Clean Air Villages

Air Quality Grant 2019-20

Bravo Ref: 31/3968

Defra Air Quality Grant Scheme 2019/20 Summary Report

June 2021

Prepared for

Department
for Environment
Food & Rural Affairs

Contents

Glossary

AQ	Air Quality
AQFA	Air Quality Focus Area
BID	Business Improvement District
CAV	Clean Air Villages
CAV1	Clean Air Villages 1
CAV2	Clean Air Villages 2
CAV3	Clean Air Villages 3
CAV4	Clean Air Villages 4
CO2	Carbon Dioxide
CRP	Cross River Partnership
EV	Electric Vehicle
F&B	Food & Beverage
GLA	Greater London Authority
LGV	Large goods vehicle
NO2	Nitrogen Dioxide
NOx	Nitrogen Oxides
OGV	Other goods vehicle
PM	Particulate Matter
SMEs	Small and Medium Enterprises

1- Executive Summary

Clean Air Villages is a Defra Air Quality Grant funded project. Clean Air Villages 3 (CAV3) built on the work undertaken through the Defra-funded 2018/19 Clean Air Villages 2 and the 2017/18 Clean Air Villages 1 project, which both aimed to **reduce emissions in hotspots of poor air quality across London boroughs**. The CAV3 project has enabled further widespread and sustained action to reduce emissions resulting from the delivery of goods and services to businesses, communities and hospitals in 16 of London's most polluted town centres ('villages').

The project was delivered by Cross River Partnership (CRP) from April 2020 to April 2021 on behalf of project lead City of Westminster and partners: London Boroughs 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, The Northbank BID and South Bank BID (12 boroughs, 4 BIDs).
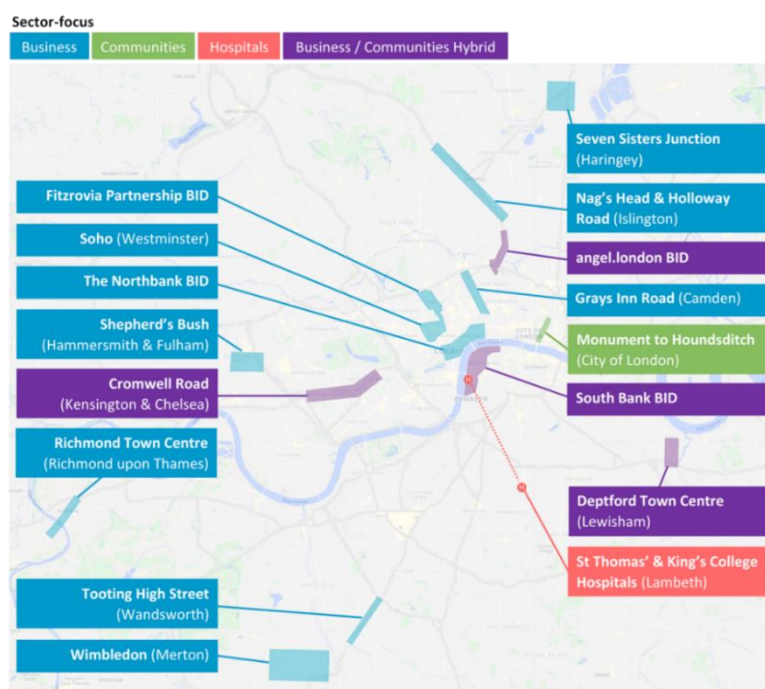
Figure 1:Map of Clean Air Villages

Through an extensive business engagement exercise, **1,561 businesses were contacted**, with 2,481 attempts at contact. **138 businesses were engaged with** via in-depth phone calls, emails and social media. **22 workshops** took place, which included **a series of 17 LiveShares** (wide-reaching webinars, bringing together a range of industry professionals to discuss and present about air quality issues and solutions), **four active travel workshops** and **one citizen scientist workshop**. **22 cases studies and toolkits** were produced and used in engagement.

16 local solutions were developed to support organisations reduce emissions from deliveries and servicing trips:

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- Nine cargo bike schemes
- Two Sustainability Forums
- One shared Electric Vehicle (EV)
- One Delivery & Servicing Audit
- One citizen scientist monitoring project
- One micro hub consolidation scheme
- One Air Quality Ambassador Programme

For CAV3, CRP produced and promoted **14 Clean Air Routes**, **seven traffic monitoring devices** were installed, **three EVs have been procured by King's College Hospital** as a result of the telematics devices that CRP provided, the **CAV Business Directory was expanded** into all CAV3 villages and **an emissions calculator called Clean Air Tool was launched**, which helps people visualise their emissions savings.

Table 1 provides an overview of the annual emissions savings estimated for the year following the project (April 2021 to March 2022) from the local solutions that were developed and implemented and from the EV Trials and Directory expansion. Appendix III shows how these were calculated.

Partner	Village / Solution	Emissions			
		NOx (kg)	**PM2.5 (kg)**	**PM10 (kg)**	**CO2 (kg)**
City	Monument	5.54	0.17	0.29	2,325.9
WCC	Soho	15.43	0.48	0.82	6,480.00
Camden	Grays Inn Road	7.44	0.23	0.39	3,121.99
LBHF	Shepherd's Bush	33.68	1.04	1.95	9,217.27
Haringey	Seven Sisters Junction	13.28	0.79	1.42	6,245.92
Islington	Nag's Head	3.30	0.18	0.30	2,558.02
Lambeth	Guy's / King's Hospitals	3.68	0.11	0.21	1,031
Lewisham	Deptford High Street	9.91	0.51	0.92	5,185.52
Merton	Wimbledon	4.03	0.24	0.43	1,897.18
Richmond	Richmond	5.70	0.34	0.61	2,680.86
Wandsworth	Tooting	5.87	0.30	0.54	3,071.11
RBKC	Cromwell Road	42.87	1.43	2.71	10,374.02
Angel BID	BID area	5.54	0.17	0.29	2,324.90
Fitzrovia	BID area	1.78	0.10	0.16	1,377.87
The Northbank BID	BID area	6.22	0.33	0.57	4,819.39
Southbank BID	BID area	3.97	0.21	0.37	3,078.23
Cross-borough	EV Trials	198.75	133.83	253.02	81,849.57
	Directory	3.88	61.37	117.14	1,286.11
	CAV3 TOTAL	**359.88**	**201.45**	**381.50**	**144,190.10**

Table 1: Potential annual emissions savings from the Clean Air Villages 3 project in 2021/22.

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Due to the on-going lockdowns and restrictions that London faced as a consequence of the Covid-19 pandemic, the **CRP team delivered CAV3 remotely** for the duration of the project. The ever-changing restrictions made project delivery more challenging but also opened up opportunities for new ways of working and delivering outputs. More information on the impact of the pandemic can be found in the Covid-19 section and in the individual Village Solutions sections.

The CRP Team

The CRP Team delivered a successful project under unprecedented circumstances. The whole team stayed in place throughout the lifetime of CAV3, providing excellent continuity. A high proportion of the team had also worked on CAV2, therefore transferring **valuable skills, knowledge and experience**.

Figure 2: The CRP team at the 2020 digital Christmas party

Targets

As shown above, the **air quality benefits achieved and predicted by the project well exceed the objectives set at project start**. The CAV3 project aimed to deliver 86.7kg NOx savings, 3,332.5 g of PM10, 24,171 kg of CO2 and actually delivered an estimate of 359.88kg NOx savings, 381,500g of PM10 and 144,190kg of CO2. **Using the Clean Air Tool developed as part of CAV3, this shows a saving in NOx of emissions of the equivalent of 1,629 football pitch sized forest fires and a saving of CO2 of the equivalent of 16,438 homes heated for one day**.

All other targets were met with the exception of the MeasureBEST update, the 1-2-1 target by village (eight per village) and the EV Trials target. MeasureBEST was not updated due to the most recent update taking place in April 2020. CRP has been formulating ideas for the next update which can take place as part of CAV4. **The overall 1-2-1 target was exceeded**, with **138 being achieved out of a target of 128**, but the spread across the villages was not consistent, with seven areas falling short of the target of eight for their area. 12 businesses were found who were interested in EV trials out of a target of 16.

Local engagement and the sharing of toolkits and offering advice and guidance provides a valuable and targeted approach to promoting behaviour change in relation to air quality. The dissemination of CAV-related case studies, toolkits and LiveShares, that promote best practice is not quantifiable as a direct outcome of the project but will further increase its effect over time. The five best practice case studies and 17 toolkits that supported the LiveShares series will continue to support the dissemination effort.

Changes to the original proposal

In light of the Covid pandemic and its impact on resources and priorities and with agreement from Defra, CRP offered all CAV3 project partners the opportunity to change their area of focus, or 'village', at project start. They were also able to change the strand focus, with the options being: Businesses, Communities, Hospitals, or a Business / Communities hybrid. Partners were also given the flexibility to change their match-funding contribution, choosing between cash, in-kind, or a combination of the two.

The following changes were agreed:

- London Borough of Camden changed their focus area from Holborn to Grays Inn Road
- London Borough of Hammersmith & Fulham changed from a Hospitals to a Businesses strand with a focus in Shepherds Bush
- London Borough of Lewisham changed their focus area from Forest Hill to Deptford
- Royal Borough of Kensington & Chelsea, London Borough of Lewisham, Angel BID and Southbank BID all decided to amend their strand to become a hybrid of Businesses and Communities
- The Northbank BID chose to change their strand from Communities to Businesses
- The CAV3 match-funding remained at £160,000 (22% of the grant), but there was a loss of £100,000 in cash match-funding, which was replaced by in-kind match. This reduction in cash led to amendments to the budget spend on various project activities. The amendment did not impact on CRP delivering a successful CAV3 project.

A cargo bike scheme which was launched in The Northbank BID area had not been utilised. This was due to the poor timing of the third national Covid lockdown on 6th January 2021, which had a particularly adverse impact on businesses in this area. CRP sought approval from Defra to roll this into the Clean Air Villages 4 programme (Defra AQ Grant 2020-21), of which The Northbank BID is a partner.

CRP and partners are now thrilled to continue delivering business behaviour change around deliveries and servicing, with funding to deliver ambitious Freight Solutions as part of the newly Defra-funded Clean Air Villages 4 project that commenced in April 2021.

2- Covid-19

The Covid-19 pandemic led to a national lockdown being imposed in the United Kingdom on 23rd March 2020. Varying government-imposed restrictions continued for the duration of the CAV3 project. The CAV3 project launched on 1st April 2020, amidst the first lockdown. CRP mobilised quickly to confirm that project delivery would continue and secured flexibility from Defra to:

- deliver the project remotely / on-line
- to offer project partners the opportunity to change their village area of focus
- work with partners and stakeholders to make the CAV3 project as relevant and supportive as possible in the context of the Covid pandemic. This meant **continuing to deliver improvements and promote behaviour change around air quality issues, whilst also being sensitive to and supporting businesses and communities during an extremely challenging time**.

Table 2 shows the timeline of evolving Covid restrictions which the CRP team navigated whilst delivering CAV3.

Date	UK coronavirus lockdowns
23rd March 2020	*First UK lockdown*
15th June 2020	Non-essential shops reopen in England
23rd June 2020	Relaxing of restrictions and 2m social distancing rule
4th July 2020	Local lockdown More restrictions are eased
3rd August 2020	Eat Out to Help Out scheme, offering a 50% discount on meals up to £10 per person, begins
14th August 2020	Lockdown restrictions eased further, including reopening indoor theatres, bowling alleys and soft play
14th September 2020	'Rule of six' – indoor and outdoor social gatherings above six banned in England
22nd September 2020	PM announces new restrictions in England, including a return to working from home and 10pm curfew for hospitality sector
14th October 2020	A new three-tier system of Covid-19 restrictions starts in England
5th November 2020	*Second lockdown* in England
2nd December 2020	Second lockdown ends after four weeks and England returns to a stricter three-tier system of restrictions
21st December 2020	Tier 4 restrictions come into force in London and South East England
26th December 2020	More areas of England enter tier 4 restrictions
6th January 2021	England enters *third national lockdown*

Table 2: Source timeline-lockdown-social (instituteforgovernment.org.uk).

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The decision to continue, as opposed to delay the delivery of this air quality project was critical because even though the first lockdown resulted in up to a 78% reduction in traffic congestion[1], with a consequent drop in emissions, this was under extenuating circumstances. The need to improve air quality remained. Links between air pollution and Covid-19 were being made. The pandemic also offered an opportunity for businesses (who were able) to change their working practices and ensuring that such processes were changed with air quality and the climate in mind, was vital.

The CRP team, in line with government guidelines, ceased going to the office from 17th March 2020 and continued to work remotely to deliver CAV3 for the duration of the project. Working in this way was not without its challenges, but it also offered the **opportunity to deliver a project in a different way**. From running a series of webinars instead of in-person workshops, to engaging with businesses and hosting all meetings online and over the 'phone. Despite stressful and relentless world events taking place, which were impacting on the CRP team and everyone linked with the project, the team discovered a new way of working which was extremely effective and were able to react and respond to the changing business landscape with tenacity and resilience. This will be addressed more in the Lessons Learned section.

The impact of the pandemic on the CAV3 partners meant that CRP needed to be more flexible than ever. The local authority partners found themselves stretched and Officers were sometimes redeployed to Covid response teams. Changes within the councils meant that CRP needed to adapt to changing members of staff and varying degrees of availability from project partners to contribute to the project. The BID partners also found themselves stretched, with many team members furloughed for a range of time periods. This also led to CRP needing to be more adaptable and sometimes patient. CRP continued to move forwards with delivering the CAV3 project, despite these hurdles. The overwhelming response from project partners was relief and joy at the Defra-funded CAV3 project continuing. Many other projects had funding pulled or redirected.

With support from the relevant project partners, CAV3 was able to offer **vital support to struggling communities during the pandemic**. Funded cargo bikes were able to be used by food banks, pharmacies, charities and businesses alike.

Further details of the impact of the pandemic on the individual village activities and cross-borough outputs can be found throughout this report.

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[1] TomTom

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3- Background

The London Boroughs 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 continue to exceed European and UK limits for air pollution. Angel.london and The Fitzrovia Partnership sit in in the London Borough of Camden, The Northbank BID sits in Westminster and South Bank BID sits in Lambeth. Despite each of these London Boroughs having Air Quality Management Areas in place, they continue to remain in exceedance of the UK's legal limits for NO2.

The 16 CAV3 focus areas—known as 'villages'—have been chosen largely to reflect GLA Air Quality Focus Areas (AQFAs). These have been identified by the GLA, based on detailed dispersion modelling of NO2 and PM10 and analysis of population exposure, and are therefore a good indication of locations of **high human exposure** where national **air quality objectives are exceeded**. These are not intended to be an *exhaustive* list of 'hotspot' locations, but indicate where the GLA believe air quality issues are the most acute.

Tackling pollution around hospitals and health centres presents a priority since patients, including young children and the elderly, are among the **most vulnerable** to the harmful health effects of air pollution. All major NHS trusts in central London are located in areas **exceeding safe air pollution limits**. A report conducted by the British Lung Foundation (BLF) found that 13 out of 14 teaching hospitals in Greater London also have levels of PM2.5 above the WHO's limit.

The Clean Air Villages 3 project focuses on three different areas: the delivery of goods and services to **businesses**, which is a major contributor to air pollution within the participating boroughs; the **hospitals** sector (the NHS produces 5.4% of the UK's greenhouse gases and reducing exposure to poor Air Quality of the most vulnerable by working with hospitals is part of the Mayor of London's Environment Strategy); and **communities** (King's and Imperial College London have messaged strongly that there is a need for more structured, widespread & positive behaviour change programmes with associated research).

At the best of times, business engagement can be a slow and time-consuming process. Small businesses are often time poor and building positive relationships takes time. With the additional challenge of the pandemic, engagement was even harder for CAV3 as changing operational guidelines impacted on which businesses were able to be open and organisations were facing immense additional pressure. Despite these challenges, the CRP team adapted to working remotely and were, in some cases, able to offer businesses free use of zero emission cargo bikes during a time when deliveries were the only way for operations to continue.

Three out of 16 of the villages were not the same as in CAV2, thus offering reduced opportunity to build on existing relationships and momentum, which can give the team a head-start on the project. However, seven out of the 12 local authority partners were existing CAV2 partners, which meant an easier transition for launching the project where the Officers were the same contacts. These existing relationships helped the project get started with greater momentum and understanding of the project. CRP was working with the new CAV3 partners on other projects, there were therefore additional relationships to build on.

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The four BIDs who joined CAV3 were all located within local authority areas that were also part of the project. This enabled joined up conversations, fostered stronger working relationships amongst all parties and helped make, for example, the setup of Vivacity traffic monitoring devices easier.

CAV3 supported businesses, communities and hospitals in the 16 chosen air quality focus areas ('villages') within the 12 boroughs to change their behaviour in taking coordinated action to reduce emissions from deliveries and services and from individual behaviour. The focus areas are called 'villages' to reflect the geographically adapted approach to business engagement and solution development.

The 16 focus areas/villages were chosen as they:

- Largely reflect the GLA **Air Quality Focus Areas** (AQFAs), with predicted continued exceedance of legal NO2 limits, up to 2020
- Represent business clusters / high streets with high footfall and therefore high exposure levels of NO2 and PM10. These are a good indication of locations of **high human exposure**
- Provide a good geographical spread across inner and outer London
- Represent areas with and without pre-existing business engagement platforms e.g. business improvement districts.

Partner Borough / BID	Clean Air Village
City of London Corporation	Monument to Houndsditch
Westminster City Council	Soho
London Borough of Camden	Grays Inn Road
London Borough of Hammersmith and Fulham	Shepherd's Bush
London Borough of Haringey	Seven Sisters Junction
London Borough of Islington	Holloway Road/ Nag's Head
London Borough of Lambeth	St Thomas' Hospital/ King's College Hospital
London Borough of Lewisham	Deptford High Street
London Borough of Merton	Wimbledon
London Borough of Richmond Upon Thames	Richmond Town Centre
London Borough of Wandsworth	Tooting High Street
Royal Borough of Kensington and Chelsea	Cromwell Road
angel.london	BID area
The Fitzrovia Partnership	BID area
The Northbank BID	BID area
South Bank BID	BID area

Table 3: CAV3 partners and their associated Clean Air Villages.

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4 - Business Engagement

Business engagement for CAV3 took a different approach from previous years. The whole CRP team worked remotely due to the pandemic and did not go out to speak or meet businesses in person.

CRP coordinated an approach to engagement which encompassed offering **advice and guidance** to **reduce emissions** from business deliveries whilst sharing up-to-date information about government guidelines and local grants for businesses and organisations that were available during the pandemic. Organisations in some of the village areas were also able to access free cargo bike hours. The conversation was different from previous CAV projects as businesses were struggling with the changing operational landscape. CRP therefore supported organisations within the wider context of the pandemic, but with conversations embedded in air quality.

CRP engaged in different ways, for example, through phone calls, emails, social media, BID newsletters and presentations at local virtual events. Support and introductions and or contacts also came about via Town Centre Managers, Local Authority business support teams, pre-existing CRP business contacts and following the promotion of the project in the wider media.

This approach has led to in-depth engagement with **138 businesses as 1-2-1 meetings**, with additional engagement by other means. Additional engagement, which includes surveys, calls and emails has resulted in **1,561 organisations being contacted, with 2,481 attempts** at contacting these organisations across the 16 villages.

Business engagement targets	Output
16 workshops • At least X1 per area	**22 workshops** • X17 LiveShares • X4 Active travel workshops • X1 Citizen scientist workshop
128 1-2-1s • X8 per area	**138 1-2-1s** • X7 village areas achieved less than x8 1-2-1s, but the overall target was exceeded

Table 4: Summary of CAV3 targets and outputs.

CRP conducted **surveys in eight of the villages**, only where the CAV3 partner requested one or it felt intrinsic to the project. A range of surveys took place which were tailored to the area for different reasons. The surveys included:

- London Borough of Camden – to feed into the council's Freight Action Plan for the area
- London Borough of Hammersmith & Fulham – to collate interest and details of usage for the shared EV

- London Borough of Lambeth – a King's College Hospital staff survey about active travel
- London Borough of Lewisham – to build on CAV2 work and to assess the perceived impact of the first lockdown
- London Borough of Merton – to better understand business deliveries and interest in a cargo bike
- London Borough of Richmond – to better understand business deliveries and interest in a cargo bike
- Angel BID – active travel survey
- South Bank BID – active travel survey

CRP has continued to find an increased awareness of the air quality issue, which has grown year-on-year during CAV engagement. Changing attitudes to the climate crisis result in greater acknowledgement and openness from organisations that CRP speaks with, in both listening and making changes. CRP has also observed that when **air quality is framed within the wider topic of sustainability**, that there is a greater level of interest and attendance at events.

Due to the financial pressure on businesses and fast-changing guidelines regarding operations, as a result of the pandemic, some CAV3 partners were hesitant in wanting CRP to conduct engagement within their villages about air quality. Additionally, with enforced business closures due to the pandemic, staff on furlough and general anxiety and uncertainty about the world, engagement was challenging. Despite this, an immense amount took place and Table 5 breaks down the number of engagement attempts that took place in the 16 villages.

CAV3 Partner	Number of businesses / organisations contacted	Number of attempts at contact
City	14	36
WCC	92	150
Camden	126	260
Haringey	70	154
Islington	65	93
Lewisham	56	109
Merton	91	132
Richmond	79	114
Wandsworth	18	33
RBKC	37	90
Northbank	149	201
Angel BID	409	445
LBHF	83	141
Lambeth	7	23
Fitzrovia	256	479
South Bank	9	18
Total	**1,561**	**2,481**

Table 5: Engagement by village.

4.1 LiveShares

CRP was joined by **experts from across the industries of transport, business, health and environment** to discuss a range of topics to help **facilitate knowledge sharing, highlighting best practice** examples. These workshops, branded 'LiveShares', took place to discuss air quality issues and solutions for CAV3.

These workshops took place virtually due to the pandemic and the digital format had positive results. **CRP hosted 17 LiveShare sessions**, running from June to December 2020, on a variety of different topics, including pedestrianisation, active travel, electric vehicles and urban greening. These sessions gave an insight into lots of relevant topics, and facilitated knowledge sharing amongst the audience.

There were **817 attendees from five countries at the LiveShares** with many more viewing the events afterwards. There were **64 external speakers and CRP team hosts**.
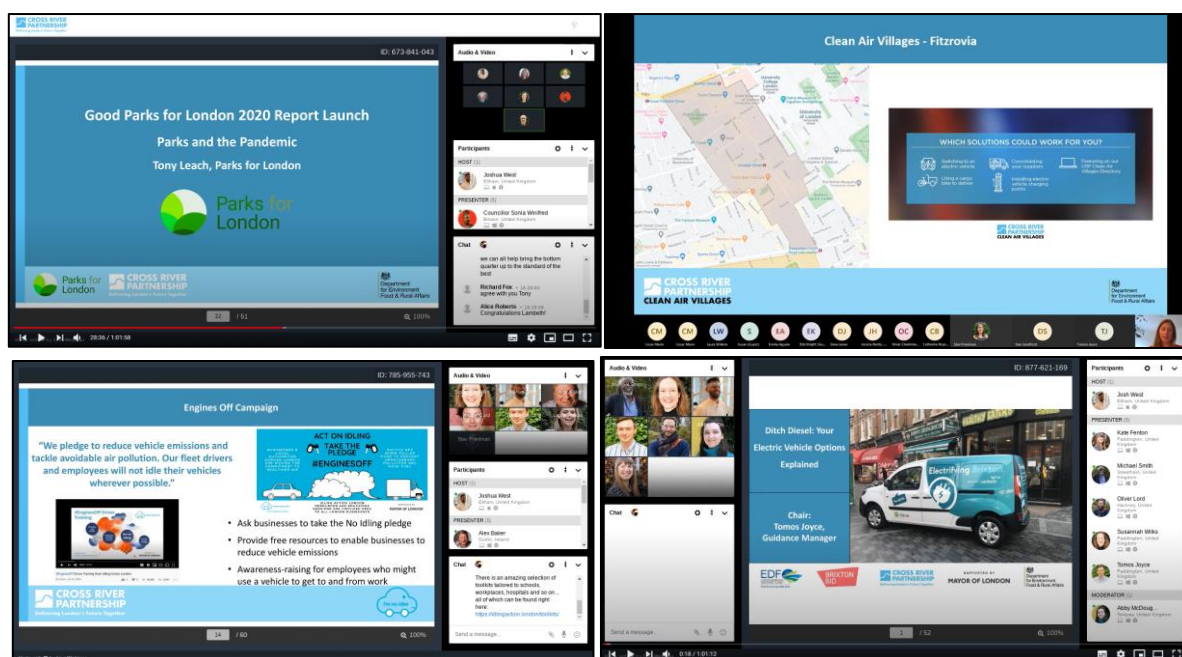

Figure 3: CRP's LiveShares via YouTube.

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This table shows a list of all the LiveShares, including how many attendees, views and speakers there were.

Title	No. attendees (out of 150 available)	Percentage of registrants who attended (%)	Date	Speaker Name	Job Title/Organisation
1. Getting from A-B: Your latest Active Travel Options Explained	72	73	10/6/20	Susannah Wilks	Director, CRP
				Andrew Hatch / Tomos Joyce	Community Partnership Specialist, TfL
				Lucy Atkinson	Senior Project Officer, Sustrans
				Sefinat Otaru	Project Manager, CRP
2. High Streets as Havens: Re-opening business safely and sustainably	92	64	02/07/20	Susannah Wilks	Director, CRP
				Simon Pitkeathley	Chief Executive, Camden Town Unlimited
				Feeroza Patel	Head of Corporate Communications, London and Partners
				Tom Linton-Smith	Project Manager, CRP
3. Parks and Open Spaces: Keeping our Air Clean in a Post-Covid Era	58	83	16/07/20	Susannah Wilks	Director, CRP
				Tony Leach	Chief Executive, Parks for London
				Jacqueline Bleicher	Urban Design Director, Global Urban Design
				Fiona Coull	Project Manager, CRP
4. Ditch Diesel: Your Electric Vehicle Options Explained	50	71	30/07/20	Susannah Wilks	Director, CRP
				Oliver Lord	Head of Policy and Campaigns, Environmental Defense Fund
				Michael Smith	Managing Director, Brixton BID
				Kate Fenton	Project Manager, CRP
	61	61	13/08/20	Susannah Wilks	Director, CRP

5. Pedestrian Priority Streets: The Benefits for School, Businesses and your Health				**Maryn Lowder**	Change Manager, Global Action Plan
				Sarah Rye	Head of Public Realm and Security, Westminster City Council
				Ross Phillips	Project Officer, CRP
6. Keeping Our Air Clean: It's Everyone's Responsibility	37	76	27/08/20	**Susannah Wilks**	Director, CRP
				Natalie Curd	Project Manager, Idling Action London
				Alex Baker	Director, CleanCar
				Laura Jacklin	Senior Project Officer, CRP
7. Re-energise your Business: Diversifying in Response to COVID-19	41	100	10/09/20	**Susannah Wilks**	Director, CRP
				Ojay MacDonald	Chief Executive, ATCM
				Louise Abbotts	BID Manager, InStreatham BID
				Kate Fenton	Project Manager, CRP
8. Better Prepared: What has London learnt from the COVID-19 Crisis?	67	73	24/09/20	**Susannah Wilks**	Director, CRP
				Tony Travers	Professor, LSE
				Joshua West	Communications and Business Development Manager, CRP
9. Operating Sustainably: a North-South perspective on UK Transport and COVID-19	47	66	08/10/20	**Susannah Wilks**	Director, CRP
				Nabeel Khan + Laura Davy	Director – Economy, Culture and Skills + Head of High Streets, London Borough of Lambeth
				Victoria Le Mare	Sustainable Journeys Delivery Lead, Transport for Greater Manchester
				Anusha Rajamani	Project Officer, CRP
10. City of culture: Re-starting the night time economy	52	73	29/10/20	**Susannah Wilks**	Director, CRP
				Amy Lame	Night Czar, GLA
				Nic Durston	Chief Executive, South Bank BID
				Sefinat Otaru	Project Manager, CRP
	15	68	12/11/20	**Tomos Joyce**	Guidance Manager, CRP

				Kate Fenton	Project Manager, CRP
11. Fitzrovia Partnership Workshop Clean Air Villages				**Dan Sandford**	Head of Place Management, The Fitzrovia Parntership
				Laura Wilkins	Account Manager, First Mile
12. A Greener and More Accessible London: Achieving Environmental Inclusivity	67	86	12/11/20	**Susannah Wilks**	Director, CRP
				Cllr Claire Holland	London Borough of Lambeth
				Tamara Djuretic + Vhenekayi Nyambyo	Director of Public Health + Partnerships and Improvement Lead, LEDNet
				Fiona Coull + Isabelle Clement	Project Manager, CRP + Director, Wheels for Wellbeing
13. Support for Businesses and Improving Air Quality in Grays Inn Road, Camden	13	93	19/11/20	**Kate Fenton**	Project Manager, CRP
				Gemma George	CCCA Lead & Sustainability Consultant, Camden Climate Change Alliance
				Klarissa Ekaputri	Senior Consultant, Momentum Transport
14. Good Parks for London 2020 Launch	120	81	26/11/20 20	**Tony Leach**	Chief Executive, Parks for London
				Martin Kelly	National Head of Planning, GL Hearn
				Meredith Whitten	Postdoctoral Research Fellow, London School of Economics
				LB Lambeth	Cllr Sonia Winifred
15. The Right to Clean Air: Protecting and Empowering Communities	39	65	10/12/20	**Susannah Wilks**	Director, CRP
				Matt Towner	Portfolio Manager, GSST
				Grant Waters and Ben Warren	CEO, COO, Tranquil City
				Abby Mcdougall	Air Quality Analysis Officer, CRP
	32	67	17/12/20	**Susannah Wilks**	Director, CRP

				Matt Dillon	Director, Arup
16. The Future Functionality and Potential of London's Centres				**Alistair Moss**	City of London Corporation
				Rachael Aldridge	Project Officer, CRP
17. Business Consolidation Roundtable Event	**3**	**60**	**16/11/20**	**Kate Fenton**	Project Manager, CRP
				Laura Jacklin	Senior Project Officer, CRP

Table 6: Full list of LiveShares, number of attendees, views and speakers

Communications

All LiveShares were communicated to the audience via 1-2-1s and village engagement, the fortnightly CRP newsletter, CRP's social media (see Figure 2Figure 4), as well as promoted by each presenter to their network. All of CRP's LiveShares offered an opportunity to hear from industry experts to better understand the opportunities to do things differently as we emerge from the pandemic, with associated benefits for businesses, communities and visitors. These fortnightly workshops required intense promotion, through CRP's network, on social media and through engagement.
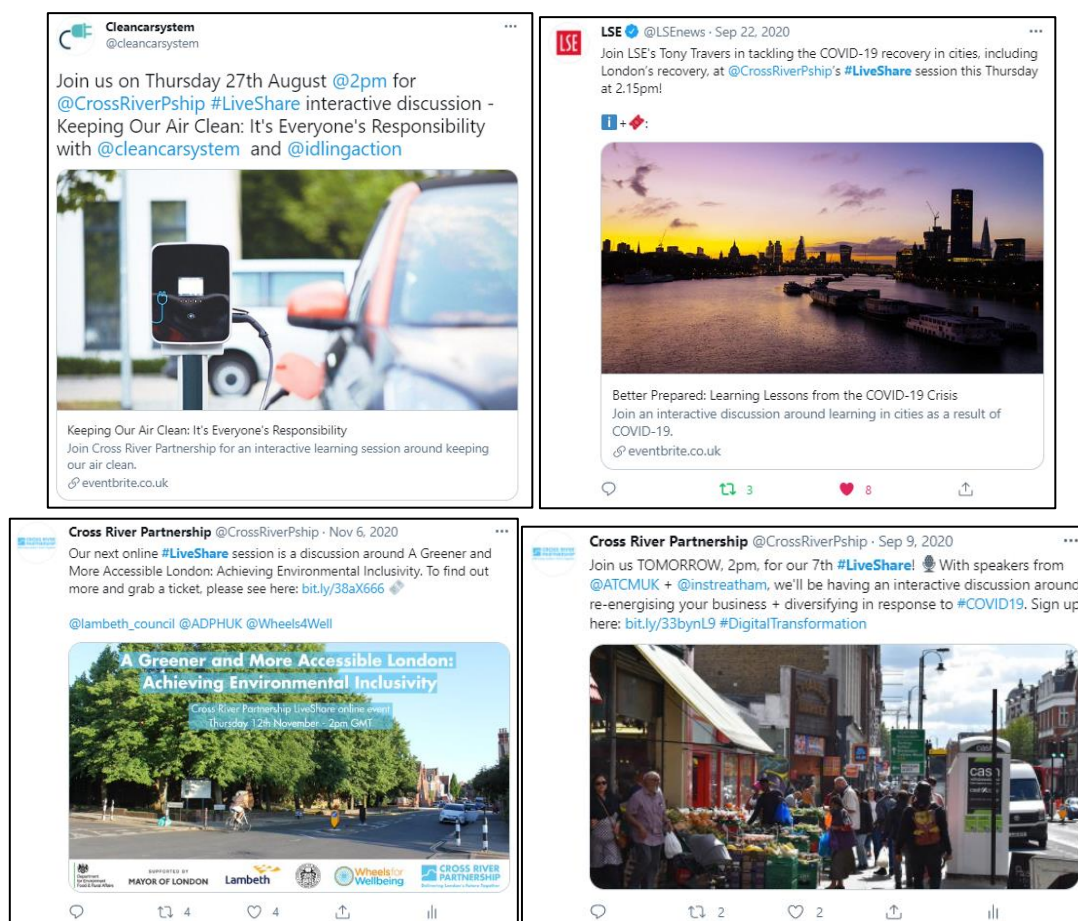
Figure 4: LiveShare promotions on social media.

Audience and Attendance

A varied audience attended the sessions – from SMEs to senior members of Local Authorities and Business Improvement Districts, across the public, private and third sectors. **Each of the 17 events had a corresponding toolkit**, with links and documents from the session.

Each LiveShare had a CRP speaker, who spoke about the Clean Air Villages programme, promoting the project to businesses and individuals, as well as encouraging calls to action from viewers. Throughout CAV3, CRP communicated these LiveShares, and their pertinent topics to businesses and communities

across the villages. The toolkits produced as part of each session were a take-away document, containing resources and guidance documents on each topic.

CRP collected data from the LiveShares from attendees about which London boroughs they lived and worked in (if applicable). Throughout the series, Londoners tuned in from both home and the office across **all 32 London boroughs and the City of London**. **The series had a total of 817** attendees, from across five countries (Australia, Germany, Switzerland, the United Kingdom and the United States of America), with **64 external speakers** and CRP team hosts.
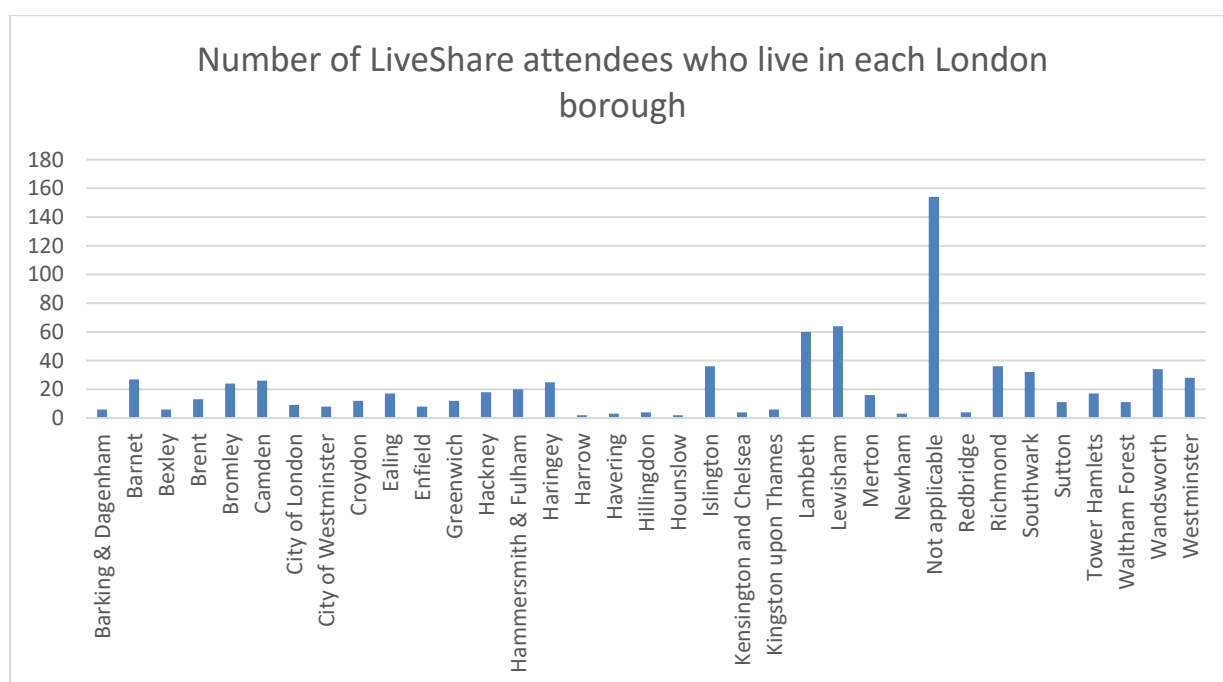
Figure 5: Graph LiveShare attendance.

Figure 5 shows information collected from 14 of the LiveShares, from 758 attendees, in relation to where they lived. 'Not applicable' was an option for those that did not live in London. This shows a good spread of attendees from all London boroughs. The London borough with the highest number of attendees was the London Borough of Lewisham (64 attendees), followed by the London Borough of Lambeth (60 attendees) and then the London Borough of Islington (36 attendees).

The aim of these sessions was to promote behaviour change to improve local air quality. The **one-hour sessions brought together industry experts** to present, explain and discuss air quality solutions via an interactive forum. There was also an interactive Question & Answers session at the end of each event, giving the audience a chance to ask questions to each presenter. CRP has so far totalled 687 views for all the LiveShares on YouTube (post-event watches), with this figure likely to increase over time. The highest number of attendees at a session was 117. On average, across the sessions, 74% of people who registered attended.

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All 17 sessions are available to view online for free, please see here for the full collection. **Extremely positive feedback was received from these sessions, leading CRP to launch a new monthly webinar series for 2021, named 'Lunchtime Launches'.**

Please see Appendix IV for an overview of the LiveShares and their topics.

Groundwork Workshops

CRP also hosted four interactive workshops with Groundwork London. Two of these were tailored to the Angel BID and South Bank BID business communities, and two were targeted at a wider audience. All four workshops promoted active travel, with two of these promoting cycling specifically.

- Workshop 1. Active Travel Workshop: Angel BID, South Bank BID, Groundwork London and CRP
- Workshop 2. Active Travel & Cycling: Angel BID, South Bank BID, Groundwork London and CRP
- Workshop 3. Clean Air Villages & Groundwork London: Active Travel Workshop
- Workshop 4. Clean Air Villages & Groundwork London: Active Travel and Cycling Workshop

The BID-focused workshops were tailored towards employees and employers, explaining the benefits of incorporating **active travel** into your life and where to get started. The sessions covered an introduction to active travel, air pollution, the benefits of active travel, how to overcome the barriers, as well as useful links, grants and apps. For the cycling workshops, participants learnt about how to get started, equipment, maintenance and cycle safety.

An Active Travel toolkit was created and sent to attendees of the event. This document is a summary of the benefits of active travel, how to avoid pollution and enables individuals to pledge to build active travel into their daily routines.

4.2 1-2-1s

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

- Sign up details for use of the free cargo bike hours
- Details about the CAV Directory
- Ascertaining interest in telematics dongles.

138 1-2-1 business engagement meetings took place as part of the Clean Air Villages 3 project, with a good spread across the villages. **This exceeds the overall target**. In a breakdown, the target of eight per village was exceeded in nine areas but was not achieved in seven areas. This demonstrates how

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different locations can be easier to engage with than others. The areas which were the most challenging to engage in were the more central London locations. These locations, such as South Bank and the City of London experienced exceptionally low footfall during the pandemic and even when businesses were able to open, there were fewer incentives for those in these areas to do so; many therefore remained closed, making engagement arduous.

4.3 - Pan-London businesses

In previous CAV projects, CRP has reached out to pan-London businesses, or large, multi-national chains, at headquarter level to discuss their deliveries, in particular within the context of the village locations. For CAV3, due to the pandemic, there was a **greater focus on providing support to smaller and independent businesses** who had fewer resources to deal with the changing restrictions. CRP therefore did not approach larger chains for CAV3.

CRP did engage with **four providers of EVs**, in order to produce a document to share with businesses that were looking to switch from a more polluting vehicle. This document would complement CRP's work with the Clean Car telematics dongles. The four providers were: EV Carshop, Leaseplan, Voltia and Zipcar.

Figure 6:CRP's EV Providers document.

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 at EMSOL's Challenges for the urban supply chain: How can we improve respiratory health?

- Presenting the project at **relevant local events**, such as at BIDs' AGM meetings, borough supply chain meetings and sustainability forums, town centre group meetings and business forums (please see individual village solutions for further information).
- **Meeting other collectives**, such as the Brewery Logistics Group and the Sustainable Restaurant Association.
- **Attending and contributing at a range of industry-relevant events**, such as:
  - The LoCity Working Group, April 2020. LoCity is a group of businesses that are aiming to switch their fleet to EV. The group includes manufacturers, logistics companies and TfL shares best practice
  - The Camden Clean Air Partnership meeting, October 2020
  - TfL's Freight Forum, October 2020.

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5 - Project Outcomes

Actions taken by businesses, organisations and individuals in the 16 focus areas **have reduced and will continue to reduce demand for delivery and servicing trips**, have resulted in **switching from more polluting vehicle options to zero or ultra-low emissions modes** and have **increased awareness of active travel and cleaner air routes**. Key outcomes include the 16 village solutions and their associated air quality benefits as well as meeting of other project targets as outlined in the original proposal. These are showcased below in more detail.

5.1- Village Solutions

5.1.1 - City of London - Monument to Houndsditch

Background

The City of London is a unique and iconic local authority district, often referred to as the Square Mile, or simply, the City. The City is host to some of London's most historic sites: Mansion House, The Monument to the Great Fire, St Paul's Cathedral and Smithfield Market. It is also home to some of the skyscrapers that create London's infamous skyline: The Gherkin, The Cheesegrater and the 'Walkie Talkie' building, home to the Sky Garden, making it a central hub for both professionals and tourists. Beyond this, there are several dozen churches and religious institutions scattered throughout the City, providing services for the region's 8,000 residents.
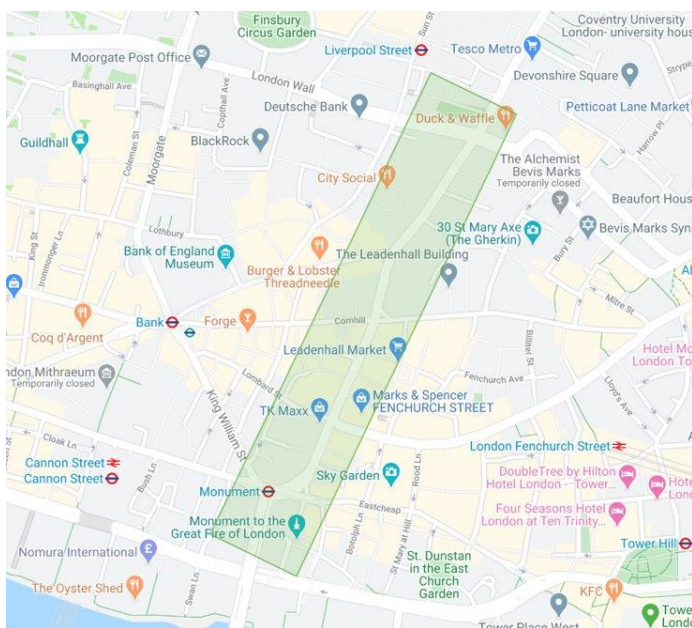
Figure 7: City of London CAV 3 focus area map.

As part of the Clean Air Villages 3 project, CRP partnered with the City of London Corporation (CLC), the City of London's governing body. CLC had procured previous work on air quality in the area focusing on interventions and engagement with schools and businesses and decided to take a community approach for the Clean Air Villages 3 project. Activity in the City of London borough was devastated during the Covid-19 pandemic: the majority of it is 513,000 daily commuters and 10 million annual tourists never set foot in the City.

The CAV3 project in the City of London borough **aimed to focus on educational engagement, activities and resources for religious institutions and local community groups**.

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Local Engagement

Based on the interests of the City of London Corporation, the CRP team conducted outreach from September 2020, initially attempting to connect with local religious institutions. The feedback from these at the onset of outreach was that there was curiosity regarding air quality interventions, but the focus needed to be on safeguarding and supporting their community members. Engagement also included a few business cooperatives (Leadenhall Market) and community groups such as Age UK and the Neighbourhood Network. **In total, 36 attempts to engage with 14 businesses and community organisations were made, three of which led to 1-2-1 meetings**.

1-2-1 Business Engagement

	Organisations	Sector
1	**Be Offices**	Other: Community
2	**Diocese of London**	Other: Church
3	**St Michael's Church**	Other: Community

Table 7: City of London - List of businesses/organisations with 1-2-1 meetings.

Community engagement and outreach was difficult due to the restrictions of the pandemic and the impact it had on businesses, but also community organisations and individuals. Much of the feedback received from religious institutions was that they were sensitive about approaching their members with any information

Figure 8: Improve your local AQ toolkit.

Figure 9: City of London 1-2-1 meeting engagement map.

that didn't relate to Covid-19 or provide them with support in some way – air quality initiatives were not a priority. The 1-2-1 with St Michael's Church led to the sharing of air quality related infographics: Sustainable Business Toolkit, How to Improve Local Air Quality and Cycling Tips for Londoners. The discussion with the Diocese of London surrounded whether there was potential to collaborate on air quality engagement and interventions across a community of London churches. While areas for potential cross collaboration were identified, the conversation occurred nearing the completion of the CAV3 project and did not allow for enough time for a suitable intervention. The third 1-2-1 was held with Julie Tucker of Be Offices, who became the **Air Quality Ambassador for the City programme**, as discussed in detail below.
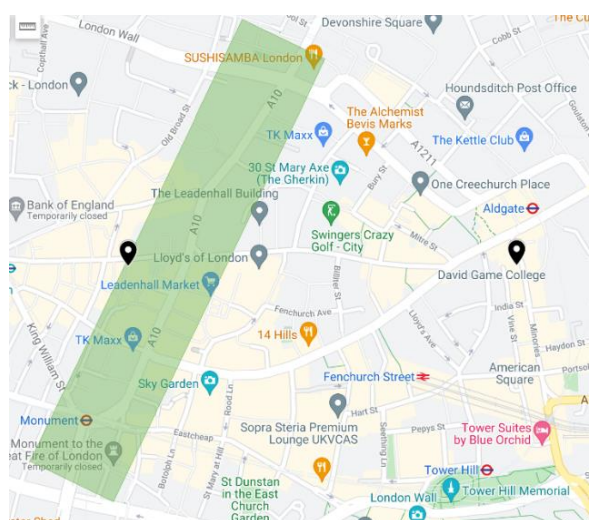
Local Solution

YOUR GUIDE TO CYCLING IN LONDON SAFELY

Figure 10: Cycling guidance toolkit.

While conducting engagement during the first and second quarters of CAV3, the CRP team recognised that alternative methods would need to be explored in order to reach the community members in the City. An Air Quality Ambassador (AQA) programme was developed and a call for applicants ran from 1st September until 11th October 2020. A total of seven applications were received for the Air Quality Ambassador programme and 1-2-1 calls were set up with six of the applicants. The requirement for AQ Ambassadors was to either reside or work within the City of London borough boundaries. **Ambassadors would go through training sessions on air quality issues** and interventions and be supported by the CRP Team to devise their own community projects. As the majority of restrictions from the pandemic were still in place during the launch of the programme, the Ambassador trainings and solutions were to take place remotely as well. Of the six applicants, one was deemed suitable in that she was an employee within the City of London and her organisation, Be Offices, also managed office space in the Clean Air Villages 3 Air Quality Focus Area. The applicants that were unsuccessful due to ineligibility were **provided with AQ resources** and suggestions for other volunteer positions; one was a resident of Lambeth and his information was passed along to the Council to join their Air Quality Steering Group.

The CRP AQ Ambassador attended two **online training sessions** that covered the basics of air quality science, issues and solutions. The interventions discussed included topics such as **active travel, electric vehicles, low emission delivery methods, click and collect services and educational engagement**. Working with the CRP Team, the ambassador developed the idea of a LinkedIn group for professionals interested in Air Quality. On 15th December 2020 the LinkedIn, **Clean Air Community group for residents and employees of City of London was launched**, with the aims of providing a platform for community members to connect, learn and engage over air quality related items: news articles, events, projects, potential collaborations, etc.

Figure 11: Sample image used in promoting the City of London Air Quality Ambassador programme.

Implementation

The Air Quality Ambassador programme was a unique solution to the City of London, but also Cross River Partnership and Greater London as a whole. **No air quality/pollution focused ambassador programmes were in existence at the time of launching the project**. The programme was launched

via Twitter and LinkedIn posts, as well as the CRP website and newsletter. The CRP Team invited members of religious institutions and community groups to apply. Age UK, a national charity, promoted the AQA programme on their Facebook page and a few churches agreed to receive the information, but were uncertain if they would pass it on to their community members at the time. One applicant reached out from the Age UK community but decided to withdraw their application for unstated reasons. The CRP Team also engaged with the London Metropolitan University to see if any of their students would be interested in the programme. Three students applied but were unfortunately neither local to the City of London nor attending the campuses in the area, and therefore were deemed unsuitable. One suitable Air Quality Ambassador was selected for the programme, Julie Tucker of Be Offices, and underwent AQ training sessions carried out by the CRP Team.

"'The Clean Air Villages and Air Quality Ambassador programmes are, in my view, critical to driving clean air initiatives in London, indeed, I know of no other organisations doing this.

No one in a city such as ours should be dying from unclean air and it is the responsibility of City businesses such as BE Offices, to play their part in reducing pollution levels for residents, workers and visitors alike, which is why I wanted to be involved. It is unfortunate and coincidental that I have become subject to respiratory problems myself in the last few months, but this has given me a much greater understanding for what it must be like for those suffering with conditions, such as asthma, which are aggravated unnecessarily by high pollution levels.

Long-established past habits have been broken during the pandemic, so we have a unique opportunity to help the city build back better and to try and create anti-pollution habits for when normal life returns"'

Julie Tucker, Air Quality Ambassador

Julie developed the idea of the air quality-focused LinkedIn group and together with the CRP Team the Clean Air Community group was launched on 15th December 2020. The AQ Ambassador and CRP Team members sent invitations out to relevant members of the community, invited businesses or organisations local to City of London to join the group. Members of the LinkedIn group were invited to share their own initiatives, projects, events related to air quality, as well as news articles or research and opportunities to engage or collaborate. One post from the CRP Team, for example, detailed the expansion of the Breathe London air quality sensor network. A member of the group had yet to hear about them and was excited to apply for a sensor for his area. **At the end of March, there were 32 members in the LinkedIn Clean Air Community group.**

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Local Communication

Figure 12: Examples of media content developed for the Air Quality Ambassador programme and the LinkedIn Clean Air Community group.
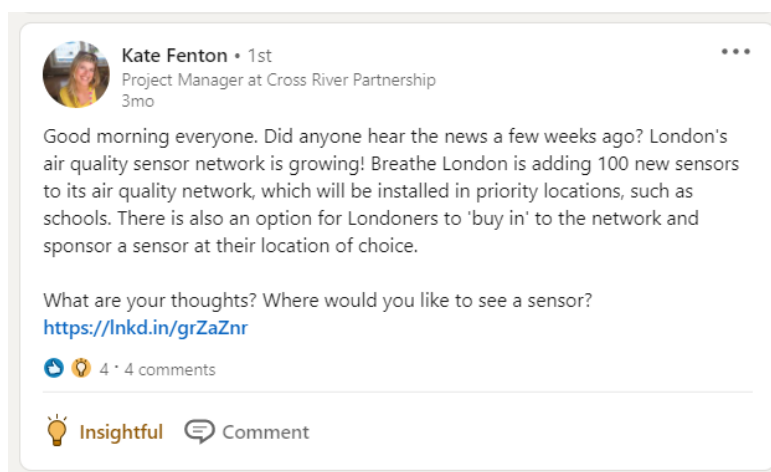

Figure 13: A sample post from the LinkedIn Clean Air Community group.

Impact

As the City of London CAV3 solution was focused on engagement and didn't include a tangible solution such as a cargo bike scheme or EV switching, the estimated impact for City of London is based on the uptake of a CRP CAV Directory supplier from two business members of the Clean Air Community LinkedIn group. The Directory was shared with all of the group members, but as of yet, no members have guaranteed their switching suppliers or delivery providers. We have therefore conducted a

conservative estimate in emissions savings based on two member businesses switching to a zero or ultra-low emission supplier from the Directory for a once-a-month delivery service.

Projected annual emissions for 5 businesses 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
0.12	1.92	3.66	40.2

Table 8: City of London projected annual emissions for 5 businesses 2021-2022.

Main Achievement

The main achievement of the Clean Air Villages 3 programme in the City of London was the development of the **Air Quality Ambassador programme** and the subsequent **launching of the Clean Air Community group** on LinkedIn. These initiatives allowed CRP to connect and engage with a community in an area that had been severely affected by the pandemic and started relationships and collaborations that have continued on past CAV3, an excellent legacy for the Defra programme.

Additional CAV3 achievements for City of London include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Liverpool Street Station to Monument.
Clean Air Villages Directory	A total of 32 low emission businesses and service providers were added to the City of London directory page.

Table 9: Additional achievements for City of London.

5.1.2 - Westminster – Soho

Figure 14: Soho CAV 3 focus area map.

Background

The first of its kind, Soho, located in London's iconic West End, is one the most eclectic neighbourhoods with global status for its wide range of entertainment that draws in hundreds of thousands of visitors. The area is composed of a mixture of hospitality, independent businesses, theatre groups, offices, and a renowned nightlife. Though certain areas of Soho are pedestrianised during the majority of the day, road traffic and congestion has consistently been of concern in this area due to the density of businesses that operate from this location. Added to this, Soho has a large footfall, thus highlighting it as an air quality hotspot with harmful levels of air pollution.

Considering the number of businesses in the hospitality sector in Soho, the CAV3 focus was to promote zero-emissions deliveries from traders at New Covent Garden Market (NCGM) located in Nine Elms as well as to Soho businesses.

Local Engagement

Following on from the second year of the project (CAV2), CAV3 engagement targeted traders from NCGM that supply to Soho, Soho hospitality businesses and Soho's landowners: Shaftesbury and Soho Estates. Since there was already a **funded zero emission consolidation scheme** in place for Soho from CAV2, the local engagement here focused on **promoting this to the NCGM traders to trial consolidated bike or EV deliveries for smaller orders into the West End**. The project for Westminster initially sought to consolidate deliveries from NCGM into Soho either by a cargo bike or EV, both supplied and coordinated by the zero-emissions courier, eco**fleet**. The scope of engagement following from CAV2 was to continue exploring the potential in involving **the market traders to join this trial**. However, this changed considerably due to lockdown and its associated restrictions on hospitality, but also due to the concerns raised by traders regarding **liability**, **feasibility**, **produce quality** and **customer satisfaction**. This led to adapting the trial for NCGM traders to carry out deliveries into Soho using zero-emissions mode, particularly for their **additional deliveries** that are usually smaller in load. The trial's scope also involved Soho businesses in using the bike hours for deliveries.

CRP worked with the major landowners in the area to **access the tenants' network** to promote the **consolidation of deliveries** into Soho from NCGM through the use of a zero-emissions courier to provide sustainable last mile solutions that cuts down on **road traffic**, **congestion**, and **emissions**.

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Through this engagement, CRP collected useful **data** on which Soho businesses have suppliers based in NCGM and helped **target engagement** with NCGM traders that have deliveries in the West End, since there are more than 200 wholesalers operating from the market. CRP also collaborated with the **Covent Garden Market Association** (CGMA) team to promote the project through their newsletters and for their team to provide us with the names of traders with whom to engage.

Due to the network size, a significant amount of time was spent identifying which NCGM traders had clients in the West End and to target engagement based on this approach. Engagement with NCGM began from when hospitality was allowed to resume in July 2020, following the easing of the first Covid lockdown. At the time of engagement, the NCGM traders were apprehensive to trial cargo bikes for deliveries due to a number of perceived risks expressed by the traders, more detail under the 'Implementation' section below.

As eco**fleet**, by this point no longer had access to an EV and the trial was to be carried out on cargo bikes, this in turn presented a significant barrier as traders were not convinced about using bikes to deliver to customers. Although during CAV2, the CRP team had visited the market and met with traders, some of whom had agreed to take part in a consolidation scheme or second deliveries; the pandemic had paused this.

Figure 15: CRP's file - Carnaby Street.

Soho restaurants and cafés were also contacted to investigate their suppliers list, though this was quite difficult as restaurants in the area have high competition and therefore, were hesitant to share such details. During the engagement, Soho businesses were forming an association known as the Soho Business Alliance (SBA), with primarily hospitality businesses as their members. CRP was introduced to this group through a contact from CAV1 and the cargo bike scheme was promoted to their group as well. Due to the nature of this cargo bike scheme, it was tailored to only planned deliveries because this allows for the courier provider to optimise deliveries timings, consolidate trips, and use the trial funds efficiently as it is expensive to have a rider and bike available. Considering that most businesses in the SBA were restaurants, they were uniquely interested in immediate delivery for hot food, which unfortunately could not be carried out by the trial. That said, the SBA connected CRP with a few large restauranteurs across London interested in bringing the zero-emissions delivery mode to their business. These included the Super 8 Kitchen which comprises of Smoking Goat, Kiln and the Michelin stared Brat. CRP offered guidance on sustainable last mile solutions as well as connected the restauranteurs with well-known zero-emission courier companies in London to trial their services.

Over the course of CAV3 engagement, **92 businesses were contacted**, a mixture of NCGM traders and Soho businesses, where traders were asked questions on delivery timings, locations, and volume while the businesses were asked about their suppliers, delivery timings, types of deliveries and stance on

receiving fresh produce by way of cargo bike deliveries. The latter would provide useful feedback to couriers on how to customise the cargo bikes to carry perishable goods.

1-2-1 Business Engagement

During CAV3, **11 1-2-1 meetings were carried out with Soho businesses and NCGM traders**. The meetings discussed their interest in joining the cargo bike scheme, guidance on zero emissions deliveries, including electric vehicles (EV), re-timing and consolidating deliveries to reduce vehicle trips.
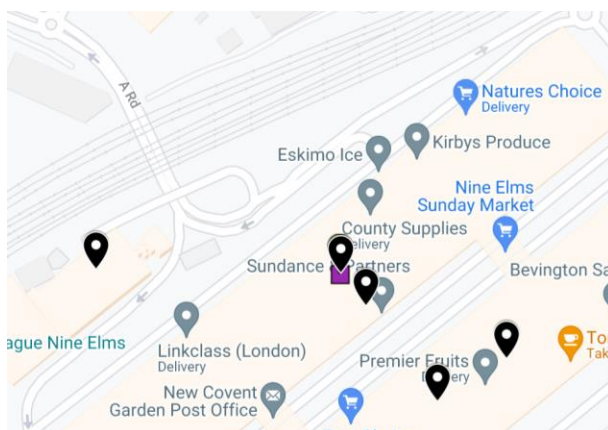
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Figure 16: New Covent Garden Market 1-2-1 suppliers meeting engagement map.
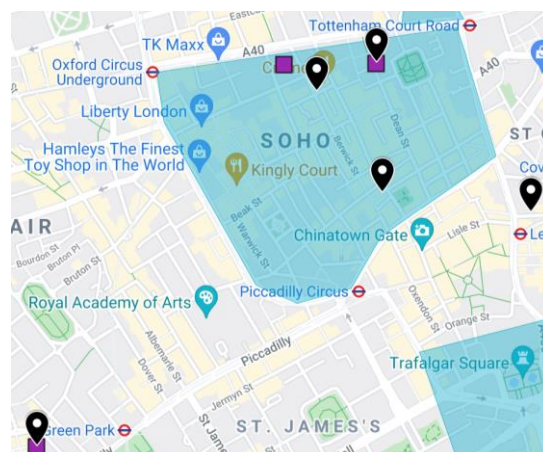
Figure 17: Soho 1-2-1 meeting engagement map.

	Business 1-2-1s	Sector
1	Bar Fruit Supplies	Other: NCGM Supplier
2	CRS & Sons	Other: NCGM Supplier
3	DDP Orders	Other: Delivery
4	Fresh Direct Local	Other: NCGM Supplier
5	IA Harris	Other: NCGM Supplier
6	Icebox Operations	Other: NCGM Supplier
7	Pierre Victoire	Food and Beverage
8	Pop Florist	Other: Florist
9	Riverford Organic Farm	Other: NCGM Supplier
10	Toi et Moi	Food and Beverage

Table 10: Soho Village - List of businesses with 1-2-1 meetings.

Local Solution

Subsequent to CAV2's extensive engagement with hospitality in Covent Garden and to continue the leads secured at NCGM, though the focus area for CAV3 shifted to Soho, the collective aim was to reduce the number of delivery vans going into Soho and re-mode smaller deliveries onto cargo bikes. Therefore, using the funding from CAV2, **a cargo bike scheme was set up** in partnership with the zero-emissions courier company, eco**fleet** also based in Nine Elms (next to NCGM), who had expertise in handling fresh produce.

Moreover, as there were many street closures in and around Soho to facilitate social distancing regulations and pedestrian safety during the pandemic, cargo bikes were an ideal alternative delivery mode for suppliers carrying out multiple deliveries into Soho, particularly as streets were becoming pedestrianised.

Implementation

At the end of CAV2, two NCGM traders had committed to joining a trial that would consolidate their second deliveries (in a day) by zero-emission, to restaurants in Covent Garden. This was at the same

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time as the COVID-19 outbreak and the subsequent lockdown imposed in London (March 2020 onwards) meant that the trial had to be put on hold. The aim for the CAV3 solution was to include the traders from CAV2 as well as others to join the trial. Understandably, the impact of London's lockdown and on-going changing restrictions presented significant barriers to the roll out of the trial. Once the initial lockdown was lifted, CRP continued engaging from July 2020 with NCGM traders and hospitality in Soho to **investigate the feasibility and appetite** for this trial. At this time, eco**fleet** no longer had their EV and the trial could only be carried out on their cargo bikes. This added to many traders' hesitation in joining the trial, who were also concerned about:

- losing their Brand Reputation Compliance Global Standards (BRCGS) certification as cargo bikes are not refrigerated as their traditional vans, though bikes can be customised for refrigeration, and
- taking the work from their drivers away.

To ease this concern, CRP coordinated with eco**fleet** to arrange a trial run with an interested trader who could test the quality of the produce to ensure compliance with their food safety regulations. However, on the day of the trial, there had been several miscommunications and a food safety test was not completed by the trader to assess quality. Following this, through the good rapport created with the CGMA, their communications team helped publicise the trial which brought in **three traders in October who were interested**. They were: DDP Orders, Icebox Operations and Riverford who had many customers in the West End. As the plans to get them started began, the tier restriction implemented in November halted the progress after which the traders expressed that their demand had fallen immensely and therefore did not have sufficient business to require cargo bike deliveries. CRP continued regular communication with these traders in the hopes that the trial could restart once restrictions eased in 2021. In the meantime, DDP Orders were using eco**fleet** for deliveries to Buckingham Palace.

Taking head of the traders' feedback, the trial focused on deliveries to Soho and not to consolidate since the deliveries could fit only one trader's goods. From January to March 2021, CRP continued promoting the cargo bike scheme to **Soho businesses, Westminster foodbanks and charities, pharmacies, offices and hospitality**, where applicable. This brought in:

The Argyll Club, a group of offices who used the scheme for deliveries between their buildings from Tottenham Court Road to Victoria; Humphrey Butler, an antique jeweller based in the Pall Mall building who use the scheme for office deliveries and low value customer deliveries from Soho; and Pure Package, a meal delivery service based in NCGM with customers in Soho.

Due to the continued engagement by CRP and interest from the NCGM traders and following the easing of London's restrictions there was an increase in interest in the trial by traders. In particular, from three traders: IA Harris, DDP and Pure Package, who wanted to use the scheme for deliveries from the market and into businesses located in the West End.

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Local Communications

CRP promoted the Soho cargo bike scheme across CRP social platforms, the council's Westminster Business team also distributed two comms pieces to publicise the cargo bike and it was also circulated on the NCGM's newsletter which garnered attention from traders. Examples of the flyers and newsletters are shown below.
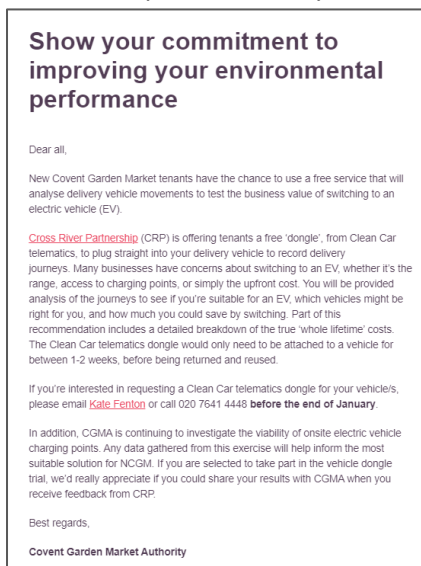

Figure 18: CRP's promotion Twitter

Figure 19: Cargo bike promotional article circulated by the CGMA through their newsletter to NCGM traders.

Impact

The emissions savings were calculated using CRP's in-house air quality monitoring tool, measureBEST. Table 10 shows the estimated annual emissions savings for a combination of five NCGM traders and Soho businesses using cargo bike deliveries for 2021-2022.

Projected annual emissions for 5 businesses 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
15.43	0.48	0.82	6,480.00

Table 11: City of London projected annual emissions for 5 businesses 2021-2022.

Main Achievement

CAV3 in Soho **brought together** key actors on freight movement into Soho, including landowners, the New Covent Garden Market traders and Market Authority, and Soho's business groups to **collaborate** on re-moding deliveries into Soho for improved air quality. Additionally, the use and **continued promotion** of the cargo bike trial and **engagement** with traders has managed to **overcome initial barriers/reservations** in acknowledging the **potential of cargo bike deliveries as a feasible alternative**.

Additional CAV3 impacts achieved in Soho:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Tottenham Court Road Station to Piccadilly Circus Station that crosses historic sites in Soho.
Clean Air Villages Directory	A total of 44 low emission businesses and service providers are now listed on the Soho page.
Vivacity traffic monitoring	Vivacity traffic monitoring took place at the Junction of Old Compton Street and Dean Street August until October.

Table 12: Additional Achievement Soho village.

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5.1.3 – Camden

Background

Grays Inn Road is a vibrant high street connecting two of London's important tube stations, King's Cross St. Pancras and Chancery Lane. Grays Inn Road is home to a wide range of independent businesses, with a large-scale office sector that represents companies such as ITV News, design and architecture firms as well as key medical service centres like the Royal National Throat, Nose and Ear Hospital. This road is therefore, usually, busy with large footfall and frequent vehicle traffic, servicing the diverse local commercial sector.

In the second quarter of the CAV3 project, Grays Inn Road was undergoing road management changes as the local council were implementing a freight action plan (FAP) with the aim of reducing congestion, traffic and pollution while

Figure 20: Camden CAV3 focus area map.

improving pedestrian and cycle safety, by changing access to loading bays located on this road. The CAV3 project was therefore planned to complement this work.

Local Engagement

CAV3 engagement was aimed at the various businesses located on Grays Inn Road such as independent cafés and restaurants, the office sector, and essential services. The focus was to understand the impact of COVID-19 on businesses, **feedback on the Council's FAP** and to continue **promoting the use of Camden's consolidation centre** (continuing the CAV2 work). The benefits of using a consolidation centre are:

- improves work environment and saves staff time spent sorting deliveries
- creates more space in offices by reducing amount of storage and packaging waste
- share suppliers with neighbouring offices and negotiate discounts

Figure 21: Camden 1-2-1 engagement map.

- reduce traffic congestion and vehicle idling and improve local air quality as a result

Businesses were asked a series of questions to understand their deliveries and servicing practice, as this could provide useful insight into vehicle movement and loading bay requirements by Grays Inn Road businesses.

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Due to the challenges of engagement in the area, a **virtual air quality workshop** was organised to bring together Grays Inn Road businesses to explore the resources and funding available through the CAV3 project and Camden Climate Change Alliance (CCCA). The workshop was joined by Momentum Transport, a Camden based transport consultancy to present a business case study on the economic, environmental and organisational benefits of consolidating their deliveries.

Survey and data collection:

The business survey was carried out and Grays Inn Road businesses were contacted by phone and email due to Covid-19 restrictions. The survey explored COVID-19 impact on the business, frequency and timings of deliveries (see **Error! Reference source not found.**), interest in cargo bikes, electric vehicles and consolidation. Businesses were also asked for feedback on the ongoing changes to the area brought by the Freight Action Plan. **A total of 126 businesses were contacted to participate in the survey** from November 2020 to March 2021. Ten businesses completed the required information by telephone (as shown in **Error! Reference source not found.**). The respondents to the survey made up local businesses, restaurants, a pharmacy, and offices. Businesses highlighted that cargo bikes are not always a 'go-to' solution as they were concerned about liability and damage during transit. This is a small sample and this should therefore be taken into consideration when exploring the data. There were challenges in trying to engage with offices as most of the engagement occurred during lockdown and Tier 2 and 3 restrictions where most employees were remote working which made it difficult to reach them by phone as this proved to be the most efficient way in engaging businesses.
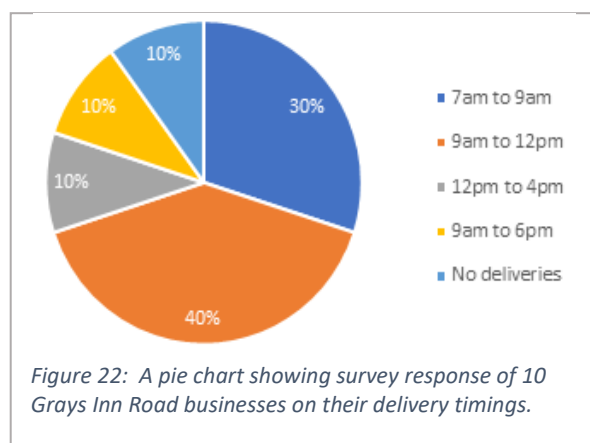
Figure 22: A pie chart showing survey response of 10 Grays Inn Road businesses on their delivery timings.

Workshop Summary
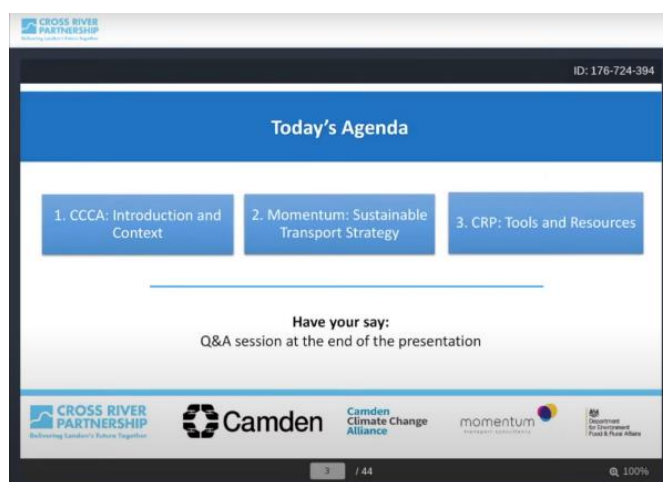
Figure 23: Screenshot from business support workshop with CCCA, Momentum Transport hosted by CRP.

A Business Support Workshop took place in November 2020, hosted by CRP and the CCCA that aimed to bring Grays Inn Road businesses to discuss joint and independent initiatives that CRP and the CCCA were carrying out. The **aim being to improve air quality in the local area and guide London's public-private sectors towards achieving net zero for a sustainable post-COVID recovery**. The workshop also drew attention to the local resources developed as part of CAV3, such as the CAV Directory and the Clean Air Route from King's Cross Station to

Great Ormond Street Hospital. The workshop was joined by a senior consultant from Momentum Transport, a Camden based transport consultancy to present the economic, environmental and organisational benefits of consolidating their deliveries as well as to amplify the role individual businesses have in reducing their impact on freight related pollution.

The workshop had **12 attendees**. All were sent a toolkit after the event which highlighted the main resources discussed. The event was also shared online.

Figure 24: Toolkit from business support workshop circulated with attendees and businesses in Grays Inn Road.

Organisation	Sector
Catalyst	Food & Beverage
NRP	Other: Office
Guy's & St Thomas' Charity	Health
London Welsh Centre	Theatre
EC1 Bathrooms	Other: Fittings
The Camden Clean Air Initiative	Not For Profit
Fisher London	Retail
Momentum Transport	Other: Office
Clean City Awards Scheme	Not For Profit
The Wesley	Hospitality
London Borough of Lambeth	Other: Council

Table 13: list of attendees at the Camden Workshop.

1-2-1 Business Engagement

Table 13 lists the **ten businesses with whom 1-2-1 meetings** took place, all of them are based in Grays Inn Road except for Momentum Transport, who are based a few streets away. These businesses were contacted about the survey to explore their delivery and servicing practices, as well as to invite them to the Business Support Workshop.

Engagement with Momentum Transport was to pursue their interest in directing their deliveries to the **Camden consolidation centre** and to expand its use through their network. The 1-2-1s with most businesses focused on the impact of the pandemic on their operations. Specifically, for the hospitality sector, there had been little to no business for the majority of 2020, with many staff on furlough. As appropriate, businesses were informed about the consolidation centre as an alternative delivery method.

Business 1-2-1		Sector
1	Catalyst	Food & Beverage
2	Dental Practice	Health
3	Grays Inn Hardware	Retail
4	Luce e Limoni	Food & Beverage
5	London Copy Centre	Retail
6	Nevex Printers	Retail
7	Peregrines Pianos	Retail
8	Starr Pharmacy	Health
9	See Research	Other: Market Researcher
10	The Corner Store	Groceries

Table 14: Camden (Grays Inn Road) - List of businesses with 1-2-1 meetings

Table 15 shows the office sector businesses that were potentially interested in using the consolidation centre. At the end of CAV2, **three of these businesses were ready to begin their hub trial**. Following the onset of the COVID-19 pandemic, all of these businesses implemented remote working. Their deliveries were therefore significantly reduced, and the hub was no longer appropriate during this time.

Business interested in the Camden Consolidation centre		Sector
1	Be Offices	Other: Office
2	CIWEM	Other: Office
3	Federation of Master Builders	Other: Office
4	Grays Inn Hardware	Retail
5	House of Illustration	Other: Office
6	Knowledge Quarter	Other: Office
7	Master Melts	Other: Office
8	Momentum Transport & Partners	Other: Office
9	Tesco (office)	Other: Office
10	Zak Agency	Other: Office

Table 15: List of businesses that were interested in using the consolidation centre

Local Solution

The objectives in Camden were to provide data on local businesses' COVID-19 impact as well as feedback about the Council's Freight Action Plan. Considering the large-scale impact of the pandemic on local businesses, through the business survey, local data on servicing and deliveries were gathered to reinforce the Council's plans as well as to connect them with businesses for continued engagement.

Camden's consolidation hub was promoted as part of the engagement work which took place. **A six-month, funded trial was available to local businesses**. Businesses who consolidated their suppliers and also used the hub, which made onward journeys using a zero-emission vehicle, would cause a reduction in the number of vehicles to the area.

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CLEAN AIR VILLAGES

Implementation

Though the impact of COVID-19 on the office sector had affected the initial interest in joining the trial of Camden's consolidation hub, CRP continued to encourage uptake of the hub, by promoting the six-month free trial.

CRP met with the team at Camden Council to fully understand the capabilities and requirements for using the hub and confirmed agreement for the free use of it for businesses in Grays Inn Road.

Momentum Transport were really interested in using the consolidation centre. CRP coordinated meetings with Momentum and Camden Council to confirm arrangements for the trial. It was agreed that **Momentum would join the trial once they were back up to 50% office capacity**. This was predicted to be in mid-June 2021. Of the businesses listed in table 14, Momentum Transport were interested to promote the hub trial to their network as they believed there would be considerable interest and understood the wider benefits of consolidating deliveries and sharing of suppliers. They estimated four of their partners/clients to join the trial with them in order to make the most use of the funding as well as help derive data for the hub operators and the Council on local interest, feasibility, estimated costings to continue commissioning of the hub.

Grays Inn Hardware, an independent hardware store was also interested in exploring how certain deliveries can be directed through the consolidation centre as they receive numerous deliveries consisting of various shapes and sizes a week. Thus, redirecting some of these deliveries would considerably reduce traffic on Grays Inn Road.

Local Communications

The air quality workshop was promoted throughout CRP's twitter channel as well as on the fortnightly E-newsletter. Camden Climate Change Alliance published articles detailing the role of CRP in carrying out the CAV3 project on Grays Inn Road and promoted the workshop through their social media channels and members' newsletter.

Figure 25: CCCA twitter post to promote the Business Support workshop.

Impact

The emissions savings calculated for Grays Inn Road used CRP'S in-house air quality monitoring tool, measureBEST. The estimated savings in table 15 represent the potential emissions savings for five businesses using Camden's consolidation hub that redirects deliveries and uses zero-emissions last mile delivery.

Estimated emissions savings for 5 businesses using the consolidation hub for 2021-2022.			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
7.44	0.23	0.39	3,121.99

Table 16: estimated emissions 2021-2022 in the Camden village from 5 businesses using the consolidation hub.

The CAV3 project helped engage with local businesses on Grays Inn Road to **collect information** on their **deliveries' frequencies** to **assist** the ongoing **Freight Action Plan commissioned by the Council**. CRP brought **Momentum Transport and four businesses** on board to **join Camden's consolidation centre scheme** upon operating at 50% office capacity. This will help reduce congestion, improve local air quality and save employee time.

Additional CAV3 impacts achieved in Grays Inn Road:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from King's Cross Station to Great Ormond Street Hospital.
Clean Air Villages Directory	A total of 32 low emission businesses and service providers are now listed on the Grays Inn Road page.

Table 17: Additional Achievement Grays Inn Road (Camden).

5.1.4 - Hammersmith and Fulham

Background
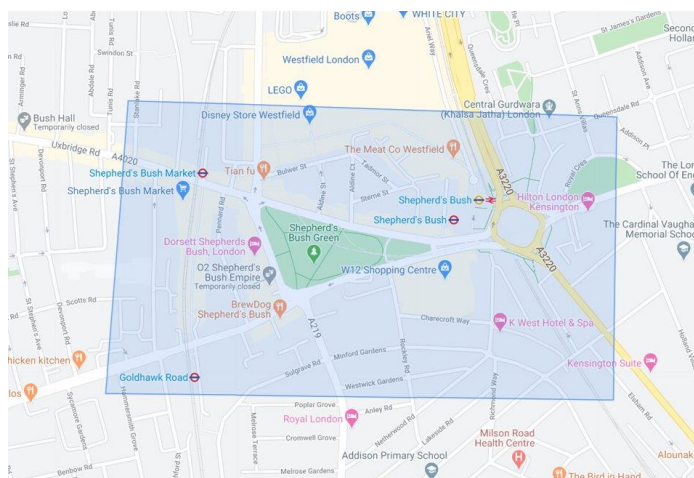
Figure 26: CRP's Shepperd's Bush focus area map.

The Shepherds Bush area is a mix of hospitality and retail units around a busy route into London along 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 Westfield shopping centre and W12 shopping centre. The area is well known for having an active night-time economy supporting local music venues such as Shepherd's Bush Empire and catering businesses e.g. restaurants and pubs.

A continuous air quality monitoring analyser is located on The Green, which is one of the most congested areas of this focus area and the annual mean for NO2 is predicted to be continually exceeded. The area is also affected by large regeneration projects around White City, causing additional congestion during the construction phase.

Local Engagement

In total, **CRP attempted to contact 52 businesses in the focus area** which were open during the restrictions, with over 90 attempts via phone, email, and social media platforms to offer support during the COVID recovery. CRP communicated with established business groups in the area including the **Shepherds Bush Business Forum** and attended the council's fortnightly business meeting.

Previous engagement with businesses from Clean Air Villages 2 and regular engagement with the Shepherds Bush Business Forum enabled CRP to identify businesses who would need support recovering from closures. Many of the businesses in the focus area were hospitality and food & beverage sector which were heavily affected by Covid restrictions. A focus on business to business trips were highlighted from the previous Clean Air Villages projects, as many
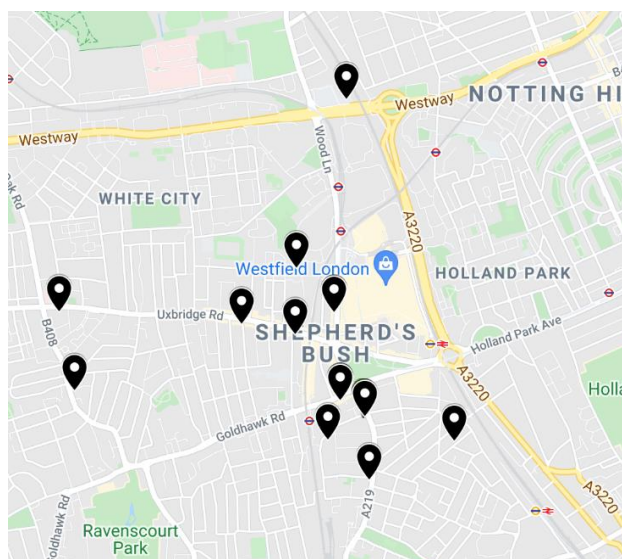
Figure 27: CRP's 1-2-1 Businesses engagement in Shepherds Bush map.

of the businesses situated in Shepherds Bush had stores in nearby Hammersmith.

1-2-1 Business Engagement

	Businesses	Sector
1	**Albertine**	Food and Beverage
2	**Askew Café**	Food and Beverage
3	**Babylon Health Pharmacy**	Health
4	**Brew Dog**	Food and Beverage
5	**Bridal Caprice Boutique**	Retail
6	**Caregrange Pharmacy**	Health
7	**David Butler Antique Lighting**	Retail
8	**Healthside Pharmacy**	Health
9	**Imperial College**	University
10	**Mr Falafel**	Food and Beverage
11	**Ma Petite Cocotte**	Food and Beverage
12	**No Waste Jose**	Retail

Table 18: Shepherds Bush village- List of businesses with 1-2-1 meetings.

Local Solution

In order to complement Hammersmith & Fulham's Ultra Low Emission Vehicle borough-wide plan, **a shared electric van was the proposed solution to improve air quality** by enabling small businesses to move stock using a cleaner alternative and to use a shared vehicle. This would complement the Parcels Not Pollution initiative that was promoted to businesses in Clean Air Villages 2. The scheme would be similar to the Fulham van, also implemented as part of CAV 2, and has a similar business user group.

The shared electric van was of interest to businesses who would use it to **collect and move stock between stores in London especially for fragile and larger items that couldn't use the cargo bike**. CRP found from their engagement that the following businesses were interested in a shared van scheme:

Business interested in using the scheme	Sector	Use of the vehicle
Albertine	Food and Beverage	To collect stock
Askew Café	Food and Beverage	To use collect stock from cash and carry
Babylon Health Pharmacy	Health	To deliver medicines
Brewdog	Food and Beverage	To move stock to other bars in the borough
Caregrange Pharmacy	Health	To deliver medicines
Little Napoli	Food and Beverage	To collect stock
Mr Falafel	Food and Beverage	To collect stock
No Waste Jose	Retail	To deliver products to customer homes
Petit Miracles	Retail	To collect donations/ deliver items
W12 shopping centre	Retail	For tenants to use for deliveries/collections

Table 19: List of businesses interested in using the scheme in Shepherds Bush village.

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It was agreed that **the shared electric van would be funded by the council for one year for businesses to use for free**. 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 scheme will be operated by Zipcar who have experience running a similar scheme in Fulham. 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.

Due to a strong working relationship developed throughout CAV1 and CAV2, **CRP was able to engage with W12 Shopping Centre as a potential stakeholder to host the van with parking, security and charging points**. CRP showcased the benefits for both the tenants at W12 shopping centre and for the wider business community to have a safe space for this asset.

Implementation

In previous shared EV schemes a fundamental part is the **charging infrastructure for the electric van being accessible and prioritised for the business users**. CRP investigated the charging infrastructure that was available in the focus area to ensure the bay could be used for a shared vehicle. After checking the public use charging points, CRP recommended that the best possible location would be the W12 shopping centre which had 24/7 security, the capability of adding further charging points and a central, easy location for businesses.

CRP coordinated several meetings with the shopping centre, Landsec's car park team, Zipcar and the council to **agree the location and funding for a charging point** as part of the scheme. By CRP coordinating these meetings challenges were investigated (such as

Figure 28: New charging point and dedicated space for EV van at W12 shopping centre.

sufficient infrastructure capacity), and a clear timsecale was set for updating the current charging infrastructure and a costing proposal for the dedicated space.

In February 2021, Landsec the managing company of W12 shopping centre, installed a further charging post and a dedicated bay for the shared electric van for a year following agreement with the council.

The launch of the shared EV was due to take place at the end of April 2021. Due to the COVID-19 lockdown and supply issues, this was put on hold. The shared electric van scheme will launch once CAV3 has ended. CRP will continue to manage the scheme for a year on behalf of the council, this will include onboarding businesses to use 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. 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. **The shared electric van is due to be installed and accessible for users in July 2021**. 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.

"At Landsec we have a great emphasis on sustainability – not just environmental, but also social and community aspects are included. At the W12 Shopping Centre at the heart of Shepherd's Bush's community; we have supported the Cross River Partnership's Cleaner Village Air Project since 2018 and shall continue to do so.

We believe that cleaner air quality will not only benefit the environment but also the lives of all those that live, work and visit the borough. We are extremely proud to support this project and have recently agreed to hosting the shared Electric Vehicle scheme for small and medium business within the borough in further pursuit of the project's goals".

Vi Chu, Centre Director, Landsec W12 Shopping Centre

"We are No Waste Jose, a household essentials refill service, straight to your door. We are just launching our business and with any start-up in their pilot phase, investment is quite tight. This is just the right support from the Hammersmith and Fulham Council and Cross River Partnership to be able to offer our customers zero-emissions delivery. We are promoting sustainable and zero-waste habits with our service, and deliveries done via electric vehicles are just as important in reducing the environmental contamination in our city".

Marcela Rivas-Velasquez, Owner, No Waste Jose

Local Communications

Shepherds Bush engagement and solution implementation were supported by a range of local communications. Tweets about the scheme went out routinely, showing CRP's engagement and promoting the sign up of the shared EV. CRP worked closely with W12 shopping centre and the Shepherds Bush Business Forum to highlight the scheme to their wider membership base.

Figure 29: CRP Tweet about the shared EV.

Impact

Estimated emissions savings have been calculated using CRPs in-house *measureBEST* emissions calculator. The below scenario calculations are projected annual estimates of emissions savings based on **15 businesses travelling 120km per week using the shared EV** compared with diesel/ petrol equivalents. Delivery scenarios have all been based on "average car" classifications, comprised of the average mix of London's diesel and petrol cars.

Estimated emissions savings based on 15 businesses using the EV for 2021-2022.			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
33.68	1.04	1.95	9,217.27

Table 20: Estimated emissions saving for Shepherds Bush village.

Main Achievement

To implement a **shared electric vehicle** and **facilitate a longer-term infrastructure for EVs** in the Shepherds Bush area, working alongside local stakeholders to add in further capacity for businesses to trial electric vehicles. This CAV3 solution will enable local trips in the borough to be undertaken by electric vehicle and could save businesses future ULEZ costs.

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from White City Place to Goldhawk Road Station.
Clean Air Villages Directory	A total of 41 low emission businesses and service providers are now listed on the Shepherds Bush page.

Table 21: Additional achievement in Shepherds Bush village.

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5.1.5 - Haringey

Background

Haringey's Seven Sisters junction has a dynamic commercial environment with many independent businesses, representative of the area's cultural diversity as well as chain supermarkets and restaurants that have become part of the fabric of this high street. This is a characteristically busy junction with large footfall and vehicle movement and serviced by a network of tube, overground, rail and buses along the A10. As a result, this stretch of the high-street was the chosen air quality focus area wherein the objectives of CAV3 in Haringey were to reduce the impact of delivery vehicles servicing the businesses in this area.

The area has a Town Centre Manager and a high streets regeneration group who meet periodically to discuss business and community needs with the Council. This was essential for engagement carried out by the Council during the pandemic and helped to foster their participation during CAV3 outreach activities.
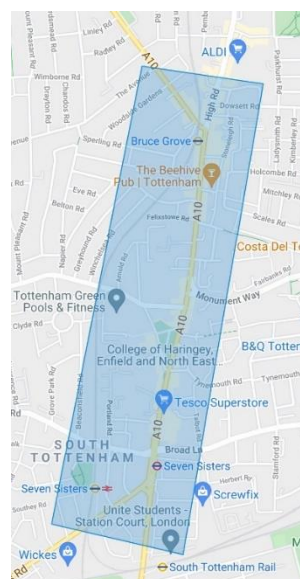
Figure 30: CRP's Haringey focus area map.

Local Engagement

The Council, organised by the Town Centre Regeneration team, collated a list of **20 hand-picked businesses for targeted engagement** during CAV3, though engagement was not restricted to these alone. The list composed of ten businesses on Bruce Grove and another ten on West Green Road, comprising of diverse independent businesses such as cafes and restaurants, a home renovations store, pharmacy, travel and estate agents, and retail stores. This list was helpful when commencing engagement as the group's diversity helped ascertain important data on the pandemic's impact on different sectors often located side-by-side on any London high street.

Figure 31: Seven Sisters Junction picture.

CAV3 engagement in Haringey was focused on raising awareness of business operations that have a significant impact on local air quality, and to discuss possible solutions to switching to low emission alternatives, where applicable. Engagement was coupled with a business survey with questions about COVID-19 impact, deliveries and servicing methods, interest in a cargo bike scheme, interest in an EV dongle or a shared EV scheme.

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CLEAN AIR VILLAGES

The business survey was carried out by phone and email. Seven businesses from the Council's targeted list completed the survey. There was a varied response to the COVID-19 impact. Those in hospitality were struggling while a home renovations store, a local bakery and a pharmacy had experienced more business than usual. **Two businesses were interested in the EV dongles (measuring vehicle journeys) and one used them**. **Four** other businesses were interested in a cargo bike trial to help with local deliveries. These businesses stated a **preference for a cargo bike trial operated by a third-party service provider, rather than owning their own**, due to a shortage of staff and funds to either hire or buy a bike.

Figure 32: A sample of the Haringey survey results, in relation to deliveries.

Figure 33: CRP's 1-2-1 engagement in Seven Sister

A total of **70 businesses** on Seven Sisters Road, West Green Road and Bruce Grove were engaged with over the course of CAV3 and resources and tools were shared.

1-2-1 Business Engagement

Businesses	Sector
1	**Bruce Burger**	Food and Beverage
2	**Bruce Grove Post Office**	Retail
3	**Café Lemon**	Food and Beverage
4	**Dawlings Travel**	Other: Travel agency
5	**MFA Flooring**	Retail
6	**Reena's Pharmacy**	Health
7	**San Marco**	Food and Beverage
8	**Tottenham Wines**	Retail
9	**Uncle John's Bakery**	Food and Beverage

Table 22: Haringey - List of businesses with 1-2-1 meetings.

During CAV3, **nine 1-2-1 meetings took place in Haringey -** Table 22 lists the respective businesses. Businesses were contacted via 'phone and email to pursue engagement and to carry out the business survey where applicable. Of the nine in depth meetings, seven businesses completed the survey. **Uncle John's Bakery were interested in the EV dongles with Clean Car and used the telematics device for three weeks**. During the 1-2-1, the business mentioned that they had several vans and lorries but use three vans to transport goods from the warehouse to their stores and retailers therefore were looking to use the dongle on one of these vans for vehicle usage data and guidance on how to switch to an

EV. Other recommendations made to businesses were to re-time deliveries outside of peak hours and to share alcohol suppliers with neighbouring pubs such as with Tottenham Wines.

Local Solution

Following engagement with businesses at Seven Sisters junction, many independent businesses had expressed the importance of local deliveries during the pandemic to sustain revenue as well as their customer base. The Town Centres group were consulted on implementing the scheme and agreed to **CRP offering businesses a fully funded cargo bike trial using a third-party provider**. CRP contacted three courier providers for quotes and Zedify were selected. They were deemed to be a reliable and ethical provider, and with a hub in Waltham Forest, had knowledge of the local area.

Implementation

Figure 34: Image of Haringey business Microfarm N15 using the cargo bike trial

Upon finalising the scheme with Zedify and Haringey Council at the end of February, the scheme officially launched in early March. From this point, CRP met with Zedify's comms team to create flyers and other promotional material to publicise the trial. Zedify were also involved in using their network to promote the trial. Following this, when the trial was ready to begin, there were a few issues in getting businesses started such as errors with the online booking system, changes to the remit radius of the scheme as well as all four initially interested businesses rescinded their commitment to the trial. This meant that more engagement needed to take place by CRP to get new businesses to join. Moreover, since the businesses on Seven Sisters Junction are predominantly independent, business had considerably slumped since January 2021 with many employees being furloughed. As engagement continued, there were several **small and independent businesses eager to have a free delivery scheme to local customers who would otherwise drive to pick up the item or have it sent by courier**.

Since the launch of the scheme, **three businesses** were using it frequently. **Local food banks and charities** were repeatedly contacted to help deliver food parcels to vulnerable people. However, due to Covid restrictions, the scheme was delayed again.

CRP spoke with all interested businesses before putting them in touch with Zedify. Zedify would then set them up on their online system through which they could
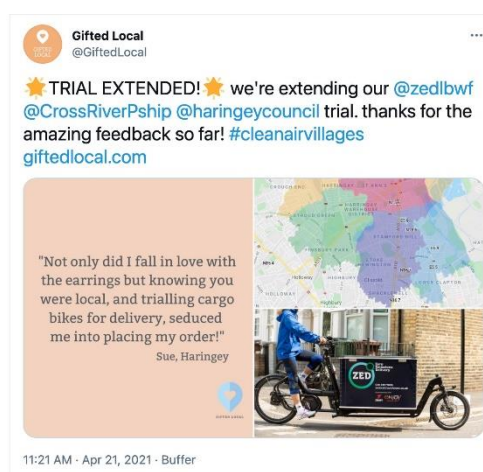
Figure 35: Promotional twitter post by Gifted Local, a Haringey business selling local artisanal items through the cargo bike trial.

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select two-hour slots and the preferred day to use the service. The funded hours were divided equally amongst the cargo bike users. A three-mile radius for deliveries/collection from the AQFA was established to ensure that the local air quality improvements worked in parallel with the objectives of the CAV3 project. Due to the relentless changes to businesses caused by the restrictions in relation to the pandemic, certain weeks were busy while others had no orders. Overall, the scheme made **over 110 deliveries** and completed **more than 415 kilometres of zero emissions** kilometres in the Seven Sisters area.

During the Haringey cargo bike scheme, **a total of five businesses / organisations used the free bike**. There were **five businesses** that were outside the AQFA boundary who were interested in using the scheme but due to the boundary restrictions for funding, they were not eligible to join.

"This initiative has really enabled us to explore the options of delivering our goods with a smile in a sustainable way that instigates change. Even better this is happening, whilst supporting ethical, local businesses that share similar ideas with us."

Nikos & Mafê, Microfarm N15

Local Communications

The scheme was publicised on Twitter using Figure 36, a promotional flyer of a Zedify rider and bike in the Haringey area by CRP, Haringey Council and Zedify. A bi-weekly promotion was carried out on CRP's Twitter handle to spread the word about the free trial. Several food hubs and businesses contacted CRP following Twitter posts.

Figure 37: Instagram post by El Bustan, a Haringey business that was using the cargo bike trial for free customer deliveries.

Figure 36: CRP's promotional flyer for Haringey cargo bike trial with Zedify.

Impact

The emissions savings for Haringey were calculated using CRP's in-house measureBEST air quality monitoring tool. Table 23 shows the emissions avoided by five businesses using the scheme from March to June 2021. Table 24 demonstrates the estimated annual emissions savings for four businesses if they used cargo bike deliveries.

Savings from the scheme March-June 2021			
NOX (g)	PM2.5 (g)	PM10 (g)	CO2 (kg)
100.66	5.95	10.79	47.34

Table 23: Emissions savings from March-June 2021 for Haringey.

Projected emissions savings for 4 businesses for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
13.28	0.79	1.42	6,245.92

Table 24: Estimated emissions savings for Haringey 2021-2022.

Main Achievement

The CAV3 project helped engage with local businesses on Seven Sisters Road where businesses expressed the need to carry out deliveries to sustain their business during Covid lockdowns. **CRP implemented a cargo bike scheme** for businesses to **experience zero-emission deliveries**.

Additional CAV3 impacts achieved on Seven Sisters Road:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Seven Sisters Station to St Ann's Hospital.
Clean Air Villages Directory	A total of 30 low emission businesses and service providers are now listed on the Seven Sisters Junction page.

Table 25: Additional achievements for the Seven Sisters village.

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June 2021

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5.1.6 - Islington - Holloway Road

Background

Holloway Road was the chosen air quality focus area in Islington as it is an A1 road with a heavy influx of vehicles that service the wide range of businesses in this area. With the guidance of local partners, the CAV3 project focused on businesses surrounding the Nag's Head Town Centre which is the second largest centre in Islington for retailing and employment. Businesses here are composed of chain stores, restaurants, as well as independent businesses of various sizes as this area continues to be sought out by businesses to operate to and from. Holloway Road is also home to London Metropolitan University, located adjacent to Holloway Road tube station. This has increased the amount of student housing along the main road. There is a diverse mixture of residents, businesses and visitors in this busy area.
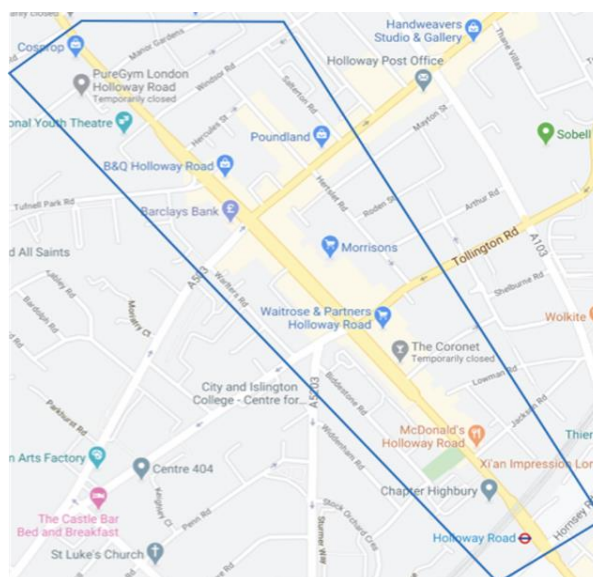
Figure 38: CRP's Islington focus area map.

Local Engagement

CRP **engaged with 65 businesses** over the course of CAV3, all done virtually due to the COVID-19 restrictions, with **93 repeated attempts**. A business survey was developed where businesses were asked about the impact of the pandemic on business operations, regular supplier frequency and timings (if applicable), interest in cargo bike ownership and courier service as well as their expected demand for usage. Businesses were also asked about their waste management practices, as improving recycling habits has been a priority area for the local agenda. Out of the 65 businesses contacted, five businesses completed the survey. Nag's Head has a quarterly Town Centre Group Meeting where local councillors, businesses, the local authority and stakeholders are invited to send in agenda items and to use the platform to voice concern. Three of these meetings were attended by CRP with the aim of understanding local concerns, to help with engagement and delivery of the CAV3 project in the local area.
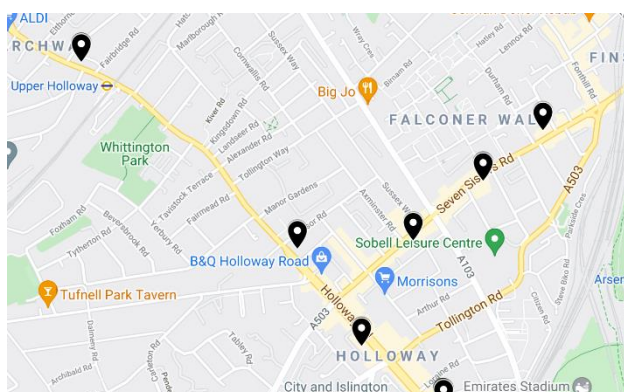
Figure 39: CRP's Islington 1-2-1 engagement map.

A challenge that has been observed through previous CAV projects is the need for an established business community group or forum, such as a BID, as this facilitates targeted engagement and encourages participation. It therefore proved difficult to engage businesses to converse with CRP team

on their business operations with no BID in this area. Moreover, the conditions put forth by the pandemic slowed efforts taken to reach businesses.

1-2-1 Business Engagement

CRP undertook **seven 1-2-1 meetings in and around Nag's Head area;** table 26 shows the businesses and their respective sector.

	Businesses with 1-2-1 engagement	Sector
1	**Apteka Chemist**	Pharmacy
2	**Dev's Chemist**	Pharmacy
3	**Girasole**	F&B
4	**Holloway Stationers & Bookshop**	Retail
5	**Indiebeer**	F&B
6	**Kilo Zero Waste**	F&B
7	**Print Core**	Other: Printers

Table 26: Islington - List of businesses with 1-2-1 meetings.

Local Solution

The London Borough of Islington already had an ongoing council-funded cargo bike scheme available to businesses across the borough in partnership with Pedivan, a zero-emissions courier based in Archway. When CAV3 engagement began in the Nag's Head area, the Pedivan scheme had been in effect for one year with ample funding remaining. Therefore, during engagement, businesses were informed of the scheme and its details, as well as connecting Pedivan with interested businesses to facilitate the uptake of the trial. The Pedivan scheme offers businesses within Islington £250 free credit for inter and intra-borough deliveries. The purpose of this scheme was for the council to **encourage local businesses to consider alternative and zero-emissions delivery modes for their business operations**. Similar to most cargo bike schemes, this scheme did not offer immediate deliveries (booked and made on the same day) and this was identified as a drawback for many businesses to join. Though the majority of London's businesses were reliant on home delivery to keep afloat during the pandemic, it was commonly found that SMEs around Nag's Head and along the stretch of Holloway Road did not have an online presence or ordering system to help support this. This inhibited their interest to join this trial as they expressed the need for an online ordering system for customers to use.
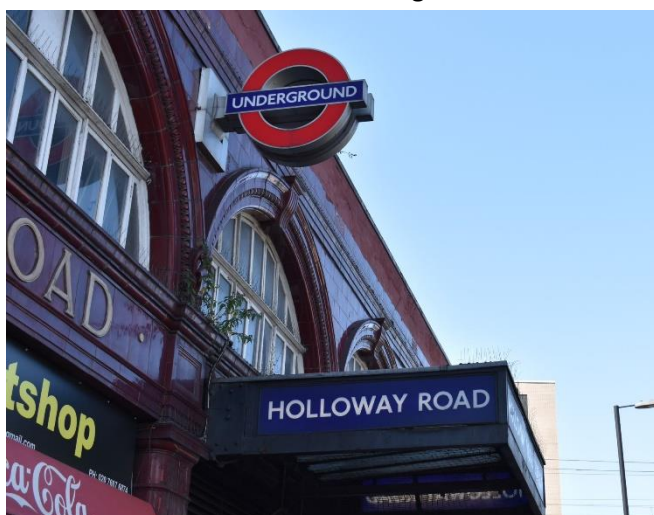
Figure 40: CRP's file Holloway Road picture

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Through the CAV3 engagement, **five businesses were interested in joining the Pedivan scheme**: two pharmacies, two food retailers and a printing shop (as shown in Table 27). However, the timing of their interest clashed with Pedivan's schedule and therefore the businesses could not trial the scheme despite CRP trying persistently to facilitate this. One business ended up hiring a member of staff for deliveries by moped.

	Business	Sector
1	Apteka Chemist	Health
2	Dev's Chemist	Health
3	Girasole	Food and Beverage
4	Kilo Zero Waste	Food and Beverage

Table 27: Businesses interested in joining Pedivan cargo bike trial in Islington.

Following from the business engagement and their interest in using cargo bike deliveries, **CRP developed a comprehensive Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis** on London's **nine cargo bike companies** tailored for Islington Council to have when consulting local businesses on potential courier providers most suitable for their needs. This SWOT analysis also rated the couriers based on three categories**: *(1) green company credentials, (2) positive employment practices and (3) practicality*** (encompassed if they had an online booking system, fleet size and composition and hub location). **CRP also produced a general factsheet of the same cargo bike companies** from the SWOT analysis. This version was intended to be published on the council's website and to be circulated to interested businesses. Therefore, this version omitted the rating system but detailed the many benefits of cargo bike deliveries compared to traditional modes as well as real-time case studies of businesses that switched to zero-emissions mode.

Implementation

The SWOT analysis featured nine cargo bike companies where comprehensive analysis of each companies' strengths, weaknesses, opportunities, and threats were examined and detailed in a report for Islington council. The first phase involved identifying the number of cargo bike companies present within London, these companies were then contacted by email and phone and were asked questions on the three categories aforementioned. The companies learnt about the purpose of the questions and were invited to provide as much information about their business operations, rider training specifications, and fleet capacities. For certain companies, ample information was available on their website while for others, direct contact was necessary for more detailed information. During this process, a couple of businesses that were hard to reach were removed from the list since there was not enough information to include them in the analysis. It was agreed to remove another company from the analysis as they had the lowest rating across the three categories and therefore would not be a contender when recommending cargo bike providers to businesses. In
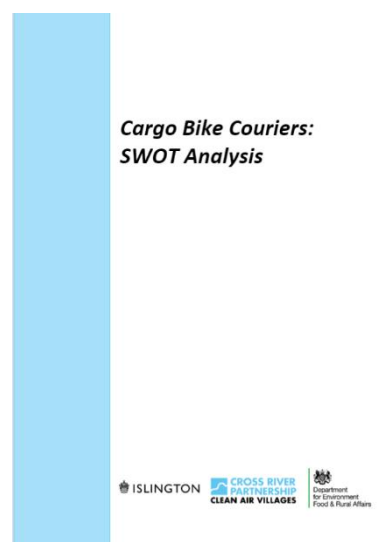
Figure 41: SWOT Analysis about cargo bike providers produced by CRP for Islington Council.

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order to make the rating system intuitive for the council team, a 'traffic light' system was inputted to determine how each company rated for each category (see Appendix V and Appendix VI).

Local Communications

The Pedivan scheme was promoted through CRP's Twitter account, as shown in Figure 42. There were also promotional flyers and tweets to Islington businesses to raise awareness of resources available to them. CRP had a bi-weekly promotion agenda for the Pedivan scheme combined with targeted engagement to businesses.

Figure 42: - CRP's Promotional - Twitter.

Impact

The emissions savings for Islington were calculated using measureBEST, an in-house air quality *monitoring tool developed for CRP. Table 28 demonstrates the estimated emissions savings for five* businesses using the Pedivan scheme where an average weekly distance travelled by bike was taken using data collected across CRP's other cargo bike scheme.

Projected emissions savings for 5 businesses using Pedivan 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
3.30	0.18	0.30	2,558.02

Table 28: Estimated emissions savings for Holloway Road village 2021-2022.

Main Achievement

CRP engaged with businesses in relation to their interest in cargo bike schemes and developed a **thorough analysis of existing cargo bike providers in London** that will enable opportunities for growth and partnership with LB of Islington and their **business community to use zero-emission modes.**

Additional CAV3 impacts achieved in Nag's Head are on Holloway Road for London Borough of Islington:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Holloway Road station to Sobell Leisure Centre.
Clean Air Villages Directory	A total of 38 low emission businesses and service providers were added to the Nag's Head directory page.

Table 29: Additional achievements Holloway Road village.

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5.1.7 - Lambeth - St Thomas' Hospital and King's College Hospital

Background
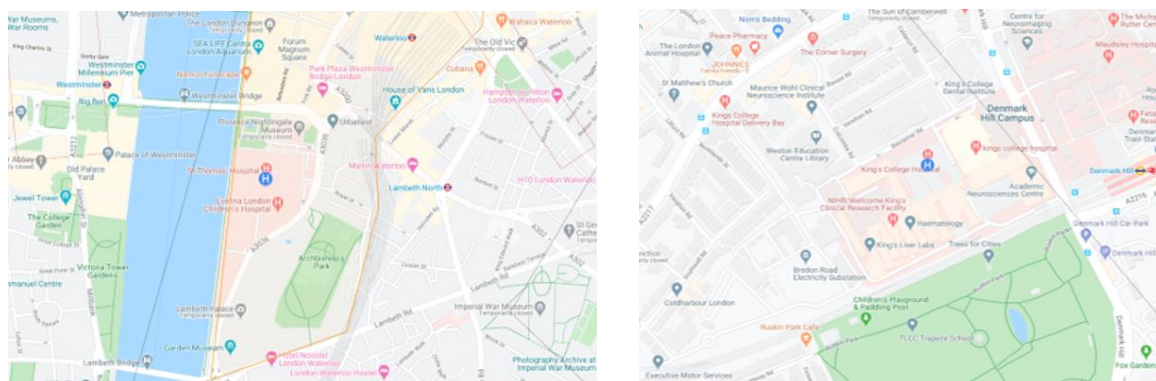
Figure 43: Focus areas for the London Borough of Lambeth: St Thomas' Hospital on London's iconic South Bank on the left, King's College Hospital on the right.

The London Borough of Lambeth is home to over 300,000 Londoners. Measuring seven miles long and three miles wide, this inner-city borough spans from the iconic South Bank to Clapham to Streatham and Crystal Palace. Lambeth boasts home to many tourist attractions, residential neighbourhoods and retail centres. Prior to the pandemic, there were approximately 9,800 businesses in Lambeth, providing nearly 120,000 jobs. Lambeth Council has an ambitious Air Quality Action Plan 2017-2022 to help protect its residents from poor air quality and ensure that its most vulnerable community members have minimised exposure to harmful pollutants.

As such, Lambeth Council has been a CRP partner for the two previous Clean Air Villages projects and saw the implementation of a shared EV van for Brixton businesses and a shared cargo bike for the Streatham business community. For the CAV3 project, Lambeth Council decided to shift focus to its health sectors, and CRP sought to work with both King's College Hospital and the Guy's and St Thomas' Trust on air pollution interventions. These took shape in the form of a citizen science air quality monitoring project and employee engagement through a variety of streams and media.

Local Engagement

Figure 44: 1-2-1 King's College Hospital engagement map.

Focusing on the health sector in Lambeth Borough, Cross River Partnership reached out to **Guy's and St Thomas' Hospital Trust and King's College Hospital to devise air quality intervention projects**. Engagement in this way was quite different to the other CAV3 villages, as there was no outreach to individual businesses, but to different departments and units within the two hospitals.

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With King's College Hospital (KCH), initial conversations with the Energy and Efficiency Manager and members of their budding Green Champions initiative explored a variety of air quality interventions. What was vital to the KCH group was establishing an evidence base for interventions and the idea of an **air quality monitoring project** was decided upon as a local solution. There was also a lot of interest in the **feasibility of EV switching** and the CRP Team provided the Performance & Compliance Team as well as King's Facilities Management with vehicle monitoring using telematic dongles for this purpose.

Early discussions with Guy's and St Thomas' Hospital Trust also explored a variety of air quality intervention options and resulted in a focus on

Figure 45: 1-2-1s Guy's and St Thomas' Hospital engagement map.

active travel solutions, specifically supporting the cycling community. The CRP Team worked with the Trust's Sustainability Officer and 'Showing we care about you' Programme Officer to conduct engagement with Trust staff regarding cycling behaviours and needs.

1-2-1 Business Engagement

Hospital Departments with 1-2-1 Engagements	
Capital Estates & Facilities (KCH)	Integrated Respiratory Team (KCH)
King's Facilities Management (KCH)	Mobile Renal Unit (KCH)
Operations (GSTT)	Performance & Compliance (KCH)
Trust Bicycle User's Group (GSTT)	

Table 30: List of Hospital Departments with 1-2-1 meetings.

Engagement took on a slightly different form through the hospital networks and was successful thanks to the referrals regarding the CAV3 project between hospital departments. Initial conversations with the operations team at **GSTT explored EV trials, development of a local Clean Air Route and led to an opportunity to work with the Trust Bicycle Users' Group (BUG)**, the latter of which was carried out from October 2020 until March 2021. The CRP Team worked with two officers from the Trust BUG in order to update a cycle resource page for the Trust's intranet pages and engage with Trust staff via a survey on cycling needs.

At King's College Hospital, initial contact was made with the Energy and Environment Manager from the Capital, Estates and Facilities (CEF) Directorate and members of the grassroots Green Champions (sustainability) group. These conversations lead to discussions with the Performance & Compliance Team, the Integrated Respiratory Team, the Mobile Renal Unit and King's Facilities Management (KFM) regarding vehicle monitoring using telematic dongles to determine suitability for EV switching.

These meetings led to the **monitoring of five vehicles** between the KFM and Performance & Compliance Teams, which eventually **led to the procurement of three electric vans**. The Mobile Renal Unit and Integrated Respiratory Team were connected with Lease Plan, a potential EV provider, along with other resources, including estimated emissions savings for the Integrated Respiratory Team, both of whom were making their own internal appeals for EV switching (more information can be found in Section 5.2). Discussions with members of the Green Champions group also lead to ideation of the local project, an air quality monitoring project where members of the hospital could participate as citizen scientists.

Local Solution

There was a great deal of interest in air quality improvement initiatives at King's College Hospital. In order to raise awareness for the issues of air quality, as well as establish an evidence base for further air quality interventions, the CRP team devised a **six-month Citizen Science Air Quality Monitoring Project**. The AQ Monitoring Project was set up in partnership with Mapping for Change, utilised **diffusion tubes to monitor NOx and 14 'citizen scientists' comprising of hospital staff, clinicians and administrators**. The voluntary citizen scientists went through a two-hour lecture and practical training in October 2020, at the launch of the project. They continued to change and collect diffusion tubes for a duration of six months and joined a **final KCH Air Quality Results presentation and discussion** in March 2021. The findings from the research and discussion were put into a final report provided by Mapping for Change, which was shared with the hospital as well as contacts at Lambeth Council.

Implementation

King's College Hospital

The Citizen Science Air Quality Monitoring project was launched through internal communications at King's College Hospital in September 2020. Hospital employees who were interested in volunteering were invited to fill out an application form. A total of **23 KCH employees applied**, **14 of which were able to attend the training and carry out the project for the six-month duration**. Monthly data collection finished in early March 2021 and citizen scientists attended an optional data presentation and discussion to review the outputs from the project. The citizen scientists found that the diffusion tubes were easy to use and simple to exchange. One drawback was identified: a few of the tubes were stolen, and therefore data for some months/locations was incomplete. During the final presentation an **Ideas for air quality interventions identified by the project participants included**:

- Restricting grounds access to EVs
- Switching hospital fleet to EVs over time
- Enforce no smoking outside the hospital
- Working with the Trust to develop more green spaces for staff and visitors
- Removing or reducing car parking spaces and focusing on public transport solutions
- Raising awareness of link between AQ and health using the project data
- Anti-idling campaign for visitors in queue to car park
- Increased public transport connections

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- Working with Council on AQ projects
- Improving active travel infrastructure
- Planting more trees, shrubs and plants on the hospital grounds

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"The project brought together a group of staff with an interest in air quality to carry out a citizen science project to understand what air quality in the hospital environment is like. This will now produce an effective team to raise awareness of the findings of the Air quality report to bring about positive change to reduce vehicle use, increase EV use and active travel."

Anonymous, KCH Citizen Scientist

Figure 46: Map of 20 locations of diffusion tubes sampling sites around KCH hospital for the Citizen Science Air Quality Monitoring project.
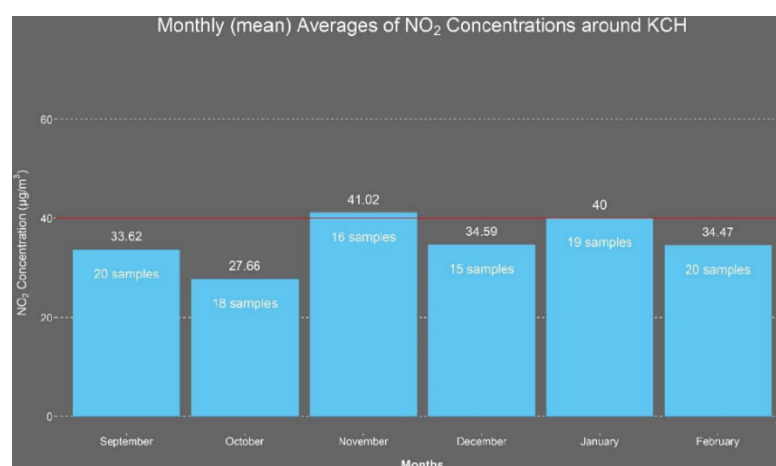
Figure 47: Average monthly NO2 concentrations for sampling sites around KCH.

Guy's and St Thomas' Trust

While the Trust was not part of the KCH monitoring project, efforts were made to support and assist the Trust Bicycle Users' Group with their initiatives to increase and improve the cycling experience of Trust employees. CRP offered support in creating a **Cycle Survey for Trust employees** which asked about current cycling behaviours, needs and opinions. The survey went live to Trust staff through internal communications such as the intranet and newsletters and received a total of **494 responses**. The CRP team provided the **analysed data** in a report for the BUG Officers and utilised the feedback regarding cycling needs to **develop the resource page for the Trust's intranet**.

The resource page included information on **where to receive cycle training, cycle maintenance, recommended insurance, the best cycle planning journey planning tools and much more**. The CRP team also commissioned a map of the recommended safe cycle route between Guy's and St Thomas's Hospitals, and created a map of cycle parking locations around each of the hospital sites.

Figure 48: Map of the recommended safe cycle route between Guy's and St Thomas' Hospitals.

Figure 49: Map of cycle parking locations around St Thomas' hospital. Bicycle racks can be found at the blue bicycles on the map.

Local Communications

While a great deal of communications and engagement at the hospitals happened during 1-2-1 conversations, there were also opportunities to reach out to the wider KCH community through internal communications. The CRP Team provided content for the intranet page regarding the launch of the Citizen Science Air Quality Monitoring Project, as well as an article for Lung Cancer Awareness Month. The cycling survey was promoted through Guy's and St Thomas' internal communications and the Bicycle User Group was also invited to the Active Travel Workshops held in conjunction with Groundwork.

Impact

While the Citizen Scientists of KCH put forth many ideas for solutions, none were implemented before the CAV3 project ended. The CRP Team has conducted an emissions savings estimate based on the notion of one LGV switching off its engine while waiting in the hospital drop-off/pick-up zone, instead of idling for five minutes. Anti-idling campaigning and awareness was one of the ideas put forth by the

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KCH Citizen Scientists that received positive support from the Council, and could be implemented fairly easily.

Estimated annual emissions savings from one LGV if idling was reduced by 5 minutes per day.			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
3.68	0.11	0.21	1,031.32

Table 31: Estimated emissions savings for Lambeth.

Main Achievement

The CRP team worked intimately with members of Kings College Hospital to conduct a **Citizen Science Air Quality Monitoring project** that would provide evidence and support for future air quality interventions. Use of the **telematic dongle monitoring** also provided data that contributed significantly to the **procurement of three electric vans**. At Guy's and St Thomas' Trust, the CRP team provided **the cycling community** with an opportunity for feedback (494 survey responses), support and resources through the Cycle Survey, the parking maps and improvements on the cycling resource page.

Additional CAV3 achievements for Lambeth include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from King's College Hospital to Camberwell High Street.
Clean Air Villages Directory	A total of 37 low emission businesses and service providers are now listed on the King's College Hospital directory page.
Telematic dongle monitoring	A total of 5 vehicles were monitored for EV switching suitability at King's College Hospital and King's Facilities Management.

Table 32: Lambeth additional achievement

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5.1.8 – Lewisham

Background
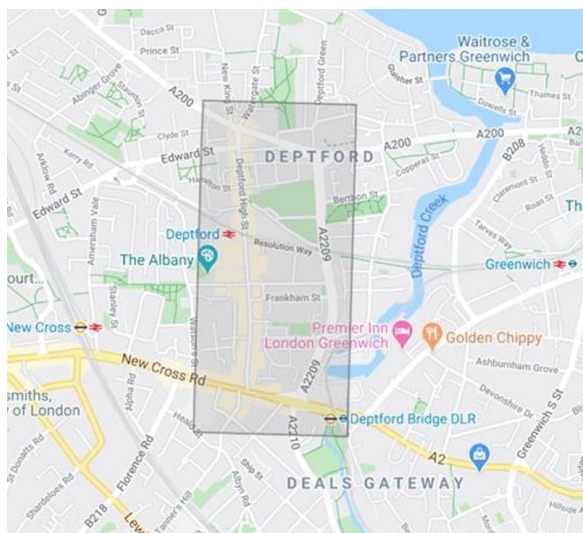
Figure 50: Map of the Deptford High Street Air Quality Focus Area

Deptford is usually a vibrant area of South East London, with a main high street running through the centre. Deptford High Street consists of independent shops including art galleries, hardware stores and small international supermarkets, as well as some high street chain stores and an active night-time economy. Significant footfall can usually be experienced in this area, especially on market days, where traders sell anything from fruit and vegetables to clothes and accessories. Significant developments, such as Cycleway 4, are also occurring to encourage cycling and walking in Deptford.

Local Engagement

CRP attempted to contact **56 organisations**, with **over 109 attempts** through phone, email and social media platforms, to assist businesses with their operations, COVID recovery and to improve air quality.

To explore the appetite for different types of solutions in Deptford, a survey was produced to explore the deliveries and operations, and the impact of COVID-19, on the organisations and the local area. This built on an existing survey from the CAV2 project in Deptford, where a record of survey respondents was kept if business engagement had taken place, to tailor questions towards any changes from COVID-19 since our last correspondence. 50 businesses were contacted to participate in the survey between August and November 2020, with nine organisations, including small local businesses, cafes and design studios, giving the required information over telephone or through virtual online meetings. The COVID-19 answers showed that **some businesses have pivoted quickly to offer digital platforms**

Figure 51: Deptford High Street

for their goods and services, which may be seen as a suitable method of income generation during enforced closures. Additionally, deliveries and online options have been useful for vulnerable, sheilding or nervous customers. Additional feedback from the surveys can be found in Appendix VII.

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	Organisation	Sector
1	**Gaff Deptford**	Food & Beverage
2	**Giles Miller**	Other: Design studio
3	**Iya Studio**	Retail
4	**Jars Bars**	Food & Beverage
5	**Klose and Soan**	Food & Beverage
6	**Lai Loi Oriental Stores**	Groceries/ supermarket
7	**Legendary Community Club**	Not For Profit
8	**Lewisham Foodbank**	Not For Profit
9	**Lomond Coffee**	Food & Beverage
10	**Moma**	Retail
11	**Station Pharmacy**	Health
12	**The Albany**	Not For Profit
13	**Villages Brewery**	Food & Beverage

Table 33: Deptford Village- List of businesses with 1-2-1 meetings.

Local Solution

The engagement survey highlighted **five businesses that would be interested in using a bespoke cargo bike delivery service**: Gaff, Lai Loi Oriental Stores, Jars Bars, Station Pharmacy and Lomond Coffee. **The businesses surveyed used cars or vans to deliver and collect stock, therefore a cargo bike would reduce or remove these journeys**, reducing congestion, improving air quality and supporting the businesses.

Due to the impact of COVID-19, there were 62.5 hours available to use from the Clean Air Villages 2 project's cargo bike scheme in Deptford with cargo bike delivery partner eco**fleet**. These hours were used in the Clean Air Villages 3 project and commenced in September 2020. This was utilised effectively as a tool to engage with more businesses, and the hours were used by the end of November 2020 by three businesses: Lai Loi Oriental Stores, Station Pharmacy and Lomond Coffee.

Figure 52: CRP's 1-2-1 Deptford engagement map. Note that 3 businesses/organisations are based outside the focus area.

Following the success of the cargo bike scheme from September – November 2020, and alongside the results of the business engagement, **it was agreed with the London Borough of Lewisham that the cargo bike scheme would be continued, to support organisations struggling during COVID-19**.

Implementation

A cargo bike scheme of 80 hours was implemented to support businesses and organisations in Deptford from December 2020, with support being provided in the run-up to Christmas. It was expected that this would last until the end of March 2021, based on usage of four-five hours per week. The new cargo bike scheme differed from the CAV2 scheme, in that:

- **A more egalitarian and community-centred approach would be adopted.** Due to the COVID-19 pandemic, food banks, charities and pharmacies were overwhelmed, and the cargo bike scheme could improve air quality whilst supporting vital community services in Deptford. Subsequently, CRP contacted, or was contacted by, 20 organisations that were performing charitable initiatives about joining the cargo bike schemes [2].
- **A new subsidised payment model was introduced, from 1ˢᵗ January 2021, to begin the long-term sustainable transition to paid zero-emission deliveries services.** After consulting with existing users of the scheme, CRP enabled businesses to purchase eco**fleet**'s hours at half price, subsidising the other half, to encourage businesses to switch to zero-emission delivery services whilst realising the cost involved. This option was only given to Lai Loi and Lomond; businesses that had used the cargo bike option extensively from September to November 2020. Station Pharmacy were exempt as they were performing a vital service in delivering medicinal and pharmacy products to those isolating or shielding from COVID-19.

The cargo bike hours were used up completely on 29ᵗʰ March 2021 by the below users. Three new users of the cargo bike scheme used the scheme from December 2020 – March 2021.

	Organisation	Sector	First Use	Final use
1	**Klose & Soan**	Food & beverage	Mar-21	Mar-21
2	**Lai Loi Oriental Stores**	Groceries/supermarket	Sep-20	Feb-21[3]
3	**Legendary Community Club**	Not for profit	Dec-20	Mar-21
4	**Lewisham Foodbank**	Not for profit	Feb-21	Mar-21
5	**Lomond Coffee**	Food & beverage	Sep-20	Dec-20
6	**Station Pharmacy**	Health	Nov-20	Mar-21

Table 34: Deptford cargo bike hours usage time.

The table below shows a detailed breakdown of the cargo bike schemes.

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[2] Many businesses in Deptford that had been performing charitable initiatives throughout the pandemic and are included in this figure.

[3] Lai Loi Oriental Stores used 6 hours of the subsidised payment scheme in January – February 2021.

	CAV2 Scheme (3rd Sep – 27th Nov 2020)	CAV3 Scheme (3rd Dec 2020 – 29th March 2021)	Total
Miles	271.5	466.4	737.9
Kilometres	437	750.6	1187.6
Miles per week (average)	20.9	27.4	24.6
Km per week (average)	33.6	44.2	39.6
Hours per week (average)	4.8	4.7	4.8
Estimated consolidation	21%	29%	27%

Table 35: Lewisham cargo bike scheme breakdown.

CAV2 presented challenges over businesses wanting the cargo bike service on-demand. This was mitigated from September 2020 by encouraging organisations to send through their delivery requirements by midnight the day before, supporting eco**fleet** with efficient delivery route planning.

The second block of 80 hours, paid for by the Clean Air Villages 3 programme, was characterised by **peaks and troughs in the demand for use**. December 2020 was a particularly busy time in the lead up to Christmas deliveries for Lai Loi and Lomond, whilst **Station Pharmacy** had increasing use from the need for many people to isolate or shield. Legendary Community Club, a **food bank** covering the Deptford area, were delivering **Christmas meal food parcels** in the week preceding Christmas directly to families in the local area. 32 hours were used in December alone by these four organisations.

January and February 2021 saw a slowing of the demand for cargo bike scheme use. Lomond Coffee were no longer eligible to use the cargo bike scheme as they moved their roastery to Forest Hill, whilst Lai Loi needed to balance the cost with fallen demand of deliveries in the local area.

Lewisham Foodbank had begun to use the cargo bike scheme in February 2021, to deliver to their site in Deptford from Forest Hill, on a regular slot on Monday morning each week. This has been vital in supporting food bank users in Deptford and encouraging them to think about using zero-emission delivery services and schemes in the future for all of their sites. Klose & Soan, a catering service and restaurant, joined the scheme in March 2021. They have since gone on to pay for the cargo bike scheme directly with ecofleet, **ensuring a long-term sustainable switch to zero emission deliveries**.

*Figure 53: An eco**fleet** rider collecting the afternoon's deliveries from Lai Loi Oriential Stores*

The cargo bike scheme concluded on 29th March 2021.
The new users, Legendary Community Club, Lewisham Foodbank and Klose & Soan, previously made these trips by car, so replacing these trips by cargo bike has had an **impact on reducing pollution and**

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congestion around Deptford. The London Borough of Lewisham has been given regular, detailed updates about the cargo bike trial scheme.

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*"We were approached by Cross River to participate in a trial eco-friendly cargo bike delivery program partnered with eco**fleet** and Lewisham council.*

*This has helped us to advertise our oriental grocery free delivery service on our social media and also tell our customers, so they don't need to leave the house. It has cut our driving delivery time in a car or van so reduced our emission. eco**fleet** have been fast and easy to communicate with.*

We have attracted more customers who would not have set foot down Deptford too and have become our regular. The feedback is they love the service by ourselves at Lai Loi family and the friendly couriers at ecofleet. They don't want us to stop."

Nhung Wehe, Owner, Lai Loi Oriental Stores

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 an email address so that businesses could express their interest in joining the scheme. Organisations, such as Lewisham Foodbank, were supportive in communicating their use of the cargo bike in Deptford.
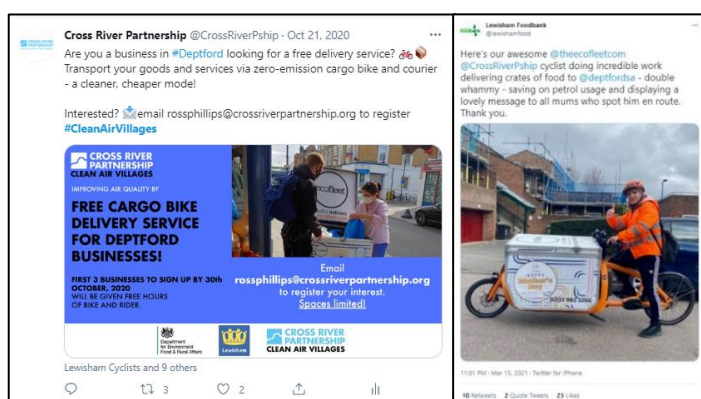
Figure 54: Tweets by CRP and a cargo bike user promoting the use of the cargo bike scheme.

Lewisham Local, a community organisation in Lewisham, were helpful in promoting webinars through the newsletter and sharing tweets about the cargo bike scheme. Additionally, Councillor Sophie McGeevor, Cabinet Member for Environment and Transport, and Councillor Louise Krupski were supportive in sharing information on social media about the cargo bike scheme in Deptford.

Impact

The below emission savings are based on the cargo bike scheme operating between September 2020 – March 2021 (30 weeks, 1,187.5km), replacing a London "average car". The projected emissions savings for 2021-2022 are based on two businesses continuing with the use of a cargo bike, with an

average of 39.6km per business use each week. This has been generated using CRPs in-house *measureBEST* emissions calculator.

Emissions savings (September 2020 – March 2021)			
NOX (g)	PM2.5 (g)	PM10 (g)	CO2 (kg)
428.18	21.82	39.70	223.95

Table 36: Deptford emissions saving September 2020 to March 2021.

Projected emissions savings 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
9.91	0.51	0.92	5,185.52

Table 37: Deptford projected emissions saving 2021-2022.

Main Achievement

The cargo bike scheme was a vital tool during the pandemic for community organisations in delivering support to those facing food poverty around Deptford, whilst improving air quality and reducing congestion in the local area by replacing these trips that were previously made by car. The cargo bike scheme was also a **launch pad for further uptake of cargo bikes by local organisations**.

Additional CAV3 achievements for Lewisham include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from New Cross Gate railway station to Deptford High Street.
Clean Air Villages Directory	A total of 50 low emission businesses and service providers are now listed on the Deptford High Street directory page.

Table 38: Additional Achievement Deptford village.

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5.1.9 – Merton
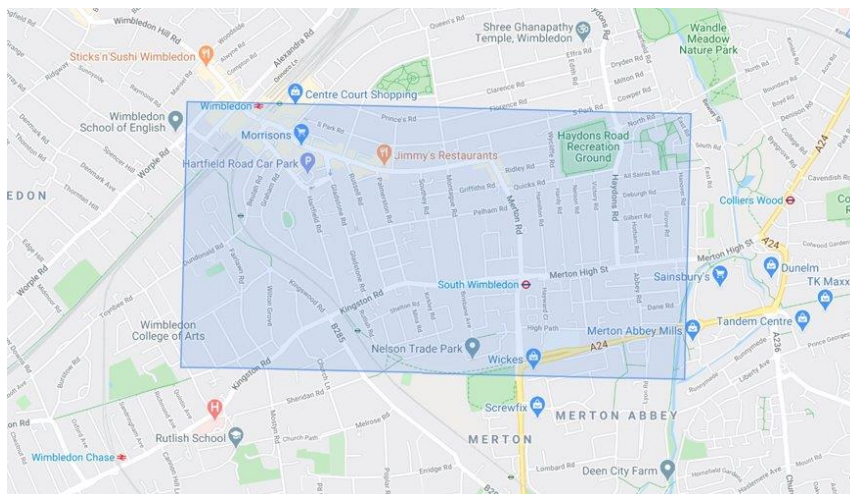
Figure 55: CRP's Merton focus area map.

Background

Wimbledon Town Centre is dominated by over 200 shops, chain stores and services including fashion to fitness, health and home interiors. Its location is served by national rail services, tube, bus and it is notably close to the A24. The main road network of Merton Road and Wimbledon Hill Road cuts through the focus area and has high use of private cars, vans and HGVs using road for deliveries and through road traffic going into Central London.

The town centre is frequented by visitors, office workers and residents, it has both a high street and indoor shopping centre, Centre Court, leading to a high footfall of pedestrians near the congested road network.

The area has a Business Improvement District, Love Wimbledon BID, who were set up in 2012 and have 349 BID businesses currently operating in the Town Centre.

Local Engagement

In total, CRP attempted to contact **82 businesses** in the focus area which were open during the restrictions with over **116 attempts** via phone, email, and social media platforms to offer support during the COVID recovery. CRP communicated the project through the Love Wimbledon BID website, newsletter and business introductions facilitated via the BID. As many of the businesses in the area were chain stores, multiple attempts were made to get both in contact with the store manager and head office, however many larger chains were closed during the project with multiple staff on furlough.

During the easing of restrictions, businesses were engaged with to trial the cargo bike scheme for deliveries to customers, as footfall to the high street/ shops had not fully resumed to pre-pandemic

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Figure 56: CRP's Merton 1-2-1 engagement map.

levels. Businesses were contacted to trial the free hours of the scheme with a focus on hospitality and retail in October and November 2020.

As further government-imposed restrictions came into place, many of the shops closed and so the focus on the cargo bike scheme went to support Covid-19 response trips. Pharmacies, not-for profits, such as food banks and charities were contacted between December 2020 and February 2021.

In the first instance businesses were contacted to answer a survey in August- September 2020, to understand the requirements they would need for deliveries, as this was the first instance businesses had heard of a cargo bike scheme. During this time four businesses answered the survey. Due to lack of responses, CRP focused on contacting businesses via 'phone to gain more information and highlight how the scheme could help support their local deliveries.

1-2-1 Business Engagement

	Organisation	Sector
1	**AFC Wimbledon**	Other: Football club
2	**Bliss Cafe**	Food and Beverage
3	**D Parry + Thomas James Chemists**	Health
4	**Elys Wimbledon (Morley Stores)**	Retail
5	**Fielders**	Retail
6	**G like Gelato**	Food and Beverage
8	**Little A.R.K.**	Other: Mutual Aid Group
9	**Lu-ma**	Food and Beverage
10	**Mai Thai**	Food and Beverage
11	**Tanna Pharmacy**	Health
12	**Trident Pharmacy**	Health
13	**Zero**	Groceries

Table 39: Merton - List of businesses/ organisations with 1-2-1 meetings.

Local Solution

Following engagement in the focus area, **a cargo bike scheme that would target local delivery trips**, was chosen. The volume of products could cater to it being switched to a cargo bike. The cargo bike scheme would be able to ease congestion on the road network by reducing the need for vans, replacing journeys with cargo bikes, which would **reduce air pollution**.

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Due to the location of the focus area, a cargo bike provider with a hub close enough to Wimbledon was chosen to carry out the trial. eco**fleet** were the local courier that was chosen and would be contracted a set number of hours to collect and deliver items for local businesses.

Implementation

A cargo bike scheme with 80 hours available was implemented to support businesses and organisations in Wimbledon. This launched in December 2020, with support being provided in the run up to Christmas. It was expected that this would last until the end of project in March 2021, based on usage of 4-5 hours per week.

Before commencing the trial, Mai Thai (Food & Beverage), Elys (department store), and Fielders (independent art retailer) had all expressed an interest in using the scheme once per week dependent on customer orders. Due to the changes in restrictions throughout December, some businesses did not have the demand from customers to use the cargo bike scheme.

*Figure 57: Mai Tai and eco**fleet** Dec 2020*

*Figure 58: Little Ark & eco**fleet** March 21*

In January and February 2021, CRP approached pharmacies and not-for-profit causes to help support local deliveries for the Covid-19 response. All the organisations that took part in the scheme previously used vans or cars to deliver and collect goods across the London Borough of Merton. The demand from **pharmacies** came as many **vulnerable individuals were shielding at home** so would need their medicines to be delivered to them.

Pharmacies had to develop a delivery system during the pandemic to cater for this new demand for prescriptions, the use of an employee car or a courier service was being used to deliver medicines to homes. The volume of medicines was easily able to fit on a cargo bike and eco**fleet** had the necessary documentation for transporting medicines with a clear risk assessment completed. **When looking at delivery services, pharmacies do need to include insurance for transporting medicine and they need to ensure that medicines are handled securely to the correct recipient**.

AFC Wimbledon and Little A.R.K contacted CRP through a local business group. Both organisations needed support for extra collections and deliveries due to the demand from the pandemic. They wanted to ensure that the delivery method being used would not have a negative impact on congestion or air quality for the communities they were serving.

	Organisation	Sector	Delivery product	Date of use/ interest
1	AFC Wimbledon	Other: Football club	To deliver food parcels from the foodbank to homes in the borough.	February 2021
2	D Parry + Thomas James Chemists	Pharmacy	To deliver medications to those at home.	February 2021
3	Elys	Retailer	To use for customer deliveries of home products	October 2020
4	Fielders	Retailer	To use for customer deliveries of artwork/ art supplies	October 2020
5	Gina Conway	Other: Hairdressers	To deliver hair care products to customers at home.	February 2021
6	Hilton Pharmacy	Pharmacy	To deliver medications to those at home.	February 2021
7	Little A.R.K.	Other: Mutual Aid Group	To collect scrub hats, clothing for NHS staff from volunteers across the borough.	February 2021
8	Mai Thai	Food and Beverage	Moving stock between stores.	December 2020
9	Tanna Pharmacy	Pharmacy	To deliver medications to those at home.	February 2021
10	Trident Pharmacy	Pharmacy	To deliver medications to those at home.	February 2021

Table 40: Wimbledon Businesses interested/ using the cargo bike scheme.

The cargo bike scheme concluded on the 10th of April 2021. Organisations were contacted by CRP to explain their options in continuing with the scheme and what other cargo bike options they could take on. **All organisations that used the scheme had previously used a van or car to collect or deliver goods across the borough, so replacing these trips by cargo bike has reduced pollution and congestion in Wimbledon and across the borough**. The London Borough of Merton and Love Wimbledon BID were given regular updates about the cargo bike scheme.

"Little A.R.K are using the Clean Air Villages 3 cargo bike scheme in London Borough of Merton. This community group, made up of over 70 local volunteers, support the community through Little Acts of Random Kindness (A.R.K) including the production and distribution hand sewn items for those in need.

Little A.R.K are using the scheme to deliver face coverings, hats and scrub bags for NHS workers, working with 7 NHS trusts. In just one month, 2,000 scrub hats and 27,000 face masks have been created over a year!"

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Figure 59: An Instagram post from Little Ark

Wimbledon 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 the businesses that were using the scheme. Love Wimbledon featured the cargo bike scheme in their newsletter which was distributed to their membership database.

Impact

Estimated emissions savings have been calculated using CRPs in-house *measureBEST* emissions

Figure 60: A CRP Tweet promoting the bike scheme

calculator. The below scenario calculations are based on the ten weeks (27 days dedicated to deliveries) the cargo bike scheme operated during (November 2020 – March 2021). Delivery scenarios have all been based on "average car" classifications, comprised of the average mix of London's diesel and petrol cars. **734.7km of zero-emission journeys have been made through the scheme**. Below are the emissions associated with this.

Total emissions avoided from cargo bike scheme.			
NOX (g)	PM2.5 (g)	PM10 (g)	CO2 (kg)
228.40	13.50	24.49	107.41

Table 41: Merton total emissions saving.

The projected emissions savings of five businesses using the scheme with a weekly distance of 43 km are below.

Projected annual emissions savings for 5 businesses 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
4.68	0.24	0.43	2,447.39

Table 42: Merton projected emission saving 2021-2022

Main Achievement

Delivering a cargo bike scheme for organisations that were **directly supporting the NHS and the most vulnerable during the pandemic**. This scheme showed that organisations that have little funding can still switch to zero emission deliveries, having a **positive impact on congestion and pollution for our most vulnerable communities**.

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Wimbledon Station to South Wimbledon Tube station.
Clean Air Villages Directory	A total of 32 low emission businesses and service providers are now listed on the Wimbledon page.

Table 43: Additional achievements Wimbledon village.

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5.1.10 - Richmond Upon Thames - Richmond Town Centre

Background
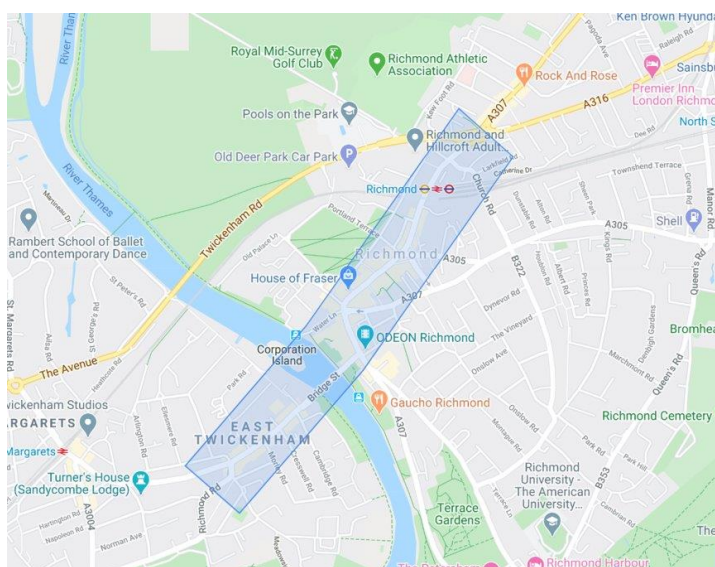
Figure 61: CRP's Richmond focus area map

Richmond Town Centre is characterised by over 100 shops, restaurants and services including independent and chain stores. It is the most polluted location in the borough and a hot spot for through traffic. The area is served by national rail services, tube, overground, bus and at an intersection of both A307 and A316. The main road through the town centre to East Twickenham cuts through the focus area and has a high use of private cars, vans and HGVs using the road for deliveries.

The town centre is frequented by visitors, tourists, office workers and residents, leading to a high footfall in close proximity to a congested road network.

The area has a Business Improvement District, Be Richmond, who were set up in 2017, with a mix of members from different sectors; hospitality, offices and retailers.

Local Engagement

In total, CRP attempted to contact **59 businesses** in the focus area which were open during the restrictions, with over **88 attempts** through phone, email and social media platforms to support during the Covid recovery. CRP communicated the project through the Be Richmond website, newsletter and direct business introductions facilitated through the BID. CRP worked closely with the London Borough of Richmond business team to communicate with businesses in East Twickenham, as these businesses were not located in the BID area.

CRP arranged for the selected cargo bike operator to visit businesses in a Covid secure manner so that businesses could see the cargo bike for themselves.

CRP attended the Be Richmond green champion meeting to promote the project to local businesses. The stakeholders in the meeting suggested further

*Figure 62: the eco**fleet** cargo bike in Richmond.*

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communication on social media platforms due to lack of staff visiting the area and the difficulty of taking part due to business closures and furlough.

CRP contacted a selected list of businesses from Be Richmond BID about the cargo bike scheme.

1-2-1 Business Engagement

	Organisation	Sector
1	A&N style	Retail
2	Bridge & Hill Livingstore	Retail
3	By the Bridge cafe	Food & Beverage
4	Kooks Unlimited	Retail
5	Manno	Retail & Food & Beverage
6	Pizzeria Rustica	Food & Beverage
7	Real Ale	Retail & Food & Beverage
8	Rubens Bakehouse	Food & Beverage
9	RV Tass	Retail
10	Tangawizi restaurant	Food & Beverage
11	Thai upon Thames	Food & Beverage
12	The Retreat Kitchen	Food & Beverage
13	TW Magazines	Retail
14	Yarn tribe	Retail

Table 44: Richmond - List of businesses with 1-2-1 meetings.

Local Solution

As the project in Richmond focused on local delivery trips, **a cargo bike scheme for the focus area was chosen**, it was discovered that the volume of products being transported would be appropriate for transportation by a cargo bike, and a modal switch could take place. The cargo bike scheme would be able to ease congestion on the road network, by reducing the needs for vans, with a consequent reduction in local air pollution.

Due to the location of the focus area, a cargo bike provider with a hub close enough to the London Borough of Richmond and located in West London was chosen to carry out the trial. eco**fleet** was the chosen courier and were be contracted a set number of hours to collect / deliver for local businesses, a similar scheme to CAV3 in Tooting.
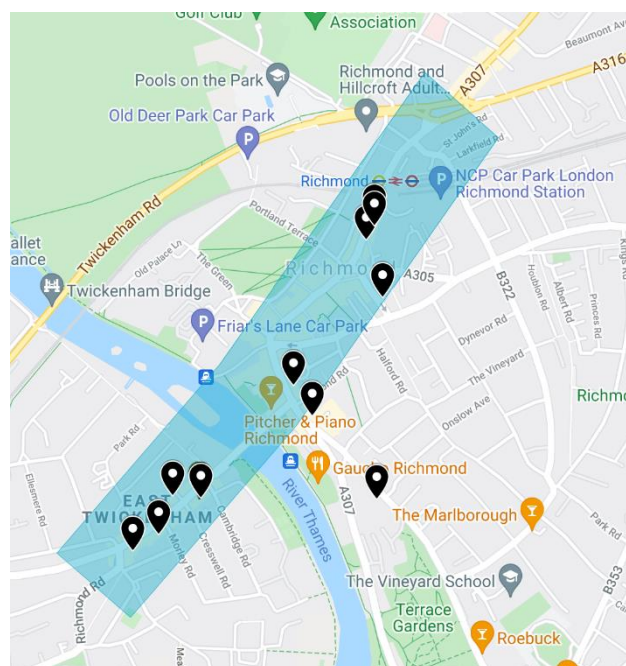
Figure 63: CRP's Richmond 1-2-1 businesses engagement meeting map.

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Implementation

A cargo bike scheme of 150 hours was implemented to support businesses and organisations in Richmond from December 2020, with support being provided in the run up to Christmas. It was anticipated that this would last until the end of project in March 2021, based on usage of ten hours per week.

At the start of the scheme, there were several restaurants in the East Twickenham area that were looking for support with customer deliveries, however, they were already using other services such as Deliveroo and Just Eat. Businesses and customers had become accustomed to the online platforms that made ordering easy for customers. Deliveries made in this way were not consolidated. The on-demand service meant that several riders would pick up and drop off deliveries - the cargo bike scheme would be used to make this system more efficient.

A challenge for most businesses was the lack of online presence with an ordering system or an in-house delivery system. During the pandemic, customers would need to find the shop/ restaurant online. Shop owners' feedback to CRP was that they were not in a place to advertise/ market themselves online at that time. CRP ensured that any business that signed up to the scheme would **benefit from social media comms and promotional material tailored to their business**.

To ensure deliveries could be consolidated and that the resource could be used as efficiently as possible, the cargo bike scheme would have a rider available all day on a Thursday from 8am-5pm.

From November to December 2020 businesses that were previously interested in the scheme had to close due to Covid restrictions and many staff were furloughed and therefore unable to take part in the scheme.

Businesses that could still operate a delivery service for their customers, did: RV Tass and Real Ale, both East Twickenham businesses started to use the cargo bike scheme in November – December 2020. In January 2021, TW magazines, the Retreat Kitchen and Pharmacare started to use the cargo bike when there was demand from customers.

	Organisation	Sector	Delivery product
1	Pharmacare	Health	Prescriptions to customers' homes
2	Real Ale	Retail	Beer deliveries to customers' homes
3	RV Tass	Retail	Paint supplies to customers' homes
4	The Retreat Kitchen	Food & Beverage	Café in Richmond delivering food to customers' homes
5	TW Magazines	Other: Media	Newspaper deliveries to businesses in East Twickenham

Table 45: Businesses using the Richmond cargo bike scheme.

As of project end, 31st March 2021, the cargo bike scheme had 108 hours left. Usage was less than anticipated due to the third Covid lockdown imposed in January 2021. The remaining hours have since been merged onto a new online platform with MyTown which **enables businesses to have both a**

zero-emission mode for delivery but also access to an online platform for a seamless customer experience for online ordering.

During the scheme, Real Ale purchased an electric vehicle to replace their diesel vehicle and utilised the cargo bike scheme for smaller deliveries in the local area.

The London Borough of Richmond and Be Richmond BID were regularly informed of the progress of the cargo bike scheme.

Local Communications

Richmond 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 the businesses that were using the scheme. Be Richmond featured the cargo bike scheme in their newsletter which was distributed to their membership database.

Figure 65: A CRP Tweet promoting the cargo bike scheme in Richmond
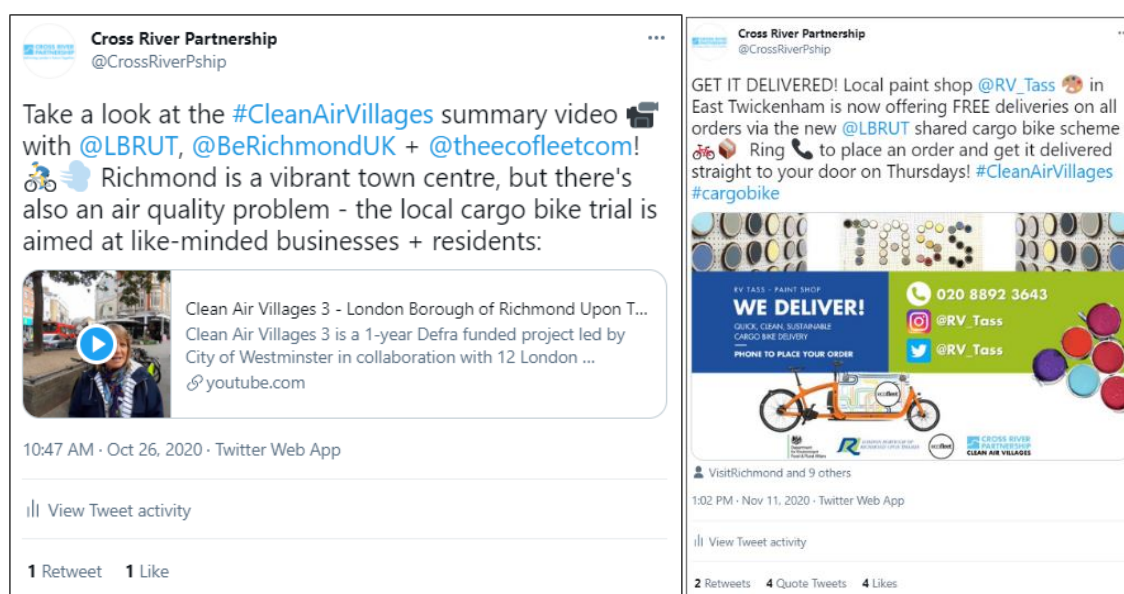
Figure 64: Additional CRP content on Twitter

Impact

Estimated emissions savings have been calculated using CRPs in-house *measureBEST* emissions calculator. The below scenario calculations are based on the 20 weeks of cargo bike scheme use from November 2020 – March 2021. Delivery scenarios have all been based on "average car" classifications, comprised of the average mix of London's diesel and petrol cars. The total km travelled through the scheme is 274km, therefore below are the emissions avoided by users of the bike.

Total emissions avoided from cargo bike scheme			
NOX (g)	PM2.5 (g)	PM10 (g)	CO2 (kg)
85.18	5.04	9.13	40.06

Table 46: Richmond emission savings – November 2020 to March 2021

The projected emissions savings for 2021 to 2022, based on four businesses using the scheme with a weekly distance of 16.1 km are below.

Projected emissions savings for 4 businesses for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
5.70	0.34	0.61	2,680.86

Table 47: Richmond projected emission saving 2021-2022

Main Achievement

Delivering a **cargo bike scheme for a range of organisations** from different sectors, who were able to use this zero-emission vehicle rather than a car/van for local deliveries. This scheme demonstrated to organisations what volume of goods could be moved on a cargo bike and led to local air quality improvements.

Additional CAV3 achievements for Richmond include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Thames Riverside to Richmond Train station.
Clean Air Villages Directory	A total of 28 low emission businesses and service providers are now listed on the Richmond page.

Table 48: Richmond additional achievement

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5.1.11 - Wandsworth – Tooting High Street

Background
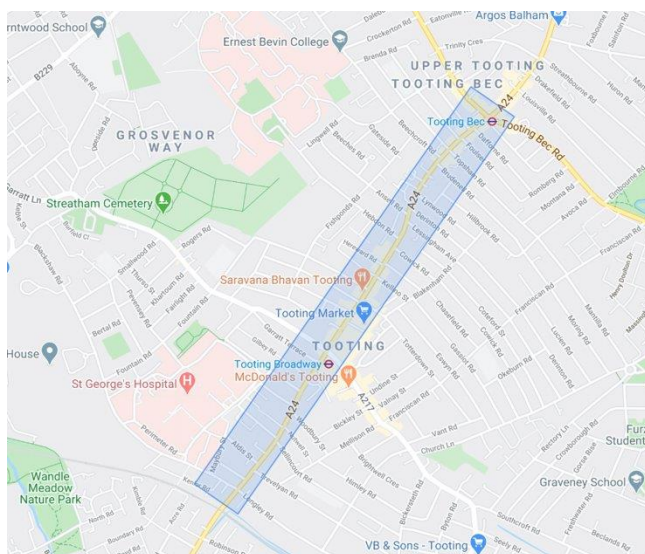
Figure 66: CRP's Wandsworth focus area map.

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 the council representatives.

Local Engagement

In total, CRP attempted to directly contact **18 businesses** which were open during the restrictions, with over **28 attempts** through phone, email, and social media platforms to support during the COVID recovery. CRP communicated the project through local groups such as the business group with the Town Centre Manager that covers all businesses located in the focus area, the owners of Tooting Market which hosts **49 independent traders** were contacted and given resources to highlight the delivery scheme. CRP continued contact with St George's Hospital, however they could not be involved with CAV3 due to lack of resource. Best practice advice was still shared with them.

The Clean Air Villages 2 cargo bike scheme, which launched in February 2020, was extended until May 2020 and engagement in the local area for Clean Air Villages 3 commenced once businesses were able to reopen in June 2020. Many of the businesses in Tooting are in the hospitality and food & beverage sector which were heavily affected by restrictions. **A focus on business to customer deliveries for restaurants was highlighted as a priority by the council**. Hospitality businesses were approached during June and July 2020, however many did not have the demand from customers for deliveries.
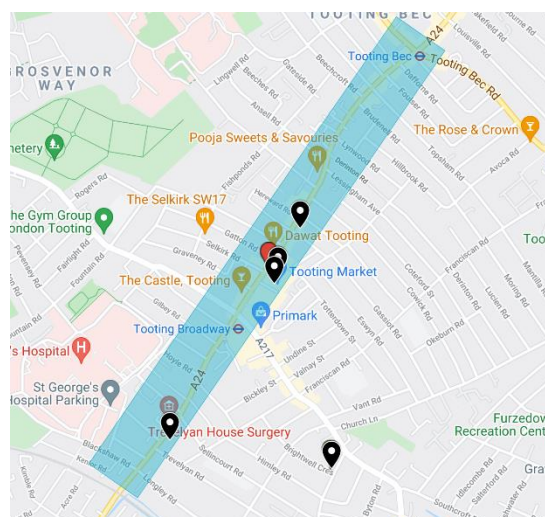
Figure 67: CRP's Tooting 1-2-1 engagement map.

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Previous engagement with businesses from Clean Air Villages 2 and regular engagement with the Town Centre Manager enabled CRP to identify businesses and not-for-profit groups who would need support recovering from closures. Businesses who were interested in the cargo bike scheme from the previous trial approached CRP for an extended trial to help support deliveries.

Additionally, Business Launchpad **a non-for-profit organisation delivering food parcels for the local food bank** expressed interest to find a more sustainable way to deliver this extra demand from the pandemic.

1-2-1 Business Engagement

	Organisation	Sector
1	Business Launchpad	Not For Profit
2	BYO	Retail
3	Kaosarn	Food and Beverage
4	Love Art	Not For Profit
5	Patel Brothers	Groceries
6	Unwined	Retail / Food and Beverage

Table 49: Tooting Village - List of businesses/organisations with 1-2-1 meetings.

Local Solution

In 2019, Tooting was selected as the focus area for Clean Air Villages 2 and a cargo bike scheme was implemented for interested businesses in February 2020. The scheme had originally focused on retail businesses trialling the scheme with five businesses signed up.

As the pandemic took hold in March 2020 the focus of the trial was to **support care homes, pharmacies, and home deliveries**. The CAV2 cargo bike scheme continued into CAV3 and was extended as the solution for the area. **Overall, the scheme delivered 130 deliveries with over 277 miles cycled and helped support both businesses and vulnerable communities**.

Following renewed interest from businesses on the high street and market traders for the reinstatement of the cargo bike scheme, the Tooting cargo bike scheme was extended to support businesses in recovering from the pandemic.

Due to the **confidence and positive feedback from businesses** who worked with the local courier eco**fleet**, the scheme was reinstated.

Implementation

The reinstated cargo bike scheme had 80 hours to support businesses and organisations from November 2020 to March 2021. CRP calculated that these hours would ensure the scheme lasted until the end of the Clean Air Villages 3 project with around ten hours scheduled to be delivered weekly. To ensure the deliveries were as efficient as possible, Tuesday was designated as the day where the scheme would run and service all five businesses in a consolidated manner. By consolidating on a

Tuesday it meant that the hours could be shared fairly with the businesses and two of the businesses who had limited orders could share the same slot. This showed **businesses that didn't have high demand or larger volumes that they could still utilise the scheme based on their needs**. This was the first cargo bike scheme that showed businesses were willing to **share the same delivery method and slot**. It showcases the importance of volume and the reactive demands from customers that the scheme could adapt to make most use of the hours by consolidating the deliveries.

As the CAV3 cargo bike hours were coming to an end, CRP suggested to the businesses that the scheme could be supplemented to extend the trial for longer. CRP based the supplemented fee that each business would need to contribute on their usage from the scheme, this was important for each business as it had to prove cost effective for them.

All businesses agreed with CRP to contribute towards costs to extend the scheme. This enabled the scheme to continue, with the final cargo bike delivery taking place on 4th April 2021.

All businesses who used the scheme are listed below with the main delivery product:

	Organisation	Sector	Delivery product
1	Business Launchpad	Not For Profit	Food parcels for vulnerable residents
2	BYO	Retail	Home delivery of essential household products
3	Love Art	Not For Profit	Home delivery of art supplies/products
4	Patel Brothers	Groceries	Groceries to residents
5	Unwined	Retail / Food and Beverage	Home delivery & store deliveries of wine/ alcohol

Table 50: Businesses using the Tooting cargo bike scheme 2020-2021.

"We joined the scheme as we believed it to be an excellent, sustainable initiative. We've found the service level to be extremely high, very efficient with friendly and accommodating riders who ensure parcels are delivered safely and securely.

We deliver weekly care packages to roughly 80 vulnerable residents referred by the NHS and other care agencies. It is important to us that the majority of our volunteers deliver on foot or by bicycle. Therefore, the scheme aligns with our mission. Should we have the appropriate funding we would certainly continue to use the scheme. It is an excellent, sustainable service.

The availability has been extremely accommodating and the customer service and follow ups have been great. The cargo bike scheme has helped our community

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outreach work tremendously. We are pleased to be part of a wonderful initiative supporting us to reduce pollution within the borough.'

Leigh Richards – Tooting Works

Figure 68: Food parcels delivered on the cargo bike

Figure 69: an eco**fleet** rider delivering in Tooting

Local Communications

Figure 70: A selection of CRP's promotional Tweets

Tooting 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 the businesses that were using the scheme. The Town Centre Group supported

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communications via Twitter. Wandsworth Council also created an article showcasing the success of the scheme in their environmental newsletter.

Impact

Estimated emissions savings have been calculated using CRPs in-house *measureBEST* emissions calculator. The below scenario calculations are based on the 17 weeks the cargo bike scheme took place (one day per week, November 2020 - March 2021). Delivery scenarios have all been based on "average car" classifications, comprised of the average mix of London's diesel and petrol cars. **876km** of journeys took place via the scheme and below shows the emissions from this.

Emissions savings from scheme until March 2021			
NOX (g)	PM2.5 (g)	PM10 (g)	CO2 (kg)
315.90	16.10	29.29	165.22

Table 51: Tooting emissions savings from November 2020 to March 2021.

The projected emissions savings of five businesses using the scheme with a weekly distance of 57 km are below.

Annual emissions for 5 businesses for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
5.87	0.30	0.54	3,071.11

Table 52: Tooting potential emissions saving 2021-2022.

Main Achievement

> **Delivering a cargo bike scheme during the pandemic**, which was a vital tool for smaller businesses, independent traders, and community groups during a difficult time. The scheme showed businesses how they could **work together to consolidate their deliveries** and helped them understand the costs and the air quality benefits.

Additional CAV3 achievements for Wandsworth include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Tooting Broadway to St George's hospital.
Clean Air Villages Directory	A total of 39 low emission businesses and service providers are now listed on the Tooting page.

Table 53: Tooting additional achievement.

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5.1.12 – Kensington and Chelsea
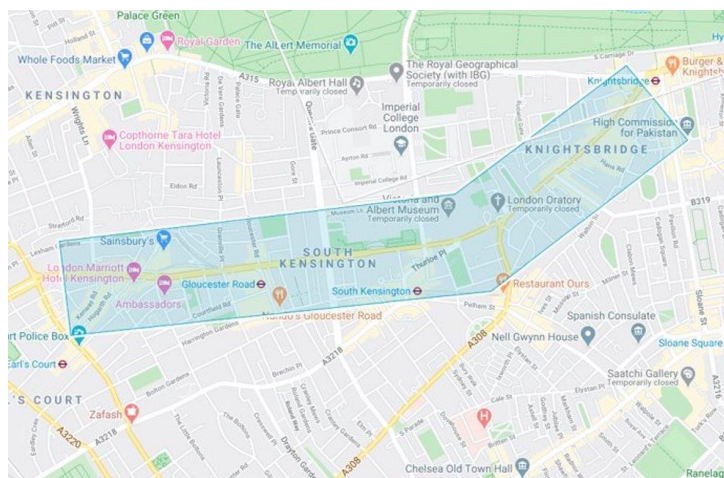
Figure 71: Map of the Cromwell Road Air Quality Focus Area

Background

The area highlighted is an Air Quality Focus Area around Cromwell Road in South Kensington. The area is a cultural hub of London, with high footfall visitors to the Natural History Museum, Science Museum and Victoria & Albert Museum, students attending Imperial College London, and shoppers visiting the many independent, boutique and chain stores and restaurants. Exhibition Road, running perpendicular to Cromwell Road, is a shared space street that contains many of these institutions.

Figure 72: Cromwell Road in 2020
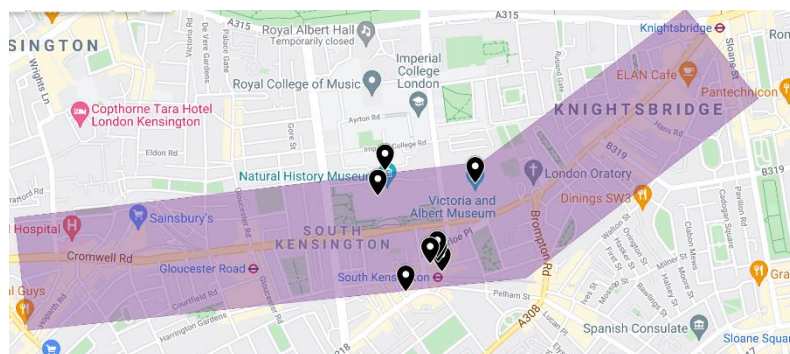
*Figure 73: RBKC 1-2-1 engagement map. * note Discover South Kensington and the Natural History Museum share the same postcode.*

In 2019, Natural History Museum (NHM), Science Museum (SCM) and Victoria & Albert Museum (V&A) were listed as 3 of the top 6 most visited free attractions in the UK, with 5.4 million visitors to the NHM, 4 million visitors to the V&A and 3.3 million visitors to the SCM[i]. There was a considerable portion of the year

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that the museums were closed in 2020 due to COVID-19, which has had a significant impact on footfall in the area.

Local Engagement

In total, CRP attempted to contact **37 organisations**, with over **90 attempts** through 'phone, email and social media platforms to support these organisations with their operations, COVID recovery and making improvements in air quality.

To explore the appetite for different types of solutions around Cromwell Road, a survey was produced to explore the deliveries and operations of businesses and organisations in the local area, and the impact of COVID-19 on the organisations and the local area. 37 businesses were contacted to participate in the survey between August and November 2020, with nine organisations giving the required information over telephone or through virtual online meetings.

Answers from the open question on the impact of COVID-19 showed that the pandemic and lockdown had a considerable impact on the local area. The key qualitative findings were:

- **Museums have a renewed focus on sustainability** and are trying to work out new ways of doing things in a sustainable, efficient and cost-effective way.
- Discover South Kensington and its partners realise the importance of reducing the number of cars in the area and are trying to encourage more cycling. Landowners South Kensington Estates also have a significant focus on sustainability, and have aims to encourage this focus for their tenants.

1-2-1 Business Engagement

	Organisations	Sector
1	**Brompton Food Market**	Food & Beverage
2	**Campbell's of London**	Retail
3	**Discover South Kensington**	Not For Profit
4	**Medici Gallery**	Retail
5	**Natural History Museum**	Museum
6	**Renzaki**	Other: Dry Cleaners
7	**Science Museum**	Museum
8	**South Kensington Estates**	Other: Landowner/estate
9	**Victoria & Albert Museum**	Museum

Table 54: RBKC - List of businesses/organisations with 1-2-1 meetings.

Local Solution

CRP met with the Royal Borough of Kensington & Chelsea (RBKC) who were keen to work with the cultural sector in the AQFA due to the large impact that the museums, galleries and institutions have on the local area for footfall and air quality. The business engagement, which led to meetings with the

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three major museums in the area by the end of November 2020, led to the development of the need for a **deliveries and servicing audit**.

CRP worked closely with the three internationally renowned museums; **the Natural History Museum, the Science Museum and the Victoria & Albert Museum**, to understand the delivery movements and consequent air quality impact. CRP coordinated a delivery and servicing audit from Monday 7th December 2020 – Sunday 20th December 2020, where a record of every vehicle movement from a delivery, service or pick-up was monitored and logged at each museum. Following this, **CRP analysed the data** and produced two **reports detailing recommendations and next steps for the implementation of consolidation, procurement, and operational recommendations**, guided by meetings with the museums as to what is feasible, achievable, and desirable.

This has been a significant undertaking of time and resources, but is a testament to the three museums involved, and the wider cultural stakeholder groups, that have had the desire and willingness to not only take part, but to work together to improve their operations and air quality in the local area.

Implementation

Figure 60: Deliveries & Servicing Audit reports produced for the museums in South Kensington

The project was impacted by changes in COVID-19 government restrictions. Uncertainty around government restrictions and the lockdown from January – March 2021 was a deciding factor in the decision to undertake the two-week monitoring period in December 2020, to ensure that the data could be collected whilst the museums were open. Additionally, due to COVID-19, conversations with the museums showed that December 2020 presented a more "usual" pattern of deliveries and servicing than previous Decembers whilst the museums were open, which are often heavily impacted by seasonal activities (e.g. ice rink at the NHM and an increase in personal deliveries). Changes during the monitoring period were therefore always a possibility given the fast-paced and ever-changing nature of responses to COVID-19.

On Monday 14th December 2020, a UK government announcement was made that London was due to move into the highest tier (3) of restrictions for COVID-19 from Wednesday 16th December 2020 at 00:01 due to rising coronavirus cases. Tier 3 meant the unfortunate closure of indoor entertainment

venues, museums, and art galleries from Wednesday 16th December 2020. A decision was made to continue with the monitoring period as deliveries and servicing was still expected during this week. There was a drop of 18% in deliveries and servicing in the second week of the monitoring project, compared with week 1. Further findings can be found in the Appendix VIII.

Following two meetings held virtually in February and March 2021 by CRP for all three museums, plus the Council, which guided the recommendations, a report was produced for the implementation of these with clear next steps. This led to the following **themes for the recommended actions**:

Consolidating Suppliers and Delivery Re-timing

This will involve collaboration between museums to identify common suppliers and contracts, that could be consolidated. Additionally, the museums will write to Benugo, who have a café at each museum site and are responsible for much of the food and drink that arrives at the museums. Working collaboratively between the museums could **reduce vehicle movements significantly**.

Consolidation Hub

A consolidation hub could be facilitated due to the volume of deliveries to the museums. This would be a long-term strategic project and requires significant thought and planning. The next steps ask key questions including desire for ownership, space, insurance, value and potential suppliers. This ideally would need to be serviced by an electric vehicle or cargo bike to further improve air quality.

Procurement Processes

There is a desire to add questions into procurement and **tendering processes to understand how suppliers are greening their fleet**, particularly given the expansion of the Ultra-Low Emission Zone in October 2021. NHM are trialling this in an upcoming procurement process, and kindly shared their procurement and tendering questions with the rest of the group. The intention is that zero emission deliveries become embedded in procurement processes of the museums, to encourage suppliers to be thinking about this and actively show commitments to improving air quality.

Staff Engagement

A staff engagement and awareness piece has been suggested for **personal deliveries** re-education and engaging with committed sustainability enthusiasts in the museums.

As a legacy, each museum and RBKC have committed to continuing with quarterly meetings to facilitate sharing knowledge and implementing the proposed recommendations. These meetings are attended by operations, sustainability, security, estates and procurement staff. An employee from the NHM has committed to organising and chairing these meetings moving forward, which is a fantastic legacy for CAV3. Subsequently, RBKC have joined the Clean Air Villages 4 project to enable CRP to continue working with the museums closely to implement some of the recommendations.

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"Being part of the CAV3 project has not only facilitated conversations internally and help raise awareness on the impacts of deliveries but has also provided an opportunity for cross-collaboration amongst the Museums. I look forward to seeing how we can work together, share ideas and identify ways of supporting a clean air recovery as our sites begin to re-open."

Kimberley Lewis – Environment & Sustainability Officer, Natural History Museum

Local Communications

Communications around Cromwell Road were focussed on promoting the use of the CAV directory and encouraging business engagement through social media channels. Significant resources were put into meeting and co-ordinating the solution with the museums. Given that the outcomes and recommendations from the project may have strategic implications for the museums, the Deliveries & Servicing Audit was not publicised at this stage.

Impact

Estimated emissions savings have been calculated using CRP's in-house *measureBEST* emissions calculator. The below scenario calculations are based on recommendations listed in the Deliveries and Servicing Audit reports, whereby milk deliveries could be consolidated to three days per week, all at the same time.

Figure 74: Tweet showing CRP's promotion of the Directory around South Kensington and Cromwell Road

A projected baseline scenario, noted from the trends in the Deliveries & Servicing Audit data, where **milk deliveries are made every day of the week**, whereby 75% of these deliveries take place during off-peak hours and 25% during the morning peak, to show what the current arrangements are at the museum. **A projected intervention scenario based on a reduction to three days per week** of deliveries of milk, all occurring off-peak, and a projection emissions savings based on this scenario for 2021-2022. Delivery scenarios have all been based on <3.5 tonne LGV average classifications, comprised of the average fleet mix of London's diesel and petrol <3.5 tonne LGVs.

Projected baseline emissions for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
90.84	3.00	5.69	22,346.10

Table 55:- RBKC estimated emissions 2021-2022 A (7 days of milk deliveries)

Projected intervention emissions for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
47.97	1.57	2.98	11,972.08

Table 56: RBKC estimated emissions 2021-2022 B (3 days of milk deliveries)

Projected emissions savings for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
42.87	1.43	2.71	10,374.02

Table 57: RBKC estimated emissions 2021-2022 C (the difference between A & B)

Main Achievement

Mobilising three major museums to conduct a Deliveries & Servicing Audit and supporting them to work collaboratively, and look at long-term, impactful, sustainable choices for their operations, deliveries and servicing. A commitment has been made to continue meeting quarterly with the Council to work together on CRP's recommendations.

Additional CAV3 achievements for RBKC include:

Initiative	Description
Clean Air Villages Directory	A total of 39 low emission businesses and service providers were added to Cromwell Road's directory page.

Table 58:RBKC additional achievement.

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5.1.13 - angel.london

Background

Angel.london is the elected Business Improvement District (BID) voted by local businesses with the collective aim to bolster commercial activity through member benefits such as safety, environmental improvements, and waste management services. The Angel is a long-established commercial area with significant historical and cultural value in London.

As one of the 35 major centres in Greater London, angel.london has been representing over 600 businesses across 45 streets as shown on figure 75. Many of the streets are perpendicular to arterial routes such as Inner Ring Road and Upper Street. The vehicle traffic and congestion attributed to these routes cause high levels of air pollution in the area, impacting the long-term wellbeing of local businesses and residents.
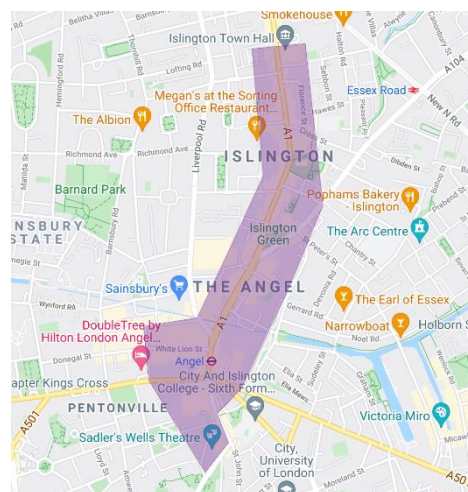
Figure 75: CRP's angel.london BID area map.

Local Engagement

CAV3 engagement in Angel BID was aimed at businesses to promote active travel amongst their respective employees as a means to reduce their commute-related air quality impact, as well as to improve health and wellbeing. The rationale for the **active travel programme** was to encourage employees to consider **more sustainable modes of transport that prioritised their health and safety** during the pandemic, as well as to draw footfall back into the Angel. The businesses were contacted via 'phone and email to complete an online survey that explored the employees' pre and post lockdown commute to work, their barriers to active travel (e.g. cannot cycle, afraid to cycle and/or too expensive), bike ownership and whether they are interested in receiving active travel resources. Based on the survey results, the programme would be designed to reflect respondents' feedback on active travel.

Figure 76 - Angel 1-2-1 engagement meetings map.

Survey and data collection:

The active travel survey had **25 respondents** from **10 businesses** from various industries such as hotel, furniture stores, theatre groups, law firm and pubs. The

Figure 77: CRP's Angel high Street picture.

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respondents were asked how they commute to work and to detail the changes to this since the onset of the pandemic. The survey was circulated to BID members through the BID's newsletter as well as directly via email. The survey results gathered in November 2020 showed that many of the respondents were still going into work and were using public transport such as trains and tubes for their travels as shown in figure 67. Whereas the average time spent in public transport was 45 minutes, the longest journey was 170 minutes.

Understandably, their working pattern has changed considerably following government rules to work remotely to control the spread of the coronavirus pandemic. Since the survey was

Figure 78: Angel BID active survey respondents' primary mode of transport to work.

conducted prior to this government mandate, they are not exemplary of the most recent status of the respondents.

1-2-1 Business Engagement

Business engagement in Angel BID began in September 2020. They were contacted by 'phone, email and through the BID's newsletters and internal network. Table 58 lists the organisations with whom 1-2-1 meetings occurred from Angel BID. Due to the pandemic, most businesses under the office sector, which comprises the majority of their members, were difficult to get hold of. Especially with many employees being furloughed or working reduced hours. The main focuses of engagement were to discuss **business operations** and potential to **consolidate and reduce deliveries** where possible, as well as **promote the active travel workshops** planned for BID members. A total of **409 businesses** were reached out to over the course of the CAV3 project with **445 attempts** by 'phone, email and through the BID's newsletter.

	Businesses	Sector
1	**Almeida Theatre**	Theatre
2	**Doubletree Hilton Hotel**	Hotel

Table 59: Angel - List of businesses with 1-2-1 meetings.

The 1-2-1 with the Doubletree Hilton Hotel explored their current sustainability initiatives and highlighted the areas that could be further looked into such as **consolidating laundry services with another hotel in the Angel area that they closely work with**. Also, to improve employees' commute by taking on active travel methods. The 1-2-1 with Almeida Theatre focused on encouraging their employees to opt for active travel and use of CRP's tools such as the Ultra-low Suppliers Directory, deliverBEST and LiveShare events that featured an array of topics on safe and green recovery from Covid.

Local Solution

Overall, the meeting was well received and presented an avenue for businesses to communicate with each other about local priority areas and share advice based on their best practice.

Figure 79: Angel High Street.

There were a few barriers in implementing the active travel programme due to the pandemic. The initial plan was to launch an active travel challenge month that would encourage people working in the Angel to participate in weekly challenges to improve their active travel. As a result of the lockdown and mandatory remote working guidance, the plan was constantly under review and adapted based on the restrictions at the time. Instead, active travel resources were circulated among the BID members as well as a BID focused active travel workshops delivered in partnership with the charity, Groundwork. Subsequently, CRP engaged with a PubWatch group consisting of four well-known pubs in the Angel that were interested in carrying out a deliveries and services plan to identify the potential for consolidating their deliveries. CRP were exploring this potential solution as it would cut down emissions and reduce congestion. However, this could not be executed as the pubs were struggling to operate their business during the pandemic and were on the verge of closure.

Following this, a sustainability and air quality forum was set up for BID members to come together to collaborate on mutual concerns and ideas to improve local air quality. The first forum meeting was held on the 17th March 2021 and was joined by ten businesses. The aim of the first meeting was to set a premise for future meetings and to engage local businesses in a joint dialogue focusing on a more sustainable commercial environment in the Angel. One of the BID's board members presented at the meeting based on their business operations founded on sustainable practice such recyclable packaging, cargo bike and EV deliveries and improving their building's energy efficiency. The meeting was also joined by representatives from Islington Council's Vision 2030 team and Air Quality team to present the council's ongoing and future initiatives, available grants, and funding for local businesses.

Implementation

The outreach for Angel BID's active travel programme began in September 2020 where members were contacted and were sent the **active travel survey** to fill out. **Two active travel workshops were planned** in partnership with Groundwork, active travel consultants. One workshop focused on general active travel and the other was specific to cycling. The workshops covered the benefits of active travel modes, catering to various BID employees and their current and future working commute plans. The

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workshops also made the connection between travel methods and air pollution, reinforcing the need to reduce congestion and vehicular traffic in and around the Angel area. The two workshops were held on Thursday, 28th January (general active travel) and Monday, 1st February (active travel with a cycling focus) and were tailored to be relevant for BID employees who were both working-from-home and currently commuting.
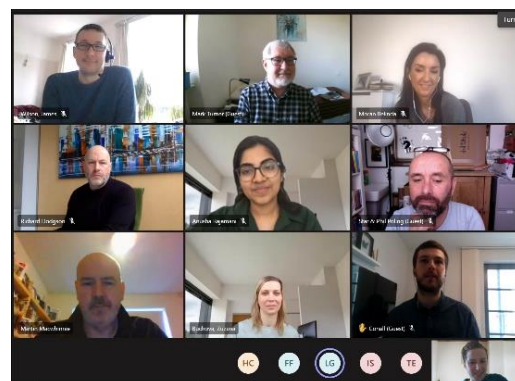
Figure 80: Photo from angel.london's first Sustainability Forum attendees.

Following this, the outreach for the Sustainability Forum for BID members involved contacting businesses by email and through the BID's newsletter. An estimate of **313 businesses** were contacted to invite them to attend the forum as well as to ask them to send their priority areas to be discussed in future meetings. A mixture of **10 businesses** attended the meeting, comprising of hair salons, hospitality, real estate developers, event management, solicitors, and theatre groups (Table 49).

As the first meeting of its kind, the focus was for businesses and **BID members to engage** in a conversation on **areas of concern and interest** for what they are seeking to benefit through these meetings, as well as a platform to meet their neighbours for **future partnership**.

These meetings will continue to be hosted by the BID, bi-monthly, joined by a representative from Islington Council's Net Zero and the Islington Sustainable Energy Partnership to discuss resources and funding opportunities. The future topics of the forum will potentially entail deliveries consolidation, last mile solutions, streamlining procurement and supply chain and waste management. The next meeting is scheduled to take place on 23rd June 2021.

	Organisation:	Sector:
1	Lambert Smith Hampton	Other: Real Estate Consultancy
2	Humble Grape	Food & Beverage
3	Little Angel Theatre	Theatre
4	Sadler Wells	Theatre
5	Hotel Chocolat	Food & Beverage
6	HSBC	Other: Bank
7	Angel Central	Other: Real Estate Developer
8	The Chapel	Other: Hair Salon
9	Time Based	Other: Event Management
10	After Noah	Retail
11	angel.london	Other: BID
12	Islington Council	Other: Local Authority
13	Islington Council	Other: Local Authority

Table 49: Sustainability Forum meeting attendees and their respective organisations.

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Local Communications

The active travel survey was promoted through CRP's Twitter and Angel BID's members newsletter, where the latter brought in most of the respondents. There were two BID focused active travel workshops (Figure 81) which were also widely promoted through CRP's and the BID's social media networks. Following from this, the first Sustainability Forum was promoted on the BID's channel as well as via email and 'phone by the CAV3 team.
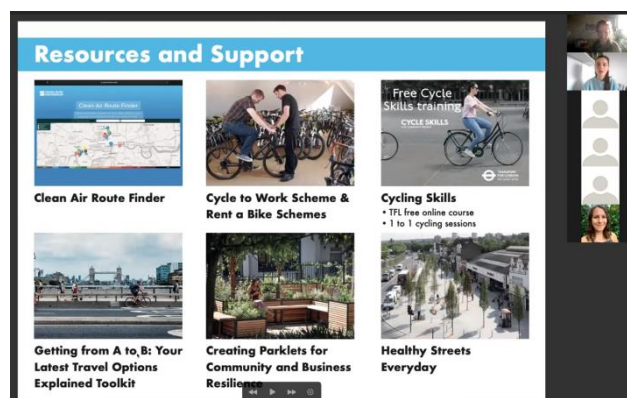
Figure 81: Screenshot from one of the active travel workshops held for Angel BID members in partnership with Groundwork.

Impact

The emissions savings were calculated using CRP's in-house air quality monitoring tool, measureBEST. Table 50 demonstrates the emissions savings estimated for the Angel village based on conversations had during the first Sustainability Forum meeting where three businesses were interested in consolidating and sharing the same supplier for recyclable packaging material.

Projected emissions savings for 3 businesses			
NOX (kg)	**PM2.5 (kg)**	**PM10 (kg)**	**CO2 (kg)**
5.54	**0.17**	**0.29**	**2,324.90**

Table 50: Angel.bid emissions savings for 2021-2022.

Main Achievement

> CRP launched a **Sustainability Forum** for Angel.London BID members. The BID will continue hosting this bi-monthly, where **air quality** will remain a key item on the agenda.

Additional CAV3 achievement for Angel.London include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Farringdon Station to Charlotte Green.
Clean Air Villages Directory	A total of 45 low emission businesses and service providers were added to angel.london directory page.
Vivacity traffic monitoring	Vivacity traffic monitoring took place on Chapel Market from September to October.

Table 60: Additional achievement angel.london village.

5.1.14 - The Fitzrovia Partnership

Background

Fitzrovia, known for the iconic BT tower, the shops of Tottenham Court Road and a plethora of independent bars, restaurants and cafes, is home to both business and residential communities of Londoners. Fitzrovia's prime location and the traffic on an often-busy Tottenham Court Road contribute to the poor air quality in the area.

Figure 82: Fitzrovia AQ focus area.

Like much of Central London during the Covid-19 pandemic, Fitzrovia's area was drastically affected by lockdown restrictions. Over the course of the CAV3 project year, the number of visitors to the Fitzrovia BID area was just over 13 million, down 71.4% of the previous year (Source: The Fitzrovia Partnership, 2021). The lack of footfall traffic affected businesses, their ambitions, aims and finances and CRP took this into deep consideration during the engagement period.

CRP's early discussions with The Fitzrovia Partnership (TFP), about CAV3, identified interests in increasing active travel, waste consolidation and providing support for businesses on sustainable, money-saving measures.

Local Engagement

Based on the interests of the Fitzrovia BID and business community, CAV3 engagement aimed to explore the following:

- **Telematic vehicle monitoring** to assess EV suitability of supplier vehicles
- Engagement with businesses regarding **delivery consolidation, office supplies and switching to green energy**
- Business support regarding **active travel awareness**

Outreach and engagement:

Figure 83: Landscape of the FTP area.

All engagement during the CAV3 project was held online due to the Covid-19 pandemic. Fitzrovia business outreach was conducted through direct emails and 'phone calls to **256 businesses** from September 2020 until end of March 2021; **479 attempts** were made to communicate with these businesses. Of the businesses contacted, 24 were either temporarily or permanently closed due to the pandemic

and a further two had relocated out of the area. A total of seven one-to-one calls/meetings were conducted during the engagement period.

The initial aim of the business outreach was to discuss with businesses their procurement needs, current delivery schedules and suppliers, and waste collection service to determine if they were suitable for **switching providers or consolidating their services**. In collaboration with The Fitzrovia Partnership's Reducing Costs initiatives, outreach was also used to determine the businesses' energy provider to see if they would be eligible for switching to a TFP's green provider. Businesses were also invited to join a *Making Sustainability Work for Your Business* **workshop** which was hosted by CRP and TFP on 12th October 2020. A total of 166 businesses were reached out to during this initial engagement period, which was paused in December 2020 due to the re-introduction of lockdown restrictions.

The second phase of engagement resumed at the end of January 2021 which was primarily focused on inviting local businesses to join **The Fitzrovia Partnership's Sustainability Forum**, an idea initiated by the CRP Team based on feedback and engagement experiences with businesses throughout the pandemic. **A further 90 businesses** were reached out to during this period, as well as 65 of the previously contacted businesses.

Figure 84: Street works in the Fitzrovia area.

Workshop Summary

The *Making Sustainability Work for Your Business* was devised as an interactive, virtual solution for engagement given the restrictions put in place during the Covid-19 pandemic. London's West End saw a 40% decrease in air pollution with the lack of traffic and business[4] and as part of CAV3 and the momentum to Build Back Better, **the workshop was devised to help businesses prepare for reopening while keeping sustainable measures – like air quality improvements – in mind**.

The *Making Sustainability Work for Your* Business workshop was offered exclusively to TFP BID members, as well as local businesses in the Fitzrovia area. The workshop took place on 12th October, when there was much anticipation of an upcoming announcement of new tiered restrictions. As a result, 22 individuals registered to attend the workshop and ten attended. The workshop was hosted by TFP and CRP and included a presentation led by First Mile recycling to help businesses learn a variety of ways that they can contribute to better air quality. As part of the workshop, the CRP team discussed opportunities and tools to improve air quality through delivery consolidations or the use of tools such as the CRP Clean Air Directory, DeliverBEST, the Clean Air Route Finder and Click.Collect.Clean Air. While the CRP Project Officer followed up with all registered and attended individuals and provided a resource toolkit (Figure 87), the workshop did not procure more 1-2-1s.

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[4] https://www.london.gov.uk/press-releases/mayoral/dramatic-improvements-in-air-quality

However, the initial outreach to invite Fitzrovia businesses to the workshop did result in a one-to-one with a local café.

Business Workshop Attendees			
1	British Association of Dermatologists	2	Fletcher Priest Architects
3	LD Partnership LLP	4	SOAS University of London
5	Sustain-Ability Ltd	6	Unlisted organisation
7	Voice & Script International Ltd	8	Wasabi Co. Ltd

Table 61: List of the businesses that attended the Fitzrovia workshop

1-2-1 Business Engagement

	Organisation	Sector
1	**Andrew Jose Salon**	Retail
2	**Dental Spa**	Retail
3	**DMG Office Supplies**	Other: Office
4	**Kafi Café**	Food & Beverage
5	**Knotel**	Other: Office space provider
6	**Norma London**	Food & Beverage
7	**Signature Entertainment**	Other: Media

Table 62:Fitzrovia Partnership - List of businesses with 1-2-1 meetings.

One-to-ones were achieved through 'phone calls and video calls over MS Teams. The 1-2-1 with DMG Office Supplies was a result of a referral from The Fitzrovia Partnership, whereas conversations with Knotel and Kafi Café were initiated via email. The remaining 1-2-1s were a result of 'cold calling'. The 1-2-1 phone conversations with Signature Entertainment, Norma London and Dental Spa, resulted in the sharing of resources, such as the Click.Collect.Clean Air, the CRP Clean Air Directory and measureBEST tools; further engagement was declined. At the time of report writing, Norma London has been temporarily closed since December due to the pandemic. Andrew Jose Salon was interested in switching to a green energy supplier and was therefore connected to The Fitzrovia Partnership to discuss this opportunity in more detail.
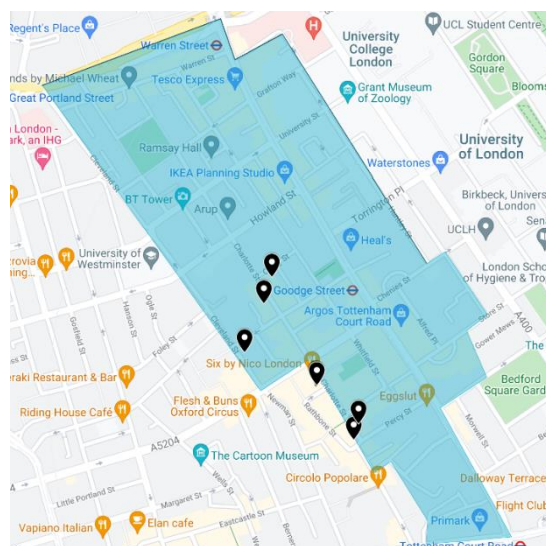
*Figure 85:Fitzrovia 1-2-1 engagement map. *note that DMG suppliers is allocated out of the focus area but operating in there.*

The 1-2-1 with DMG Office Supplies resulted in the use of telematic dongles to monitor their delivery vehicle's suitability for electric vehicle switching. More details on this can be found in section 5.2. Engagement with Kafi Café was ongoing and included

participation in The Fitzrovia Partnership's Sustainability Forum, and **planning for the café to use TFP's cargo bike** for procurement of essential items such as locally produced chocolates or coffee beans straight from the roastery.

Local Solution

Initially there was no sole solution for The Fitzrovia Partnership's focus area, as outreach was intended to be ongoing and provide independent solutions and advice for Fitzrovia businesses. Feedback and conversations from initial outreach indicated that **businesses were interested in air quality interventions as part of addressing wider sustainability issues** but concerns about the pandemic had taken priority. This led to the launch of an ongoing **Sustainability Forum**, to be hosted by The Fitzrovia Partnership, which could be used as a platform for businesses to engage, inspire and collaborate over sustainability-related issues. **The first forum was co-hosted by CRP and TFP and in collaboration with London Borough of Camden**, included educational materials about air quality, as well as solutions and opportunities for Fitzrovia businesses.

Other air quality interventions pursued in collaboration with The Fitzrovia Partnership, included finding a business to use a currently underutilised cargo bike. The CRP team connected TFP to a local coffee shop, Kafi Café, that focused on servicing Fitzrovia businesses while optimising their sustainability efforts. **Kafi Café intends to use The Fitzrovia Partnership's cargo bike for collecting coffee beans and confectionary from local suppliers on a weekly basis**. At the time of writing the report, the insurance was being arranged for the use of the cargo bike.

Implementation

There were 26 businesses that registered interest in the Sustainability Forum and 23 attendees from 16 businesses were in attendance for the first meeting (see Table 63).

Company (Number of Attendees)			
1	Arqiva Telecommunications	10	Kafi Cafe
2	ARUP Consulting	11	M.I. Media
3	Building Centre	12	Meristem (Landscape design)
4	Calligaris Furniture	13	Planet Organic
5	Camden Council (3)	14	University College London Hospital (2)
6	Concept Living (3) Design	15	British Film Institute
7	Good Man Jones Ltd (2)	16	Rebecca Hossack Art Gallery (2)
8	Heal's Furniture	17	The Fitzrovia Partnership (2)
9	HOK Design	18	Cross River Partnership (3)

Table 63: List of businesses in attendance of first Sustainability Forum (number of representatives attending from each forum.

Lastly, the CRP team worked with DMG Office Supplies, TFP's office goods supplier, to provide telematic dongle monitoring of one of their delivery vehicles. After four weeks of monitoring the DMG vehicle, the CRP team provided a report and a follow-up call to discuss EV switching possibilities. **DMG**

Figure 86: Examples of TFP newsletter communications sharing CRP initiatives.

Office Supplies is committed to switching to EVs, however, this initiative was put on hold due to the third lockdown's impact on their business.

Local Communications

While local engagement was predominately carried out by the CRP team through direct emails to BID members, social media communications were also utilised throughout the engagement period. The Fitzrovia Partnership also took an active role in promoting workshops and events through their weekly newsletter.

Impact

Two solutions were pursued for The Fitzrovia Partnership's CAV3 project: the launching of the Sustainability Forum and the shared usage of the BID's cargo bike for business members. While the former procured many ideas for air quality interventions, none were implemented by CAV3 project end. The BID's cargo bike was being set up for use by one business to collect supplies from local providers - at the time, they were using public transport for these pick-ups, so no emissions savings were estimated for this business. However, the intention was to offer the cargo bike to other businesses, so estimated emissions savings are calculated based on one business using the cargo bike for local deliveries and supplies, with an average weekly distance of 15km.

Figure 87: The toolkit of air pollution interventions created for the Making Sustainability Work for Your Business workshop.

Estimated emissions savings for one business for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO_2 (kg)
1.78	0.10	0.16	1,378

Table 64: Estimated emissions savings for one business using the cargo bike, with an average weekly distance of 15km.

Main Achievement

> **CRP launched a Sustainability Forum** that TFP will continue bi-monthly with their members. Air quality will remain a key item on the agenda. Additionally, CRP found a business interested in using **TFP's cargo bike** and provided valuable support to businesses and the community during Covid-19 lockdowns.

Additional CAV3 achievements for The Fitzrovia Partnership include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from Euston to Charlotte Street.
Clean Air Villages Directory	A total of 43 low emission businesses and service providers were added to The Fitzrovia Partnership directory page.
Vivacity traffic monitoring	Vivacity traffic monitoring took place on Charlotte Street and Warren Street from October until January.

Table 65: Fitzrovia additional achievements.

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5.1.15 – The Northbank BID

Background
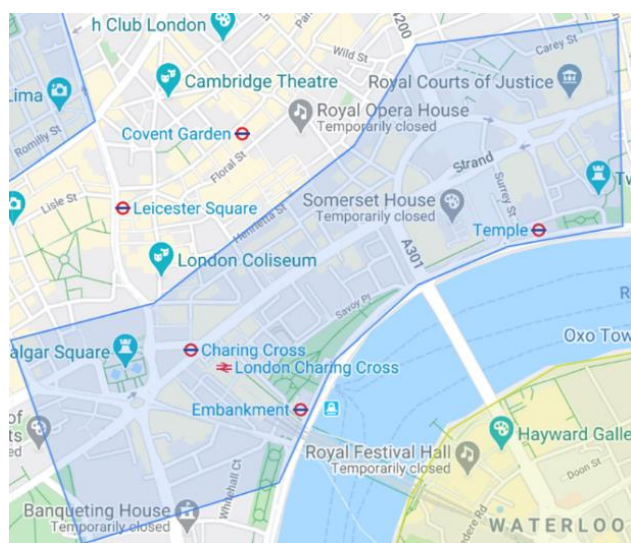
Figure 88: The Northbank BID map.

The Northbank is a vibrant area full of restaurants, museums, theatres and universities. The site merges cultural entrepreneurs with hospitality, and businesses with a hectic cultural life and a corporate environment at the same time. The Northbank BID was created in October 2013 and renewed for a second term in 2018, aiming to revitalise the area.

The BID has been working on projects and solutions to improve the area infrastructure to welcome visitors and tourists to the site. Also, it has focused on promoting safety and enhances the well-being of its community with actions to develop the environment and air quality in the area, promoting solutions in active travel and deliveries service.

Local Engagement

Initial conversations with the BID, led to CRP continuing the work started in CAV2 (in the Covent Garden area), to **consolidate fruit and vegetable deliveries coming into the area from New Covent Garden Market**, to restaurants in Northbank. These would be done by **zero emission vehicles**. This had been ready to launch in February 2020 but had to be put **on hold due to Covid-19**. Engagement continued in July 2020.

Key challenges faced during engagement related to the consolidation project were:

- Reaching the right person in the business.
- Helping restaurants understand the wider benefits of the project.
- Getting hold of vital information about the restaurants 'suppliers and deliveries.
- To keep the conversation going with a continuous risk of lockdown.
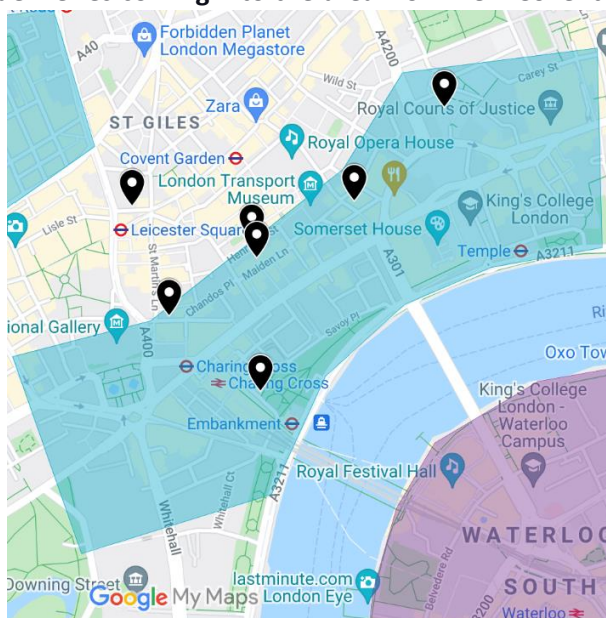
Figure 89:The Northbank BID engagement map. To note: Premier Fruits are based at NCGM. Bancone and Rosetta Cafe are under the same postcode.

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On 1st November 2020, a lockdown was implemented in which restaurants had to close and this made engagement in the area about consolidation nearly impossible. CRP continued to engage with the traders in New Covent Garden Market, but many had to also close because their customer base was predominantly restaurants. As a result of this, CRP put the consolidation scheme aside and **focused on developing a cargo bike scheme for businesses, organisations, charities and food banks** in the area.

1-2-1 Business Engagement

CRP contacted **149 businesses/organisations**, between July 2020 and March 2021. **Nine 1-2-1s** took place (please see Table 66). The BID also took an active part in engagement, supporting CAV3.

	Organisations	Sector
1	Black Box	Food & Beverage
2	Bancone	Food & Beverage
3	Coral Pearl	Food & Beverage
4	Grays and Feather	Food & Beverage
5	Gordon's Wine Bar	Food & Beverage
6	London Schools of Economics and Political Science - LSE	University
7	Rosetta Cafe	Food & Beverage
8	Premier Fruits	Food & Beverage
9	Sticks N Sushi UK Limited	Food & Beverage

Table 66: The Northbank BID - List of businesses with 1-2-1 meetings.

Local Solution

Air Quality in The Northbank area does not meet health-based targets for NO2. The Northbank area is part of central London and a busy place with heavy road traffic and many offices and corporate buildings. It has high emissions of PMs and NO2, the most concerning pollutants in the area.

A series of activities and measures to improve the area have been enabled by the BID; e.g.re-planning, deliveries and services into buildings, awareness-raising campaigns, promoting walking and cycling along cleaner air routes, and more. Therefore, these areas were

Figure 90: Trafalgar Square in The Northbank BID area.

linked to CRP's Clean Air Villages 3 project.

In the first half of CAV3, CRP worked hard to recruit businesses to take part in the New Covent Garden Market, zero emission consolidation trial and continued engagement that had developed during CAV2. The on-going threat of closures and on-going changes to the rules of operation that were imposed during the pandemic made this really challenging.

On 26th March 2020, the lockdown measures legally came into force in England, making it more difficult to contact businesses. Engagement picked up from 4th July 2020, when pubs and restaurants reopened. The hospitality sector was hit particularly hard. From July to October 2020, the Clean Air Villages 3 team contacted **108 businesses**, **154 times**, spending at least five hours per week on engagement. However, despite the number of calls and emails, businesses did not feel able to take part in the scheme. Restaurants were closed or only doing deliveries, with no idea of when they would get back to their usual operations. Overall, businesses had lost their business customers and deliveries were no longer taking place. Many restaurants were closed, some reduced their menus, prioritising working with the essential and more profitable options, optimising their staff numbers and avoiding food waste. Consequently, the New Covent Garden Market suppliers experienced the knock-on-effect of the changes to restaurants and also closed or reduced their operations. This meant that, unfortunately, the CAV3 consolidation scheme could not work during this time.

Ultimately, CRP accepted that this was no longer feasible within the time frames of the project and in December 2020, **CRP began seeking interest from local businesses in the use of a cargo bike for the area**. With agreement from the BID, this was aimed at pharmacies, food banks, charities, and not-for-profit organisations, as well as BID businesses. Offering wider support in this way was vital during the lockdown.

The Northbank BID area was deeply impacted by the three lockdowns in March and November 2020 and January 2021 due to Covid. Due to their location in central London, there was a significant reduction in footfall.

Figure 91: Cargo bike in front of Somerset House in Aldwych.

Implementation

During the Clean Air Villages 3 Project, 72 hours of cargo bike use was offered to businesses in The Northbank BID area in partnership with the cargo bike company eco**fleet**. This was agreed just before the third lockdown in the United Kingdom was announced, which started on 6th January 2021. The scheme was finally able to launch in March 2021, **aiming to increase the use of zero emission vehicles in the area**. The CAV3 team contacted 18 organisations, the BID sent out a newsletter to their members and it

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Figure 92: Flyer to promote cargo bike schemes in The Northbank BID area.

was promoted on their website. Unfortunately, despite the efforts to promote it, no businesses were in a position to use the bike at that time.

The Northbank, being in central London was impacted by lockdowns to a greater degree than other areas. With little to no workforce or tourists in the area, restaurants and retail remained closed. CRP agreed with Defra and The Northbank BID that the cargo bike hours would be used as part of CAV4, with take up expected to grow with the opening up of shops and restaurants that is planned as part of the government roadmap for emerging from lockdown.

Local Communications

CAV3 materials were shared with businesses in Northbank in relation to the cargo bike scheme, the CAV Directory and wider air quality-related project activities, examples are below. CRP published 09 Twitter material promoting air quality in The Northbank BID. The Northbank BID also promoted the cargo bike trial on its website and published articles in their newsletter about CAV3:

Figure 94: CRP's Twitter promotional for The Northbank BID village.

Figure 93: The Northbank BID Newsletter about CAV3.

Impact

The emissions savings were calculated using CRP's in-house air quality monitoring tool, measureBEST. These are based on four businesses using the zero-emission vehicle with 72 hours of cargo bike hours. The potential of emissions saving is listed below:

Estimated emissions savings for four businesses for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
6.22	0.33	0.57	4,819.39

Table 67: The Northbank BID village emission saving estimated for 2021-2022.

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Main Achievement

CRP was able to offer essential **support for businesses** in Northbank during the pandemic. This included advice and **guidance about air quality**, in addition to wider business support. A **zero-emission cargo bike scheme** was launched in the area, which will continue to be available during the follow-on CAV4 programme**.**

Others additional achievement in the area:

Initiative	Description
Clean Air Villages Directory	A total of 38 businesses are added to CRP's Clean Air Villages Directory in The Northbank BID area.

Table 68: The Northbank BID's additional achievements.

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5.1.16 - South Bank BID

Background
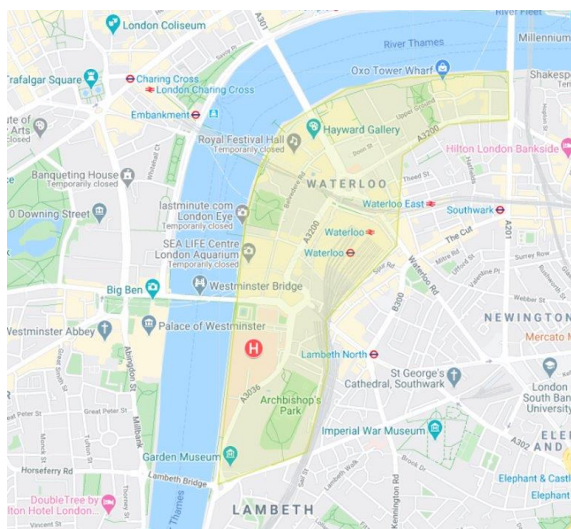
Figure 95: South Bank BID map.

London's infamous South Bank is home to some of London's most iconic institutions including the London Eye, South Bank Centre, Royal Festival Hall, the London Aquarium, the National Theatre and the Oxo Tower. In a typical year, as a cultural epicentre of London, South Bank attracts around 30 million visitors and is home to 50,000 employees. South Bank also hosts London's busiest train station – Waterloo – which sees about 100 million journeys a year. It's prime location along London's beautiful river bend, provides views from Parliament to St Paul's Cathedral to London's East and contributes to the success, atmosphere and appeal of South Bank.

As part of the Clean Air Villages 3 project, the CRP Team partnered with South Bank BID which provided support and resources to around 200 local businesses. The BID has taken an active role in helping improve the local environment; it hosts a London & Partners Working Group on Climate Change, the South Bank Air Aware Scheme and had purchased two electric cleaning vehicles to be used for litter picking, graffiti removal and street cleaning.

The CAV3 project in South Bank aimed to support the BID in its environmental initiatives, with a focus on improving air quality. CAV3 initiatives took a business focus and would aim to increase employee engagement and education surrounding active travel.

Local Engagement

South Bank BID was interested in a variety of air quality interventions but decided on an **employee engagement programme to help increase interest in active travel**. The aim was to create a campaign through the BID's newsletters and social media channels building up to **a month of active travel challenges** for employees of South Bank BID member businesses. To understand the commuter behaviours in the South Bank, a survey was sent out to BID members via the South Bank BID member newsletter. The survey was sent out to BID

Figure 96: South Bank area.

members during the month of September and received 10 responses from a variety of BID businesses, as outlined in Table 69.

	Travel Survey Business Respondents	Sector
1	Ballet Rambert Ltd	Other: Entertainment
2	BFI	Other: Entertainment
3	Coin Street	Not For Profit
4	Harvey Nichols	Food and Beverage
5	IBM UK	Other: Office
6	Joules	Food and Beverage
7	LCR Property	Other: Real estate
8	Neds noodle bar	Food and Beverage
9	Sea Containers London	Food and Beverage
10	Wavemaker Media	Other: Entertainment

Table 69: Businesses that respondent to the South Bank BID survey submitted September 2020.

The **travel survey** was useful in providing a glimpse of the commuter habits of businesses on the South Bank. The average commute for South Bank employees was 45 minutes but ranged from 25 to 95 minutes. Half of the respondents owned a bicycle, though one indicated that they do not commute in London. When asked about barriers to cycling, the responses were as follows:

- three selected that they were too frightened to cycle in London
- three said that they were unfamiliar with cycle routes
- two were uninterested in riding around London
- two thought it was too expensive.

The survey also provided information on how commuters were getting to South Bank, and only two respondents utilised active travel (one cycling and one walking) as their main method of commute. While the information gathered in the survey proved insightful, it was a smaller sample size than desired. The ongoing restrictions of the Covid pandemic had temporarily closed many BID member

● Petrol or diesel car	0
● Bus	1
● Train	3
● Taxi	0
● Bicycle	1
● Foot	1
● Tube	2
● Electric vehicle	0
● E-bike	0
● Other	1
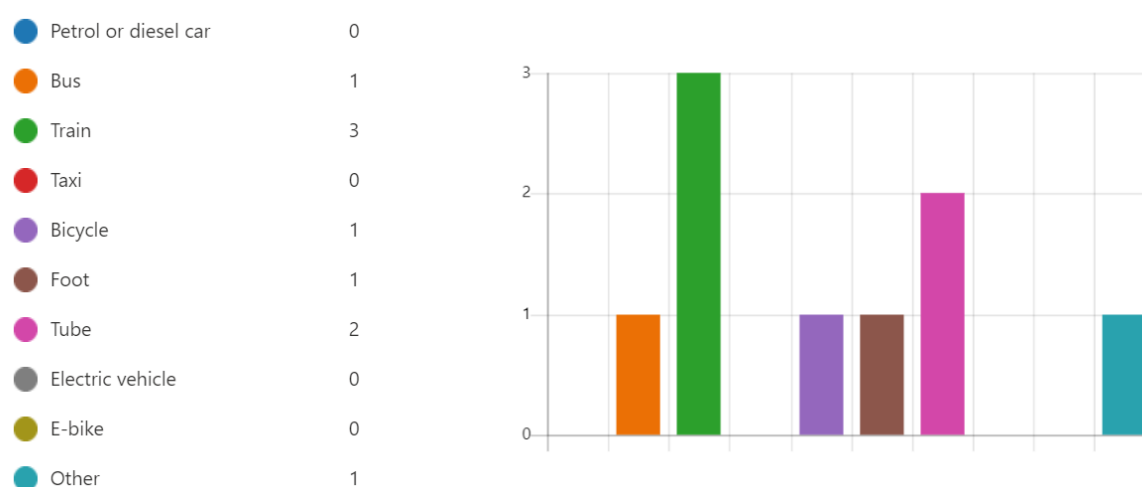
Figure 97: Survey results from South Bank BID Travel Survey carried out in September 2020.

businesses and a number of staff were furloughed during this period. Regardless, the survey responses helped direct the remainder of the engagement, including the **development of active travel workshops**.

Workshop Summary

As part of the South Bank BID and Angel BID employee engagement solutions, CRP partnered with Groundwork, to **host two active travel workshops**, one focusing on general active travel and the other was specific to cycling. The workshops covered the benefits of active travel modes, catering to various BID employees and their current and future working commute plans. The workshops also made the connection between travel methods and air pollution, reinforcing the need to reduce congestion and vehicular traffic in and around the South Bank BID area. The two workshops were held on Thursday, 28th January (general active travel) and Monday, 1st February (active travel with a cycling focus) and were tailored to be relevant for BID employees who were both working-from-home and currently commuting.

Active Travel Workshop Attendees			
1	**Coin Street Community Builders**	4	**Guy's & St Thomas' Trust**
2	**Hannah Quigley**	5	**Noodle Nut House**
3	**South Bank Employers Group**		

Table 70: List of businesses on the Active Travel Workshop - The South Bank BID area.

1-2-1 Business Engagement

Both the workshops and the survey allowed for the CRP team to make connections with businesses in the South Bank, leading to four 1-2-1 conversations. Each conversation resulted in the sharing of resources and guidance from CRP, such as the **'8 Ways to Make Your Business More Sustainable' infographic**, and support and guidance on grants for EVs or charge points. Due to the lull in business activity, no further actions were taken beyond these measures during the remainder of the CAV3 project.

	Organisations	Sector
1	Ballet Rambert Ltd	Other: Entertainment
2	Coin Street	Not For Profit
3	Harvey Nichols	Food and Beverage
4	Ned's Noodle Nut House	Food and Beverage

Table 71: The South Bank - List of businesses with 1-2-1 meetings.

Local Solution

South Bank BID's interest in providing a clean, green space for its members led to the idea of **a shared cargo bike scheme for local business deliveries**. As part of the CAV3 project, a second-hand cargo bike was purchased from Bikeworks to be utilised by South Bank BID members for local deliveries. CRP proposed that **a local bike shop could host the bike** and made the introduction. The BID is working in

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conjunction with Balfe's Bikes Waterloo site (an independent bike shop) to provide businesses with free use of a cargo bike for local delivery needs. At the time of writing this report, the bike had been purchased and delivered to Balfe's Bikes in Waterloo and was awaiting branding of the cargo container. From there, the bike will be offered up to a couple of BID businesses to trial it and determine the best use cases, and then develop and expand the cargo bike scheme from there.

Beyond this, to support the use of the cargo bike, as well as active travel methods of BID members, an **employee education programme** was developed for South Bank BID which involved the active travel workshops, educational posts on social media channels and informational resources to be shared through the BID newsletter.
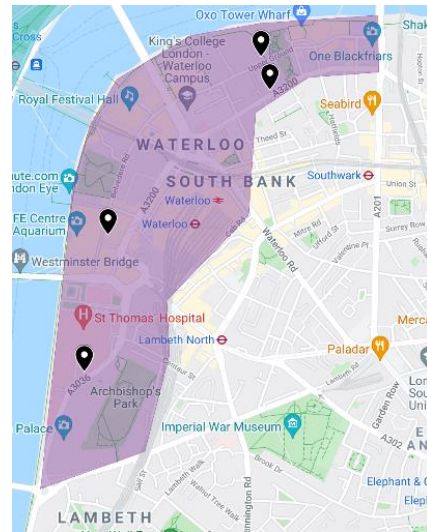
Figure 98: The South Bank BID 1-2-1 engagement map.

Implementation

Engagement and implementation of South Bank BID village solutions was especially challenging given the closures and restrictions associated with the Covid pandemic. The BID was cautious to address its members with other issues or items, such as air quality, when the majority of organisations along the South Bank had been closed and staff were either working from home or furloughed. For this reason, the CRP team took extra care and dedication towards ensuring their communications and materials were sensitive to the situation that most businesses were enduring, and the South Bank BID marketing and communications team took care of outreach, advertising and inviting BID members to any relevant CRP initiatives, such as LiveShares, as well as the BID-dedicated active travel workshop hosted by Groundwork. One of the main components of the active travel engagement solution was hosting an **Active Travel Challenge Month** over social media channels, to engage with BID member employees and educate and elicit actions related to active travel (i.e. commitments to cycle three times per week, or taking a walking adventure at lunch). After careful consideration, this Active Travel Challenge Month was **postponed indefinitely**, due to the ongoing restrictions of Covid. In the meantime, South Bank BID was supplied with a number of air quality infographics and resources to share with their BID members.

Local Communications

Communications with the South Bank BID community was mostly conducted through the BID newsletter and communication channels. At the launch of the project, CRP worked with South Bank BID to create a 'village summary video' explaining the issue of air quality along the South Bank, which featured Canon Giles Goddard of St John's Church in Waterloo. This was featured on the CRP YouTube channel and shared with the BID to disseminate to their members. The CRP team provided newsletter content for promoting these workshops, and guided Groundwork in creating a post-workshop toolkit (see Figure 100 below).

Figure 99: The beginning of the Active Travel Workshop toolkit developed by Groundwork in collaboration with CRP for South Bank and Angel BIDs (left). Screenshot of Clean Air Villages 3 South Bank BID village video (right).

Impact

While the cargo bike scheme was yet to be fully implemented at close of project, the estimated emissions were calculated based on average usage of similar cargo bike schemes. Below are the projected emission savings for three and six businesses using the cargo bike in 2021-2022. The difference in emissions savings between three and six businesses is due to the emissions being calculated based on the average weekly distance travelled by businesses in kilometres. Therefore, the difference in average weekly distance travelled is between 45km and 150km, hence the savings are proportional to the increase in kilometres.

Projected emissions savings for 3 and 6 businesses for 2021-2022				
Number of business users	NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
Three	3.97	0.21	0.37	3,078.23
Six	15.91	0.86	1.47	12,330.13

Figure 100: Projected emissions savings from shared cargo bike scheme.

Main Achievement

CAV3 delivered two Active Travel Workshops for BID employees and supported the BID in purchasing a cargo bike for their members. CRP also developed the resources and materials needed to implement the shared cargo bike scheme.

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Other initiatives carried out in South Bank BID as part of the CAV3 project include:

Initiative	Description
Clean Air Route	Monitoring was conducted in October 2020 to determine a Clean Air Route from St Thomas's Hospital to Oxo Tower via Waterloo station.
Clean Air Villages Directory	A total of 42 low emission businesses and service providers were added to the South Bank BID directory page.
Vivacity traffic monitoring	Vivacity traffic monitoring took place on Concert Hall Approach and Belvedere Road from October until January.

Table 72:The South Bank BID additional achievements.

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5.2 - EV trials

Introduction

As part of the work undertaken in Clean Air Villages 2 (CAV2), businesses indicated that they would like to know more about electric vehicles and how to transition to cleaner delivery methods. In Clean Air Villages 3 there was a target to find 16 businesses interested in EV trials.

Based on previous engagement from CAV2, CRP enhanced the process for promoting electric vehicle trials, to include collecting baseline data on vehicle usage for businesses considering switching. **CRP therefore leased vehicle telematics dongles from Clean Car that would be offered to businesses for free**. These devices would enable businesses that did not have a fleet manager, or employee dedicated to logistics, to gather a detailed overview of vehicle usage. Figure 101 shows the process that CRP conducted to support businesses considering switching to an EV:

| CRP engaged with businesses interested in switching | The Clean Car device monitored the business vehicle and captured average usage data | CRP met the business to discuss the findings and next steps | Business trials an EV |

| CRP sent a telematics dongle to the business to attach to their vehicle | CRP created a tailored report for the business by analysing the data from the Clean Car platform | CRP introduced the business to EV suppliers and charging point companies, as appropriate |

Figure 101: CRP's step-by- step process for supporting businesses considering switching to an EV

The **Clean Car dongles are plugged into a vehicle** and the information captured is available in their online platform. This shows **vehicle mileage, time stopped/parked and GPS location**. Clean Car also offer information about **charging point infrastructure and offer recommendations for which EV on the market would be most suitable**. Clean Car then produces a report based on this information, which uses data sources to make comparisons of vehicle costs, fuel price and maintenance of an internal combustion engine vehicle compared to a plug-in hybrid EV/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.

CRP then created a detailed report for each organisation that used a dongle, analysing the data and making a recommendation.

The contents were split into the following (further details can be found in Appendix IX):

1. Existing fleet overview
2. Individual vehicle summary including
   - Mileage
   - Speed
   - Parking
   - Time in car
   - Overall suitability for EV
   - Comparison of ICE vehicle vs EV equivalent
3. Summary & Next steps
4. Resources – Funding, Grants & Resources
5. Table of Electric vehicles on the market (including payload, approximate cost and mileage)

At the start of the project CRP engaged with **four EV leasing providers** (EV carshop, Leaseplan, Voltia, and Zipcar). Following use of the dongles, CRP was able to make introductions to the most relevant providers for organisations wanting to trial an actual EV. These providers offered a range of vehicles, from small to medium sized vans with a payload greater than 3.5 tonnes. CRP contacted a range of leasing providers so that businesses that currently lease their vehicles (the majority) had some organisations to contact. Figure 97 is a decision tree for organisations searching for a provider of EVs (based on the four that engaged with CRP).

Figure 102: Decision tree for organisations searching for a provider of EVs.
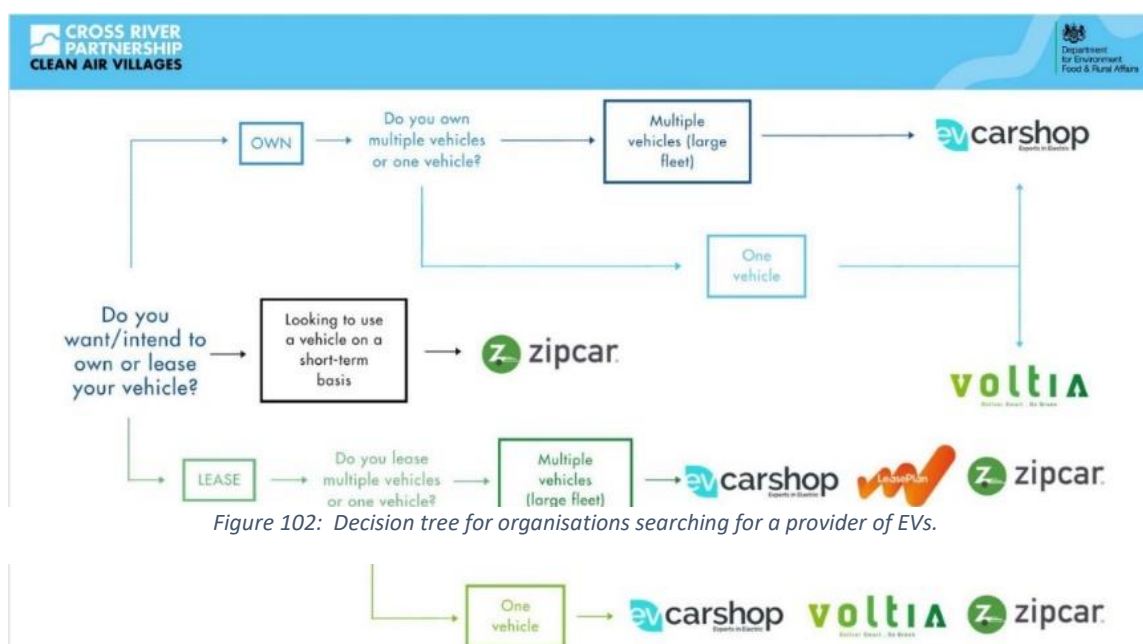
For Clean Air Villages 3, **12 businesses were identified as being interested in EV trials or switching to and EV**.

	Business Name	Type of Organisation	CAV3 Village
1	Bush Studios	Other: Arts and Culture	Shepherds Bush
2	DMG supplier	Office supplies	Fitzrovia
3	Gaff	Food and Beverage	Deptford
4	King's College Hospital	Health	King's College Hospital
5	Lomond Coffee	Food and Beverage	Deptford
6	London Borough of Hammersmith and Fulham	Other: Local Authority	Shepherds Bush
7	Rambert	Other: Dance company	South Bank
8	Real Ale	Food and Beverage	Richmond Town Centre
9	Rodizio Rico	Food and Beverage	London-wide
10	Royal Borough of Kensington and Chelsea	Other: Local Authority	Cromwell Road
11	Science Museum	Museum	Cromwell Road
12	Uncle John's Bakery	Food and Beverage	Seven Sisters

Table 73: Businesses interested in using the telematic dongles

Throughout CAV3 engagement, CRP asked organisations in the villages about vehicle ownership and highlighted the EV work and dongles that were available to them and their suppliers. Table 73 shows **organisations that were genuinely interested in switching to an EV from their current, more polluting vehicle and who wanted CRP's support**. CRP created a registration form, guidelines and deadlines to ensure successful management and return of the dongles.

Challenges

Due to government restrictions as a result of the pandemic, dongles were sent out in the post, instead of being delivered in person. CRP had less control over ensuring that they were received by the correct person. This was most relevant for the larger organisations.

Additionally, due to Covid, not all businesses were operating at 'usual' capacity, therefore finding the right time to use the dongles was trickier, causing delays in their use.

Some organisations had concerns about the collection of confidential data (the recording of delivery routes). CRP and Clean Car worked together to overcome this hurdle by anonymising some data and limiting the sharing of the reports.

CRP offered additional support to all interested organisations, by meeting them to discuss their requirements and/or challenges, sharing information about: funding, charging points, payload and by making necessary introductions.

Outcomes

Table 74 shows the **six organisations who used the dongles on 15 vehicles**. All organisations received CRP's detailed report with recommendations.

	Business/ Organisation	Number of vehicles tracked	Number of Dongles	Type of Organisation
1	**DMG supplier**	1	1	Office supplies
2	**Kings College Hospital (a range of departments)**	5	5	NHS Trust
3	**London Borough of Hammersmith and Fulham**	5	3	Local Authority
4	**Royal Borough of Kensington and Chelsea**	1	1	Local Authority
5	**Science Museum**	2	4	Museum
6	**Uncle John's Bakery**	1	1	Food & Beverage

Table 74: Businesses who used telematic dongles

Figure 103: Overview of report from Clean Car system from telematic dongles used

Overview of vehicles tracked

The vehicles that were tracked with the dongles were part of fleets making local journeys throughout the central London area and consisted of medium sized panel vans, mainly diesel vehicles.

Most vehicles were completing less than 80 miles per day, which indicated that most vehicles in the current EV market would have sufficient mileage on a single charge. Knowing the location of their current parking spot helped organisations to decide whether the current infrastructure of charging points would be sufficient or if an installation of a dedicated charging point would be beneficial.

"I was initially sceptical about the programme and what we were doing, but the facts and figures we've produced have turned my mind and attention... to the fact that there is an advantage both commercially, economically and environmentally to switch to electric vehicles. Since receiving the data we have now ordered an EV which will be coming in the next few months."

Gavin Pettitt, Supply Chain Manager

Main Achievement

As a result of CRP's efforts, **three EVs have been leased by King's College Hospital**. All users of the dongles have been introduced to the relevant EV providers.

Emissions savings

The estimated emissions savings were calculated using CRP's in-house measureBEST tool. Using the daily mileage data provided by the telematic dongles, the total annual mileage was extrapolated to calculate the projected annual savings as a result of converting the existing vehicles to electric equivalents. Table 75 shows the total savings combining data from the 15 dongle users.

Estimated emissions savings from LGV conversions for 2021-2022			
NOX (kg)	PM2.5 (kg)	PM10 (kg)	CO2 (kg)
198.75	133.83	253.02	81,849.57

Table 75: Estimated emissions savings from LGV conversions 2021-2022.

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5.3 – Directory & tools

5.3.1 - CRP Clean Air Villages Directory

Figure 104: Postcard to show the CRP Clean Air Villages Directory (generic rather than village-specific)

The CRP Clean Air Villages Directory (Figure 104) is a list of businesses providing their services using fully electric, ultra-low emission vehicles, cargo bikes or by foot. The Directory was launched as part of Clean Air Villages 1 and then expanded to all village areas in Clean Air Villages 2 and 3. It is now a **fully expanded tool with a search function, 14 business types and 27 village pages**.

This tool showcases **suppliers, businesses, manufacturers and leasing companies** 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 each village start to prioritise those modes over diesel vans. For the Manufacturing/Leasing Ultra-Low & Zero Emission Vehicles category, it should be noted that ultra-low and zero emission vehicles are not necessarily used for the delivery method of this offering. Depending on the business, there may be emissions associated with transportation of vehicles, charging point installation and other infrastructure.

On the Directory, each business has a short summary about who they are, with contact details and their dispatch point. There is a map, list function and now a search bar for easy navigation for users. The number of businesses on the directory is expected to grow over time, as more fleets become zero and ultra-low emission.

Expansion of the Directory

For CAV3, the 'Ultra-Low Emission Supplier Directory' was **renamed the 'CRP Clean Air Villages Directory'**. This was after a discussion of different name ideas from the CRP Team. The new name is simple but tells users what the tool does effectively and links it to the Clean Air Villages programme,

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as well as making it relevant to a wider audience. The tool is now targeted beyond businesses seeking suppliers and is aimed at the general public too.

CRP met with a design agency to discuss the feasibility of ideas linked with expansion of the Directory, as well as discuss ideas to make the tool **more user friendly**.

In July 2020, **CRP launched 13 new Directories, expanding to all CAV3 village areas**. The Directories for all CAV1 and CAV2 villages are still within the tool, meaning that there are a total of 28 village pages (Figure 105) (please see a full list of village areas in Appendix X - A). The London Borough of Lewisham, London Borough of Hammersmith and Fulham and London Borough of Wandsworth did not have a Directory page for CAV3, as the village areas remained the same from CAV2 (Deptford for Lewisham, Shepherds Bush for Hammersmith and Fulham and Tooting for Wandsworth). To make the expansion effective and up to date, all existing businesses were contacted as to whether they operate in the new village areas, and research on new businesses to upload to the site was completed throughout the year.

Figure 105: Map showing the expansion of the Directory with 28 village pages.

In November 2020, the Directory was also **updated to include a search function** (Figure 106). This makes the tool more user-friendly, especially as the number of businesses listed increases. Users can search for the name of the businesses they are trying to find. Each business has several key words attached to it, for example coffee, gift, bike or courier.

Figure 106: Search function on the CRP Clean Air Villages Directory.

As part of an **update to the tool** for CAV3, the Directory also lists suppliers who **manufacture or lease ultra-low and zero emission vehicles** (for example EV providers). This category is called 'Manufacturing/Leasing Ultra-Low & Zero Emission Vehicles'. Other business type categories which

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were added during the project include 'Florist/Gardening', 'Groceries/Food & Drink' and 'Maintenance/Training'.

The CRP team promote the CRP Clean Air Villages Directory in 1-2-1 engagement with businesses, communities and hospitals, as well as at events e.g. Live Shares and in communications.

Benefits of the Directory

The Directory has the following benefits:

- Free to use and free for suppliers, businesses, manufacturers and leasing companies to be listed
- Lists organisations who deliver using cleaner, greener vehicles, based on proximity to your postcode – this promotes a reduction in congestion and supports local businesses
- An incentive for businesses to switch vehicles and a behaviour change for individuals
- Easy to use and search for businesses and suppliers – suitable for businesses, communities and individuals alike
- Dedicated page for each village area
- Displays whether click and collect is available for each business
- Free promotion for businesses who deliver via ultra-low emission

Local Communications

Figure 107: Examples of promotions of businesses listed on the CRP Clean Air Villages Directory from CRP's Twitter account.

CRP has regularly promoted the Directory through social media platforms Twitter and LinkedIn, as well as through email and at events and workshops. CRP produced a generic Directory postcard (Figure 107) and stamp (which can be seen in Figure 108), which has also been used by businesses listed and partner organisations in local promotions of the tool.

CRP encourages the Directory to be listed on partner and business websites. Please see some examples below of where the Directory has been listed on partner websites and beyond:

- [Hatton Garden BID](#)
- [angel.london](#)
- [The Northbank BID](#)
- [Lewisham Local](#)
- [South Bank BID](#)
- [The Fitzrovia Partnership](#)
- [London Borough of Hammersmith and Fulham](#)

Analytics

As of 31st March 2021, the **Directory lists 84 businesses** (please see a full list in [Appendix X - B](#)). 39 of these businesses were listed during the CAV3 programme.

Website analytics, including traffic, were regularly monitored for the Directory (please see [Appendix X - D](#)). Q2 shows the highest traffic for the CRP Clean Air Villages Directory, coinciding with the expansion of the tool.

Figure 108: Examples of partners promoting the CRP Clean Air Villages Directory through their Twitter accounts.

Impact

Emissions savings (as a percentage) for ten 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		Total emissions saved (per km)			
From	**To**	**NOX (g)**	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
HGV	Electric HGV	100%	15%	15%	100%
LGV	Battery electric LGV	100%	21%	22%	100%
LGV	Full hybrid LGV	97%	17%	20%	15%
LGV	Plug-in hybrid LGV	93%	20%	22%	62%
LGV	Cargo bike	100%	100%	100%	100%
Car	Bike, cargo bike or on foot	100%	100%	100%	100%

Table 76: Total emissions saved per vehicle type.

Using an estimation that four businesses will use the Directory each month to switch to a supplier using a zero or ultra-low emission delivery mode, the projected emissions saving for 2021-22 have been generated as follows.

Projected emissions savings (2021-2022)			
NOX (kg)	**PM2.5 (g)**	**PM10 (g)**	**CO2 (kg)**
3.88	61.37	117.14	1,286.11

Table 77: Directory emissions savings estimation.

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"With the uptick in demand for e-commerce, the need to address the carbon footprint of the last-mile supply chain has never been more pressing, particularly in cities. It gives me great hope to see so many incredible businesses committed to zero-emission deliveries, at Circla we never even questioned whether we would deliver our products in any other way and hope that more businesses come on-board."

Claudia Gwinnutt. CEO & Founder – Circla.

"There haven't been many positive sides to the pandemic but one change for the good has been our migration to local delivery by e-cargo bike. At the start of lockdown, we worked day and night to get all of stock of vinyl records on our website and offered free local delivery by bike within a three-mile radius. Our customers loved this and our hashtag #eelsonwheels almost trended! It's a real joy cycling round the Borough on the e-cargo bike. It's as least as quick as a car with no parking worries. It's much cheaper and of course it's far better for the environment."

Kevin Jones, Co-Owner, Eel Pie Records.

Christmas Campaign

Over the Christmas period in 2020, CRP promoted businesses listed on the Directory through Twitter channels. Businesses were appreciative of this promotion, especially given the government restrictions on trading due to Covid at the time. Please see images in Appendix X - C.

Main Achievement

All CAV3 partners have a **dedicated, on-line, local CAV Directory page**. This unique resource is promoted by CRP and partners across London. The resource highlights and promotes businesses and suppliers contributing to **better air quality**.

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5.3.2 - Clean Air Tool

A recurring theme in CRP's work delivering improved air quality is grasping the impact of the reduction – or savings – in noxious emissions. Although CRP quantifies the improvements to air quality based on local businesses and residents carrying out certain actions, the numbers do not necessarily mean anything tangible to some of our stakeholders.
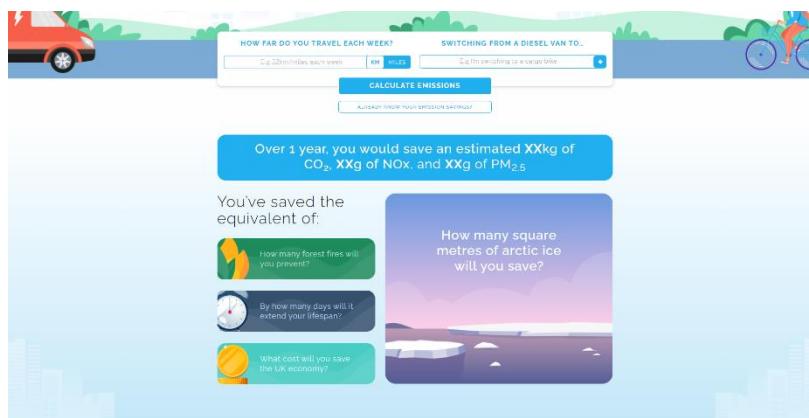
Figure 109: Screenshot of the Clean Air Tool homepage.

The Clean Air Tool is a web-based solution that has been developed in Q4 to help people better understand the impact of their actions. While there are many existing tools to help visualise CO2 equivalencies, CRP's solution also displays tangible equivalents for NOx and PM emissions savings that are easier to visualise.

The first stage of calculations, quantifying the emissions savings, is based on CRP's measureBEST calculations. MeasureBEST was updated as part of Clean Air Villages 2 and is used by CRP to calculate the emissions savings of various interventions. For the Clean Air Tool, measureBEST was used to calculate a fixed annual rate of emissions based on switching from a diesel van travelling a specified distance over one week. The user also has the option to enter a specific quantity for a pollutant.

For the next stage of calculations, CRP worked with Dr Robin Lamboll who is a climate science and policy research associate with the Grantham Institute for Climate Change at Imperial College. Dr Lamboll **calculated a series of conversion factors for each pollutant** as follows:

Results after using the Clean Air Tool to calculate emissions savings equivalencies switching from a diesel van to an electric van, with a weekly mileage of 200km.
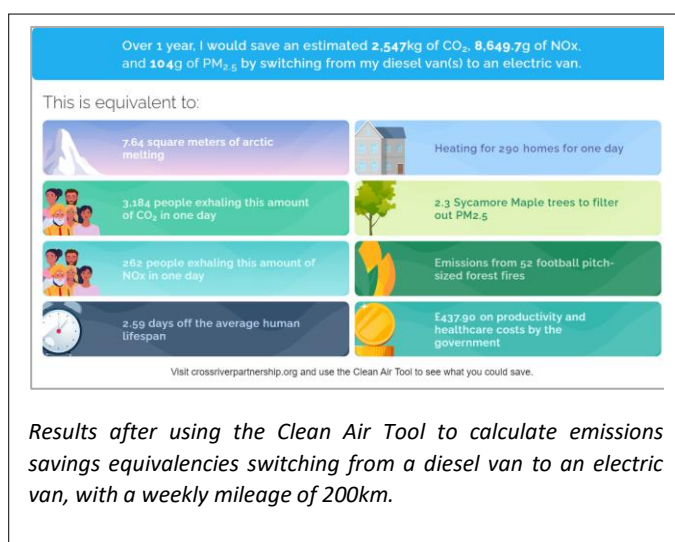
Figure 110: Clean Air Tool emissions savings equivalencies.

- CO2:
  o Square metres of arctic ice prevented from melting
  o Number of homes heated in one day
  o Number of people needed to exhale an equivalent amount in one day
- NOx:
  o Number of people needed to generate an equivalent amount in one day
- PM:

o   Number of Sycamore maple trees required to filter out the particulate matter from the air

The users can download their results, fitted to a square or rectangular page, to enable sharing via social media.

An extensive campaign has been planned to promote the Clean Air Tool. In particular, this will be centred around **National Clean Air Day, on 17th June 2021**. The tool will be shared and promoted widely to the public and private sector. The tool will tie in with materials that CRP will produce to support businesses in light of the planned expansion to the ULEZ, to further support switching to zero and ultra-low emission vehicles. This will take place as part of CAV4.

Main Achievement

> **Launching the Clean Air Tool**. A free, online tool which **calculates estimates of emissions savings for switching to EV**. The outputs are produced as **visual outputs**. Emission quantities can also be entered manually and these will also be converted into visual outputs.

5.4 - Update 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 CAV3, the recommendations generated by deliverBEST were **updated to reflect the expansion of the CAV Directory into the new village areas**. An example is provided above in Figure 112. For any inputted postcodes that fall within CAV3 village areas, the deliverBEST survey will return this recommendation (among many others), directing them to their local Directory page.

deliverBEST was also **updated to direct users to the Clean Air Routes that were developed for 14 routes** in the CAV3 villages. As the tool is aimed at business owners, these routes can be shared with their employees to encourage use of routes to work which will expose them to fewer emissions. An example is provided in Figure 111.

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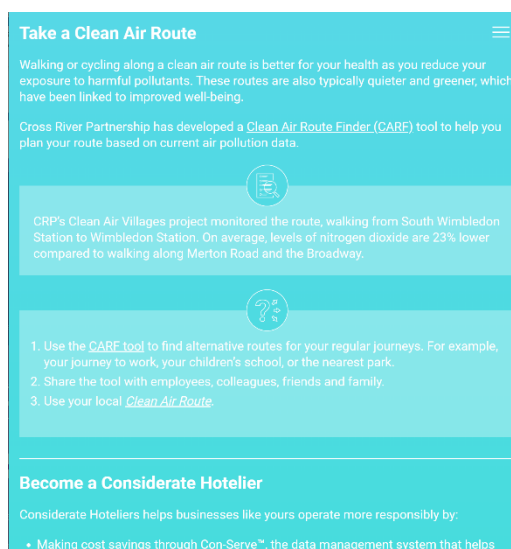
Figure 111: Clean Air Route on deliverBEST recommendations page.

Figure 112: Cleaner supplier (CRP's Directory) on deliverBEST recommendation page.

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 IX.](#) 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.

This tool was updated in March 2020 as part of CAV2 to **include additional vehicle types**, as well as **calculations for fine particulate matter** (PM2.5). CRP has been formulating ideas throughout CAV3 for a further update, which would enhance its useability with Vivacity traffic monitoring devices and would make it even more fit for purpose for calculating emissions for CRP partners and projects. For example, the update and inclusion of buses and cargo bikes is being considered. **CRP will refine these ideas and update measureBEST as part of CAV4**.

5.6 – Clean Air Routes

Background

As part of the Clean Air Villages 3 project, CRP looked to expand on the award-winning Clean Air Route Finder (CARF) journey planner and provide personalised routes for each CAV3 partner's 'village'. Road vehicles are the main driver of London's pollution problem, and harmful gases such as nitrogen dioxide can aggravate asthma and other respiratory conditions. CRP's Clean Air Routes (CAR) provide a walking, cycling or rolling route designed to **help people trying to avoid busy and polluted roads**. These serve as easy alternatives to popular commuter routes and are mostly designed to give guidance between stations and key destinations.

Prior to the development of these Clean Air Routes, the Clean Air Route Finder journey planner could be used to search and plan the least polluted routes for journeys around London. It also displayed 15 previously monitored routes. As part of CAV3 and in collaboration with the CAV3 partners, **the CRP team sought to develop 16 new Clean Air Routes**.

Reason for new CAR production

The CAV3 Team worked with village partners to determine which routes would be of interest for their village. Routes had common themes, such as a commute to a business hub from a local train station (for example, Charlotte Street in Fitzrovia to Euston station), or a popular path between two local destinations or monuments (such as St Thomas' Hospital to Oxo Tower along South Bank). The Northbank BID did not receive a Clean Air Route as they had previously developed CAR which could be found on the CARF.

Figure 113: Tranquil City – Clean Air Route Monitoring

Once these routes were decided, they would be monitored to:

- Quantify the **health benefits** of walking and cycling along quieter streets,
- **Raise awareness** about the choices we can make to our regular journeys,
- Encourage **sustained behaviour change** regarding cleaner routes.

There has been a significant increase in public demand for healthier, less polluted and more sustainable routing options. Those new to cycling should be able to find quieter and less traffic-busy routes to **gain confidence**, while parents should be able to **find healthy and safe walking routes to school**. The village-specific CAR will provide partners with another means of communicating the importance of walking and cycling within their communities, for both employees and visitors to their areas.

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Monitoring the CAR

Development of cleaner alternative **routes was informed by modelled data, combined with local knowledge**. Seven modelled layers were used to assess the quality of each road segment, including the average annual concentration of **nitrogen dioxide and the Healthy Streets Index score**. The Healthy Streets Index scores every street in London according to factors that

Figure 114: Tranquil City – Clean Air Route Monitoring Report methodology.

affect our health and wellbeing, including road danger, air pollution and noise. The Healthy Streets Index aims to highlight less polluted, more people-friendly and liveable streets. This dataset has been created as part of the _Streets collaboration, a project between Healthy Streets Ltd, University College London and Tranquil City Ltd.

Once the initial route pairs were selected, site visits were conducted to identify any concerns regarding accessibility and safety, and adjustments were made to route alternatives based on these recommendations. The monitoring was carried out by Tranquil City using **Aeroqual Series 500 handheld air quality sensors** in October 2020. The Aeroqual Series 500 sensors were selected and subsequently purchased by CRP as they provide **real-time air quality data on a convenient, hand-held device**. While the primary pollutant of concern was nitrogen dioxide, particulate matter (both PM10 and PM2.5) was also monitored. Each route pair was monitored simultaneously to enable direct comparison between pollution levels along the standard route and Clean Air Route. Each route was monitored up to six times to improve the accuracy of the results.

Results and dissemination

The initial results were discussed with the CRP Team and developed into a **detailed Clean Air Routes Monitoring Report**, which was produced by Tranquil City and provided in depth details of each route, the highlights and the air quality results. The CRP Team developed a **case study and individual flyers** for each route that could be shared and disseminated with CAV3 partners and their communities.

The newly created CARs were also added to the CARF journey planner tool. A **total of 14 new CARs were developed** as part of the Clean Air Villages 3 project; one proposed CAR was not published as the monitoring data found the alternative route showed a slight increase in NO₂ concentrations, signifying the importance of monitoring.

Figure 115: Tranquil City – Clean Air Route Monitoring Report route results.

Results from the CAR research has revealed that, compared to the standard routes, these new Clean Air Routes:

- **Reduce exposure to nitrogen dioxide** by between 17 and 41%.
- Provide up to 28% more **exposure to greenery and nature**.
- Have consistently **lower noise levels**, with an average reduction of 11 decibels. This is typically perceived as a halving of the sound level.

Exposure to quieter and greener environments has been shown to **improve health and wellbeing**, as well as creating a safe and enjoyable experience for pedestrians and cyclists. These benefits would be even greater if the Clean Air Routes were included as part of a **regular routine**.
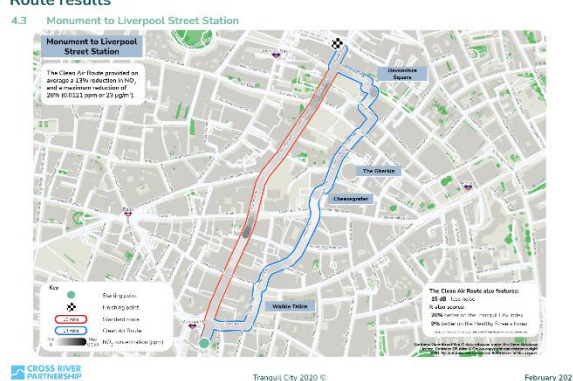
Figure 116: Clean Air Routes

In addition to protecting our health, Clean Air Routes encourage Londoners to discover new things where they live or work. Between Tottenham Court Road station and Piccadilly Circus, a new Clean Air Route, guides pedestrians through Soho, exploring the area's vibrant and historic streets. Soho, like many areas across London, has been greatly impacted by restrictions as a result of the Covid-19 pandemic. As it becomes increasingly safer to do so, Clean Air Routes will help to encourage visitors to return to these areas, and to do so on foot or by bike.

Issues & challenges

The Covid-19 pandemic has had a major impact on people's daily lives. The reduction in road traffic impacted monitoring undertaken as part of this study, which took place in October 2020, with lower levels of pollution recorded than would have been expected prior to the pandemic. Covid-19 is also expected to impact how many people use the Clean Air Routes, while many offices and businesses remain closed at time of writing. Despite this, **walking and cycling must be an intrinsic part of London's green recovery**, and Clean Air Routes have an important role in helping Londoners to safely move about the city.

Accessibility was an important factor when developing Clean Air Routes, the CRP Team along with Tranquil City aimed to ensure that all routes were **accessible and safe**, free from restricted pathways, long-term construction or lack of pavement. This did mean that some routes that appeared ideal on paper had to be reconsidered and re-routed. In some cases, this meant that routes took several minutes longer than anticipated and there is a risk that they become unusable for commuters who are pressed for time. Careful decisions were made to ensure that the routes remained **accessible and inclusive** and at best interest of Londoner's health and safety.

Next steps

Each of the new routes has been added to CRP's Clean Air Route Finder, an interactive journey planner developed in partnership with King's College London to help identify low pollution walking and cycling routes in London. The personalised village results and flyers have been disseminated among CAV3 partners, which have been shared among their community members to help support the uptake of cycling and walking in their areas.

With suitable information and encouragement, people will continue to walk more, explore local areas and recognise the benefits of walking for short journeys. The promotion of Clean Air Routes and other interventions to limit personal exposure must be supported by local, regional and national action to reduce air pollution at source.

5.7 - Air Quality Monitoring

5.7.1 -Updating Clean Air Route Finder

In 2017, CRP and Imperial College London's Environment Research Group[5] developed the Clean Air Route Finder using the London Air Quality Network (LAQN), to **help users plan their active travel journeys using low pollution routes around London**. The LAQN is an advanced air quality monitoring network used by Imperial College to create the London Atmospheric Emissions Inventory (LAEI) which charts NO_2, $PM_{2.5}$, PM_{10} and ozone (O_3) concentrations across the city.

The route finder retrieves up to three alternative walking or cycling routes from Google Maps, then calculates the total modelled pollutant dose along each route for NO_2, $PM_{2.5}$ and PM_{10} using a combination of average concentrations, distance and ventilation rate for walking or cycling. The sum of these differences is presented as relative percentage difference in green, amber and red.

Following the onset of Covid-19 and the resulting lockdown, London saw a surge in the number of active travellers anxious to avoid using public transport. Nervous cyclists, especially, were encouraged to take to the road since there were fewer cars on the streets. In addition to concerns over contracting the virus, other factors like social distancing and a heightened awareness of air quality, meant that people were paying more attention to how they got around town. **CRP decided on several updates to support Londoners who wanted to make all or part of their journey actively**. Formerly, the CARF

__Former version of the Clean Air Route Finder.__ Here, the user has been given three walking routes from Trafalgar Square to Victoria Station. The green (cleanest) route cuts through St James's Park and, although it is the same distance as the amber (next best) route, it offers approximately 2.5 times less exposure than the amber route.
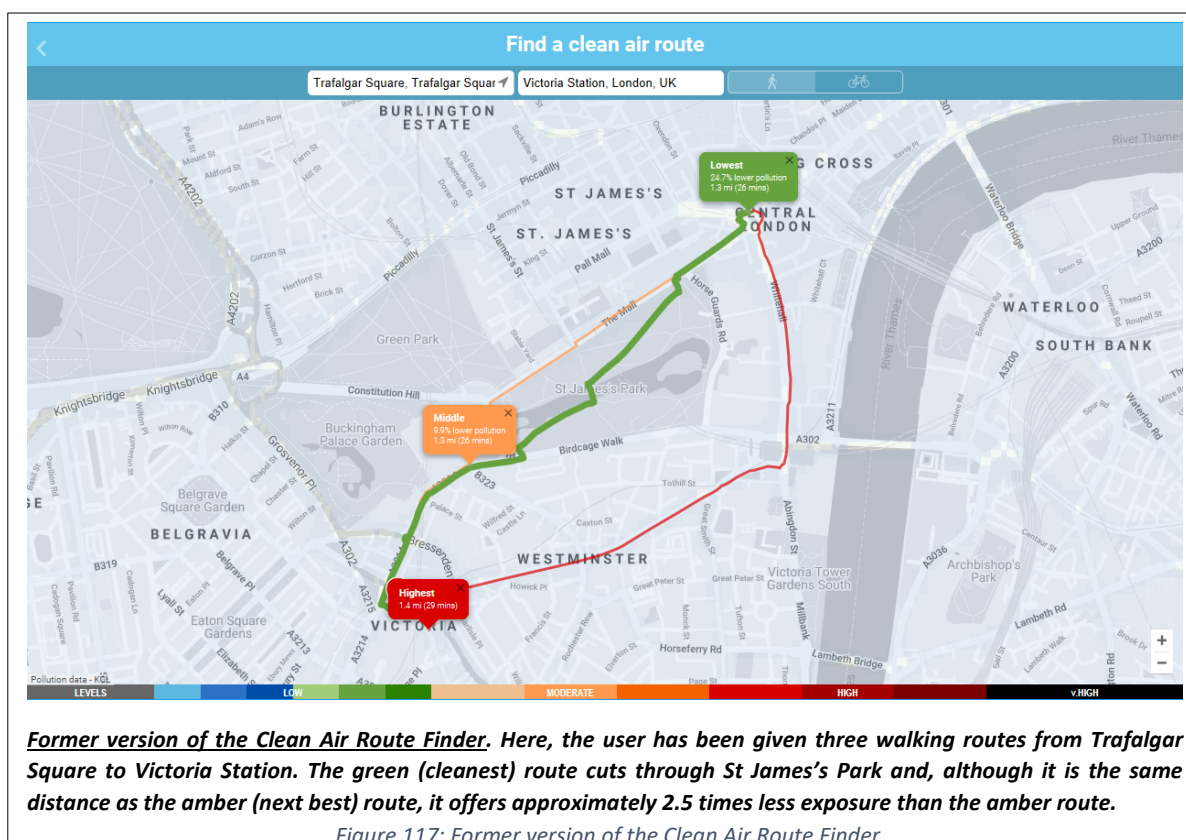
Figure 117: Former version of the Clean Air Route Finder.

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[5] The Environmental Research Group moved from King's College London to Imperial College in 2020.

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widget consisted of a single layer that allowed pedestrians and cyclists to enter their start and end points, after which a route would be calculated.

The latest version of the widget now has multiple layers, as well as more information about the **level of exposure along each calculated path.**

Widget Layers

Originally, the CARF widget has a single layer for the user. By default it displayed Clean Air Walking Routes which are local routes specified or approved by our partners that have been actively monitored for pollution and compared to pollution levels along more popular – but also more polluted – paths.

When the user clicked the widget, the routes disappeared and presented a blank map above which the user would enter their start and end points.

Layer 3 – Station`s displays London's railway termini and the distance that can be cycled within two and five minutes of each.

Layer 2 - Clean Air Routes layer of the CARF widget displays Clean Air Routes developed with partners across London.

Layer 1 - Clean Air Routes displays Clean Air Routes developed with partners across London.

Layer 4 – Walking Tube displays walking routes between various tube stations around London.

Figure 118: four images of the options when they open the widget

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The user now has **four options** when they open the widget:

1. *Clean Air Routes* which displays a mix of up to 25 clean **walking *and* cycling paths** across the city. As with the old version, clicking a route pops up a window with information about the path. The routes produced for Clean Air Villages 3 are also displayed here.
2. *Cycleways*, formerly Cycle Superhighways and Quietways, which displays **Transport for London's cycle network** linking communities, businesses, and key destinations.
3. *Stations*, which displays **National Rail's London Terminals across central London**, as well as the two- and five-minute cycling radius from each station.
4. *Walking Tube,* which is based on a 2018 study, led by CRP, to examine walking as an alternative to using the tube. It shows the **walking routes between some of central London tube stations**, enabling users to get off the tube earlier and walk the rest of the way or even walk their entire journey.

Graduated routes

Previously, the widget would show calculated routes as solid green, amber and red paths, averaging the user's exposure over the entire route. The user had no way to know where the "hotspots" along each route was. Now, the when the user zooms in on the path, the colour intensity varies, becoming deeper as the pollutant concentrations worsen.

5.7.2 - Vivacity traffic monitoring

The colour of each route varies in intensity depending on how polluted the air is along that section of the route.
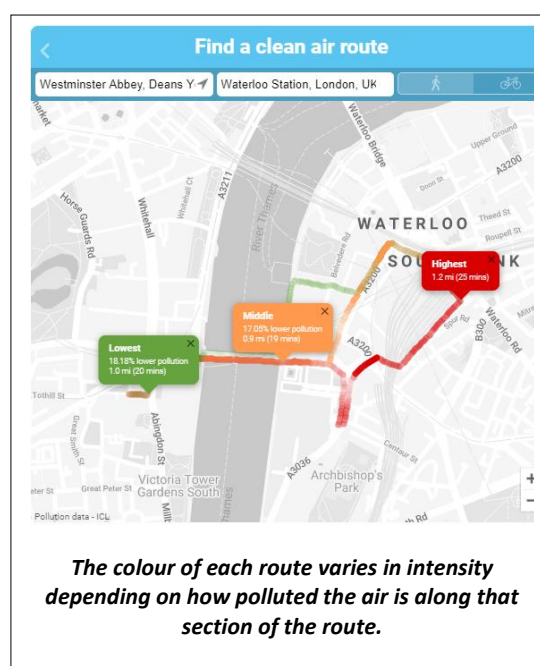
Figure 119: Clean Air Route graduated routes.

Background

Vivacity Traffic Monitoring was a cross-project programme, working with partners from Clean Air Villages 3 and CRP's Healthy Streets Everyday project (Mayor's Air Quality Funded) to **improve the monitoring of specific sites** or "villages" in boroughs, using Vivacity sensors.

CRP co-ordinated the project and alongside access to a real-time data dashboard, **CRPs data analysis and reports enabled partners to assess, monitor and evaluate the benefits and costs of active travel, sustainable transport or business support schemes**. This has filled a much-needed desire from partners for more evidence to base decision-making for air quality, business support, street design, public realm, deliveries and servicing, active travel and sustainable transport planning.
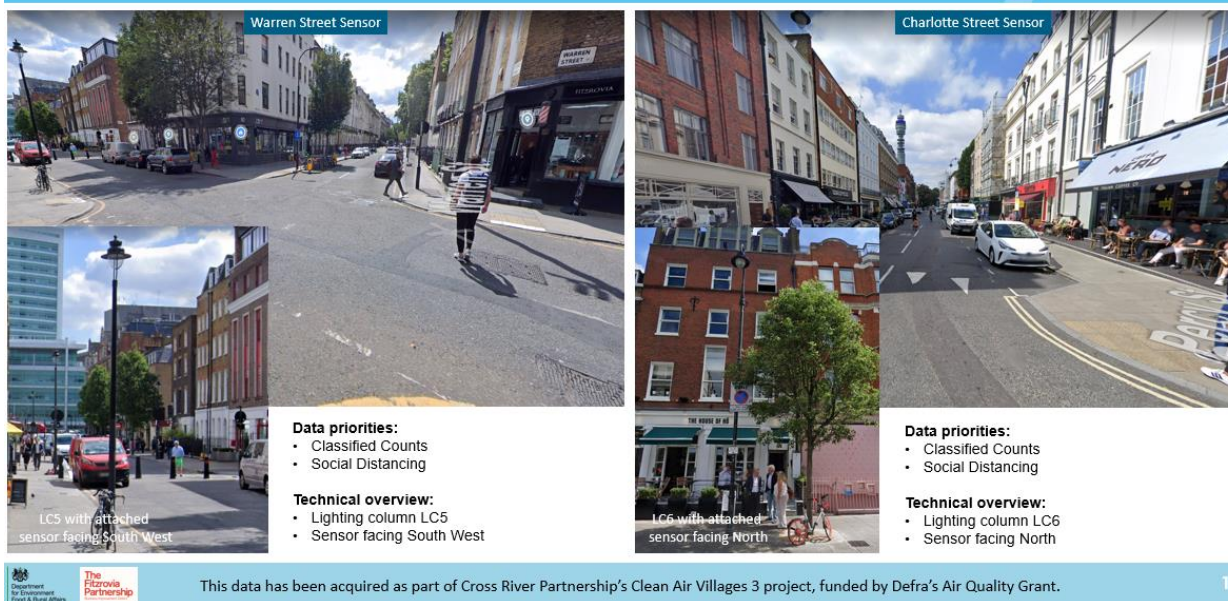
Figure 120: A snapshot of the detailed reports provided to partners that took part in the Vivacity monitoring programme.

Why Vivacity?
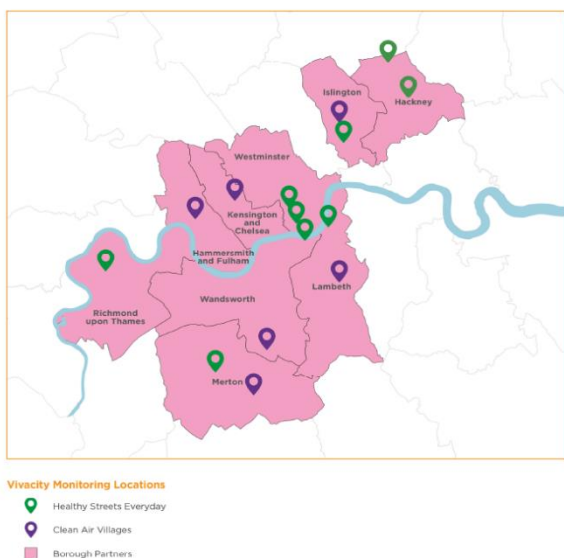
Figure 121: A map of the Vivacity monitoring locations across the Healthy Streets Everyday and Clean Air Villages 3 programmes

Vivacity approached CRP in 2020 to work collaboratively on the Clean Air Villages 3 project, and a cross-project monitoring solution was created to cover CRP's HSE and CAV3 partners. Vivacity sensors use artificial intelligence and machine learning technology to capture detailed and anonymous traffic, cycle and pedestrian counts. Vivacity sensors are installed with a specified "count line", where motorised and non-motorised traffic crosses either in or out of, which is then processed, completely anonymised, and each frame of video is deleted immediately after processing.

The sensors also have the capability to show road behaviour and tracks and provide models for social distancing based on the number of (anonymised) pedestrians against the amount of space in a location. This has proven particularly useful as a tool in town centres for COVID-19.

Partner Monitoring

CRP offered the opportunity to all CAV3 partners to participate in the monitoring programme by having a sensor in their selected village site. Across the Vivacity monitoring programme, CRP worked with 14 partners to install 20 Vivacity sensors across London. A map of the locations can be seen below:

CRP worked with six partners from the Clean Air Villages programme to install seven sensors across London. The table below shows the partner, sensor locations, monitoring purpose, and monitoring, installation and the data analysis timeframes. All partners received monitoring for approximately 2-3 months.

Partner	Location	Monitoring Purpose	Installation Period	Report Data Analysis Range
London Borough of Merton	The Broadway, Wimbledon Town Centre, SW19	All motorised and non-motorised classified traffic counts	24th August 2020 – 30th October 2020	27th August 2020 – 30th October 2020
Westminster City Council	Junction of Old Compton Street and Dean Street, Soho, W1D	All motorised and non-motorised classified traffic counts. Evaluate deliveries and servicing. Particularly interested in cycling and walking counts.	24th August 2020 – 3rd March 2021	27th August 2020 – 31st October 2020
Angel BID	Chapel Market (installed on Liverpool Road), N1	All motorised and non-motorised classified traffic counts	24th August 2020 – 3rd March 2021	1st September 2020 – 31st October 2020
The Fitzrovia Partnership	Junction of Warren Street and Fitzroy Street, W1T	All motorised and non-motorised classified traffic counts	30th October 2020 – 3rd March 2021	4th November – 31st December 2020
The Fitzrovia Partnership	Junction of Charlotte Street and Percy Street, W1T	All motorised and non-motorised classified traffic counts	28th September – 3rd March 2021	12th October 2020 – 30th November 2020
London Borough of Richmond	Kew Road, TW9	All motorised and non-motorised classified traffic counts	24th August 2020 – 3rd March 2021	27th August 2020 – 31st October 2020
South Bank BID	Junction of Concert Hall Approach and Belvedere Road, SE1	All motorised and non-motorised classified traffic counts, and road behaviour usage on each road.	24th August 2020 – tbc. (2022 – extension agreed)	1st September 2020 – 31st October 2020

Table 78: Information about the Vivacity monitors installed for the CAV3 partners

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Evidence-Based Decision-Making

All partners received a **detailed report of the motorised and non-motorised traffic counts and estimated emissions.** This includes at least one month's analysis of data, separating out weekend vs weekday data to show the differences this can have on motorised and non-motorised traffic counts. Additionally, hourly averages were produced, once more comparing weekends and weekdays, to demonstrate changes at an hourly level what an "average" day at the Vivacity sensor location. Trends could then be extrapolated from this to understand when spaces are busiest by different motorised and non-motorised users of the space.
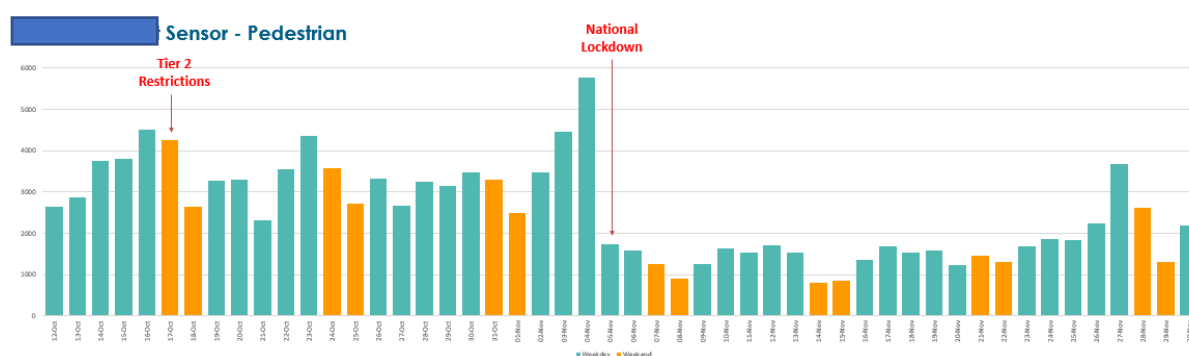
Figure 122: Pedestrian data from a Vivacity sensor in London.
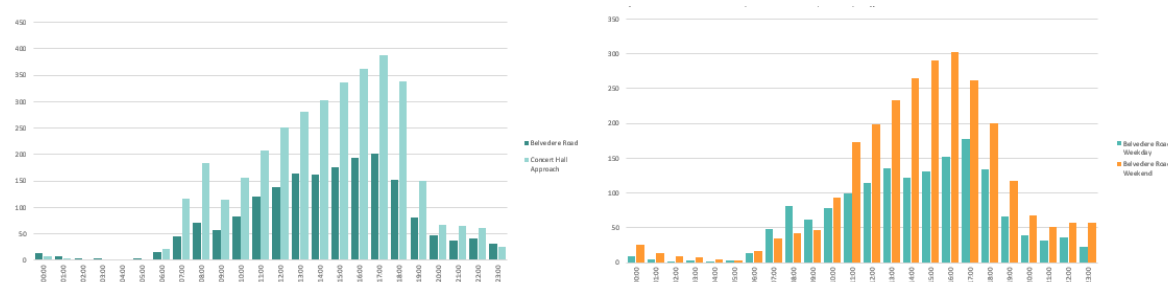
Figure 123: Average hourly pedestrian counts from a Vivacity sensor in London.

Some partners requested social distancing data analysis. This provides a model of data from the Vivacity sensors that shows anonymous interactions under two metres and can be used to understand how pedestrians and space can change throughout the days, weeks and throughout the monitoring period. This is a model to show and understand how busy public spaces compared with the amount of space, with interactions under two metres recorded. This can help partners to identify where more space could be provided in crowded outdoor spaces to make social distancing measures easier to maintain for pedestrians in this location. **Estimated emissions** from cars, LGVs and OGVs during a partner's chosen monitoring period, calculated using CRP's in-house emissions calculator, *measureBEST,* **were produced for each partner to understand when areas may be most congested and polluted using this modelling**.
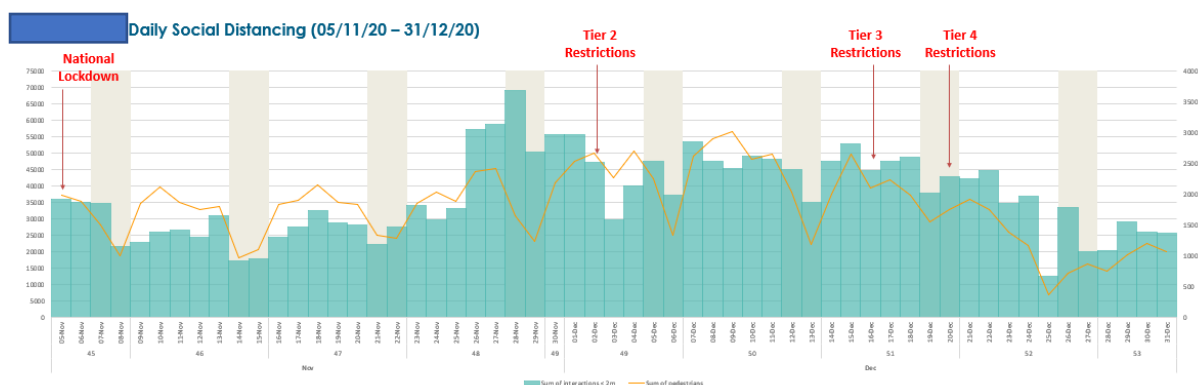
Figure 124: Social distancing model showing interactions of less than two metres vs pedestrians from a Vivacity sensor in London.
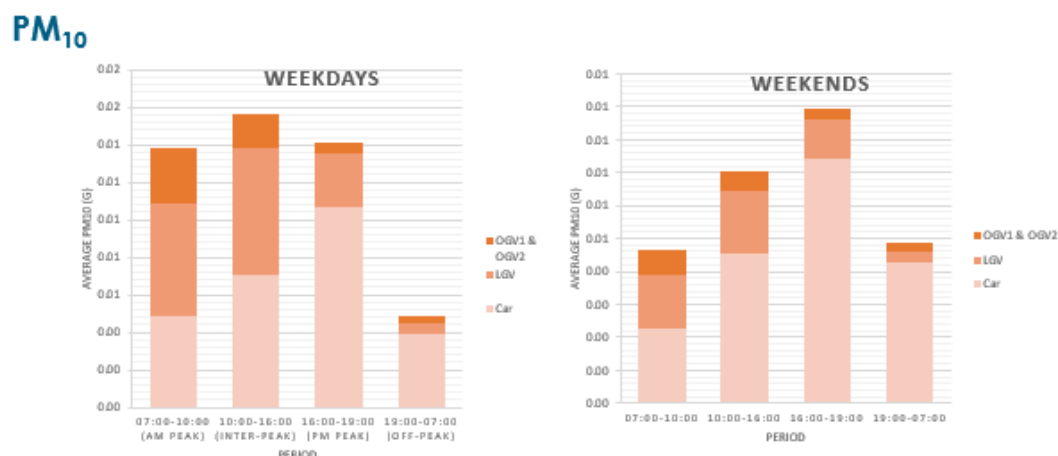
Figure 125: Estimated PM10 emissions from a Vivacity sensor in London.

All the data was carefully analysed with respect to the coronavirus restrictions imposed locally and nationally. These were included in the written analysis and graphs to visually demonstrate how these restrictions can impact motorised and non-motorised traffic counts, including the "rule-of-six", national lockdown, changes to local tiers. Moreover, written analysis explored public holidays, celebrations, local events, extreme changes in weather, road closures, and much more, to support partners with understanding changes to their road layouts.

These reports were issued in February and March 2021 and have been crucial in providing **evidence for their decision-making in their local authorities and BIDs through business support, street design, public realm, deliveries and servicing, air quality active travel and sustainable transport planning**. The reports have been used by partners to extend business support schemes for summer 2021, such as **Westminster City Council's al-fresco dining scheme**, change and monitor road layouts, or access, monitor and reduce congestion and pollution levels, and analyse the impact of active travel infrastructure. This project and case study as been covered by **Citti Magazine** and **Highways Today**.

CRP has used the experience of extensive monitoring and data analysis to create a guidance document, *Meaningful Monitoring: Providing the Path to Positive Change*, as part of the Healthy Streets Everyday programme. This supports local authorities and business improvement districts to utilise evidence-based decision-making in making positive changes in their streetscapes and local areas.

For a snapshot of a Vivacity report, please see Appendix XII.

Beyond CAV3

Following the conclusion of the CAV3 project, one partner, South Bank BID, has agreed to an extension of the use of the Vivacity sensor at Belvedere Road and Concert Hall Approach. Additionally, South Bank BID have funded the installation of four more sensors in locations in the BID area, with CRP providing detailed data analysis services to support the evidence-based decision-making of the organisation.

"We really liked the Vivacity monitoring and the data that we have collected because the data is so intellectual and so useful. We would like to see local authorities take this forward because it is evidence-based. Because of the interventions we have had from Charlotte Street, we have been able to identify that there are certain hours of the day where there is reduced traffic, particularly from commercial vehicles and in the middle of the day. This is an evidence base to work with the local authority and say 'close the street in the middle of the day' because having reduced commercial vehicles saw increases in footfall. We now have an evidence base to say reduced commercial vehicles equals improved footfall, which could be brilliant for our streeteries. Instead of just having seating in parking spaces, we could have communal seating that goes all the way across the road, that the BID could assist in maintaining."

Lee Lyons – Chief Operating Officer, The Fitzrovia Partnership

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6 - 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, health sector and other communities, CRP communicated project progress and findings to strategic agencies in London, London Boroughs, Business Improvement Districts and other CRP Partners. Table 79 below provides an overview of dissemination outputs versus the original targets.

Target as per proposal	Output
Develop 16 relevant local communications to motivate and create behaviour change.	This target has been far exceeded, with flyers being produced for local / tailored distribution, bespoke social media content being sent out regularly and local media reporting on the project
Develop 16 case studies, best practice/how-to guides/toolkits	22 case studies and toolkits produced and used in engagement, with additional tailored content produced for CAV partners (17 toolkits, 5 case studies)
Best practice sharing events, educational workshops, pop-ups etc. (One per area (16), plus one wider event)	22 events took place (17 LiveShares, 4 active travel workshops, 1 citizen scientist event)
4 Stakeholder steering group meetings	Stakeholder steering group meetings held with partners invited to attend all: • 9 July 2020 • 15 October 2020 • 14 January 2021 • 15 April 2021
4 Quarterly project update reports and one overall project evaluation report	Herewith complete

Table 79: Summary of CAV3 targets and outputs.

6.1 - Case studies

CRP communicated through a range of channels and produced dissemination material across platforms throughout the Clean Air Villages programme.

As part of this wide dissemination, and in addition to the **17 toolkits produced to tie in with the LiveShares**, **CRP produced five best practice, multi-page case studies in digital format**. All case studies are available on the CAV3 Project Page and the CRP Publications Page. They have been circulated amongst the Clean Air Villages business, community and hospital network, and also amongst CRP partners and all presenters at CRP's LiveShare series. Paid advertising was not utilised, and these case studies will continue to be used beyond project end date, particularly in relation to the Defra-funded

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Clean Air Villages 4 programme. CRP believes these documents will inspire businesses, local authorities, BIDs, landowners, hospitals, residents and other groups to utilise the tools available to help **reduce congestion and pollution**. These case studies will promote wider behaviour change and facilitate knowledge sharing across these groups.

The five case studies that CRP produced as part of the CAV3 project include:

1. [How your business can switch to an EV](#) (Figure 126)

This telematics dongle case study takes the audience step-by-step through how monitoring the use of CleanCar Dongles can support businesses that are considering the switch from diesel/petrol to electric vehicle. **CRP used eight Clean Air Villages Telematics Dongles tracked over 16,000 miles and monitored 18 vehicles**. The case study explains the potential emissions savings to those interested in making the switch, including information about the vehicles and organisations that made the switch. The document also features a testimonial from King's College Hospital about their positive experience of using a CleanCar Dongle. The aim is for this case study to be clear about the barriers to switching to electric vehicle, and how organisations can overcome these and learn more about the transition.

Figure 126: EV/Dongle Case Study (left) and LiveShare Case Study (right)

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2. [CRP's LiveShare Online Events](#) (Figure 126**Error! Reference source not found.**)

The CRP LiveShare case study details the success of the online, interactive webinar series which ran from June to December 2020. The aim of the LiveShares was to **promote behaviour change and to improve local air quality through knowledge sharing** on everyday actions that businesses and individuals could take. This case study links to all toolkits associated with the 17 LiveShares, all of which can be found on the [CRP Publications Page](#). The aim is for these toolkits to be of use to the wider public, as a resource for information on air quality, active travel and a variety of other topics.

3. [Monitoring Interventions in Central London: Soho's Al Fresco Dining Scheme](#) (Figure 127)

The Vivacity traffic monitoring case study showcases the range of data that the sensors produced, and how this monitoring can be utilised by BIDs and Local Authorities. The case study covers the **20 sensors installed in collaboration with 14 partners**, with a specific focus on Westminster City Council's sensor in Soho, which captured the pedestrianisation of Soho's streets throughout the summer of 2020. The document details the analysis of Soho's data and the outcomes of the monitoring.

4. [Cargo Bike Schemes – a sustainable response to the COVID crisis](#) (Figure 128)

The cargo bike response case study is about the **seven Clean Air Villages cargo bike schemes** and the range of organisations which used the delivery service for independent stores and market traders, as well as essential items from pharmacies and food banks, such as medicines and food parcels, during the pandemic. The step-by-step guide specifies why to use a cargo bike, the types of cargo bike schemes available to utilise, the main challenges for potential users, user types and purpose, the
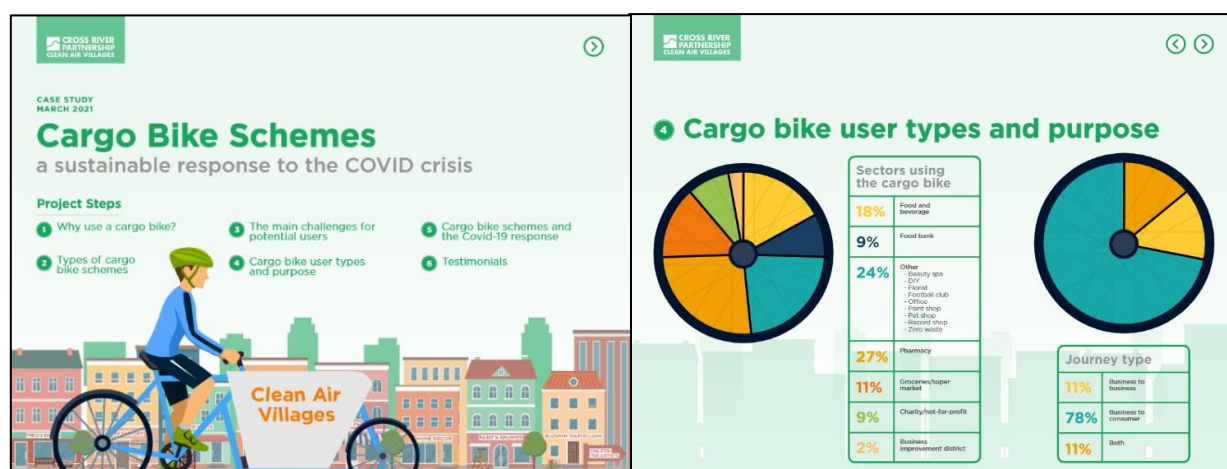
Figure 128:Cargo Bike Response Case Study.

response to the pandemic and finally testimonials. Schemes available to utilise, the main challenges for potential users, user types and purpose, the response to the pandemic and finally testimonials.

5. Developing New Clean Air Routes and associated flyers for each route (Figure 129Figure 129)

The Clean Air Routes case study explains why the routes have been produced and what the data for each route means. This case study details the **14 routes and the monitoring undertaken** by Tranquil City, identifying the purpose of the monitoring, and defining what a clean air route is. This document also states the process of how the routes were selected, explains the Healthy Streets Index, and signposts to the Clean Air Route Summaries and the Clean Air Route Finder for more information.

The associated, 14 Clean Air Route flyers promote the walking and cycling route for each village area and a route-specific flyer has been created for each partner with a Clean Air Route. CRP will continue to publicise these flyers for events such as Walking Month, using the hashtag #CleanAirRoutes to promote these on social media. Each flyer contains a map of the route, average emission savings, average noise reductions along the route and other information such as nearby tube stations, parks and attractions. CRP will be encouraging partners to share these routes to fit with current Government guidelines of walking more in London and avoiding public transport at busy times during the pandemic.

Aeroqual, who produce the air quality monitoring devices used on each Clean Air Route, are also producing a case study on CRP's walking routes with Tranquil City.

Figure 129: Developing New Clean Air Routes Case Study (left) and Discover Clean Air Routes Flyers (right)

6.2 Toolkits and how-to guides

CRP produced 17 [toolkits](#) to accompany the LiveShare series. These documents included the most up-to-date information on air quality, COVID-19 announcements and CRP's most recent relevant resources. These toolkits provided key information for local authorities, BIDs and landowners, as well as communities, hospitals and businesses within the Clean Air Villages. Each of the 17 toolkits summarised the key resources and links relevant to the speaker's presentations and beyond. This includes guidance documents, CRP materials, any legislation changes and funding opportunities, as well as inspiring case studies and local authority support. The toolkits also presented useful news articles from both national and regional media outlets and air quality research from academia. Each toolkit was customised for the topic of the LiveShare, and was distributed after each session to those registered, with the recording (all LiveShare sessions are saved on CRP's YouTube channel) and presentation slides.

Figure 130: CRP's toolkits & additional resources

CRP produced additional materials to support activities in all other areas of CAV3, as appropriate. From materials for the Sustainability Forums, to documents to support switching to EVs.

6.3 - Sharing best practices

The collaboration of 12 different local authorities and four business improvement districts on the Clean Air Villages 3 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 digitally on 9th July 2020 to discuss project background, activities, and targets, and strategy within the context of the pandemic.

Figure 132: CAV3 partners and CRP at the final steering group meeting.
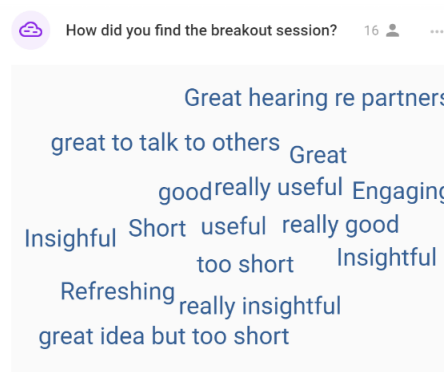
Figure 131:Wordcloud feedback from partners about the breakout sessions.

More information can be found about CRP's **far-reaching and wide-ranging series of 17 LiveShares** in [Section 4.1.](#)

Throughout the project, CRP published **81 articles** about the Clean Air Villages project in the CRP fortnightly newsletter, which goes out to over 900 partners and stakeholders.

CRP has 1,813 followers on Twitter and 490 followers on LinkedIn. 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 3, there have been over **330 Tweets** from CRP's account throughout the year with the hashtag **#CleanAirVillages**, receiving retweets and engagement from those involved in the project. The project, using #CleanAirVillages has also been communicated via LinkedIn, where followers are 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.

In addition to extensive business engagement, including the 1-2-1s and LiveShares, and the production of case studies and toolkits, and an extensive communications campaign, the sharing of best practice took place in a multitude of other ways:

- **Quarterly steering group meetings** - 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. As all these meetings took place digitally due to the pandemic, it enabled partners to attend with additional team members, CRP also recorded the meetings so that they could be watched at a later date. CRP trialled different formats and found that

Webinar: Respiratory Health Challenges for the Urban Supply Chain

Figure 133: CRP presenting at EMSOL's webinar

the use of breakout rooms in MS Teams enabled **smaller group work and brainstorming** to take place during the meetings which the partners responded well to. Feedback from these sessions was built into the project.
- CRP created **videos** about CAV3 that were tailored to each village area, as a way to trial an alternative way to engage. Here is a sample of one of the videos: from the London Borough of Richmond upon Thames 'village'.
- Via attendance and participation at **events**:
    - CRP held a webinar for internal staff at Westminster City Council on 28th July 2020, that focused on the Clean Air Villages 3 project and how individuals have a role to play in improving air quality
    - BID Green or Environmental meetings, as well AGMs
    - Town Centre Group meetings and / or business forums

- o Borough supply chain meetings
- o CRP spoke at an EMSOL event (Respiratory Health Challenges for the Urban Supply Chain)
- Via meetings with **industry specialists**, for example:
  - o RYTLE (logistics)
  - o Orkestro (last mile deliveries)
  - o Commonplace (community engagement platform)
  - o Six Star (hospitality sector)
  - o Sustainable Restaurant Association

6.4 - 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 and also in areas not applicable to CAV3. Examples of this legacy and network building are here:

- A restaurant group called Super 8 Kitchen, with a branch in Soho was contacted about CAV3 and CRP advised them on cargo bike operators that would be useful or relevant for their branches in other parts of London, such as Sardinia in London Bridge, that were not in the village areas
- A catering company called Klose & Soan contacted CRP about the Deptford cargo bike hours when there were limited hours remaining. They used six hours and subsequently began paying to continue using the zero emission service
- When CRP was recruiting volunteers for the City of London Air Quality Ambassador project, seven volunteers applied who were not eligible to be a volunteer. CRP provided air quality advice and resources to these individuals regardless, wanting to support enthusiastic members of the public who were keen to make a difference to air quality
- The **LinkedIn Air Quality Group** has been expanded beyond the City of London remit and now has **90 people in the group** and continues to grow
- Oxford City Council attended one of the LiveShare events and consequently contacted CRP for advice in relation to shared EVs:
  - o Additional local authorities, business groups and BIDs have also contacted CRP about shared EVs and also for advice about running cargo bikes schemes. The CAV2 case studies have been very helpful resources for these enquiries.

7 - Lessons Learned

CRP knows from previous CAV workshops, that attendance from businesses can be a challenge. Working remotely resulted in all the CAV3 workshops taking place digitally. A series of LiveShares took place. The attendance and interest in attendance in these was high, both at the live events, but also in YouTube views afterwards. Attendance at in-person workshops would be between one and 20 people. The highest number of attendees at a LiveShare was 119 people. Running the workshops digitally meant the format was different and less personable than an in-person workshop. In future, a mix of both kinds would be ideal. The connections made at in-person, local workshops are still valuable for relationship building, but the **online events are far wider-reaching**.

Even though CRP has observed a change in attitude and increase in awareness towards AQ since CAV1, AQ is still low on the agenda of many businesses. However, CRP has learned that when an **AQ conversation or session is embedded within a wider discussion about sustainability**, there is much more interest – even when the topics covered are the same as a session that is just about AQ. It is therefore important to think carefully about the **language used** when talking to businesses about AQ, as this impacts on how relevant they feel it is to them. With sustainability strategies becoming standard practice, even for a small business, it is important that AQ is embedded within these.

Different CAV partners and stakeholders have **different levels of capacity and resources** to contribute towards the project. CAV3 was delivered during a pandemic and consequently there were significant resource changes – whether from BID staff members being on furlough, or Local Authority Project Officers being redeployed – as a result of this. CRP therefore needs to have on-going conversations, throughout the project, with in-kind match-funding partners about such changes. CRP gathers quarterly in-kind match-funding reports but contributions vary by quarter.

Business engagement is always a challenge, pandemic, or not. All engagement took place remotely, this meant that the CRP Team had to rely more on partners for local information. It also meant that any businesses which did not have an online presence, or up-to-date contact information could not be contacted. CRP accepted that there were enough businesses that could be contacted remotely that this was not a problem. Delivering CAV3 remotely has demonstrated that fruitful engagement is still possible without going out in-person, however, in an ideal world, there would be a **mixture of both kinds of engagement**.

Lessons learned from the cargo bike schemes were that:

- For businesses that do not have an online ordering system, making use of a cargo bike is a huge challenge. CRP therefore plans to **build website ordering systems into future cargo bike schemes**, where necessary and possible.
- The pandemic provided a unique opportunity in which some organisations were forced to make deliveries to customers (where they previously had not done this) in order to stay open. Being able to offer a zero-emission vehicle at this time, prevented these organisations from automatically using a diesel van, or more polluting vehicle.

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- Organisations were **willing to pay for such services**, to keep them operating, once they were able to see and feel the benefits to them (either through increased sales, or positive feedback from customers);
- Commitment to use cargo bike schemes from organisations can take place, then upon launch, minds are changed. This shows that sometimes launching a cargo bike scheme without spending too long consulting local organisations is a better use of time. In this way engagement can focus on offering of a tangible scheme, rather than an idea.
- Different cargo bike providers offer a **different degree of service and speed** at setting up new businesses. It is therefore important to take this into consideration during procurement, as the level of service can impact on how successful a scheme is.

CRP learnt from previous CAV projects that case studies / toolkits needed to be completed earlier, in order for them to be more useful during delivery, but also so that resource on production of these was spread out more evenly across the delivery period. CRP therefore produced toolkits throughout the project, and produced video content as a way to promote the village activities by a different media from usual. The videos had a varied response; the average number of watched was 21. This suggests that **a more tailored response to the production** of such videos might be valid in future.

The entire CAV3 project was delivered during the Covid-19 pandemic. With the CRP staff team working remotely and partners also largely working from home, although this fluctuated throughout the changing government restrictions. The pandemic provided a huge challenge to the internal team, all partners and all organisations that CRP worked with during this time. CRP **adjusted and redirected resources** – where possible – **to activities that could support the isolated and vulnerable**. Engagement conversations were held cautiously, understanding that businesses were suffering immensely. There were some areas of the project which actually flourished during the pandemic (such as the LiveShares and some cargo bike schemes) and other areas where the project could not be delivered in the way in which it had been planned (such as with the New Covent Garden Market consolidation scheme), when this occurred CRP had to have back-up plans in place. It was more important that ever to **experiment, adapt, learn, react and evolve** to the changing needs of organisations during the changing restrictions.

8 - Next steps

CRP and partners are thrilled to have been awarded further Air Quality Grant funding to deliver **Clean Air Villages 4 in 2021/22**. This is particularly welcomed news due to partners' loss of funding from other sources in light of Covid and the ongoing restrictions in the United Kingdom and CRP looks forward to working with Defra on this renewed opportunity.

The **15-month programme** will see CRP working collaboratively with **26 project partners** to deliver ambitious **Freight Solutions for a Clean Air business recovery from Covid**. The CAV4 Freight Solutions implemented will incorporate Consolidation; Distribution; Mode; Technology; and Policy elements, trialled across different 'Villages'.

The 26 project partners for CAV4 are: London Boroughs of Barnet, Brent, Hammersmith & Fulham, Islington, Lambeth, Lewisham, Merton, Richmond upon Thames, Royal Borough of Kensington & Chelsea, Southwark, Wandsworth, and Westminster City Council, Kent County Council, as well as Business Improvement Districts (BIDs); angel.london, Better Bankside, Euston Town, The Fitzrovia Partnership, Hammersmith, Midtown, Northbank, South Bank, Team London Bridge, Victoria and Victoria Westminster, plus Landowner Cadogan Estates and Strategic Partner the Port of London Authority (PLA).

With 26 partners across the public and private sectors, CAV4 provides a unique opportunity to trial and deliver freight solutions with a wide range of stakeholders, across a wide area of London. The learnings will go far beyond the areas that CRP will be working in, leading to a catalyst of air quality improvements in London and beyond.

CAV4 will reduce NOx, CO2 and PM emissions by working with the 26 partners on:

- Expanding the use of and understanding of consolidation centres
- Expanding the use of a micro-distribution hub and a feasibility study into clean last-mile deliveries
- Exploring the feasibility of river and rail freight
- Continue the promotion and implementation of cargo bike and shared EV schemes
- Supporting and educating businesses on their options in light of the expansion of the ULEZ
- Developing AQ tools and monitoring which complement and promote behaviour change

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9 – Contact

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10 – Appendices

Appendix I - List of Tables

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Appendix II - List of Figures

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Appendix III - Emissions Calculations

The emission savings calculated throughout this report used CRP's in-house 'measureBEST' tool. This tool was initially commissioned by CRP to support businesses to understand and implement best practice to make their deliveries more efficient and consequentially, reduce its related emissions. The measureBEST tool was developed by CRP as part of the Mayor's Air Quality Funded Clean Air Better Business programme. During Clean Air Villages 2, this tool that was initially developed for estimating emissions for vans and lorries, was updated to include a wider group of vehicles and fuel types as well as calculations for fine particulate matter ($PM_{2.5}$).

To carry out the emissions savings calculations for CAV3 villages required detailed information from businesses and communities on vehicle type, journey, and frequency where possible. 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. Moreover, the CAV3 village solutions have varied significantly from each other as there have been more village focus (business, communities, and hospitals) thus adapting the way in which emissions savings have been calculated.

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

- Vehicle type (as defined by the Emissions Factor Toolkit – further information provided below)
- Delivery 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.
  - In some cases, where relevant, a standardised 'per mile' calculation was used.
- Delivery frequency (is an annual estimate is required)

Calculation method:

The vehicle type, delivery 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.

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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 type-wear but does not consider non-tailpipe emissions of carbon dioxide (CO_2) 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 80 below).

	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

Table 80: Average traffic speeds by area and time period (in km/h).

Vehicle types:

Using CRP's measureBEST tool, the following emissions generated 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 vehicle (>3.5 tonnes; incorporating the mix of rigid and articulated across the London fleet).	2.53	0.07	0.13	0.92
London Average LGV	Light goods vehicles (<3.5 tonnes). Average emissions considered across London fleet mix.	0.88	0.03	0.05	0.25
London Average Car	Average car (considered across London vehicles mix).	0.00	0.06	0.11	0.00
EV HGV	Fully electric HGV. PM emissions only, from tyre, brake, and road abrasion.	0.00	0.02	0.04	0.00
Full hybrid LGV	Petrol-only full hybrid LGV.	0.02	0.02	0.04	0.21
Plug-in hybrid LGV	Petrol-only plug-in hybrid.	0.064	0.021	0.040	0.09
Battery EV LGV	Fully electric LGV. PM emissions only, from tyre brake and road abrasion.	0.37	0.02	0.03	0.20

Battery EV Car	Fully electric car. PM emissions only, from tyre brake and road abrasion.	0.00	0.02	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

Table 81: Emission per vehicle types.

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.

Appendix IV- LiveShares

- LiveShare 1, **'Getting from A to B: Your Latest Travel Options Explain'**, focused on cycling, walking, recent infrastructure improvements in London and the many benefits of active travel. The webinar was an opportunity for attendees to understand the current and future active travel option across London, including updates to the London Streetspace Programme, as well as how to plan clean air journeys.

- LiveShare 2, **'High Streets As Havens: Re-opening Business Safely and Sustainably'**, offered insight into some of the key challenges businesses have had to overcome in order to become compliant with new restrictions, providing inspiration in terms of working together as part of an overall green recovery from Covid.

- LiveShare 3, **'Parks and Open Spaces: Keeping Our Air Clean in a Post-Covid Era'**, gave the audience an overview of London's green spaces and their maintenance, including their vital importance over lockdown.

- LiveShare 4, **'Ditch Diesel: Your Electric Vehicle Options Explained'**, was a discussion around the 2021 ULEZ expansion and proposed 2035 petrol and diesel car sales ban. This LiveShare explored the different options available to make fleet compliant, including why making the switch to electric vehicle makes sense for businesses. This event promoted the Brixton EV, a previous Clean Air Villages initiative.

- LiveShare 5, **'Pedestrian Priority Streets: Benefits for Schools, Businesses and your Health'**, gave insight into School Streets and how these can help to improve local air quality, especially for the health of children. This was also relevant for businesses, looking into the impacts of street closures on the central London hospitality sector.

- LiveShare 6, **'Keeping Our Air Clean: It's Everyone's Responsibility'** showcased the Idling Action campaign, and the actions you can take to help improve air quality locally. CleanCar discussed their telematic dongles and how these can inform users of suitable alternatives to combustion engine vehicles.

- LiveShare 7, **'Re-Energise Your Business: Diversifying in Response to COVID-19'** explored rethinking customer services, consumer habits, digital transformation and the role of the high street, especially in the context of COVID-19 and the climate crisis. This gave businesses the opportunity to ask questions about how operations should be acclimatised to the current situation.

- LiveShare 8, **'Better Prepared: Learning Lessons from the COVID-19 Crisis'** offered discussion around proactive city and public realm management, and how this is vital in supporting health for all. Professor Tony Travers focused on the economic and financial aspect of London's recovery. CRP showcased how air quality in cities has never been more important, and the benefits improved air quality has to economic recovery.

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- LiveShare 9, **'Operating Sustainably: A North-South Perspective on Transport and COVID-19'** was a Clean Air Day special. This session explored how transport has been affected by the pandemic and the future strategies available to ensure a clean air recovery. CRP also showcase the advantages and challenges to last mile deliveries and consolidation centres.

- LiveShare 10, **'City of Culture: Re-starting the night-time economy'** explored London's cultural and creative industry recovery, highlighting the history of London's iconic venues and nightlife, as well as the importance of a green recovery that tackles air quality and everyone's exposure to harmful pollutants.

- LiveShare 11 was in partnership with The Fitzrovia Partnership and addressed '**reducing costs and improving sustainability'**. Both organisations discussed how businesses can make simple switches to save money whilst improving sustainability. Attendees learnt about the quick tricks for businesses to save money and help improve local air quality.

- LiveShare 12, **'A Greener and More Accessible London: Achieving Environmental Inclusivity'** offered discussion around London's green spaces and their accessibility. This factored in design and decisions being made for new spaces, and how we can learn from the past to ensure that London's spaces are for everyone.

- LiveShare 13, **'Support for Businesses and Improving Air Quality in Grays Inn Road, Camden'** was a session to support local businesses in the Clean Air Villages of Grays Inn Road. Local businesses learnt about CRP's tools how consolidation can help businesses and deliveries.

- LiveShare 14, **'Good Parks for London 2020 Launch'** showcased the work that land managers are doing in and around London, to improve air quality and manage London's green spaces. The London Borough of Lambeth's parks service scored exceptionally well against the Good Parks criteria this year.

- LiveShare 15, **'The Right to Clean Air: Protecting and Empowering Communities'** explored Tranquil City research in collaboration with CRP, where air quality monitoring has revealed that clean air walking routes can have up to 23% lower levels of nitrogen dioxide when compared to streets typically suggested by popular route finders.

- LiveShare 16, **'The Future Functionality and Potential of London's Centres'** was an interactive session around London's centres and the challenges the pandemic has presented in terms of transport, footfall, air quality and functionality.

- LiveShare 17 was a roundtable event for businesses engaged in the project, exploring how the Clean Air Villages programme can help to '**improve local air quality whilst saving money and time**'.

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Appendix V – Islington - Cargo bike provider criteria and colour rating

A. Green company credentials	100 % zero-emission fleet
	Zero-emission cargo bikes but not full zero-emission fleet
	No zero-emission delivery options
B. Positive employment practices	Full time employment; London Living Wage (LLW); Structured training
	Zero-hour contracts; LLW; Riders provided with vehicle
	Zero-hour contracts; no LLW/Riders to provide own vehicle
C. Practicality	Minimum four of: • Large cargo bike capacity (>100 kg) • Online booking platform • Same-day delivery • Hub close to Islington • Capability to deliver cold food, hot food, flowers, etc.
	Minimum three of the above
	Two or less of the above

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Appendix VI – Islington - Summary of cargo bike providers and rating

Provider	A	B	C
CitySprint	• Not fully zero-emission	• Zero-hours contract • Riders to provide own vehicles	• Online booking and tracking but small cargo bike capacity (50 kg)
e-cargobikes	• 100 % zero-emission fleet	• FT employment • LLW • Structured training	
Ecofleet	• 100 % zero-emission fleet	• FT employment • LLW • Structured training	• Online booking system • Have provisions for same-day delivery • Hub not close to Islington
Mango Logistics	• Not fully zero-emission	• Mix of zero-hours contracts and FT riders • LLW • Riders provided with vehicles	• No hubs close to Islington • No insulated boxes: limited capabilities
Pedal Me	• 100 % zero-emission fleet	• PT and FT employment • National Living Wage • Riders can own company shares	
Pedivan	• 100 % zero-emission fleet	• LLW • Self-employed • Riders provided with vehicles	
WeGo Couriers	• Not fully zero-emission	• FT employment • LLW • Structured training	• No hubs close to Islington, no same day delivery
Xero E (Incl. Pedals)	• 100 % zero-emission fleet	• Zero-hours contract • Riders to provide own vehicles	
Zedify	• 100 % zero-emission fleet	• LLW • Mixture of FT employment and zero-hour contacts • Riders provided with vehicles	• Online booking system available • Have provisions for same-day delivery • Hubs located close to borough

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Appendix VII - Deptford

Additional qualitative findings from the survey in Deptford:

- Furloughing and enforced temporary closures throughout the year were very prevalent, including pressure on contracts and business closures in Deptford.
- Eat Out to Help Out and more remote workers has helped some businesses, although it has still been an incredibly challenging year with enforced closures.
- There is a clear community spirit and desire to support the local area, such as supporting NHS staff in the first lockdown.
- Deptford's business respondents have shown to be resilient and technologically savvy.

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Appendix VIII - RBKC

Additional qualitative findings from the survey around Cromwell Road:

- Furloughing and enforced temporary closures throughout the year were very prevalent.
- Anecdotal evidence suggests that the three major museums being open helps with footfall in the area. Footfall was considerably impacted as the museums only reopened in August 2020.
- Some local businesses have reported lower footfall by around 50% when we spoke to them in July – September. This situation is likely not to have improved over the last few months due to further changes in restrictions.
- There are anecdotal reports of business closures in the area, and concerns from some businesses around developments and being forced out.

Timeline of the Deliveries and Servicing Audit Solution

CRP has noted a timeline of the project below:

- July 2020: First contact attempted to museums
- August 2020: First meeting in place. Museums reopen.
- September 2020 – November 2020: Meetings undertaken with all museums to explain the project, explore initial ideas of how the project could work with them, and project resources shared.
- December 2020: Final meetings on Deliveries & Servicing Audit taken place with each museum. Data collection and monitoring date agreed. **Data collection undertaken Monday 7th December 2020 – Sunday 20th December 2020.**
- January – February 2021: Data cleansing, analysis, and report-writing.
- February 2021: First meeting and presentation to share findings and give recommendations about how to reduce delivery movements in the area.
- March 2021: Second meeting and presentation to guide implementation and next steps, after organisations had a chance to read the initial report. Support with commencing implementation of agreed actions and commitments, to leave a legacy in place.

Key Findings from the Deliveries and Servicing Audit

The key findings were:

- There were 658 unique trips recorded over the 2-week monitoring period, with 761 deliveries, services or collections across the two weeks.
- Wednesday 9th December saw the highest number of unique trips with 79 vehicles delivering, services or picking-up from the museums.
- Monday 14th December saw the highest number of deliveries, services and collections throughout the period, with 92 deliveries and 77 unique vehicle trips.

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- There were 230 listed suppliers from the data collected, with 238 different couriers, delivery companies or service providers. This could be as many as 362 suppliers, if each time "unknown" is listed as a supplier is different.
- Of the 642 weekday deliveries, 28% were made in the morning peak between 7am – 10am. The inter-peak period, from 10am – 4pm, is by far the busiest time for the three museums to receive deliveries, with 3 of every 5 deliveries occurring during this time period.
- Of the 658 unique trips, 72% of these were made by van and 18% made by lorry.
- At least 1 in 4 unique vehicle trips had an unknown reason or purpose, with only 5% recorded as personal.
- There was a drop of 18% in deliveries and servicing in the second week of the monitoring project, compared with week 1, due to the change in government restrictions from COVID-19.

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Appendix IX - EV trials

Example of EV report CRP created from telematic dongles

Cross River Partnership Kings Facilities Management Dongle Report

Contents

Overall suitable percentage of fleet

All vehicles (100%) are suited to at least one Battery Electric Van

Last 6 Months Multiple selections			
19/07/2020 - 18/01/2021	52.1	37.5	146
eLCV Suitable: % of Fleet	Avg Daily Fleet Miles	Avg Days With Data per Driver	Avg Trips per User
Suitable	100%	95	13
	% Days Below eLCV Avg Range	Max Daily Miles	Avg Miles Per Trip

eLCV Suitable: % of Fleet by Vehicle

eLCV Make	eLCV Model	Vehicle Type
All	All	All

Name	Range (Miles)	Charge Time*	Avg OTR	% Suitable
ARRIVAL T4 60kWh Van	117.80	8.46	£35,000	100.00%
Citroen Berlingo 550Kg L2 0.0Elec 66 EU6	100.70	2.57	£29,531	100.00%
Citroen Berlingo 635Kg L1 0.0Elec 66 EU6	100.70	2.57	£29,321	100.00%
Citroen Dispatch e-Dispatch M 1000Kg 0.0Electric 50k...	200.45	5.71	£43,982	100.00%
Citroen Dispatch e-Dispatch M 1000Kg 0.0Electric 75k...	200.45	8.57	£43,982	100.00%
Citroen Dispatch e-Dispatch M 1200Kg 0.0Electric 75k...	194.75	8.57	£49,748	100.00%
Citroen Dispatch e-Dispatch XL 1000Kg 0.0Electric 75k...	200.45	8.57	£48,890	100.00%
Citroen Dispatch e-Dispatch XS 1000Kg 0.0Electric 50k...	140.60	5.71	£40,970	100.00%
Citroen SpaceTourer e-SpaceTourer M 5Dr 0.0 Electric 5...	135.85	5.71	£49,067	100.00%
Fiat Ducato e-Ducato 35 LWB 0.0Electric 47kWh 122	212.80	5.37	£81,549	100.00%

*Charge times are approximate, based on usage of a 7kW charge point to 80% capacity.

3

Existing Fleet Overview

Username	Total Miles	Avg Weekly Miles	Avg Miles Per Day	Max Daily Miles	Days with Data	EV Suitable	Current Vehicle	Current Vehicle Usage
KCH1P Gavin	779	130	41	74	19	YES	Citroen Berlingo 625Kg L1 - LJ68 EAG	This vehicle is used to deliver medical supplies to Home Dialysis Patients across the SE London and NW Kent Area.
KCH2P Gavin	Did not record						Citroen Berlingo - LA19 HCY	
Lambeth Elizabeth 2	884	147	40	75	22	YES	Ford Transit Luton – HW70 RTZ	This vehicle is used for general daily delivery service Bromley/ Denmark Hill area.

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KCH1P Gavin – (Citroen Berlingo, LJ68 EAG)

Driver Details

Driver and Vehicle Details

KCH1P Gavin	All BEVs
Driver Name	Current Vehicle Selection
100.0%	154.10
% Days Below Range	Vehicle Range (in Miles)
Yes	N/A
Meets Vehicle Charge Needs	Vehicle Charge Time

Vehicle Name	Suitability	Range in Miles	Battery	Charge Time
ARRIVAL T4 60kWh Van	●		117.80 74kWh	8.46
Citroen Berlingo 550Kg L2 0.0Elec 66 EU6	●		100.70 22.5kWh	2.57
Citroen Berlingo 635Kg L1 0.0Elec 66 EU6	●		100.70 22.5kWh	2.57
Citroen Dispatch e-Dispatch M 1000Kg 0.0Electric 50kWh 136	●		200.45 50kWh	5.71
Citroen Dispatch e-Dispatch M 1000Kg 0.0Electric 75kWh 136	●		200.45 75kWh	8.57
Citroen Dispatch e-Dispatch M 1200Kg 0.0Electric 75kWh 136	●		194.75 75kWh	8.57
Citroen Dispatch e-Dispatch XL 1000Kg 0.0Electric 75kWh 136	●		200.45 75kWh	8.57
Citroen Dispatch e-Dispatch XS 1000Kg 0.0Electric 50kWh 136	●		140.60 50kWh	5.71
Citroen SpaceTourer e-SpaceTourer M 5Dr 0.0 Electric 50kWh	●		135.85 50kWh	5.71

Trip Details

66	9.41
Total Trips	Avg Miles Per Trip
0.31	56.63
Shortest Trip (Miles)	Longest Trip (Miles)

Miles Driven Per Day

Distance Details

66	778.61	56.63	40.98	74.12	100.00%
Total Trips	Total Distance (Miles)	Longest Trip (Miles)	Avg Miles Per Day	Max Daily Miles	Days Below Avg EV Range

Miles Driven on Days with Journeys

Speed Details

21.41%	70.85%	4.63%	2.84%	15.63
% at 0 MPH	% at 1 -30 MPH	% at 31 - 50 MPH	% at 50+ MPH	Avg Trip Speed (MPH)

Average Speed by Day with Journey
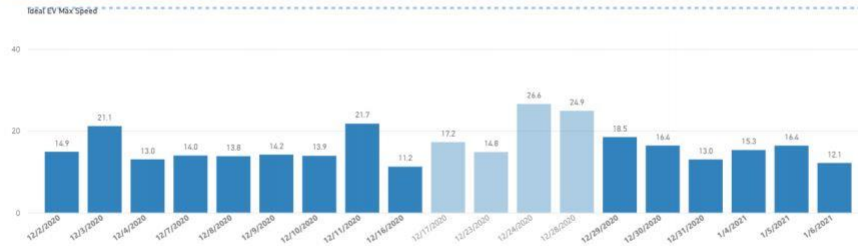
Time-in-Car

67:58:46	0:51:37	3:34:40	4:17:05	5:38:50
Total Time in Car	Avg Trip Time	Avg/Day with Journey	Max Trip Time	Max Daily Time

Driving Time (in Hours) per Day with Journey

Clean Air Villages 3 Summary Report
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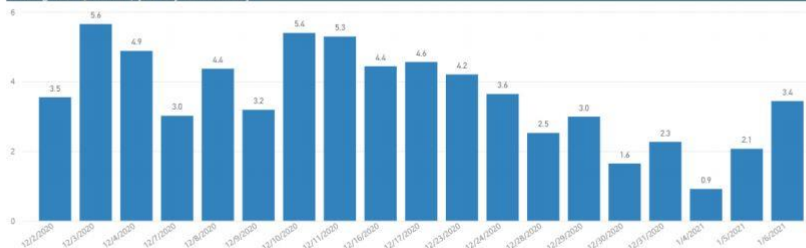
Parking Locations
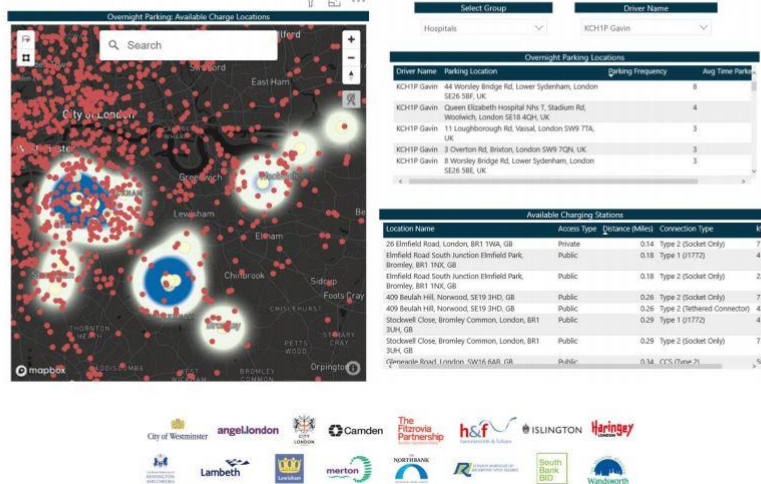
9

Overall EV Suitability

Overall Results: Suitable

Distance Results:	Speed Results:	Park Time Results:
100.00%	98.11%	Yes
Days Below Avg Range	% Under 50+ MPH	Meets Charge Time

Distance Analysis:

Your distance driven per day is within the average EV range 100% of the time, so you are a good candidate for EV investment by this measure.

Speed Analysis:

The majority of your trips are done at speeds under 50 MPH, which is consistent with the recommendation to perform mostly urban trips in an EV as energy can be recuperated when braking.

Park Time Analysis:

For each day with a journey, your vehicle is parked overnight or for a long duration during the day, which should provide the time necessary to charge your vehicle on-street or at home.

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Comparison of Citroen Berlingo vs Citroen Berlingo EV
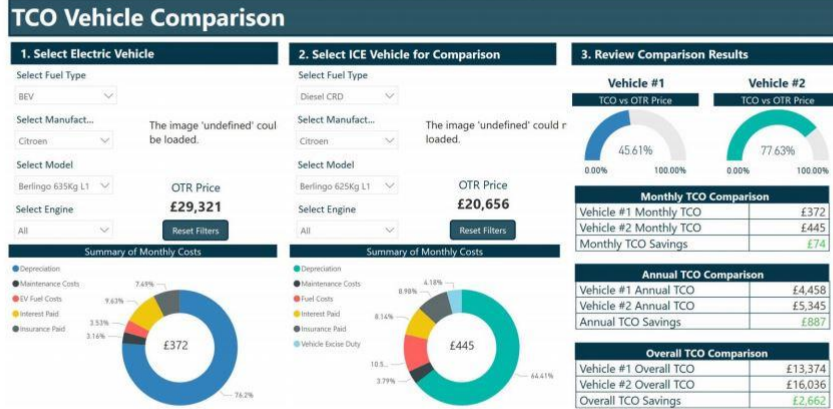
11

Lambeth 2 Elizabeth – (Ford Transit Luton, HW70 RTZ)

*this vehicle was switched to the next van look at the dark blue data set below.

Driver Details

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Distance Details
*this vehicle was switched to the next van look at the dark blue data set below.

(Blank)	884.32	(Blank)	40.20	74.66	100.00%
Total Trips	Total Distance (Miles)	Longest Trip (Miles)	Avg Miles Per Day	Max Daily Miles	Days Below Avg EV Range

Miles Driven on Days with Journeys
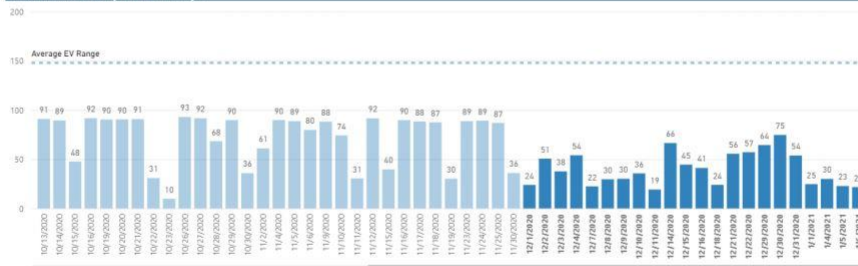
13

Speed Details
*this vehicle was switched to the next van look at the dark blue data set below.

22.28%	58.55%	12.51%	5.56%	18.50
% at 0 MPH	% at 1 -30 MPH	% at 31 - 50 MPH	% at 50+ MPH	Avg Trip Speed (MPH)

Average Speed by Day with Journey

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Clean Air Villages 3 Summary Report
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Time-in-Car
*this vehicle was switched to the next van look at the dark blue data set below.

64:36:46	0:51:00	2:56:13	3:37:49	5:21:30
Total Time in Car	Avg Trip Time	Avg/Day with Journey	Max Trip Time	Max Daily Time

Driving Time (in Hours) per Day with Journey

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Parking Locations – showcases main parking spots through heat spots.

Overnight Parking: Available Charge Locations

Select Group	Driver Name
Hospitals	Lambeth Elizabeth 2

Overnight Parking Locations

Name	Parking Location	Parking Frequency	Avg Time Parked
rth Elizabeth 2	36 Vancouver Cl, Orpington BR6 9XR, UK	112	
rth Elizabeth 2	Normanby Building, Brixton, London SE5 9RR, UK	84	
rth Elizabeth 2	5 Cromwell Rd, Vassal, London SW9 7BG, UK	36	
rth Elizabeth 2	Princess Royal University Hosp, Orpington BR6, UK	13	
rth Elizabeth 2	Starts Hill Road, Orpington BR6 8ND, UK	12	
rth Elizabeth 2	Farnborough Hospital, Farnborough Common, Orpington BR6 8NY, UK	10	
rth Elizabeth 2	64 Caldecot Rd, Camberwell, London SE5 9RP, UK	8	

Available Charging Stations

Location Name	Access Type	Distance (Miles)	Connection Type	
Shopping Centre, Greenhithe, DA9 9ST, GB	Public	0.58	Type 2 (Socket Only)	
37 Croydon Road (A232 Eastbound), West Wickham, London, BR4 9HZ, GB	Public	0.59	CCS (Type 2)	5(
37 Croydon Road (A232 Eastbound), West Wickham, London, BR4 9HZ, GB	Public	0.59	CHAdeMO	5(
37 Croydon Road (A232 Eastbound), West Wickham, London, BR4 9HZ, GB	Public	0.59	Type 2 (Tethered Connector)	4(
Wellesley Road, Croydon, CR0 1UP, GB	Public	0.61	BS1363 3 Pin 13 Amp	3
Guildhall Middle Level Car Park, Kent, DA9 9ST, GB	Public	0.61	Type 2 (Socket Only)	7
1 Hermitage Lane, Norbury, SW16 3LH, GB	Public	0.62	Type 2 (Socket Only)	2(
1 Hermitage Lane, Norbury, SW16 3LH, GB	Public	0.62	Type 2 (Tethered Connector)	4(-

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Overall EV Suitability

Overall Results: Suitable

Distance Results:

100.00%
Days Below Avg Range

Speed Results:

95.16%
% Under 50+ MPH

Park Time Results:

Yes
Meets Charge Time

Distance Analysis:

Your distance driven per day is within the average EV range 100% of the time, so you are a good candidate for EV investment by this measure.

Speed Analysis:

The majority of your trips are done at speeds under 50 MPH, which is consistent with the recommendation to perform mostly urban trips in an EV as energy can be recuperated when braking.

Park Time Analysis:

For each day with a journey, your vehicle is parked overnight or for a long duration during the day, which should provide the time necessary to charge your vehicle on-street or at home.

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KENSINGTON AND CHELSEA · Lambeth · Lewisham · merton · NORTHBANK · R · South Bank BID · Wandsworth

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Comparison of Ford Transit Luton vs EV equivalent IVECO

cleancar << Back to TCO Calculator   Lambeth Elizabeth 2   To Fleet TCO Comparison >>

TCO Vehicle Comparison

1. Select Electric Vehicle	2. Select ICE Vehicle for Comparison	3. Review Comparison Results

Select Fuel Type: BEV

Remote images not supported

This is the certified version of the Image by CloudScope visual.

Select Manufact... IVECO
Select Model: Daily Electric 80 k...
Select Engine: All
Reset Filters

OTR Price
£60,000

Select Fuel Type: Diesel CRD

The image 'undefined' could n loaded.

Select Manufact... Ford
Select Model: Transit 350 L2
Select Engine: All
Reset Filters

OTR Price
£37,593

	Vehicle #1	Vehicle #2
	TCO vs OTR Price	TCO vs OTR Price
	55.90%	85.67%

Monthly TCO Comparison	
Vehicle #1 Monthly TCO	£932
Vehicle #2 Monthly TCO	£895
Monthly TCO Savings	-£37

Annual TCO Comparison	
Vehicle #1 Annual TCO	£11,180
Vehicle #2 Annual TCO	£10,735
Annual TCO Savings	-£445

Overall TCO Comparison	
Vehicle #1 Overall TCO	£33,541
Vehicle #2 Overall TCO	£32,206
Overall TCO Savings	-£1,336

Summary of Monthly Costs
- Depreciation
- Maintenance Costs
- EV Fuel Costs
- Interest Paid
- Insurance Paid

£932

Summary of Monthly Costs
- Depreciation
- Maintenance Costs
- Fuel Costs
- Interest Paid
- Insurance Paid
- Vehicle Excise Duty

£895

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CLEAN AIR VILLAGES

Summary & Next steps

- Based on the data that has been analysed on current usage of the vehicles, the mileage currently undertakes below the average miles for an EV.

- The maximum daily of mileage of 75 miles means that it can easily be on an EV and would not need to be recharged daily.

- The speed and time in car show that the vehicle could easily recharge on route with the current charging infrastructure being close to common stopping points.

- We would suggest trialling an EV on the needs you will need for payload, for the Citroën Berlingo we have shown the direct EV equivalent however there will be other on the market that have the same payload and dimensions. For the Ford Transit Luton this vehicle we have showed an example of comparison with an IVECO daily electric that would give you roughly the same payload and dimensions to the current vehicle and it matches the EV range to the maximum of 90-130km range.

- CAV team can introduce you to EV manufacturers/ leasing companies/ charge point providers to have a more detailed conversation on the costing.

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Appendix

Resources - Funding, Grants & Resources

- Head to the UK gov site to see if your business qualifies for a discounted EV charge points at your workplace: https://www.gov.uk/apply-electric-vehicle-charge-point-discount
- Grants of up to £3,000 are available for certain low-emission vehicles: https://www.gov.uk/plug-in-car-van-grants/overview
- Check out the UK Gov guide on expensing your business vehicle: https://www.gov.uk/expenses-and-benefits-company-vans
- Calculate the tax benefits of different vehicles: https://vanchooser.net/companyvan/tax/select/
- Use the UK government website to find car fuel data, CO2 and vehicle tax tools: https://www.gov.uk/co2-and-vehicle-tax-tools
- The Vehicle Certification Agency has resources on fuel consumption, emissions monitoring and more: https://www.vehicle-certification-agency.gov.uk/fuel-consumption-co2/
- Resources and updates from the Office for Zero Emission Vehicles can be found here: https://www.gov.uk/government/organisations/office-for-zero-emission-vehicles
- The Fleet Operation Recognition Scheme is a voluntary accreditation scheme for fleet operators. Their website and services provide lots of resource and assistance: http://www.fors-online.org.uk/
- Information on the London's Low Emission Zone (LEZ) can be found at the TfL website: https://tfl.gov.uk/modes/driving/low-emission-zone
- Information on the Ultra-Low Emission Zone (ULEZ) can be found at the TfL website: https://tfl.gov.uk/modes/driving/ultra-low-emission-zone

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Table 1: Overall Suitability by Vehicle

Vehicle Name	Range (Miles)	Charge Time*	Average OTR	% Suitable
Citroen Berlingo 635Kg L1 0.0Elec 66 EU6	100.7	2.571429	£29,321	100.00%
Citroen Berlingo 550Kg L2 0.0Elec 66 EU6	100.7	2.571429	£29,531	100.00%
Renault Kangoo Z.E. 0.0Electric 33kWh 60	161.5	3.771429	£29,861	100.00%
Renault Kangoo ML20 Z.E. 0.0Electric 33kWh 60	135.85	3.771429	£31,351	100.00%
Nissan NV200 e-NV200 Combi M1 0.0Electric 109	177.65	4.571429	£31,574	100.00%
Nissan NV200 e-NV200 LCV 0.0Electric 40kWh 109	100.7	4.571429	£32,310	100.00%
Renault Zoe Van 0.0E R110 52kWh 107	232.75	5.942857	£32,575	100.00%
Renault Kangoo Maxi Z.E. 0.0Electric 33kWh 60	161.5	3.771429	£32,781	100.00%
Renault Kangoo Maxi LL21 Z.E. 0.0Electric 33kWh 60	135.85	3.771429	£33,151	100.00%
Nissan NV200 e-NV200 Evalia MPV M1 0.0Electric 109	177.65	4.571429	£33,642	100.00%
Peugeot Expert e-Expert Compact 1000Kg 0.0Electric 50kWh 136	135.85	5.714286	£40,945	100.00%
Citroen Dispatch e-Dispatch XS 1000Kg 0.0Electric 50kWh 136	135.85	5.714286	£40,970	100.00%
Citroen Dispatch e-Dispatch M 1000Kg 0.0Electric 50kWh 136	135.85	5.714286	£41,099	100.00%
Peugeot Expert e-Expert Standard 1000Kg 0.0Electric 50kWh 136	194.75	5.714286	£44,479	100.00%
Peugeot Expert e-Expert Standard 1000Kg 0.0Electric 75kWh 136	194.75	8.571429	£44,479	100.00%
MERCEDES-BENZ eSprinter 55 kWh Van	88.35	6.285714	£45,000	75.00%
Vauxhall Vivaro Vivaro-e L1 3100 0.0Electric 50kWh 136	195.7	5.714286	£47,143	100.00%
Vauxhall Vivaro Vivaro-e L1 3100 0.0Electric 75kWh 136	195.7	8.571429	£47,143	100.00%
Peugeot Expert e-Expert Standard 1200Kg 0.0Electric 75kWh 136	194.75	8.571429	£48,603	100.00%

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Vehicle Name	Range (Miles)	Charge Time*	Average OTR	% Suitable
Peugeot Expert e-Expert Long 1000Kg 0.0Electric 75kWh 136	194.75	8.571429	£48,865	100.00%
Citroen Dispatch e-Dispatch XL 1000Kg 0.0Electric 75kWh 136	194.75	8.571429	£48,890	100.00%
Citroen SpaceTourer e-SpaceTourer M 5Dr 0.0 Electric 50kWh 136	135.85	5.714286	£49,017	100.00%
Mercedes-Benz Vito eVito L2 FWD 0.0Electric 41kWh 114 EU5	88.35	4.685714	£49,672	75.00%
Citroen Dispatch e-Dispatch M 1200Kg 0.0Electric 75kWh 136	194.75	8.571429	£49,748	100.00%
Mercedes-Benz Vito eVito L3 FWD 0.0Electric 41kWh 114 EU5	88.35	4.685714	£50,296	75.00%
Vauxhall Vivaro Vivaro-e L2 3100 0.0Electric 50kWh 136	195.7	5.714286	£50,333	100.00%
Vauxhall Vivaro Vivaro-e L2 3100 0.0Electric 75kWh 136	195.7	8.571429	£50,333	100.00%
Volkswagen Transporter ABT eTransporter 0.0Electric 37.3kWh 113	77.9	4.262857	£52,441	75.00%
Volkswagen Transporter ABT eTransporter Kombi 0.0Electric 37.3kWh 113	76	4.262857	£57,805	75.00%
IVECO Daily Electric 80 kWh Van	117.8	9.142857	£60,000	100.00%
VW eCrafter 36 kWh Van	94.05	4.114286	£60,000	75.00%
Mercedes-Benz Sprinter eSprinter L2 FWD 0.0Electric 55kWh 116	78.85	6.285714	£63,730	75.00%
Renault Master SWB 31 FWD 0.0Electric 33kWh 77	117.8	3.771429	£66,631	100.00%
Renault Master MWB 31 FWD 0.0Electric 33kWh 77	117.8	3.771429	£66,811	100.00%
Renault Master LWB 31 FWD 0.0Electric 33kWh 77	117.8	3.771429	£67,771	100.00%
LDV V80 EV80 LWB 0.0Electric 56kWh 125	114	6.4	£73,975	100.00%
Fiat Ducato e-Ducato 35 MLWB 0.0Electric 47kWh 122	212.8	5.371429	£79,465	100.00%
Fiat Ducato e-Ducato 35 MLWB 0.0Electric 79kWh 122	212.8	9.028571	£79,465	100.00%
Fiat Ducato e-Ducato 35 MWB 0.0Electric 47kWh 122	212.8	5.371429	£79,731	100.00%
Fiat Ducato e-Ducato 35 MWB 0.0Electric 79kWh 122	212.8	9.028571	£79,731	100.00%
Fiat Ducato e-Ducato 35 LWB 0.0Electric 47kWh 122	212.8	5.371429	£81,549	100.00%

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Vehicle Name	Range (Miles)	Charge Time*	Average OTR	% Suitable
Fiat Ducato e-Ducato 35 LWB 0.0Electric 79kWh 122	212.8	9.028571	£81,549	100.00%
Fiat Ducato e-Ducato 35 XLB LWB 0.0Electric 47kWh 122	212.8	5.371429	£82,689	100.00%
Fiat Ducato e-Ducato 35 XLB LWB 0.0Electric 79kWh 122	212.8	9.028571	£82,689	100.00%
Fiat Ducato e-Ducato35MWB Passenger M1 0.0Electric 47kWh 122	129.2	5.371429	£83,723	100.00%
Fiat Ducato e-Ducato35MWB Passenger M1 0.0Electric 79kWh 122	129.2	9.028571	£83,723	100.00%

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Appendix X - Directory

Appendix A - CAV Directory pages:

Column one shows village pages added during year one of the CAV project. Column two shows village pages added during year two of the project. Column three shows villages pages added during year three of the project.

CAV1 Village Pages	CAV2 Villages Pages	CAV3 Villages Pages
Archway	Brixton	angel.london BID
Old Street	Cadogan	Cromwell Road
Deptford	Covent Garden/Strand	Grays Inn Road
Fulham	Earl's Court	King's College Hospital
Lewisham Town Centre	Hatton Garden	Monument to Houndsditch
	Ladbroke Grove	Nag's Head & Holloway Road
	Streatham	Richmond Town Centre
	Shepherds Bush	Seven Sisters Junction
	Tooting	Soho
		South Bank BID
		The Fitzrovia Partnership
		The Northbank BID
		Wimbledon

Table 82: CAV Directory pages.

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Appendix B - 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 project. Column three shows businesses added during year three of the project.

CAV1	CAV2	CAV3
3F EV Ltd	AbsolutePrint	After Noah
AV2Hire	Balfe's Bikes	Batch & Co Coffee
Bread By Bike	Father Nature	Bike BUBL
Captain Cyan	Fed by Abel & Cole	Bikeworks
CarryMe Bikes	First Mile	Brookmill Roastery
Champagne Lasseaux	Good Sixty	Bulk Market
Cleanology	Green Tomato Cars	CakeDrop
Colyer London	GreenZone Cleaning & Support	Carnival Coffee Roasters
Cooper's Bakehouse	Services	Charles of Belgravia
Drings Butcher	Honest Foods London	Charrli
DriveElectric	Hospitality Source	Circla
E-Car Club	iKhofi	Courtesan Ltd
e-cargobikes.com	Parcels Not Pollution	Crumbs and Doilies
Elysia Catering	Pedals Delivery	Edible Blooms
Farmdrop	Pesky Fish Ltd	Edie Rose
Fresh Flower Scent	Petalon	Eel Pie Records
Gnewt	Planet Minimal	EV Car Shop
LeasePlan	Ride Clean Ltd	Everyday Bikes
London Calling Arts	The Cycling Sparks	Hicks of Chelsea
Made in Brockley	The Ecofleet	iKhofi
Mango Logistics Group	WEGO Couriers	InStreatham BID
Moose Mail		Kappacasein
Pedivan		London Copy Centre Ltd
The EcoSmart Ltd		London Smoke and Cure
Today Bread		Love Triangle
Zedify		Mai Thai Restaurant
		Pedal Me
		POP Florist
		Portobello Juice
		Raybel Charters
		Sheen Polish Delicatessen
		The Jam Pedlar
		Toast Ale
		TOPUP TRUCK
		Tout Nu Cosmetics
		Tryd
		Urb-it
		XeroE Limited
		Zhero
Total: 26	Total: 20	Total: 39

Table 83: List of businesses on the Directory.

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Appendix C – Images of the Clean Air Christmas campaign 2020
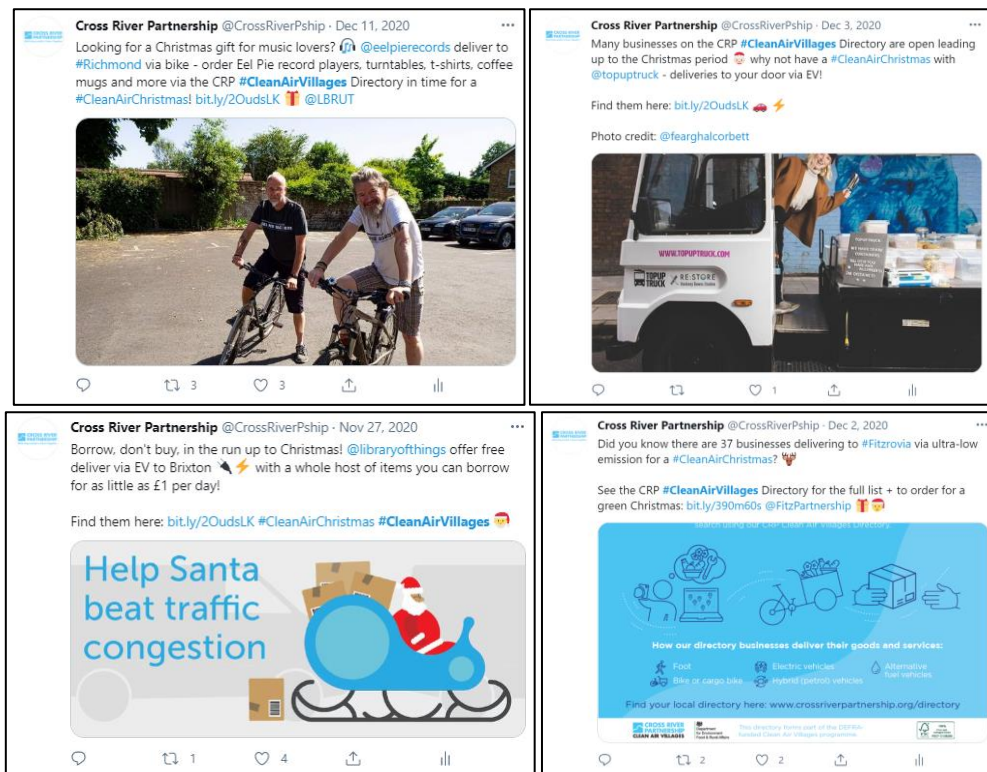
Figure 134: Snapshots from the #CleanAirChristmas campaign

Appendix D – Online traffic for the CRP Clean Air Villages Directory

	Q1	Q2	Q3	Q4
Total Events	145	231	175	103
Unique Events	91	154	131	84
Sessions with Event	37	71	46	26
Number of users	302	516	297	344
Number of new users	283	440	251	306
Pageviews	1161	1671	760	618
Unique Pageviews	844	1253	630	540

Table 84: Table to show website analytics per quarter for the time period April 1st 2020 – March 31st 2021.

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Appendix XII – Vivacity

A snapshot of part of a Vivacity report.

- The number of cyclists passing the sensor on [redacted] has been broadly in decline since the 22nd September Working from Home guidance was issued by central government. This is most evident on weekdays, however following the 10-11th October, this trend becomes more evident at weekends too. Until 22nd September, both weekday and weekend cyclists had actually been increasing - this could be partly due to schools reopening at the beginning of September. As a result, the final days of August and the whole month of September saw a greater daily average of cyclists compared to October (843 cyclists on average per day throughout the end of August and September compared to 550 cyclists on average per day in October). This decline may be partly explained by the shorter hours of daylight and decreasing outdoor temperatures / increasing rainfall associated with the onset of Autumn, as well as less people commuting due to the pandemic / WFH.
- The low level of cyclists on the weekend of the 3rd / 4th October is likely attributed to the heavy rainfall that was experienced during this period (precipitation data can be viewed at https://www.visualcrossing.com).

Hourly Average Classified Counts (27/08/20 – 31/10/20)

Private Car Hourly Average Counts

Weekday Vs Weekend Cars Hourly Average Counts


- For both ▓▓▓▓ and ▓▓▓▓, average hourly car counts follow a similar pattern – between 03:00 and 05:00 private car numbers gradually decrease before then increasing at a fairly consistent but gradual rate between 07:00 and 15:00.
- For both ▓▓▓▓ car counts are very low between 17:00 and 21:00 which is associated with the area being shut to traffic during these times for al fresco outdoor dining as part of the coronavirus response to help late night dining and night time activity associated with restaurants and pubs/bars in the area.
- Following this, on both streets there is an increase between 22:00 – 23:00, peaking at an average of 195 cars per hour on ▓▓▓▓ and 131 cars per hour on ▓▓▓▓. This is likely a result of increased taxi/Uber pick-up activity associated with late night dining etc.

- *Weekday:* Hourly average private car counts peak at 23:00 and 00:00 (134 cars per hour and 102 cars per hour respectively). These peaks are most likely due to increased taxi/Uber pick-up activity associated with late night dining etc. The impact of the road closure associated with al fresco outdoor dining can also clearly be seen as car counts are very low between 17:00 and 21:00. Weekday hourly average car counts also hover around 15 per hour between 09:00 and 16:00 which could be associated with through traffic in the area.
- *Weekend:* Hourly average car counts follow a different trend to weekdays, peaking at 02:00. This is also likely due to taxi pick-up activity associated with weekend evenings (although this is interesting given that the 10pm Curfew was introduced during the monitoring period). Early morning counts (00:00 – 05:00) are significantly higher on weekends than weekdays and again this could be a result of taxi and Uber pick up movement following late night activity in the area.

Hourly Average Emissions (03/09/20 – 30/10/20)

NOx
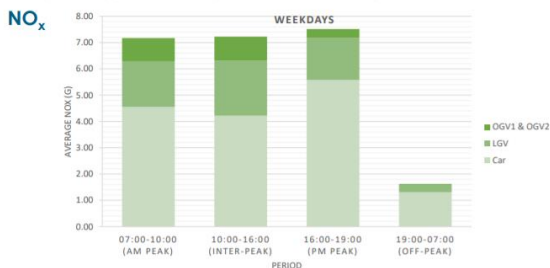
- Across all time periods, cars are the largest contributor to average hourly NOx. Cars account for over 70% of total NOx during the PM peak.
- Average NOx emissions are highest during the evening period (4–7pm), reaching 7.52 grams.
- LGVs (Vans) are the second largest contributor of NOx with greatest pollution from these vehicles observed during inter-peak (10am–4pm). This is most likely due to deliveries and through traffic. A similar trend is observed for OGVs.
- Average NOx emissions for all vehicle types are considerably lower during off-peak hours.
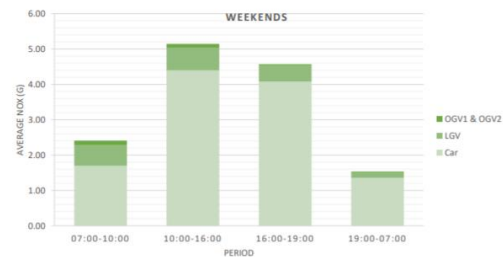
- Similar to weekdays, cars remain the largest contributor of NOx across all time periods.
- Average NOx emissions are highest between 10am–4pm, which is likely due to retail and hospitality activity.
- The contribution from LGVs and OGVs is significantly lower during the weekend. This is expected to be due to less servicing and delivery activity taking place.
- There is little difference in average NOx emissions overnight between weekdays and weekends, both at just over 1.5 grams.

CO2

- Average CO2 emissions follow a very similar pattern to that of NOx emissions for both weekdays and weekends; cars are the greatest contributor of CO2 followed by LGVs and OGVs respectively. Similarly, average CO2 emissions are greatest between 10am–4pm (on weekends) and evening peak (on weekdays). The average hourly CO2 emissions during evening peak (4–7pm) on a weekday were over 3kg.

Clean Air Villages 3 Summary Report
June 2021

CROSS RIVER PARTNERSHIP
CLEAN AIR VILLAGES