Clean Air Villages

Air Quality Grant 2018-19

Bravo Ref: 24571

Defra Air Quality Grant Scheme 2018/19 Summary Report

August 2020

Prepared for

Department
for Environment
Food & Rural Affairs

Contents

1. Executive Summary

Clean Air Villages is a Defra Air Quality Grant funded project. Clean Air Villages 2 (CAV2) built on the work undertaken through the Defra-funded 2017/18 Clean Air Villages (CAV1) project which aimed to reduce emissions in hotspots of poor air quality across five London boroughs. The CAV2 project has enabled further widespread and sustained action to reduce emissions resulting from the delivery of goods and services to businesses in 13 of London's most polluted town centres ('villages').

The project was delivered by Cross River Partnership (CRP) from April 2019 to April 2020 on behalf of project lead London Borough of Lewisham and partners London Boroughs of Camden, Hammersmith &Fulham, Lambeth, Wandsworth, Westminster and the Royal Borough of Kensington & Chelsea as well as business improvement district Euston Town, and the landowner Cadogan Estates.

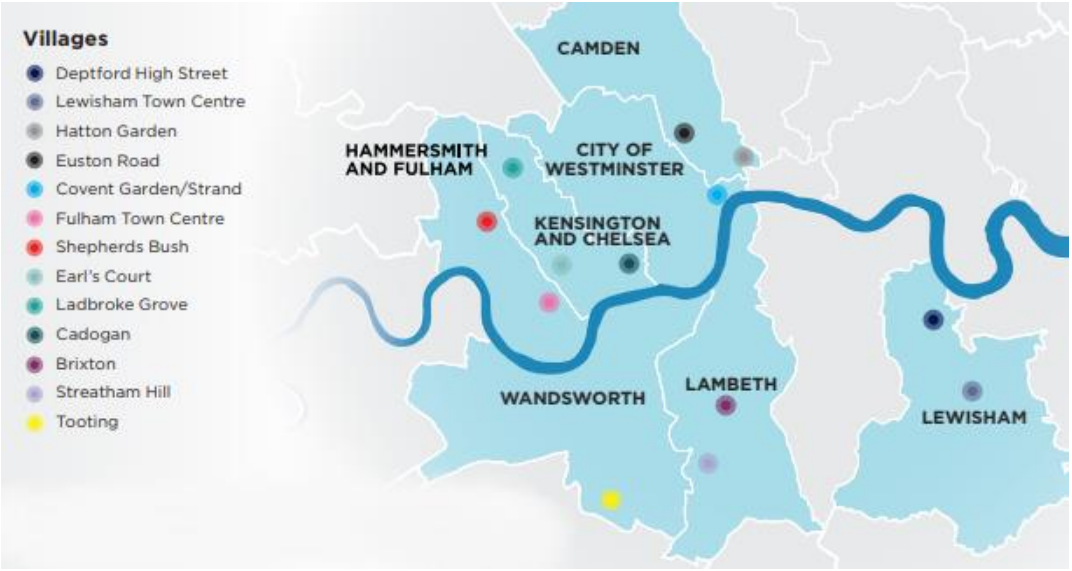


Figure 1. Map of Clean Air Villages 2019-20.

Through an extensive business engagement exercise, 12 local air quality workshops were held, 90 businesses engaged with in-depth, over 120 completed surveys and over 750 businesses engaged with via walk-ins, event presentations, phone calls and emails. Based on the findings from this engagement and further survey work, 13 local solutions were developed to help businesses reduce emissions from deliveries and servicing trips, one for each village. The tailored solutions range from a shared electric van to locally tailored cargo bike schemes.

Table 1. Potential annual emissions savings from the Clean Air Villages 2 project in 2020/21.

Borough	Village / solution	NOx (kg)	PM2.5 (g)	PM10 (g)	CO2 (kg)
Lambeth	Brixton	9.91	66.04	66.04	4,159.66
	Streatham	4.71	253.61	434.10	3,649.45
Lewisham	Deptford	2.22	113.28	206.08	1,162.47
	Lewisham Town Centre	0.45	22.97	41.79	235.74
Camden	Combined (Hatton Garden and Euston Road)	1.27	8.90	9.33	539.36
RBKC	Ladbroke Grove	1.50	76.36	138.92	783.59
	Earl's Court	0.90	45.94	83.58	471.48
LBHF	Fulham Broadway	2.90	15.42	28.04	860.68
	Shepherds Bush	1.67	51.36	96.57	456.06
Westminster	Covent Garden	11.61	210.76	328.84	4,762.53
Wandsworth	Tooting High Street	1.01	51.64	93.95	529.94

Cadogan Estates		0.84	42.91	78.07	440.36
Euston Town BID		0.72	36.75	66.87	377.18
Cross-borough	EV Trials	136.73	900.66	1,688.08	37,424.96
	Directory	1.14	22.97	43.81	369.65
	TOTALS	**177.59**	**1,919.58**	**3,404.06**	**56,223**

Table 1 provides an overview of the annual emissions savings estimated for the year following the project (April 2020 to March 2021) from the local solutions that were developed and implemented, as well as those solutions that were not completed due to the COVID-19 pandemic. Due to the lockdown from the pandemic, some village activities were delayed or put on hold, these estimates are therefore presented to include extrapolations of hypothetical emissions savings, based on these activities continuing as part of CAV3. Appendix G shows how this was calculated.

Impact of the COVID-19 pandemic

A national lockdown was imposed in the United Kingdom on 23rd March 2020 due to the COVID-10 pandemic. The CRP team ceased going into the office from 17th March, but anxiety within the population was building in the weeks ahead of this. Some of the CAV2 solutions were timed to start or had already begun in March 2020, with timescales for the end of those that had fixed delivery dates being due to end by 30th April 2020. The timing of lockdown in relation to the CAV2 project was therefore highly significant.

In the build up to lockdown and once lockdown was imposed, some CAV2 activities had to be put on hold or adjusted. For example, the Covent Garden consolidation trial was put on hold because deliveries to restaurants were no longer taking place. The cargo bike pilot schemes were dependent upon whether the providers were continuing to operate and whether there were any deliveries to make. CRP were highly reactive during this period of time and were able to respond to the most urgent needs within our communities. Cargo bikes were reserved for pharmacy and food bank deliveries to the vulnerable and isolated and CRP worked tirelessly to help these zero emission vehicles provide essential support across London during this tumultuous and difficult time. Defra were highly supportive during this unprecedented time.

For further details on the implications of the lockdown in relation to individual village activities, please see the village summary section.

Targets

As shown above, the **air quality benefits achieved and predicted by the project well exceed the objectives set at project start**. The CAV2 project aimed to deliver 157kg NOx savings and the estimated saving comes to 177.59kg.

All other targets were met with the exception of the workshops and the pan-London business engagement. CAV2 aimed to hold 13 air quality workshops (one per village). 12 were held. The final workshop was scheduled to take place on 25th March 2020 but was cancelled due to the lockdown. It is also worth noting that while CRP exceeded the target of finding 13 businesses interested in EV trials, no actual trials took place. 20 businesses were found that were interested in the trials but none of these converted into trials. Further information can be found in the EV trials section. Ten, out of a target of 13 pan-London business engagement meetings took place (35 such businesses were contacted to initiate a conversation).

CRP worked with businesses in three villages to develop and encourage uptake of consolidation services.

Furthermore, whilst being village-specific in their development, the solutions are transferable to other London boroughs and beyond, allowing for plenty of best practice exchange as shown during the project

itself. This impact is not quantifiable as a direct outcome of the project but will further increase its effect over time. Communications material developed as part of the project, such as nine concise and business-focussed case studies, and a further five detailed best practice case studies aimed at Local Authorities, Business Improvement Districts and business groups will continue to support this dissemination effort. CRP will also apply Clean Air Villages learning to its other programmes and projects, such as the Central London Sub-Regional Transport Partnership or Healthy Streets Everyday.

Camden Town Unlimited BID were an original project partner for CAV2. At the time that the grant was awarded to CRP, the BID were unfortunately not in a position to take part and were consequently not involved in CAV2.

CRP and partners are now thrilled to continue delivering business behaviour change around deliveries and servicing, with additional strands focused on communities and individual action associated with air quality improvement as part of the newly Defra-funded Clean Air Villages 3 project that commenced in April 2020.

2. Background

The London Boroughs of Camden, Hammersmith & Fulham, Lambeth, Lewisham, Wandsworth, Westminster and the Royal Borough of Kensington & Chelsea continue to exceed European and UK limits for air pollution. Euston Town business improvement district sits in the London Borough of Camden and Cadogan Estates sits in and the Royal Borough of Kensington & Chelsea. Despite each of these London Boroughs having Air Quality Management Areas in place, they are projected to remain in exceedance of the UK's legal limits for NO2 beyond 2020.

Delivery of goods and services is a major contributor to air pollution within the participating boroughs, with freight responsible for 36% of total NOx, and 39% of particulate matter (PM10) emissions from road transport in London, despite accounting for just 16% of vehicle kilometres. The business sector is a significant generator of demand for these deliveries.

Business engagement can be a slow, lengthy process, with small, independent businesses lacking the time to spend on addressing air quality issues that will also result in time and cost savings for their business. Significant time and effort went into building relationships with businesses and community organisations in the first year of the CAV project (CAV1), engaging them on air quality and deliveries and building support for local solutions and action. In many villages this engagement has been hard fought, with most not having an existing business improvement district, town centre manager or other pre-existing active business community. With eight out of the 13 villages being from CAV1, continuing this support and building on the initial momentum brings additional savings. The fact that four out of the five local authorities from CAV1 wanted to continue to be part of CAV2 and that three other authorities, two BIDs and a major landowner also wanted to join, is a testament to the fact that the approach is working and that businesses still require support.

CAV2 enabled and supported business communities in 13 chosen air quality focus areas ('villages') within the seven participating boroughs to take coordinated action to reduce emissions from business-related deliveries and services. CAV2 is a behaviour change project. The focus areas are called 'villages' to reflect the geographically adapted approach to business engagement and solution development.

The 13 focus areas/villages were chosen as they:

- Predicted continued exceedance of legal NO2 limits by 2020 – GLA Air Quality Focus Areas;
- Business clusters / high streets with high footfall and therefore high exposure levels. All seven participating London boroughs are densely populated, representing 20% of London's population but only 11% of London's inland area;
- Providing a good geographical spread across inner and outer London;
- Representing areas with and without pre-existing business engagement platforms e.g. business improvement districts.

Table 2. Partner boroughs and their associated Clean Air Villages.

Partner (Total – 9)	Clean Air Village (Total – 13)
London Borough of Camden	Euston Road, Hatton Garden
London Borough of Hammersmith and Fulham	Shepherds Bush, Fulham
London Borough of Lambeth	Brixton, Streatham Hill
London Borough of Lewisham	Lewisham High Street, Deptford
London Borough of Wandsworth	Tooting
London Borough of Westminster	Covent Garden/Strand
Royal Borough of Kensington and Chelsea	Earl's Court, Ladbroke Grove
Cadogan Estates	Cadogan

Euston Town BID	A sub-village within Euston Road

Clean Air Villages was delivered by Cross River Partnership (CRP), a sub-regional public-private partnership delivering regeneration projects in central London for more than 25 years.

3. Business Engagement

The Clean Air Villages 2 project allowed for a coordinated approach to reduce emissions from business deliveries whilst letting the different characteristics and business make-up within the villages drive the local solution and implementation.

To accommodate for different business needs across and among the 13 villages, CRP engaged in a range of different ways, e.g. through village workshops, 1-2-1 sessions, presentations at other locally relevant events. The engagement process included businesses of all sectors and all sizes, though pan-London businesses were approached at headquarter as well as local store level. Businesses were approached through:

- Local Authority economic development / business support teams
- Local BIDs, other business groups or town centre managers, where relevant
- Attendance and presentations at other local events targeting businesses
- Local/regional Chambers of Commerce
- Pre-existing CRP business contacts
- Walk-ins, and surveys

This approach has led to in-depth engagement with 90 businesses as 1-2-1 meetings, with additional engagement by other means. Additional engagement, which includes visits, surveys and emails has resulted in engagement with more than 750 businesses across the 13 villages (and 14 areas).

Table 3. Summary of CAV2 targets and outputs.

Business engagement targets	Output
13 workshops New villages – 5 Existing villages – 8	**12 workshops** New villages – 5 Existing villages – 7
90 1-2-1s New villages – 50 Existing villages – 40	**90 1-2-1s** New villages – 42 Existing villages – 48
13 cross-borough businesses	**10 1-2-1s** (35 contacted in total)

CRP avoided conducting surveys during CAV1 as it was felt from experience on other CRP projects that businesses suffered from survey 'fatigue' and that a tailored conversation would be more valuable. With additional outputs being required for the delivery of CAV2 and there being a broader realm of topics to speak with businesses about, it was decided that surveys would take place in 11 of the villages, as appropriate (this included Euston BID). The surveys were completed in a conversational way, rather than feeling clinical, in order to develop a positive relationship with the businesses.

Surveys were tailored by the village area but an example of areas that initial surveys covered was as follows:

- Key supplier names
- Delivery frequency and vehicle mode
- Awareness of sharing suppliers with neighbours
- Vehicle ownership
- Whether customer deliveries took place
- Awareness of local EV charging infrastructure
- Interest in EV trials
- Interest in cargo bikes

CRP has found through business engagement for CAV2 compared with CAV1 that there has been a noticeable increase in awareness of the air quality issue. An increase in media coverage on the topic has

resulted in greater knowledge about it. This aids any initial conversation about air quality, as it is perceived with a more acute awareness of the need to combat the issue. Combined with the future expansion of London's Ultra Low Emission Zone (ULEZ), the Mayor's Scrappage Scheme, the London Lorry Control Scheme and the introduction and planning of Clean Air Zones, Low Emissions Zones and Low Emission Neighbourhoods (and the associated loading/unloading restrictions), it is difficult for businesses to avoid the issue entirely. Particularly with new businesses, CRP has found that a greater focus on sustainability, or an assumed degree of behaving in a sustainable way seems to be more usual.

3.1. Village workshops

12 out of a target of 13 air quality workshops took place, with a total of 43 attendees (see Appendix A). The purpose and format of each workshop was adapted in each village. For CAV2, the workshops took place at different points during the project and fell into the following three categories:

1. Speculative air quality workshop to discuss local issues and potential solutions.
2. Focused workshop to discuss the details of a specific solution due to be implemented.
3. Focused workshop to review and feedback on a previously implemented solution.

Workshops require a great deal of time and effort to find a location that is convenient for local businesses to easily attend. They then require intensive promotion. Despite flexibility from CRP around the time of day and day of week to hold such workshops, to aim for a strong level of attendance, turnout can sometimes be low, as was found on CAV1. Small businesses often commit to attending, only to find they do not have the time on the day. It is not always necessary to have a large turnout in order for the workshop to be of great value. On occasions when the project partners, local Councillors and a small handful of small businesses have met with CRP this has led to a helpful discussion and solution agreement.

Where relevant, CRP arranged for a cargo bike and rider to be present at the workshops. This tangible demonstration was valuable in enabling local businesses to see the capacity and capabilities of cargo bikes. It also presented an opportunity to meet a rider and ask questions. Extremely positive feedback was received about these demonstrations.

In the cases of Brixton and Streatham, where the solutions had been initiated as part of CAV1 but had been implemented during CAV2, workshops were held that invited users of the shared electric van for Brixton and the users of the shared cargo bike in Streatham to share their experiences of the schemes. In both cases this led to changes and improvements being made to the solutions.

The Lewisham workshop did not take place. An original workshop had been arranged, with local Estate Agents invited to discuss shared vehicle ownership. CRP had arranged for a vehicle sharing company to also attend, but this was cancelled due to no Estate Agents confirming their attendance. Later, a workshop was scheduled to take place on 25th March 2020 to discuss a shared cargo bike for a local community group. This workshop was cancelled due to the COVID-19 lockdown.

Please see Appendix A for an overview of workshop dates and locations.

3.2. Business 1-2-1s

Business 1-2-1 meetings took place in the village areas and involved discussion of deliveries as well as potential actions in more detail. CRP would tailor these meetings to also include, if applicable:

- Sharing details about the Ultra-Low Emission Directory
- Enquiring about local knowledge for spaces to install EV charge points
- To ascertain interest in an EV trial

90 1-2-1 business engagement meetings took place as part of the Clean Air Villages project, with a good spread across the villages. This meets the overall target. Though in a breakdown, eight of these meetings took place in existing villages rather than in new villages. This further supports that working in new areas for the project is more challenging, as there is no engagement to build on. The target for 1-2-1s was higher in the new villages, which also made this target harder to reach.

3.3. Pan-London businesses

In addition to local engagement with businesses in the villages, more than 30 pan-London businesses were approached during CAV2, at headquarter level (see Appendix B for further details). Nine of these businesses engaged with CRP on the issue of deliveries as a 1-2-1 meeting. These businesses were asked about deliveries regarding their London stores. Any issues local to the villages were flagged to the relevant Borough.

The businesses that were responsive were already using or exploring EVs where feasible for their fleets. Issues raised about restrictions on night-time deliveries that had been raised during CAV1 continued to be a topic of concern. CRP is currently conducting a study involving noise monitoring which could support out-of-hours deliveries. The trial aims to show local authorities can manage best practice in quiet deliveries. This study may therefore be able to help tackle the current lack of flexibility around deliveries. Delivering during the night-time will help to alleviate congestion and will reduce local levels of pollution.

Awareness of the air quality activities of pan-London businesses provided a useful tool to support engagement with smaller businesses during CAV2. Some small businesses stated that their business's impact on local congestion and pollution is limited compared with larger businesses on the high street. CRP was able to highlight what larger businesses are doing, supporting the argument that we all have a role to play when it comes to tackling air quality. Please see Appendix B for a list of engaged pan-London businesses as well as focus points of the discussions.

In addition to the above, CRP has engaged with a large number of additional businesses across the villages by:

- Presenting at industry-relevant conferences, such as the LoCITY annual conference (to an audience of fleet managers).
- Presenting the project at relevant local events, such as at BID's AGM meetings, Borough supply chain meetings, town centre group meetings and business forums (please see individual village solutions for further information).

4. Project Outcomes

Actions taken by businesses in the 13 focus areas (plus Euston BID, a sub-village with Euston Road) have reduced and will continue to reduce demand for delivery and servicing trips and promoted suppliers using ultra-low emission vehicles. Key outcomes include the 13 village solutions and their associated air quality benefits as well as other meeting of other project targets as outlined in the original proposal. These are showcased below in more detail.

4.1. Village solutions

4.1.1. Camden – Euston Road

At the outset of the project, it was agreed that the focus for CAV2 in the London Borough of Camden would be the promotion of the Council's own consolidation hub for local businesses to use in each of the identified 'villages'. Activities unique to each village are first outlined below, followed by a collective discussion of the implementation of the solution and its impacts.

Background

Euston Road is a main arterial route in central London that runs from Marylebone Road to King's Cross. The road forms part of the London Inner Ring Road and marks the boundary of the congestion charge zone (CCZ) and Ultra Low Emission Zone (ULEZ), prior to its expansion. Euston Road is one of the most polluted thoroughfares in London, which in turn negatively impacts the mixed retail, office and independent restaurants located on either side. Businesses in the area also continue to face significant challenges resulting from an extended period of high-speed railway, HS2, construction. Two BIDs in the area, Euston Town and The Fitzrovia Partnership, were keen to be involved with the CAV2 programme. The former subsequently generated a separate project, as discussed in section 4.1.4.

Local engagement

CAV2 engagement aimed to explore local interest from the office sector in trialling the Council's consolidation centre. This 'hub', based between Farringdon and King's Cross, was already in use by the Council, with spare capacity available. Any additional businesses would be able to select certain deliveries from regular suppliers to be redirected to the consolidation hub. From here, the 'last mile' delivery would be made using an electric vehicle. Not only is this approach less polluting, it also enables fewer journeys to the area as multiple orders can be combined onto one vehicle at the hub. Encouraging additional local businesses to begin using the hub could provide numerous benefits:

- **Maximising utility** of the hub, thereby supporting its value as an asset for the Council to **secure continued funding**.
- **Reducing pollution** in AQFAs by delivering 'last mile' on zero emission vehicles.
- **Reducing congestion**, by combining multiple deliveries onto one vehicle.
- Potential for businesses to share suppliers which could lead to **financial savings**.
- **Raising business awareness** of the process and benefits of consolidation.

The air quality impact and cost savings would be expected to accelerate as more businesses in the same area, with shared suppliers, join the scheme.

Surveys and data collection:

Since the consolidation hub is not suitable for the handling of perishable produce or 'urgent' deliveries, the office-sector, and primarily stationary and *janitorial deliveries, were targeted during engagement. As part of a survey, businesses were asked for details about their suppliers, and the typical volumes and frequency of their deliveries. Challenges were faced trying to access the right contact within an office, as these organisations are largely inaccessible to the public, particularly if visiting in-person,*

where it is difficult to get beyond reception. For this reason, CRP used a combination of phone calls, emailing and making use of BID networks to engage with businesses.

A total of **29 businesses** were engaged within the Euston Road area regarding the consolidation hub. Due to the crossovers with the project with Euston Town BID (discussed below), **75 businesses** were engaged with in total within the Euston Road area regarding the CAV2 programme and its activities (as shown in Figure 2).

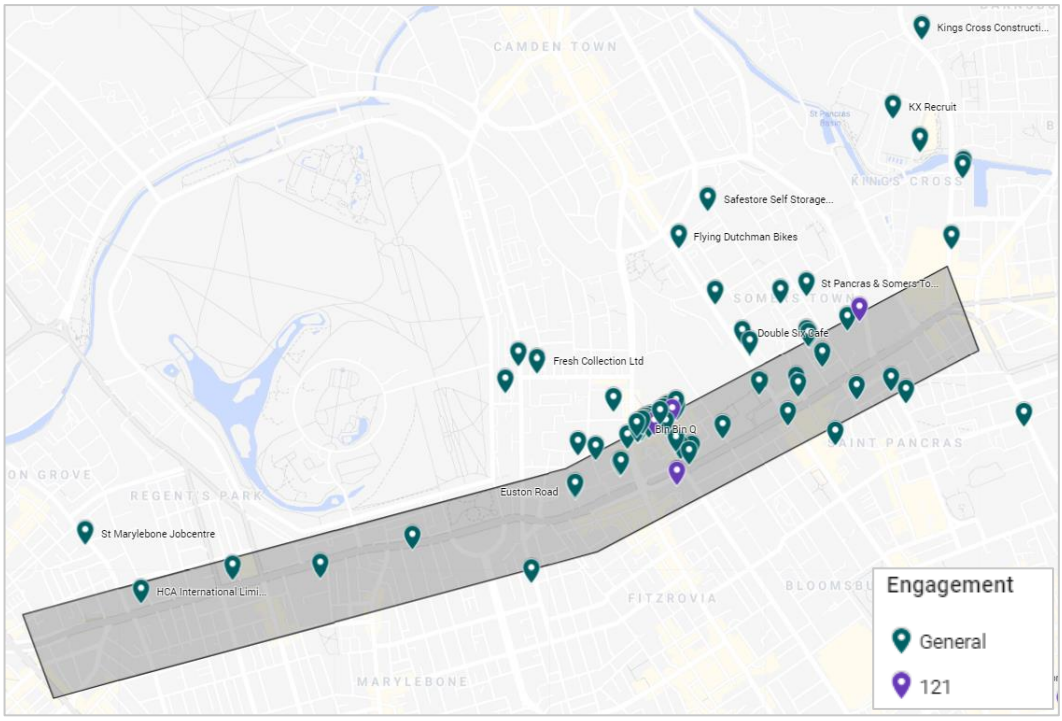


Figure 2. Map of engagement in Euston Road area.

1-2-1 business engagement

Table 4 lists the organisations with which 1-2-1 meetings took place in the Euston Road village. In December 2019, CRP met with University College London Hospital (UCLH). Bringing together representatives from the Procurement, Supply Chain and Sustainability departments, this meeting aimed to explore how the CAV2 programme could support UCLH's existing strategies for consolidation and fleet electrification. The Camden Council hub was deemed to have insufficient space to accommodate the scale of consolidation UCLH were investigating. CRP continued to engage with the hospital regarding fleet electrification and the use of Clean Car telematics dongles.

Table 4. 1-2-1 meetings in the Euston Road village.

Business
Bio Organix
Diwana Bhel Poori House
Knowledge Quarter
University College London Hospital (UCLH)
University of Arts London

Workshop summary

Due to the crossovers between the two villages in Camden, a combined workshop was organised (discussed below in section 0). CRP also attended and presented at the Knowledge Quarter's Supply Chain Network Meeting in February 2020. The Knowledge Quarter (KQ) is a collective of over 100 academic, cultural, research and scientific partner organisations located in a small area near to King's Cross. Among these

partners are global brands such as Google and BT, as well as smaller businesses. CRP's presentation served to share learnings from the CAV2 project and gather interest from organisations in attendance in the consolidation hub scheme.

Local communications

CRP used social media to promote all aspects of the CAV2 programme, including any workshops or events (see example in Figure 3**Error! Reference source not found.**). Despite having good relationships with BIDs in the areas, setting up meetings with their members was challenging. It took a great deal of time to raise the local profile of the project and for it to gain momentum in the business community.

Figure 3. Example of Twitter activity.

4.1.2. Camden – Hatton Garden

Background

The renowned district of Hatton Garden encapsulates London's historic jewellery quarter, as well as a cluster of creative industries, coffee shops, food stalls and Leather Lane Market. There is significant pressure on the area from development, including the new Crossrail station under construction at Farringdon. Surrounded by arterial routes, including Chancery Lane to the south and Clerkenwell Road to the north, the area is dominated by vehicle traffic leading to high levels of pollution. Businesses in the area are represented by Hatton Garden BID, who were positively engaged with the CAV2 programme from the outset.

Local engagement

Please refer to the discussion in section 4.1.1 for Euston Road, which is also applicable for Hatton Garden. In addition to phone calls, emailing and making use of BID networks, CRP also conducted two visits to the area to complete surveying in person, with support from Hatton Garden BID's Street Ambassador and their existing connections with businesses.

Summary of information gathered:

A total of **25 businesses** were engaged with in and in the surrounding area of the Hatton Garden village. These are shown in Figure 4. A **high volume of parcel delivery vehicles** (e.g. DPD, DHL, Parcel Force) was observed while visiting the area. This was supported by information gathered via conversations with businesses and the BID Street Ambassador. Deliveries from these providers appeared incredibly disjointed with the same operator making several visits to the same area, or even street, at different times during the

day. This therefore supported the potential for a consolidated approach to significantly impact local congestion and emission sources.

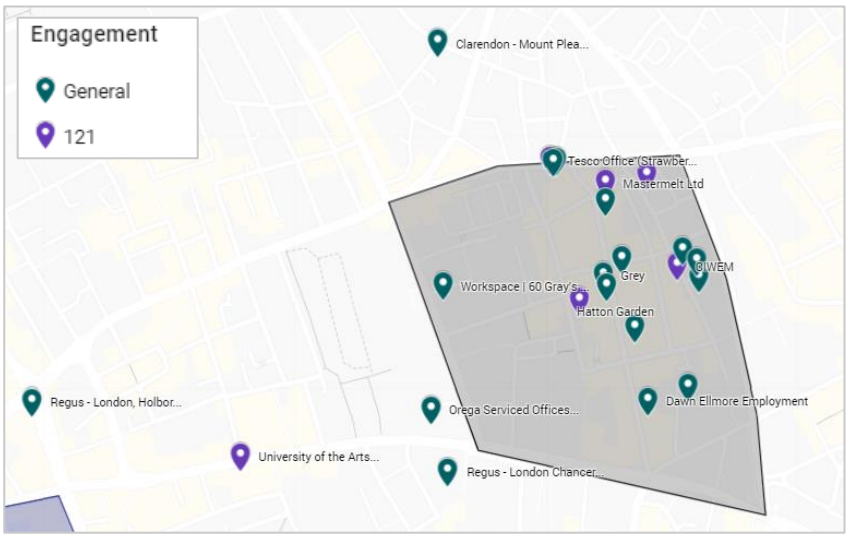


Figure 4. Map of engagement in Hatton Garden area.

1-2-1 business engagement

Table 5 lists the organisations with which 1-2-1 meetings took place in the Hatton Garden village. At the time of meeting, Momentum Transport Consultancy were already consolidating their incoming deliveries using a sustainable courier and were motivated to work with CRP to encourage neighbouring businesses to share this approach to help reduce operational costs.

Table 5. 1-2-1 meetings in the Hatton Garden village.

Business
CIWEM (Chartered Institution of Water and Environmental Management)
Mastermelt Ltd.
Momentum Transport Consultancy
Tesco (Facilities Manager)
ZAK Agency

Detailed delivery data was collected from Mastermelt Ltd. and Tesco's office located on Clerkenwell Road, which houses the Digital team. The Facilities Manager for the site had **concerns about large numbers of staff personal deliveries**. From data collected over a week of monitoring, personal deliveries totalled over 70 parcels, with Amazon and Royal Mail representing the largest shares of deliveries. It was proposed that CRP could support Tesco to communicate the impacts of personal deliveries to employees in terms of congestion and emissions, encouraging staff to redirect these to their homes, via the consolidation hub, or to use their local Click & Collect services.

Workshop summary

In collaboration with Momentum Transport Consultancy, CRP hosted a workshop for local businesses around use of the consolidation hub. This was promoted to organisations in both Hatton Garden and Euston Road via email, social media, and Hatton Garden BID's newsletter and networks. See Figure 5 for an example of the flyer used to promote this. The workshop was attended by 11 representatives from eight different organisations (listed in Table 6).

Table 6. Organisations represented at the Hatton Garden workshop.

Organisation	
Arcadia Group / DHL	Mastermelt Ltd.
Federation of Master Builders (FMB)	Momentum Transport Consultancy
Hampstead Village BID (Primera)	University College London (UCL)
Hatton Garden BID	Zedify

Local communications

Hatton Garden BID provided significant support in promoting the project to local businesses via their newsletter and social media platforms. CRP also promoted activities via its own social media channels and flyers (such as in Figure 5) distributed by email and during visits to the area.

Figure 5. Flyer to promote Camden consolidation workshop.

Figure 6. Example of a tweet from Hatton Garden BID promoting CAV2 to their members.

4.1.3. Camden – Combined activities

Implementation of solution

In March 2020, an agreement was established between CRP, Camden Council and WEGO Couriers, that CAV2 funding would be used to ***provide a cycle courier to support the expanded use of Camden's consolidation hub by local businesses*** for a duration of 6 months. During these 6 months, businesses would not be expected to pay for this service. It was hoped this would encourage a larger number of businesses to make that initial switch towards consolidation, by reducing the level of risk involved. This would then provide Camden Council with the data they require to calculate accurate and realistic costings, based on businesses' actual usage of the hub, rather than estimations and projections.

Mastermelt Ltd., based in Hatton Garden, were due to be the first to start using this scheme. Mastermelt Ltd. provided a delivery log for non-precious items during October 2019. This data is summarised in Table 7 below, including a breakdown of the vehicle type. Deliveries from Viking, FedEx and DHL were identified as suitable for consolidation through the hub. CRP planned to reach out to neighbouring offices, as well as

these identified suppliers, to prioritise subsequent engagement with businesses who share suppliers that would already be delivering to the hub on behalf of Mastermelt Ltd.

Table 7. Summary of non-precious deliveries to Mastermelt Ltd. during October 2019

Supplier	Vehicle		
	HGV	LGV	Total
DHL	-	2	2
FedEx	2	-	2
Viking	-	9	9
Total	**2**	**11**	**13**

Unfortunately, shortly after the agreement with Camden Council and WEGO was reached, lockdown measures were announced in response to COVID-19. CRP promptly contacted local businesses to provide an update regarding funded use of the hub, and to determine how they had been impacted by the lockdown. 47 businesses, primarily office-sector, were contacted via email. As expected, all those who responded confirmed they were now **closed in some form, with staff working remotely or on furlough**. In light of this, and due to concerns of the hub's own operational capacity during lockdown, it was decided to **pause the funding until the situation eased**. Camden Council are partnering with CRP as part of the third year of Clean Air Villages (CAV3). It is therefore possible to resume use of the hub as part of CAV3, subject to there being sufficient deliveries to businesses that wish to take part, to justify the use of the hub.

Impact

Based on the delivery information received from two businesses, and the projection of an additional two businesses signing up to use the consolidation hub, the following projected emissions saving for 2020-21 have been generated.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
1.27	**8.90**	**9.33**	**539.36**

These figures assume consolidation activity does not commence before November 2020 to allow time for offices to recover from lockdown.

Main achievements

CAV2 encouraged the office-sector to reassess **business and personal deliveries and established a strong framework to expand use of the consolidation hub post-Covid**

4.1.4. Camden – Euston Town BID

Background

Euston Town is the elected Business Improvement District (BID) representing businesses in Euston. Euston Town's coverage area is shown in Figure 7**Error! Reference s ource not found.**. The BID's current projects include the regeneration and celebration of Drummond Street. This vibrant and multi-cultural high street, dominated by traditional independent Indian and Bangladeshi restaurants, has been heavily impacted by HS2 construction in recent years. Euston Town successfully lobbied for Drummond Street to form the western entrance of the HS2 station, which will generate a wealth of opportunities for the street and its businesses.

Figure 7. Euston Town BID footprint.

Local engagement

CAV2 aimed to explore the feasibility of a community-owned cargo-bike for food businesses on Drummond Street. It was proposed that this could provide:

- A ***valuable asset for businesses*** to collect stock and make local deliveries,
- A way to ***influence business attitudes*** towards cargo-bikes and encourage the confidence that these are a sustainable alternative to cars and vans.

Surveys and data collection:

Several visits to the area were conducted by CRP between August and November 2019. The survey used covered: interest in a **shared cargo-bike**; **outgoing deliveries**, and whether they use third-party couriers; incoming deliveries and **suppliers**. This included gathering the time, frequency and nature of these deliveries.

A total of **18 food businesses were visited**, as shown in Figure 8. Of these, **ten businesses were responsive**, with six (highlighted in green in Figure 8) providing in-depth information about their existing operations and incoming deliveries. The ten responsive businesses are listed in Table 8.

Table 8. List of businesses who provided information on Drummond Street.

Organisation	
Bin Bin Q	Plentiful Foods Indian Spice Shop
Bio Organix	Milkman
Chutney's	Sizzling Bombay
Diwana Bhel Poori House	Taste of India
Gupta Confectioners	The Crown & Anchor

Significant challenges were faced engaging with businesses on Drummond Street, with managers often unavailable, and other employees not wishing to interact. CRP attempted to host an informal drop-in session at one of the restaurants on the street, the owner of which was receptive to the project. Unfortunately, despite advertising directly via a private WhatsApp group for the local traders, this workshop was not attended by anyone. CRP was scheduled to attend and present at the November monthly trader meeting organised by Camden council with HS2, however this was cancelled and not rescheduled.

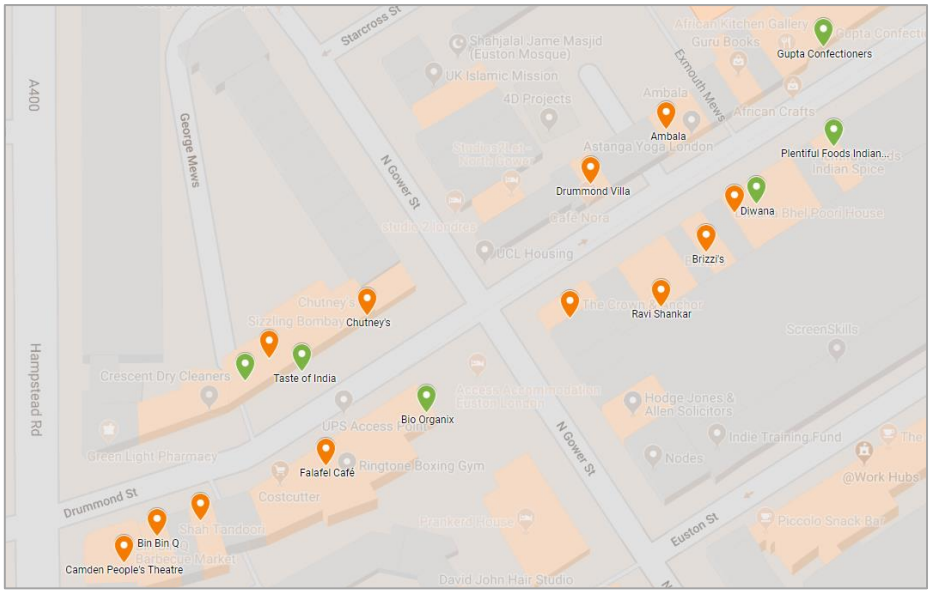
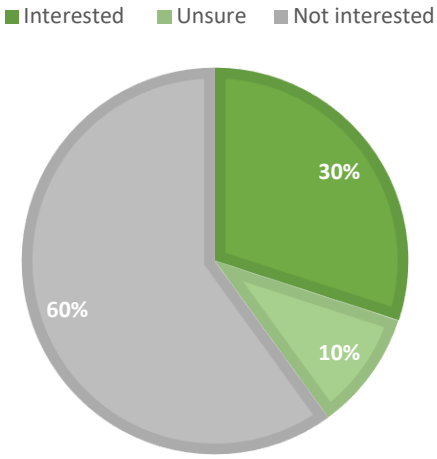


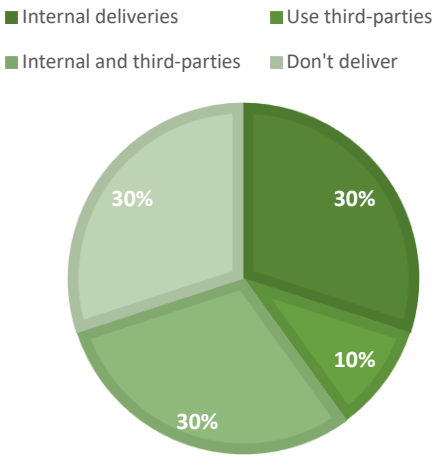
Figure 8. Business engagement on Drummond Street.

Summary of information gathered:

Would you be interested in a shared cargo-bike?



Do you make deliveries, or use any third-party couriers?



Three of the ten businesses who were responsive, expressed interest in using a cargo-bike for deliveries. Reasons for not being interested included concerns about a member of staff being available to ride the bike, or the fact they were already using third-party delivery services such as Deliveroo or Uber Eats. The ten businesses declared the names of **17 different regular suppliers**. Five of these were already being used by more than one business on the street. This was in part due to existing communication between a few of the restaurants, such that they had previously made attempts to share suppliers to reduce costs.

Local solution

The results of business engagement were presented to Euston Town in December 2019. It was agreed that CRP would explore options available for a ***dedicated cargo-bike and rider***, which could be used to ***deliver to the local office sector*** which dominates the area. It was agreed this service could also be extended beyond food businesses on Drummond Street to include two other streets within the BID footprint. Opting for a scheme operated by a cargo-bike provider, with a rider, would help to minimise issues surrounding business'

employees riding the bike, as well as negating the need for rider training, insurance, a booking system, storage and maintenance.

CRP requested quotes from six cargo-bike companies in relation to a cargo-bike with rider scheme to serve businesses on Drummond Street (and other Euston Town BID members). This was for a total of 80 hours, based on ten hours per week for eight weeks. **WEGO Couriers were successfully selected** by Euston Town to complete this work, supported by their existing links within Camden and in the Euston area.

Implementation

In January, with support from Euston Town and WEGO Couriers, CRP began promotion of the scheme, approaching food businesses on Drummond, Eversholt and Chalton Streets. Over 25 restaurants, cafes and food retailers were approached, with four initially signing up to use the service (see Table 9). Each of these businesses received clear instructions on how to book the bike directly with WEGO and were then listed on a website (http://www.eustontown.com/cargo-bike-scheme).

Table 9. Businesses signed up to use the cargo-bike scheme.

Business	Location
Bio Organix	Drummond St.
Cheezelo	Chalton St.
Diwana Bhel Poori House	Drummond St.
Gazelle Dates	Chalton St.

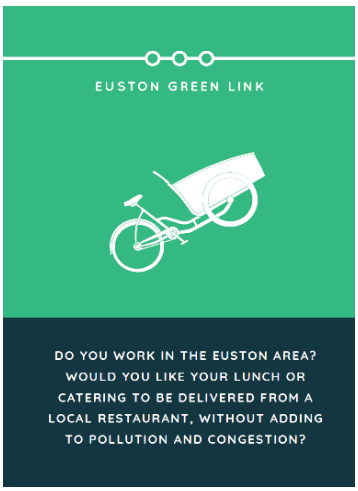


Figure 9. Flyer used to promote the scheme.

Once these restaurants had signed up, the service was promoted to the local office sector, to encourage behaviour change around ordering food and catering from local businesses using zero emission delivery vehicles. Promotion included a combination of distributing flyers (see an example in Figure 9. Flyer used to promote the scheme.), emailing contacts directly, and via Twitter. Stickers were also designed (Figure 10) to be placed on items delivered by the bike to help inform the end customer, who may not always be aware by which type of vehicle their delivery has arrived.

Figure 10. Sticker to be applied to any item delivered using the cargo-bike.

Summary of WEGO's activity:

After launching the scheme on 5th February, WEGO's dedicated rider was focussed on establishing a presence within the local business community in the Euston Town area. Activities included: handing out leaflets on the street; visiting businesses in person; creating a visual presence by cycling around the target streets each day on a branded cargo bike; and completing any deliveries required by businesses. Around 30 photographs were taken of the cargo bike in action to support social media posts and a day generating film footage of the cargo bike in the Euston Town area from the cyclists' perspective.

Collectively, **over 40 businesses** in the Euston area were contacted about the scheme. Engagement with offices was challenging. It was often difficult to reach the appropriate contact, and many implied they already had internal catering contracts in place. Despite this, the workspace Phoenix Court were very keen for their weekly business buffets to be delivered by the bike from their local suppliers. The cargo-bike also completed a local delivery for Bio Organix, as well as two further deliveries for the BID. Despite slow progress at first, Euston Town saw the potential in this idea and began an **application for Round 4 of the Healthy Streets Fund for Businesses** (HSFfB), extending the scheme to include the Camden Town area. It was believed the market and slightly different community of businesses in this area would help

to encourage use of a cargo-bike. Unfortunately, in response to the Coronavirus pandemic, both the HSFfB and Euston Town CAV2 cargo-bike scheme were put on hold in March 2020. It has been agreed with WEGO that the **40 remaining unused hours** are to be used once the BID have the capacity and resources to resume. Despite a limited number of deliveries taking place, there is a growing appetite for cargo-bike deliveries in response to changes to road layouts and user charges. Since the end of CAV2, local cheesemonger Cheezelo have reached out to CRP as they are keen to permanently deliver to their customers using cargo-bikes rather than by car.

Figure 12. CRP and CAV partners promoting the cargo-bike outside Diwana with the restaurant's owner.

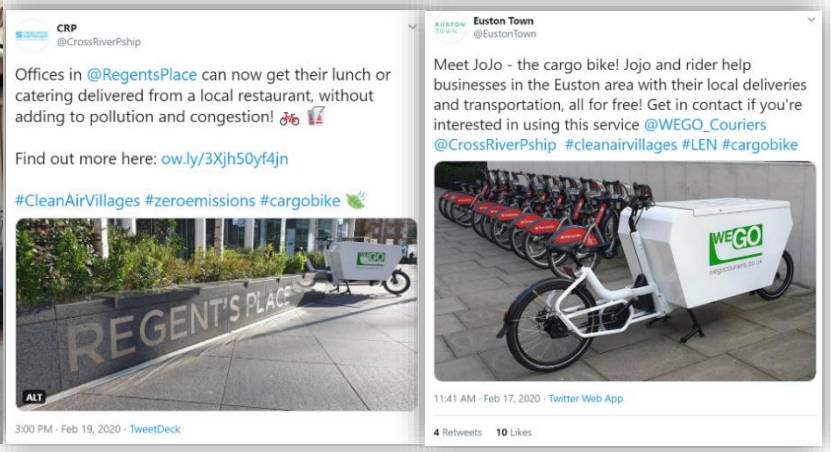


Figure 11. A selection of Tweets promoting CAV2 in the Euston area.

Local communications

The CAV2 project and Euston Town cargo-bike scheme were promoted locally via Euston Town's monthly newsletters, appearing in both the February and March editions. CRP and Euston Town both regularly tweeted about the scheme to further raise awareness (see examples in Figure 11). The Euston Town website also hosted a webpage advertising the businesses using the cargo-bike service.

Impact

The following emissions savings have been projected for the 40 hours that remain, based on CRP's experience with average cargo-bike usage in Wandsworth and Kensington & Chelsea.

Projected emissions saving (Remaining hours of CAV2 scheme)			
NOX (g)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
57.69	**2.94**	**5.35**	**30.17**

If this translates into sustained behaviour change and continued use of cargo-bikes, for example with the support of the HSfBF, the following emission saving for 2020-21 has been projected.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
0.72	**36.75**	**66.87**	**377.18**

Main achievements

CAV2 **engaged in depth with traders on Drummond Street** to elevate the local profile of cargo-bikes and gain valuable experience implementing and promoting a sustainable delivery scheme for businesses.

4.1.5. Cadogan Estates

Background

Cadogan are a private landowner situated in the Royal Borough of Chelsea and Kensington and were the first landowner to join as partner of the Clean Air Villages project. Cadogan comprises a mix of buildings including both commercial and residential tenants and covers around 93 acres of land. It lies just west of the original City, with Hyde Park to the north, and the River Thames to its south with 15 acres of gardens. This central location does also mean that the area is a flow through road and that the road network is frequently congested due to the density of commercial units.

Cadogan chose to focus on a specific area to achieve a local solution, Pavilion Road was selected as the focus area. The road is located opposite a primary school and has recently been pedestrianised. The road is regularly used by delivery vehicles to deliver goods at the front of stores to avoid using the loading bay located on the southern end of the road, leading to unwelcome idling.

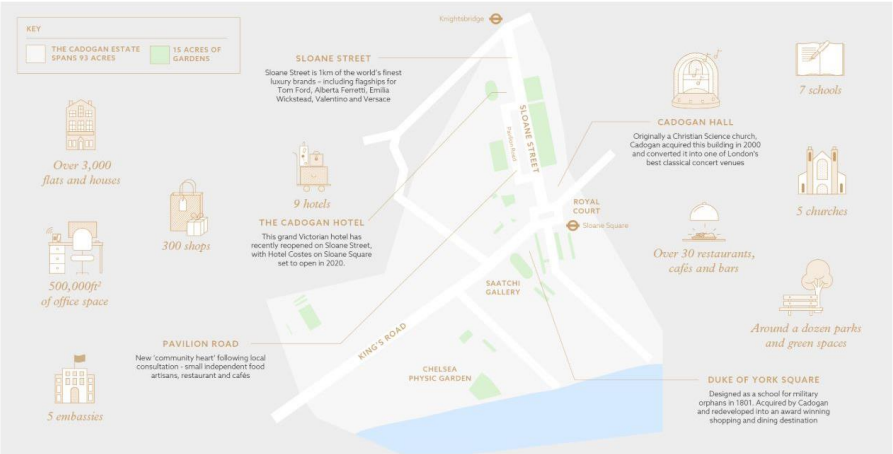


Figure 13. Map of the Cadogan estate.

Local engagement

Pavilion Road consists of independent stores mostly **food stores, restaurants and an onsite gym.** Firstly, Cadogan emailed their tenants to highlight CRP's engagement about air quality and showed how they could get involved**.** Cadogan were keen to show their tenants that air quality was a priority for the estate.

Surveys and data collection:

CRP undertook several engagement days in which the team visited ***20 businesses*** on Pavilion Road. Businesses were invited to attend a workshop to discuss a local solution. For those that could not attend, CRP conducted a survey to understand business delivery patterns.

The survey used covered: interest in a **shared cargo-bike**; **outgoing deliveries**, and incoming deliveries and **suppliers**. This included gathering the time, frequency and nature of these deliveries.

To gain a better understanding of the number of vehicles delivering to the road, and contributing to further congestion, CRP created a delivery log template for the security team at the loading bay to complete over a 2-week period. The findings will be used by Cadogan to feed into their future strategies.

Findings from engagement:

- Most businesses relied on customers visiting the destination area, but there was a lack of options for sustainable home-delivery.
- The ***three businesses who had their own delivery service, were a mix of businesses with some owning their own fleet or others outsourcing to a courier to deliver (e.g. Deliveroo).***

Figure 15. Map of engagement on Pavilion Road.

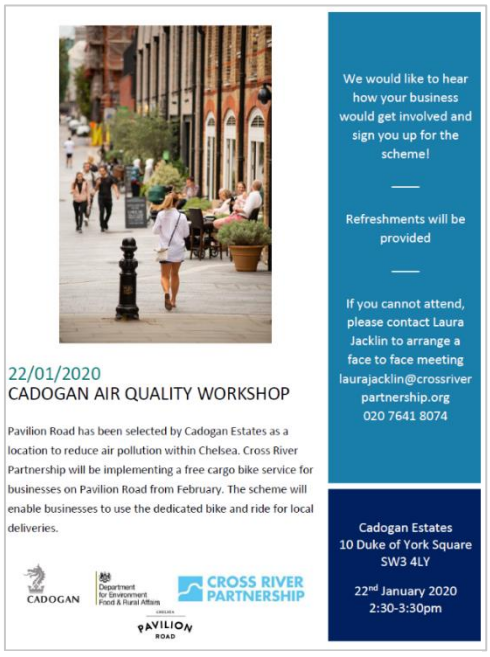


Figure 14. Flyer for CAV2 Air Quality workshop at Cadogan.

- Not all store deliveries used the loading bay. It was utilised largely by suppliers to the gym and restaurants. No suppliers to the independent stores used the loading bay during the two-week log period, showcasing the lack of baseline data for vehicle movements in this area.

1-2-1 business engagement

CRP had in-depth meetings with ***the five businesses*** that completed the survey. CRP also contacted ***The London Cheesemonger***'s suppliers to discuss their fleet and the possibility of switching to electric vehicles.

Table 10. 1-2-1 meetings in Cadogan village.

	Organisation
1	The Sea, The Sea
2	London Cheesemongers
3	Provenance Butchers
4	Cadogan Estates
5	Natoora

Workshop summary

In collaboration with Cadogan, a workshop was hosted in their Duke of York offices close to Pavilion Road on 22nd January 2020. As engagement highlighted the lack of a local, sustainable delivery service for the stores, the solution proposed was to gauge interest in a cargo bike delivery scheme.

Cadogan's preference was for a local solution that enabled a customer to pick several items from the grocery stores *(London Cheesemongers, the Sea, the Sea Fishmonger, Provenance Butchers, Natoora*) on the road ***"creating a virtual basket***". This would also consolidate deliveries onto one, clean mode of transport. The first phase of a trial could focus on selected businesses to gauge the success and demand of such a service.

During the workshop, CRP highlighted what information would be needed from businesses if they were to take part in a cargo bike scheme, including:

- Times and dates each business would use the service

- Approximate number of hours required each week
- Commitment that staff would be trained to use the booking system
- Delivery radius

Concerns and questions raised during the workshop about a cargo bike delivery service were around:

- How to book the service and would this be an online system
- Capacity of the service
- Weight limits of the load that the bike can carry
- Temperature control for food products
- Contamination of food if this was a shared box
- Marketing of the scheme

	Organisation
1	Cadogan
2	Natoora
3	The Sea, The Sea
4	Cadogan 11 hotel

Table 11. Organisations that attended the CAV2 Cadogan workshop

As part of the workshop, CRP invited a cargo bike company to showcase a bike. This enabled businesses present to address any concerns and ask key questions to the operator and rider.

Local solution

Following on from the workshop, businesses felt their queries had been answered and were confident about participating in the scheme. The solution in Cadogan would be the **dedicated cargo bike delivery scheme with a rider** for the selected Pavilion Road businesses (below):

Business name	Business type
Natoora	Greengrocer
The Sea, The Sea	Fishmonger
Provenance Butchers	Butchers
London Cheesemongers	Cheesemonger

Table 12. Businesses signed up to use the cargo-bike scheme.

Opting for a scheme operated by a cargo-bike provider, with a rider, would help to minimise issues surrounding business' employees riding the bike, as well as negating the need for rider training, insurance, a booking system, storage and maintenance.

CRP requested quotes from six cargo-bike companies to serve the four businesses on Pavilion Road, with a five miles radius maximum. This was for **a total of 80 hours, based on ten hours per week for eight weeks. e-cargobikes.com were successfully selected** by Cadogan to operate the scheme, supported by their existing links in Royal Borough of Kensington & Chelsea and being able to fulfil Cadogan's strict procurement guidelines. The scheme commenced once the operator had completed all the procurement documents for Cadogan ***this did delay the original start date of 24th February.***

Implementation

Following extensive work by CRP to agree and plan delivery dates and times, to 'onboard' the businesses onto the delivery platform, and to promote it, **the scheme launched on 6th March 2020**, with a soft marketing launch to create interest from local customers.

At the start of the scheme, London Cheesemongers used the scheme every day for their home delivery service. The other businesses were slower to take up the scheme. Reasons for this were: employee awareness of the scheme and finding it difficult to book, changing business behaviour can take time.

Challenges:

- During week one of the scheme, the cargo bike operator's online platform experienced IT issues. Businesses – for the duration of the scheme – had to call to book slots, rather than booking through the platform. This made the process a little less seamless.
- Three weeks into the scheme the COVID-19 lockdown was announced. The businesses on the scheme were, as essential food stores, able to stay open. Demand for deliveries grew exponentially. Due to the limitations of the timings that were available to the businesses, they did not all use the scheme. The fishmonger used the scheme when the hours worked for them but simultaneously

used an established online booking and delivery service too. Natoora and Provenance Butchers felt overwhelmed by orders during this period and used their own vehicles to keep up with demand.

The London Cheesemongers used the scheme throughout the eight-week period. **Around two-three deliveries a day** were made. The five-mile radius was also expanded to cater for their requirements. **177 deliveries were made.** They also replaced one of their incoming deliveries ***from van to cargo bike, using one of the businesses on the Directory.***

"Thank you for providing this service, it has been extremely helpful and amazingly well timed."
Jared Wybrow, Manager at London Cheesemongers

During the COVID-19 lockdown, Cadogan extended the scheme for ***three weeks*** to support businesses to use cleaner delivery options. The fishmonger was able to test the scheme and **completed 12 deliveries.** Their previous delivery service with Stuart was unfortunately ***unreliable and did not carry out the level of customer service required for the business*.** Feedback from other, non-food businesses in the area was that there was further interest in the scheme, for example, Hicks of Chelsea (dry cleaners) said they would use it as a drop-off service for their customers.

Local communications

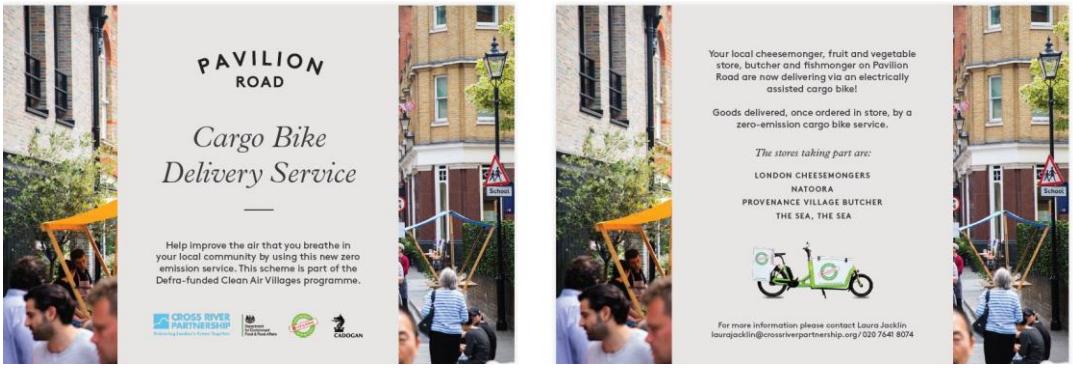


Figure 17. Flyer to promote CAV2 Pavilion Road cargo-bike service.

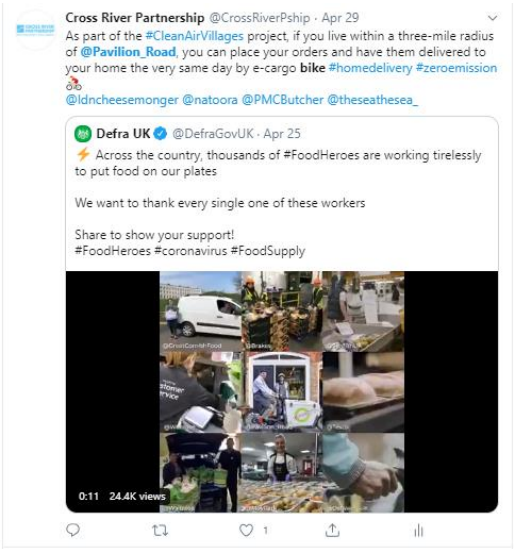


Figure 18. Pavilion Road cargo-bike scheme featured in Defra's Food Heroes video. Source: Twitter.

Figure 16. Pavilion Road cargo bike promotion. Source: Twitter.

Flyers and marketing of the scheme were jointly branded and benefited from the Cadogan marketing agency's support. Advertising also took place on the Pavilion Road Instagram page to ensure the scheme represented the estate's vision.

Impact

The following impact measurements were calculated from the London Cheesemongers and The Sea, The Sea using the cargo bike delivery service, who completed a total mileage of **319.5 miles** up to 22nd May and delivered **189 deliveries**: The London Cheesemongers (177 deliveries); The Sea, The Sea (12 deliveries).

During the 11 weeks that the scheme was in operation, businesses on Pavilion Road helped to avoid the following total emissions.

Emissions avoided (During CAV2 Scheme)			
NOX (g)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
115.20	**5.87**	**10.68**	**60.25**

If this translates into sustained behaviour change and continued use of cargo-bikes for deliveries, the following emission saving for 2020-21 has been projected.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
0.84	**42.91**	**78.07**	**440.36**

Main achievements

CAV2 enabled businesses to ***expand their reach to customers using a sustainable delivery system***. By using a cargo bike service, businesses had ***control of the transport mode that would be used for delivering locally*** and proved that businesses ***can share the service of a bike and rider***. Cadogan were able to provide a cleaner delivery service for a range of tenants and ensured local deliveries would not negatively impact local air quality for residents and customers.

4.1.6. Hammersmith & Fulham – Fulham Town Centre

Background

Fulham was selected as the focus area for the second year of the Clean Air Villages project with a specific concentration on North End Road. North End Road has current council projects including regeneration projects due to a recent decline in the number of shops in the area including large retailers such as M&S and Evans Cycles closing. The town centre has an active night-time economy with a high number of restaurants and bars, with an increase in smaller independent stores opening in the area creating a vibrant food destination. The area is known for being a through road for traffic along the A304 that links between areas north and south of the river Thames, which has continually increased the congestion in the area. North End road has an artillery B317 road that has consistent issues of construction traffic to the Lillie Road development. The area is designated as an air pollution hotspot and exacerbated by the heavy footfall in the area has led to concern about air quality of those visiting the area.

Figure 19. North End Road, Fulham. Source: Google Maps.

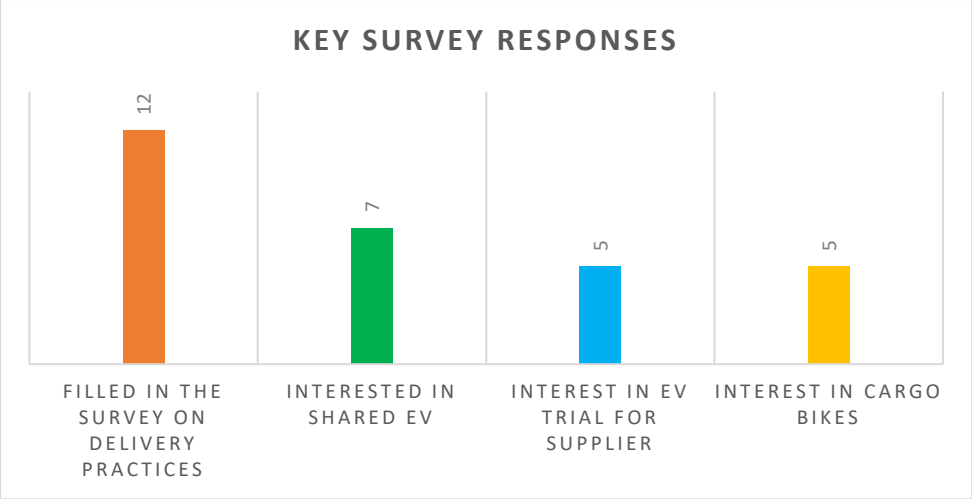
Local engagement

The focus for CAV2 was to find a physical solution such as ***a cargo bike delivery scheme or a shared electric van for businesses to reduce emissions from vehicle movements.***

Surveys and data collection:
Several visits (four) were conducted by CRP between August 2019 and February 2020 with a focus on increasing engagement with businesses along North End Road who were new to the CAV2 Project. Engagement included walk-ins to businesses to discuss their delivery patterns and emailing an online survey to Fulham BIDs mailing list to gather further information.

Overall, ***CRP engaged with 40 businesses in the focus area*** as shown in Figure 20. Of these, 12 completed the survey. Additional engagement with local stakeholders such as Fulham BID and the Hammersmith and Fulham supply chain group enabled CRP to contact a wider range of businesses.

Figure 20. Map of engagement in Fulham Town Centre village.



1-2-1 business engagement

	Organisation
1	Fulham Broadway Shopping Centre
2	Market Halls Fulham
3	Manuka Kitchen
4	Al Baydar
5	Market trader

Table 13. Businesses engaged with 1-2-1 within the Fulham village.

From the businesses originally visited, a follow up meeting took place.

Key feedback from businesses in relation to switching vehicle mode:

- Lack of commercial parking for businesses and therefore difficult for those with their own fleet.
- Lack of charging infrastructure if a business wanted to switch to an EV.
- One business said: "The North End Road is very polluted and some of the larger businesses, such as Iceland cause congestion when they receive deliveries".
- Some businesses in Fulham have other stores in London and conduct inter-store deliveries so a shared EV would be ideal for this.

Workshop summary

A workshop was held on 19th February 2020 at the Fulham Broadway shopping centre office. The workshop was promoted to all 40 engaged businesses, using an online flyer. 3 businesses cancelled last minute. Shared vehicle provider, Zipcar, brought an EV with them to showcase to attendees.

Table 14. Organisations that attended the CAV2 workshop in Fulham.

	Organisation
1	Zipcar
2	Fulham Broadway Shopping Centre

Local solution

A shared electric van was the proposed solution to improve air quality. The scheme would be similar to the shared EV scheme implemented in the Brixton 'village'. The solution would encourage behaviour change around not only EVs, but shared vehicles.

Figure 21. Demonstration of the EV at the Fulham workshop at Fulham Broadway Shopping Centre.

CRP found from their engagement that the following businesses were interested in a shared EV scheme:

	Organisation
1	Al Badyar- (greengrocer, North End Road)
2	Balfe's Bikes
3	Royal Trinity Hospice (charity shop, North End Road)
4	Market Trader (North End Road)
5	Princess Dry Cleaners
6	Brooklyn Pizza Crew
7	Kye's Health Choices
8	Market Halls Fulham (food & beverage vendors) – the owners of Market Halls and their **seven** traders/vendors could move stock to their other London sites.
9	Fulham Broadway shopping centre would also offer the van to their **tenants**

Table 15. Businesses interested in a shared EV.

The shared electric van will be funded by the council for **the first year and will be free for businesses to use.** Offering use of the van for free – to begin with – will ensure that there is no financial barrier to businesses in trialling the behaviour change scheme. The provider of the vehicle will be ***Zipcar, who have experience working with CAV in Brixton*.** The benefits of using this vehicle sharing company are that they are a recognisable brand, therefore businesses will sign-up more readily; a booking system, insurance, maintenance, cleaning and customer services are already in place too. ***CRP engaged with Fulham Broadway Shopping centre who were able to provide a dedicated parking bay with a charger for the van.***

Implementation

The launch of the shared EV was due to take place at the end of April 2020. Due to the COVID-19 lockdown, this was put on hold. Some businesses ceased trading during this period and there were delays in relation to the contractual process with the funder & operator.

The shared electric van scheme will launch once CAV2 has ended. The council will manage the scheme. CRP has prepared documents that are necessary to run the scheme to streamline this process, such as registration forms and data collation documents. The contacts have also been informed and handed over to the council. Legal agreements are in place between the council and Zipcar. CRP has ensured that a process is in place to ensure that the scheme can launch smoothly – please see Appendix C.

The shared electric van is due to be installed and accessible for users in August. Appropriate health and safety measures will be put in place to ensure that the vehicle is safe for users in the context of the COVID-19 virus. Please see the Brixton EV best practice case study for details on how to setup a scheme.

Local communications

Figure 22. Local communications via Twitter, from CRP and Fulham Broadway BID.

Local communications went out via Twitter and LinkedIn, both from CRP and Fulham Broadway BID. CRP also produced a flyer for the Fulham workshop, which was handed out to local businesses and promoted through Eventbrite.

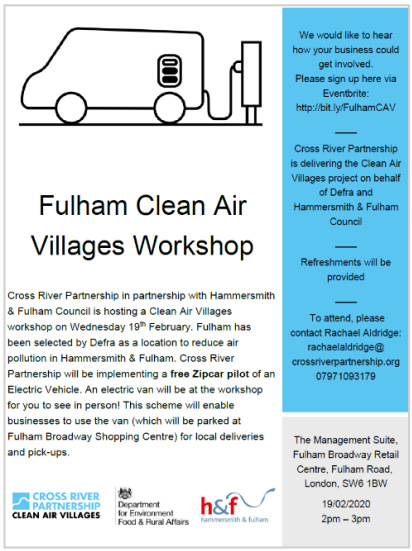


Figure 24. Flyer for CAV2 Fulham Workshop to promote the shared EV.

Figure 23. Local communications via LinkedIn, to promote the expansion of Parcels Not Pollution and the EV.

Impact

Based on data gathered from four businesses interested in using a shared EV in Fulham, and assuming the van is ready for use from August 2020, the following emissions savings for 2020-21 have been projected.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
2.90	**15.42**	**28.04**	**860.68**

Main achievements

The **shared electric vehicle** in Fulham will help the **business community contribute positively towards improving local air quality**, by providing them with a **cleaner vehicle mode.** This CAV2 solution will enable businesses to ***trial an electric vehicle*** and use a shared vehicle, promoting **long term behaviour change.**

4.1.7. Hammersmith & Fulham – Shepherds Bush

Background

The Shepherds Bush focus area was selected due to the volume of vehicles delivering to the mix of hospitality and retail units around a congested route into London by the A4. The area is home to independent traders and market stalls in Shepherd's Bush market as well as having larger occupiers such as the Westfield and West 12 shopping centres. The area is well known for having an active night-time economy supporting the local music venues such as Shepherd's Bush Empire and catering businesses e.g. restaurants and pubs.

A localised air quality monitoring analyser is located on the green and has shown a continuously exceeded level of annual mean for NO2. A direct correlation based on the freight and vehicle journeys servicing this area, alongside a higher average footfall from the commercial tenants. Furthermore, large regeneration projects around White City have contributed to additional congestion during construction phases.

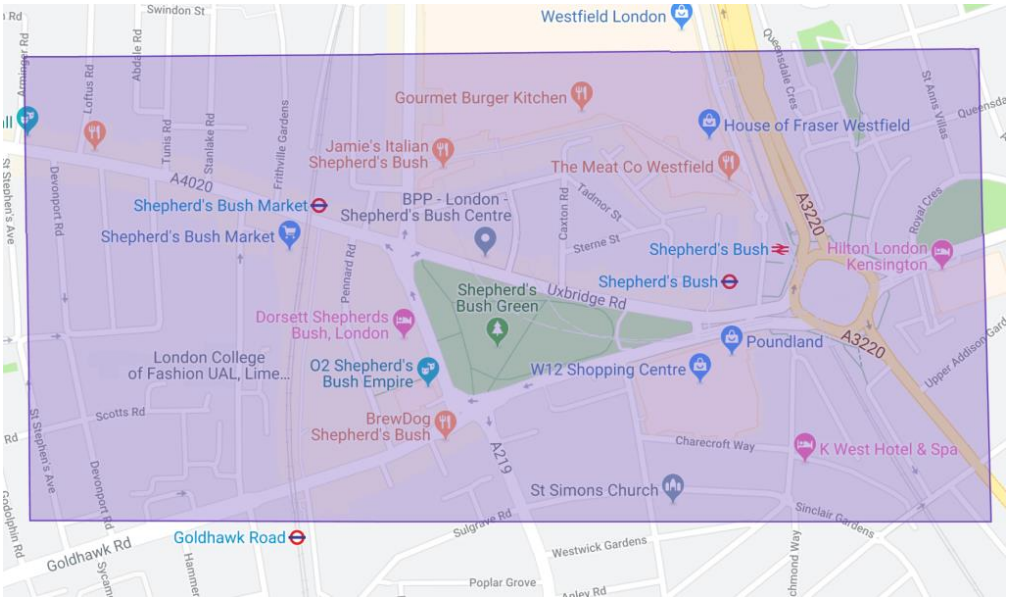


Figure 25. Map of GLA AQ Focus Area 75 – London Borough of Hammersmith & Fulham.

Local engagement

CRP's engagement in Shepherds Bush has built on the work from CAV1 where the team worked with hotels to consolidate deliveries, primarily focusing on the hospitality sector. In CAV2, the emphasis was to expand on this work and encourage further sectors to switch to low emission deliveries.

CRP regularly attended the monthly business forum that took place in Shepherds Bush (August 2019-February 2020). The forum included larger businesses including both Westfield and W12 Shopping Centre (managed by Landsec), as well as smaller businesses in the area. During the monthly meetings CRP discussed local options with the ***regular eight attendees***, that would minimise their impact on deliveries.

Surveys and data collection:
In addition to the monthly business forum meetings, CRP undertook ***12 days of engagement from August 2019 to February 2020*** in the area including **walks-ins to 39 businesses**. The survey used during engagement covered; interest in a shared cargo bike delivery scheme, outgoing deliveries and supplier details. This

included gathering timings and frequency. **Ten businesses who answered the survey were interested in a cargo bike delivery scheme**.

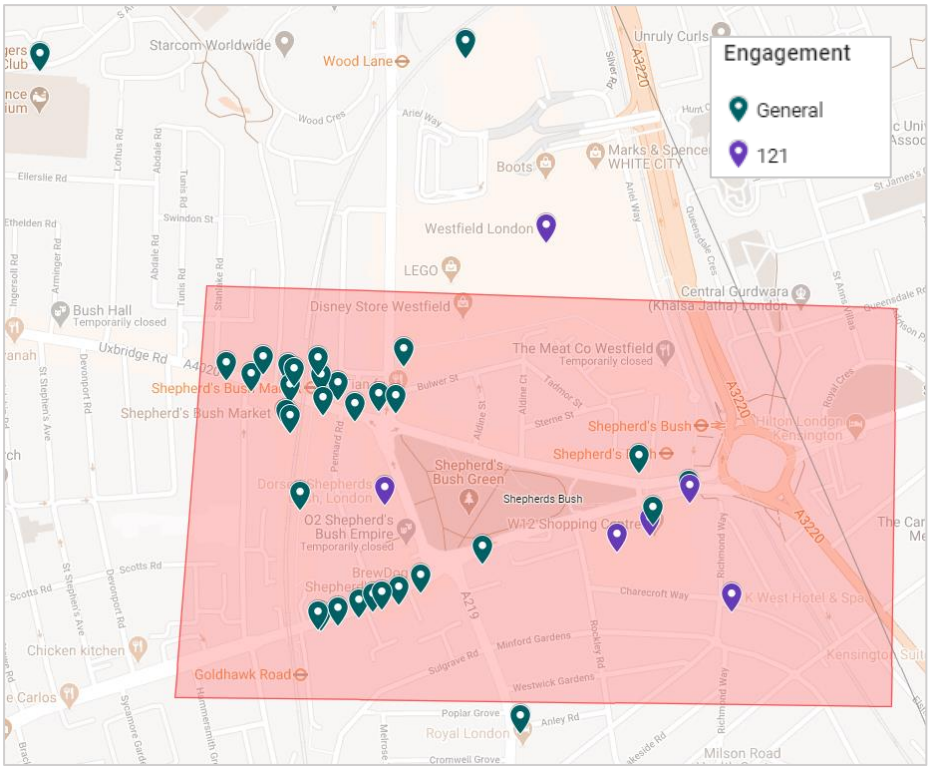


Figure 26. Map of engagement in Shepherds Bush village.

1-2-1 business engagement

Seven 1-2-1s were carried out in Shepherds Bush. These were predominantly with businesses around the green.

Table 16. 1-2-1 meetings in Shepherds Bush.

	Organisation
1	W12 Shopping Centre
2	K West Hotel & Spa
3	Dorsett Hotel
4	Westfield London
5	Belushi's
6	Sixt Car Rental
7	Charity Shop West12

CRP undertook regular 1-2-1 meetings with the W12 shopping centre manager, in order to discuss air quality initiatives, for the deliveries of their tenants which were directly contributing to local air pollution. Such initiatives included ***traffic counting and improving signage to avoid further congestion*** made by deliveries going to the Westfield's loading yard. CRP were pivotal in introducing the manager with the correct contact at the council.

Throughout the project CRP also notified businesses about the upcoming ULEZ expansion and the LEZ coming to the area by distributing TfL ULEZ leaflets. CRP provided the shopping centres with an email including relevant links and details of the LEZ zone that would be affecting their suppliers delivering to the **296** stores, this was then circulated via their logistics platform.

Workshop summary

CRP held a workshop on 11th November 2019, at the Dorsett Hotel, Shepherds Bush. CRP arranged for the local Parcels Not Pollution cargo bike scheme to attend. Attendees were able to find out about the scheme, see the bike and speak to the rider in order to fully understand the service, whilst signing up.

Table 17. Organisations that attended the CAV2 workshop in Shepherds Bush.

	Organisations in attendance
1	Mr Falafel
2	Dorsett Hotel
3	W12 Shopping Centre
4	e-cargobikes
5	Hammersmith BID

Figure 27. Parcels not Pollution bike at the Shepherds Bush workshop.

Local solution

The proposed solution for the area was to re-mode local deliveries by offering the borough's Parcel Not Pollution cargo bike service to businesses. By switching to this service, the outcome would be to directly reduce vehicle congestion and enable a cleaner final mile alternative within the local borough. The Parcels Not Pollution scheme would be expanded into the Shepherds Bush area.

The CAV2 solution funded an extension of the hours and area currently being offered by the scheme ***to 5pm-7pm*** in the evenings to support the night-time economy. The service would run from ***9am-7pm for an eight-week period. A target of ten business sign-ups to the scheme was agreed upon.*** CRP would find and register 10 businesses, who would commit to switching from a regular van delivery to using the bike, once per week.

Following the workshop, CRP organised for the cargo bike delivery operator of Parcels Not Pollution to attend a Shepherds Bush forum meeting and held a pop-up event at W12 Shopping centre on 28th February 2020 to promote to the tenants. **Two days of engagement also took place.**

Implementation

The extension of the Parcels Not Pollution scheme ***launched on 13th February 2020*** and would take place over **an eight-week period, with two hours per day** (five days per week) being available – ***for free*** – for businesses to use.

As the Parcels Not Pollution scheme was already set up with an online sign-up process, CRP would follow the same format when onboarding businesses:

- CRP would follow up by email with interested businesses, sharing a link to the simple online registration form.
- Once completed, CRP and Hammersmith BID would collect more detail from registered users, ***such as logging their current delivery mode***.
- CRP would further support the registered businesses by discussing the day and timings of their usage of the cargo bike.
- CRP would keep in regular touch with the cargo bike provider, the BID and the businesses who signed up from the 'village' to ensure the scheme was running smoothly.

Table 18. Businesses signed up to the cargo-bike scheme.

	Business Name	Sector of Business	Reason to use the bike
1.	QPR Football Club	Leisure	Move goods around the local area e.g. after school training
2.	Petit Miracles Hub	Charity	To collect donations for the store and to collect printing from Hammersmith
3.	Mr Falafel	Food and Beverage	To collect food orders (e.g. chickpeas from their supplier)
4.	Brewdog	Food and Beverage	To move stock between their other pubs in London
5.	Bush Theatre	Leisure	To collect / drop deliveries
6.	MaMa Nati Ltd	Retail	To collect / drop deliveries
7.	Age UK - W12 Shopping Centre	Charity	To collect donations from homes
8.	Belushi's	Food and Beverage	Weekly stock movements to other local sites e.g. Hammersmith
9.	The Bush Doctors	Health	To deliver prescriptions to homes
10.	Shepherds Bush Library	Education	To move books between other libraries
11.	W12 Shopping Centre	Retail	To move food bank donations from the shopping centre to Olympia food bank

Once the COVID-19 lockdown was imposed, only two of the registered businesses remained open (The Bush Doctors & the Shopping Centre). During this time, the shopping centre started a food donation project and the cargo bike scheme was their first-choice of delivery method to transport donations to the food bank. This has been so successful that it is now a weekly service and the food bank is paying the service to deliver to homes across the borough.

Local communications

Local communications were sent out via Twitter and LinkedIn to promote the Parcels Not Pollution service to local businesses, and to promote the pop-up event at W12 Shopping Centre.

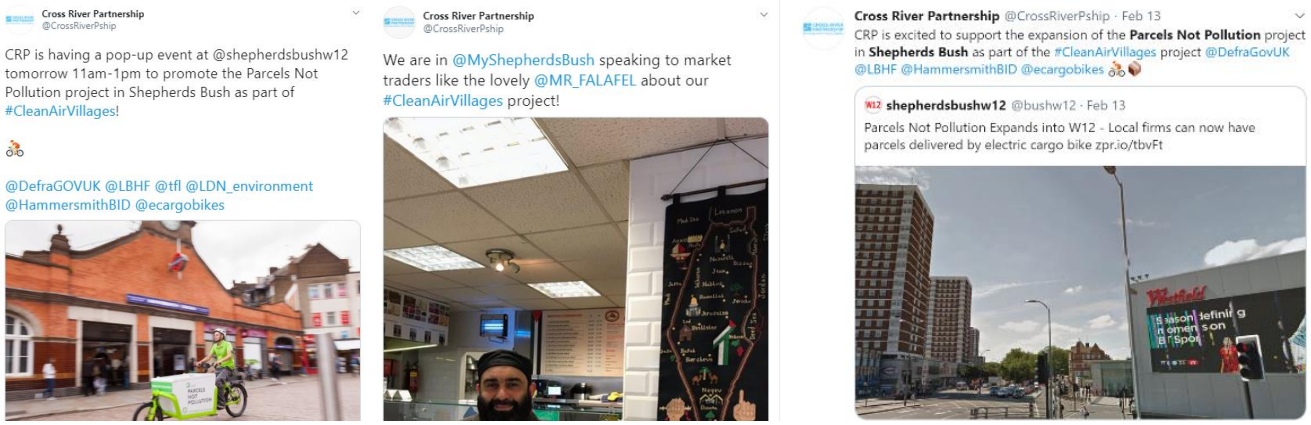


Figure 28. Tweets from CRP showcasing communications abuout the Parcels Not Pollution Service. Mr Falafel, pictured (middle), was found during the CAV2 business engagement, and signed up to the service for food deliveries.

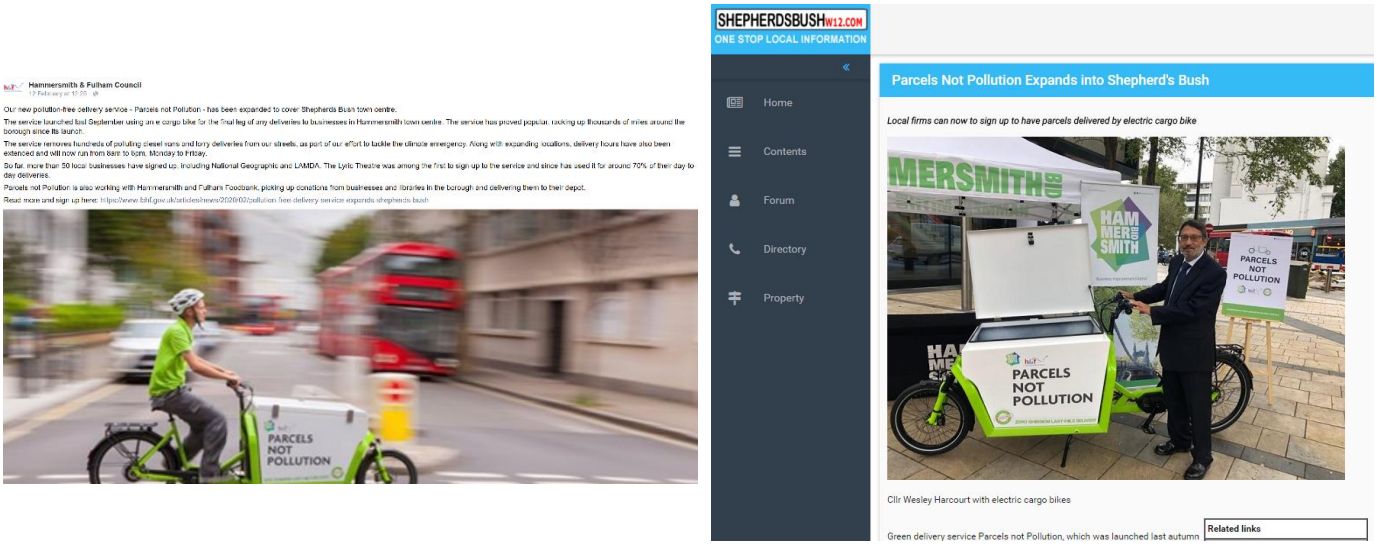


Figure 29. The expansion of the Parcels Not Pollution service also featured in Capital West, Netdoor.co.uk and ShepherdsBushW12.com.

Impact

Based on the existing use of the service, projected emissions savings for 2020-21 have been generated.

Projected emissions saving (2020-21) – *Current use only*			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
0.77	**23.85**	**44.85**	**211.79**

Two further businesses expressed a keen interest in using the service and provided information of the typical journeys they would replace. Both were unfortunately forced to cease operation during the COVID-19 lockdown. The potential emissions savings have also been calculated assuming these businesses begin using this scheme once they are able to reopen.

Projected emissions saving (2020-21) – *Additional businesses*			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
1.67	**51.36**	**96.57**	**456.06**

Main achievements

The extension of the local cargo bike scheme in the Shepherds Bush 'village' has demonstrated that different sectors can use the same delivery service for a range of different goods. During the COVID-19 crisis the scheme provided a reliable, zero-emission delivery system for those most vulnerable in society. Additionally, CRP created a best-practice guide, explaining how to implement a similar initiative elsewhere.

4.1.8. Lambeth – Brixton

Background

Brixton is a busy, eclectic area in South London, with high street shops on the main road and smaller, independent businesses by the market. Brixton Village and Pop Brixton are in close proximity to Electric Avenue and offer enclosed shopping and restaurant spaces. This village presents a strong business community, through Brixton Business Improvement District (BID). The BID was set up in 2013 and has 667 business members. This provided an extremely useful link for CRP to connect more easily with the community and save time. The engagement in Brixton built on that of that of CAV1, where the concept of a shared electric vehicle was introduced and developed as a local solution.

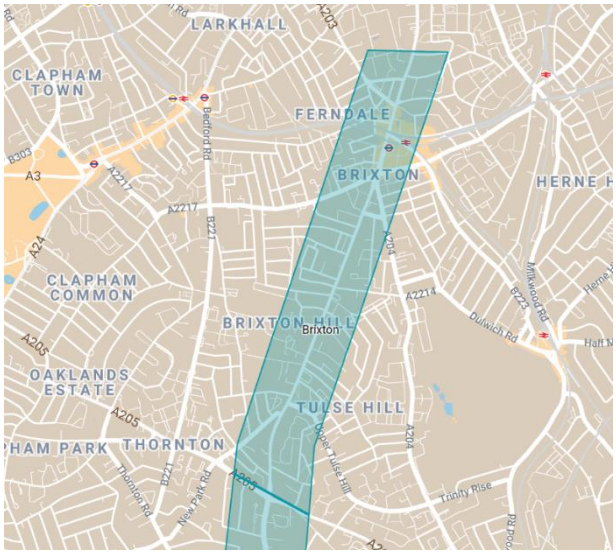


Figure 31. Map to show the boundaries of the Air Quality Focus Area.

Figure 30. Local engagement with businesses along Electric Avenue.

Local engagement

Once a launch date for the vehicle was in place, the Brixton EV was promoted by the CRP team (Figure 30). More than 100 businesses were approached about the van and flyers were distributed. Key businesses were invited to the launch. 46 businesses were contacted, following on from the engagement. The launch took place on 3rd December 2019, with Councillors, Lambeth Council, Zipcar, CRP, Brixton BID and local businesses present.

During CAV1, CRP conducted preliminary business engagement in Brixton through workshops, meetings, door-to-door visits and an event hosted in the market. Businesses were asked about their existing vehicles and behaviour, including size and payload, typical time of use, average mileage, ULEZ compliance and current attitude towards EVs.

Workshop summary

A workshop, held at Brixton BID's office two months after the launch, was attended by five businesses who use the van on a regular basis. This was an opportunity for these businesses to provide detailed feedback on the EV and to discuss ideas for improvements. Brixton BID and Zipcar also attended. Zipcar's presence was invaluable in being able to provide feedback on what the vehicle booking system was capable of. Actions taken from the workshop included installation of protective flooring for the van, which Zipcar implemented in March 2020.

Table 19. Organisations that attended the CAV2 workshop in Brixton on 29th January 2020.

	Organisation
1	Zipcar
2	Brixton BID
3	Healthy Eaters
4	Abdul's Fruit and Veg
5	Studio 73
6	The Remakery
7	Urban Growth

Figure 32. Map of engagement in Brixton.

1-2-1 business engagement

Six 1-2-1s took place. These enabled CRP to gain further information about deliveries and servicing for these businesses and were an opportunity to offer advice on air quality.

During the first two quarters of the CAV2 project there were a number of hindrances to the launch of the shared electric van. Due to the possibility that the scheme may not go ahead due to barriers such as Lambeth not being able to secure funding, or it not being possible to find a suitable parking and charging bay, CRP explored an alternative solution for Brixton. Local businesses and the Council had highlighted an issue about the frequency of deliveries of ice by diesel vehicle to the area. In Pop Brixton and Brixton Village, where there is a high density of micro businesses with little to no storage space, CRP explored this issue. The exploration was to ascertain whether local ice storage could be provided to reduce the number of deliveries, or whether a large ice machine could be provided.

CRP's research found that even though a local ice supplier made daily deliveries (or more frequent than this during peak summer times), businesses were already working together to share storage space. One of the largest bars in Pop Brixton was also researching a purchase of their own ice machine. Research about ice machines by CRP also led to discovering that the volume of ice required by bars and restaurants would demand an ice machine or storage that was beyond what would have been feasible. It was therefore deemed that this was not the right solution to pursue.

Table 20. 1-2-1 meetings in Brixton.

	Organisation
1	Pop Brixton
2	Ritzy
3	Satay Bar
4	Resi
5	Healthy Eaters
6	Oligab Eggs

Local solution

Research from the first year of the CAV project showed that local businesses were interested in a shared electric vehicle. CRP continued to liaise with the London Borough of Lambeth and the shared vehicle provider (Zipcar) to get the van in place. The Brixton EV is London's first shared electric van scheme and is free for Brixton businesses to use for one year.

CRP, Zipcar and the London Borough of Lambeth met and agreed on working together to put the solution in place. Zipcar were chosen as the preferred vehicle provider because their brand was known widely (which would encourage registration to the scheme), and they had a booking and maintenance system in place.

Zipcar contacted vehicle manufacturers to obtain costs and lead times of acquiring a small EV and a Renault Kangoo ZE was decided upon. Meanwhile, Lambeth secured funding to support the project for one to two years and found an existing charging point with a parking bay that was easily accessible for Brixton businesses. The parking bay had to be converted to a car club bay which presented a delay to the launch. Delays were also experienced due to vehicle supply issues to the UK market.

In the build-up to the launch date, all partners came together, including Brixton BID to plan the launch event and publicity.

CRP and Lambeth agreed to make the vehicle free for businesses to use, as this would be more likely to encourage long term behaviour change around using not just an EV, but a shared EV. Lambeth secured funding for the EV from December 2019 to November 2020. The legacy of CAV2 is in place, as this scheme will continue beyond the scope of the Defra-funded project. CRP developed the initial solution, bringing together the partners necessary to launch the scheme, facilitated discussions, setup meetings and kept the project moving towards its goal.

Implementation

Usage of the EV has grown steadily, but with fluctuations observable in March 2020, when lockdown was announced. The number of organisations actively using the vehicle has grown from nine at launch to 19 as of May 2020.

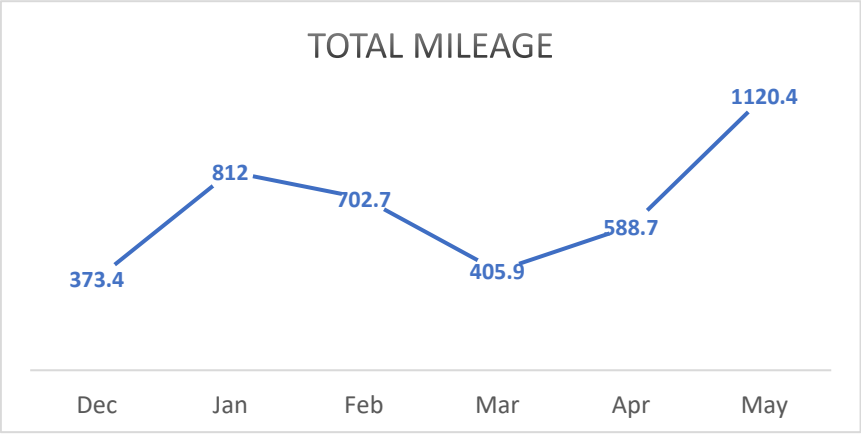


Figure 33. Monthly total mileage of the Brixton EV since its launch in Dec 2019.

Organisations that use the EV are wide ranging, from art galleries and restaurants, to landscape architects and film makers. The van has driven 4,025.9 miles between December 2019 and 31st May 2020For a business to book the vehicle, they must first contact CRP, who will explain the initiative and send out a registration

form. This form explains the air quality context behind the scheme and asks the signee to agree to use the free vehicle fairly. It also asks questions that CRP use for behaviour change and monitoring purposes. Businesses return the signed registration form and CRP directs them to the EV's dedicated landing page with Zipcar. CRP sends Zipcar the business name and email address. CRP also asks businesses to complete an anonymous baseline survey. The business then needs to create a Zipcar Business Account, if they don't have one already. A business account is free for the first year. The business is then able to book and use the EV.

CRP liaised tirelessly with businesses, ensuring that they understood the motives behind the scheme, completed surveys and feedback and built a positive relationship with them so that feedback was frank and helpful. Without this key stakeholder engagement element the project would not be as successful as it has been to-date.

The Brixton EV has helped to raise the profile of shared van schemes for businesses and provides a useful example to facilitate replication of this idea elsewhere. As part of CAV2, a step-by-step, best-practice case study was produced, explaining the process of creating the scheme in detail. CRP is now able to convince other commercial neighbourhoods to consider shared EVs, based on the successes of the Brixton EV. This case study guides local authorities, step-by-step, through the process, including challenges to overcome.

It has been agreed that once CAV2 comes to an end, Brixton BID will take up the day-to-day registration of businesses to the EV. Lambeth secured funding to make the EV free for businesses for one year. There is the potential that this could be extended for another year, subject to funding and subject to how successful the scheme has been.

Figure 34. Cover image of the Brixton EV best practice case study.

"The new shared electric van in Brixton has enabled small businesses right across Lambeth to witness that it's good business sense to use shared transport, as well as being better for the environment than using your own vehicle"

Councillor Claire Holland, London Borough of Lambeth

As can be seen in Figure 33 above, there was a clear lull in usage of the EV when the COVID-19 lockdown was first imposed in March. There has been a gradual upward trend since then, as businesses have emerged.

Local communications

Communications for this spread far and wide, from tweets from local Councillors to international Fleet newsletters reporting on the Brixton EV. Please see Appendix D for table of articles mentioning the Brixton EV.

Impact

Since the shared EV launched, up until 31st May 2020, 19 businesses in Brixton have helped to avoid the following emissions, by choosing to hire the EV over petrol and diesel vehicles.

Emissions avoided (Launch – 31st May 2020)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
5.55	**36.98**	**36.98**	**2,329.3**

Based on businesses' use of the scheme so far, the projected emission savings for 2020-21 have been generated as below.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
9.91	**66.04**	**66.04**	**4,159.7**

Main achievements

A **free shared electric van** in Brixton has been made available for businesses to use, which is leading to long term behaviour change around shared vehicles and electric vehicles. The legacy of Defra's seed corn funding for CAV2 will lead to replications of this project elsewhere, with the positive impact on air quality being extremely wide-reaching.

Figure 35. The launch of the Brixton EV, with support from local businesses (left), the Brixton EV charging on Pulross Road (right).

4.1.9. Lambeth – Streatham Hill

Background

Streatham Hill is a bustling high street located in South London, with a variety of different businesses including restaurants, pubs, takeaways, independent retailers and estate agents. It is also part of the busy A23, a major road between London and Brighton. Because of this, local cycling can often be perceived as dangerous. InStreatham BID is a local collective voice for over 500 businesses in Streatham, supporting projects which invest in the development and promotion of the area and its businesses. CRP worked with the BID for the first year of the project, and the success of the second year builds on the work started in CAV1.

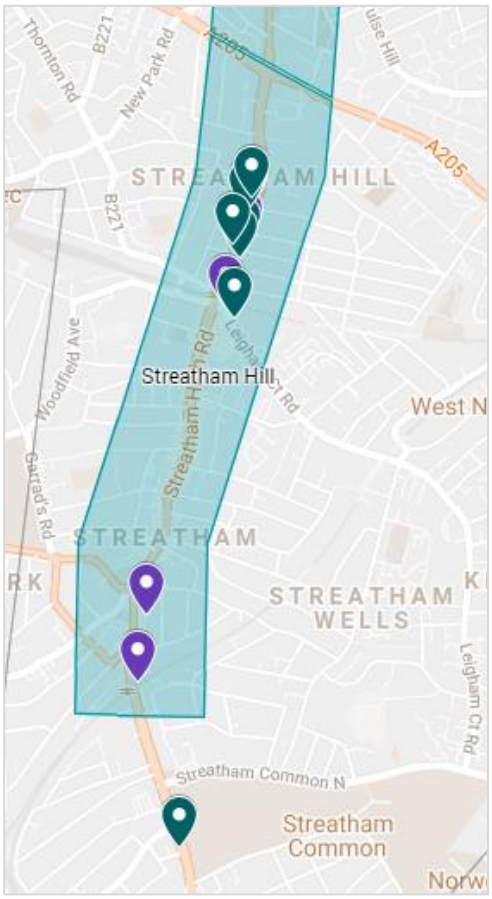


Figure 36. Map of Streatham Hill Clean Air Village and engagement that took place.

Local engagement

Engagement in Streatham was centred around the shared cargo bike initiative decided upon in CAV1. During the first year of the project, CRP supported InStreatham BID, who in collaboration with Balfe's Bikes, submitted a funding application for a cargo bike, which was granted by the TfL Healthy Streets Fund in April 2019. The concept of a shared cargo bike attracted interest from many local businesses.

The CRP team handed out InStreatham BID posters and promoted the bike. 13 businesses were engaged with in January 2020: speaking to locals about the shared cargo bike scheme and how they can sign up. Six of these businesses were interested in signing up, and this information was passed on to InStreatham BID.

Since then, and particularly during the COVID-19 pandemic, many more businesses have signed up to the shared cargo bike scheme. The scheme has also been used by pharmacies for essential deliveries.

Figure 37. Map showing engagement in the north of the village in more detail.

"The cargo bike scheme has been a great asset to businesses in Streatham, especially since the introduction of the rider, which I believe is an integral part to its success. It has helped businesses find a more sustainable way to deliver their goods and services, not just locally but across London as a whole. Bike shops have a fundamental role in helping these schemes become a success and being involved in an initiative for all local businesses in the community."

Richard Balfe, Owner, Balfe's Bikes.

"Bikes are definitely the best way to deliver delicate plants, as well as the best environmental option. Our shop is located at a pollution hotspot and we want to do what we can to reduce impact. Rather than offering customers free delivery, we decided to donate these fees to foodbank projects. We would like to continue to always offer a cargo bike delivery option to local customers."

Anne Fairbrother, Cornercopia.

Workshop summary

A workshop, hosted at Hood (café), was attended by Dr Doolittles 2, who were interested in using the bike, as well as InStreatham BID and Balfe's, to discuss the use of the shared cargo bike. All businesses who use the shared cargo bike were invited to the workshop.

Table 21. Organisations that attended the CAV2 workshop in Streatham Hill.

	Organisation
1	InStreatham BID
2	Balfe's Bikes
3	Dr Doolittles 2

1-2-1 business engagement

Seven 1-2-1s took place. These meetings enabled CRP to promote the bike further, and these conversations were also an opportunity to discuss air quality in relation to the specific business needs.

Table 22. 1-2-1 meetings in Streatham Hill.

	Organisation
1	Fish Tale
2	Dr Doolittles 2
3	Cornercopia
4	ADS One Ltd
5	Jackson Pharmacy
6	Green Cactus
7	London Smoke and Cure

Local solution

Research from the first year of the project showed that local businesses were interested in a shared cargo bike scheme. CRP continued to liaise with InStreatham BID and Balfe's Bikes to ensure the success of the scheme. The bike was launched in September 2019, with councillors, businesses and the BID present.

The solution for the Streatham Hill focus area is a shared cargo bike, for use by businesses who are part of InStreatham BID. This free service for members now comes with a rider, so businesses do not have to take time away from their stores. This was requested by several businesses in feedback for the bike. As of 31st May 2020, 12 businesses have used the bike, with all of these having used the service more than once and a total of 147 bookings. Since being introduced on 10th February 2020 until 31st May, the ***rider has completed over 1,750 miles***. When accounting for deliveries made without the rider (roughly 36% of bookings), this suggests the bike may have completed over 2,700 miles since launching. Competency training was provided by Cycle Confident, and all riders of the cargo bike had to complete essential training. A local rider was recruited, for businesses to make deliveries even if they did not have staff available.

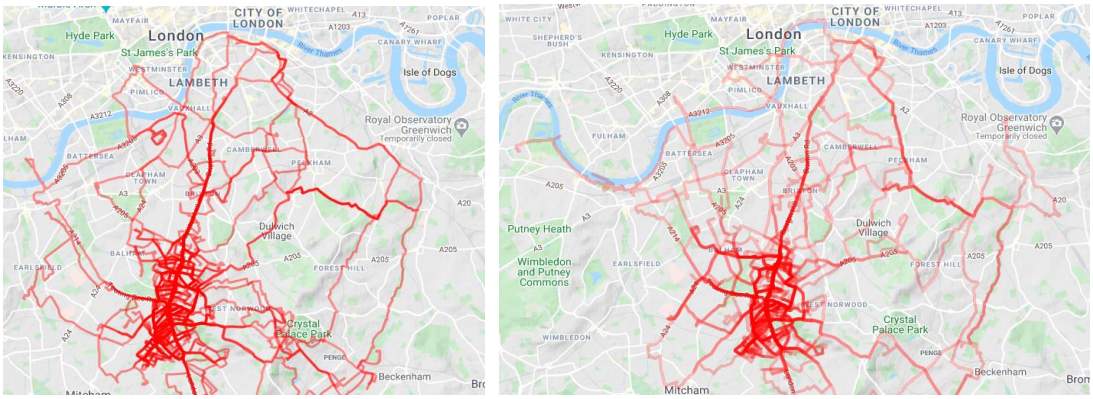


Figure 38. Maps showing journeys covered by the rider and bike in April (left) and May (right) 2020.

Implementation

The implementation of the shared cargo bike scheme was a collaboration between CRP, InStreatham BID and Balfe's Bikes. CRP advised on insurance and engaged with businesses. The BID bought the bike and Balfe's Bikes advised on options. The BID put the booking system in place. CRP helped promote the scheme and arranged the workshop.

Use of the bike has grown rapidly since it launched. Organisations that utilise the service are wide ranging, from plant and gardening businesses to paint and hardware stores. Businesses can book the bike in one of two ways.

1. On its own for them to use, once training is completed
2. With a rider

Two calendars on the app run simultaneously, so that the bike can only be booked one way in each time slot. Once booked, the app sends an email to InStreatham BID, Balfe's, where it is stored, and Chris, the rider. The booking app youcanbook.me is used.

"The feedback from businesses that have used our cargo bike scheme has been incredibly positive. On top of all of the environmental benefits, it is much friendlier to be able to deliver a locally managed scheme where technology supports the human interactions and not replaces it."

Louise Abbotts, BID Manager, InStreatham BID

Local communications

A variety of local communications took place to promote the bike in the local area. Posters were displayed in shop windows in Streatham, and flyers were given to local stores. InStreatham BID put out regular posts in the newsletter and on their website about the cargo bike, promoting it to their businesses.

Figure 39. The bike features regularly in InStreatham BID's newsletter and has featured on other online newsletters such as bikebiz.

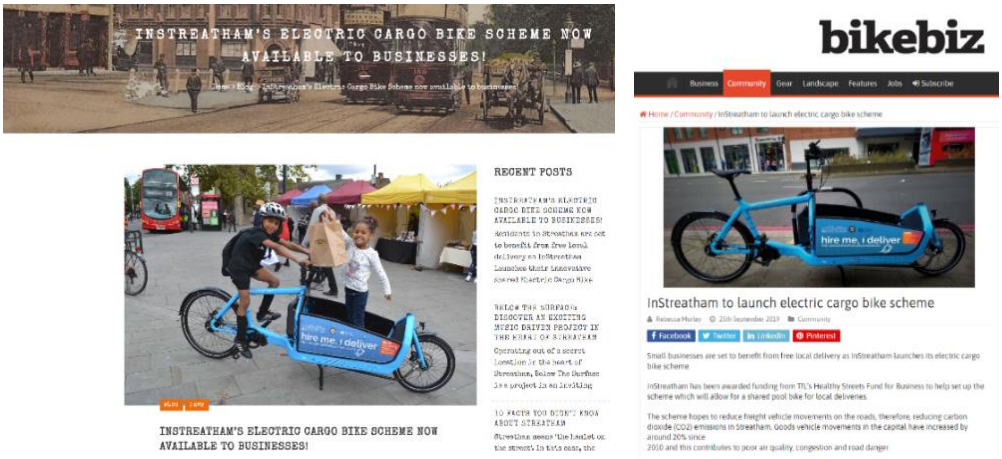


Figure 40. Twitter coverage of the cargo bike launch and promotion of the bike has been vast.

Impact

The majority (68%) of businesses reported that the bike was being used to replace deliveries that would have otherwise been completed by car. Based on the estimated total mileage for the scheme, the total emissions avoided have been calculated as follows:

Emissions saving (10th Feb – 31st May 2020)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
1.51	**81.04**	**138.72**	**1,166.2**

Based on businesses' use of the scheme so far, the projected emission savings for 2020-21 have been generated as below.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
4.71	**253.6**	**434.1**	**3,649.5**

Main achievements

A shared cargo bike was made available to the local business community for free, to offer zero emission journeys. A rider was also made available to help bring further businesses on board to use the scheme.

4.1.10. Lewisham – Deptford

Background

Deptford is a characterful area of South East London, with a main high street running through the centre. Deptford High Street consists of independent shops including small international supermarkets, hardware stores and art galleries. Significant footfall can be experienced in this area, especially on market days, as there are 3 different, and very popular, markets in Deptford. These sell all manner of things, from fruit and vegetables to clothes and accessories. Deptford also has an active night-time economy, with many restaurants and bars.

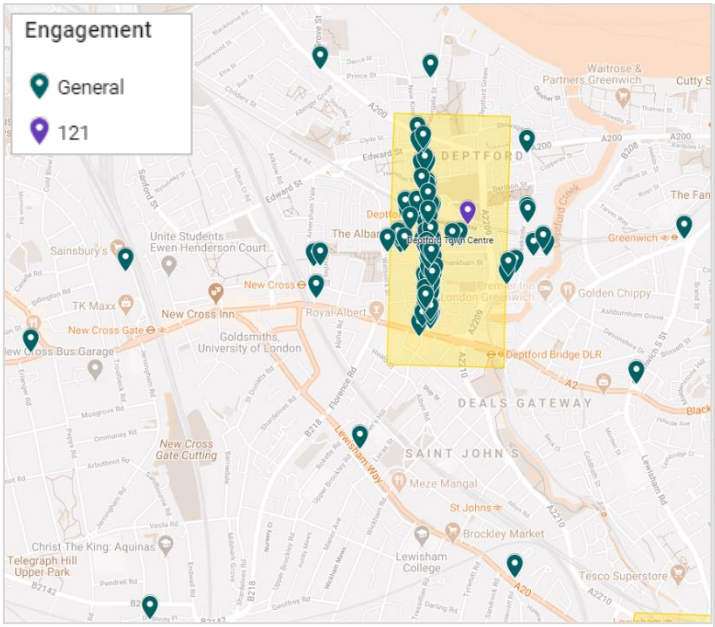


Figure 42. Map of Deptford Clean Air Village and overview of the engagement that took place.

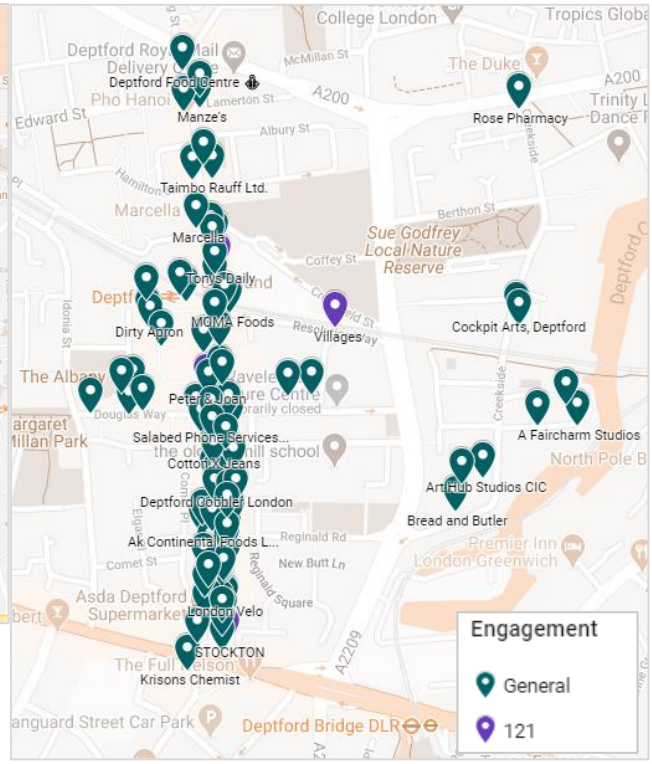


Figure 41. Map of engagement along Deptford High Street in more detail.

Local engagement

CRP engaged with over 75 businesses in Deptford by conducting a survey, visiting some more than once, including those along the High Street, Creekside and Deptford Market Yard. 26 of the 75 businesses completed the initial interest survey. During business engagement, CRP asked if a cargo bike (bespoke, shared, ownership) would be useful for deliveries, as well as frequency and timings of any demand in usage. Businesses were also asked if they were interested in trialling an electric vehicle or had any need in a shared electric vehicle. Information was collected about their main suppliers, and interest in the concept of a consolidation hub. The survey information was collated to find the best solution for the area. Some businesses included in the survey were multi-tenanted, such as Cockpit Arts and Art Hub Studios.

A challenge found in Deptford, echoed from some villages in CAV1, was that there is no established business community group or forum, or BID. It therefore proved more difficult to persuade engaged businesses to attend workshops. Business engagement through walking into shops and talking to market traders was generally the best approach.

Workshop summary

The CAV2 workshop was held at London Velo, a cycling repair shop and café in Deptford. London Borough of Lewisham were keen to explore and promote cargo bikes in Deptford. Five businesses that had expressed an

interest in a cargo bike scheme in the survey were invited to the workshop at London Velo, where an eco**fleet** cargo bike was showcased.

Table 23. Organisations that attended the CAV2 workshop in Deptford.

	Organisation
1	London Velo
2	London Borough of Lewisham
3	Eco**fleet**

1-2-1 business engagement

CRP undertook 6 1-2-1 face-to-face meetings in Deptford.

Table 24. 1-2-1 meetings in Deptford.

	Organisation
1	Villages Brewery
2	Peter and Joan
3	London Velo
4	Bar Stockton
5	Tony's Daily
6	Phone Service Ltd

Additional engagement to note:

Number of businesses	Engagement
42	A second round of engagement took place once a solution involving cargo bike deliveries had been agreed on. CRP showcased an eco**fleet** cargo bike to businesses, including the market traders: they were also able to meet the rider. 11 of these businesses were interested in using the bike and completed the sign-up survey.

Local solution

Initial research in Deptford showed that five businesses (Cockpit Arts, Phone Service Ltd, Tony's Daily, London Velo, Bread and Butler) were interested in using a cargo bike service. Tony's Daily used a car regularly, therefore a cargo bike service would reduce emissions by replacing those journeys with a zero-emission mode. Other businesses surveyed often used a taxi to pick up deliveries. The cargo bike would therefore reduce such journeys too: reducing congestion and pollution.

CRP contacted seven cargo bike providers, with hubs across London, and the ability to deliver London-wide, to find a suitable provider to work with in Deptford. The cargo bike provider chosen was eco**fleet**, a reliable, quick and ethical cargo bike courier service. eco**fleet**, a start up with capacity and enthusiasm, already delivered to the Deptford area, and were keen to be involved in the scheme. Their bikes came with highly trained riders.

London Borough of Lewisham were keen to experiment and introduce a cargo bike scheme in Deptford as this pilot would influence their Liveable Neighbourhood project.

Implementation

The results of the business engagement were presented to London Borough of Lewisham in November 2019. It was agreed that a cargo bike scheme would be introduced in February 2020, due to last for eight weeks. This time period was chosen as it tied in with the end of the CAV2 project. The feedback from the scheme would feed into the Deptford Liveable Neighbourhood plans and would promote long-term behavioural

change amongst the business community around cleaner transport modes. Additionally, as cargo bikes were underrepresented in Lewisham, raising awareness of their load capacity and mileage would encourage further behaviour change.

It was determined that businesses interested in using the cargo bike would, on average, use the bike 12 times per week. The journeys were estimated to be short (within a one-mile radius of Deptford High Street). The scheme would offer ten hours per week to businesses collectively for deliveries/collections of stock/products.

Initially, two-hour time slots on agreed days were decided upon. CRP promoted the cargo bike scheme leading up to the launch. 45 businesses saw the cargo bike and of them, 11 showed an interest in using the cargo bike scheme by completing a new survey about their intended usage.

One business used the cargo bike regularly: Lomond Coffee, located at Deptford Market Yard. They used the bike and rider for a regular delivery of their coffee beans across London. Lomond Coffee usually used a car courier service, so each of these journeys was replaced by a zero-emission vehicle. Only one business used the scheme due to the difficulty in arranging hours with businesses. All businesses who completed the survey, showing their interest in signing up to the scheme, were contacted, however they could commit to specific hours for cargo bike use. eco**fleet** require specific hours and drop off points for their deliveries, for the best use of the rider's time. The nature of the trial was quite a structured time frame for businesses to use the service. This was a challenge as businesses did not have regular delivery to work with, and often businesses asked to use the bike without notice, wanting the service to be on demand.

Five weeks into the scheme, the COVID-19 lockdown was announced. Shortly after this, eco**fleet** closed down their operations due to low demand and to protect their employees from the virus. The cargo bike scheme was put on hold. When eco**fleet** were considering restarting their operations, CRP contacted ten local pharmacies and food banks to see whether it would be helpful to use the hours for the delivery of essential medicines and food for the vulnerable and isolated. Though four pharmacies said over the phone that they were interested in using the cargo bike, this did not materialise into enough of a commitment to reinstate the scheme. CRP kept London Borough of Lewisham and eco**fleet** up to date on developments. 63 hours remain to be used and can be used as part of CAV3.

"We've used ecofleet for deliveries across London and found the service to be very friendly, professional and easy to use. The deliveries were very efficient with excellent tracking, and it feels good to know we can offer delivery of our product using an environmentally friendly service. Will definitely be using ecofleet again and have already recommended it to other businesses."

Hayley Bryant, Lomond Coffee.

Local communications

Deptford business engagement and solution implementation were supported by a range of local communications. Tweets about the cargo bike scheme went out routinely, showing CRP's engagement and displaying a survey link so that businesses could express their interest in using the cargo bike. Local Councillors were also highly supportive of the initiative (see Figure 43. Local Councillor tweet about the cargo bike scheme.Figure 43).

Figure 43. Local Councillor tweet about the cargo bike scheme.

Impact

Based on the usage of the cargo-bike during the first five weeks of the scheme, the following emissions savings are projected for the hours that remain. This assumes a total of four businesses regularly using the service.

Projected emissions saving (Remaining hours of CAV2 scheme)			
NOX (g)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
266.71	**13.59**	**24.73**	**139.50**

If this translates into sustained behaviour change and continued use of cargo-bikes, the following emission saving for 2020-21 has been projected.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
2.22	**113.28**	**206.08**	**1,162.47**

Main achievements

Awareness of cargo bikes in Deptford has increased and the promotion of these zero-emission vehicles encourages their future uptake.

The feedback from extensive business engagement and challenges that came from the cargo bike scheme will help steer London Borough of Lewisham's Liveable Neighbourhood project in Deptford, as the plan is to implement and encourage cargo bike use in the area.

4.1.11. Lewisham – Lewisham High Street

Background

The Lewisham Town Centre 'village' extends from Lewisham train station to Catford (see Figure 44), and roughly follows the route of Lewisham High Street, part of the A21, a busy trunk road connecting London with commuter towns in the South of England. This village spans over 2km in length, and covers a wide variety of retail, including an historic street market, a small number of bars and restaurants as well as an indoor shopping centre with over 65 shops. The NHS Trust University Hospital Lewisham is also located within this region.

The area is currently served by 23 TfL bus routes. The Lewisham to Catford Low Emission Bus Zone has been in place since April 2019, as part of which TfL have reported a 90% reduction in NOx emissions along this route[1]. From October 2021, the Ultra-Low Emission Zone (ULEZ) will be expanded to include this area and is expected to have a significant impact on businesses whose vehicles are not eligible.

Engagement as part of CAV1 identified pockets of businesses where deliveries/servicing trips are highest, and congestion builds up. The market is linked to a significant number of van movements. Shared storage space, the shared use of a low emission van and other ideas were also being explored as part of CAV1.

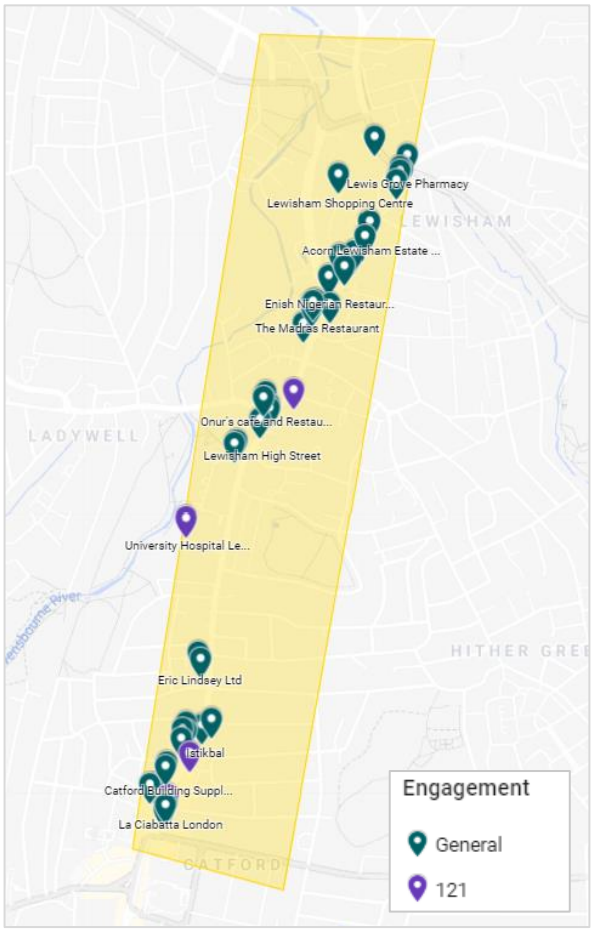


Figure 44. Map of Lewisham Town Centre Clean Air Village and engagement that took place.

Local engagement

Following on from the first year of the project, CAV2 engagement aimed to explore the following concepts with local businesses:

- interest in a ***shared cargo-bike*** for making local deliveries;
- interest in a ***shared electric vehicle scheme***.

Surveys and data collection:

Seven visits to the area were conducted by CRP between July 2019 and January 2020. The survey used covered the following topics:

1. **Cargo-bikes** – *Would you be interested in a shared cargo-bike?*
   - Type of scheme they would be interested in e.g. owning a cargo-bike, sharing with businesses, or using a bespoke delivery service.
   - How often, when and what they would use a cargo-bike for.
2. **Shared Electric Vehicles (EVs)** – *Would a shared EV scheme work for their business?*
   - What size vehicle would they require.
   - How often, when and what they would use a shared EV for.

[1] https://www.london.gov.uk/WHAT-WE-DO/environment/environment-publications/low-emission-bus-zones-evaluation-report

Those surveyed were also asked about their existing vehicle(s) where applicable, and whether they would be interested in trialling an EV.

Summary of information gathered:
A total of **41 businesses** were engaged with during visits to the area, 16 of which completed the survey in full. Only two businesses expressed an interest in a cargo-bike service (see left-side of Figure 45 – please note, respondents could select more than one option). One business reported that they currently hire a taxi to do their shopping, therefore using a cargo-bike to go to and from wholesalers would generate an emission saving. Many survey respondents were unfamiliar with the concept of a cargo-bike altogether. Once informed, their size and maximum load were viewed as a drawback, with these concerns often supported by an opposition to cycling in general, perhaps out of personal preference or due to fears around safety. Unlike other areas of inner London, cargo-bikes have yet to establish a significant presence in Lewisham. It is likely this serves to encourage the view from businesses that cargo-bikes are not a realistic alternative to motor vehicles.

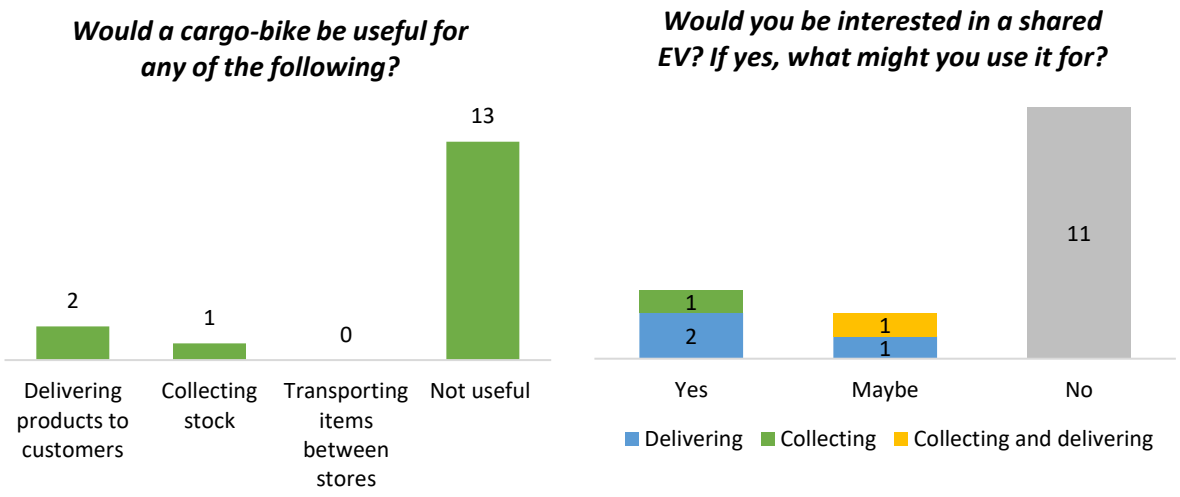


Figure 45. Summary of data collected from survey.

Five businesses responded 'yes' or 'maybe' to interest in a shared EV (see right-side of Figure 45). Reservations from businesses could be attributed to the existing ownership of vans and cars, often used as private vehicles to get to and from work, and a possible detachment from the impacts likely to be incurred by the expansion of the ULEZ. At the time of engagement (Summer-Autumn 2019), ULEZ expansion into this area was almost two years away. The size of this village area, and the businesses represented within, do not lend themselves naturally to a shared vehicle scheme. There is no obvious 'hub' location to host a vehicle, with businesses at the Catford end of Lewisham High Street a substantial distance from those in the town centre.

Since initial business engagement did not generate a clear direction, further research was conducted by CRP to explore potential alternative solutions. These are discussed below in more detail. CRP first met with the **University Hospital Lewisham (UHL)** at the start of CAV2, to discuss their existing deliveries and potential involvement with CAV2. A second meeting, that brought together the Procurement and Emergency Planning Departments from UHL, explored:

- ***Potential to use a cargo-bike to carry out pathology trips between Lewisham and Greenwich Hospitals***. At the time, this was already being carried out between Guy's and St. Thomas' Hospitals – initially as a 6-month trial, subsequently rolled out as a permanent solution. Read more about this in a case study produced by TfL here.

- ***Procurement of fully electric shuttle buses between Lewisham and Greenwich Hospitals***. The existing contract was up for renewal, presenting the opportunity to opt for cleaner vehicles.

Using data obtained from UHL, it is estimated the two shuttle buses, which transport staff between these two hospital sites, cover up to *62,400 miles per year*, carrying out 24 trips a day, five days a week. Unfortunately, despite initial support, it was very difficult for CRP to obtain the necessary information from contacts within the hospital in order to progress these concepts towards a solution. While significant effort was made to engage with the hospital, it was ultimately concluded to focus on alternative activities.

CRP also contacted and visited **12 local estate agents** to investigate interest in reducing private vehicle ownership in favour of car club vehicles. This was prompted by a case study produced by Zipcar with Knight Frank, an independent property agent, which claimed '*replacement of expensed private mileage with Zipcar reduced cost by 50%*'. In addition to cost savings, the transition to car club vehicles can reduce emissions as employees are discouraged from driving their company vehicles to work. While there was some support for this concept during engagement, there were ***concerns about the local transport links***. Many employees felt this solution, while suited to inner London, would not be replicable in Lewisham due to the reliance on cars, particularly for those commuting over a large distance. As experienced elsewhere, it was also a challenge to engage with the decision makers, with many estate agents being part of larger firms. CRP attempted to host a workshop inviting estate agents to discuss alternatives to private hire vehicles, however we received no local interest.

1-2-1 business engagement

Table 25 lists the businesses with which 1-2-1s took place in Lewisham Town Centre. It was anticipated, following a workshop due to be held in March 2020 (discussed below), further 1-2-1 meetings would take place to discuss business' involvement in the solution for this village. Unfortunately, both the workshop and any potential 1-2-1s were impacted by the COVID-19 lockdown.

Table 25. 1-2-1 meetings in Lewisham Town Centre.

	Organisation
1	Catford Food Centre
2	La Ciabatta
3	University Hospital Lewisham
4	Rushey Green Time Bank

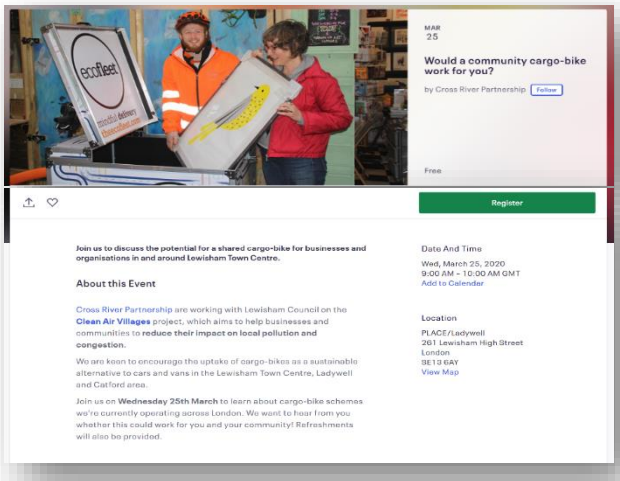


Figure 46. Eventbrite page for the proposed CAV2 Lewisham workshop.

Workshop summary

Following a 1-2-1 meeting with Rushey Green Time Bank, plans were put in place to host a workshop on 25th March 2020 to explore interest from *Lewisham Local* businesses in a shared community cargo-bike. An Eventbrite page, created to promote this, can be seen in **Error! Reference source not found.**. Unfortunately, i n light of social distancing restrictions related to COVID-19, this event was cancelled and unable to be rescheduled before the conclusion of CAV2.

Local solution

Following a 1-2-1 meeting with Rushey Green Time Bank (RGTB), a local Lewisham charity that facilitate the exchange of skills and experience within the community, CRP began exploring options for the rental or purchase of a cargo-bike. RGTB were keen to own a cargo-bike for their projects, such as FoodCycle Lewisham which offers free community meals cooked using surplus food. When not needed internally, RGTB hoped to offer this resource to local businesses and community groups.

Implementation

While an initial workshop to explore interest in a community cargo-bike was cancelled due to the COVID-19 lockdown, the need for this resource was as vital as ever. In the early weeks of lockdown, RGTB were contacted by an increasing number of charities and foodbanks in need of support to deliver to vulnerable people. CRP conducted research into the rental or purchase of a cargo-bike, obtaining quotes and lead-times from various providers. Lewisham Council, with Sustrans, were able to identify 'emergency' funding for the purchase of an electrically assisted cargo-bike. The chosen bike from CarryMe Bikes was delivered to RGTB on the 8th April and has since been on loan to King's Church who are using this to deliver food parcels to vulnerable adults who are self-isolating (Figure 48). CRP continue to provide technical support, such as securing insurance for the bike, using expertise established from experience operating cargo-bike schemes.

Local communications

CRP promoted the project via social media and the distribution of flyers and postcards (see Figure 47). Figure 48 shows a tweet published by RGTB promoting use of the cargo-bike by King's Church during lockdown.

Figure 47. Postcard promoting the ULES Directory to businesses in Lewisham Town Centre.

Figure 48. Tweet from RGTB promoting use of the cargo-bike.

Impact

If the shared cargo-bike were to be used by just 5 local businesses or organisations, covering 5km each per week, the potential emission saving for 2020-21 would be:

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
0.45	**22.97**	**41.79**	**235.74**

Experience in other areas, such as in Streatham, has shown that where managed successfully, and ideally with a rider in place, there is potential for a cargo-bike scheme to cover over 250km per week.

Main achievements

CAV2 supported the purchase of a **cargo-bike for Rushey Green Time Bank** which has been used by charities during Covid-19 lockdown and **will continue to support businesses and communities**.

4.1.12. Royal Borough of Kensington and Chelsea – Earl's Court

Background

Earl's Court is a mix of residential properties, independent traders, hotels and retail chains. The area's central location is one of the main interchanges for freight vehicle travelling through into central London and has a high footfall of visitors visiting the museums along Cromwell Road. The GLA air quality focus area includes the A3220 which is a congested artillery road which includes Crowell Road to the north and south to the River. A Realtime NO2 analyser is located on Earl's Court Road and indicates that the annual mean objective is exceeded at this location.

The area has been highlighted in the press in recent years for being the worst area in London for air pollution in turn creating a link to dangerous health concerns for those in the area. It is important to note even though the area is highly densely occupied by businesses it is not served by a business improvement district unlike some other areas in the Clean Air Villages project. Positive outcomes of the first year of Clean Air Villages has led to the council creating a local business forum to better understand the commercial needs for this local area. There were big changes in the local stakeholders during this year of the project including a long-term stakeholder CAPCO selling their land asset.

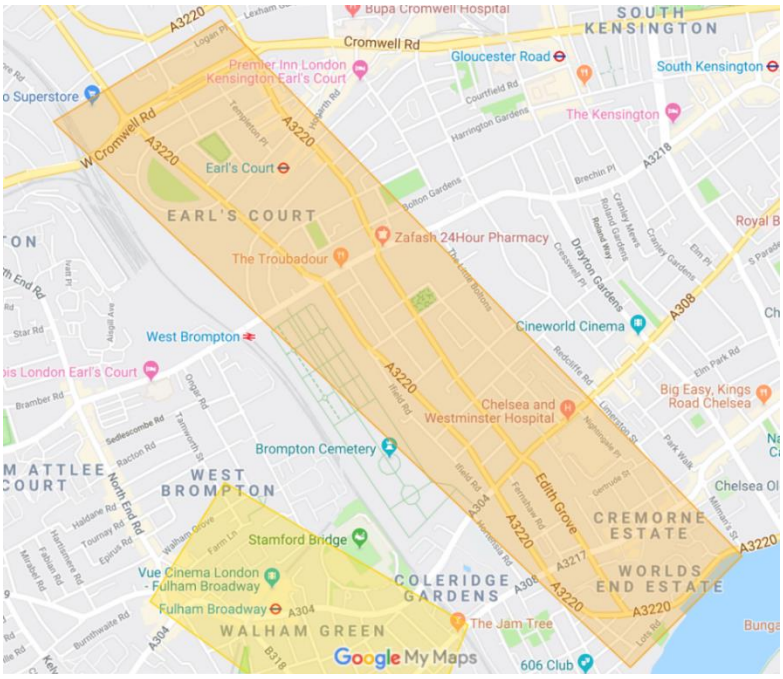


Figure 49. Map to show Earl's Court Air Quality Focus Area.

Figure 50. Earls Court Road. Source: Google Maps.

Local engagement

In the second year of the project, CRP built on the engagement from the forum to implement a physical solution to change ***last mile delivery methods, examples of cargo bike schemes and shared EVs were suggested.*** At the start of the project, a survey was undertaken in the area, CRP aimed to understand which solutions would be of interest to most businesses in the area. In conjunction with the RBKC economy teams' consultants (the Means), CRP promoted the survey during further engagement with ***75 businesses interviewed about the economic development*** of Earls Court, ***46% scored air quality*** as an issue for the area. As part of this engagement, the directory postcard and information about the Clean Air Villages project was

distributed and those who wanted to take part in CAV were directed to CRP. CRP followed ***up with 20 businesses*** who wanted to know more about the project.

The survey demonstrated that there were many priorities for businesses including; lack of investment in the area since the conference centre had been demolished. Further shared statistics came from the engagement:

- ***61%*** of those interviewed said they thought that initiatives to improve air quality would be helpful.
- ***62% thought more physical greening projects were important***.
- There was significant overlap so that, when added together as interlinked issues, ***63% thought it was important to improve air quality or greening.***

The CRP team ***led nine days of engagement in the area***, which included walk-ins to businesses on the high street to discuss deliveries.

- ***A total of 26 businesses were engaged with***, including discussing the local Earls Court directory postcard and following up on email with the survey link to understand what delivery solution they would be interested in.
- ***11 businesses answered the survey***, the majority were hotels in the area and there was potential interest in a shared EV.

One key output of the survey is that many of the businesses do not have control over the deliveries coming to their site and there is a minority that own their own fleet/vehicle.

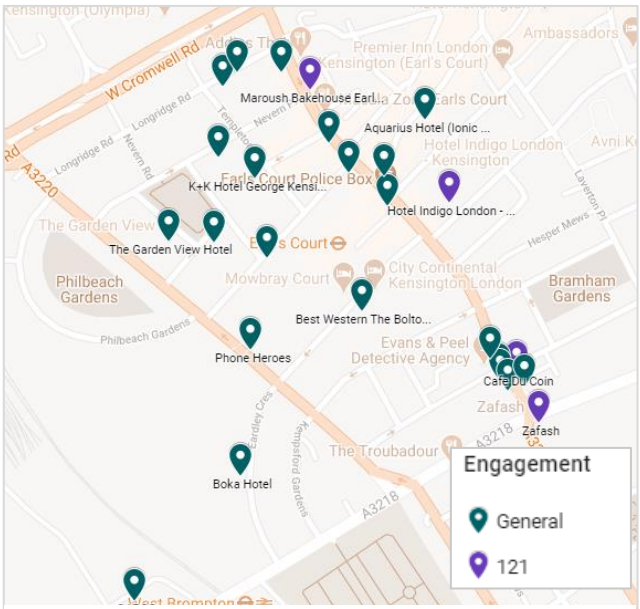


Figure 51. Map of engagement in Earl's Court.

Challenges that boutique and smaller hotels faced when it came to engaging with the project was their availability to attend workshops. ***Focus was shifted to face-to-face engagement or phone calls to gather information***. Earl's Court Road is dominated by retail chain stores, in which store managers do not have control over their delivery patterns as this is controlled by head office logistics departments. The main points from the engagement are as follows:

- Larger retail chains have deliveries planned for once per week and head office plan the most efficient routing to deliver to several stores in London.
- Businesses are aware of the concerns about air quality in relation to Earls Court Road, but understand that it is a main flow-through road.
- Lack of loading bay space is a concern for most deliveries that take place here and therefore fines for illegal parking/loading is common.
- Lack of charging infrastructure in the area.
- Clear concerns remain about the number of waste operators in the area.

Workshop summary

The workshop in Earls Court was hosted in the My Earls Court development offices on 20th November 2019. Local stakeholders were invited to discuss the council's waste service and Transport for London were invited to host an interactive approach on shared deliveries.

CRP also attended the Earls Court business forum on 21st January 2020 in which a range of attendees were present, including council officers, councillors and businesses from the Earls court area. ***CRP led an***

interactive workshop on the environment and followed up with face-to-face meetings with businesses from the workshop.

Table 26. Organisations in attendance at the CAV2 Earl's Court workshop.

	Organisation
1	RBKC – Waste team
2	TfL

1-2-1 business engagement

Table 27. 1-2-1 meetings in Earl's Court.

	Organisation
1	Indigo Hotel
2	Maroush Bakehouse
3	Café Du Coin
4	Zafash Pharmacy

Local solution

After much discussion with businesses, the solution to be implemented was to promote the council's ***bike leasing scheme "Try Before You Buy"***. The scheme operated by Pedal My Wheels began ***in 2017 in the Royal Borough of Kensington and Chelsea and they were the first borough in London to implement such an initiative.*** A business in the borough can apply for a bike or cargo bike to lease on a monthly payment plan as part of the scheme. The bike can be used for both ***personal use and for business deliveries*** around the local area. The poster below for Earls Court was created with Pedal My Wheels, to showcase the advantages of loaning a bike enabling businesses to try a new method of delivery rather than the barrier of investing in a cargo bike with an expensive upfront cost. The flexibility of the lease scheme gives the opportunity for a business to find the right bike for them: ***including regular maintenance, servicing and training.***

Figure 52. Flyer to promote Peddle My Wheels to businesses in Earl's Court.

Implementation

CRP would have conducted further face-to-face engagement with businesses in Earls Court, to promote sign up of the leasing scheme. CRP ordered ***150 leaflets to be disseminated during March 2020***, due to the COVID-19 lockdown, the promotion of the scheme became virtual.

As the Clean Air Villages project was coming to an end, CRP sent on marketing materials to the economy team at the council and to the Earls Court business forum to highlight the initiative to businesses in the area. The council air quality team have ***150 leaflets to promote the scheme*** to businesses who may be interested.

A small coffee shop Café du Coin was a business who regularly engaged with the CRP team, were interested in replacing their ***vehicle with a hybrid/electric and creating an in-house cargo bike delivery service for the clients they had in the area***. CRP introduced the scheme to the Café du Coin and introduced them to an EV provider to gain a better understanding of the vehicle that would be a best switch for their needs.

Local communications

Figure 54. Earl's Court business forum opinion survey created by the RBKC including the Clean Air Villages project.

Figure 53. Directory postcard used for Communications in the Earl's Court village

Impact

There is potential for the promotion of cargo-bikes among local businesses to generate the following projected emissions savings for 2020-21. These calculations were based on the information provided by Café du Coin and extended to account for three further local businesses switching to cargo-bike deliveries.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
0.90	**45.94**	**83.58**	**471.48**

Main achievements

This CAV2 local solution enabled businesses to take ***advantage of an ongoing cargo bike scheme*** and to spread the cost of a cargo bike over time. This solution enables a 'try before you buy' for businesses and includes training for staff.

4.1.13. Royal Borough of Kensington and Chelsea – Ladbroke Grove

Background

Ladbroke Grove, home to Portobello Road Market, as well as a wealth of independent shops, cafes and bars, is a vibrant and diverse neighbourhood with an active night-time economy. The Westway flyover, a 2.5-mile-long elevated dual carriageway, cuts across this area, bringing noise and pollution associated with the 96,000 vehicles that use it each day[2]. The Ladbroke Grove village (shown in Figure 56) was part of the first year of Clean Air Villages (CAV1). Engagement as part of CAV1, identified that market storage is very limited and increasing it would reduce the number of local van movements. A cargo-bike was also piloted with local organisation, Westway Trust, to reduce personal staff deliveries arriving at their site under the Westway.

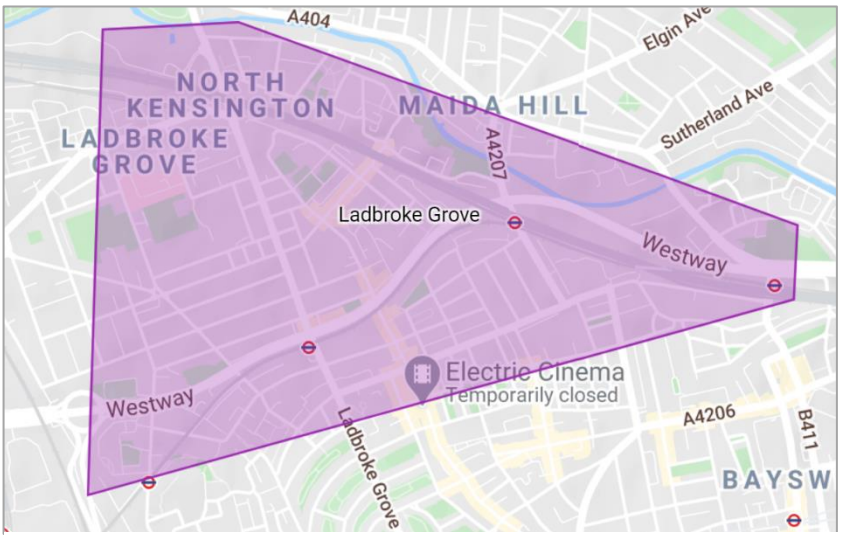


Figure 56. Map of Ladbroke Grove Air Quality Focus Area.

Figure 55. Picture taken during engagement visit (Thursday 3rd October 2019).

Local engagement

Following on from the first year of the project, CAV2 engagement aimed to explore the following:

- Interest from businesses in a *shared cargo-bike* and rider for making local deliveries,
- *Promotion of electric vehicles* to market traders,
- *Potential local storage spaces* for businesses/market traders to reduce frequency of deliveries.

Surveys and data collection:

Several visits to the area were conducted by CRP between August and December 2019. The survey used covered: interest in a shared **cargo-bike**; incoming deliveries and **suppliers**. Those surveyed were also asked about their vehicle(s) where applicable, and whether they would be interested in trialling an EV.

Market traders were engaged with separately, with the help of RBKC Markets Manager, through a one-off visit to Portobello and Golborne Markets in November 2019. Ten market traders were informally interviewed, spanning a range of sectors, from fruit & vegetables to vintage clothing. These conversations explored: their current vehicles; interest in EVs and/or shared vehicles; and issues around local storage space.

Summary of information gathered:

[2] https://tfl.gov.uk/travel-information/improvements-and-projects/a40-westway

A total of **64 businesses and traders were engaged with**. Of these, 13 businesses completed the survey. It is worth noting, market traders were not asked to complete the survey. **Six businesses expressed an interest in a cargo-bike scheme**. The most popular type of scheme, selected by all six, was a bespoke delivery service (see Figure 58 – please note, respondents could select more than one option). However, one business stressed this would need to be competitive with existing non-cargo-bike courier services they were using. All interested businesses anticipated using this for deliveries to customers, with two also stating this could be used to transfer stock between stores.

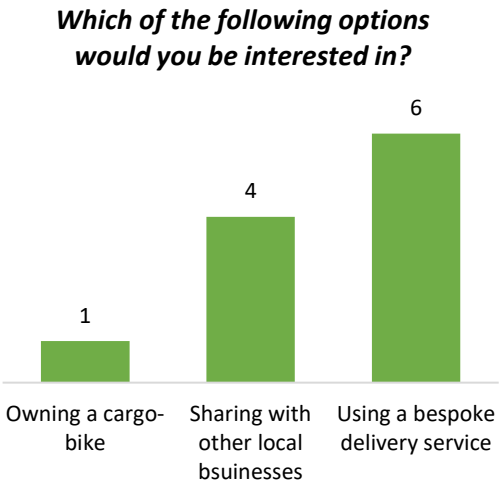


Figure 58. Summary of data collected.

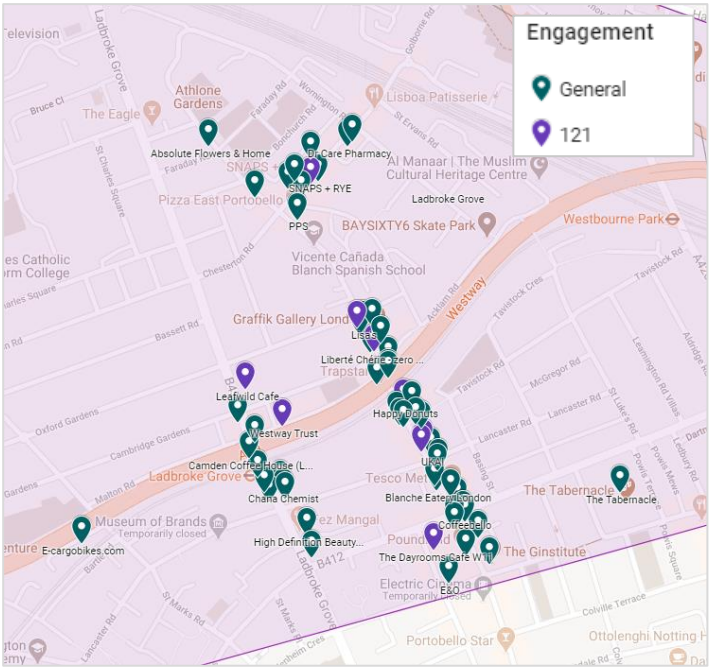


Figure 57. Map of engagement in Ladbroke Grove.

11 businesses stated they receive incoming deliveries, with more than 72% (eight) receiving food and drink deliveries. Seven businesses provided details of suppliers, with 22 different companies being named, and only one supplier (Allan Reeder) appearing more than once.

Engagement with market traders revealed that **9 of 10 market traders owned a non ULEZ-compliant van**. Interest in EVs was mixed, with three traders interested in further information about the trials available (as part of CAV2), while others were strongly opposed to the idea, largely due to the expense. One trader mentioned (via email) that "it will be ***more economic to pay the fine every time*** I move [my van] than to invest in another compliant van".

Issues and challenges faced:

- **Storage** was a consistent issue for market traders, with many using their vehicles as 'moving' storage. This appeared to encourage the high ownership of large vans observed, which provided an ***additional barrier to buying ULEZ compliant vehicles***, due to the high capital costs associated with these larger vans.
- Storage was also observed as an issue among local businesses, with lack of space encouraging a ***high frequency of incoming deliveries***.

Several attempts were made by CRP to explore storage options nearby, including the underutilised Acklam Garages on the Swinbrook Estate. In order to finalise any alternative storage solutions outside the lifetime of

the CAV2 project, the appropriate internal department at the Royal Borough of Kensington & Chelsea would need to be fully engaged with.

1-2-1 business engagement

Table 28 lists the businesses with which 1-2-1s took place in Ladbroke Grove. In nearly all cases, these businesses were engaged with multiple times throughout the project.

Table 28. 1-2-1 meetings in Ladbroke Grove.

Organisation	
Westway Trust	Happy Donuts
Planet Minimal	Leafwild Cafe
Okasan Sushi	Luna Y Sol
Real Ale	The Olive Bar
The Dayrooms Cafe W11	

Workshop summary

A workshop was held on 13th November 2019 at the Street Trading Office to further explore issues faced by market traders. It was hoped this would bring together a small group of traders to collectively discuss the project. The workshop was promoted in person on a market day and via RBKC Markets monthly trader newsletter (see flyer shown in Figure 60). Unfortunately, only one trader attended the workshop, which was therefore treated as a 1-2-1 meeting. CRP received feedback that traders struggled to leave their stalls to attend a workshop and when not working they live out of the area. Taking this on board, further engagement was carried out via direct visits to individual stalls.

CRP representatives also attended and presented at the joint **Colville Community Forum and Market Streets Action Group meeting** on 10th December 2019 at the Portobello Court Clubroom. This meeting was attended by both local businesses and residents, as well as Councillors, and was focused on air quality and environmental issues. Valuable insights gained during this meeting included:

- *Food deliveries from third party couriers* were viewed as the biggest issue in the area.
- *Many residents were unfamiliar with cargo-bikes*, perhaps calling for raising of awareness of what these are, what size and how they can be used as an alternative to cars and vans.
- Both traders and residents were generally in favour of *stricter and more permanent road closures* along Portobello Road.

Despite their ownership of larger vehicles, mileage covered in the local area by market traders is in fact relatively low, since they rarely make deliveries. It was decided, with the Council, a local solution should continue to focus on non-market businesses, focusing on the large number of food businesses in the area. RBKC decided to proceed with implementing a cargo-bike scheme with a dedicated rider. Working with a cargo-bike provider would help to minimise issues finding employees to ride the bike, as well as avoiding the need for rider training, insurance, a booking system, storage and maintenance. CRP requested quotes from three cargo-bike companies for a total of 80 hours, based on ten hours per week for eight weeks. **E-cargobikes.com** were successfully selected by RBKC to complete this work, supported by their existing links within the area, being based under the Westway themselves.

Implementation

In February 2020, supported by E-cargobikes, CRP began promotion of the scheme to businesses in the area. Five different businesses used the service, with 209 deliveries being made in total across the ten weeks. Figure 59 shows how use of the scheme steadily grew as CRP liaised with businesses to establish regular and convenient delivery slots. By week six, two local pharmacies were using the service every weekday afternoon to deliver prescriptions to residents. Following the commencement of COVID-19 lockdown restrictions, the

ten hours per week were in full use by the two pharmacies and a local community organisation Bay20 delivering food to **vulnerable people.**

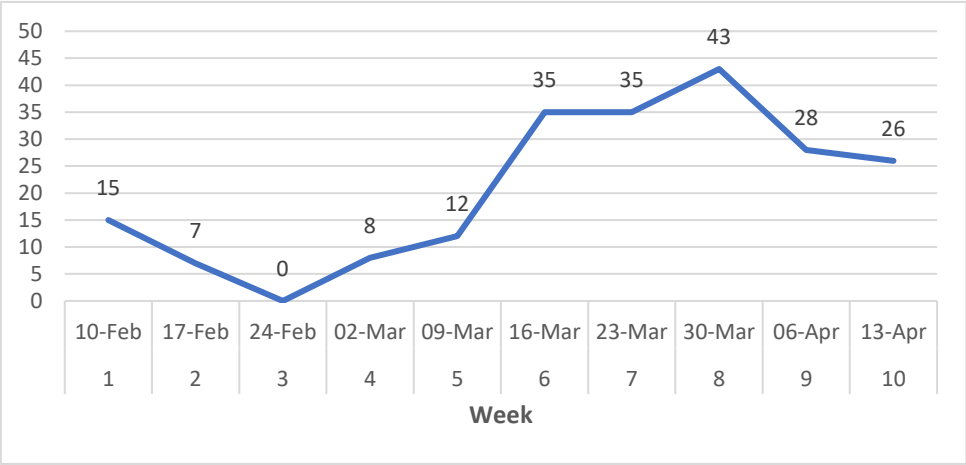


Figure 59. Number of deliveries completed each week during the cargo-bike scheme.

Recognising the significance of this scheme, RBKC Council were able to secure funding to ***extend this scheme for a minimum of eight weeks*. This free service was extended to include five further pharmacies in the area, with a total of 31 hours per week available. The cargo-bike scheme has received a great amount of positive feedback, as shown below:**

"We're making up to 27 deliveries a day to individuals and families of different sizes. We have our own vehicles too, but the bikes have been a real help on our busiest days."
Fiona Doherty, Community Development Director at Bay20.

"Originally this was about cleaner air… With the coronavirus pandemic it has taken on another important purpose helping residents get food and medicine deliveries to their door."
Cllr Cem Kemahli, Lead Member for Environment (RBKC).

Local communications

Figure 61 shows the flyer used to promote the CAV2 workshop in the Ladbroke Grove area. Having launched the scheme, CRP and

Figure 60. Tweet promoting the cargo-bike.

Figure 61. Flyer promoting the market trader workshop.

partners were active on social media promoting the cargo-bike use by local businesses. See Figure 60 for a sample of communications, and a link here to a video posted on Twitter.

Impact

Based on delivery data collected during the ten hours per week scheme, the potential emissions saving by expanding this to additional pharmacies and businesses, with over 30 hours per week, is projected for 2020-21 as follows.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
1.50	**76.36**	**138.92**	**783.59**

Main achievements

CAV2 successfully introduced cargo-bikes as a cleaner and **long-term delivery solution for pharmacies**. Our work also provided **valuable support to businesses and the community during Covid-19 lockdown**.

4.1.14. Wandsworth – Tooting

Background

Tooting is dominated by micro businesses and restaurants, with two indoor markets alongside its busy high-street. Its location is served by a range of different transport modes, tube, bus and notably the A24, a red route linking to central London. The focus area has been chosen due to the impact of high use of private cars, vans and HGVs, contributing to dangerous air pollution levels.

The area has a Town Centre Manager and Group that regularly meet to discuss business and community needs with council representatives. In 2018, a green courier scheme was highlighted as an action for the Tooting High Street Air Quality Action Plan. At the start of CAV2 the council had Local Implementation Plan (LIP) funding to develop a green courier scheme. Some preliminary business engagement had taken place. CRP would continue this work and develop a sustainable scheme.

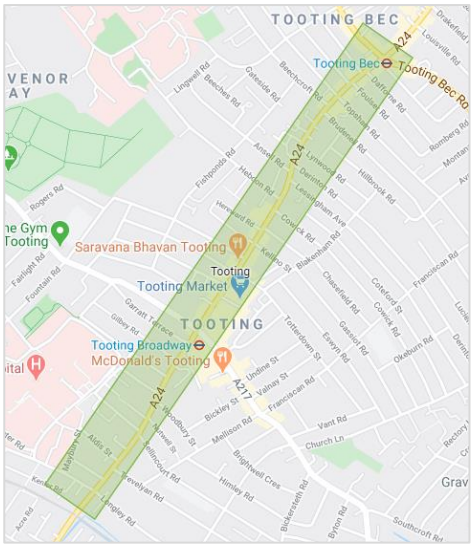


Figure 62. Map to show the boundaries of the Air Quality Focus Area.

Local engagement

Tooting's Town Centre Group is made up of business owners who have been trading in the area for years. Concerns over local AQ have been voiced repeatedly. CRP worked closely with the Town Centre Manager (TCM), who organised the Group. The support from the TCM led to introductions to local businesses, including Tooting Market (an indoor market).

CRP met with additional businesses along the high-street, which included small businesses (food shops, pharmacies and Asian clothing stores). On these engagement days, the team would approach shop owners in person to discuss the project. This took place in order to gather further feedback about the green courier initiative.

CRP **engaged with 88 businesses** (see Figure 63). Surveys took place and were also left to be completed later. CRP also met St George's Hospital regularly about how they could be involved in the scheme. The hospital was keen to have a positive impact on air quality in relation to the health of both patients, visitors and employees. Businesses were asked what type of cargo bike delivery service would work for them: whether the businesses wanted to provide an employee to ride the bike or use a third-party operator. The overwhelming response was that the small businesses ***did not have the resources to ride a bike themselves***. A third-party operator would therefore be required.

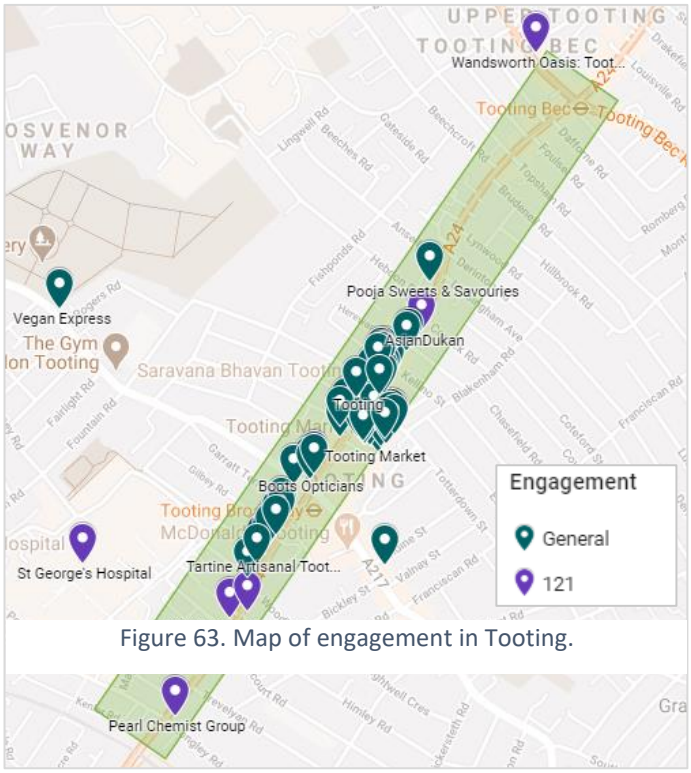


Figure 63. Map of engagement in Tooting.

1-2-1 business engagement

CRP undertook 16 1-2-1 face-to-face meetings in Tooting.

Table 29. 1-2-1 meetings in the Tooting village.

Organisation			
1	Asian Dukan	**9**	Love Dhala
2	Blessy Bakes	**10**	Patel Brothers
3	Brickwood	**11**	Pearl Chemist group
4	Café Tartine	**12**	St George's Hospital
5	Carm Jewellery	**13**	Tooting Healthy Streets
6	Chicken Shop	**14**	Tooting Market
7	GDC Paints	**15**	Unwined
8	VPZ	**16**	Wandsworth Oasis

Additional engagement to note:

- 67 businesses were visited regarding a deliveries survey, directory postcards were also distributed.
- 14 businesses answered the deliveries survey online.

Workshop summary

CRP invited all the market traders to a workshop on 15th August 2019 at Tooting Market. They were invited by speaking to them individually and by inviting them to discuss a green courier option for their business. Tooting Market also promoted this via their business community WhatsApp group. The workshop highlighted that small businesses wanted to have a positive impact on air quality but were concerned over costs and how an initiative would be funded.

Table 30. Organisations that attended the CAV2 workshop in Tooting.

Organisation	
1	BYO
2	Blessy Bakes
3	Tooting Market
4	Unwined
5	Tooting Town Centre

Figure 64. The CAV2 workshop was held inside Tooting Market.

Local solution

Following the deliveries research, CRP set about implementing the green courier scheme. Two cargo bike providers were contacted and asked to tender for the scheme. With an initial ten-week scheme being setup; ten hours each week would be collectively available for businesses to use, for free. This included a delivery consolidation option. Eco**fleet** were chosen; a reliable, quick and ethical cargo bike courier service, based in the same borough and located 20 minutes from Tooting. Eco**fleet** attended a Tooting Town Centre Group meeting to meet some of the businesses and to showcase their cargo bikes and answer any questions.

Figure 65. Tooting Town Centre meeting attendees meeting Eco**fleet** 8th October, 2019.

Implementation

Ten businesses had initially expressed an interest in taking part in the scheme. ***The scheme launched on 3rd February with five businesses using the cargo bike (Tooting Pharmacy, Patel Brothers, Unwined, Wandsworth Oasis and Love Art).*** Love Art, a market trader, wanted to consolidate the numerous Amazon packages that they receive, onto one cargo bike delivery to the market. This was trialled twice during the scheme, but then lockdown was enforced. There was a range of businesses, from different sectors involved in the trial. This provided an opportunity to see whether a cargo bike delivery service would work for them.

Businesses were asked to choose ***a two-hour timeslot and a day of preference to use the service.*** The hours were then divided up equally amongst the five businesses. CRP gave eco**fleet** notice of these timeslots and a plan for each week was determined. The scheme was being used to capacity from the moment of its launch. At the end of March 2020, the scheme had to be suspended due to COVID-19. Business operations had changed significantly and eco**fleet** ceased operations due to concerns over the safety of their employees. When eco**fleet** were able to reopen safely, CRP acted quickly to contact organisations in Tooting that the scheme could support.

The final three weeks of the scheme were used by:

- Patel Brothers to deliver food to local care homes;
- Three pharmacies to deliver medication to those isolating or shielding;
- BYO to commence home deliveries of their products (following the closure of Tooting Market).

All deliveries took place within ***a five-mile radius of Tooting, with an average of eight miles ridden over a one-hour period.*** Overall the scheme has achieved ***over 130 deliveries and completed more than 277 miles of low emission miles in the Wandsworth area.***

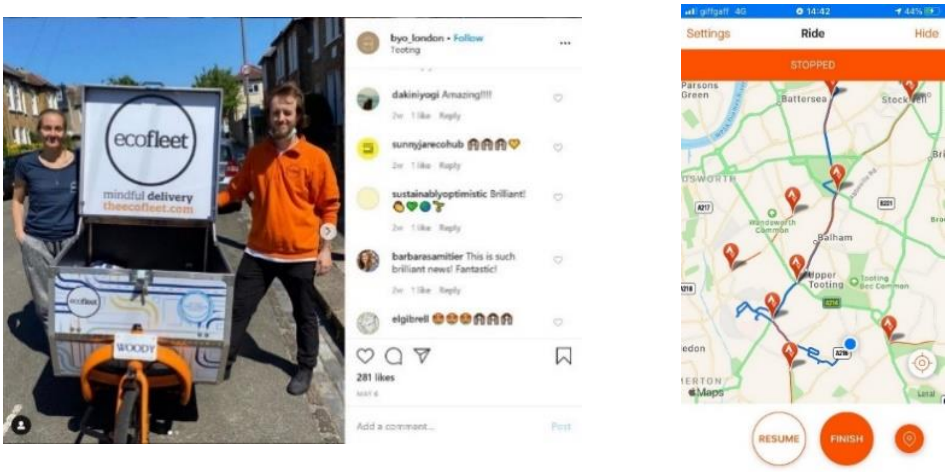


Figure 66. Example of market trader using the service during lockdown includes mapping of the route the rider and promotion on Instagram.

Local communications

Figure 67 shows the launch of the Tooting cargo bike trial via Instagram and two articles were published by the council to showcase the scheme (in table 32). Figure 68 shows the workshop flyer that was given to all the market traders. Figure 69 shows some of the local engagement that took place in Tooting, including town centre meetings and business engagement with market traders.

Figure 68. Flyer of the CAV2 workshop for Tooting Market.

Figure 67. Launch of the Tooting cargo-bike trial.

Table 31. Published articles on the Tooting cargo-bike.

Article title	Publisher	Date	Link
e-cargo bike trial launched in Tooting	London Borough of Wandsworth	5/02/20	https://www.wandsworth.gov.uk/news/february-2020/e-cargo-bike-trial-launches-in-tooting/
e-cargo bike service recruiting after delivery contract win	Nine Elms	21/02/20	https://nineelmslondon.com/news/e-cargo-bike-service-recruiting-after-delivery-contract-win/

Figure 69. Communications on Twitter promoting CAV2 activity in Tooting.

Impact

Based on the estimated total mileage for the scheme, the total emissions avoided have been calculated as follows:

Emissions saving (During 10-week scheme)			
NOX (g)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
202.53	**10.323**	**18.780**	**105.93**

If this translates into sustained behaviour change and continued use of cargo-bikes for deliveries, the projected emissions saving for 2020-21 has been generated.

Projected emissions saving (2020-21)			
NOX (kg)	PM2.5 (g)	PM10 (g)	CO2 (kg)
1.01	51.64	93.95	529.94

Main achievements

CAV2 successfully introduced a cargo bike scheme in Tooting which was highly local: from the provider, and deliveries to the business users. The scheme has demonstrated the breadth of sectors that can use such a scheme successfully. Our work also provided **valuable support to businesses and the community during Covid-19 lockdown**.

4.1.15. Westminster – Covent Garden/Strand

Background

Covent Garden, one of London's most well-known areas, sits at the heart of the West End. The area has a mix of museums, theatres, restaurants, and cafes. Covent Garden is one of the most popular tourist attractions in the world. While a lot of the central area (including the Piazza) is pedestrianised for most of the day, the traffic and congestion around the main roads can be overwhelming. Westminster suffers from the worst air pollution in the country, with almost ten million drivers in London contributing more than half of the deadliest emissions. Air quality has been prioritised in the BID's Strategic Vision study and the area has been classified a Business Low Emission Neighbourhood.

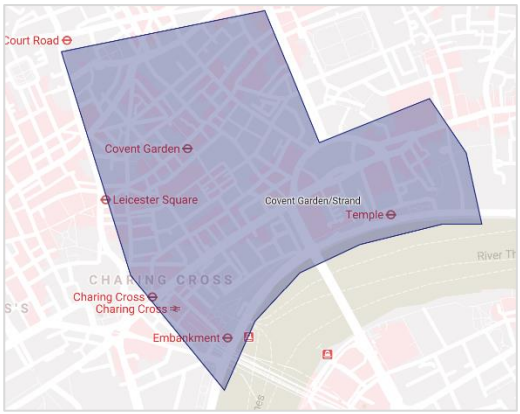


Figure 70. A map to show the Air Quality Focus Area of Covent Garden.

Covent Garden is also associated with the former fruit and vegetable market, which in 1974 relocated to the New Covent Garden Market (NCGM) in Nine Elms. The NCGM is now the largest wholesale fruit, vegetable and flower market in the United Kingdom, with approximately 200 wholesalers.

Local engagement

CRP met with the main landowners CAPCO, Mercers and Shaftesbury, in the area, as well as Northbank BID. CRP and the West End Partnership also met NCGM. CRP conducted an extensive survey of the Food & Beverage (F&B) sector with the support of the landowners and BID.

A considerable amount of time and resources were spent in Covent Garden, with engagement carried out by four CRP team members. CRP surveyed 70 businesses and visited 107 businesses, some more than once. This survey included business details, details of three main suppliers, delivery timings, number of covers, size of establishment and details of waste collectors.

CRP encountered some challenges in data collection, including the fact that ministering surveys was time consuming due to the sheer number of food and beverage establishments in Covent Garden. It was also a challenge to find the right member of staff to complete the survey. It was found that many businesses do not always have accurate data concerning their deliveries, for example there were discrepancies in information provided by the same business when surveyed in-person by the team and when the occasional survey was also completed online.

Workshop summary

Following on from the survey, an AQ workshop took place to explore a consolidation of fruit and vegetables from NCGM to old Covent Garden F&B businesses. It was hosted by Café Pacifico on 15th January 2020. This was attended by eco**fleet** and the project partners, however many of the local food and beverage businesses were unable to attend on the day. Because of this, 1-2-1 meetings were organised with these businesses.

Figure 71. eco**fleet** bike at the Café Pacifico workshop, Covent Garden.

1-2-1 business engagement

13 detailed face-to-face meetings were carried out with Covent Garden businesses, including discussions around changes businesses could make to reduce emissions from deliveries. Recommendations found from the data collection stage were shared, for example, Crème de la Crepe were struggling to store non-perishable items, so the CRP team suggested using the local Transport of London Museum storage, in order to minimise the number of deliveries (knowledge of the storage space had come from a conversation with another business called, Santa Nata). Other suggestions made to businesses included reducing ad hoc deliveries, re-moding and re-timing deliveries.

Table 32. 1-2-1 meetings in the Covent Garden/Strand village.

Organisation			
1	Flesh & Buns	**8**	The Barbary
2	St John Bakery	**9**	Pret A Manger
3	REKKI	**10**	Temper
4	Crème de la Crepe	**11**	Entremettier
5	Café Pacifico	**12**	Hospitality Sourced
6	Arket	**13**	Petersham Nurseries
7	Wildfood Cafe		

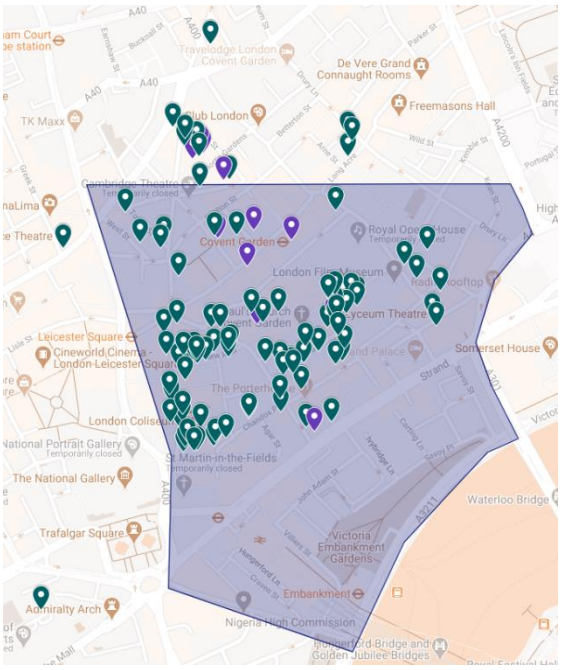


Figure 72. Map of engagement in Covent Garden.

Local solution

Potential solutions considered, included the consolidation of waste management, plus oil management, and setting up a preferred supplier list. Research showed a variety of different waste and recycling collection services (including oil collection) operating in the area, with at least ten mentioned in the surveys. The use of technology, such as the app Rekki, was also discussed. Conversations with stakeholders led CRP to investigate interest in the consolidation of deliveries from NCGM to Covent Garden. CRP was informed that the move of the fruit and vegetables market to NCGM had added to the congestion and pollution in the area due to the sheer number of daily deliveries coming from NCGM to restaurants and cafes in Covent Garden. The number of second and more ad hoc deliveries with smaller quantities (of missing or forgotten items) also compounded the matter.

The solution agreed upon was a 'last mile' consolidation of second deliveries from NCGM using low or zero emission vehicles. This is a feasible solution as traders at NCGM used cargo bikes during the October 2019 Extinction Rebellion protest which blockaded roads into Covent Garden. The last mile company chosen to transport the fruit and vegetables, eco**fleet** is based locally to NCGM. They have experience in delivering fruit and vegetables, and their electrically assisted cargo bikes have a load capacity of 623L, which is around eight boxes/crates of fruit and vegetables. They also have an electric van for larger deliveries.

Implementation

CRP asked the landowners and BID to nominate businesses to participate in the trial. Along with the nominations, survey data was used to identify businesses who were the most eligible for the trial (i.e. receiving deliveries from NCGM). In total, eight businesses were selected to participate in the trial (see Table 33). Businesses 1-4 were keen to participate. Information was gathered from these businesses and their associated suppliers, regarding quantities and critical timings for delivery. It was decided that mainly consolidating second deliveries in the first instance would be the best way forward. Staff turnover was a big

challenge as two of the interested and eligible businesses, Arket and The Big Easy changed managers during the project, and re-engaging new managers was a challenge.

Table 33. Suitable businesses identified for the trial and their suppliers from NCGM.

	Business	Supplier
1	The Barbary	Entremettier
2	Jacob the Angel	Entremettier (through the Barbary)
3	Grays & Feather	Fresh Connect
4	Sushi Samba	I A Harris and Sons First Choice
5	Arket	Sherringhams
6	The Big Easy	Yes Chef
7	Wild Food	Kirbys
8	Z Hotels	Premier Fruits

CRP enabled a traffic count study to take place for the Covent Garden Piazza area, taking place over one week in January. There were 334 vehicle movements over the week within the Piazza, which is pedestrianised for most of the day. 97 of these deliveries were comprised of fruit/vegetables/mixed food deliveries (29%).

Sushi Samba and their suppliers I A Harris and First Choice (located at NCGM) were interested in the cargo bike trial. 48 of these deliveries into the Piazza over this week were to Sushi Samba, of which 23% were from NCGM.

CRP and eco**fleet** met IA Harris and Yes Chef on 11th March 2020 and it was agreed to start the consolidation trial with Sushi Samba in the first instance, with the aim to expand the deliveries to further restaurants gradually. Both suppliers contacted their customers to see if they also wanted to participate. The consolidation trial was due to start, using electrically assisted cargo bikes and an electric van when necessary, when concerns over the COVID-19 pandemic elevated. Unfortunately, London was then put into lockdown causing the trial to be put on hold. Subject to the restaurants and suppliers returning to 'business as usual', the trial has the potential to take place as part of CAV3. For CAV3, the AQFA for Westminster is Soho which is next to Covent Garden. The consolidation trial could operate with the businesses from CAV2 and with new businesses in CAV3.

Local communications

Figure 73. IA Harris and eco**fleet** at the NCGM meeting with CRP 11th March 2020

The landowners and BID promoted the directory throughout their networks of tenants and members. This was done via hard-copy posters and digital newsletters.

The landowners and BID also sent out letters written by CRP that explained about the research that was taking place in the area. This, in some cases, meant that when they were visited by CRP there was some context and awareness.

Impact

The following projected emissions savings for 2020-21 were generated, based on a total of four businesses being involved. Data provided by Sushi Samba was used to estimate the number of deliveries taking place. It has been assumed that 2nd deliveries will be replaced by cargo-bike from August 2020, followed by 1st deliveries by EV from November 2020.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
11.61	**210.76**	**328.84**	**4,762.5**

Main achievements

Bringing together the main landowners and BID in Covent Garden to collaborate on an air quality project and **securing agreement with competitive NCGM suppliers** to work together is a tremendous achievement. The research and meetings led to the **consolidation trial being ready to start** and have paved the way for continued conversations about behaviour change around AQ being on the agenda of all stakeholders involved.

4.2. EV trials and charge point installation

As part of the work undertaken in Clean Air Villages 1, businesses indicated that they would like to know more about electric vehicles and how to transition to cleaner delivery methods. In Clean Air Villages 2 there was a target to find 13 businesses interested in EV trials. No actual trials took place, however, **20 businesses were found in the villages that were interested in EV trials**. Converting businesses interested in EV trials into actual trials was challenging. Following conversations with suppliers, there were times when the vehicle requirements meant that there was not an EV that met them, as was the case with Villages Brewery in Deptford; their payload requirement was extensive. Other times, businesses were not responsive after expressing initial interest. Other businesses were put off by the level of detail required about their current vehicle use, which was necessary before CRP brokered conversations with suppliers.

At the start of the project, three electric vehicle manufacturers were contacted (a minimum of three were to be engaged with as part of CAV2). Businesses interested in a trial would then be matched with the most appropriate supplier. These manufacturers provided a range of vehicles, from small vans with a payload of under 3.5 tonnes (Renault, Nissan) to vehicles with a payload of greater than 3.5tonnes (PanelTex). Leaseplan were also approached to showcase the leasing options that businesses could take to test a vehicle on a more flexible basis. **Four EV suppliers were successfully engaged with, exceeding the target.**

CRP needed to know what information the suppliers would need from a business exploring switching to an EV. With the aid of the suppliers, CRP produced a list of key questions to ask businesses (Appendix E). This enabled a supplier to assess the current needs of a business and EV model suitability for their requirements. This also encouraged businesses to analyse their operations in detail. CRP gathered this information then matched the business with the relevant EV manufacturer and made an introduction. They could then have a detailed conversation about their requirements and could discuss a trial.

Most businesses that CRP supports do not have a fleet manager, or employee dedicated to logistics, they also did not always know the answers to CRP's questions. CRP therefore leased some telematics dongles, which would monitor a vehicle's usage. These Clean Car dongles can be plugged into a vehicle and produce a report based on vehicle mileage, time stopped/parked and GPS location.

Figure 74. Visual of Clean Car reporting dashboard.

A report is created based on the telematics information collected and uses data sources to make comparisons on vehicle costs, fuel price and maintenance of an ICE vehicle compared to a PHEV/EV.

The reporting analysis makes assumptions based on current vehicle behaviour, including whether the vehicle makes a stop that would be long enough to charge it, if it was travelling a longer distance. The parked data can help determine, for example, whether there are existing and suitable charging points in the area.

Key challenges faced by businesses considering switching to an electric vehicle:

- Not the right size option available

- Price of an electric vehicle versus diesel
- Range anxiety
- Charge point infrastructure
- Availability of EVs
- Mindset that the technology is not ready yet
- Complications and confusion around buying/leasing and then operating an EV
- Lack of awareness of grants/schemes

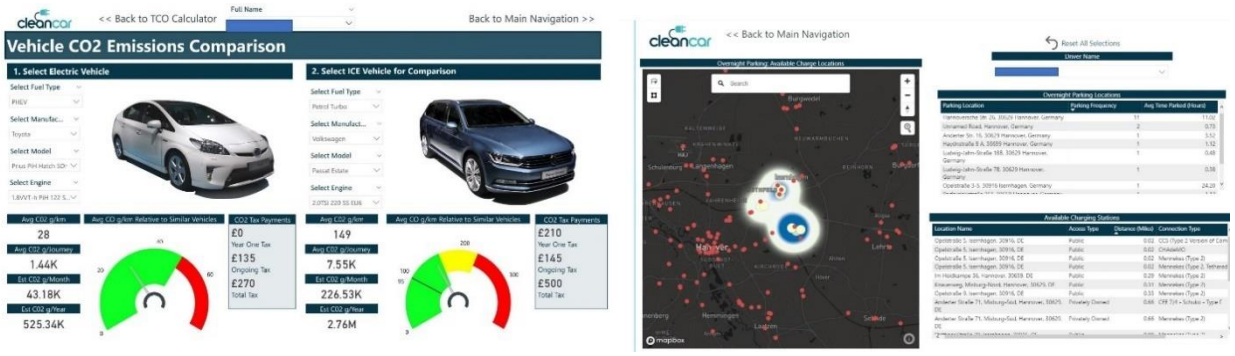


Figure 75. Visual of Clean Car reporting dashboard.

Most businesses that were interested in EVs were micro/small. Their reasons for wanting to switch vehicles was:

- Better air quality for the local community
- Cheaper running costs
- Marketing their business as a "greener" supplier
- Utilise new charging point infrastructure
- To be in line with the introduction of the expansion of the ULEZ/LEZ

CRP exceeded the target of finding 13 businesses interested in EV trials, though no actual trials took place. 20 businesses were found that were interested in the trials (with an additional 17 interested in telematics dongles) but none of these converted into trials (see Appendix E). CRP followed up with all 20 businesses requesting further information about their vehicle/fleet. **Seven businesses** went on to complete the in-depth survey and CRP matched these requirements with the most relevant supplier.

CRP enabled the London Borough of Hammersmith and Fulham to use three Clean Car dongles on their fleet. Figure 76 shows part of the EV suitability report that was subsequently shared with their fleet manager. They are currently creating an EV fleet strategy and this information will help steer this. As the Borough wanted to update and install charge points in their depot, CRP also introduced them to Podpoint (an electric vehicle charging point provider). This installation is now complete and the site is ready for vehicles to be charged centrally.

Multiple selections | L... | 6 | Months
18/01/2020 - 17/07/2020

User Name	Total Miles	Avg Weekly Miles	Avg Miles Per Day	Max Daily Miles	Days with Data	EV Suitable	Current Vehicle
Hammersmith Device2	5,983.66	427.40	83.11	232.75	72	●	Ford Transit Custom 290 L1
Hammersmith Device3	1,408.40	140.84	23.09	39.07	61	●	Citroen Berlingo 625Kg L1
Hammersmith Device1	121.25	30.31	17.32	33.59	7	●	Volkswagen Caddy Maxi C20 N1

Figure 76. Overview of Directory services and transport modes as of 11th May 2020.

Delays of the delivery of the dongles (produced in China), in January 2020 were later found to be linked with the COVID-19 outbreak. Unfortunately, once the dongles were delivered to CRP, London shortly thereafter went into lockdown. Only three were given out. CRP is able to use these leased dongles as part of CAV3.

Based on the vehicle and mileage data provided by respondents to the EV questionnaire, the potential annual emissions savings as a result of converting their existing vehicles to electric equivalents have been calculated as follows:

	Annual emission saving			
	NOX (kg)	PM2.5 (g)	PM10 (g)	CO2 (kg)
LGV Conversions	136.7	900.7	1,688.1	37,425
HGV Conversions	217.5	985.9	1,739.1	81,236
Conversions (HGV + LGV)	354.2	1,886.6	3,427.1	118,661

Main achievements

CRP successfully **engaged with EV suppliers** and offered **advice and guidance** to 20 businesses considering switching from a more polluting equivalent.

4.3. Ultra-Low Emission Supplier (ULES) Directory

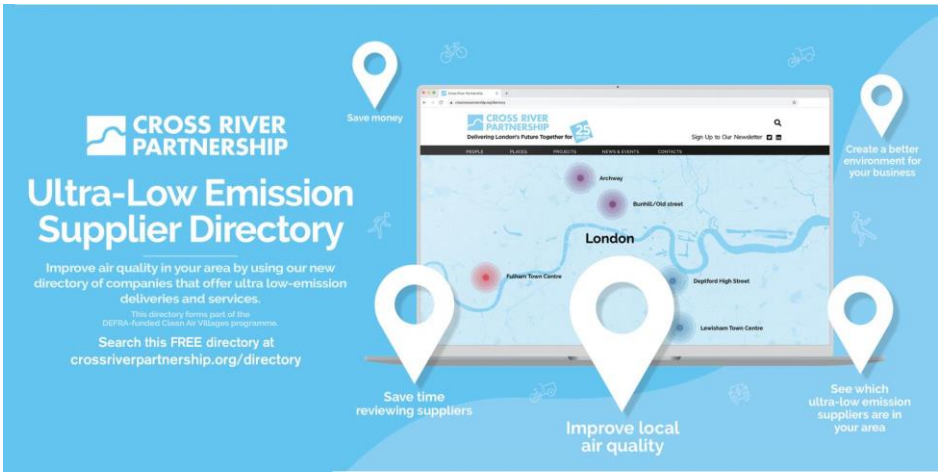


Figure 77. The Ultra-Low Emission Supplier Directory.

The Ultra-Low Emission Supplier Directory is a list of businesses providing their services using fully electric, ultra-low emission vehicles, cargo bikes or by foot. This tool showcases suppliers and businesses who deliver across diverse sectors using zero or ultra-low emission vehicles and encourages local suppliers to change to more sustainable/low emission modes of travel as businesses in the village start to prioritise those modes over diesel vans. On the directory, each business has a short summary about who they are, with contact details and their distance from the village centre. There is a map and list function. The number of businesses on the directory is expected to grow over time, as more fleets become ultra-low emission.

Expansion of the directory

Five directory pages were created as part of CAV1 and launched in May 2019. The directory was created to provide a useful resource for businesses who wanted cleaner deliveries; an amalgamated list based on your own postcode location. As restrictions on (un)loading become tougher and local authorities favour Clean Air Zones, as examples, it is becoming more important to choose and use suppliers who deliver using zero and ultra-low emission vehicles. Improving air quality is a key priority and the directory enables procurement choices to be made more easily that favour deliveries which will work towards this goal.

The directory was expanded in CAV2 so that each 'village' had its own dedicated page. There are now 15 dedicated 'village' pages. 32 businesses were listed across the five different CAV Ultra-Low Emission Supplier

Figure 78. Overview of Directory services and transport modes as of 11th May 2020.

Directories as of 20th May 2019. As of 17th April 2020, there are 50 businesses (see Appendix F) on the Directory. There are a variety of businesses listed on the Directory, with the most common delivery service

being 'Catering', 'Couriers' and 'Other'. As the 'Other' category has the most businesses listed within, it may be useful for CRP to look at expanding this to make more categories. The most common mode for businesses listed on the Directory is 'Bicycle', including cargo and electric.

Benefits of the directory

The directory has the following benefits:

- Free to use
- Free to be listed on
- Lists businesses who deliver using cleaner, greener vehicles, based on proximity to your postcode
- Knowing that air quality is becoming an increasingly important issue to tackle, the directory provides an incentive for businesses to switch vehicles
- Easy to use
- There's a dedicated page for each village

Local communications

In addition to face-to-face communications about the Directory during business engagement, CRP has promoted the directory through social media, via email and at events and workshops. Village-specific posters were distributed, and many partners have displayed the directory on their websites. CRP produced village-specific Directory postcards, as well as a generic Directory postcard.

A Directory stamp was also created, so that businesses can showcase that they are listed on the site. This can be displayed on promotional materials both on and offline.

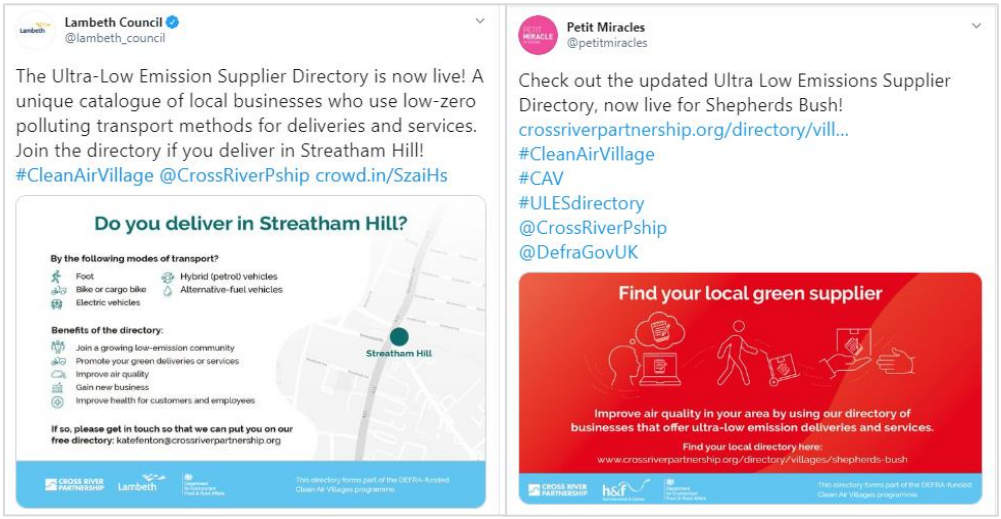


Figure 80. A sample of online communications to promote the Directory.

Figure 79. Directory stamp, for businesses to promote that they are on the Directory.

Web page analytics

Website analytics, including traffic, was regularly monitored.

Table 34. Table to show website analytics between time period 11th May 2019 – 11th May 2020.

Feature	Value
Users	1,562
New users	1,567
Sessions	3,052
Number of sessions per user	195
Pageviews	5,655
Pages/session	1.85
Avg. Session duration	02:33 mins
Bounce rate	74.57%

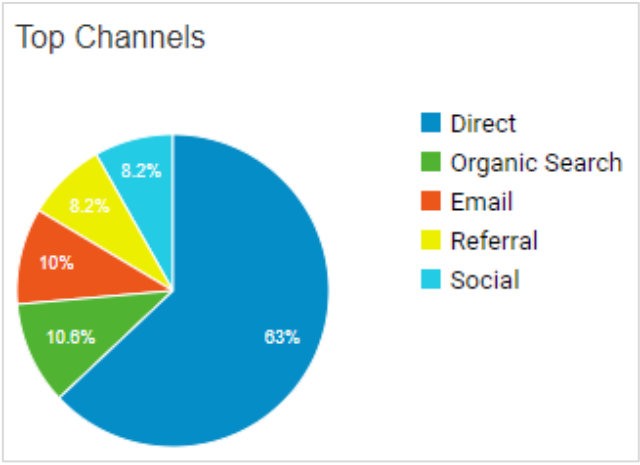


Figure 81. Pie chart to show how audiences first accessed the Directory.

Impact

Emissions savings, (as a percentage) for six anticipated vehicle conversions as a result of a business using a supplier on the Directory have been generated using CRP's in-house measureBEST tool.

Conversions		Emissions saving			
From:	**To:**	**NOX**	**PM2.5**	**PM10**	**CO2**
HGV	Electric HGV	100%	10%	11%	100%
LGV	Battery electric LGV	100%	16%	17%	100%
LGV	Full hybrid LGV	98%	12%	15%	18%
LGV	Plug-in hybrid LGV	91%	16%	17%	63%
LGV	Cargo bike	100%	100%	100%	100%
Car	Bike, cargo bike or on foot	100%	100%	100%	100%

Using an estimation that two businesses in each CAV2 Village will use the Directory each month, the projected emissions saving for 2020-21 have been generated as follows.

Projected emissions saving (2020-21)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
1.14	**22.97**	**43.81**	**369.65**

Feedback from businesses

CRP has fostered a positive working relationship with many of the businesses listed on the Directory. Here are some quotes from listed businesses:

"Made in Brockley sells the best in Brockley, and all our local sales are delivered to our customers' doors by bike. We are proud to be featured on the low-emissions directory."
Adam James, Made in Brockley.

"We're committed to doing everything we can to improve the air quality in London, so we're delighted to be part of the Cross River Partnership directory."
Kate Walker-Collins, Fed by Able and Cole.

"It's wonderful being part of the Clean Air Directory, as the community here all support positive environmental change for the future!"
Chantal Martineau, Fancy Kombucha.

CRP also contacted 37 more businesses after the launch of the tool, however, these were not eligible to be listed. Businesses were contacted via email, if their ultra-low emission vehicle had been seen out and about, or if they contacted us directly.

Christmas Twitter Campaign

Over the Christmas period, CRP promoted a selection of businesses from the directory, to engage an audience to support festive low-emission deliveries.

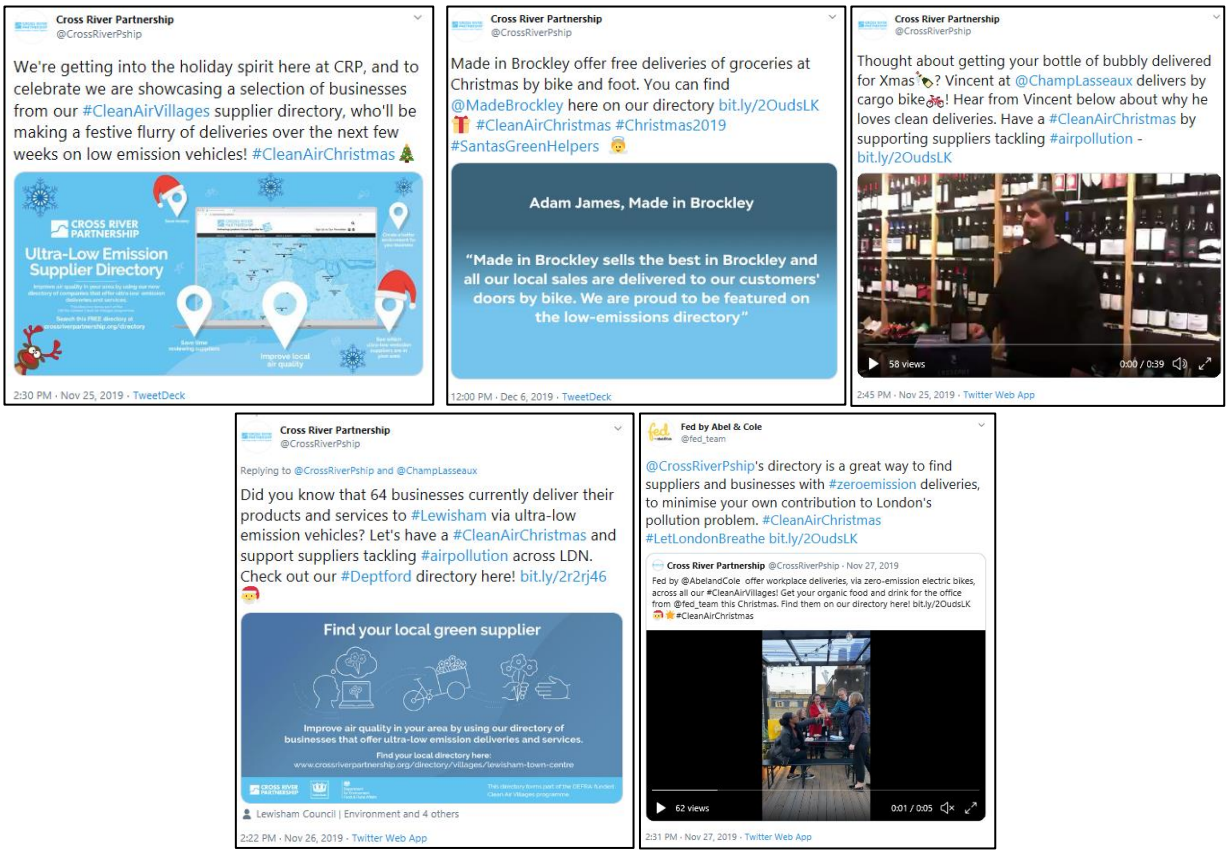


Figure 82. Snapshots from the Clean Air Christmas campaign

Main achievements

All CAV2 partners have a **dedicated, local directory** page. This unique resource is promoted widely by CRP and partners. The resource **highlights and promotes businesses contributing to better air quality**.

4.4. Trials of consolidation hubs

Increasing uptake in consolidation services was an aim of CAV2. CRP raised the topic with partners and with businesses in the villages. In six partner areas, there was no interest in trials (sometimes due to space availability) to move trials forwards. Consolidation activities developed in the following three areas:

- London Borough of Camden

CRP worked hard in both Camden villages to encourage uptake of the Borough's existing consolidation hub. Significant resistance and concerns from the BIDs and businesses were faced. Concerns were predominantly about long-term costs, following the end of a free trial period. Despite this, CRP was able to reach a place where businesses had agreed to make use of a free trial. These activities will be revisited as part of CAV3, once these businesses resume 'normal' operations after lockdown. Further details can be found in the Camden village summary.

- London Borough of Wandsworth

In relation to the Tooting cargo bike scheme, a market trader from the market agreed to consolidate her parcels from different couriers (e.g. DPD, Amazon etc.). These were consolidated at eco**fleet**'s warehouse and then delivered on one journey by cargo bike. The trader was pleased that this would not only reduce congestion close to the market, but would also be more efficient for her business, as deliveries of stock all arriving at once would be a better use of her time. Only one consolidation of these goods took place before COVID-19 lockdown was enforced. This was enough to provide the business with the confidence that the service was professional and reliable.

- Westminster City Council

A trial involving the consolidation of fruit and vegetable deliveries from New Covent Garden Market in Nine Elms, into food and beverage businesses based in old Covent Garden Market grew from the engagement that took place in the Covent Garden village. This trial was developed and is ready to launch as part of CAV3 once businesses emerge from lockdown. Further details can be found in the Westminster village summary.

Lessons Learnt

Significant challenges were faced in discussions and in the setting up of consolidation trials. These challenges and lessons learnt are important to highlight for future projects:

- Concerns from BIDs and businesses about the long-term feasibility of consolidation hubs was a significant barrier to initial uptake of ideas. Longer development time may therefore be needed in order to get traction on such projects.
- In relation to above is the high capital costs of coveted space in London, which is an additional long-term deterrent of such trials.
- Challenges in finding consolidation space in the first instance represented an initial first hurdle. Under-utilised car parks were sometimes highlighted as opportunities but leads often led nowhere.
- The COVID-19 pandemic and subsequent lockdown provided an unfortunate hindrance to the CAV2 consolidation trials. This also presents a potential opportunity, for example, as retail space could become available as not all businesses will survive the pandemic.
- As local authorities turn more areas into the likes of Low Emission Zones, there may be an increasing emphasis on micro consolidation and last mile delivery, as timing restrictions will create significant barriers to already challenging routing planning for fleet managers.

4.5. Updating deliverBEST and measureBEST

deliverBEST

CRP's deliverBEST tool shares practical, proven solutions to help businesses make their deliveries more efficient. This was originally commissioned as part of the CRP Clean Air Better Business (CABB) programme to support businesses to understand and implement best practice to reduce costs and emissions. This online questionnaire collects basic information, instantly providing respondents with recommendations relevant to their business. This includes responses tailored to the exact postcode provided.

As part of CAV2, the recommendations generated by deliverBEST were updated to reflect the expansion of the Ultra-Low Emission Supplier Directory into the new village areas. An example is provided below in Figure 83. For any inputted postcodes that fall within CAV2 village areas, the deliverBEST survey will return this recommendation (among many others), directing them to their local Directory page.

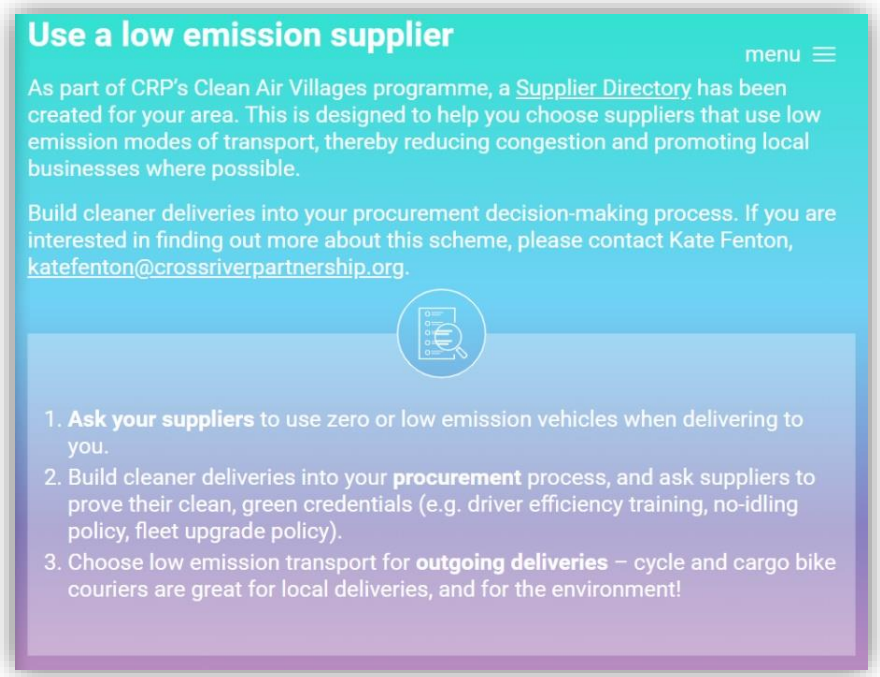


Figure 83. Snapshot of a deliverBEST recommendation, directing respondents to the Ultra-Low Emission Supplier Directory.

deliverBEST was also updated to direct users to tangible Clean Air Villages solutions that had been implemented. Examples of these include the Brixton shared electric van (Figure 85) and the shared cargo-bike in Streatham (Figure 84). Where possible, the deliverBEST survey will also direct respondents to CAV2 case studies to further promote these to a wider audience.

measureBEST

Emission savings have been calculated throughout this report using the CRP in-house 'measureBEST' tool. For more information on this process, please refer to Appendix G. measureBEST was originally commissioned by CRP to support businesses to understand and implement best practice to make their deliveries more efficient and reduce emissions. This was developed as part of the CRP Clean Air Better Business programme, a Mayor's Air Quality Fund project, and calculated emissions for freight vehicles only. CAV1 identified that this tool needed to be expanded to accommodate a wider range of vehicles, as many of the smaller businesses engaged with the project were using cars and lighter vans. measureBEST also uses Defra's Emissions Factor Toolkit (EFT), for which new versions are regularly released, replacing the previous values. An update of measureBEST was carried out during CAV2 using the latest emissions factors at the time

(version 9.0 of the EFT). The tool was also updated to include additional vehicle types, such as diesel and petrol cars, as well as calculations for fine particulate matter (PM2.5).

Figure 85. Snapshot of a deliverBEST recommendation highlighting the Brixton shared electric van.

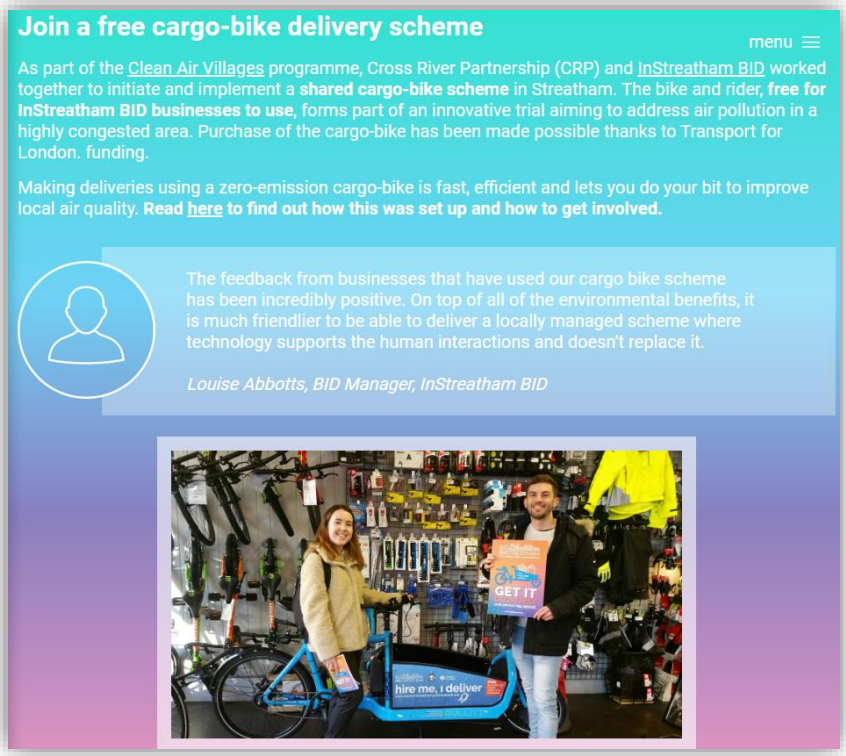


Figure 84. Snapshot of a deliverBEST recommendation highlighting the Streatham free shared cargo bike for businesses.

5. Dissemination

With the help of project partners, stakeholders and engaged businesses, CRP has communicated extensively about the Clean Air Villages project. In addition to the wider business community, CRP communicated project progress and findings to the Mayor of London and the GLA, London Boroughs, Business Improvement Districts and other CRP Partners. Table 35 below provides an overview of dissemination outputs versus the original targets.

Table 35. Overview of dissemination and governance outputs vs targets

Target as per proposal	Output
Develop 13 case studies, best practice/how-to guides	Complete and used in further business engagement
Produce 2 additional case studies, specifically on EV charge point installation and space made available for micro consolidation	1 case study on EV charge point installation was produced The other case study was not produced
30 locally-relevant communications (e.g.10 flyers; 10 specific emails and 10 social media bespoke messages as a minimum) 2 magazine/press articles	These targets has been far exceeded, with flyers being used to promote workshops and solutions, local media reporting on the project and an abundance of countless bespoke social media messages
deliverBEST online tool updated with at least 10 new locally-relevant actions for businesses to take	Complete
4 Stakeholder steering group meetings	Stakeholder steering group meetings held with partners invited to attend all: •14 June 2019 •2 October 2019 •8 January 2020 •8 April 2020
2 Best practice sharing events with Councillors	A launch event took place, which was combined with the Q1 steering group meeting. This took place on 14th June 2019 at King's College air quality super site and included a tour of the facilities. This was attended by local Councillors and Officers from each borough. A second best-practice sharing event was planned to coincide with the launch of the shared EV in Fulham, but this was cancelled due to the lockdown.
4 Quarterly project update reports and one overall project evaluation report	Herewith complete

5.1. Case studies

CRP communicated through a range of channels and produced dissemination material which will be used beyond project end. Paid advertising was not utilised.

CRP produced 14 case studies (nine business, and five best practice), with businesses and organisations engaged with the CAV2 project. All case studies are available on the CAV2 project page, as well as the CRP website publications page. They have been circulated amongst CRP partners and are being used for online business engagement. CPR hopes that these are valuable and help to inspire and signpost businesses, local authorities, BIDs, landowners and other groups to take steps towards reducing congestion and pollution on our roads. CRP and partners are now actively using them in business engagement activities, both for the Clean Air Villages project and beyond.

Business case studies

These two-sided documents were produced with businesses engaged in the CAV2 project. They are compact case studies which largely highlight examples of small businesses who are contributing towards improving their local air quality. These businesses were: London Cheesemongers, Cadogan, e-cargobikes, Wandsworth Council, Hospitality Source, London Smoke & Cure, InStreatham BID, Lambeth Council, Cooper's Bakehouse, Planet Minimal, BYO, Paxton and Whitfield, eco**fleet**, Abdul's Fruit and Veg, Healthy Eaters, Brixton BID, Zipcar and Elysia Catering. Many of these businesses and organisations are located in the CAV2 village areas, with many on the ULES Directory.

Figure 86. Overview of Clean Air Villages business case studies.

Best practice case studies

These are more detailed case studies/how-to-guides, explaining how to go about setting up an electric van sharing scheme, for example. Steps include how to establish local interest, key stakeholders, choosing the right service, securing funding and next steps. These take the audience step-by-step, through an interactive PDF. The businesses involved in these case studies were: Balfe's Bikes, Brixton BID, Cornercopia, e-cargobikes, Hammersmith BID, Hammersmith and Fulham Council, Lambeth Council, Landsec, Pod Point, InStreatham BID, TfL, W12 and Zipcar.

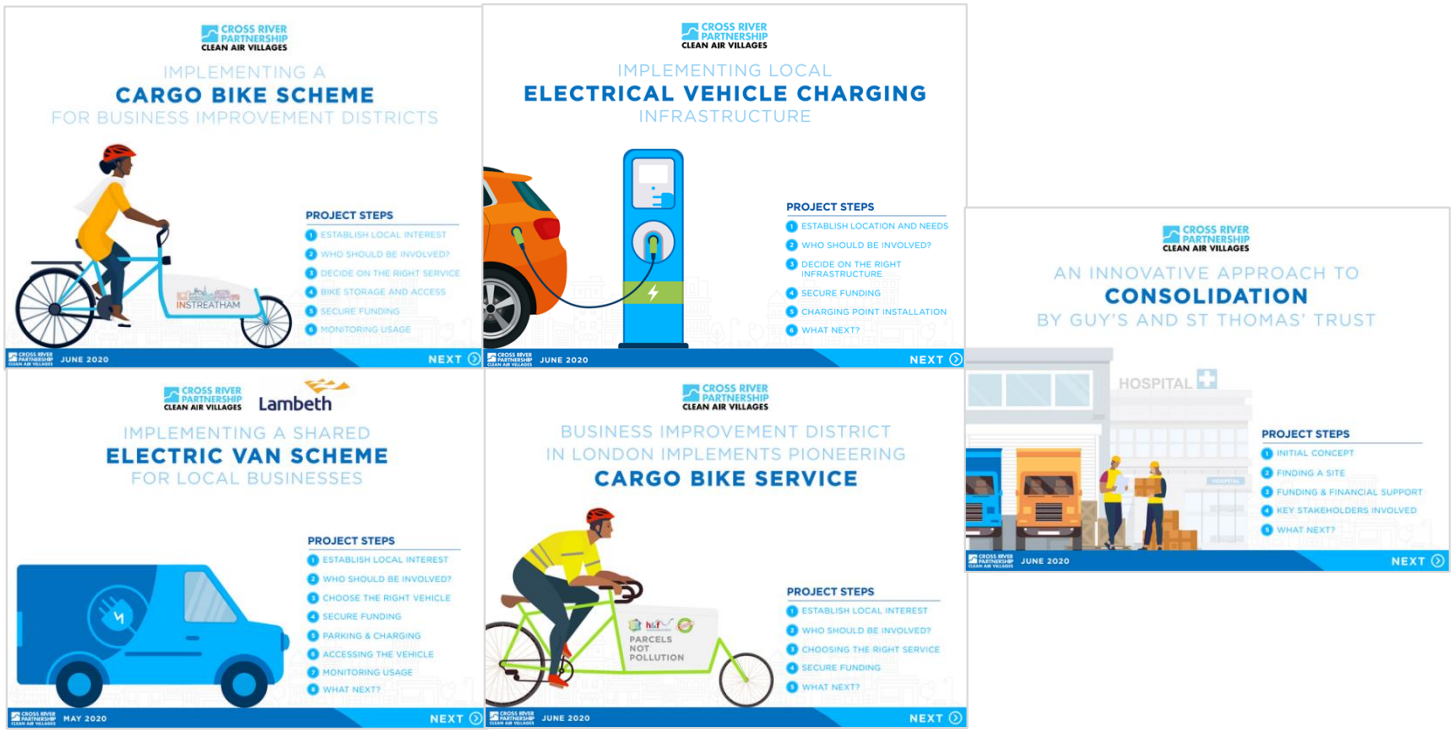


Figure 87. Overview of Clean Air Villages best practice case studies.

- CRP published 17 articles about the Clean Air Villages project in their monthly newsletter, which goes out to over 578 partners and stakeholders. Please see Appendix H for a list of these articles.

- CRP has 1,580 followers on its main Twitter account, and 1,511 followers on the Cross River Partnership Clean Air account. Tweets are posted daily from the main account, with many of these promoting the work of the Clean Air Villages project, using the hashtag #CleanAirVillages. As part of Clean Air Villages 2, there have been over 150 Tweets from CRP's account throughout the year with the hashtag #CleanAirVillages, receiving retweets and engagement from those involved in the project, please see Appendix I for more examples. The project, using #CleanAirVillages has also been communicated via LinkedIn, where CRP has 339 followers, comprised of those interested in air quality and beyond.

- In addition to the above, **local communications** were developed and disseminated. Please see individual village summaries for details

5.2. Sharing best practice

The collaboration of seven different local authorities and two private sector organisations on the Clean Air Villages 2 project allowed for best practice exchange and the promotion of a coordinated approach to deliveries and servicing trips and their impact on air quality across boroughs.

The project launch event / first quarterly meeting was held on 14th June 2019 with borough partners, local Councillors as well as CRP to discuss project background, strategy as well as any relevant local activities and networks. This event was important in order to ensure local support for the project as well as any future knowledge transfer activities. The event also took place at one of only three Air Quality supersites in the UK, one of which is in the London Borough of Lewisham. Councillors, Officers and CRP staff were able to go on a tour of the site (see Figure 89).

Figure 89. King's College Air Quality supersite, the location of CAV2 Q1 steering group meeting.

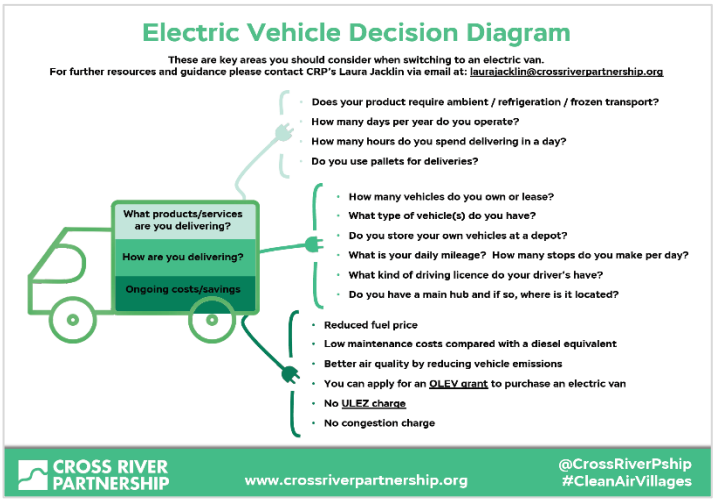


Figure 88. A decision tree diagram of questions for businesses to consider when thinking of switching to an EV.

In addition to extensive business engagement, including the 1-2-1s and air quality workshops, and the production of case studies, the sharing of best practice took place in a multitude of other ways:

- Quarterly steering group meetings (the Q3 meeting took place at CEVA Logistics consolidation hub in Dartford. This was a learning opportunity to show the CAV partners the hub that serves the Guy's and St. Thomas' NHS Foundation Trust. The site has reduced the number of daily deliveries to Guy's Hospital by 90%). These meetings allowed for a presentation of project progress within the villages as well as cross-referencing other relevant air quality work within the boroughs and beyond.
- The production of a decision tree document for businesses about electric vehicles and cargo bikes
- Via attendance and participation at events:
    - CRP presented about CAV2 at the 3rd Annual Air Quality Forum in February. This was an opportunity to share project experiences and learnings with local authorities and industry representatives from a transport and academic background.
    - CRP presented at the LoCITY annual conference to an audience of fleet managers. This was an opportunity to promote the Ultra-Low Emission Supplier directory, highlight the difficulties that small businesses face around vehicle purchase and lease decisions and also to network.
    - CRP presented about CAV2 at the London Boroughs AQ Best Practice Sharing event.
    - CRP attended the CIEH Awards, where the programme received an award for Best Collaboration for the first year of the programme (CAV1).
    - CRP also attended and presented at other local events, e.g. at a Royal Borough of Kensington and Chelsea supply chain meeting, Hatton Garden BID's AGM, Brixton BID's AGM, the

Colville Community & Market Streets Action Group Meeting, the Camden Knowledge Quarter Supply Chain Network meeting, the Shepherds Bush Business forum and the Business forum workshop led by the Means & RBKC Economy team.

Figure 90. CRP staff receiving the Best Collaboration CIEH award, also representing the CAV1 lead authority, London Borough of Lambeth.

5.3. Community and network building

The Clean Air Villages project has contributed to community and network building whose results are likely to last beyond project end. This is especially the case in areas with little pre-existing business communities and/or BIDs. Examples of this legacy are here:

- Micro-business, Graveny Gin, in Tooting are now using eco**fleet** for their home deliveries.
- Landsec and the foodbank in Shepherds Bush are now paying to use the Parcels Not Pollution zero-emission service.
- CRP linked businesses in Earl's Court with the council to input greening outside their businesses. These businesses were also introduced to EV Car Shop for advice on switching to EVs.
- The Ladbroke Grove cargo bike scheme was expanded by the council and a pharmacy in Earl's Court used the service.
- The Cadogan businesses using the cargo bike were able to ascertain what demand for zero-emission deliveries there would be.
- Two businesses in Deptford contacted CRP about paying for cargo bike deliveries.
- There have been many enquiries about CAV activities: from BIDs beyond the village areas (e.g. Station to Station BID) to organisations in London and beyond. CRP is always willing to share advice that will lead to improvements in air quality, no matter the location.

6. Lessons learned

- Different CAV partners and stakeholders have **different levels of capacity and resources** to contribute towards the project. Delays on engagement with businesses can occur if this is not managed effectively. It is therefore vital that CRP has contingency plans in place for moving forwards with engagement within certain time periods, whether partners or other stakeholders are fully engaged or do not have capacity at the time to support. CRP's partners are always supportive of the project but because the project is one year, there is not time to delay actions that move towards implementing solutions and delivering outputs.

- From project outset, it is important to **obtain the right contacts from the key partners**. This includes officers from within local authorities from transport, waste, procurement and marketing. This would include a main point of contact and a marketing contact from BIDs and landowners. Having these introductions and conversations early is important as it ensures all departments are aware of the project. The CAV project transcends a number of departments and it helps to meet teams additional to air quality within local authorities. This also helps to ensure that CRP is made aware of any schemes, other projects or grants that could be relevant for CAV. These other schemes could be from any stakeholders that project partners are working with.

- Finding a **local 'ambassador' or business 'champion'** has proved valuable and fruitful, where there has been one in a village. This enables CRP to foster stronger relationships with the business community more quickly due to the trust that already exists with such an individual. Leaving behind a new local business champion in a village can also be a legacy and facilitator of further air quality behaviour change.

- **Business engagement** has continued to be a challenge in CAV2. It **takes time and persistence** and varying approaches to result in success. Language can be a barrier and the fact that SMEs are time poor. As the issue of air quality has gained media exposure, CRP has found that introducing the health issue is an easier conversation, but there is still resilience from many businesses who – for whatever reason – do not want to engage in a conversation, much less make changes to their business that would lead to better local air quality. CRP has continued to attempt engagement with a business, no matter their size. Continued engagement with larger, cross-borough businesses has the benefit of being able to share such plans and strategies with SMEs – who sometimes feel that their efforts would be futile in comparison with a bigger business. Being armed with such information can help galvanise support from SMEs, as CRP can explain and encourage a collective, community effort. Again, CRP has found that where an area lacks a BID, Town Centre Group, Forum, or established business community, it is that much more challenging to engage with businesses collectively on air quality.

- **Workshop attendance** has continued to be a challenge. The organisation and planning of workshops takes considerable time and effort. Despite the best efforts of the CAV team, attendance can sometimes be low. SMEs with the best of intentions, cannot always make it, as last-minute business issues arise. There is also never a good time of day for a business workshop to take place. The formats of workshops varied for CAV2 as they were tweaked for each village. Where the context was specific, this did sometimes lead to better attendance. This therefore suggests that **more tailored and specific workshops could be more valuable for participants**. The broader air quality topic may be deemed too superfluous to day-to-day business operations for many

businesses. CRP can therefore consider running workshops in a different way on future projects. The valuable content shared during these workshops could also be maximised if such workshops took place online and this is a form of media that CRP can explore in the future.

- Individual business operations are often unique and in many village areas there is a diverse business make up. When choosing to implement a tailored local solution in a village it is therefore necessary to remember that **there is not a one-size-fits-all solution**.

- With the various cargo bike pilot schemes that took place there were a number of lessons learnt:
  - The requirements that a business think they have and the requirements that they actually have may be different
  - A business may express an interest in using a scheme, only to then not use the bike once in place
  - The location of a cargo bike provider is critical, as this will improve speed and efficiency of the service for customers and will give a scheme the best chance of success
  - Consideration was given to the **longevity and financial feasibility** of each cargo bike scheme that took place. It was deemed important that there be an organisation to continue operating a scheme beyond CRP's involvement (such as a BID). The Energy Saving Trust eCargo Bike Grant was also suggested to partners involved with the CAV cargo bike schemes, as this was available to local authorities and could further support these schemes
  - Delays to the launch of one of the cargo bike schemes was due to procurement governance procedure, demonstrating that the sooner a provider can be chosen the better.

- The CAV case studies, across both years, have been produced towards the end of the project, to highlight solutions that have been implemented as part of the project, but to also highlight examples of other businesses that are working towards improving air quality. Such benchmark examples serve as useful documents during further business engagement. This component of the project has been very time consuming. It would be of greater value to the project, to **produce these case studies earlier**, so that they can provide guidance and value to businesses, communities and partners throughout project delivery. These case studies could be expanded to **encompass guidance materials, toolkits, podcasts and videos** and could be produced to support and inspire on a wider variety of air quality actions.

- To varying degrees, COVID-19 had an impact on the CAV solutions and activities. Specific details can be found in the village summaries for local impacts. Whilst the CAV2 project proposal had contingency plans in place for varied risks, the emergence of a pandemic that would affect not just this project, but the wider London, national and global community was unprecedented. Whilst CRP could not have predicted that the final and vital weeks of the project delivery would involve London being in lockdown, what CRP did do, was **adjust and redirect CAV resources** – where possible – to activities that could support the isolated and vulnerable. Cargo bikes were able to be used for pharmacy deliveries to the elderly and vulnerable and were also used for food bank deliveries. CRP was highly resilient during this time and kept working to finish the CAV2 project, to continue air quality improvement activities and adapted to working remotely, in a very challenging time.

- With the whole CRP staff team **working from home** (due to COVID-19 lockdown from 17th March 2020), along with many project partners and stakeholders, CRP has learnt that the delivery of CAV can still take place, even when experiencing a national lockdown which ceases many activities and affects the lives of our nation.

- Activities need to be adapted and some of the impacts of COVID-19 were negative. A workshop was scheduled to take place in Lewisham on 26th March (the first full week of lockdown). This could not take place digitally as it would not have been appropriate, due to the pressure that businesses were under at this time. CRP is therefore thinking about how workshops could take place in the future, should we continue to experience such restrictions. Given that workshop attendance has been a challenge for the CAV project, **digital workshops** that are promoted far wider than a particular village area, could be a valid alternative.

- If nothing else, the opportunity that lockdown has offered CRP, is to evaluate and consider alternative ways to deliver such an air quality project, within the framework that government guidelines for safety allows. Rethinking processes and creating new ways to deliver outputs within a challenging context can ultimately **lead to a stronger and more progressive project**.

7. Next steps

CRP and partners are thrilled to have been awarded further Air Quality Grant funding to deliver Clean Air Villages 3 in 2020/21. This is particularly welcomed news due to partners' loss of funding from other sources in light of COVID-19, and CRP looks forward to working with Defra on this renewed opportunity.

The year-long programme will see CRP working collaboratively with 12 London boroughs and 4 Business Improvement Districts, to improve air quality in 16 different London 'villages', where both air pollution and population density levels are high. The project aims to engage with 16 Clean Air Villages, hold 16 air quality workshops/webinars, and engage with 128 businesses via 1-2-1 meetings. CAV3 will expand the remit of engagement to cover not only businesses, but communities and hospitals too.

The project partners for CAV3 are: London Borough of Camden, Hammersmith & Fulham, Haringey, Islington, Lambeth, Lewisham, Merton, Richmond upon Thames, Wandsworth, City of London Corporation, the Royal Borough of Kensington & Chelsea and Westminster City Council, as well as Business Improvement Districts (BIDs) angel.london, The Fitzrovia Partnership, Northbank BID and South Bank BID.

As noted above, air quality-funded projects have suffered as a result of some redirection of funds to the COVID-19 emergency. It is therefore, now more than ever, extremely important that projects such as Clean Air Villages are able to support businesses that are struggling during this difficult time. The impact of lockdown on business operations and consumer behaviour has been drastic. There are also indications that air pollution can worsen the impact of COVID-19 on patients. This is a unique and vital opportunity to make positive changes in favour of improving air quality within our communities, while we are individually and collectively rebuilding the way we live.

CAV3 will reduce NOx and PM emissions in 16 polluted 'villages' in a businesses, communities and hospitals context by:

- Building on the success of CAV2, with lessons learned and materials and tools to share;
- Extending this proven approach to new areas, where there is borough and BID support;
- Expanding this local and cross-borough approach into the new strands of communities and hospitals, in order to make the CAV project applicable and supportive of behaviour change in a wider context.

8. Contact information

For further information please contact CRP Project Manager Kate Fenton at katefenton@crossriverpartnership.org.

Appendices

A. Overview of workshop dates and locations

Village area	Workshop date	Location
Brixton	29/01/20	Brixton International House
Cadogan	22/01/19	Cadogan Estates
Covent Garden/Strand	15/01/20	Café Pacifico
Deptford High Street	14/11/19	London Velo
Drummond Street	01/10/19	Diwana Restaurant
Earl's Court	20/01/20	My Earls Court
Euston Road	16/01/20	Momentum Transport Consultancy
Fulham Town Centre	19/02/20	Fulham Broadway Shopping Centre
Hatton Garden	16/01/20	Momentum Transport Consultancy
Ladbroke Grove	13/11/19	Trading Street Office
Lewisham Town Centre	25/03/20*	*cancelled due to Covid-19
Shepherds Bush	11/11/19	Dorsett Hotel
Streatham Hill	23/01/20	Hood

B. Pan-London business engagement

All pan-London businesses were sent a list of questions about their delivery practices specifically related to delivering to their stores in London:

1. What is the future for your delivery fleet (whether there will be any electric/ hybrid/ alternative fuel vehicles)?
2. Do you use any other modes of transport for city areas e.g. cargo bikes for home deliveries?
3. Is there any legislation in areas like London that you feel makes it harder to deliver into certain areas (includes loading bay restrictions, timing restrictions)?
4. Are there any other challenges in delivering to large cities that we should take into account?

Key findings from the 1-2-1 pan-London meetings are as follows:

Tesco

- Currently looking at alternatives for their fleets and depot charging that would be required.
- Challenges that are faced by deliveries: London Lorry Control scheme, parking tickets from different boroughs and loss of loading bays.

Sainsbury's

In relation to their home delivery section:

- Sainsbury's already have two EVs operating in London and will extend their trial in 2020. Sainsbury's noted that there are still no OEMs offering electric chassis cab 4.25T electric vans which is what they need in order to be able to make a wider transition of their home delivery fleet.
- Sainsbury's previously trialled cargo bikes. They may return to this, but there are no immediate plans.
- Sainsbury's noticed that zero-emission zones that operate in Shoreditch and the proposed zone in Oxford where they are only active certain times of the day are difficult to manage for logistics of the deliveries and inevitably make routing less efficient.

- The more productive Sainsbury's deliveries can be completed (in terms of drops per hour), the more profitable the business can be, and fewer vans will be on the road. At present the biggest challenge in city centres is finding parking spaces close to a customer's address. This reduces productivity of a delivery which is a lose/lose outcome.
- In Argos (sister organisation) they have been trialling a larger electric PanelTex vehicle and Sainsbury's are keen for OEMs to come into the market and support electric vehicles with warranties etc.
- Regarding individual boroughs in London, Sainsbury's would like to see consistency on: standards, timescales, enforcement, signage etc. Moving towards a city-wide, or UK-wide standard would be even better. The wider the variety of standards per borough, the more difficult logistics becomes.

Regarding overall delivery and the logistics fleet for delivering from warehouse to high streets, Sainsbury's outlined the following:

- The future will be a mix of all, including gas for HGV vehicles.
- Electric will play a big part in the future, potentially for all vehicle movements.
- Sainsbury's have delivery point 'hot spots' for certain stores, where the time to unload is not enough and night restrictions/ then day parking restrictions make it challenging. The London Lorry Control (ban) scheme also causes delivery vehicles to travel longer distances within London.

New Look

CRP met with New Look's Logistics Director:

- New Look currently uses Clipper Logistics for all deliveries to stores from their warehouse in Bradford & Stoke on Trent.
- There is also a depot in Harlow that houses the London fleet in which the deliveries from Bradford are switched for the London delivery.
- Most vehicles are 90% full when out for delivery.
- The different delivery options that they include are: click and collect which account for only 55% of the e-commerce sales and DPD are contracted for the next day delivery which only accounts for 14% of sales.
- New Look are considering utilising collection lockers in store e.g. Amazon lockers.
- Clipper Logistics use 25 tonne to 30 tonne, Euro 6 diesels in their fleet, which are ULEZ compliant.
- New Look and Clippers Logistics explored changing their fleet to gas, however, the Harlow base could not get a reliable supply of gas on site.
- Most deliveries take place pre-8am or are night-time deliveries as there is no need for staff to be in store when the deliveries are being done. There has rarely been issues of the noise deliveries, most deliveries use totes and not roll cages which are normally associated with noise deliveries.
- Return logistics is used for all deliveries, recycling of all plastics which contributes to creating 30% of e-commerce bags from the recycled plastics.
- New Look have a closed loop system for the cardboard from deliveries.
- New Look's future thinking is working with other retailers to consolidated deliveries in areas in which stores are located nearby, this would not be done with competitors but smaller retailers.

McDonald's

Martin Brower (MBUK) logistics, Senior Logistics Strategy Consultant:

- Manufacturers are investing heavily in new technology, battery technology and development but it is also clear that there are several viable alternatives that are potential solutions for future MBUK fleet vehicles.
- Hydrogen fuel cells, hybrid technology and renewable fuels are all still considered as sustainable alternatives to fully electric vehicles, however the recharging infrastructure at this time is not sufficiently mature enough to provide a reliable, robust solution of a fully electric fleet for MBUK.
- Martin Brower believe that it is clear at this moment in time that there is not one "perfect solution" that can provide the appropriate sustainable system that is sought by many major companies within the industry resulting in the development of several different alternatives.
- MBUK will continue to evaluate and consider all environmentally sustainable solutions that are available or under development within the logistics industry and will take part in manufacturer trials and tests whenever possible to determine which direction will be most suitable for the distribution network.
- Once this work has been completed, a decision can be made on next steps and which alternative will be specified by MBUK. Based on the initial work already undertaken by MB the projection currently is for the introduction of fully electric vehicles to be added to their current fleet by 2021–22.
- There are no plans for any alternative modes of transport at this time given the average weight and volume of the product delivered and the requirement for this to be temperature controlled.
- The main challenge in delivering to restaurants in London is the London Lorry Control Scheme, with its restrictions of Mon-Fri 2100-0700, and weekends Sat 1300 to 0700 Mon which has seen an increasing travel distance for HGVs and creating a negative associated impact.
- Another challenge for MBUK's deliveries is related to Red routes in the capital, the loading bays are for only 20 minutes which isn't enough time to carry out a safe delivery. Red route loading bays also aren't always close to the restaurants, so MBUK have had to put MOU (Memorandum of Understanding) agreements at some restaurants which takes some time to arrange.
- Most London Boroughs now allow HGVs to deliver without a PCN being issued, whilst loading/unloading is taking place. However individual boroughs like Westminster do not adopt this policy so there are restrictions on delivery times. This provides huge logistical challenges.
- Another concern MBUK has is that councils are placing more environmental and noise restrictions on deliveries, often due to new builds in the area, such as, Clean Air Zones and Zero Emission Zones in areas of high pollution. Electric HGVs currently do not have adequate mileage capacity and so HGV deliveries are often being banned during specific time periods.
- Schemes to make London more pedestrian-friendly includes pavement widening and metal bells being placed on corners, this in turn reduces vehicle size access for turning. This then increases the number of vehicles making deliveries because for every articulated truck MBUK takes off the road to accommodate these changes, they must put two rigids on the road. This increases traffic and pollution. MBUK's perspective is that the bigger the vehicle the better for the environment and congestion, as there will be fewer vehicles on the road.
- Another concern MBUK highlighted was that loading bay sizes are being reduced, articulated vehicles don't fit, again forcing more vehicles onto the road.

Waitrose

"I am delighted to let you know that the John Lewis Partnership has established an industry leading aim to have a zero-carbon transport fleet by 2045. In order to achieve this, we will be converting all heavy goods

vehicles to biomethane by 2028. This means rolling out over 500 new state-of-the-art delivery trucks over the next ten years, powered by 100% renewable biomethane fuel, which significantly reduces greenhouse gas emissions. The biomethane used in our trucks is renewable and produced solely from food waste and waste materials." Danielle Crompton, Partner & Sustainability Manager

Greggs

Ian Mitchley, Logistics Manager

- Greggs haven't moved to electric yet, but they are always looking at what the next best thing for the future is and are currently building a long-term strategy for the business.
- Greggs are in partnership with Deliveroo and Just Eat in London for home deliveries to individuals.
- Noise restrictions are driving the fleet into the road during peak times. The restrictions make it harder to deliver between 22.00-06.00 which would be ideal for Greggs.
- Other challenges that Greggs have mentioned are that parking restrictions are an issue, they encounter fines when trying to serve shops on London's high streets. This is making it harder to maintain a presence on these high streets.

DPD

CRP met with the CSR General Manager

- DPD were exploring micro consolidation in London and built the Westminster micro- consolidation hub which opened in 2019. At the time, DPD were looking to open more hubs in London so that the last mile could be done via emission free modes.
- Challenges that DPD found in delivering in London: parking/unloading bay availability, scarcity of logistics land for micro consolidation sites.

CEVA logistics

- Warehouse logistics space has become more difficult to find in central London.
- The Dartford consolidation hub was built to reduce vehicle movements into London hospitals.
- Another consolidation project in North London has shown that larger suppliers are used to consolidate for smaller suppliers. As consolidation takes place outside central London, it can save money for suppliers as they will not have to pay the congestion charge.
- Experiences from starting consolidation projects is that there tends to be resistance from suppliers, before they come round to it.
- More micro hubs in central London would be ideal. Railway arches in areas like Bermondsey are suitable as it is quite industrial: meaning that they have access for relatively large vehicles and can be used to feed out by small electric/ cargo bikes from those hubs.

Daimler

CRP met with the Head of Fleet, Mercedes-Benz Vans UK Ltd

- The Daimler London Dealerships are selling 'all things electric' during 2020 and the portfolio of LCV is increasing especially during the second half of 2020.
- At the start of 2020, Daimler bought a mid-sized eVito Van and Tourer models to the market, both full electric and both A/c charge.
- The 'generation 2' eVito Tourer will be coming in the final quarter of the 2020 with the rapid charging and an extended range of 230 miles.
- Training for dealerships to sell the 'early adopters campaign' which promotes leasing of electric vehicles.

Brewery Logistics Group (BLG)

Response from the Vice Chairman of BLG

- The BLG is a trade association representing key logistics companies servicing pubs, restaurants and bars in London. The BLG sit on several groups and forums in London and are core members of the Central London Freight Quality Partnership.
- The BLG is a forum for the interchange of information of mutual interest related to all aspects of brewery logistics operations in London, with special emphasis on PCNs, access to the kerbside and on health & safety obligations, cycling issues and on congestion and emissions.
- It currently represents 15 members who cover over 3,750 vehicle days per week in London, accounting for approximately 75% of all beer deliveries inside the M25.
- At present BLG members are facing the most difficult time delivering into central London and are finding the time window for deliveries shortening, inflexibility from the London Lorry Control Scheme, with additional issues due to a growing population and noise complaints where previously there was no issue.
- BLG members are facing reduced productivity due to congestion and reduced access to the kerbside which has seen them employ more vehicle movements to take up the short fall, the cost of delivering a tonne of beer in London has now gone past £100 per tonne for the first time, this is compared with £71 in the rest of the country.
- There is now a reality whereby distribution companies invited to tender for central London contracts are declining offersr due to costs and complexity.
- BLG are seeing a lack of a joined-up approach by the 33 London Boroughs, with differing agendas and varying schemes which have had a negative impact on improving air quality in the capital. BLG are keen to find a solution that works for everyone: cyclists, pedestrians and business alike, hence they continue to ask questions on proposed schemes about the effects kerbside and the impact on the free movement of goods on London's roads.
- BLG members are making great strides in the consolidation of loads, and where once a pub received six separate deliveries, many now have one Dray vehicle, once per week. Some BLG members have taken this even further by delivering point of sale goods and collecting waste.

Pan-London businesses engaged with		
Asda	Nandos	William Hill
Tesco	Subway	Tk Maxx
Sainsbury's	Greggs	New Look
Morrisons	KFC	Sports Direct
Iceland	Pret a Manger	Argos
Waitrose	Dominos	The Body shop
Co-op	McDonalds	WH Smith
Aldi	Costa	Franco Manca
Lidl	Starbucks	Primark
Costcutter	Boots	H-&M
Nisa Local	Poundland	DPD
Marks & Spencer	Ladbrokes	

C. Fulham EV process details

The following was agreed with LBHF and Zipcar:

1. Businesses complete a registration form for the council (an agreement that they understand that the scheme is about improving local AQ and aims to improve awareness and understanding of EVs, whilst also encouraging businesses to share vehicles rather than owing them)
2. Businesses will need to setup a business account with Zipcar
3. Businesses will be linked with the exclusive shared electric van following approval by the council and will be able to book the van
4. Usage reports will be sent to the council business team each month by Zipcar EV trial interest

D. Published articles mentioning the Brixton EV

Article title	Publisher	Date	Link
Businesses in Brixton to Share Electric Van	Air Quality News	3/12/19	https://airqualitynews.com/2019/12/03/businesses-in-brixton-to-share-electric-van/
Electric van sharing for small businesses in Brixton	Green Fleet	4/12/19	https://greenfleet.net/news/04122019/electric-van-sharing-small-businesses-brixton
London shared business e-van scheme set to launch in Brixton	Intelligent Transport	4/12/19	https://www.intelligenttransport.com/transport-news/93036/london-shared-business-e-van-scheme-set-to-launch-in-brixton/
Electric van sharing scheme launches in London	International Fleet World	4/12/19	https://internationalfleetworld.com/electric-van-sharing-scheme-launches-in-london/
Zipcar launches electric van sharing in London	Electrive	5/12/19	https://www.electrive.com/2019/12/05/zipcar-launches-electric-van-sharing-in-london/
Electric van shared by Brixton businesses	Energy Saving Trust	30/10/19	https://energysavingtrust.org.uk/about-us/news/electric-van-shared-brixton-businesses
London's First Shared Electric Van	Brixton BID	9/12/19	https://www.brixtonbid.co.uk/londons-first-shared-electric-van/
London's first shared E-Van business scheme to launch in Brixton	Zipcar	N/A	https://www.zipcar.com/en-gb/press/london-e-van-launch
Electric van-share scheme launched	Evening Standard	3/12/19	N/A
Brixton is home to London's first shared electric van	Brixton Bugle	3/12/19	https://brixtonblog.com/2019/12/brixton-is-home-to-londons-first-shared-electric-van/
London's first electric van sharing business scheme is launched	Fleet Point	3/12/19	https://www.fleetpoint.org/electric-vehicles-2/electric-vans/londons-first-electric-van-sharing-business-scheme-is-launched/

E. EV trial and dongle interest

Borough	Village	Business name
Camden	Euston Road	UCL Hospital
Lambeth	Brixton	Phillip Butchers

Lambeth	Brixton	Make Do & Mend (Pop)
Lambeth	Brixton	New Zealand & Australian Cellar (Pop)
Lambeth	Brixton	Malika
Lambeth	Streatham	Fish Tale
Lambeth	Streatham	Dr Dolittles Pet Shop
Lambeth	Streatham	Tariq Halal Butcher
Lewisham	Deptford	Tony's Daily
Lewisham	Deptford	Zahra Fabric
Lewisham	Deptford	AK Continental
Lewisham	Deptford	The Waiting Room
Lewisham	Deptford	Highstreet flowers and fruit and veg
Lewisham	Deptford	Kim's Newsagent
Lewisham	Lewisham TC	La Ciabatta
Lewisham	Lewisham TC	Onur's Cafe and Restaurant
Lewisham	Lewisham TC	Bellona
Lewisham	Lewisham TC	Corte Cafe
Lewisham	Lewisham TC	Levante Pide
Westminster	Covent Garden	St. John's Bakery
Lewisham	Lewisham TC	Catford Food Centre
Lewisham	Lewisham TC	Anatolia
RBKC	Ladbroke Grove	Leafwild
RBKC	Ladbroke Grove	Royal Trinity Hospice
RBKC	Ladbroke Grove	Real Ale
RBKC	Ladbroke Grove	The Olive Bar
RBKC	Ladbroke Grove	Afghan Carpet Store
Lewisham	Lewisham HS	Klos Deli
Wandsworth	Tooting	Wandsworth Oasis
RBKC	Earls Court	Cafe du Coin
Westminster	NCGM	Fresh Connect
Westminster	NCGM	IA Harris
Westminster	NCGM	Oui Chef
Lambeth	Brixton	Market stall
Wandsworth	Tooting	Caribbee
Wandsworth	Tooting	Hali.H
Wandsworth	Tooting	Graveney Gin

<u>EV survey questions from Survey Monkey asked to those interested in EV trials:</u>

1. Please tell us about the vehicles that you have in your fleet. (Please include all modes of vehicles, including bikes).
2. What is the average daily mileage of your vehicle(s)?
3. What are the average number of stops per day?
4. What type of products do you deliver or service?
5. What is the payload that you are looking for?
6. How many days do you operate per year?
7. Do you have permission to install a charging point in your fleet location?
8. How often do you have a safety inspection on your vehicle?

F. Ultra-Low Emission Supplier Directory Information

CAV project	Village
CAV1	Archway
CAV1	Old Street
CAV1	Deptford
CAV1	Lewisham Town Centre
CAV1	Fulham
CAV1	Tooting
CAV1	Earl's Court
CAV1	Brixton
CAV1	Streatham
CAV2	Covent Garden/Strand
CAV2	Euston Road
CAV2	Hatton Garden
CAV2	Shepherds Bush
CAV1	Ladbroke Grove
CAV2	Cadogan

List of businesses on the Directory:

Column one shows businesses added during year one of the CAV project. Column two shows businesses added during year two of the CAV project.

CAV 1	CAV 2
3F EV Ltd	AbsolutePrint
Anglo Ltd	Balfe's Bikes
AV2Hire	Father Nature
Bread By Bike	Fed by Abel & Cole
Captain Cyan	First Mile
CarryMe Bikes	Good Sixty
Champagne Lasseaux	Green Tomato Cars
Cleanology	GreenZone Cleaning & Support
Colyer London	Services
Cooper's Bakehouse	Honest Foods London
Drings Butcher	Hospitality Source
DriveElectric	iKhofi
"E-Car Club"	Parcels Not Pollution
e-cargobikes.com	Pedals Delivery
Elysia Catering Ltd	Pesky Fish Ltd.
Fancy Kombucha	Petalon
Farmdrop	Planet Minimal
FasterBy.Bike	Ride Clean Ltd
Fresh Flower Scent	The Cycling Sparks
Gnewt	The Ecofleet
LeasePlan	Theatre of Wine
London Calling Arts	WEGO Couriers
Made in Brockley	
Mango Logistics Group	
Moose Mail	

Pedivan TheEcoSmart Ltd Today Bread Zedify	
Total: 29	**Total: 21**

Eligibility criteria for the directory

The Directory inclusion criteria is as follows:

1. Deliver mode:
    a. Inclusion criteria: Ultra-Low Emission vehicles* in fleet
    b. Inclusion criteria: If mixed fleet, must be able to guarantee to deploy ultra-low emission vehicles at least 80% of the time
    c. Vehicle type:
        i. Foot/cycle/cargo bike delivery
        ii. Fully electric van/truck
        iii. Hybrid vehicle (petrol hybrid only)

*Ultra-low emission vehicles are defined by the Office for Low Emission Vehicles (OLEV). Only those currently eligible for a plug-in grant, i.e. not Category 2 and 3 cars.

G. Calculation of Air Quality Impact

Emission savings have been calculated throughout this report using the CRP in-house 'measureBEST' tool. This was originally commissioned by CRP to support businesses to understand and implement best practice to make their deliveries more efficient and reduce emissions. measureBEST was developed as part of the Clean Air Better Business programme, a Mayor's Air Quality Fund project, managed by CRP. While only initially including vans and lorries, this tool was updated as part of CAV2 to include additional vehicle types, such as diesel and petrol cars, and calculations for fine particulate matter (PM2.5).

In order to calculate emissions savings for CAV2, as much information as possible was gathered from businesses and partners concerning vehicle type and journey. CRP cannot guarantee the accuracy of the information provided, and therefore recommend that emissions calculations are used as guidance values based on the information available. In some cases, reasoned assumptions have been made concerning the journey and vehicle type, combined with averaging techniques to minimise misrepresentation of emission savings.

In order to calculate emissions produced, the following information is required by measureBEST:

- **Vehicle type** (as defined by the *Emissions Factor Toolkit* – further information below)
- **Time period**
    - Morning peak (07:00-10:00)*
    - Inter-peak (10:00-16:00)*
    - Evening peak (16:00-19:00)*
    - Off-peak (outside these times)
      *On working weekdays (Mon-Fri) only.
- **Trip length** (in km)
    - If known, the split by distance within each London zone (central, inner and outer) is required.

  - If unknown, an average can be used, calculated using an average distance from the centre of each borough to the M25 via arterial routes.
  - In some cases, where relevant, a standardised 'per mile' calculation was used.
- **Delivery frequency** (if an annual estimate is required)

Calculation method:
The vehicle type, time period and distance split within London zones are used by measureBEST to determine the appropriate emissions factor. These are then multiplied by trip length to give an emission total per trip. Delivery frequency is then used to inform an annualization factor, from which the emissions produced for a year are calculated.

Defra's Emissions Factor Toolkit (EFT):
The latest update of measureBEST uses version 9.0 of the EFT, a speed-based model of tailpipe emissions. The EFT also includes estimates of brake and tyre-wear but does not consider non-tailpipe emissions of carbon dioxides (CO2) associated with alternative technologies. The EFT can be used to provide emission rates (in g/km) for oxides of nitrogen (NOX), particulate matter (PM10 and PM2.5) and CO2. These can be calculated by vehicle type for a user-defined average speed.

Average speeds for four time periods across each London zone were sourced directly from TfL via a Freedom of Information request (presented in Table 36).

Table 36. Average traffic speeds by area and time period (in km/h).

	Central	Inner	Outer
Morning peak	12.1	18.6	29.2
Inter-peak	10.9	19.8	33.2
Evening peak	11.6	16.8	26.9
Off-peak	21.6	32.8	48.6

Vehicle types:
Using CRP's measureBEST tool, the following emissions generated per kilometre were calculated for both conventional and ultra-low emission delivery methods:

Vehicle/method	Description	Emissions generated per km			
		NOX (g)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)** (Tailpipe)
London Average HGV	Heavy goods vehicles (>3.5 tonnes; incorporating the mix of rigid and articulated across the London fleet).	1.55	0.06	0.13	0.70
London Average LGV	Light goods vehicles (<3.5 tonnes). Average emissions considered across London fleet mix.	0.75	0.03	0.05	0.18
London Average Car	Average car (considered across London vehicle mix).	0.30	0.02	0.03	0.15

EV HGV	Fully electric HGV. PM emissions only, from tyre, brake and road abrasion.	0.00	0.06	0.11	0.00
Full hybrid LGV	Petrol-only full hybrid LGV.	0.02	0.02	0.04	0.15
Plug-in hybrid LGV	Petrol-only plug-in hybrid LGV.	0.07	0.02	0.04	0.07
Battery EV LGV	Fully electric LGV. PM emissions only, from tyre, brake and road abrasion.	0.00	0.02	0.04	0.00
Battery EV Car	Fully electric car. PM emissions only, from tyre, brake and road abrasion.	0.00	0.01	0.03	0.00
Bike, cargo bike or on foot	Tyre, brake and road abrasion emissions assumed negligible.	0.00	0.00	0.00	0.00

Emissions from *alternative fuel* vehicles (e.g. compressed natural gas, CNG) could not be calculated due to unavailability of data in measureBEST, further complicated by the range of different fuel types within this category.

H. Dissemination: CRP Newsletter Articles and LinkedIn Posts

Date	Article title	Method of dissemination	Link to article/post
20/05/19	CRP's Ultra-Low Emission Supplier Directory Launches!	CRP Newsletter	https://crossriverpartnership.org/news/crps-ultra-low-emission-supplier-directory-launches/
11/06/19	Clean Air Villages 2 Event Launch	CRP Newsletter	https://crossriverpartnership.org/news/clean-air-villages-2-event-launch/
11/06/19	Clean Air Villages 1 Business Case Studies	CRP Newsletter	https://crossriverpartnership.org/news/clean-air-villages-1-business-case-studies/
23/09/19	Out and About in Drummond Street	CRP Newsletter	https://crossriverpartnership.org/news/out-and-about-in-drummond-street/
23/09/19	Clean Air Villages Project Shortlisted for an Award	CRP Newsletter	https://crossriverpartnership.org/news/clean-air-villages-project-shortlisted-for-an-award/
13/08/19	Work Experience at Cross River Partnership	CRP Newsletter	https://crossriverpartnership.org/news/work-experience-at-cross-river-partnership/
13/08/19	CAV Conversations	CRP Newsletter	https://crossriverpartnership.org/news/cav-chats/
10/19	Ultra Low Emission Supplier Directory	LinkedIn	https://www.linkedin.com/posts/cross-river-partnership_cleanairvillages-cav2-defra-activity-6564063977943511040-Zcua
25/10/19	CAV update: September and October	LinkedIn	https://www.linkedin.com/posts/cross-river-partnership_cleanairvillages-airquality-cleanairforall-activity-6597140625651576832-z2FG
25/10/19	CAV Conversations – September & October	CRP Newsletter	https://crossriverpartnership.org/news/cav-conversations-september-october/
25/10/19	Latest funding bid – Taking smart electric vehicle charging to the next level	CRP Newsletter	https://crossriverpartnership.org/news/latest-funding-bid-taking-smart-electric-vehicle-charging-to-the-next-level/

25/10/19	Addressing congestion in Ladbroke Grove	CRP Newsletter	https://crossriverpartnership.org/news/addressing-congestion-in-ladbroke-grove
11/19	Parcels not Pollution comes to Fulham	LinkedIn	https://www.linkedin.com/posts/fulham-broadway-bid_fulham-bid-pollution-activity-6609813226228199424-X5_a
11/19	Freight in the City	LinkedIn	https://www.linkedin.com/posts/cross-river-partnership_airquality-cleanairvillages-seul-activity-6597504497050767362-uj_4
11/19	Best Collaboration Award for our #CleanAirVillages project!	LinkedIn	https://www.linkedin.com/posts/cross-river-partnership_cleanairvillages-ciehawards-airquality-activity-6601120620463947776-_nRF
22/11/19	CRP Submits Application to Defra's Air Quality Grant Programme	CRP Newsletter	https://crossriverpartnership.org/news/crp-submits-application-to-defras-air-quality-grant-programme/
12/19	Brixton EV Launch	LinkedIn	https://www.linkedin.com/posts/cross-river-partnership_brixton-cleanairvillages-airquality-activity-6607921348125831168-nXzi
16/12/19	London's first shared electric van for businesses launches in Brixton	CRP Newsletter	https://crossriverpartnership.org/news/londons-first-shared-electric-van-launches-in-brixton/
01/20	#CleanAirVillages workshop, Hatton Garden	LinkedIn	https://www.linkedin.com/posts/cross-river-partnership_clean-air-villages-camden-consolidation-activity-6622488915280572416-G4YU
28/01/20	Solutions to poor air quality for local businesses	CRP Newsletter	https://crossriverpartnership.org/news/issues-and-solutions-to-poor-air-quality-for-local-businesses/
28/01/20	Upcoming events for Clean Air Villages	CRP Newsletter	https://crossriverpartnership.org/news/upcoming-events-for-clean-air-villages
02/20	Clean Air Villages workshops	LinkedIn	https://www.linkedin.com/posts/cross-river-partnership_cleanairvillages-cleanair-righttocleanair-activity-6635550639298621440-vWHc
02/20	Fulham Clean Air Villages Workshop	LinkedIn	https://www.linkedin.com/posts/fulham-broadway-bid_fulham-electricvehicles-cleanair-activity-6633712089187913728-d-U8
02/20	Parcels not Pollution – extended to Shepherds Bush	LinkedIn	https://www.linkedin.com/posts/hammersmith-bid_freighthub-lastmiledelivery-parcelsnotpollution-activity-6630071708051214336-MgUP
25/02/20	Air Quality Solutions Launched as part of Clean Air Villages	CRP Newsletter	https://crossriverpartnership.org/news/air-quality-solutions-launched-as-part-of-clean-air-villages/
16/03/20	CAV on track – cargo bikes, telematic dongles and feedback workshops	CRP Newsletter	https://crossriverpartnership.org/news/cargo-bikes-telematic-dongles-and-feedback-workshops-cav-updates-march-2020/

17/03/20	Brixton share electric vehicle success!	CRP Newsletter	https://crossriverpartnership.org/news/brixton-shared-electric-vehicle-success/
Total: 27 Clean Air Villages articles/posts between April 2019 and March 2020			

I. Other key communications (via Twitter)

Irfan Mohammed @IrfanMohammed_ · Dec 3, 2019

If you are a small business and are Brixton Based then.....

We have some great news @CrossRiverPship along side @Zipcar & @lambeth_council have just launched a Brixton Shared Electric Van which you can register to use

Yes you got it we are #ElectrifyingBrixton #CleanAir

@Brixtonbid and 8 others

6 8

Tooting Newsie @tootingnewsie · Jul 26, 2019

#Tooting has joined the Clean Air Villages 2 scheme, which works with local businesses & communities in an aim to reduce emissions in 13 hotspots of poor air quality across 7 London boroughs. Details via @CrossRiverPship: bit.ly/2LOvCt1

Transition Tooting and 7 others

1 8 14