's <u>Climate Emergency Action Plan</u> sets out comprehensive actions for reducing carbon emissions across the City, working in partnership with businesses, communities and residents. The action plan also aims to consolidate and streamline freight and deliveries to reduce on-road emissions.</p>
<p>WCC's <u>Fairer Westminster Strategy</u></p>	<p>Creating a Fairer Environment is a key role of the <u>Fairer Westminster</u> strategy, with the need to take ambitious action on climate change, improve air quality, and encourage more sustainable and active modes of travel.</p>
<p>WCC's <u>Air Quality Action Plan 2019 - 2024</u></p>	<p>The <u>WCC Air Quality Action Plan 2019 - 2024</u> states that road transport is the biggest single source of pollutants within the City of Westminster. The geographically specific nature of road-related air pollution means that transport emissions also heavily contribute to air pollution hotspots across the city. In recent years WCC have taken strides to reduce emissions from transport where they are able to. This includes a first for the UK in retrofitting WCC's waste vehicle fleet to substantially reduce their own emissions, to introducing London's first diesel parking surcharge as a trial in the Marylebone area, which WCC have now rolled out across the city. The work in this area links into many other council policies and strategies, including WCC's <u>Walking Strategy</u>, <u>ActiveWestminster Strategy</u>, and <u>Electric Vehicle Charging Strategy</u>. One of the key actions from this strategy also highlights the</p>

need to work closely with businesses and business groups to tackle emissions from deliveries and vehicle fleets by welcoming new green technology and innovation in Westminster.

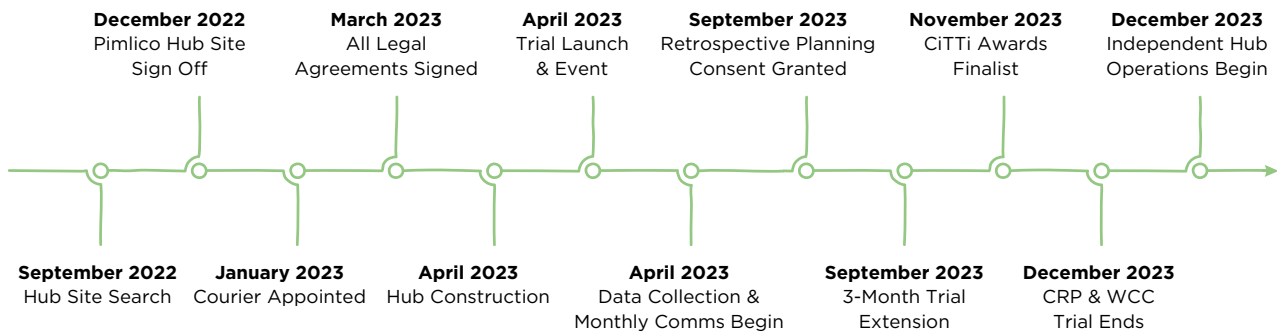
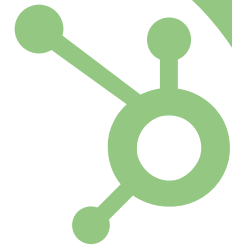
WCC's Freight, Servicing and Deliveries (FSD) Strategy

The WCC Freight, Servicing and Deliveries (FSD) Strategy supports the introduction of consolidation and micro distribution centres, in the right conditions, so that it can enable quieter deliveries and the use of low emission modes for positive air quality results in the local area. Through this project, WCC are delivering on their promise to support the establishment of micro-distribution centres by exploring land opportunities through planning in the borough that could be available for this purpose, and supporting projects that can help to get micro-logistic hub projects started, where competition law permits. The strategy aims to create area and city-wide initiatives to minimise freight movements through macro and micro consolidation initiatives. This includes encouraging the use of environmentally friendly vehicles at these hubs, while avoiding conflict with other street users and nuisance noise for residents.

Mayor's 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 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. Setting Up the Hub



4.1. Project Timeline

Westminster City Council (WCC), Cross River Partnership (CRP) and Infinium Logistics Solutions (ILS) began to explore potential sites in the City of Westminster in September 2022. The three parties were able to define their requirements and ILS created a shortlist of 4 potential sites that fit the **specifications and budget** in November 2022. ILS presented their official proposal in December 2022. Following a series of site visits and comparisons with ILS, WCC and CRP agreed that their preferred and most suitable option would be the Q-Park Pimlico site. This decision was signed off at a WCC Cabinet Member Briefing with Councillor Dimoldenberg, Cabinet Member for City Management and Air Quality, on 15th December 2022.

WCC and CRP had also started drafting an official request for proposals (RFP) aimed at logistics operators and low-emission couriers in November 2022.

After the Q-Park Pimlico site was selected, WCC invited these stakeholders to **tender to carry out last-mile deliveries** from the micro logistics hub as part of the subsidised trial via email on 16th December 2022. The deadline for proposals was set to 14th January 2023. This brief was also shared via the Institute of Couriers' (IOC) newsletter on 18th December 2022. WCC and CRP offered couriers the opportunity to see the site in person before submitting a proposal as part of open days that were held on 9th and 10th January 2023.

WCC and CRP received proposals from four operators. These were then evaluated against the key requirements by WCC and CRP. Delivery Mates' proposal scored highest and was therefore **awarded the bid** on 25th January 2023.

The number of parties involved in the

legal proceedings was relatively high, which led to a few delays in terms of bureaucratic processes, such as understanding and finalising required permissions and legal agreements. All legal documents were signed by the end of March 2023.

The hub was then **constructed** in only 4 days between Monday, 3rd April 2023 and Thursday, 6th April 2024 (note that Friday, 7th April and Monday, 10th April 2023 were bank holidays). The hub was then inspected by Infinium Logistics Solutions on Tuesday, 11th April. Following receipt of the necessary operational procedure and health & safety documentation, ILS handed the hub over to Delivery Mates who were able to move their dedicated e-cargo bikes and equipment to the hub between 15th and 16th April.

The launch date for the micro logistics hub trial was set to 17th April 2023, to allow WCC and CRP some time to work on the official **press release** and **launch communications assets**. CRP designed vinyl stickers that were added to the Delivery Mates e-cargo bikes as well as social media posts to announce the trial launch. ILS created a banner that was added to the hub's fencing. A photoshoot took place on 13th April in order to include a selected picture of the new micro logistics hub and a Delivery Mates e-cargo bike in the press release which was published on 17th April 2023. The press release was well received and publicly shared by more than 10 news outlets, magazines, blogs, and newsletters within a short time span. Additionally, the articles were often re-posted on social media, especially via LinkedIn.



Banner design that was externally attached to the micro logistics hub's fencing.



Vinyl sticker design that was attached to the Delivery Mates e-cargo bikes.

A week after the trial was officially launched, CRP organised a **post-launch event** on the afternoon of the 24th April 2023 at the Artist Residence London in Pimlico. The event consisted of a site

visit of the new micro logistics hub within Q-Park Pimlico, followed by a Q&A session, group pictures, and a networking opportunity afterwards.



Site visit to the Pimlico micro logistics hub as part of the post-launch event.

After the micro logistics hub started operating in April 2023, WCC and CRP were also able to provide Delivery Mates with **business engagement support** in May 2023. This included designing and printing 300 postcards to hand out to local businesses who may wish to send deliveries via the hub.



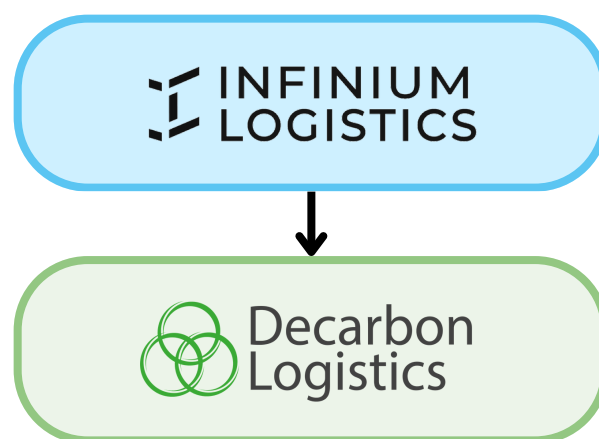
Two-sided postcard design to encourage local businesses to get involved.

While the trial was running and Delivery Mates was carrying out e-cargo bike deliveries to the local area and beyond, the courier created **monthly (4-weekly) reports** and CRP shared 3 key insights about the trial via social media on a monthly basis.

On 26th May 2023, Infinium Logistics Solutions (ILS) announced that, following a strategic review, it had refined its key focus areas to concentrate on building its European asset management capabilities and business solutions that support the energy transition of commercial transport. As such, activities including urban hubs transitioned away from the business to form their own dedicated and specialist entities. Therefore, the urban logistics hub arm of Infinium Logistics Solutions was closed.

Infinium Logistics Solutions (ILS) was

succeeded by Decarbon Logistics Solutions (DLS), a company created by ILS Co-Founder and former CEO Paul McCormack and run by the same team behind urban hubs at ILS, and provided additional project support for the remainder of the micro logistics hub trial period. DLS continues to specialise in the design and development of urban hubs, provision of out of home delivery solutions, and support for commercial customers transitioning to EVs.





On 1st September 2023, the Pimlico micro logistics hub was retrospectively **granted planning consent** by Westminster City Council, the superior landlord of the site. The planning application was prepared by ILS together with their planning partners Jigsaw Planning, and submitted on 21st June 2023. Infinium Logistics Solutions usually make **retrospective planning applications** for any hubs they create in case this was ever challenged. The Tenancy At Will (TAW) agreement between Infinium Logistics Solutions and Q-Park had also stated that planning permissions shall be required for the permitted use. The application for the Pimlico micro logistics hub was an application for change of area of the car park and use as a last mile logistics hub (storage and charging of cargo bikes) (SuiGeneris).

In September, Delivery Mates also **expanded their operations** to include deliveries for Laundryheap via the micro logistics hub in Pimlico. Laundryheap, a

customer of Delivery Mates, commenced operations with the low-emission courier in London that month and has since expanded to Amsterdam and Paris. Delivery Mates offer full logistics and fleet services to them. The courier maintains a dedicated fleet of e-cargo bikes for Laundryheap deliveries due to the unique odour associated with clean and dirty laundry, which does not align well with the other deliveries handled via the micro logistics hub.

After six months of successful trial operations until the end of September 2023, WCC and CRP were able to fund an additional **three-month extension of the trial** until the 31st December 2023 to continue gathering valuable data, especially during the busiest Christmas delivery period in December. Facilitated by DLS, Delivery Mates and Q-Park agreed to an extension of the Pimlico micro logistics hub on 22nd September 2023 and the Tenancy At Will (TAW) agreements were renewed.

After WCC and CRP submitted the Pimlico micro logistics hub trial to the **CiTTi Awards 2023** under the '**Last-Mile Delivery**' category in July 2023 and subsequently being shortlisted in September 2023, the collaborative project was **honoured as a finalist** on 21st November 2023, during the official awards ceremony. The CiTTi Awards celebrate innovation, excellence, and

dedication within the transportation industry. WCC and CRP's journey to the finals was marked by a shared passion for improving last-mile delivery solutions in London and contributing to sustainable urban development. This recognition is a testament to the hard work, commitment, collaboration, and forward-thinking approach that define Cross River Partnership.



WCC and CRP's nomination at the CiTTi Awards 2023 ceremony.

On 28th December 2023, DLS informed CRP that following negotiations with the relevant parties, an agreement had been reached between Delivery Mates and Q-Park and the micro logistics hub will **remain in operation** at Q-Park Pimlico **after the 9- month trial** ends at the end of December. This is an **agreement with a minimum commitment period of 12 months**. Decarbon Logistics Solutions facilitated the conversations between Delivery Mates and Q-Park, encouraging them to continue the hub operations after the trial ended. CRP shared the news with Councillor Dimoldenberg, Cabinet Member for City Management and Air Quality, at a WCC Cabinet Member Briefing on 16th January 2024. An official **press release** was published on 15th February 2024, which was then shared by a number of channels as well.

4.2. Hub Site Specifications

Infinium Logistics Solutions (ILS) identified a suitable space for the WCC and CRP-funded micro logistics hub in the City of Westminster. To achieve this, ILS undertook an extensive search of potential spaces using their existing relationships with landowners, car parks, and contractors in London. They carried out detailed desk top analysis and on-site surveys to qualify each site against important logistics hub criteria to identify the most suitable location and construct the micro logistics hub in a comparatively short time.

Working to the project budget and timeline, ILS provided a range of hub design and configuration options, whilst simultaneously negotiating with the landlord to secure the necessary consent and permission for the permitted use and alterations to the car park area.

ILS successfully navigated adjustments to the hub design, ensuring compliance with landlord requirements while also considering budget constraints and project timelines. These changes were essential to develop a suitable solution for the project.

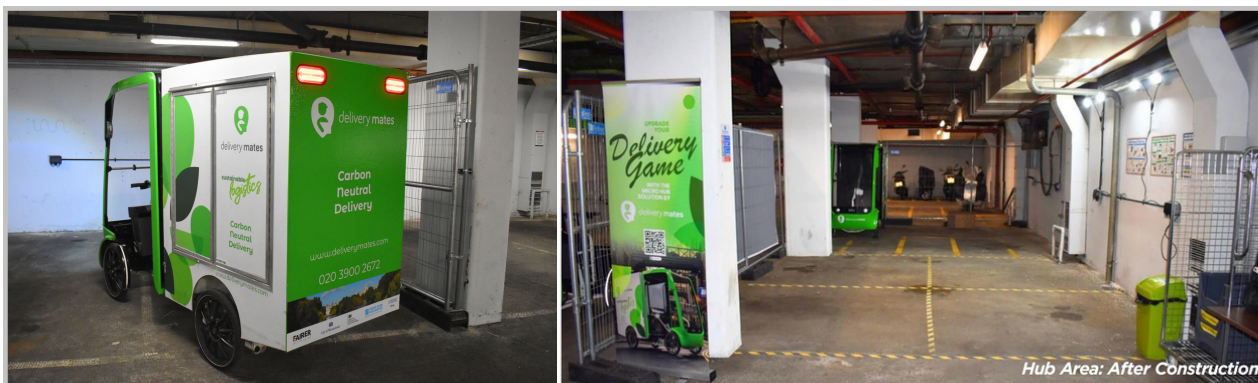
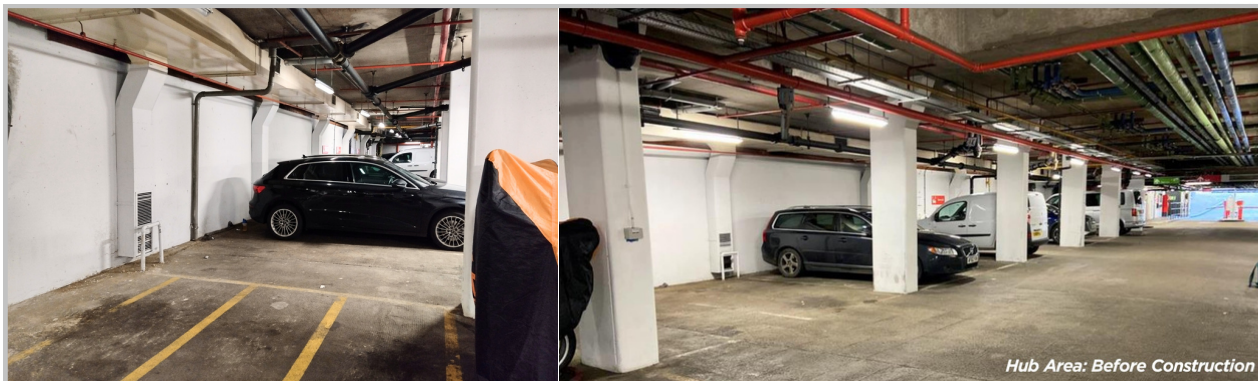
Located within an underutilised section of the Q-Park Pimlico parking facility on Cumberland Street, London SW1V 4LR, the micro logistics hub site was selected as it met satisfactory specifications:

- Suitably sized hub surface area of 800 sq ft (six car parking bays worth of space)
- Repurposing of an underutilised section of the indoor parking facility
- Space on entry level (level 0), which facilitates easy loading / unloading within the hub and is located away from the main traffic route and out of the way of other car park users
- Q-Park Pimlico is surrounded by large and wide main roads, which are accessible to larger electric vans (two metre height restriction)
- Entrance / exit does not cause any inconvenience to other road users on Cumberland Street outside
- Secure car park barrier access controlled; RFID access permits frictionless controlled entry and exit for courier's cargo bikes
- Existing site management and facilities at Q-Park Pimlico, including 24/7 car park access, security patrols, CCTV, toilets, and 4G WiFi signal
- Q-Park Pimlico has a precedent for other use cases, as a storage company and another cargo bike courier already operate from this location

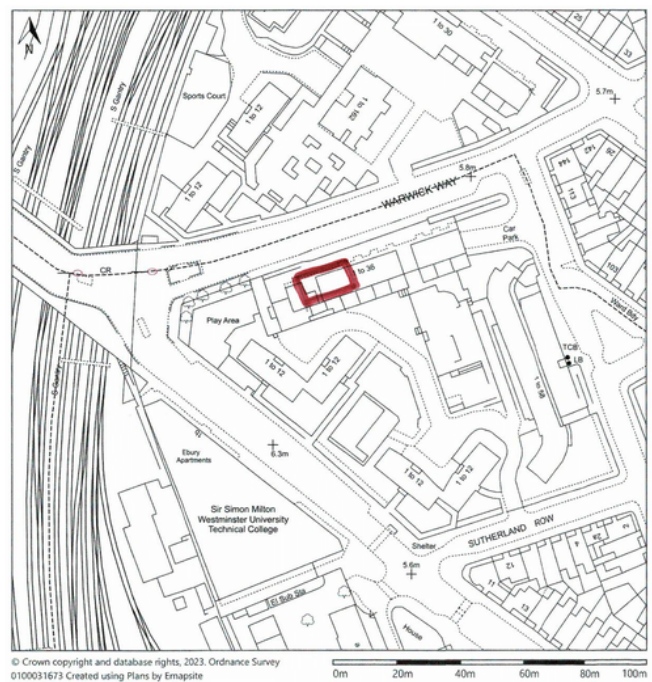
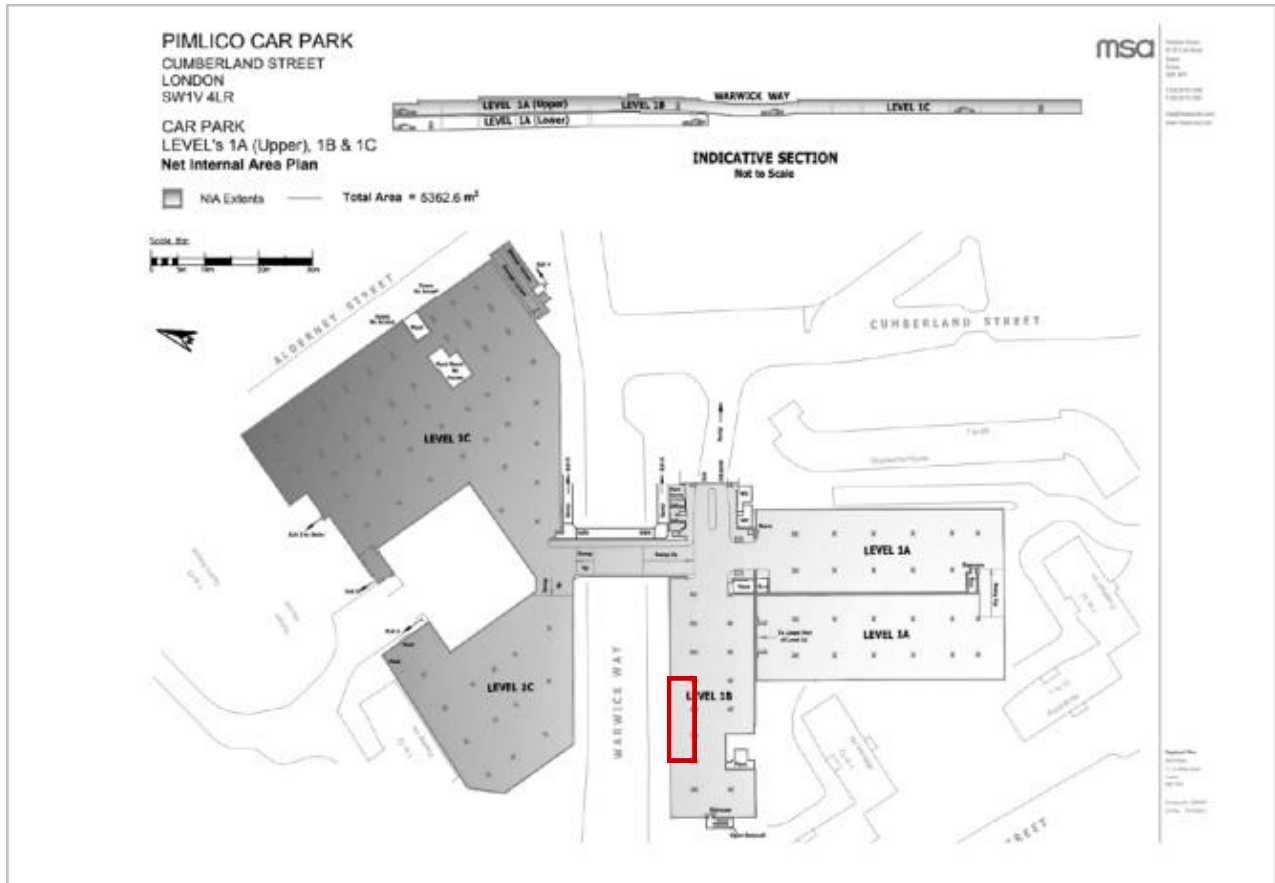
The hub was also fitted out with five standard 240V 13Amp single phase weatherproof double sockets, temporary security fencing and gates, specialised lithium battery fire extinguishers, additional portable LED lighting, roll cages, industrial shelving, as well as a desk for Delivery Mates staff on-site. The gates were designed with a 180-degree

hinge to avoid obstructing any traffic routes when open.

Infinium Logistics Solutions and later on Decarbon Logistics Solutions would carry out regular checks on the micro hub and address any issues between the operator and landlord as part of their hub management service.



The site plan below indicates the micro logistics hub's position relative to the entire Q-Park Pimlico area. The hub's outline is marked by a red rectangle in the Level 1B section.



Site plans utilised by Infinium Logistics Solutions.

The 800 square feet micro logistics hub, which equates to around 6 car parking bays, has been used strategically by Delivery Mates. The courier has allocated space to park their e-cargo bikes and charge their batteries, store goods, sort deliveries, as well as dispose of any waste.

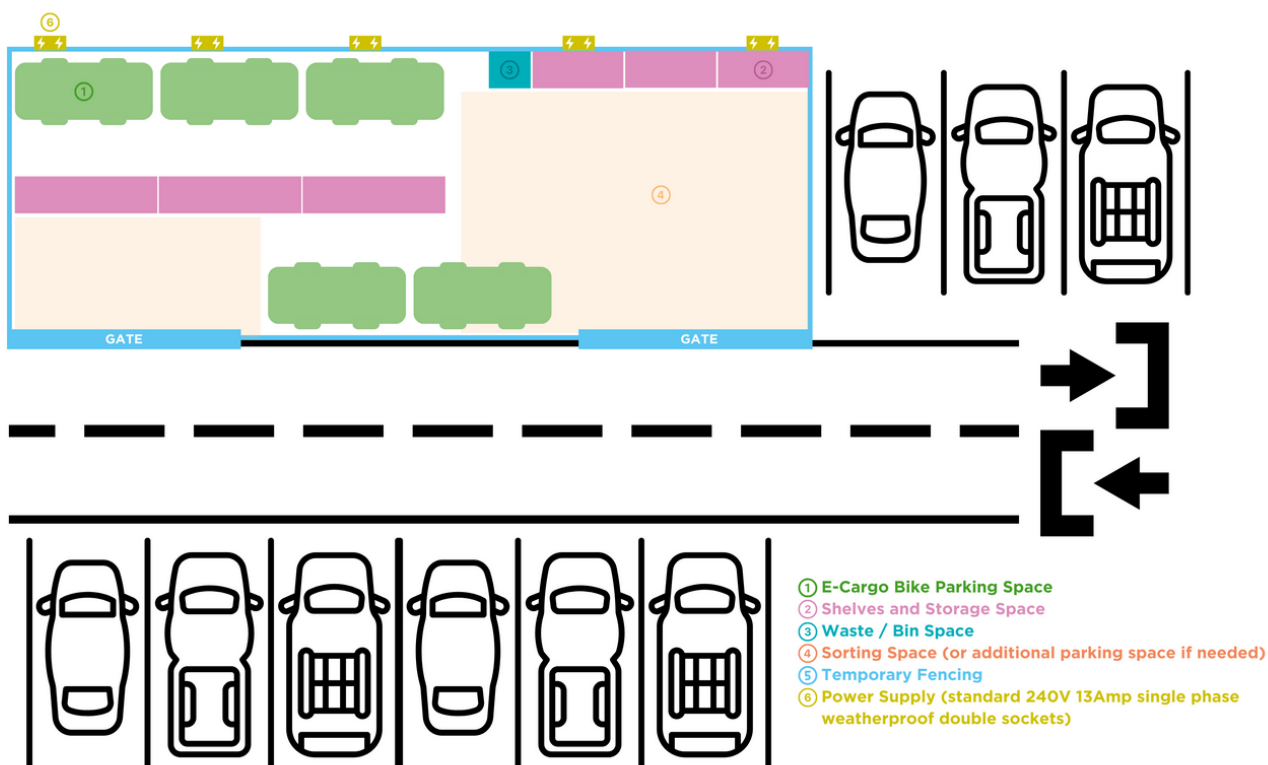


Diagram of the most recent Pimlico micro logistics hub site layout.

4.3. Trial Costs

Please note that all costs mentioned are exclusive of VAT.

The Pimlico micro logistics hub trial duration saw CRP funding £28,073.82 in total, covering the set up and construction costs (capital expenditure, incl. legal fees, planning application fees, health and safety fixtures) as well as 4 months of rental and management fees for the micro logistics hub site. The micro logistics hub incurred construction

expenses totalling £14,533.82, along with 4 months of rental costs and management fees amounting to £13,540 (each month costing £3,385). WCC was able to fund 4 months of rental and management costs, also totalling £13,540. This resulted in a combined cost of £41,613.82 covered by CRP and WCC.

Delivery Mates (DM) assumed the rental and management costs for one month

(£3,385), as well as the running electricity expenses. The courier used a total of 1,997.135 kWh of electricity throughout the trial period and based on a rate of £0.45 per kWh, these costs amounted to around £898.71. There was also an admin fee of £25 per month that Delivery Mates paid to Infinium Logistics Solutions and later on Decarbon Logistics Solutions, adding a total of £225 to the electricity bills. During the 9-month trial, Delivery Mates therefore paid a total of £4,508.71.

DLS successfully facilitated an agreement being reached between DM and Q-Park for DM to continue operating the Pimlico hub after the trial, transferring all costs and responsibilities to DM including future breakdown costs estimated at £2,651.

The total cost of the entire 9-month Pimlico micro logistics hub trial paid by all parties, including the future breakdown cost, equated to around £48,548.53.

In addition to the essential trial expenses above, CRP also rented a noise and video monitor from EMSOL for 6 months which cost £7,381.25, included the equipment's rental fees, installation, an additional WCC commando socket, and access to the EMSOL data dashboard.

4.4. Cost Comparison

During the trial period, the micro logistics hub site at Q-Park Pimlico was valued at approximately £51 per square foot. The rate was high, but it reflected the amount of space requested, the hub's location in a premium central London area, the comparatively short rental period, and the necessary hub management and admin fees.

Now that Delivery Mates will continue operations independently at the hub, the courier will be paying around a third less than this cost per square foot under a minimum 12-month commitment with Q-Park. This is due to the longer commitment period than during the trial, as well as some savings on management costs. Decarbon Logistics Solutions successfully negotiated a longer-term arrangement on behalf of Q-Park and Delivery Mates directly, resulting in this lower rate.

This new rate falls within the range of £25 to £35 per square foot typically paid for micro logistics hub sites in Greater London, covering rent, management and admin fees, but excluding any set up and energy costs. Rates are also dependent on the hub's location within London, how much space is taken, the total rental period, and site specifications.

Furthermore, Delivery Mates have confirmed that the overall delivery cost from the Pimlico micro logistics hub is 3% cheaper than from their Acton and SE15 hubs, including any transport of goods to the micro logistics hub.

In an interview with Zag Daily, Delivery Mates highlighted that while finding space in the inner city can often come at a higher cost to couriers, particularly when constructing or setting up new hubs, this is offset by the reduced travel and associated costs in and out of the city.



5. Testimonials and Public Relations



5.1. Trial Launch

When the Pimlico micro logistics hub trial was officially launched, the project partners provided the quotes below:

“

Councillor Paul Dimoldenberg, Cabinet Member for City Management and Air Quality, Westminster City Council, said:

“Westminster has some of the worst air quality in London and making improvements to reduce pollution and emissions is a key priority for us. We’re taking steps to reduce petrol or diesel car travel where we can, and this new micro-logistics hub operating in the heart of Westminster has an important part to play in this by promoting healthy, greener and more efficient deliveries in our city and so we can build a fairer environment in Westminster for everyone.”

”

“

Paul McCormack, Chief Executive Officer, Decarbon Logistics Solutions, said: “Our team have been delighted to work with all the parties involved in getting this trial operational from the start. We can see that cargo bikes are becoming increasingly popular inner-city sustainable solution for final mile collection and delivery, that is why the number of hubs we operate continues to expand in the UK and throughout other parts of Europe. The stats prove it’s the right way to go with the average diesel van emitting 241g CO₂ per km. By comparison, cargo bikes have zero tailpipe emissions!”

”

“

Adam Bidder, Managing Director, Q-Park UK, said: “Q-Park have been at the forefront of the European Parking industry in the creation of Sustainable Mobility Hubs. Our aim is to develop parking facilities into vital instruments to help realise urban accessibility, sustainability and liveability. We are therefore delighted for our latest scheme with Infinium Logistics and Westminster Council is being launched.”

”

“

Susannah Wilks, Director, Cross River Partnership, said: “CRP is delighted to deliver this 6-month micro logistics hub trial with Westminster City Council, Infinium Logistics and Delivery Mates. This forms part of the Defra-funded Clean Air Logistics for London programme and aims to better air quality across the City of Westminster.”

”

“

Kevin Savage, Chief Operating Officer, Delivery Mates, said: “We are hugely proud to be working with all the partners on this exciting project. Opening a Micro Logistics Hub in Pimlico will further strengthen Delivery Mates capability to deliver sustainable logistics to customers, residents and local retailers. We look forward to playing a part in reducing congestion, removing emissions and creating a safer delivery environment for all stakeholders within Westminster.”

”

The key project partner's perspectives were also captured as part of a series of interviews which were recorded during the project's launch event and can be watched via CRP's YouTube channel [here](#) or by clicking on the thumbnail below.



5.2. Communications and Press Coverage

As described in section 4.1. of this report, Cross River Partnership carried out various engagement and communications approaches to promote the trial and its learnings. This included:

- Initial launch press release
- Banner for the hub's fence
- Vinyl stickers for Delivery Mates' e-cargo bikes
- Post-launch event
- Interview videos
- Printed postcards for local businesses
- Launch social media posts (via LinkedIn, Twitter/X, Instagram)
- Monthly trial insights posts / social

media campaign (via LinkedIn, Twitter/X, Instagram)

- CiTTi Awards 2023 nomination
- Post-trial press release

The two press releases and general news about the trial were shared by the following external channels.

Initial Launch Press Release and Mentions:

- WCC's [business newsletter](#)
- Westminster City Council's [website](#)
- Q-Park's [website](#)
- Delivery Mates' [website](#)

- [MotorTransport](#)
- [Truck.co.uk](#)
- [Air Quality News](#)
- [IlanVisits](#)
- [Transport Xtra](#)
- [The Business Magazine](#)
- [South London Press](#)
- [EV Powered](#)
- [Green Fleet](#)
- [Commercial Green Fleet Magazine April 2023](#)
- [Fleet News](#)
- [Last Mile Conference](#)
- [Logistics Manager Magazine August 2023](#)
- [ITS International](#)
- [CiTTi Magazine September 2023](#)

Post-Trial Press Release:

- [Q-Park's website](#)
- [Green Fleet](#)
- [Institute of Couriers](#)
- [Zag Daily](#)
- [BNN Breaking](#)
- [Parking Network](#)
- [CiTTi Magazine](#)
- [Van Fleet World](#)



5.3. Post-Trial

Delivery Mates shared their opinion with Cross River Partnership after the trial finished, and they stated that working with a range of stakeholders with different roles was a great experience for them. This included the project coordination and financial support from CRP and WCC, the expertise from Infinium Logistics Solutions and Decarbon Logistics Solution in terms of e.g. saving time and effort identifying suitable spaces, liaising with landlords and managing the hub's required planning application, and Delivery Mates' own customers who trusted the courier to carry out their deliveries using a relatively new service via the Pimlico micro logistics hub.

Regarding the trial's Return on Investment (ROI), which is usually a calculation of the monetary value of an investment versus its cost, Delivery Mates have explained that they see the trial's ROI beyond pure financials. They value the amount of knowledge and learnings they have been able to gather, especially about the type of investment that is required to operate from a micro logistics hub. This includes grasping costs, time, site management, and staff resourcing. The courier described the challenge of time management, which required careful planning in advance, as new projects have the potential to overwhelm an organisation. Allocating specific roles early on is crucial to prevent duplication and streamline operations at the new site.

Now that Delivery Mates will continue their operations at the Pimlico micro logistics hub, they are keen to engage with more local businesses in the City of Westminster.

When WCC and CRP announced the continuation of the Pimlico micro logistics hub operations after the trial ended, the project partners shared the below:

“

Councillor Paul Dimoldenberg, Cabinet Member for City Management and Air Quality, Westminster City Council, said: "We are immensely proud of the success of the Pimlico Micro Logistics Hub, which demonstrates the power of working together to tackle urban transport challenges. This project exemplifies our commitment to creating a greener, more sustainable economy while supporting local businesses and improving the quality of life for residents. Building on the success of the trial, Westminster City Council hopes to expand and replicate similar initiatives across the city to transform urban logistics and improve sustainability."

”

“

Isidora Rivera Vollmer, Project Manager, Cross River Partnership, said: "Cross River Partnership is incredibly pleased that the micro logistics hub in Pimlico will remain in operation for an additional 12 months. The trial aligns with our current Defra-funded Smarter Greener Logistics programme, which aims to minimise the impact of freight on noise, air quality, traffic, and pavement space in London. This is an amazing collaborative achievement between Cross River Partnership and Westminster City Council and shows the value of public-private collaboration and innovative trials like these."

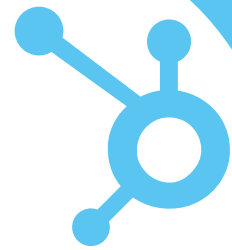
”

“

Additionally, in an interview with Zag Daily, Kevin Savage, Chief Operating Officer at Delivery Mates, said: "Each bike can manage two trips per hour and will run for eight to nine hours in a day. Over the nine months we completed almost [...] the equivalent to a van operation. [...] We are also continuing to operate in Westminster because the support that we received over the first nine months enabled us to build a business model that was sustainable."

”

6. Data Analysis and Insights



6.1. Operational Insights

CRP made sure to collect and share valuable data and KPIs from the courier on a monthly basis, as complete data transparency and the ability to share these learnings publicly are vital to CRP’s trials. The operational data was captured by Delivery Mates and shared with CRP via monthly (4-weekly) reports, as described in the table below.

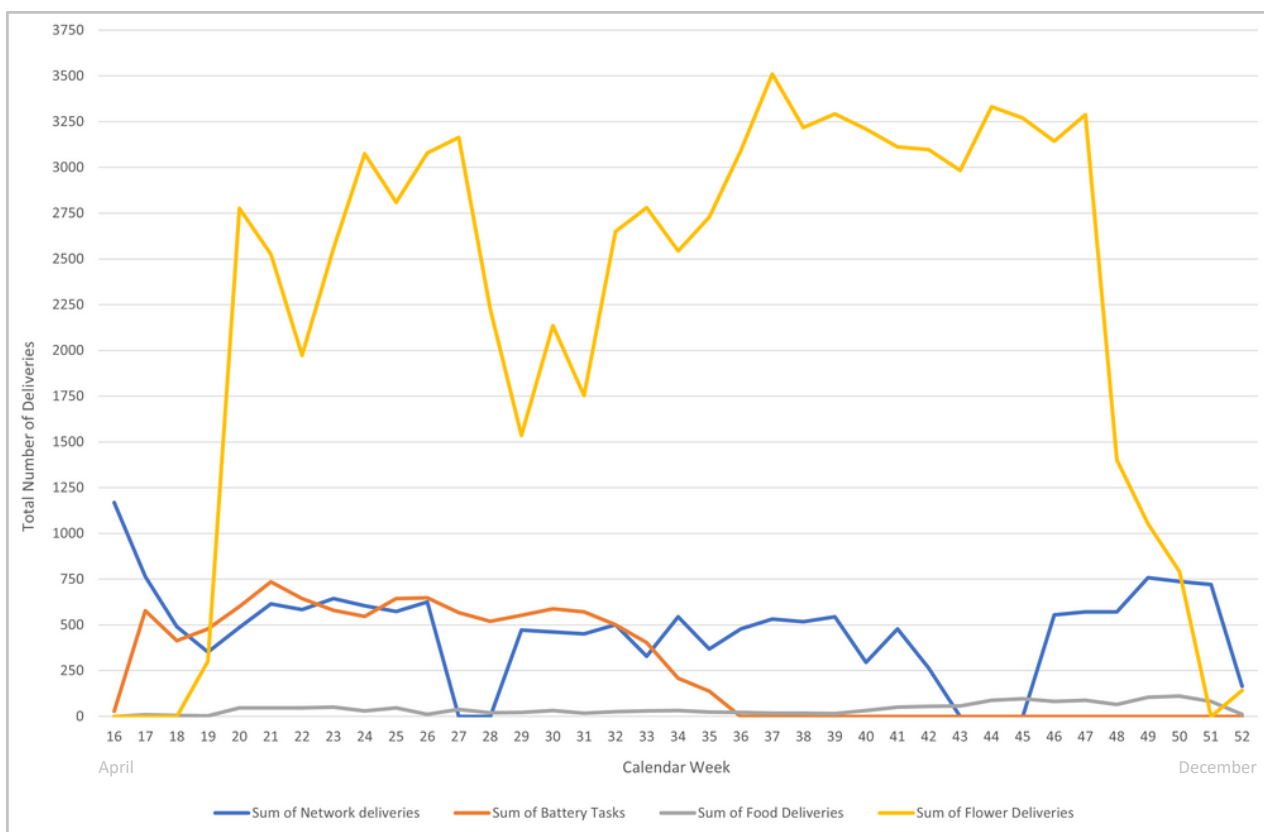
Trial Month	Calendar Weeks	Dates in 2023
1	16 - 19	17.04. - 14.05.
2	20 - 23	15.05. - 11.06.
3	24 - 27	12.06. - 09.07.
4	28 - 31	10.07. - 06.08.
5	32 - 35	07.08. - 03.09.
6	36 - 39	04.09. - 01.10.
7	40 - 43	02.10. - 29.10.
8	44 - 47	30.10. - 26.11.
9	48 - 52	27.11. - 31.12.

The Pimlico micro logistics hub is operational from mainly Monday to Saturday and earliest 6:30 AM to latest 8:00 PM.

The goods are brought into the Pimlico micro logistics hub on 1 to 2 electric vans from Delivery Mates’ larger hub in Acton and the network client’s hub in SE15. From September onwards, the hub started receiving their fresh flower deliveries directly from the CRP-funded micro logistics hub in Wandsworth via electric van, linking both CRP trials.

There are 4 main types of deliveries taking place from the hub, which are parcels and laundry shipments (“network deliveries”), food, fresh flowers as well as battery swaps. ‘Battery swapping’ is the service Delivery Mates offer to change drained batteries on shared public electric bikes and scooters with fully charged ones. Batteries are charged at Delivery Mates’ hub in Acton and then brought to Pimlico to be distributed by their e-cargo bikes.

A total of 111,236 deliveries were sent via the hub throughout the entire 9-month period. This equates to an average of around 431 deliveries per day or 3,006 deliveries per week (37 weeks in total). The different weekly volumes of the four types of deliveries can be seen in the line graph below. Additionally, around 33% of these were B2B deliveries.



Total number of deliveries per calendar week, split by type of transported goods.

Parcels and laundry (“network deliveries”) typically entail an average of 7 daily deliveries per e-cargo bike, ensuring efficient distribution across various destinations. In contrast, fresh flowers are characterised by an average of 35 daily deliveries per e-cargo bike, catering to the unique needs of floral arrangements and timely deliveries. This means that each e-cargo bike rider delivered an average of 46 consolidated parcels, laundry shipments, and fresh flowers per their daily route.

An average of 6 food deliveries were occasionally handled by only a few e-cargo bike riders per day. Additionally, an average of 38 daily battery tasks were carried out via the hub until the 2nd September, which were distributed by a dedicated rider.

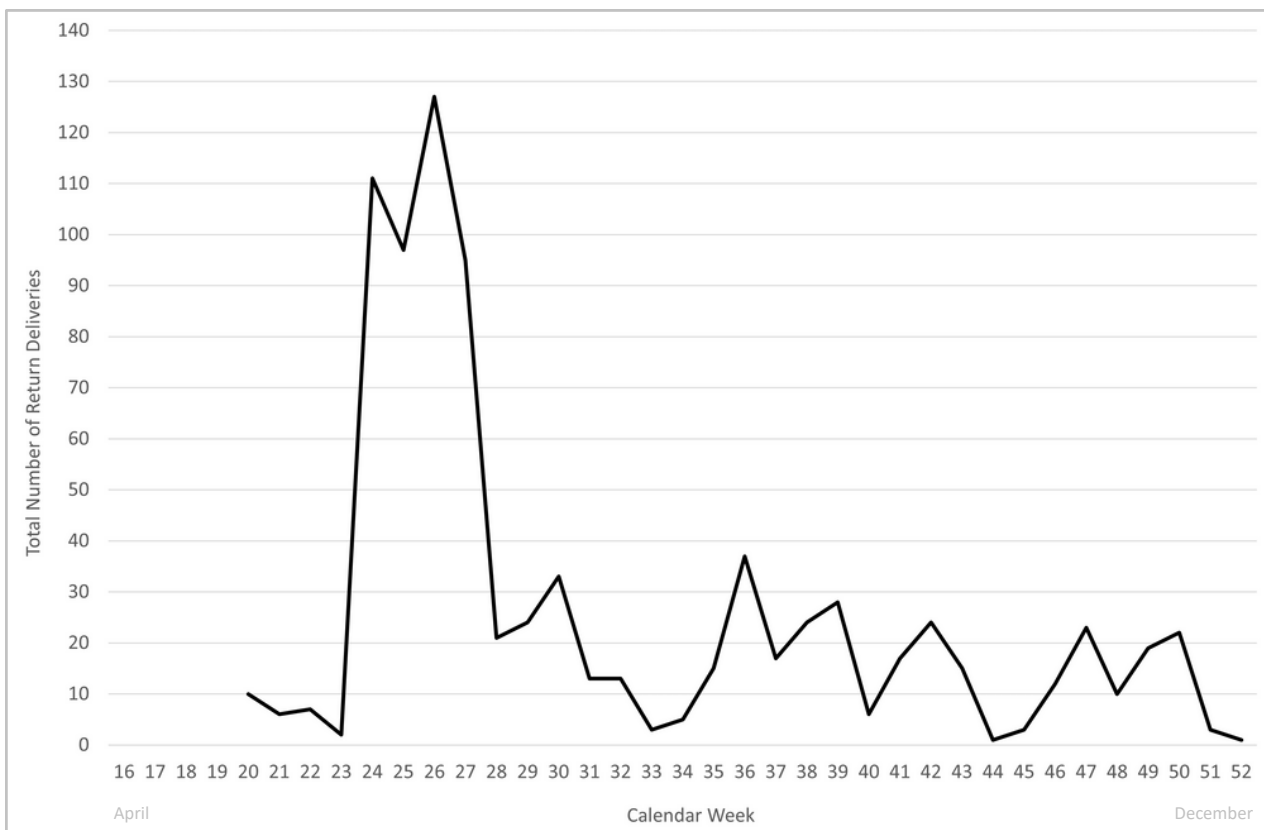
This approach ensures that parcels, laundry, flowers, and food items are

promptly and reliably transported to their intended recipients, maintaining high standards of service and satisfaction throughout the delivery process.

Delivery Mates’ return deliveries consist of parcel and flower deliveries that were not successfully delivered to customers on the first attempt. These items require re-attempting delivery on the following day. To facilitate this process, these parcels are stored at the hub station until they are scheduled for the next day’s delivery attempts. This system ensures that undelivered parcels are efficiently managed and rescheduled for timely delivery to customers, optimising the courier’s service and customer satisfaction levels.

As seen in the next graph, the number of reported return deliveries were highest between calendar weeks

24 to 27 (5th June 2023 - 9th July 2023). After that, they average at around 23 return deliveries per week. Throughout the entire 9-month trial period, there was a total of 844 return deliveries, which was a very low value, around 0.76%, when compared to the total number of deliveries (111,236).



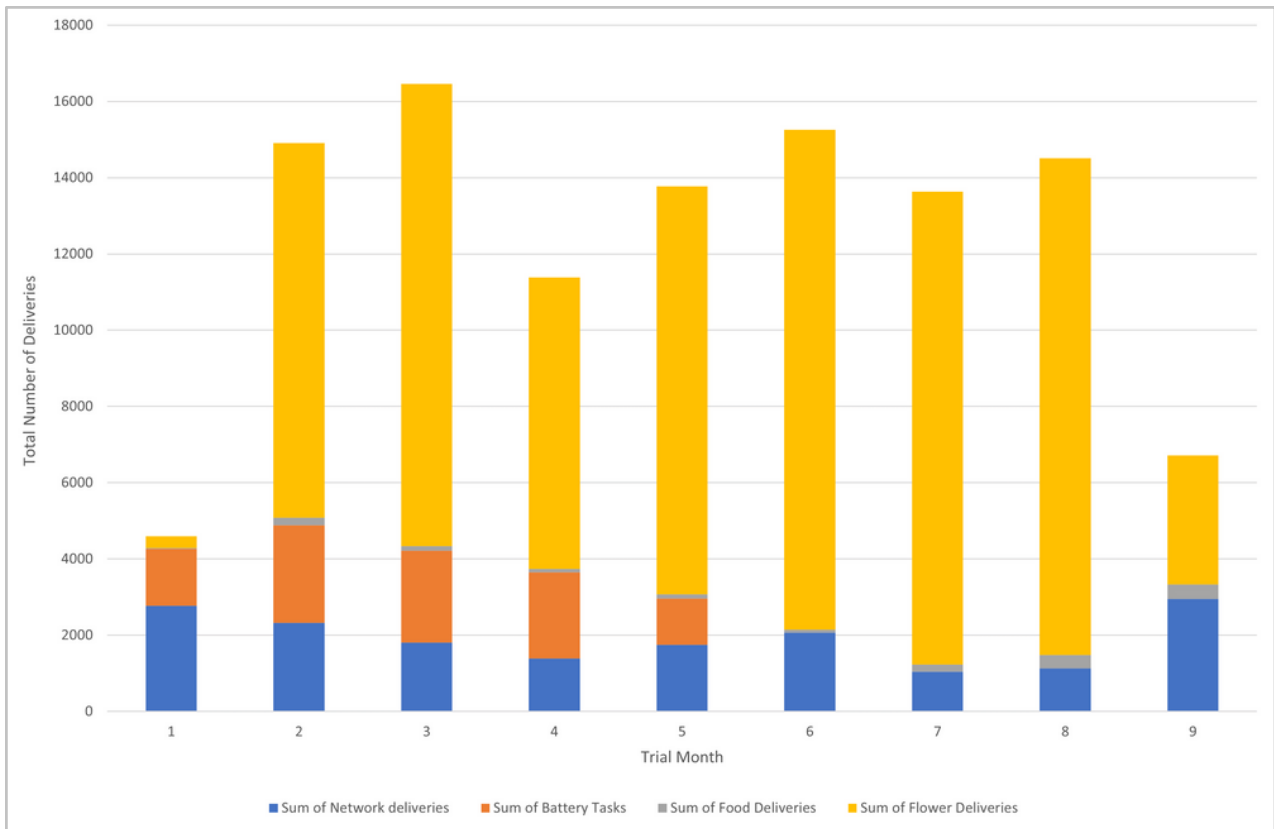
Total number of return deliveries per calendar week.

The number of e-cargo bike deliveries via the hub every 4 weeks fluctuated during the 9-month period, as seen in the stacked bar chart on the next page, with values peaking in trial month 3 and remaining high until month 8. There were low volumes of fresh flower deliveries in the first month and last month and no battery swaps from month 6 onwards.

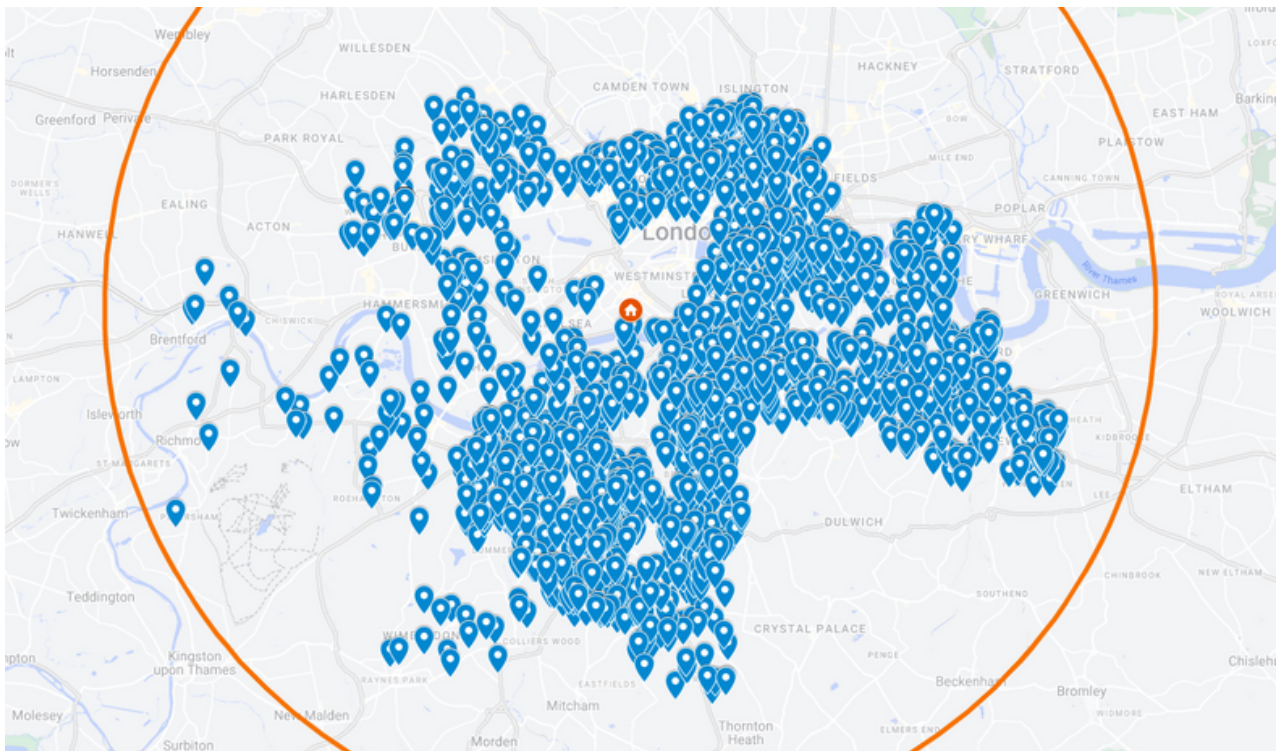
Delivery Mates operated in an 8-mile delivery radius which captured 19 London boroughs, as seen in the map on

the next page. This highlights the wide positive impact of this small hub to most of Central London.

There was an average of 9 e-cargo bikes operating via the hub (between 1 and 18) per day, as well as an average of 5 e-cargo bikes regularly being charged at the hub overnight (between 2 and 7). The remaining e-cargo bikes were taken by the riders to their homes overnight.



Total number of deliveries per trial month, split by type of transported goods.



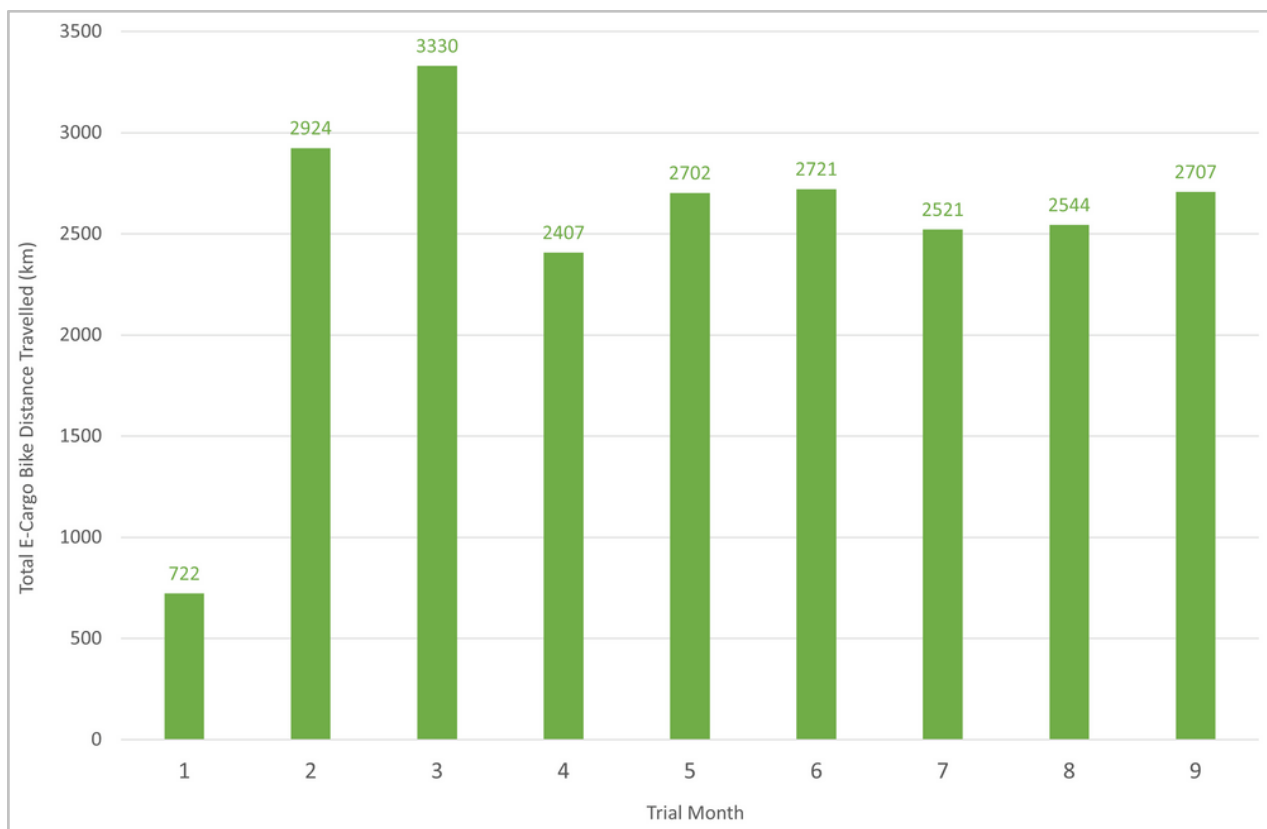
Map visualising the delivery postcodes and the 8-mile delivery radius from the Pimlico micro logistics hub.

In terms of additional staffing, the hub station remained under the supervision of a dedicated team comprising a sorting supervisor, lead driver, and micro hub (site) manager. The sorting supervisor is tasked with meticulous documentation, labelling, and tracking to maintain precise inventory management standards. Meanwhile, the micro hub (site) manager’s responsibilities included overseeing the e-cargo bikes, ensuring the health and safety of the site, and handling all communications with the central operations team at the larger Delivery Mates hub in Acton. Additionally, the micro hub (site) manager is responsible for coordinating the availability of all riders throughout the week. In the event of the sorting supervisor or micro hub (site) manager

being absent, the lead driver seamlessly steps in as a backup, ensuring operational continuity and efficiency within the hub station. Together, this dedicated team ensures smooth operations and effective management of the micro logistics hub in Pimlico.

No near miss or incidents were reported throughout the 9-month trial period.

The e-cargo bikes travelled a combined total of 22,578 km (14,029 miles) in the 9-month period, which is more than halfway around the Earth. This was an average of 88 km per day or 2,509 km per trial month. The bar chart below shows that distances steeply rose in trial month 2 and peaked in the third, remaining high thereafter.



Total distance (in km) travelled by the e-cargo bikes per trial month.

External reports have shown potential operational cost benefits of low-emission last-mile delivery solutions. A [2023 British Land report](#) highlighted that international research indicates that micro logistics hubs enhance efficiency and service standards, offering faster, more reliable, and adaptable deliveries compared to traditional networks. Utilising cargo cycles from micro hubs can result in reductions of delivery costs by 28-31%. Additionally, a survey revealed that 36% of customers expressed readiness to pay a premium for deliveries originating from a micro logistics hub, indicating recognition of environmental advantages and anticipated service enhancement. Cargo bikes are noted for providing more precise delivery times due to reduced traffic delays.

During the trial, Delivery Mates were able to capture total NHS cost savings of £681.34, which was calculated using Defra's data on societal costs of air pollution.

The courier also reported that the model reached a break-even point after 8 months. While some customers are willing to pay somewhat extra for sustainability measures, many of them are still hesitant to pay significantly more. Hence, the micro logistics hub's rental and running costs must be distributed across all shipments. While deliveries via the hub contribute to offsetting the operational expenses, achieving economies of scale is crucial to breaking even.

6.2. Air Quality Benefits

The total distances travelled by the e-cargo bikes on the last mile led to a substantial CO₂, NO_x, and PM_{2.5} emissions reduction when compared to polluting van (LGV) deliveries. The monthly emissions savings below have been calculated with Delivery Mates' in-house algorithm, which takes various factors into consideration.

After 9 months of operations, CRP's [Transport Emissions Calculator](#) captured emissions savings of 9,523 kg of CO₂, 16,897 g of NO_x, 794 g of PM_{2.5}, and 1,372 g PM₁₀ when comparing the e-cargo bikes to polluting van deliveries. However, this does not take cargo weight, total travel time, nor emissions associated with the electricity required to charge the e-cargo bikes' batteries into account.

Delivery Mates' in-house algorithm was able to calculate emissions reductions of 4,186 kg of CO₂, 15,141 g of NO_x, and 303 g of PM_{2.5} when comparing the e-cargo bikes to polluting van deliveries on the last mile.

Translated into more tangible examples, by using the [CRP Clean Air Tool](#), this would mean:

- CO₂ emissions from 85 football pitch-sized forest fires 🔥
- NO_x emissions equivalent to what 459 people emit in one day 🤚
- 6.8 sycamore maple trees required to filter out these PM_{2.5} emissions 🌳

6.3. Noise Monitoring

CRP was also able to fund an EMSOL noise sensor for the majority of the trial period, between July and December 2023. The sensor, which also included a video camera to record and identify any likely noise sources, was attached to a 'no entry' sign post near the Q-Park Pimlico car park's entrance (what3words location: [transmitted.empire.food](#)) where the micro logistics hub is located.



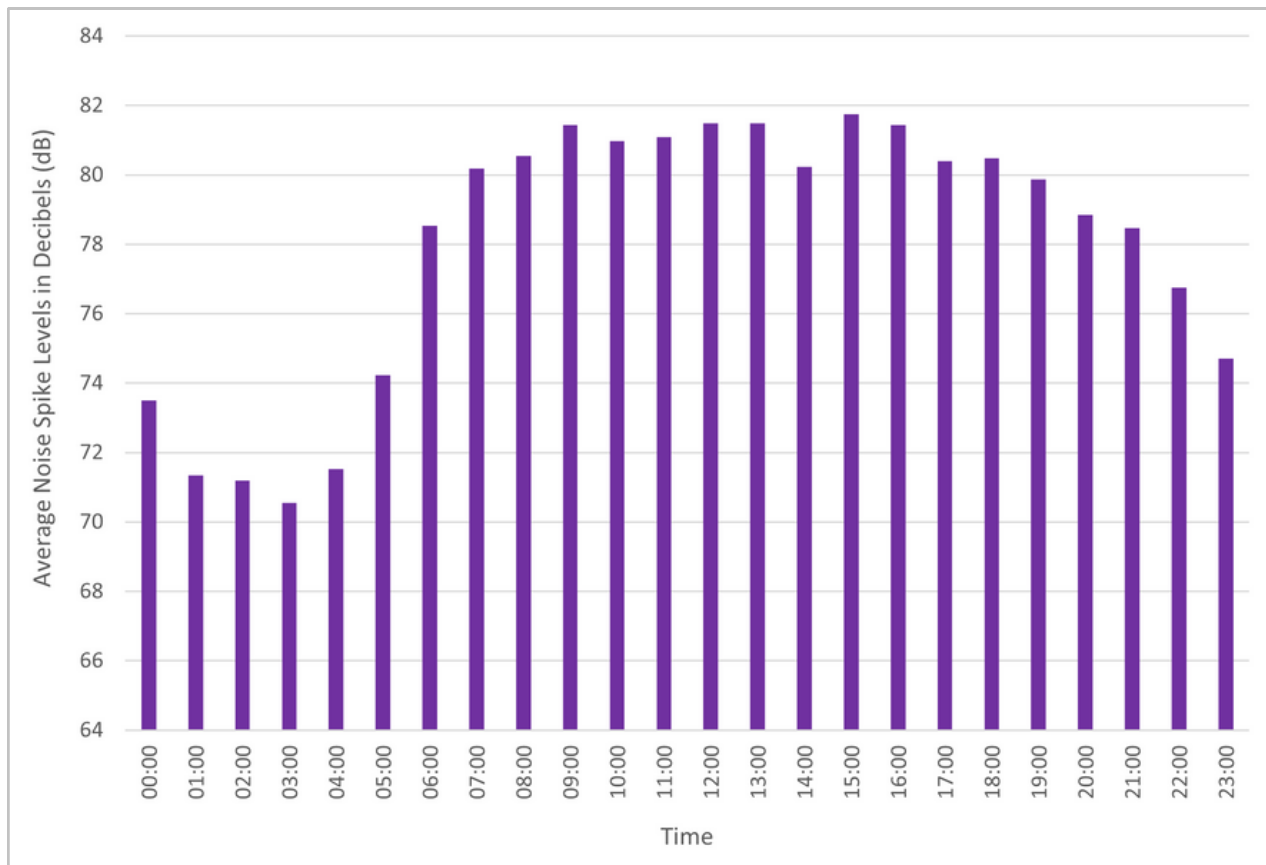
Noise and video monitor attached to the 'no entry' sign post near Q-Park Pimlico's entrance (see arrows).

The EMSOL sensor near Q-Park Pimlico captured an average noise spike level of 74.78 decibels (dB) throughout the monitoring period between July 2023 and December 2023. This noise level can roughly be compared to, for example, the noise level in a crowded restaurant or a loud conversation. Busy street traffic usually causes noise of approximately 70 to 85 dB in urban areas.

A number of studies have linked noise pollution to increased anxiety, depression, high blood pressure, heart disease, and strokes. In fact, long or repeated exposure to sounds louder than 70 dB may be harmful, and noise pollution at or above 85 dB, as perceived by the human ear, can cause permanent hearing loss.

The average hourly noise spike levels

start to rise from 04:00 onwards and peaking at 09:00 (81.44 dB), possibly due to the AM commute and morning traffic nearby. Values remain high until around 18:00, when they start to slowly decrease until 01:00 (71.33 dB). Noise peak levels remain below 72 dB until 03:00.

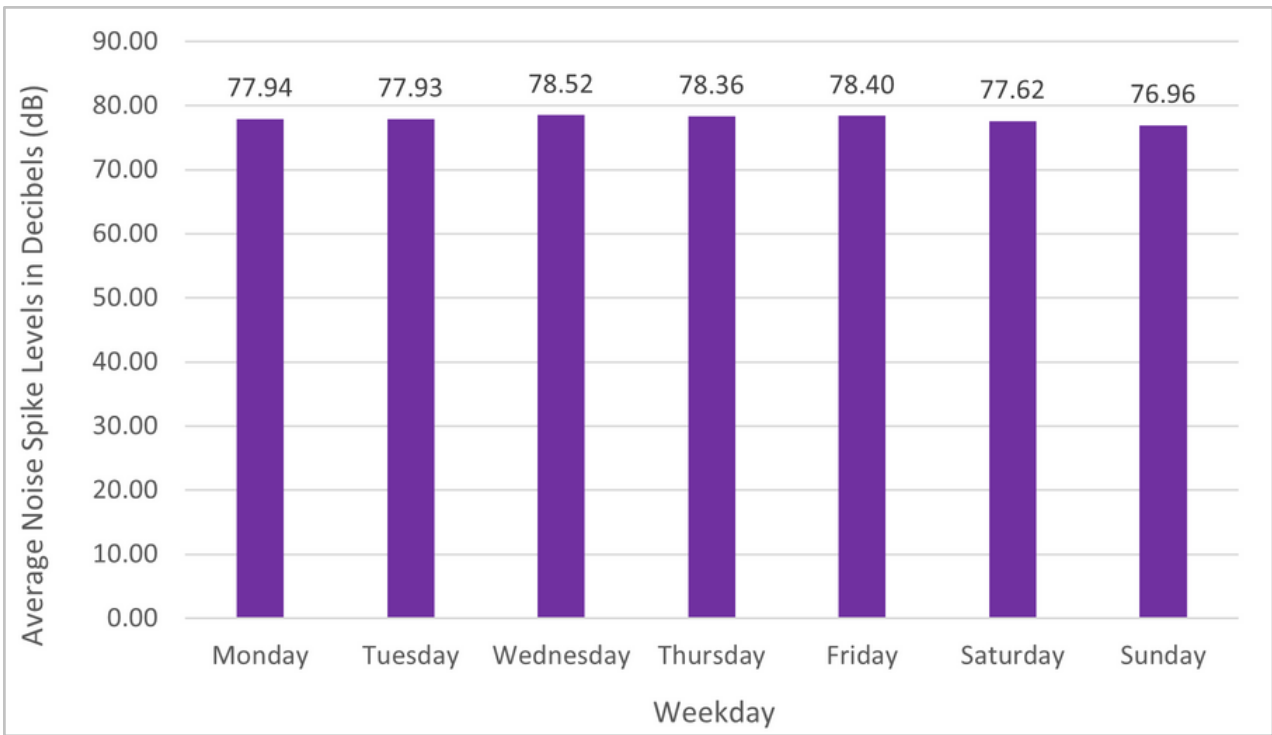


Average noise spike levels in decibels (dB) throughout a 24-hour day.

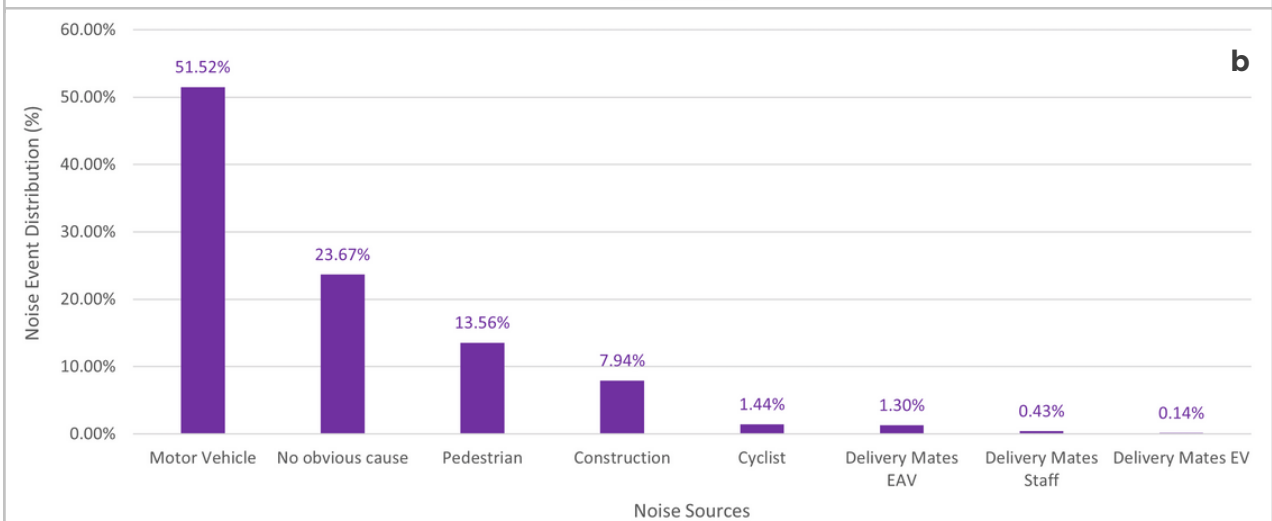
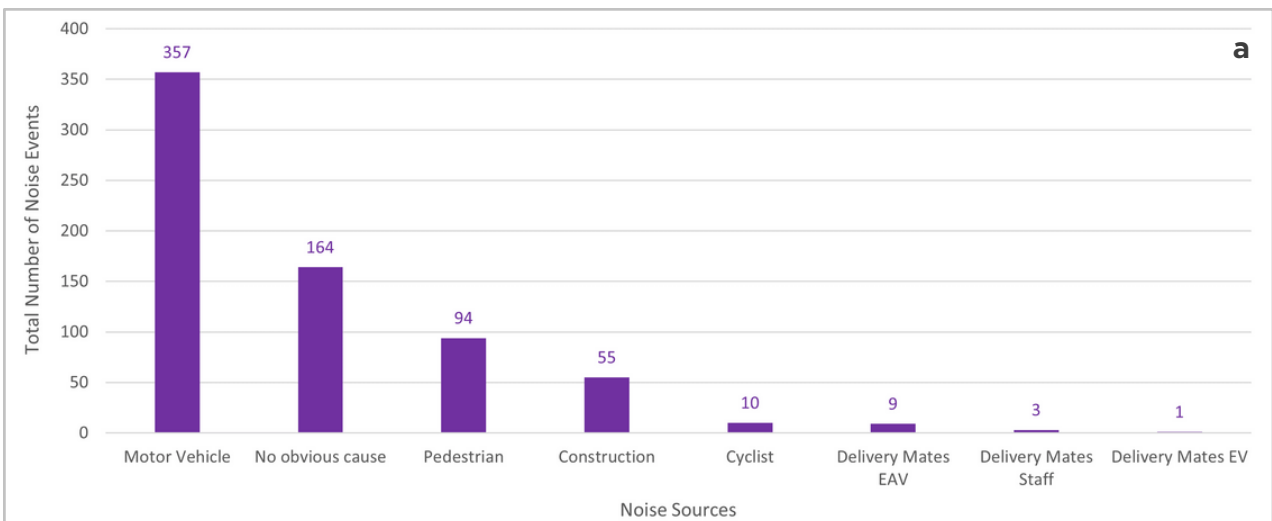
In general, as seen in the bar chart on the next page, the average noise peak levels on different weekdays are relatively similar, between 76.96 dB and 78.52 dB. Sundays seem to be the quietest day (76.96 dB), likely due to reduced freight and commuter traffic. Wednesday sees the highest average noise peak level at 78.52 dB.

There was a total of 693 noise spikes which surpassed the respective thresholds throughout the 6-month monitoring period. The data on the next page shows that the majority of noise events were caused by motor vehicles

(51.52% of all noise events). A large portion (23.67%) could not be attributed to a specific source, followed by pedestrians (13.56%), construction (7.94%), and cyclists (1.44%). Only a fraction (total of 1.87%) were caused by related hub vehicles or staff members. However, it is worth noting that not all staff members wear uniforms and not all EVs are branded with the Delivery Mates logo. Therefore, this number could be even lower as CRP had to make assumptions based on the vehicles or people going in or coming out of the car park at certain times.



Average noise spike levels in decibels (dB) throughout a 24-hour day.



Total number of noise events split by noise source. (a) Total counts. (b) Percentile distribution.

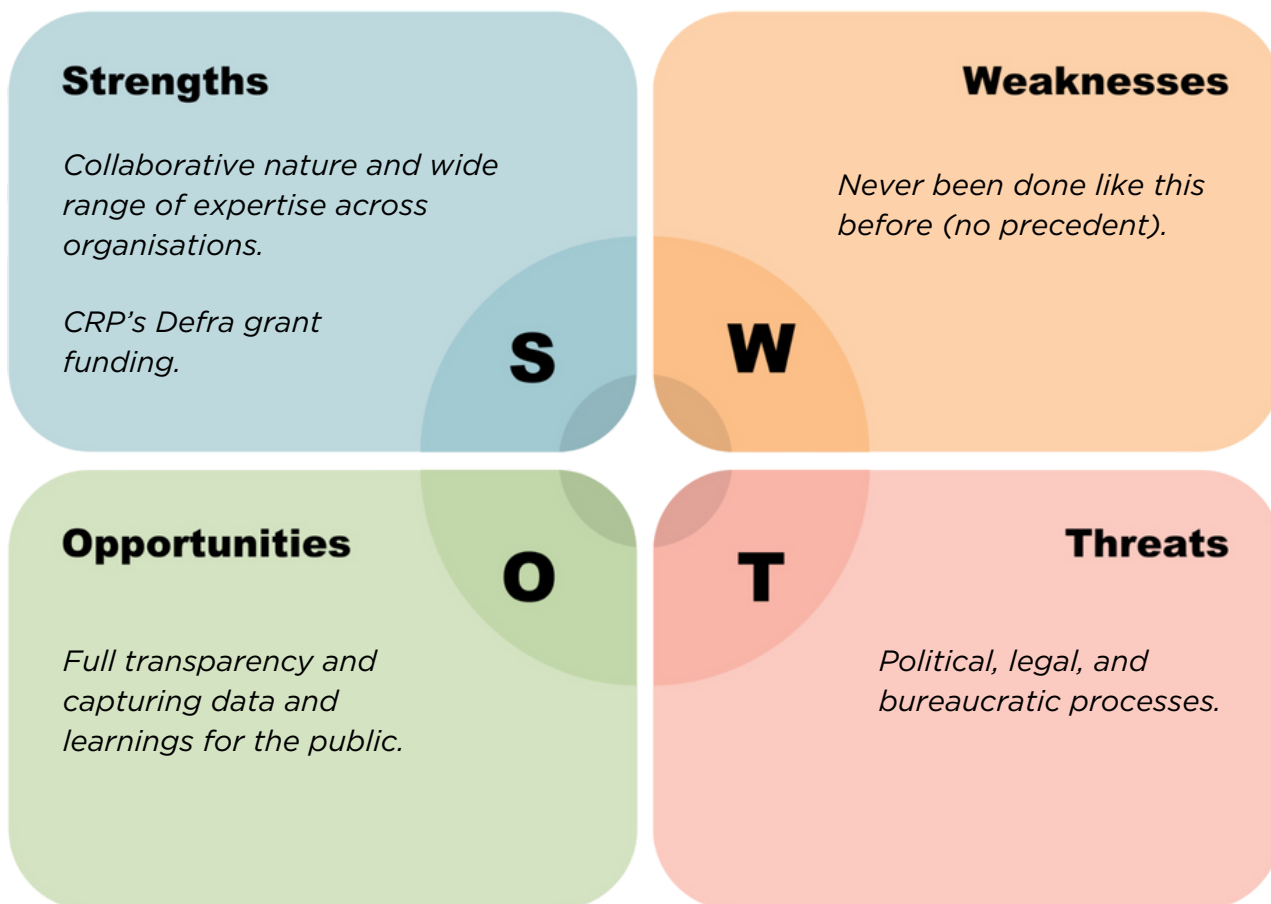
6.4. Challenging Misconceptions

In their operations, Delivery Mates acknowledge the perception among some customers that some delicate items, such as fresh flowers, cannot be effectively delivered by e-cargo bikes. However, Delivery Mates challenge this misconception and demonstrate that e-cargo bikes are well-suited for transporting fresh flowers. The 'EAV 2Cubed' e-cargo bikes Delivery Mates use, have smaller loading compartments, and travel shorter distances on the last-mile, therefore inherently reducing the risk of damaging the goods during transportation. As part of the Pimlico micro logistics hub trial, Delivery Mates collaborated with an e-commerce florist specialising in boxed flowers, hand tied

bouquets, and other gifts destined for homes or offices. Their process involved collecting the goods from the florist's warehouses and facilitating deliveries through the Pimlico hub. The courier carried out the fresh flower deliveries with notable success during the trial.

Similarly, ILS and DLS were able to assess locations and work closely with landlords and the operator to put measures in place to address concerns some may have regarding impact on other car park users, access protocols and movement of cargo bikes around site, use of the demised area, operator and rider behaviours.

6.5. SWOT Analysis



CRP and WCC conducted a SWOT analysis to help assess the feasibility and potential challenges of developing this micro logistics hub. This helped inform strategic planning and decision making to ensure that the benefits are maximised, and risks associated with the hub and future trials are mitigated against.

In terms of the project's strengths, the success of this trial would not have been possible without the strong collaboration between WCC and CRP, as well as the support from Infinium Logistics Solutions, later on Decarbon Logistics Solutions, and Delivery Mates. This was fuelled by WCC's commitment to reducing pollution and their emissions target to reach net zero by 2040; Cross River Partnership's expertise in delivering positive change with partners; Infinium Logistics Solutions (and later on Decarbon Logistics Solutions) playing a vital role in building the micro logistics hub within Q-Park Pimlico; and Delivery Mates low-emission courier appointed to carry out deliveries from this hub.

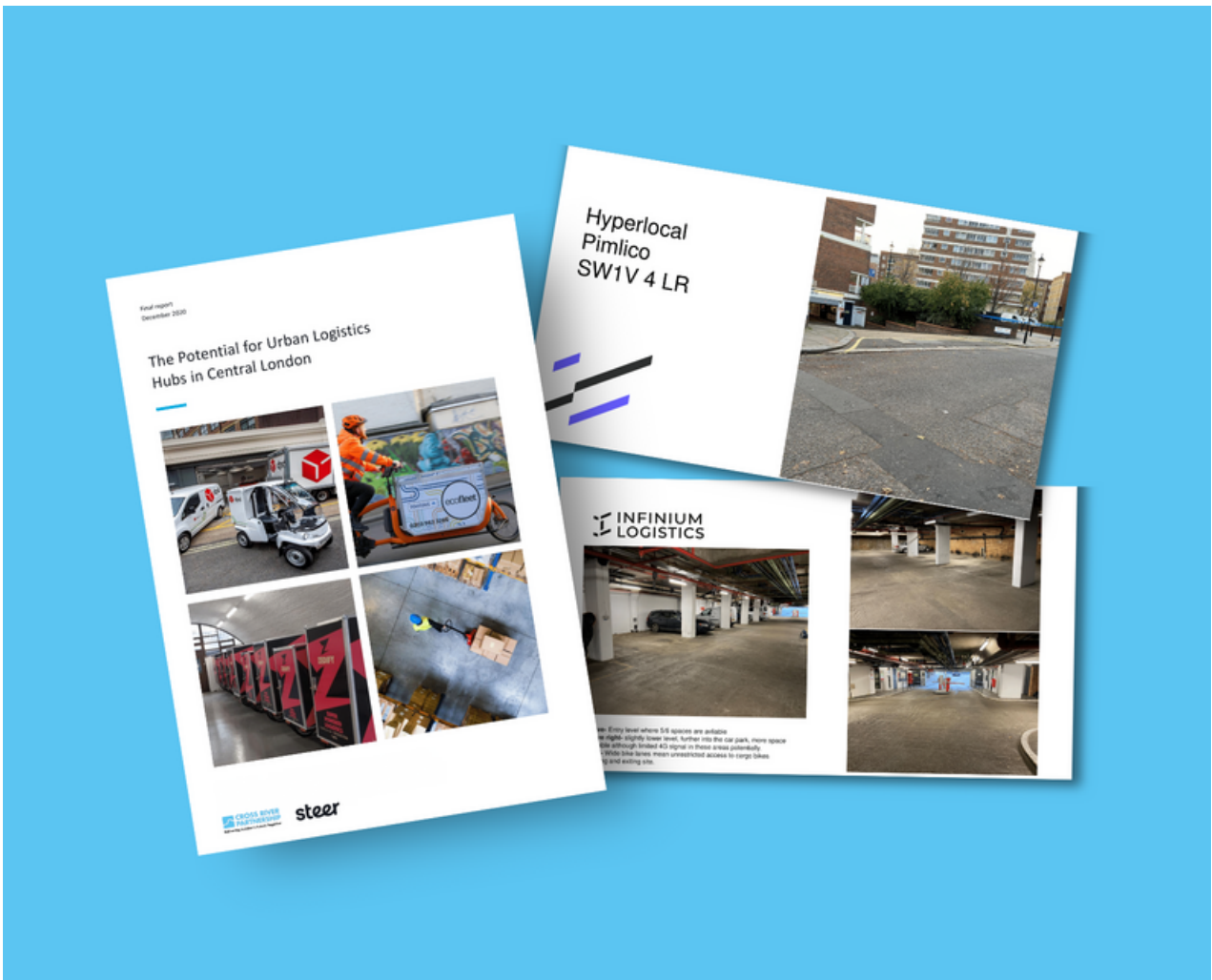
CRP's Defra-funded Clean Air Logistics for London programme was also vital in financing a substantial amount of the total trial costs, including the set up and construction costs of the micro logistics hub.

A challenge WCC had to overcome internally was the lack of knowledge around micro logistics hubs in general. It was important for the CRP's key contacts at WCC to secure internal buy-in by building a compelling case that highlighted the micro logistics hub's potential environment benefits, and demonstrating the trial's alignment with WCC's FSD strategy and net zero goals. The WCC team was able to leverage

opportunities by demonstrating the benefits of, for example, reduced traffic congestion and promoting sustainable practices in the City of Westminster and beyond.

One threat the CRP and WCC teams faced, involved navigating certain bureaucratic processes, which at times presented delays. An example would be the bureaucracy involved in understanding and finalising required permissions and legal agreements when creating and signing the initial contracts between all project partners. This placed added pressure on CRP, as specific deadlines set by the Defra-funded SGL programme had to be met to ensure timely project delivery. However, despite these hurdles, the teams remained committed to overcoming obstacles and successfully delivering the trial within the specified timeframe.

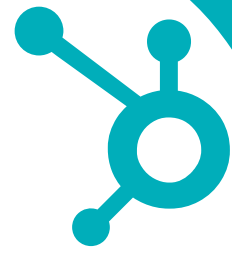




There was initial concern that securing a location would be a challenge. WCC’s Corporate Property team had previously conducted a site search for micro logistics hubs and found that nothing in their portfolio of ownership was deemed suitable. However, this challenge was overcome when CRP and WCC partnered with Infinium Logistics Solutions, which allowed WCC and CRP to work with those who have expertise in finding and developing logistics sites in target areas such as car parks, as identified in a previous CRP [report](#) from 2020. This research had provided CRP with an overview of potential locations in central London that would be suitable for urban logistics hubs.

The CRP and WCC-funded micro logistics hub trial in Pimlico offers the opportunity to inform future sustainable logistics projects, due to CRP and WCC being fully committed to sharing all captured data and learnings transparently and publicly. It sets a precedent for other local authorities and businesses who may want to work on similar sustainable logistics projects. The lessons learned can be applied to other projects to further refine this model and expand the network of micro logistics hubs in London. This holds particular significance, as there is generally a lack of publicly available data from other urban logistics hub projects in London.

7. Learnings and Recommendations



7.1. Pimlico Micro Logistics Hub

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

Firstly, it would have been necessary to discuss the project with more WCC departments earlier on, including the Corporate Property, Procurement, Legal, and Finance teams. This would have, for example, accelerated the process of understanding the legal agreements required between all parties involved in the trial.

Secondly, it would have been helpful to be very clear about confidentiality regarding public announcements on social media before the official press release was published, as some project partners were initially under the impression that they could share project updates online at any time.

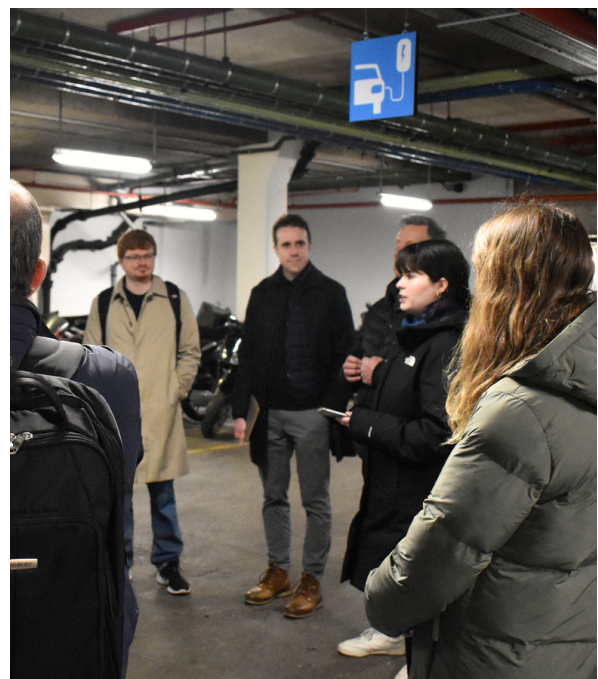
Nevertheless, several factors also significantly contributed to the success of the project.

Firstly, the utilisation of a stakeholder diagram proved instrumental in visualising the intricate relationships and individuals involved in the project, thereby fostering clarity and alignment

among stakeholders.

Additionally, securing the approval of Councillor Paul Dimoldenberg, Cabinet Member for City Management and Air Quality at Westminster City Council, provided crucial support and reassurance, particularly when addressing hesitant parties.

Furthermore, organising Open Days for interested operators proved beneficial in fostering engagement with potential low-emission couriers, with back-to-back timeslots ensuring efficient utilisation of time.



CRP and WCC's choice to partner with Infinium Logistics Solutions (ILS), later on Decarbon Logistics Solutions (DLS), also proved to be an excellent investment, enabling the organisations to concentrate on wider tasks, such as project coordination, overarching environmental and communication strategies, operational data analysis, and general promotion of the trial with external parties. ILS/DLS played a pivotal role in identifying and constructing the hub space, conducting routine site inspections, and serving as a liaison between the courier and the landowner to address any queries. This collaboration not only led to substantial savings in resources and time, but also streamlined operations effectively.

These initiatives collectively facilitated effective communication, collaboration, and engagement throughout the project lifecycle.



7.2. Future Micro Logistics Hubs

Reflecting on the Pimlico micro logistics hub trial's journey unveils valuable insights for future projects in urban sustainable logistics. Some of the key recommendations have been summarised below.

1) Unlocking Logistics Space:

One significant lesson learnt is the importance of identifying and qualifying suitable spaces for logistics operations. Landowners of private and common land, including businesses and local authorities, should be aware of feasible spaces on their land and consider unlocking these for sustainable logistics operations like micro logistics hubs. These can include finding underutilised spaces, locate potential meanwhile spaces, or spot any permanent spaces that could generate income for the landowner. This trial demonstrated that not a lot of space is required to run a similar hub and that micro logistics hubs can work in dense, urban areas with a high level of commercial activity. Offering spaces on shorter-term leases, between 6 months to a year, would also significantly benefit couriers in establishing micro logistics hubs. Removing the burden of having to commit to longer leases, such as 2 to 5 years, would alleviate financial and operational pressure.

2) Collaboration and Flexibility:

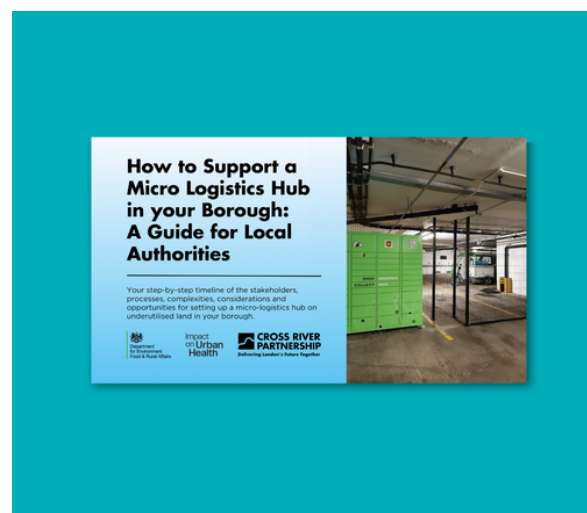
Strong collaboration between project partners and a willingness to adapt and be flexible are key to success. In Pimlico, this especially referred to the public and private sector partners, which can often have different areas of expertise and approaches to innovative trials like these. Regular meetings and

check-ins play an essential role in nurturing effective communication among all project partners. By facilitating consistent dialogue, these conversations help mitigate misunderstandings, enhance clarity, and ensure alignment on project objectives and deliverables for all stakeholders involved.

3) Public Awareness:

Complete transparency and data sharing with the public are vital to foster trust and awareness about the benefits of low-emission freight solutions, such as micro logistics hubs and e-cargo bike deliveries to local residents and businesses. It is important to acknowledge that the general public may not possess as much in-depth knowledge about sustainable logistics as professionals within the sector. Therefore, it is also vital for project partners to engage with community organisations, local businesses, and other stakeholders in the target area to understand and address the different needs and concerns. This also includes improving the tone and language used in external communications (via print and digital channels) and avoiding jargon. Inclusive public educational events, workshops, webinars, roundtables, and 121 sessions can also help in engaging with the local community.

Generally, micro logistics hubs are quite scalable models and can be applied to different geographic areas if the overarching guidelines are considered. CRP has developed a comprehensive [guidance document](#) for local authorities which serves as a step-by-step guide for opening a new micro logistics hub in their borough. Many of the Pimlico micro



logistics hub trial's learnings significantly contributed to the development of this document.

A [2023 report](#) commissioned by [British Land](#) can be seen as an example of this site identification exercise. It delves into the significance of freight micro hubs in tackling delivery demands, environmental concerns, congestion, and curbing carbon emissions. Specifically focusing on London, the study examines challenges, methodologies for hub space selection, and potential opportunities for the implementation of micro hubs on British Land owned sites.

CRP is also currently working on commissioning a report to analyse existing freight flows in Greater London and will help landowners, local authorities, and other relevant stakeholders to understand how delivery vehicles are currently transporting goods around the city. This data and information can then help identify opportunities for SGL interventions, as well as analyse key areas in different boroughs where there is need land to be prioritised for logistics operations. This report,

including case studies focusing on the London Borough of Lambeth, Ealing, and Hackney, will be published in late 2024.

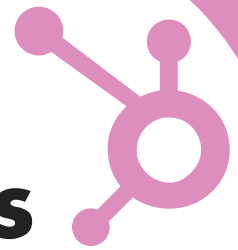
However, early engagement with couriers is also crucial, as finding the ideal location for micro logistics hubs involves more than just theoretical suitability. The success of a hub trial depends on various factors, including the courier's existing and potential customer base in the hub's vicinity, their existing hub network, as well as suitable cargo

bike and road infrastructure to carry out the low-emission last-mile deliveries. Additionally, careful consideration must be given to the set up, rental and operational costs of the hub, and the additional resources needed by the courier to manage the site effectively. It is important to recognise that simply opening a hub does not always guarantee courier participation. The hub design, specific courier needs and requirements must be taken into account as well.



CRP hosting the DFT's Road Freight Regulation division team at the Pimlico micro logistics hub in March 2024.

8. Inspiration for Others



Since the trial began in April 2023, the Pimlico micro logistics hub project has inspired other local authorities and Business Improvement Districts to explore and support micro logistics hubs as part of their sustainable last-mile solutions. CRP's previous [Impact on Urban Health](#)-funded [Clean Air Freight](#) programme, which included site visits and workshops with local authority representatives, as well as shared resources and support with improving knowledge across London, also fed into this increased interest in urban logistics hubs.

For example, CRP worked with the [London Borough of Wandsworth](#) to enable [another micro logistics hub trial](#) in the APCOA Southside Shopping Centre car park in Wandsworth Town, which was launched in August 2023 and ran until mid-February 2024. Many of the Pimlico hub trial's learnings fed into the development of this project. The hub also later delivered fresh flowers to the Pimlico hub, creating a network between these locations.

In August 2023, Cross River Partnership introduced Decarbon Logistics Solutions to [Solent Transport](#), who are an apolitical partnership between four local transport authorities (Isle of Wight, Hampshire County, Portsmouth and Southampton), working to deliver improved transport infrastructure, networks and systems. Both organisations have since then been working together to [potentially trial](#)

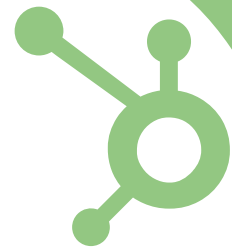
micro logistics hubs in Portsmouth and Winchester as part of the Solent Future Transport Zone. CRP have been able to share useful insights with Solent Transport which helped shape their project and strategy.

CRP have also been supporting SGL partners with additional data and advice. This has included the [London Borough of Hammersmith & Fulham's](#) North End Road / Coomer Place hub, [Better Bankside's](#) Green Logistics Centre and the [London Borough of Hackney's](#) general hub plans. The London Borough of Hammersmith & Fulham received detailed insights and costs based on the Pimlico hub trial and advice on low-emission couriers to approach. CRP also supported them regarding fire safety and operational management plans. Furthermore, CRP has been advising Better Bankside on contractual queries, and will support the London Borough of Hackney with data and advice regarding contracts, project risks, learnings, and site visits.

As part of the SGL programme, the [London Borough of Islington](#) and CRP have also been working on another potential micro logistics hub trial to be launched in 2024.



9. Additional Resources



Please find a list of relevant resources below:

Guidance Documents

- How to Support a Micro Logistics Hub in your Borough: A Guide for Local Authorities [here](#)
- Do I have the right space for a Micro Logistics Hub? [here](#)

Online Tools

- CRP's Urban Logistics Hub Map [here](#)
- CRP Clean Air Tool [here](#)

Project Overviews

- Micro Logistics Hub Trial in Pimlico - Overview [here](#)

- SGL Urban Logistics Hubs - Cheat Sheet [here](#)
- Wandsworth Hub Trial - Overview [here](#)

Press Releases

- Initial Pimlico Hub Press Release [here](#)
- Wandsworth Hub Press Release [here](#)
- Courier Fair Press Release [here](#)
- Second Pimlico Hub Press Release [here](#)



10. APPENDIX - Methodology and Data Collection



Operational and Air Quality Data

CRP receives monthly (4-weekly) reports from Delivery Mates in which they share their operational data, such as number of deliveries, distances travelled, number of e-cargo bikes, types of deliveries, and operational hours. The data was shared with CRP via monthly (4-weekly) reports, as described in the table below.

Trial Month	Calendar Weeks	Dates in 2023
1	16 - 19	17.04. - 14.05.
2	20 - 23	15.05. - 11.06.
3	24 - 27	12.06. - 09.07.
4	28 - 31	10.07. - 06.08.
5	32 - 35	07.08. - 03.09.
6	36 - 39	04.09. - 01.10.
7	40 - 43	02.10. - 29.10.
8	44 - 47	30.10. - 26.11.
9	48 - 52	27.11. - 31.12.

Delivery Mates' in-house emissions

savings algorithm takes various factors into consideration, such as e-cargo bike speeds and time travelled, goods' size and weight, as well as the number of drop offs on a multi-drop trip. The algorithm also uses data from other sources, such as TfL's traffic speed and ULEZ fleet mix of euro standard engines data, National Atmospheric Emissions Inventory emissions data (NOx, PM2.5, tyre and break emissions, road abrasion), and Defra's UK electric grid emissions data.

CRP's [Transport Emissions Calculator](#) (TEC) captured slightly different emissions savings when compared to Delivery Mates' algorithm. However, this is due to the TEC not taking cargo weight, total travel time, nor emissions associated with the electricity required to charge the e-cargo bikes' batteries (scope 2 emissions) into account. The TEC is based on Defra's Emissions Factors Toolkit (EFT) version 11, which was released in November 2021. The EFT is published by Defra and the Devolved Administrations to assist local authorities in carrying out Review and Assessment of local air quality as part of their duties under the Environmental

Act 1995 as amended by the Environment Act 2021. The EFT allows users to calculate road vehicle pollutant emission rates for CO₂, NO_x, PM_{2.5} and PM₁₀ for a specified year, road type, vehicle speed and vehicle fleet composition.

In order to translate the emissions savings into more tangible examples, CRP have used their in-house Clean Air Tool. The Clean Air Tool aims to help users better understand the impact of switching from a diesel van to a cleaner mode of transport by calculating and visualising their emission savings. CRP calculated the potential reduction of carbon dioxide (CO₂), nitrogen oxides (NO_x) and particulate matter (PM) emissions based on switching from a diesel van using Defra’s average UK fleet emissions, TfL average vehicle speed data, and the average trip length within Greater London taking the average distance from central Westminster to M25 via the main arterial routes (A1, A2, A4 and A13).



Noise Monitoring

CRP was also able to fund an EMSOL noise sensor for the majority of the trial period. The noise monitor, which also included a Reolink RLC-811A video camera to record and identify any likely noise sources, was installed on 27th June 2023. CRP rented the equipment for a duration of 6 months until the end of December 2023. The sensor was attached to a 'no entry' sign post near the Q-Park Pimlico car park’s entrance (what3words location: transmitted.empire.food) where the micro logistics hub is located. Initially the threshold for the sensor’s noise spike detection was set to 95dB in July, 90dB in August and September, until it was lowered to 80dB from October onwards. This was due to CRP setting a stricter noise threshold and therefore aiming to capture more noise events. All noise events and related videos were then reviewed by the CRP team and assigned a specific source of noise; categories included:

- Delivery Mates EV
- Delivery Mates EAV (e-cargo bikes)
- Delivery Mates Staff
- Construction

You've saved the equivalent of:

-  How many forest fires will you prevent?
-  By how many days will it extend your lifespan?
-  What cost will you save the UK economy?

- Motor Vehicle
- Pedestrian
- Cyclist
- Electric Scooter
- No Obvious Cause



There were sensor outages on the time periods below:

- 16/08/2023 16:00 – 17/08/2023 09:00
- 01/09/2023 8:00 – 11/09/2023 08:00
- 13/11/2023 10:00 – 20/11/2023 08:00
- 27/11/2023 11:00 – 28/11/2023 12:00
- 15/12/2023 12:00 – 18/12/2023 15:00

Based on the information CRP received, the sensor experienced outages due to cable work being conducted around the sign post, resulting in a loss of power supply. These works, managed by UK Power Networks for a residential connection, were not affiliated with WCC operations. There were also additional works being undertaken near the car park’s entrance during most of the monitoring period which may have caused some of the outages as well.

Additional Measures

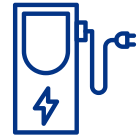
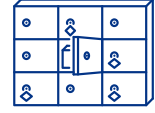
CRP also informed the WCC team who manages residents’ noise complaints about this micro logistics hub trial, in case any nearby residents report loud noise originating from the car park and likely caused by the courier’s staff and operations.

Additional insights and pictures of the micro logistics hub trial were captured by [Decarbon Logistics Solutions](#), as part of their routine site inspections, or during site visits coordinated by CRP.



From left to right:

- Jim Glen, Councillor for Pimlico North Ward
- Councillor Paul Dimoldenberg, Cabinet Member for City Management and Air Quality, Westminster City Council
- Edward Cox, General Manager, Decarbon Logistics Solutions
- Kevin Savage, Chief Operating Officer, Delivery Mates
- Fiona Coull, Senior Programme Manager, Cross River Partnership
- Paul McCormack, Chief Executive Officer, Decarbon Logistics Solutions
- Daniella Jovanović, Principal Climate Emergency Officer, Westminster City Council
- Hugh Brennan, Transport Programme Manager, Westminster City Council
- Isidora Rivera Vollmer, Project Manager, Cross River Partnership



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

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 CRP YouTube Channel