



**PIONEERING A FUTURE MODEL
FOR PUBLIC MARKETS
BY FARE CITY 2023**



ABOUT

Fare City is an award-winning London-based think tank and social enterprise. Our mission is to co-create fairer cities through the promotion of more accessible, equitable and sustainable city transport. Our team of built environment professionals uses an evidence-based approach which strives to empower city users to make reasoned mobility choices which are right for them and others.

The authors

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Abbreviations

BID – Business Improvement District
CAM – Cleaner Air Market
CAZ – Clean Air Zone
CIC – Community Interest Company
CO ₂ e – Carbon Dioxide Equivalent
EV – Electric Vehicle
FIT – Foundation for Integrated Transport
ICE – Internal Combustion Engine
LPG – Liquid Propane Gas
MoU – Memorandum of Understanding
ULEZ – Ultra Low Emission Zone
ZTE – Zero Tailpipe Emission

FOREWORD

Street markets are an important part of urban life in the UK, but until now there has been little work on helping the traders in them move to less polluting vehicles - so this report is genuinely groundbreaking.

Fare City and its partners have given traders at the Maltby Street market in London the opportunity to try out zero emission vehicles - electric vans as well as cargo bikes - for their market transport to see how they work.

The results are startling, with significant reductions in carbon emissions and other pollutants even from this small-scale trial. As importantly, the team has shown how Cleaner Air Markets can be set up elsewhere, and what's involved. The Foundation for Integrated Transport were happy to fund this project, and - like many of the projects we've funded - it's shown that it's possible to reduce pollution and carbon emissions from road transport whilst saving people and businesses money.

The report shows that there needs to be more incentives and support for small businesses in public markets to switch to zero emission vehicles. I hope it is read and followed up by councils, market organisers, and the Government so that more markets can become Cleaner Air Markets.



STEPHEN JOSEPH OBE //

Trustee and Chair, Foundation for Integrated Transport
Professor, Smart Mobility Unit, University of Hertfordshire

EXECUTIVE SUMMARY

There is an exciting opportunity to reconsider how we service our public markets in a way that could lead to appreciable health, environmental, and economic benefits. At present, traders use polluting vans and cars to bring goods to and from markets in towns and cities across the UK. For years, this practice of driving goods into the heart of communities has contributed to local air pollution, congestion, and carbon emissions, all of which adversely impact the very people such markets aim to serve. The emergence of zero tailpipe emission (ZTE) modes of transport, including cargo bikes and electric vehicles (EVs), presents viable alternatives to markets wishing to address these issues.

The Cleaner Air Market (CAM) is a pilot project that pioneers a new approach to public markets. It combines greater trader sustainability with increased market accessibility in a format that lead partners, namely those coordinating the project, can apply practically. Lead partners could be traders, market managers, community or professional groups, and local authorities. Fare City was the lead partner at the Maltby Street CAM, a project aiming to normalise the use of cargo bikes and EVs by demonstrating that they can seamlessly replace polluting vans and cars in a working market.

Pilot Objectives

- To help traders trial the use of ZTE modes of transport, including cargo bikes and EVs, to reduce the market's contribution to local air pollution
- To demonstrate that the market can decarbonise while continuing to run undisrupted
- To raise awareness of cargo bikes and EVs to replace internal combustion engine (ICE) vans and cars for transporting goods and people
- To identify how the market can be made more inclusive by improving accessibility for users

To meet these objectives, the project team assigned a range of actions to eight separate project stages, which ran over for a 12-month period. These stages included the following:

1. **Team** – establishing project partners
2. **Audit** – auditing Maltby Street's suitability
3. **Funding** – obtaining funding to conduct the pilot
4. **Strategy** – designing and developing a delivery programme
5. **Procurement** – sourcing ZTE modes of transport
6. **Trials** – trialling ZTE modes of transport
7. **Engagement** – meeting objectives and generating social impact
8. **Event** – CAM market weekend

The research was conducted with a range of project stakeholders and this informed actions in each of these stages. Ongoing qualitative research aimed to understand the values, attitudes, and experiences of each stakeholder group. Supporting quantitative research served to highlight how specific stakeholder actions had resulted in tangible change, and how other markets could understand their potential carbon savings.

Pilot Outcomes

- **50% of the market traders switched to ZTE modes** for some, or all, of their market weekend trips. This included 17 trips and resulted in an average **CO₂e reduction of 76.2%**, and a total saving of 23 kg CO₂e (Fig 01). Annual CO₂e savings would total 1,175 kg (Fig 02) – **the equivalent of one person making over three economy class return flights from London to Glasgow.**

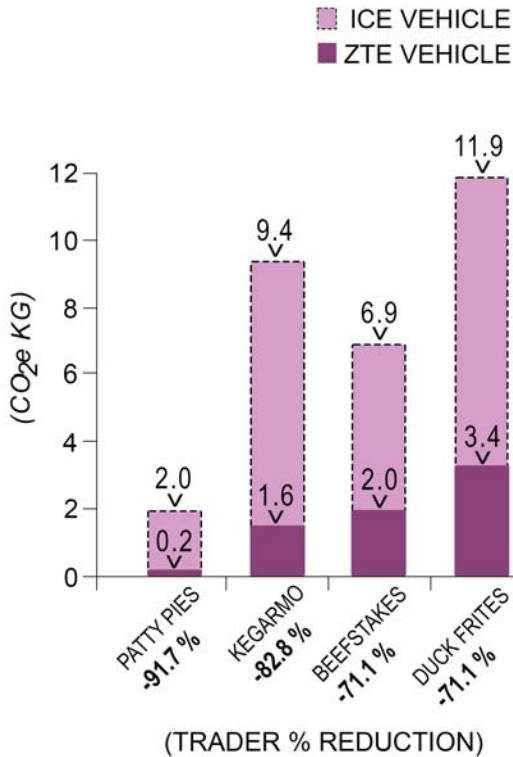


Fig 01: Trader carbon emissions comparison table (CAM weekend)

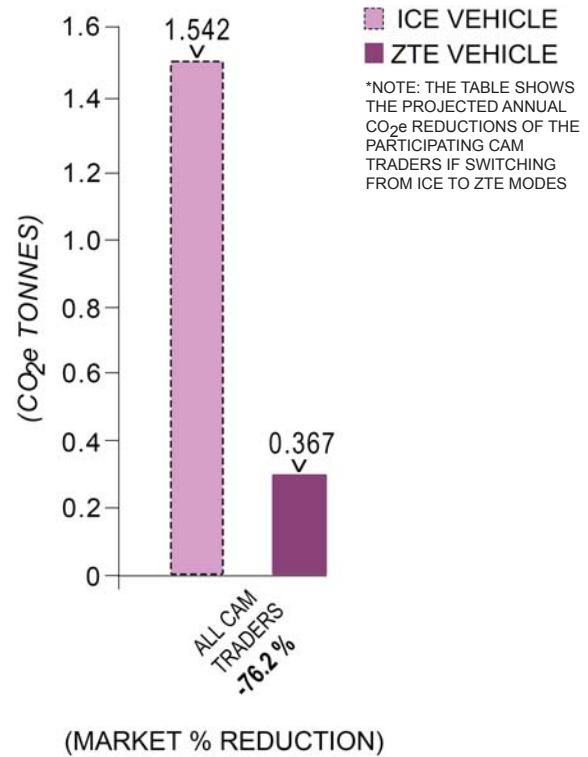


Fig 02: Market carbon emissions comparison table (annual projection)

- Data modelling demonstrated how other markets can understand their potential carbon emission savings based on vehicle type, number of trips, and distance travelled (Fig 03). **Modelling showed that cargo bikes contribute 67.5 times less CO₂e than diesel vans**, while EVs contribute 3.5 times less CO₂e than diesel vans (Fig 04).

NUMBER OF MARKET TRADERS TRAVELLING 3KM					
		1 TRADER	10 TRADERS	30 TRADERS	50 TRADERS
MODE	E-Cargo Bike CO ₂ e	0.02 kg	0.24 kg	0.71 kg	1.18 kg
	Electric Van CO ₂ e	0.46 kg	4.60 kg	13.79 kg	22.98 kg
	Diesel Van CO ₂ e	1.59 kg	15.92 kg	47.75 kg	79.59 kg

Fig 03: Future CAM's, market carbon calculation table (based on 3km each way)

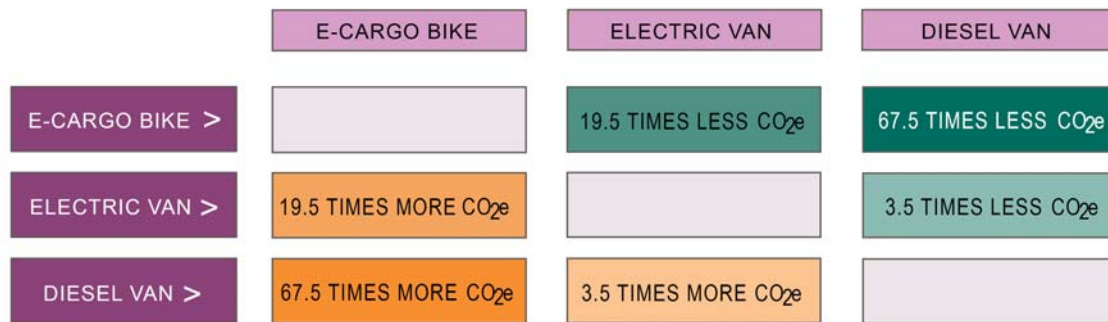


Fig 04: Transport mode, carbon footprint comparisons grid

- **One trader purchased a cargo bike, while the market manager purchased an e-motorcycle.**



- **80% of participating traders** said they were likely, or very likely, to choose a ZTE mode of transport in the near future.
- **90% of all traders and 57% of market businesses engaged with the project.** This included attending an air pollution workshop, a disability awareness workshop, and displaying CAM signage on their stalls/premises over the CAM weekend.



- **50+ attendees joined the launch of the CAM weekend.** It was endorsed by two London Assembly Members, covered by two publications, and two CAM traders reported achieving their highest annual sales.

The strategy for delivering the objectives of the Maltby Street CAM was to incrementally build the project towards the CAM weekend. Tactics for gaining, and maintaining, stakeholder interest included applying ongoing experimentation and adaptation, being responsive to the traders' preferred ways of working, and fostering inclusivity and collaboration with external partners. Though this approach proved successful in helping the project to meet all its main objectives, it may prove to be too comprehensive for other markets that may wish to implement a reduced model of the pilot trialled at Maltby Street.

Cleaner Air Market Models

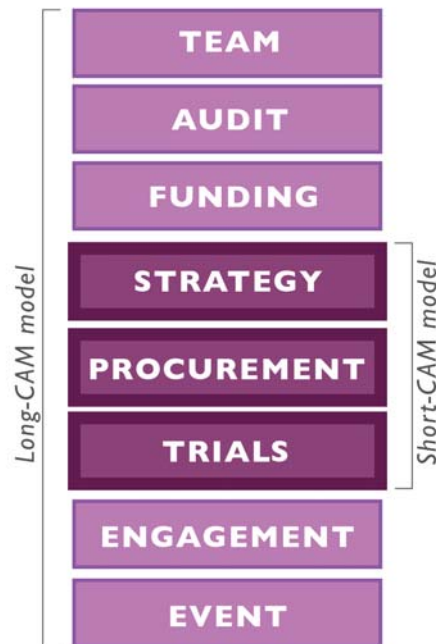
The project team has identified two CAM models: a Long-CAM and a Short-CAM.

Long-CAM

The Long-CAM has been trialled at Maltby Street and consists of eight project stages: Team, Audit, Funding, Strategy, Procurement, Trials, Engagement, and Event. These eight stages are described in detail in this report and represent the most comprehensive CAM model.

Short-CAM

The Short-CAM reduces the number of project stages to three: Strategy, Procurement, and Trials. This model presents an alternative approach that lead partners may find appealing in responding to the specific needs of their market. Given that no two markets are the same, it is likely that markets may choose and assemble different stages to shape, or suit, their project strategy.



Findings and Recommendations

The decision to develop and deliver a Long-CAM at Maltby Street has led to the following key findings and subsequent recommendations:

01

Recommendation

Finding 01: The CAM concept works

The pilot successfully met the stated project objectives. These included reducing the market's contribution to local air pollution and reducing traders' carbon emissions by over three quarters (average 76.2%). This was achieved using fewer ICE vehicles and more ZTE modes. The pilot also highlighted areas that could be improved for future CAMs, including the need to secure wider trader buy-in. Traders reported that having access to high-quality information at the outset of the project would have accelerated their participation, and even helped secure the participation of additional traders.

Recommendation 01: Utilise the Maltby Street CAM evidence base for future CAMs

Lead partners should share Maltby Street CAM case studies early in the project process. Feedback from traders can then be leveraged to develop and tailor a project strategy suited to the requirements of the market. Securing greater buy-in from the outset may enable future CAMs to be more successful in stating, and meeting, more ambitious project objectives.

02

Recommendation

Finding 02: The definition of a CAM is versatile

The two models presented in this report, Long-CAM and Short-CAM, aim to work with traders to switch all individual trips from their base to the market. However, aside from targeting individual trips, the pilot highlighted that two other methods could be employed in future CAMs. First, a hub method that could consolidate traders' goods and equipment at a location within proximity to a market – an approach partially trialled in the pilot. Second, a communal cargo bike method whereby traders cluster collections as part of a single trip – an approach being explored as a legacy option of the pilot.

Recommendation 02: Markets must develop a CAM model that is right for them

Lead partners must work with project stakeholders to develop a model that works for them. The carbon modelling presented in this report can be applied to different market types and demonstrates the huge potential of running any model of CAM. Lead partners should aim to employ an adaptive style of engagement with their market to ensure that CAMs develop and grows organically, in line with the needs of stakeholders.

03

Recommendation

Finding 03: A policy gap exists between the awareness of ZTE modes of transport and their uptake

City authorities across the UK are confronting the dual environmental challenges of air pollution and climate change through initiatives such as clean air zones and net zero targets, respectively. These initiatives advocate an accelerated transition to ZTE modes of transport, given their suitability to address both these challenges. An example is the London ULEZ scrappage scheme, which will enable users to swap out an ICE vehicle in favour of a cargo bike or EV. However, a policy gap exists, as many of the businesses that could benefit from this transition, such as market traders, are not being sufficiently incentivised to make the switch.

Recommendation 03: CAM accreditation to accelerate the uptake of ZTE modes of transport

The CAM could act as a conduit to link ZTE modes of transport between environmental initiatives and small businesses. The Maltby Street CAM demonstrates that there is insufficient incentivisation for small businesses to switch to ZTE modes, owing to a lack of awareness that they can work for businesses. A CAM accreditation scheme could offer businesses additional support, provide businesses with a competitive advantage, and make businesses more attractive to customers.

INTRODUCTION

The ubiquity of public markets in towns and cities across the UK makes them an integral part of civic life, as they not only facilitate commerce via the trading of goods, but also serve as a forum for the exchange of ideas and information. However, the proximity of markets to the public also means that emissions from traders' vans and car trips create air pollution, which negatively impacts local communities, while simultaneously contributing to the climate crisis through carbon emissions. Even the smallest markets have complex supply chains that require hundreds of trips to service them. Regardless of what the markets may sell, they rely almost exclusively on polluting ICE vans and cars.

In London, road vehicles are the biggest source of air pollution leading to respiratory illnesses which contribute to an estimated 4,000 deaths per year.¹ Marginalised groups, including the most vulnerable and less affluent, are among those disproportionately impacted. The London Congestion Charge zone, the UK's first clean air zone (CAZ), was rolled out 20 years ago and is now supported by the Ultra Low Emission Zone (ULEZ). The ULEZ is a landmark measure that is due to be extended to the whole of Greater London in 2023.² Five UK cities have taken London's lead and implemented CAZs, from Bradford in the north to Portsmouth in the south, while at least three more will begin charging those in non-compliant vehicles in 2023.³

A separate yet interdependent issue is the contribution that road vehicles make to climate change. In the UK, transport emits more greenhouse gases than any other sector, 24% of total carbon emissions, with cars responsible for 52% of these emissions and vans for 16%.⁴ Despite a recent reduction in van emissions, they are the only transport mode that has increased its carbon emissions, up by 40%, in the last 30 years. In addition to environmental drawbacks, vans and cars pose a threat to those using less powerful modes. In the UK, vans and light goods vehicles are involved in more deaths of other road users per mile travelled than any other vehicle type, including HGVs.⁵

London's ambitious aim to become carbon neutral by the end of the decade is in part dependent on the success of the mayor's Accelerated Green Pathway, which specifies a ban on fossil fuel vans and cars and a 27% reduction in car vehicle km travelled by 2030.⁶ The Greater London ULEZ forms part of this strategy and will offer a £120m scrappage scheme, which includes the option of replacing a van with a fully electric vehicle, including an e-cargo bike.⁷ With every London market set to be included within the limits of the Greater London ULEZ by the autumn of 2023, there is a need to help market traders, who may typically own some of the most polluting vehicles, to transition to ZTE alternatives.

The Maltby Street CAM aims to help the traders of a working market to trial such ZTE modes, including cargo bikes and EVs. While cargo bikes are typically quicker, cheaper, and more environmentally friendly than vans and cars, there is a lack of awareness among the public of what the mode is, let alone what benefits it offers over more established options.⁸ The CAM endeavours to help normalise the use of cargo bikes and EVs by pairing them with a working market to demonstrate that both can serve the needs of traders and contribute to an improved environment for the local community. The pilot additionally aims to highlight how markets can be made more inclusive by improving accessibility for all market stakeholders.

This report includes a research appraisal and a toolkit which draws upon the findings of the Maltby Street pilot to suggest how other markets may be able to implement their own CAM. It aims to achieve this by first relaying and analysing the experiences of the project team at Maltby Street, before providing practical advice and resources for the consideration of prospective project partners, including traders, market managers, and policymakers. Ultimately, the report aims to demonstrate that the CAM concept is deliverable and can be replicated, improved, and scaled for the benefit of markets throughout the UK.

1. <https://www.london.gov.uk/city-hall-blog/clean-air-day-2022-action-reducing-londons-pollution-cannot-wait>

2. <https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/ulez-expansion-2023>

3. <https://www.gov.uk/guidance/driving-in-a-clean-air-zone>

4. <https://www.gov.uk/government/statistics/transport-and-environment-statistics-2022/transport-and-environment-statistics-2022>

5. <https://www.pacts.org.uk/wp-content/uploads/PACTS-What-kills-most-on-the-roads-Report-15.0.pdf>

6. https://www.london.gov.uk/sites/default/files/london_net_zero_2030_-_an_updated_pathway_-_gla_response_1.pdf

7. <https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/scrappage-schemes#on-this-page-0>

8. <https://www.justeconomics.co.uk/health-and-well-being/delivering-value>

METHODOLOGY

The Maltby Street pilot employed a triangulated research methodology comprising both qualitative and quantitative research methods. The CAM can be considered a hybrid project, with actions initiated by project partners and their impact recorded and analysed by the Fare City team. The project uses both primary and secondary data.

The qualitative research comprised an audit, short surveys, roundtables, workshops, and semi-structured stakeholder interviews with project partners, market management, market traders, and market customers. Engagement with each of these groups was conducted throughout the course of the project, beginning in the summer of 2021, and concluding in the autumn of 2022. The ongoing nature of the qualitative research first informed how the project developed, enabling the project team to review and respond to stakeholder feedback, and second, outlined what quantitative data would be produced and where it could be most effectively employed.

The quantitative research comprised two main parts. The first was to calculate existing traders' vehicle emission data and analyse this against their new, ZTE mode of transport. This was achieved by analysing secondary data of traders' existing and proposed vehicle specifications alongside custom trip data. The second was to model the approximate carbon emissions of future CAMs by determining the average carbon emissions of three modes of transport, and comparing them against the number of trips, the length of these trips, and the number of market traders. The first piece of research was modelled in June 2022, ahead of the CAM weekend, and was subsequently updated in December 2022 to reflect the trips that were completed. The second piece was modelled in December 2022 and first published in this report.

This mixed-methods approach was chosen for two reasons. The first was to lead with qualitative engagement as a tool for actively developing the project's objectives, strategy, and programme. The second was to use quantitative research, in the form of vehicle emissions data, to demonstrate the environmental impact of the business decisions made by traders to switch vehicles. Both qualitative and quantitative research methods were used to demonstrate why other markets should convert to a CAM and how they could do so. A logic change model situated in the report appendices serves to monitor, capture, and evaluate the impact of both the project's qualitative and quantitative research.

Who is the report for?

This report is for anyone interested in understanding why CAMs are needed and how one could be implemented. Typically, this may include market managers, market traders, local authorities, community groups, and built environment and transport professionals. The report refers to the individual and/or organisation that will be leading the project as the 'lead partner'. In the context of the Maltby Street Cleaner Air Market, Fare City was designated the lead partner.

How to use this report

- The body of the report is divided into eight stages. Each stage comprises a key aspect of how the Maltby Street CAM was delivered, and how future CAMs could be both developed and delivered.
- Each of the eight stages is divided into two sections. The first section 'Maltby Street Cleaner Air Market', describes the findings of the Maltby Street CAM project, including actions, insights, and project data.
- The second section 'Future Cleaner Air Markets', analyses and draws upon these findings to suggest specific actions for lead partners to consider before implementing a CAM.
- The second section additionally includes three checkpoints designed to help lead partners to consider specific actions before moving on to the next project stage.
- A link to further material positioned in the project appendices provides lead partners with documents designed to assist them. These include data tables, directories, and templates.

PIONEERING A FUTURE MODEL FOR PUBLIC MARKETS

Maltby Street Market

Founded in 2010, Maltby Street Market is a thriving weekend market selling high-quality street food from a range of international cuisines.⁹ The market is in the London borough of Southwark and is situated along the Ropewalk, a privately owned yard adjacent to a Victorian railway viaduct to the north, and a residential housing block to the south. The railway arches host seven businesses, while the market has ten permanent traders. Traders represent a range of nationalities, selling Venezuelan, Ethiopian, Vietnamese, Sri Lankan, Spanish, and British cuisine, while permanent businesses include a bar, a grocer, a seafood restaurant, a barber, and a coffee shop.

The market manager is supported by a small team that helps maintain and run the market. The management's aim is for Maltby Street to excel in the best quality street food while ensuring that traders work cohesively alongside one another to effectively accentuate the ethos of the market. This includes creating a welcoming, inclusive, and sustainable environment, with the market employing 100% renewable electricity, recycling all its cooking oil, and being an early adopter of no single-use plastic.

The market manager's time is at a premium, and most of it is spent attending to market admin, seasonal events and projects, and market maintenance. Maltby Street's traders are equally passionate about the market and the quality of the food they sell. This ranges from understanding the provenance of their ingredients to ensuring that strict protocols are adhered to in the preparation of products and disposal of waste. Some traders will only sell at the market, while others will also sell from other markets or premises within London. Many of the traders operate within the ecology of the local area, with collections and deliveries typically made from nearby suppliers.

The market's traders are a blend of start-up and established businesses, ranging from first-time traders to those with commercial premises. Regardless of the differing scale, diversity, and maturity of their businesses, all traders are conscious of factors impacting their time, resources, and profit margins. Traders are naturally concerned with optimising their operations, which can make some traders more receptive to change, while others – who may consider they have reached peak efficiency – can be more resistant. Though every market is different, many of the issues experienced at Maltby Street will be familiar to other markets up and down the UK. Understanding the underlying motivations of these stakeholders is important when considering whether there may be the potential to transition to a CAM.

9. <http://www.maltby.st/>



Above: The Ropewalk, Maltby Street Market // Source: Fare City
Center: Market traders cooking // Source: Fare City
Above right: A business located in the railway arch // Source: Fare City

Stage One // Team

Maltby Street Cleaner Air Market (July 2021 - January 2022)

Assembling a project team began before a suitable market to pilot the project was identified. Fare City drafted up a concept note that considered organisations to approach and outlined why they would be a good fit for the project. A key project partner was Pedal Me,¹⁰ a London-based cargo bike logistics firm which Fare City had worked with on several previous occasions. The company's proficiency in moving both goods and people, along with their ability to take additional capacity on trailers, made their inclusion important in demonstrating the suitability of cargo bikes for the job.

In addition to providing an alternative mode of transport for market traders, the project required raising awareness of the need for a CAM along with experience in community engagement to help deliver it. Air quality campaigners Mums for Lungs¹¹ scored strongly on both counts and indicated that they would be interested in helping, while air quality policy expertise was supplied by Clean Cities Campaign.¹² Ensuring that any future CAM is inclusive would begin by improving its physical accessibility. Award-winning inclusive cycling charity Wheels for Wellbeing¹³ was asked to join the project based on the strength of its outreach, policy, and advocacy work.



Above: The first team visit to Maltby Street Market // Source: Fare City
Above right: Pedal Me were a key project partner // Source: Fare City

Soon after the concept note had been circulated, Pedal Me suggested a meeting with a Southwark councillor who had links to the local Maltby Street Market. Online and in-person meetings revealed that the project team and market management shared similar values and were driven by complementary motivations for trialling the project. However, both sides questioned the suitability of Maltby Street as a pilot site. The management was unsure whether the traders of a working market would buy into the project, whereas Fare City felt the market's small size and limited accessibility could be problematic. Fare City, therefore, suggested a two-day market audit to test the feasibility of the site ahead of a decision being made.

As the project progressed, the roles and remits of different team members developed, while Maltby Street Market joined as a project partner once the audit had been completed, and prior to the grant bid being submitted. Fare City coordinated the project team via emails, a WhatsApp group, online meetings, phone calls, and in-person on-site meetings. Once project funding had been secured, a Memorandum of Understanding (MoU) was drawn up, reviewed, and signed by all project partners. Associate partners, including Zipcar,¹⁴ MP Smarter Travel,¹⁵ and Peddle My Wheels,¹⁶ joined the project at later dates to assist the core team with aspects of its delivery.

10. <https://pedalme.co.uk/>

11. <https://www.mumsforlungs.org/>

12. <https://cleancitiescampaign.org/>

13. <https://wheelsforwellbeing.org.uk/>

14. <https://www.zipcar.com/en-gb>

15. <https://www.mpsmartertravel.co.uk/>

16. <https://www.peddlemywheels.com/>

Future Cleaner Air Markets

For prospective lead partners thinking about trialling a CAM, it is critical to understand the values, short-term aims, and long-term ambitions of potential partners. Doing so will bring any issues quickly to the fore and enable the team to address them before expending valuable time and energy on a proposal that may not progress. All Maltby Street project partners had concerns, the most common of which was the number of resources required to service a project that might not work. Even when funding was secured, partners were concerned that the project might take time away from their core business activities, and in the case of Wheels for Wellbeing, their core messaging which focused on accessibility as opposed to clean air.

Setting up a project team was a logical first step for Fare City, given that the concept was still in its infancy, with no market site or funding secured. As lead partner, Fare City benefitted from access to a network of organisations that not only understood the issues of poor air quality and accessibility but could see the potential of cargo bikes for addressing this within the context of a market setting. The project additionally benefitted from being London-based, in proximity to experienced partner organisations that were able to advise on – and advance – the proposal. Securing Maltby Street as the pilot market was a result of a partner's existing network, and each partner was partially invested in joining the project for different reasons.

Importantly, the ability to quickly assemble a project team provided a level of confidence to the market management, who understood that the team possessed the intent and capabilities to advance a proposal. The market also had its own commercial, communal, and environmental motivations for participating. These included providing the market with a competitive advantage over other markets, diversifying the market's customer base, and the potential to further the market's existing sustainable practices.

The partner model for the Maltby Street CAM was secured via an MoU, an arrangement that established a joint endeavour among the project's partners. Though not legally binding, the arrangement imparted a level of responsibility for each partner and helped the team to develop a sense of cohesiveness. Depending on the type of CAM being implemented, a less formal arrangement may be preferable, especially if the project's programme is much more fluid than the project milestones set out at Maltby Street.

While establishing a project team for the Maltby Street CAM was a logical first step, it may not be possible, or even desirable, for other prospective lead partners. First, the need to establish a team will depend on the type of CAM the lead partner is aiming to implement. If implementing a Short-CAM with a transport-only option, ample project resources, and several willing traders, the partner model may not be necessary. For other lead partners, access to the breadth and depth of suitable partners may simply not be available. It is important that at the outset of the project, the lead partner determines what type of CAM model will be most suitable for their locality, and how they can best achieve its implementation.

Action

Checkpoint:

1. Who is the lead partner, and what model of CAM do they consider most suitable?
2. If a partner model is selected, who are the potential partners, what is their understanding of the issues faced, and what are their motivations for participating?
3. What are each partner's respective roles and responsibilities, and how will these be implemented? If applicable, what type of formal arrangement between partners is required?

Further Reading: [Appendix I.0_FC_CAM Concept Note_Summary](#)

Stage Two // Audit

Maltby Street Cleaner Air Market (September 2021)

Following initial meetings with market management, the Fare City team conducted a two-day audit across a market weekend. The aim of the audit was to understand how the market operated, with a view to determining the feasibility of piloting a CAM at the site. The audit focused on four key areas: site and network, accessibility and amenity, market stakeholders, and market atmosphere and ambience. The audit methodology included site surveys, observation, and qualitative semi-structured interviews with traders and market management. The results of the audit were recorded and analysed in a ten-page report, which included key findings and five recommendations for the consideration of the project team and market management.

The audit not only provided the project team with a rich insight into the workings of the market but also highlighted the realities between a working market and some of the assumptions made in the initial concept note. Crucially, it got the project team thinking about how potential challenges could be overcome and about areas where the project team would need to adapt or modify their approach. Two key issues emerged, including the need to agree on a definition of a Clean Air Market, and the need to be creative in overcoming the accessibility issues inherent in a tight site.

Several things prompted the project team to rename the project from the 'Clean Air Market' to the 'Cleaner Air Market'. First, a wood-burning stove belonging to one of the five permanent businesses was problematic for Mums for Lungs, as one of their flagship campaigns focused on the harmful impact of wood burning. One suggestion was for the business to limit the emissions produced by trialling smokeless wood, along with the option of fitting a water filter designed to purify smoke particles. Also, several market traders use liquid propane gas-powered grills and fryers, which could not be changed.

Second, during initial conversations with traders, many stated that only an electric van would meet their specific needs. As several traders had considered purchasing an electric van and were keen to trial one, the project team reluctantly decided to broaden the scope of the pilot to include ZTE EVs, which, despite being more sustainable than ICE modes, still contribute to air pollution via brake and tyre particulates (PM2.5). It was therefore agreed that the term 'Cleaner Air Market' would best reflect the exploratory nature of the pilot, with the use of zero tailpipe emission modes of transport set as the project baseline.

The second issue is the small footprint of the market. This was exaggerated by hard borders running the length of the Ropewalk, which resulted in a linear circulation route with pinch points prohibiting free movement – especially challenging for those using wheelchairs and non-standard cycles. The project team considered that this was the biggest challenge to overcome and one that threatened the idea of providing a fully accessible market. However, options presented by the market management included using their experience of proactively managing the market, and the potential to secure a road closure for Maltby Street at the one end of the site. Both had been successfully employed when COVID-19 restrictions were in place, while the team additionally considered that a planned accessibility audit might provide further opportunities for improvement.



Market traders must negotiate a tight site // Source: Fare City

Future Cleaner Air Markets

There were multiple benefits to conducting an audit at Maltby Street. The audit helped to identify and contextualise the physical, social, and operational issues at play, established project parameters, and led to a set of market-specific recommendations for the consideration of the project team. The audit also provided the project team with an initial touch point with market traders to understand whether participating in a CAM was of interest to them. A further benefit was that it provided the project team with a good insight into the level of complexity of some of the trader's trip patterns, along with what mode of ZTE transport may serve them best.

An audit also enabled the team to begin to build rapport with the market management, a key decision maker, while it provided the team with a detailed understanding of specific issues relating to Maltby Street, and a broad understanding of general issues relating to small markets. In return, the presence of the team at the market provided the management with a level of confidence that the team was serious about developing and delivering the project.

Despite being indispensable for the Maltby Street CAM, an audit may not be required for other market sites. Again, depending on the profile of the project lead, an audit may be unnecessary, especially if the project lead is a market manager or otherwise has a strong familiarity with the workings of the market. Alternatively, the project lead could access the CAM resources, which provide a template for conducting a high-level audit, thereby ensuring the main points are considered. If planning to implement a Short-CAM, this stage could be incorporated into the 'strategy' stage and developed simultaneously alongside a project brief and programme.



Above: Market accessibility was reviewed // Source: Fare City
Above right: Early engagement with market traders // Source: Fare City

Action

Checkpoint:

1. Who is the lead partner, and to what extent do they understand how the market operates?
2. If auditing the market, who will conduct the audit, and what level of information do they require?
3. Has the audit provided satisfactory evidence that a CAM is both feasible and desirable among a broad group of project or market stakeholders?

Further Reading: [Appendix 2.0_FC CAM Audit Report_Summary](#)

Stage Three // Funding

Maltby Street Cleaner Air Market (August 2021– December 2021)

Much of the preparatory work outlined in the initial two stages was developed with a view to securing project funding, which, once obtained, would unlock subsequent project stages. From the outset, Fare City identified a grant as the most likely source of funding. This was based not only on the company's status as a Community Interest Company (CIC) (and therefore its eligibility to apply for such grants), but also on the innovative nature of the project and the potential for both replicability and scalable impact. Fare City considered the Foundation for Integrated Transport (FIT)¹⁷ as a potential funder, as the project appeared to align with the organisation's values and the theme of its annual funding programme, 'Reducing dependence on the private car'.

Fare City had an initial meeting with FIT in August 2021. This came shortly after developing the project concept note, and was followed by a second meeting in December 2021, once the project team had been assembled, a market site secured, and the audit report produced. Fare City's decision to assemble a project team of known and respected organisations was welcomed by the funders, who felt that such an alliance might mitigate the risks associated with funding a single organisation alone. Additionally, securing a working market for the pilot project, along with conducting a comprehensive market audit, likely provided a further level of comfort to the funders that the project's foundations were already in place.

The grant application process enabled the project team to progress the concept note to the level of an outline brief and programme, and was supported by a good channel of communication between Fare City and FIT. Upon winning the grant in December 2021, FIT's decision to enable the project team to draw down the project fee as required, greatly assisted the team's ability to deliver the project. Interim and final project reports were issued to FIT to provide updates on the project's actions and impact.

Future Cleaner Air Markets

Regardless of where funding is obtained, some funding will be required, at the minimum to cover the costs of the traders' cargo bikes and EV trips. Working out how much funding is required to hold even the simplest model of a CAM is closely aligned with the next project stage 'strategy', as the project's parameters will inform how much funding is required, and by when it is required. The experimental nature of the Maltby Street CAM necessitated the balance of the funding to be front loaded, to give the project team the autonomy to make decisions and ensure that momentum could be maintained. This was especially important if the pace of the project needed to be accelerated beyond the milestones of the project programme.

There are several potential routes to funding, the suitability of which will depend on the profile of the lead partner. For instance, if the lead partner is a local authority, it may be possible to access sufficient funds to begin a project. Similarly, a market intent on introducing a CAM may be able to raise funds that can be used for this purpose. In these cases, funding may not be considered a separate stage but may form part of another stage, for instance, strategy, if the project funding is already assured.

It is, however, probable that some external funding will be required. Options could include community and sector-specific grant funders using a similar approach to the Maltby Street CAM, support from a nearby Business Improvement District (BID), which can make the case for a CAM to local businesses, or even public or private sponsorship via new or long-standing partnerships. Alternatively, reducing upfront costs may include targeted discounts or in-kind arrangements for CAM-specific services, for instance, national or local schemes providing discounts on either the hire or purchase of cargo bikes.

¹⁷ <https://integratedtransport.org.uk/>

While future CAMs will inevitably vary in their requirements, the blueprint established by the Maltby Street CAM can provide some ideas for how to seek and secure funding. Additionally, the benefit of being able to draw upon the project's evidence base could prove useful for prospective lead partners and enable them to demonstrate to potential funders that backing a CAM could lead to a range of tangible benefits and would therefore represent money well spent.

Action

Checkpoint:

1. What is the funding needed for (e.g., a Long-CAM, a Short-CAM)?
2. How can the lead partner and/or project team draw upon existing associations, or develop new ones, to obtain funding?
3. What additional financial support may be available (e.g., discounts, in-kind support)?

Further Reading: [Appendix 3.0_FC CAM Grant Application Summary](#)



*Business Improvement Districts may provide businesses with support to switch to ZTE modes
// Source: (Above) Team London Bridge & Tomtek Photography, (Above right) Team London Bridge*

Stage Four // Strategy

Maltby Street Cleaner Air Market (January 2022 – February 2022)

Though the project team, the market site, and some of the project's parameters had been agreed upon before the funding application, a full strategy was only developed once funding had been obtained. The main reason for this was to limit the project team's exposure to working at risk. Inevitably, a certain level of risk (i.e., time and resources expended) was considered acceptable to enable the team to submit a competitive bid; however, there were no guarantees that it would be successful. The bid application certainly accelerated some of the thinking and decision making behind how the project could develop, while pitching the project as a pilot offered the project team the scope to trial many different scenarios, with the aim of testing what worked and what did not.

Once funding was obtained, Fare City drafted up and issued a project brief and programme based on the developed concept note, audit findings, and bid application. The brief established four specific project objectives and set out a detailed programme including milestone markers for collective actions, along with partner-specific actions to be delivered across two distinct project phases. The brief and programme formed the basis of the project strategy. The strategy for delivering the Maltby Street CAM was to incrementally build the project towards the CAM weekend, six months ahead, through an initial three-month 'trial' phase, which then led into a three-month 'delivery phase'.

The trial phase was designed to raise awareness of the project through set piece events, including trader vehicle trials, and an accessibility audit. The delivery phase was designed to then lock in actions ahead of the CAM weekend, including developing detailed trader trip plans, finalising market management plans, and delivering any additional partner actions that came out of the trial phase, for instance, a disability awareness workshop. The programme, though tightly packed, was also designed to provide a margin of tolerance, thus affording the project team the necessary time and space to build rapport with traders, with a view to securing greater participation.

The project team employed a range of tactics to help implement the project strategy; some were planned, while others evolved. They included: ongoing experimentation and adaptation, with the project team prepared to identify and implement improvements right up until the CAM weekend; responsive trader engagement, where the team established multiple touch points with traders and endeavoured to understand the best way of communicating with each; and inclusivity and collaboration, for which the team were quick to bring in other individuals and organisations whom they believed would add value to the project. (e.g., Zipcar, MP Smarter Travel).

The first of three roundtables enabled partners to review and agree the strategy. Fare City then drafted up and issued a partner MoU to the project team, detailing partnership aims and objectives, partnership activities, and designated partnership leads. After the partners signed, Fare City issued separate briefs to each partner detailing their roles and responsibilities. There is consensus among partners and traders that the strategy developed by the project team was the correct one for meeting the project's main aim of delivering a Cleaner Air Market. The strategy enabled the project's four key objectives to be mostly met, the project programme to be mostly met, and the project's social impact objectives to be met, and in some cases exceeded.



The trial phase included trader vehicle trials // Source: Fare City

Future Cleaner Air Markets

A project strategy is a fluid entity and could conceivably form the first stage of any CAM process – as in the case of a Short-CAM. However, if lead partners are to adopt this approach, an intimate familiarity with the market, its stakeholders, and their values and objectives is required to short-circuit the preceding stages. This information was not known to Fare City and the project team at the outset of the project; therefore, the preceding stages and the strategy developed by the team reflect how the team best considered their chances of successfully delivering the project.

The Maltby Street CAM was a pilot, an unknown quantity to traders, and, to some extent, the project team. To gain and maintain the participation of traders, the team aimed to make the offer as attractive as possible, covering all associated project costs and undertaking almost all of the work in organising the project's transport logistics. This approach aligned with the project tactics employed by the team, including ongoing experimentation and adaptation, responsive trader engagement, and inclusivity and collaboration. The lengthy project programme complemented these tactics, which enabled the project strategy of building and sustaining momentum in the lead-up to the CAM weekend to be implemented.

The biggest barrier to the team's ability to gain participation was traders not understanding how the project would work. Traders and project partners have subsequently said that the use of case studies to demonstrate the benefits of the project would have proved invaluable, as several traders reported that being able to make an informed decision requires having good information to hand as far in advance as possible. Inevitably, as a pilot project, these case studies did not exist and could not, therefore, be front loaded into the project programme.

Arguably, in circumnavigating this, the project team could have accelerated some of the project actions, such as the Mums for Lungs air pollution workshop. This would have provided traders with an earlier insight into why the project was needed, if not how it would be executed. In retrospect, this was an oversight that may have encouraged more traders to buy into the principles of the project and, in turn, engage in the trader trials. Part of the reluctance to front load project actions was in assessing how to manage trader relations, which required striking a fine balance between providing traders with enough information as and when they needed it, but without overloading them given their limited time.

The majority of traders and the market management reported that the level of interaction by the project team was just the right amount over the six months the team was on site. Aside from the frequency of interaction with traders, a key part of the engagement process was understanding how to interact with individual traders. Some traders, though expressing an interest in the project, were uncontactable by email and phone, and this necessitated regular in-person market visits to keep them engaged with the process. Other interested traders who were contactable via email used staff to run their stalls and rarely visited the market. This required perseverance from the project team in trying to set up trials and additional project actions in the absence of having the decision maker on site.

The two models presented in this report are designed to provide a starting point for markets to tailor the CAM concept to their specific needs. Whether markets choose to adopt either model in its entirety, or opt for an option somewhere in between, they should note that a key tactic to help initiate their chosen project strategy is to stay adaptable. While the time afforded by a longer CAM will inevitably help, adaptability is more dependent on establishing clarity of purpose and fostering a willingness to succeed among the project team. This will make it more likely that a partner will identify an issue sooner or that a trader will be more determined to find a suitable workaround. The project strategy is a critical component in embedding this mindset, and should be collaboratively set and transparently communicated among stakeholders before proceeding with the next stage.

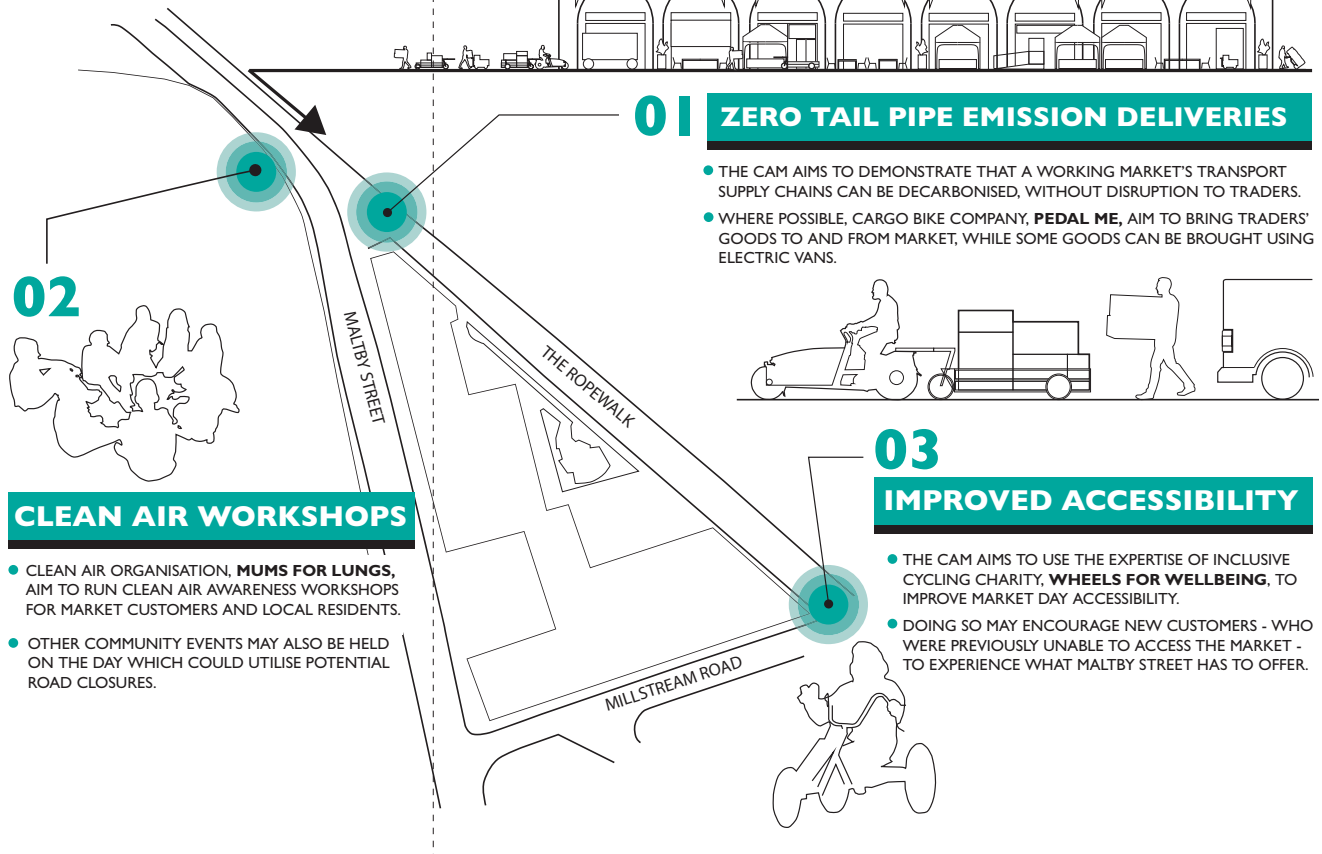
Action

Checkpoint:

1. How well do you understand the needs and aims of the market's traders, and how will this inform the type of strategy you choose?
2. How will you communicate this strategy to the project stakeholders (e.g., a meeting, a written brief)?
3. How long do you envisage the project programme to be, and what checkpoints will you include?

Further Reading: [Appendix 4.0_FC CAM Project Brief Summary](#)

CLEANER AIR MARKET WHAT HAPPENS ON THE DAY?



The team presented traders with information such as this leaflet to outline how the market would work // Source: Fare City

Stage Five // Procurement

Maltby Street Cleaner Air Market (March 2022 – June 2022)

The Maltby Street CAM benefitted from cargo bike operator Pedal Me being an integral part of the project team. Early discussions with the operator confirmed that they had both the desire and the resources to service the market. However, during the market audit, it became apparent that cargo bikes would not be a suitable option for all traders. Some traders were not aware they existed; some knew what the bikes were, but had not seen one close up; while one market business had used Pedal Me before. The project team focused on trying to bring traders onside by asking Pedal Me to first wheel a bike through the market and explain its benefits to traders, before the trials where traders got a first-hand look at the loads being transported.

To help determine what type of mode would be most suitable for traders, Fare City conducted an in-depth analysis of each interested trader's specific requirements. This entailed Fare City developing a detailed trader trial form that asked traders to supply information on their operation, ranging from itemising their load to logging their trip patterns. Though the form was accessible, it was six pages in length, which may have deterred some traders from filling it in. Recognising this, Fare City used the opportunity to set up one-to-one online meetings to talk traders through the form while crucially beginning to build rapport with individuals by learning about their business and answering any questions they had.

Fare City conducted the first round of trader meetings in early March 2022, which included two traders who were keen to use a cargo bike and one who wanted to trial an EV. While it was simple to pair the two traders with Pedal Me, acquiring a suitable EV proved much more difficult. An introduction to a London BID manager via a mutual associate led to discussions with the Zipcar team, which had access to a shared electric van owned by Brixton BID. After agreeing to the use of the van, a miscommunication between the team and Zipcar meant that the van was not available for the first trial, and although it was available for a later trial, it was too small for the needs of the trader.

Securing suitable electric vans proved to be one of the most challenging aspects of the pilot. The project team wrongly assumed that being based in London and possessing both the time and the budget would enable several suitable vans to be secured for the trials and certainly before the June CAM weekend. It soon became clear that there were only a few other shared London-based EVs that could be hired for the project, and that they were of a similar size to the Zipcar van, which would be too small for the purposes of the majority of traders.

The focus then turned to hiring vans in a short-term hire arrangement from suppliers. This not only highlighted the lack of companies based in the vicinity of London, with the closest ones being in Rochester, Kent, and Portsmouth, but also the prohibitive cost of rental for weekend hire and the lack of availability. Instead, the team contacted car dealerships that sold electric vans directly and who were happy to lease suitable vans on a longer-term hire arrangement (up to ten days) at no charge. The vans would be dropped off and collected by the dealership, with only insurance and charging costs to be covered by the project team. The process was straightforward and enabled the team to obtain enough vans for the CAM weekend



Zipcar Brixton BID electric van at Maltby Street // Source: Fare City

Future Cleaner Air Markets

Procurement of ZTE transport services is arguably the most important project stage, simply because if suitable options to switch do not exist, then it will be difficult to hold a CAM of any sort. Therefore, for any lead partner considering implementing a CAM, an early-stage review of the options in the vicinity of the market is critical. Lead partners should consider some of the following options, which include the type of modes available, number of operators available (density of services), capacity of operators (size of fleet), service hours, service cost, and willingness to engage on a potentially long-term basis. A more comprehensive list of considerations is detailed in the 'Action' section.

Though the Maltby Street CAM had a dedicated cargo bike partner with the requisite capabilities and resources to service the project, some issues still emerged. These included restrictions on the company's operating hours, which, while extended for the purposes of the CAM, reverted to regular weekend hours once the project had concluded. This prevented a trader wanting to use the service beyond the CAM from doing so, as delivery times for market setup would have been too late and pickups for market close-downs too early. Additionally, a varying level of support for trader liaison and project development owing to Pedal Me's low profit margins and limited time meant that Fare City, as lead partner, had to assume greater responsibility for organising traders' trips than was originally anticipated.

The team considered at length how EVs could, and should, be incorporated into the project. A key issue was how to reconcile the use of an EV in the most efficient way possible, yet still meet the specific needs of traders. An initial suggestion from the Zipcar team was to use the Brixton BID van in the same way it was used by Brixton traders during the week, namely to cluster collections as part of a single trip to improve efficiency. However, traders needed to travel from different origin points, with different loads, for arrival at the market at the same time. While this effectively rendered this approach unworkable, it may prove suitable for servicing other types of markets, including fixed-basis markets such as the one at Brixton.

The project team were surprised at the lack of hire options within the proximity of London, which challenged how in keeping with the project's objectives it would be to rent a van based 120 kilometres from the market. While the high price point of hiring these EVs would likely make them prohibitive to use on a short-term, let alone long-term basis, it was additionally the logistics and environmental impact associated with travelling long distances that ruled these hires out. After much research, the team found a dealership with depots in Heathrow and Brighton from which two demonstration vans were delivered. These options, though not ideal, were more sustainable in that they enabled traders to trial the vans at no cost, vans could then be purchased by traders directly from that dealership.

Beyond the core cargo bike and EV services used at the Maltby Street CAM, there are other options available to future CAMs. These include longer-term supplier-led 'try before you buy' cargo bike schemes, business subsidies for hire schemes and operator services, and even some app-based pay-per-hour cargo bike schemes. The implementation of clean air zones in a growing number of UK cities typically provides an accompanying scrappage scheme, which enables businesses to trade in an older vehicle for a compliant one.

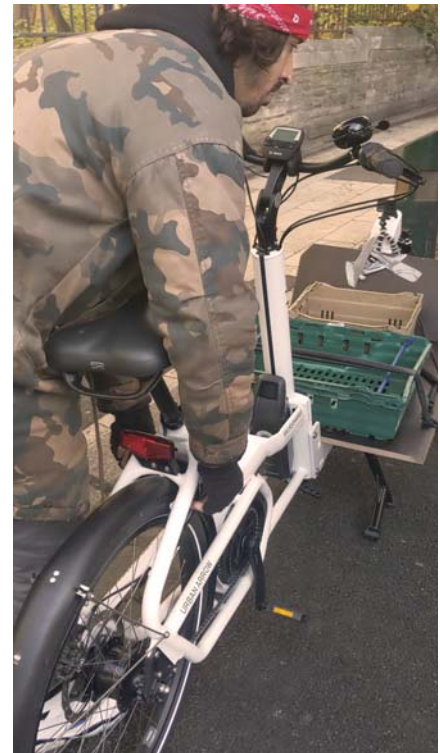
In London, the Greater London ULEZ expansion's scrappage scheme will provide discounts on cargo bikes as well as EVs. Ultimately, having several options available is preferable, while Maltby Street traders felt that competition between operators and suppliers would work in favour of traders at future CAMs. A list of UK cities with cargo bike hires and purchase companies has been detailed in the Further Reading section.

Action

Checkpoint:

1. What ZTE transport options are available in the vicinity of your market and/or city?
2. Do you understand the parameters within which potential operators and/or suppliers operate (e.g., density, availability, geography, and cost of services)?
3. If potential operators and/or suppliers cannot offer a complete service, who will need to pick up any necessary coordination and/or logistics?

Further Reading: [Appendix 5.0_FC CAM_Cargo Bike Directory](#)



Above: Peddle My Wheels offer a shared cargo bike service which may suit some market traders // Source: Fare City
Above right: A local subsidy scheme offered by Team London Bridge and MP Smarter Travel enabled a trader to purchase a cargo bike // Source: Fare City

Stage Six // Trials

Maltby Street Cleaner Air Market (March 2022 – May 2022)

Two sets of trader trials were held, the first in mid-March and the second in early May, seven weeks apart. The project brief specified a single set of trials to be completed in phase one of the project; however, the reality of coordinating traders and operators meant that holding two trials was a logical choice. Although three traders had completed trial forms and were scheduled to trial in the first round, only one did so. A second cargo bike trader contracted COVID-19 shortly before the trial and did not trade on the trial weekend. A third trader, who was supposed to use the Brixton BID van, was not able to do so after a miscommunication regarding the trial dates meant the van was not available.

The first trial with a single cargo bike trader had mixed results. Two cargo bikes and trailers transported the trader team and their equipment a total of 13 kilometres to the market from their home in Maida Vale. Though the trip was approximately 15 minutes quicker than when using a car, vibrations from the trailer damaged the trader's vegan cakes. Further investigation revealed that the products carried in the front of the bike were unaffected, while the condition of those carried in the trailer was fortunately remedied at the market. Despite this, the experience deterred the trader from using the bikes and trailers for anything other than return trips. The traders participated in the CAM weekend but were brought to the market by Fare City in the smaller Brixton BID electric van and were returned using a cargo bike.

The second trial comprised one cargo bike trader and one electric van trader. While a new market trader successfully trialled a cargo bike from their base in Norwood, South London, the second trader, who was supposed to trial the Brixton BID van seven weeks before, did not participate. This was due to an oversight on the part of the trader: the van was too small as it had not been checked against the dimensions of the trader's equipment. Fare City also had to contend with other issues before meeting the trader. These included a lack of available fast charging points, the inaccessibility of some charging points, inaccuracies in the charging app (used to locate the charging points), and having to then use slower charging points. This all contributed to a trip of 5.5 kilometres, and a full charge, ending up taking six hours to complete.

The trials proved invaluable for not only highlighting aspects of each mode that were unsuitable to the needs of traders, but the different operational considerations the team would need to address before the CAM weekend. The extended period between trials enabled the project team to review and redress certain issues while providing additional time to increase interest and secure further participation. Ultimately, the trader trials were just that – trials, which both emphasised areas for improvement while demonstrating to the market traders that the project team were able to handle adversity, which provided confidence ahead of the CAM weekend.



Cargo bike trailer being wheeled into the market // Source: Fare City

Future Cleaner Air Markets

The trader trials represented a definitive stage of the Maltby Street CAM and the first real test of whether the CAM concept could work. During the interviews, several traders voiced the importance of retaining autonomy over their operations, including their transport choices. Proposals that could lead to a lack of control, either owing to the use of a third party (cargo bikes), or an untried mode of transport (both cargo bikes and EVs), required careful deliberation from traders. The level of risk proved to be unacceptable for several traders, who were interested but did not participate.

As per the project objectives, the project team aimed to mitigate the risk to traders and enable the market to run as undisrupted as practicably as possible. This resulted in the Fare City team undertaking most of the liaison between traders and operators, and organising transport logistics. Traders using cargo bikes could have used the Pedal Me customer app where jobs can be booked and managed, a practice that one of the participating traders successfully used. However, for most traders, special requirements such as multiple trailers, early pickups and late dropoffs meant that having Fare City manage this element of the project was the favoured route at the trial stage. Developing guidance for booking specialist jobs could be an option to empower traders to manage their own logistics.

The trials not only allowed the project team to suggest, test, and review (and subsequently address) issues geared towards greater efficiency, but also led to several benefits for participants. These included greater awareness of the versatility of cargo bikes and the knowledge that they can provide a viable alternative to vans. Some time savings were made, especially at the market, where loading and unloading were made simpler owing to the ability to wheel a cargo bike and trailer through the market directly to the trader's pitch. Conversely, in other cases, time was lost at the point of origin of traders' trips, because of several traders' practice of permanently storing their equipment in their vans, resulting in the double handling of equipment.

A workaround was found that mitigated the risk of individual pickups and proved an attractive option for several traders. This was to store bulky equipment at Pedal Me's nearby base, which would then be brought on the market day morning as traders arrived as part of the last mile journey, effectively replicating a hub-style arrangement. This worked to provide a low-risk way for several traders to participate in the project. However, others viewed this as having a higher risk, as loads were effectively split and still required good coordination between Pedal Me and individual traders, due to traders setting up and packing down at different times, despite the market's fixed opening and closing times.

While Fare City considered the suggest, test, and review process to be well suited to the Maltby Street trials, it may not prove to be the most suitable approach for all markets and traders. A second approach, forming part of a Short-CAM option, may be to retain the trader trial checklist at the beginning of the onboarding process, but to commit to a long-term trial, and resolve any issues on an ongoing basis. The aim of this approach is to rapidly normalise the use of cargo bikes and EVs, which may then result in a more organic model of growth, with subsequent traders trialling and ultimately adopting ZTE modes.

For cargo bikes, this may constitute a long-term hire option, such as a 'try before you buy' style scheme, which several London suppliers currently offer. Southwark-based BID, Team London Bridge, has partnered with MP Smarter Travel on a cargo bike business brokerage scheme called 'Bikes for Business'.¹⁸ The programme offers up to 50% off the first £300 spent on any bike-based service, including courier services such as Pedal Me, while offering an additional £1,000 towards the purchase of a bike. This approach would require traders to assume more responsibility for their logistics and commit to quickly identifying and addressing issues. Based on the trials at Maltby Street, this option could certainly work for some traders.

18. <https://www.teamlondonbridge.co.uk/bikesforbusiness>

This faster, more organic model could prove an appealing proposition for some markets that want to adopt a lighter-touch approach and provide a more measured way of allocating funding to help traders switch to ZTE modes. Following the CAM weekend, several new traders, having seen cargo bikes being used multiple times, and EVs just once, came forward requesting more details, with one trader then purchasing a cargo bike. Another potential advantage of the long-term trial model is that traders are typically collaborative and learn quickly from one another, meaning a higher likelihood of other traders adopting and, if successful, embedding ZTE modes into their own operations.

Action

Checkpoint:

1. Who will administer the trader trial checklist and onboarding process, the project lead, the local authority, and/or the logistics provider?
2. How much autonomy do traders want in organising their transport logistics? What options are available to them based on the availability of different modes?
3. Do traders have the interest, capacity, and adaptability to opt for a continuous or longer-term trial model?

Further Reading: [Appendix 6.0_FC CAM Trader Trial Form Summary](#)

Note* As EVs were not used at the Maltby Street trials, but were used at the CAM weekend, details on their performance have been included in Stage Eight 'Event'.



Above: Trial one, the first cargo bike traders arrive at the Market // Source: Fare City
Above right: Trial one, the traders utilised two cargo bikes and a trailer // Source: Fare City
Bottom right: Trial two, a second trader utilised two cargo bikes // Source: Fare City

Stage Seven // Engagement

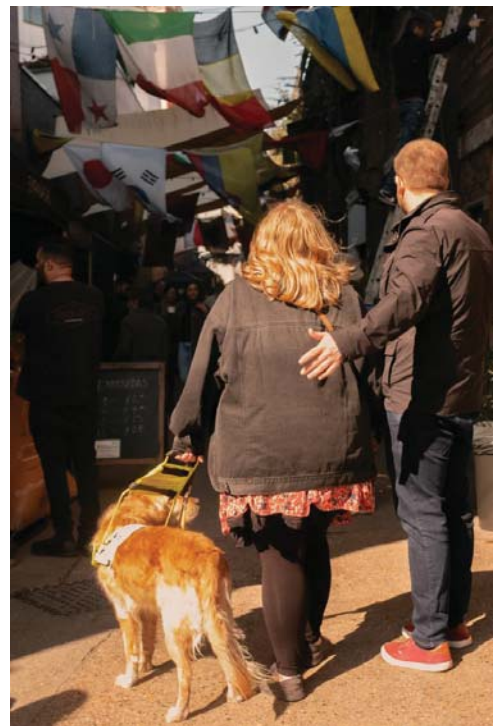
Maltby Street Cleaner Air Market (February 2022 – July 2022)

Part of the project strategy consisted of a Fare City-led engagement programme, which considered who the project should aim to engage with and how. As a social enterprise, Fare City placed equal importance on understanding what the tangible social value of this engagement would be, and how any value generated by one group could, in turn, result in benefits for another. For instance, customer surveys confirmed that traders switching to ZTE modes was valued, and was more likely to lead to customers purchasing from those businesses over those offering similar products that did not. Groups identified for engagement included market traders, market customers, local businesses, residents, and Southwark Council.

Unsurprisingly, most of the project team's capacity for engagement was dedicated to the market's traders. As per the project strategy, multiple touch points were scheduled into the programme to incrementally gain and maintain traders' interest. This not only aimed to help traders switch to ZTE modes but also to consider other aspects of the market and their own operations. Improving market accessibility to make the environment and market day experience as inclusive as possible was a key objective of the pilot. Project partners Wheels for Wellbeing led this brief and began by visiting the market ahead of conducting a full accessibility and visual impairment audit several weeks later. The audit identified three main findings, including the need to improve stall accessibility, improve market website accessibility, and improve market signage.

An audit recommendation that was implemented by the project team was to hold a trader disability awareness workshop, which was attended by nine traders and three market businesses. This enabled the Wheels for Wellbeing team to impart invaluable personal and professional experience to traders and local businesses keen to understand how to improve the accessibility of their operations. Areas covered included disability equality legislation, terminology and the use of language, and suggestions for how traders could be more proactive in assisting disabled customers. The workshop also provided scope for traders to share experiences, ask questions, and explore ideas.

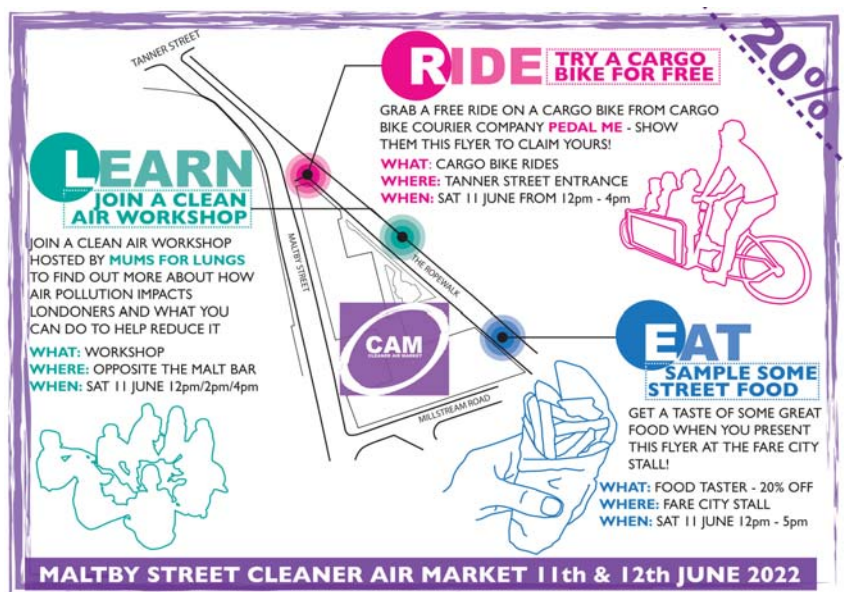
The Fare City team was keen to understand what market customers thought of the CAM concept, and to explore whether the actions of traders and local businesses had any impact on the purchasing decisions of customers. Of the 102 market customers surveyed, 99% considered that air pollution was an important issue affecting Londoners, 82% considered that sustainability was important for small businesses, and 75% stated that they were more likely to purchase from traders using sustainable transport modes over competitors who did not. However, many respondents did recognise that it was not always easy for smaller businesses to act sustainably, given the financial pressures they face.



A visual impairment audit at the market // Source: Fare City

The majority of traders and businesses suggested that the project had also worked to accelerate their thinking about other ways in which markets and traders could operate more sustainably. Suggestions included sourcing ingredients from accredited suppliers, using electric-to-power operations in place of LPG, and the need for better waste separation at markets themselves, as opposed to this taking place off site. The market manager's decision to purchase an electric motorbike was a tangible change that came as a direct result of the project.

The local community, an intended beneficiary of the project, was not engaged with as fully throughout the project as originally planned. Despite identifying several community contacts at the strategy stage of the project, engagement was not conducted until after the completion of the trader trials and with one month to go until the CAM weekend. At this stage, emails were sent, and calls were made to community groups, including tenant and resident associations, youth centres, and community centres. Despite some initial introductions, no further progress was made. In the week preceding the CAM weekend, the Fare City team hand delivered 250 event flyers to the nearby Arnold Estate and St Saviours Estate, meeting residents and explaining the project to them where possible. Despite offering a 20% discount on CAM weekend food, no flyers were handed to traders.



Above: Market traders and businesses attending a disability awareness workshop // Source: Fare City
 Above right: Leaflets were posted to 250 residents as part of the engagement programme // Source: Fare City

Future Cleaner Air Markets

The experimental nature of the Maltby Street CAM afforded the project team the scope to try different ideas and develop those that proved most impactful. This led to multiple benefits, which the Fare City team captured in a logic change model, a document that records different project actions and analyses their ultimate impact against a set of benchmarks. As the CAM was a pilot, project action benchmarks – essentially a more granular set of objectives tying into the project's overall objectives – could be difficult to define. However, the majority were in fact met, and validated the project strategy adopted by the team, especially the tactic to pursue ongoing experimentation and adaptation.

While the project's experimental nature was beneficial in identifying and implementing different ideas, a considerable amount of the project team's time was spent liaising with traders to get them to commit to trialling ZTE transport modes. While this was the project's main objective, it served to eat into the finite resources of the project team and effectively resulted in time being lost elsewhere – most notably for community engagement. In addition to possessing less time to engage with the community, the pilot's lack of certainty made it more difficult for the project team to shape a meaningful offer to residents and local stakeholders earlier in the process.

Future CAMs would benefit from clearly defining which stakeholders they want to engage with and how they want to specifically engage with them early in the project process. Above all, the objectives unique to each future CAM, along with the type of CAM model adopted, will largely determine the extent of stakeholder engagement and its quality. The evidence base established by the Maltby Street CAM may enable future CAMs to accelerate some of the project processes and free up team capacity. This could be beneficial in helping future CAMs to ensure that more stakeholder engagement is front loaded, which, in turn, could lock in trader participation earlier in the process.

An example of a piece of stakeholder engagement that could be front loaded and is not dependent on trader buy-in (and may even help to gain it) is to conduct customer surveys. The surveys at Maltby Street took place at the time of the second trial, as they had not been part of the original project brief. In retrospect, customer surveys could have taken place before the first trader trials, and the findings relayed back to traders in an earlier air quality workshop. Though it may be tempting to conduct a survey even earlier in the process, for instance at the market audit stage, it is important that where project actions are front loaded, they are still governed by a project strategy, thereby ensuring they work interdependently, with each action informing the next.

Engagement will form an important part of any future CAM, regardless of the model adopted. A Short-CAM will still require good trader engagement to articulate the project concept and generate enough interest for traders to follow through with case studies, procurement, and trials. Alternatively, a Long-CAM may generate additional social value through a range of anticipated and unanticipated outcomes. At Maltby Street, this ranged from the installation of permanent accessible market signage to a trader considering the use of accessible menus for their stall. At Maltby Street, extensive stakeholder engagement was successful in getting traders to think about how small actions could leverage a competitive advantage for the market.

Action

Checkpoint:

1. What different types of engagement will enable you to realise your project's objectives? Who needs to be engaged with as your stakeholders, and to what extent?
2. How will engagement be incorporated into the project programme? And how can the sequencing of activities lead to additional social value?
3. How will you monitor and record the impact of the project against both your original objectives and any additional objectives that you may have identified since beginning?

Further Reading: [Appendix 7.0_FC CAM Logic Model](#)

Stage Eight // Event

Maltby Street Cleaner Air Market (11 and 12 June 2022)

The CAM weekend was held on 11 and 12 June to coincide with the UK's annual Clean Air Day on 17 June, as per the project programme. The team believed that the CAM would be more impactful given the increased awareness of clean air around the national day, as well as benefit from greater media traction when promoting the event. The project team also chose to trial the project over a weekend to demonstrate that it could directly fit into the routine of traders at the market. In total, five traders used a ZTE mode of transport for some, or all, of their market trips that weekend. Two traders utilised cargo bikes, two utilised electric vans, and one trader used both a cargo bike and an electric van.

The arrival of traders at the market passed without incident, despite one cargo bike arriving slightly later than planned. The traders using EVs parked and unloaded as normal, while those using cargo bikes benefitted from having their goods wheeled to their respective pitches. The number of trips completed using ZTE modes across the market weekend was 17. This was 11 fewer than scheduled the previous week, owing to two traders dropping out a few days before, and one trader opting to retain their van for some of their trips. The five participating traders still constituted half of the market's regular traders.

Those who did participate were able to understand the environmental impact of switching to a ZTE mode, as Fare City had calculated each trader's CO₂e saving by using data on traders' existing and trial modes of transport, their trip length, and the number of trips completed. On average, the four traders* reduced their carbon emissions by 76.2%, which saved a total of 23 kg CO₂e. The highest savings were made by a trader who had switched from a hybrid car to a cargo bike for all their trips (91.7% reduction), while traders who switched from a diesel van to an electric van made a 71.1% reduction. A trader using mixed modes saved 82.8%. If all traders switched to ZTE modes over the course of a calendar year and traded for 51 weekends, they would collectively save over a tonne of CO₂e.

Importantly, traders were able to share this information with customers, as custom chalkboards illustrating each trader's carbon savings were produced and displayed at their stalls. Overall, traders were happy with the performance of their new transport modes, with those using EVs relaying that the vehicles were easy to drive and spacious. However, one trader reported that the high cost and inconvenience of charging the vehicle could prohibit longer-term use. These observations were compounded by the latest EV charging apps not being up to date. Those using cargo bikes reported no problems, though minor issues with the coordination of bikes and trailers could have been improved, and potentially would be, if used on a long-term basis.

*Though five traders used ZTE modes during the CAM weekend, Fare City deemed that one trader's CO₂e savings were negligible owing to the traders continued use of an ICE van for other trips. The ZTE trips have, therefore, been discounted.



Trader carbon emission and accessibility signage was displayed // Source: Fare City

The project team held a reception event at the market's Malt Bar on Saturday morning to officially open the CAM. The event was attended by over 50 people and featured speakers, a project film, and light refreshments. Attendees included environment and transport professionals, politicians, project partners, and some members of the public. The team held several other market events on the day, designed to raise awareness of issues integral to the project's main objectives. Mums for Lungs ran a series of informal talks with customers throughout the day to discuss the implications of poor air quality for city users. Pedal Me and Peddle My Wheels provided free cargo bike rides for customers, some of whom had never seen, let alone been, on a cargo bike, while Wheels for Wellbeing held an inclusive cycle ride from their training base in Herne Hill to the market, with ten of their stakeholders.

Improving market day accessibility was a fundamental part of the Maltby Street CAM and was geared towards improving the market's facilities and stalls to provide a welcoming and inclusive space for those with disabilities. The market day ride, which included ten disabled people using non-standard cycles, tested some of the measures implemented by the project team. These included general market wayfinding and signage, with two high-level toilet signs installed, as well as trader and business-specific signage. In total, nine traders and three market businesses displayed 'Happy to help' signage featuring accessible infographics, which was a trader-led recommendation from the disability awareness workshop.

The weekend was successful, as all trader trips were completed as planned, extensive stakeholder engagement was carried out, and two participating traders reported their highest takings of the year, which they attributed to the CAM. Following the event, Fare City debriefed with project partners, traders, and event attendees to begin the process of analysing the overall impact of the project, including what had worked well and what areas could be improved. This was conducted using a range of methods, including online surveys, and online and in-person meetings. Project deliverables included a report, two films, a logic change model, data on trader's carbon emissions, and a framework for assessing the approximate emissions of future CAMs.

Future Cleaner Air Markets

It is up to lead partners to decide whether to hold a dedicated CAM event. Doing so at Maltby Street CAM seemed logical, given that it was the first CAM, while doing so enabled the project team to share and promote the project more widely. More fundamentally, holding an event served to instil fresh momentum into the project and accelerated several traders' decisions to participate. In addition to keeping traders focused, it also allowed partners to build the event and implement other aspects of the project while offering additional opportunities for participation and publicity. Drawbacks included retaining interest and sustaining momentum after the event took place, as all traders reverted to their regular transport modes once the weekend had been completed.

The decision to hold an event will depend on the overall objectives of future CAM's. Doing so was a key deliverable of the Maltby Street project and contributed to the development of the project strategy, which set out incremental actions designed to increase participation ahead of the June CAM weekend. While this successfully led to half the traders using ZTE modes over the same weekend, it was ultimately unsuccessful in retaining trader interest and sustaining project momentum. The project did deliver some longer-term outcomes, most notably providing a route for a trader to purchase a cargo bike via the Bikes for Business programme. However, it was never a stated aim to convert traders to ZTE modes long term, only to raise awareness and provide the opportunity to trial them. In this regard, the project can be seen to have been successful.

Future CAMs must aspire to be more ambitious. Though much will depend on the objectives of each individual market, where possible, lead partners should specifically state that an aim is for market traders to convert to ZTE modes. Accelerating a trader's decision to trial a mode may now be easier given that aspects of the Maltby Street CAM concept have been proven, and may, therefore, not necessitate an event to bring the project together. However, perhaps the key factor in determining whether a trader will make the switch is whether the trader believes enough in the reasons behind the project to invest time, money, and effort into it.

Fare City interviewed participating traders at all stages of the project to understand their motivations for first trialling and then potentially switching to a ZTE mode. All traders cited an alignment of their values with those of the project as a key reason for participating, which included a sense of social responsibility. Additionally, several traders wanted to build upon existing sustainable practices, while the ability to test an idea was appealing to traders, especially those who had previously considered an EV. Retaining as much control as possible was important for traders when considering whether to trial a ZTE mode, and ultimately led to one trader reducing their participation, where they felt that their control was in jeopardy.

Traders who opted to use an EV relayed that the mode offered them greater potential to maintain control, not only because they would be driving the vehicles themselves, but also because it constituted a direct switch from one van to another and was therefore a known quantity. Importantly, talks with traders highlighted the importance of their mode of transport when not travelling to and from the market. For smaller traders who do not have a commercial kitchen, their van is typically used as storage, making it more likely that it may simply not be viable to use a cargo bike. This is true for one trader looking to secure a commercial kitchen, who stated that pairing one with a cargo bike would make absolute sense, as high kitchen rental costs would be offset by lower transport running costs.

If an event does appear suitable to help meet the project's objectives, lead partners will need to consider how to promote it. The Maltby Street CAM drew upon the existing networks of project partners to publicise the event across social media, including Twitter, Instagram, Facebook, and LinkedIn, using a mix of tailored posts and targeted paid-for ads. Fare City additionally sent emails, distributed flyers to residents, spoke to market customers, and issued a press release to interested parties, including local and industry publications. Lead partners should mobilise existing networks where possible and may even consider using a media agency to develop a comprehensive communications strategy.

Action

Checkpoint:

1. How important is a CAM event in helping you meet your project's objectives?
2. What key actions will be included in the event?
3. How will you promote the event? Who needs to do what to encourage its reach?

Further Reading: [Appendix 8.0_FC CAM Maltby Street Carbon Emission Tables](#)
[Appendix 8.0_FC CAM Future CAMs Carbon Emission Tables](#)



Top left: CAM reception // Source: Fare City
 Top right: Inclusive toilet signage // Source: Fare City
 Middle: Mums for Lungs workshop // Source: Fare City
 Bottom: Pedal Me rider transporting trader goods from the market // Source: Fare City

Top: A Wheels for Wellbeing member at the market // Source: Fare City
 Middle: One of the traders EV's at the market's entrance // Source: Fare City
 Bottom: Cargo bikes and EV's being loaded at the end of trading // Source: Fare City

Conclusion and Recommendations

The idea for a CAM was first proposed in Fare City's cargo bike policy report *Sharing the Load*, published in May 2021. The report recommended a 'cargo bike clean air market' where 'goods for sale and physical market infrastructure are brought to a location within London regularly via cargo bike'. This ambition was realised at the Maltby Street Market just a year later and is in keeping with the rapid rise of cargo bike use in the capital in the last five years. Though the Maltby Street CAM did not use only cargo bikes and has not happened regularly, it has, however, demonstrated that a CAM is possible and that it does have the potential to be improved, replicated, and expanded.

The project's carbon modelling provides the most compelling case for why other markets in cities across the UK should aspire to CAMs. Even the small-scale intervention at Maltby Street realised an average 76.2% reduction in traders' carbon emissions and an estimated annual saving of over a tonne of CO₂e. The opportunity to not only decarbonise our cities but also clean up the air, improve public accessibility, and encourage businesses to further develop sustainable practices could be greatly assisted by the rollout of CAMs, a potentially low outlay, yet high impact, initiative.

Normalising the use of ZTE modes of transport at markets can encourage long-term behaviour change among businesses and their customers by raising awareness and empowering them to act. The Maltby Street trader who bought a cargo bike, having only observed the market trials, is a testament that this can and does happen. While traders and businesses will need to show foresight and trust in the process to make the switch, it is up to city authorities to demonstrate that they possess the vision and leadership to ensure that this trust is not misplaced. CAMs should be considered part of an integrated ecosystem of city-wide measures to get cities on track to deliver better health, environmental, and economic outcomes for all.

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Recommendation

Utilise the Maltby Street CAM evidence base for future CAMs

The pilot successfully met the stated project objectives. These included reducing the market's contribution to local air pollution and reducing traders' carbon emissions by over three quarters (average 76.2%). This was achieved by the use of fewer ICE vehicles and more ZTE modes. The pilot also highlighted areas that could be improved for future CAMs, including the need to secure wider trader buy-in. Traders reported that having access to high-quality information at the outset of the project would have accelerated their participation, and even helped secure the participation of additional traders.

Lead partners should share Maltby Street CAM case studies early in the project process. Feedback from traders can then be leveraged to develop and tailor a project strategy suited to the requirements of the market. Securing greater buy-in from the outset may enable future CAMs to be more successful in stating, and meeting, more ambitious project objectives.

Recommendation

Markets must develop a CAM model that is right for them

The two models presented in this report, Long-CAM and Short-CAM, aim to work with traders to switch all individual trips from their base to the market. However, aside from targeting individual trips, the pilot highlighted that two other methods could be employed in future CAMs. First, a hub method that could consolidate traders' goods and equipment at a location within proximity to a market – an approach partially trialled in the pilot. Second, a communal cargo bike method whereby traders cluster collections as part of a single trip – an approach being explored as a legacy option of the pilot.

Lead partners must work with project stakeholders to develop a model that works for them. The carbon modelling presented in this report can be applied to different market types and demonstrates the huge potential of running any model of CAM. Lead partners should aim to employ an adaptive style of engagement with their market to ensure that the CAM develops and grows organically, in line with the needs of stakeholders.

Recommendation

CAM accreditation to accelerate uptake of ZTE modes of transport

City authorities across the UK are confronting the dual environmental challenges of air pollution and climate change through initiatives such as clean air zones and net zero targets, respectively. These initiatives advocate an accelerated transition to ZTE modes of transport, given their suitability to address both these challenges, as demonstrated by the London ULEZ scrappage scheme, which will enable users to swap out an ICE vehicle in favour of a cargo bike or EV. However, a policy gap exists, as many of the businesses that could benefit from this transition, such as market traders, are not being sufficiently incentivised to make the switch.

The CAM could act as a conduit to link ZTE modes of transport between environmental initiatives and small businesses. The Maltby Street CAM demonstrates that there is insufficient incentivisation for small businesses to switch to ZTE modes, owing to a lack of awareness that they can work for businesses. An accreditation scheme between city authorities and CAMs could offer businesses additional support, provide businesses with a competitive advantage, and make businesses more attractive to customers.



Project stakeholders at the launch of the Maltby Street CAM // Source: Fare City

Further Discussion and Next Steps

This report sets out how a CAM was delivered at Maltby Street and signposts how future CAMs may be developed in ways that provide greater flexibility for lead partners. The report is by no means exhaustive, but does highlight the huge potential of future iterations, and the need to determine key CAM benchmarks. Further experimentation will help to determine these benchmarks and may, in turn, increase the likelihood of gaining accreditation – one of the report recommendations. Doing so could ultimately lead to the concept, now a working prototype, being improved, replicated, and scaled to a much greater extent. The suggested areas for further discussion and the next steps are as follows:

Improve, replicate, and scale the prototype locally

The Maltby Street CAM was an initial pilot to test whether the concept was workable and whether it could lead to tangible change. Now that aspects of the concept have been proven, it would be logical to take the project's learnings and aim to apply them to other markets. A larger pilot could consist of working simultaneously with two or three markets located in proximity to one another. Doing so would enable much of the Maltby Street project outputs to be reused and refined, which in turn would serve to encourage collaboration and enable rapid upskilling to foster collective benefits, for instance, improved local air quality and sharing of best practices between markets.

Establish a core set of benchmarks for future iterations of the prototype

Taking proven aspects of the Maltby Street pilot and simultaneously applying and improving them across neighbouring markets will reveal the measures that are best suited to replication, and those that are less so. This should enable an outline set of benchmarks to emerge, which can be subsequently used to help inform other CAMs. As per the final report recommendation, one aim of establishing benchmarks must be to achieve accreditation.

Test the suitability of different models and methods

Further experimentation could afford the opportunity to implement other CAM models, such as the Short-CAM, while also enabling other trader trip methods to be tested. Maltby Street's profile, including its small cohort of traders, the nature of trader trips, and the disparate nature of where traders travelled from, meant that replacing each individual trader's existing market day trips was preferable. However, other markets with differing profiles and trader requirements may suit some of the other methods identified, including a last-mile hub method, and/or a shared trader cargo bike.

Determine ways to monitor air quality

The Maltby Street team was mindful of the need to monitor and evaluate the success of the project strategy via the outcomes it delivered against the pilot's objectives. However, one objective that the nature of the strategy made difficult to monitor was the pilot's impact on local air quality levels. This was because the project was geared towards the CAM weekend, which would have a limited impact on local air quality, apart from not contributing to local air pollution. A longer-term trial using equipment such as diffusion tubes could be a better way of monitoring a CAM's air quality impact, while additional measurements for recording the outcome of improved local air quality could be developed and included in the project logic change model.

Identify and implement further market-specific measures

Lead partners should use the Maltby Street CAM resources to help them identify other areas of the market's operation that could be improved via the implementation of simple measures. Though not evident at Maltby Street, engine idling is a common, and unnecessary, contributor to local air pollution. Markets that experience this among traders, neighbouring businesses, or customers could develop an anti-idling policy that focuses on the air quality impacts of idling and the inefficiencies of fuel consumption. Doing so could prove to be a complementary measure to engage stakeholders in the CAM, even though they may not be actively trialling a ZTE mode.

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Appendices

Appendix 1.0 FC_CAM: Concept Note Summary

1.0 Project Synopsis: *What is a cargo bike clean air market?*

Fare City are proposing a cargo bike Clean Air Market (CAM). This will be a new type of public market whereby goods for sale, market traders and market infrastructure are brought to a site in London using cargo bikes and cycles. The purpose of the market is two-fold:

1. To prove that a conventional event (a market) can be staged in a new and engaging way which does not contribute to poorer local air quality levels.
2. To demonstrate the capabilities of cargo bikes and other types of cycle in bringing a high volume of goods to market in an efficient, sustainable, and safe manner.

2.0 Project context: *What is the case for a cargo bike clean air market?*

Fare City's cargo bike policy report, 'Sharing the Load', makes three recommendations for how greater non-commercial cargo bike use can be encouraged in London. One recommendation is to establish cargo bike clean air markets as a way of raising the profile of cargo bikes among Londoners. Fare City consider that greater cargo bike use can be achieved by introducing the mode to the public in a more nuanced way than by direct promotion alone. This will require pairing their use to an issue which resonates with the widest possible range of Londoners, namely clean air, in a format that is inclusive, accessible, and engaging – a market.

3.0 Project Brief: *An overview of the project:*

Who: *Who are the project's intended stakeholders?*

1. Market traders & businesses
2. Residents
3. Market customers

What: *Key elements of the CAM?*

1. Goods for sale and infrastructure brought to a designated site via the use of cargo bikes and cycles, while all ancillary CAM infrastructure (e.g. generators) will be zero emission.
2. Held in a London borough and supported by the local authority.
3. Provide a range of activities designed to raise awareness of the importance of clean air, the benefits of sustainable travel, and how the local authority are addressing these (and other) environmental and transport issues.
4. The success of the CAM will be determined against a bespoke social impact framework which will consider both quantitative and qualitative metrics and will be agreed by the wider project team.

Where: *Where will the CAM take place?*

1. The CAM will be held in a London borough which is at least partially located within the proposed ULEZ extension zone.
2. The market site should have good public transport and cycling links.
3. The market site should provide high levels of local accessibility, on either a permanent basis or temporarily for the purposes of the market (e.g. dropped kerbs, egress points).

When:

1. The CAM could be held over the course of a day to coincide with one of several periodic or unique events – such as London’s annual Car Free Day (LCFD) or the extension of the ULEZ, respectively.

4.0 Project Deliverables: *What will a CAM deliver and how will stakeholders’ benefit?*

Deliverables: *The CAM will deliver:*

1. A physical market (short-term), selling goods for sale and running clean air and sustainable transport programs.
2. An evaluative report: A report which evaluates the combined impact of the CAM and infrastructure trial will be published by Fare City. This will appraise both the concept and the value of rolling out similar initiatives across London and other UK cities.

Social Impact: *Stakeholders could benefit via:*

1. The CAM will not contribute to poorer local air quality levels, unlike a similar event.
2. The CAM will be a community event, which will provide multiple options for interaction and engagement beyond the trading of goods.
3. The CAM will serve to raise awareness of the benefits of making more sustainable travel choices and provide opportunities to trial different types of cycle, including cargo bikes.

5.0 Project Programme: *What are the project’s key dates?*

A project programme should be set out in detail once the project team has been established and once any ‘unknowns’ have been reviewed.

6.0 Project Funding: *How will the project be funded?*

Given Fare City’s role as project team lead and our status as a CIC, we are eligible to apply for third sector-specific grant funding. We consider that grant funding would provide the project team with the best opportunity for delivering the project, however, we are open to discussing alternative proposals which members of the project team may put forward.

7.0 Project Team: *Who will design and deliver the market? (Potential Partners)*

Project lead: *Fare City*, Clean air partners: *Mums for Lungs*, Clean air experts: *Clean Cities Campaign*, Local authority: *TBC*, CAM delivery partner: *Pedal Me*, Communications Partner: *TBC*, Funding body: *TBC*

8.0 Press and Promotion: *How will the market be advertised?*

A media strategy would need to be developed to ensure that the project gains traction early, prior to subsequently building upon this in the run up to the CAM. Partnering with either a communications agency and/or running media ‘in house’ via the project team, will need to be considered.

9.0 Project Evaluation: *How will the success of the project be determined?*

The project should employ the triangulation of research methods to determine an evaluative framework. This framework could include quantitative metrics, such as the number of project stakeholders and the number of market attendees, alongside qualitative metrics, from understanding public perception and satisfaction of the CAM, to identifying the number of market traders who would consider purchasing a cargo bike for deliveries.

Appendix 2.0 FC_CAM: Maltby Street Market Audit Summary

Summary:

In September 2021, Fare City carried out an audit of Maltby Street Market, Southwark, with the aim of determining its suitability for hosting a cargo bike clean air market (CAM). The audit was conducted over two days (4th & 5th September) and involved initial surveying work of the site and local area, alongside talks with both market traders and the market's management.

The audit was designed to provide an initial appraisal of the market including:

1. Site and network
2. Accessibility and amenity
3. Market stakeholders
4. Market atmosphere and ambience

The report predominantly collected qualitative data based on observation, surveying and the results of semi-structured interviews with market stakeholders. There is the potential to conduct a more in-depth audit to collect quantitative data (e.g. visitor counts, air quality levels) at a later date, preferably once project funding has been secured.

Fare City consider that the market is suitable for the trialling of the CAM, but this would require five recommendations to be actioned in advance of the CAM taking place. These include:

1. Agreeing on the definition of a Maltby Street Clean Air Market:

Fare City will recommend what a Maltby Street Clean Air Market could look like, a definition which will need to be discussed and agreed upon by the project's stakeholders. Holding the CAM at Maltby Street would represent a different take on the definition of a 'clean air' market as conceived in Fare City's original concept note. However, the opportunity to work directly with traders at an existing market is more representative of markets up and down the UK and is therefore more valuable in understanding the challenges and opportunities in encouraging systemic change. Clarifying the definition of a clean air market via the use of a strategic brief is an important next step.

2. Obtaining a road suspension for Maltby Street.

Fare City considers that obtaining a road suspension for Maltby Street is integral to holding the CAM. Doing so will provide the necessary space to include additional stalls featuring clean air and active travel related activities, as well as improved accessibility for cargo bikes, cycles, and attendees. The market management has indicated that securing this suspension is feasible given that the road was previously suspended and that it would likely be obtained by Spring 2022.

3. Developing a robust market management plan

Fare City recommends that Maltby Street's management lead the project team in developing a robust market management plan. Given the site's compact dimensions and the likelihood of higher-than-normal levels of attendance, a strategy for ensuring that the CAM is well managed is critical. This will ensure that both the current and the new elements of the market work cohesively and that high levels of accessibility are always maintained.

4. Trialling trips for individual traders to demonstrate proof of concept

Fare City recommends trialling trips with several traders. This is important in first identifying how their supply chains work, and second, in understanding which elements of these supply chains can be substituted with cargo bikes. Developing plans for individual traders may be time consuming but is necessary to test the feasibility of proposals and provide traders with the confidence to trust the use of cargo bike logistics.

5. Actively monitoring and evaluating progress at all project stages

Fare City recommends that the pilot be carefully monitored and regularly evaluated from start to finish as a means of delivering the best possible outcome. Doing so will necessitate a well-coordinated project team, where team members liaise closely with a clear understanding of individual roles and responsibilities.

Appendix 3.0 FC_CAM: FIT Grant Application Summary

Project name:

Cleaner Air Market

Project summary:

Fare City and its project partners are proposing a Cleaner Air Market (CAM). This will be a new type of public market whereby goods for sale, market traders and market infrastructure are brought to an existing London market using a combination of cargo bikes, cycles, and some electric vehicles. The project aims to demonstrate how a working market can viably decarbonise its complex supply chains, while creating a more accessible, equitable and sustainable market experience for the benefit of traders, attendees, and the local community. The project is designed to be scalable, replicable and above all, impactful.

WHAT are you planning to do?

Fare City and its project partners will liaise closely with London-based Maltby Street market management and traders, to improve the community-wide impact of the market. This includes working collaboratively with market traders to replace their car and van trips with sustainable modes of transport. Cargo bike logistics company, Pedal Me, will courier goods, equipment and personnel to and from the site on market days, while public transport and 'zero tail-pipe emission' modes of transport will support traders who are unable to utilise this service.

Inclusive cycling charity, Wheels for Wellbeing, will advise the market management on how it can improve market day accessibility, while clean air organisations – Clean Cities Campaign and Mums for Lungs – will run clean air events at the market. These could consist of stalls, workshops, and rides to empower attendees to consider the benefits of sustainable modes of transport.

The Cleaner Air Market will aim to:

- Sustainably decarbonise the market's transport supply chains, using cargo bikes, cycles and zero tail-pipe emission modes of transport.
- Demonstrate that markets can decarbonise while continuing to run undisrupted.
- Improve local air quality and reduce congestion on market days.
- Raise awareness of the potential of cargo bikes and cycles to replace petrol and diesel cars and vans, for transporting goods and people.

The impact of the Cleaner Air Market will be to:

- Use an evidence-led approach to establish the principles of a Cleaner Air Market, which may then be scaled up and/or replicated by other markets across the UK.

WHY is your project needed?

The Cleaner Air Market is needed to demonstrate that cargo bikes can reduce dependency on cars and vans at a working market. The CAM is based on the findings of Fare City's cargo bike policy report, 'Sharing the Load' which recommends that cargo bikes need to be introduced to the public in a more nuanced way than direct promotion alone. This led us to recommend pairing cargo bike use to an issue which an increasing number of cities are addressing – air quality – in a format that resonates with as many city users as possible, a public market.

The ubiquity of public markets in cities, towns and villages users across the UK makes them an integral part of civic life. However, their proximity to the public also means that harmful emissions from trader's car and van trips negatively impacts local communities. Fare City's primary market research suggests that even the smallest markets have complex supply chains which require hundreds of journeys. Replacing even a fraction of these trips via sustainable modes would improve local air quality and in turn result in appreciable health, wellbeing, and economic gains for all.

A robust evaluative report will be a key project deliverable. This will be critical in demonstrating proof of concept and developing guidelines which could enable other UK markets to advance their own proposals. The CAM could be the catalyst for a large-scale transformational change in attitudes towards how public markets are serviced and what the capabilities of cargo bikes are.

WHERE will your project take place?

The project will take place at Maltby Street Food Market in the Inner London borough of Southwark, one of the UK's worst air pollution hotspots. The market is privately owned and resides adjacent to a railway viaduct. A Fare City audit confirmed that Maltby Street is suitable for hosting the CAM, owing to excellent cycle and public transport links, the sustainable aspirations of the market's management, and the market's small cohort of traders. Securing a small, established, inner-city, market for a pilot provides a high likelihood of trader buy-in, the findings of which can be developed and upscaled to other markets.

WHEN will your project take place?

The project will be split into two phases: 'Trial' (September '21 to March '22) and 'Delivery' (March '22 to September '22). To date, Fare City has audited the market and assembled a project team. Further trial phase actions include project coordination, cargo bike/trader trials, auditing and producing a progress report. Delivery phase actions include designing, coordinating, promoting, delivering, and evaluating the project. The market itself will take place between May – July '22. The market management and project team are open to hosting several markets depending on the success of the trial, trader buy-in, capacity and budget.

WHO or what will benefit from this project?

The project will target both direct and indirect beneficiaries. Direct beneficiaries will include market traders, market attendees and market management. Traders may feel empowered to switch to more sustainable – and affordable – modes of transport, while providing more accessible stalls may unlock a new cohort of customers. Attendees can learn about clean air initiatives via workshops and may prefer to support sustainable businesses. Market management will benefit by becoming an exemplar of championing sustainable practices. Indirect beneficiaries include the local community, who will be consulted throughout the project and benefit from less market day emissions, noise, and congestion.

Appendix 4.0 FC_CAM: Project Brief Summary

The project will be split into two phases: 'Trial' (September '21 to March '22) and 'Delivery' (April '22 to September '22).

- **Trial phase** actions include project coordination, cargo bike/trader trials, additional accessibility auditing and producing a progress report.
- **Delivery phase** actions include coordinating, promoting, delivering, and evaluating the project. The market itself will take place between in June 2022, preferably in the same week as Clean Air Day (16th June).

Trial Phase: September 2021 – March 2022

Fare City: Project coordination, monitoring and evaluation

- Produce detailed project brief, project programme and project social impact framework.
- Produce project literature for market management to circulate to market traders and to local community groups/resident associations.
- Co-develop detailed trader travel programmes with Pedal Me, market management and x2 market traders.
- Coordinate periodic project meetings, including travel to and from the site.
- Collate and evaluate trader and Pedal Me trial data/feedback to produce an end of phase progress report, including recommendations (to be issued directly to FIT).

Pedal Me: Trader trials

- Co-develop detailed trader travel programme with Fare City, market management and x2 market traders, including working out trader loads/capacity, identifying pick up/drop off locations, planning routes and journey times.
- Provide courier services for x2 traders over the course of a market weekend, including organising and manually handling the loading/unloading of goods and equipment; performing safety checks; moving goods; working outside of regular operational hours (weekends early morning/late evening).

Maltby Street Market: Trader engagement and project coordination

- Facilitate engagement between the project team and market traders.
- Advise the project team on both market-specific and local/community issues.

Wheels for Wellbeing: Market accessibility audit

- Undertake accessibility audit of Maltby Street Market, including production of an audit report and recommendations.
- Advise the team on market accessibility issues.

Mums for Lungs & Clean Cities Campaign: Project advisory services

- Advise the project team on air quality issues – e.g. what air quality metrics to use when developing project methodology; how air quality statistics are accurately and effectively employed in project literature.

Delivery phase: April 2022 – September 2022

Fare City: Project coordination, monitoring and evaluation

- Co-develop detailed trader travel programmes with Pedal Me, market management and approximately x8 market traders.
- Coordinate and produce project literature for market launch (e.g. flyers, video, podcast, banners).
- Coordinate periodic project meetings, including travel to and from the site.
- Collate, analyse and present project data (e.g. person counts; trader and total number of trips decarbonised; trader and total quantity of carbon saved).
- Produce a detailed project report to include findings, evaluation, and recommendations.
- Develop a set of principles/guidelines which other markets may use to develop individual proposals.

Pedal Me: Trader courier services

- As per Phase One actions, but to additionally include:
- Co-develop detailed trader travel programme with Fare City, market management and x8 market traders.
- Provide courier services for x8 traders over the course of a market weekend(s).

Maltby Street Market: Operation and market logistics

- Develop market day management plan for the CAM.
- Obtain market day road suspensions.
- Employ additional market staff/security to marshal an expanded and busier site over the course of a market weekend(s).

Wheels for Wellbeing: Project advisory and stakeholder engagement services

- Organise a market day ride from the Herne Hill velodrome on market day(s)
- Advise the team on market accessibility issues.

Mums for Lungs: Stakeholder engagement and promotion

- As per Phase one actions, but to additionally include:
- Prepare, set-up and run market stalls and engagement activities.
- Help to produce promotional material and disseminate project findings/recommendations

Clean Cities Campaign: Project advisory and stakeholder engagement services

- As per Phase one actions, but to additionally include:
- Promotion of project and dissemination of project findings/recommendations

Other Phase Two actions for consideration:

- Project team to produce all CAM promotional material.
- Electric van hire for market days.
- Report launch.
- Project team and partner meetings.

APPENDIX 5.0_FC CAM: UK Cargo Bike Directory

Cargo bike delivery services

Name	Location(s)	Website	Services
Absolutely Courier	London	https://www.absolutelycourier.com/our-services/sameday-courier-services/cargo-bike-courier-service/	<ul style="list-style-type: none"> • Same day courier services • Multiple cargo bike types • Up to 200kg
Cargo Bike Movement	Edinburgh	https://www.cargobikemovement.com/	<ul style="list-style-type: none"> • Collects surplus food from supermarkets to prevent waste and deliver through charities to those that need it
Cargodale	West Yorkshire - Clarendale & Halifax	https://www.cargodale.co.uk/	<ul style="list-style-type: none"> • B2C deliveries from local businesses and markets • Cargo bike hire & training
Co Delivery	Exeter	https://www.co-delivery.co.uk/	<ul style="list-style-type: none"> • Delivery services using a multiple cargo bike types • Up to 250kg capacity • Real time tracking
E Cargo Bikes	London	https://e-cargobikes.com/	<ul style="list-style-type: none"> • Last mile service for businesses & customers
E cargobike Colchester	Colchester	https://ecargobikecolchester.com/	<ul style="list-style-type: none"> • B2C - local business to customer deliveries
Ecofleet	London	https://ecofleet.co.uk/	<ul style="list-style-type: none"> • Bespoke Last-Mile Delivery Services • Same day delivery • Dedicated delivery
Farr Out Delivery	Edinburgh	https://www.farrout.delivery/	<ul style="list-style-type: none"> • B2B & B2C orders • Information on fares & sizes
Get Around Milton Keynes	Milton Keynes	https://getaroundmk.org.uk/cycling/e-cargo-bikes	<ul style="list-style-type: none"> • Milton Keynes Council sponsored 12 cargo bikes available for businesses to use - on both short & long term paying basis
Hereford Pedicabs and Cargo	Hereford	https://www.herefordpedicabs.com/#intro	<ul style="list-style-type: none"> • Last mile delivery and first mile collection services • Pedicab recycling services • Pedicab hire services
Hugos Delivery	London	https://hugoseco-delivery.com/#happy costumers	<ul style="list-style-type: none"> • Delivery of business and personal goods in London by trike
Islabikes Cargo	Ludlow	https://www.islabikes.co.uk/pages/cargo	<ul style="list-style-type: none"> • Local deliveries trial in and around Ludlow
Keert	Isle of Wight	https://keert.uk/	<ul style="list-style-type: none"> • Sustainable point to point delivery on Isle of Wight using cargo bikes • B2C, B2B and regular, multi-drop services • Information on fares & sizes
Our Bike - Peddle My Wheels	London	https://ourbike.co.uk/	<ul style="list-style-type: none"> • Community cargo bike share scheme • Bikes hosted by businesses in 22 locations in London and available for both business and non-business use
Pedal & Post	Oxford	http://www.pedalandpost.co.uk/	<ul style="list-style-type: none"> • Same day courier • Multi-drop • Tracking of orders provided
Pedal Me	London	https://pedalme.co.uk/	<ul style="list-style-type: none"> • Delivery - Cargo bikes & trailers (150 - 300kg), Passenger taxi, B2B logistics & special services • Training - Cargo Bike Rider Training • Offers delivery tracking • Living wage employer
The Bike Drop	Stroud, GL5 postcodes	https://www.thebikedrop.co.uk/	<ul style="list-style-type: none"> • B2C & B2B options • Pay per delivery and dedicated rider service options

The Blue Bermondsey	Bermondsey, London	https://www.bluebermondsey.co.uk/what-we-do/delivery-service/	<ul style="list-style-type: none"> • B2C - cargo bike delivery service for businesses in the Bermondsey area
Xero E	UK wide	https://www.xeroe.co.uk/services	<ul style="list-style-type: none"> • Same day and next day delivery services • Storage and fulfilment services • Cargo bike and cycle deliveries
Zedify	Brighton, Bristol ,Cambridge Edinburgh ,Glasgow ,London Norwich, Plymouth Southampton, Waltham Forest Winchester	https://www.zedify.co.uk/	<ul style="list-style-type: none"> • Next day delivery service using e cargo bikes • Shop to customer deliveries • Multi-drop deliveries from urban micro fulfilment centres • Reverse deliveries for customers • Local & national business courier • Last mile delivery services • Same day deliveries for food, drink and flowers • Uses urban micro-mobility hubs to service their last mile deliveries • Parcel tracking • Living wage employer

Cargo Bike sales

Name	Location / Delivery	Website	Details
Carry Me Bikes	London + UK wide Delivery options	https://www.carryme.org.uk/	<ul style="list-style-type: none"> • Social Enterprise cycle shop • 7 types of cargo bikes • Hire options • Try before you buy option • Offers cargo bike sessions
Edinburgh Bicycles	Edinburgh + UK wide delivery	https://www.edinburghbicycle.com/all-electric-bikes/electric-cargo-bikes	<ul style="list-style-type: none"> • Sells Tern cargo bikes
Flying Dutchman Bikes	London - Notting Hill & Camden	https://www.flyingdutchmanbike/	<ul style="list-style-type: none"> • Sells a wide range of e-cargo bikes • Appointment only
Fully Charged	London, Guildford, Silverstone, Cornwall + UK wide Delivery options	https://www.fullycharged.com/e-bikes/bike-type/electric-cargo-bikes	<ul style="list-style-type: none"> • Sells a wide range of e-cargo bikes • Offers cargo bike trials
London Green Cycles	London + UK wide Delivery options	https://www.londongreencycles.co.uk/	<ul style="list-style-type: none"> • Sells a wide range of e-cargo bikes • Offers e-cargo bikes to hire on a day, week or monthly and long term basis
Outspoken Cycles	Cambridge	https://www.outspokencycles.co.uk/shop/cargo-bikes/	<ul style="list-style-type: none"> • Sells wide range of e-cargo bikes • Offers cargo bike trials
Urban Bikes	London & Rye + UK wide Delivery options	https://urbanebikes.com/collections/electric-cargo-bikes	<ul style="list-style-type: none"> • Sells a wide range of e-cargo bikes • Offers cargo bike trials
Warlands Cycles	Oxford	https://www.warlands-cycles.co.uk/catalogue/cargo-bikes	<ul style="list-style-type: none"> • Sells a wide range of e-cargo bikes

Cargo bike specific programmes

Name	Location	Website	Details
Bikes for Business	London Bridge area, London	https://www.bikesforbusiness.com/	<ul style="list-style-type: none"> • Offers discounts for local businesses to purchase cargo bikes.
Energy Saving Trust	UK wide subsidies for buying e-cargo bikes	https://energysavingtrust.org.uk/service/e-cargo-bikes/	<ul style="list-style-type: none"> • Currently offering Scottish grants for purchasing cargo bikes

Appendix 6.0 FC_CAM: Abridged Trader Trial form

Section 1: Market goods and load

1.1 What is your business and what do you sell?

Please enter answer here:

1.2 Who works at your stall on market day(s)?

Please enter staff name(s) below:

Trader 01 Trader 02

1.3 Please itemise your load:

- Please describe the load that you will want to move by either cargo bike and trailer or electric van:

- e.g. commercial oven (fragile / heavy); punnet of vegetables (fragile/store flat); electrical equipment (fragile); gas cannister (flammable / heavy)

Item: Characteristic: (You can tick multiple boxes)

..... Heavy [] Fragile [] Stored Flat [] Folding [] Flammable []

Section 2: Trips before market days

2.1 Do you bring any items to Maltby Street BEFORE trading on Saturday?

Y [] N []

If you answered **NO**, please go to section 3.

2.2 If you do, on what day(s) do you bring items?

.....

Section 3: Trips to and from the market on Saturday

(Outbound – to the market on Saturday)

3.1 On Saturday morning what do you typically bring?

- Please list individual items

- If you bring all items listed in question 1.2 'Itemise your load' in a single load, please leave blank

Load 1

Load 2

3.2 Where are these items brought FROM?

- Please tell us if they are brought from multiple addresses (e.g. some from home, some from a commercial kitchen)

Load 1 address

Load 2 address

(Inbound – from the market on Saturday)

3.14 What do you do with your goods when you leave the market on Saturday?

- Please list what goods go where (e.g. do some goods go back to your home; to a commercial kitchen; to a lock up nearby)

Load 1 address

Load 2 address

Section 4: Trips to and from the market on Sunday

(Outbound – to the market on Sunday)

If you do not typically trade on Sundays, please go to section 5

4.1 Do you make the same journey(s) on Sunday as you do on Saturday?

- If your journeys are exactly the same, please go to section 5
- If your journeys are different, please describe how they are different below.
- If any of the options are the same as on Saturday, please leave them blank.

Yes [] All information is the same

No [] Some of the information is different

Items: What is different?

Section 5: Trip costs and additional information

5.1 How much does it cost to bring your goods to and from market using your current vehicle(s) / modes of travel?

- Please consider all trips prior to the market and during market weekend. This could include:
 - Fuel costs / ULEZ charge / Tolls / Costs for deliveries (e.g. from a supplier) Oyster fares – e.g. for team member journeys / Parking costs

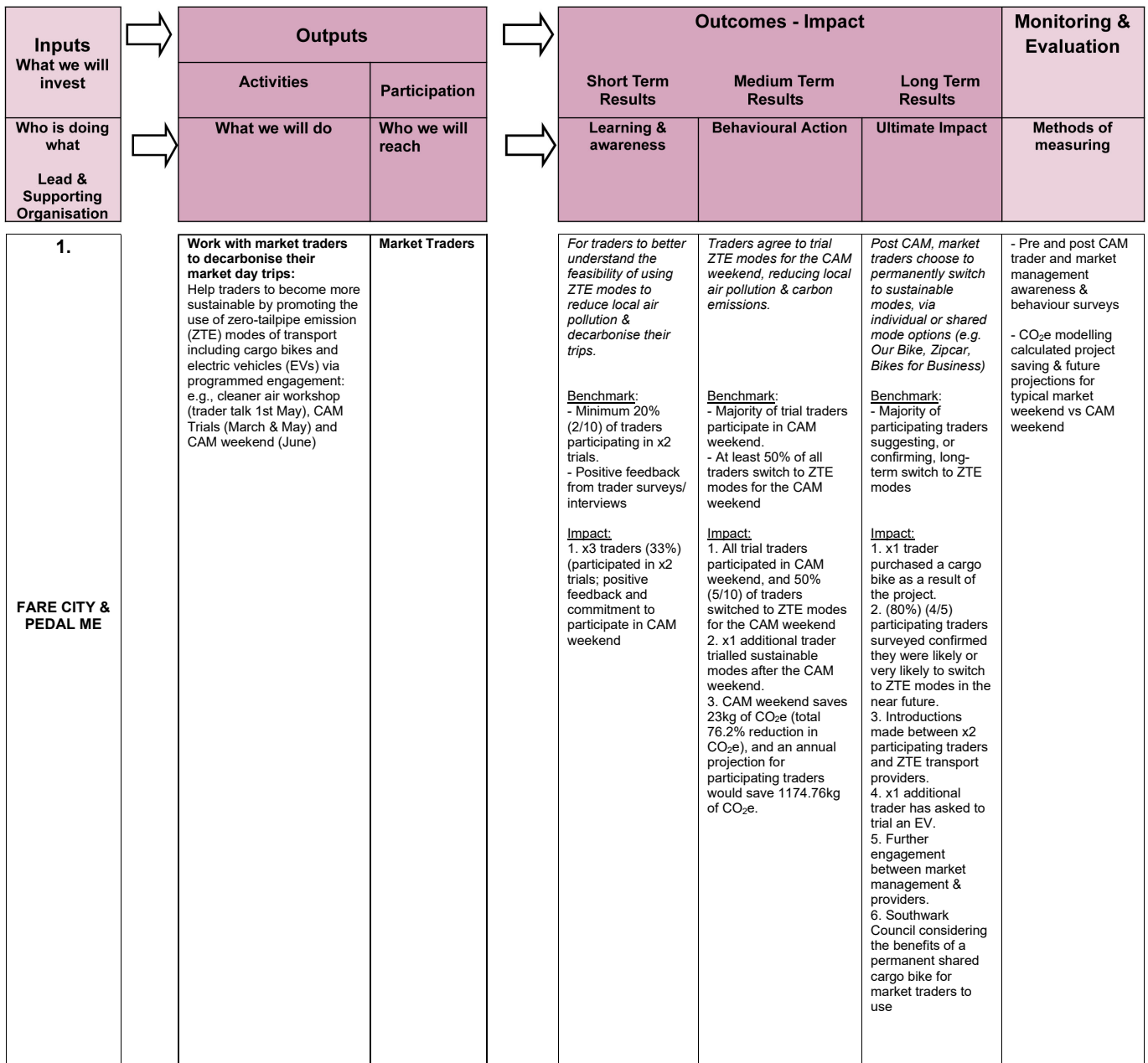
5.2 Is there any additional information that we have missed, and you think we should know about before we do the trial with you?

- Please list any additional comments

5.3 What service would you like to trial to move your goods?

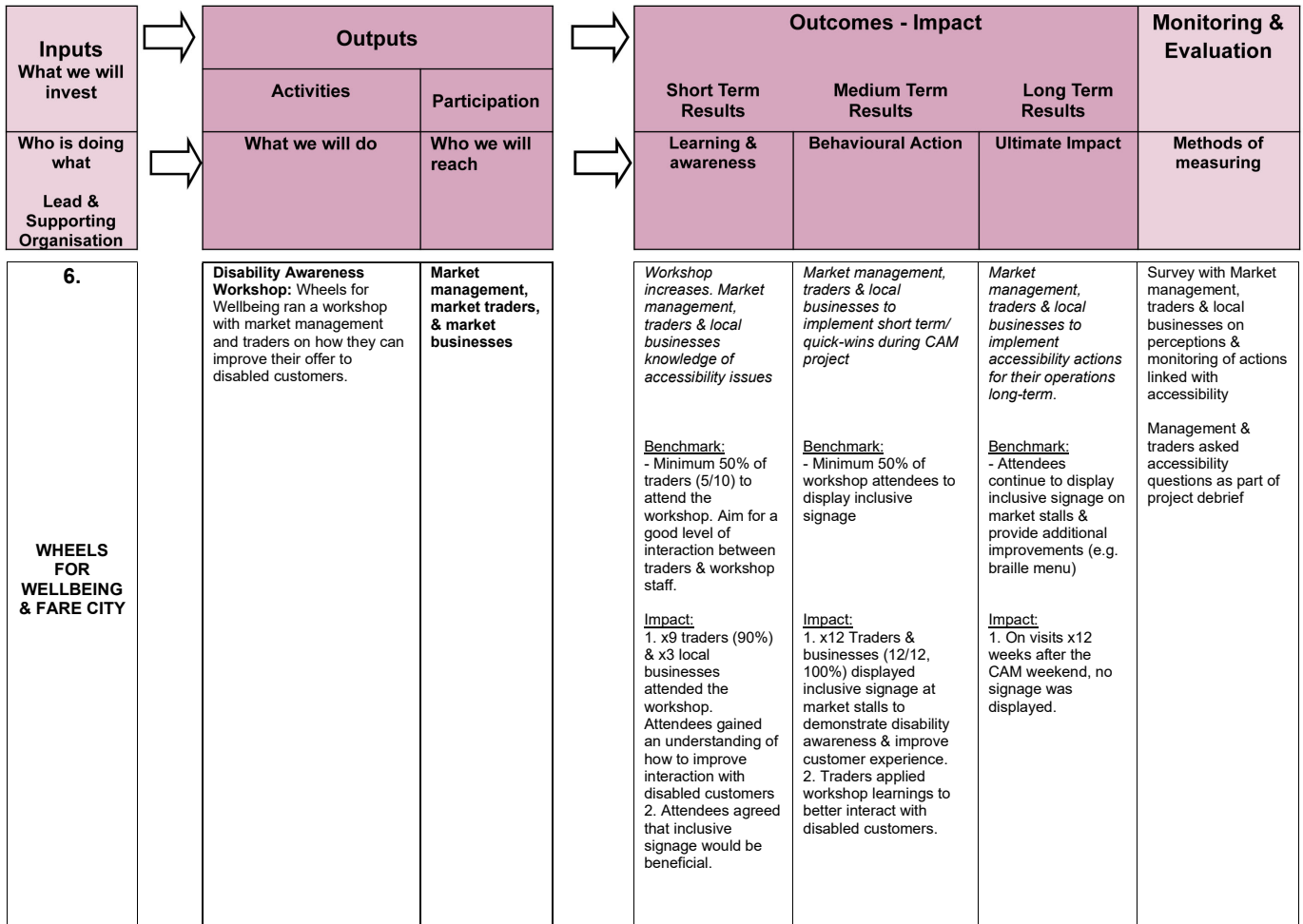
Cargo bike & Trailer [] Electric Van/Car [] Other []

APPENDIX 7.0: Cleaner Air Market - Logic Model FC_CAM: Logic Change Model



Inputs What we will invest	Outputs		Outcomes - Impact			Monitoring & Evaluation
	Activities	Participation	Short Term Results	Medium Term Results	Long Term Results	
Who is doing what Lead & Supporting Organisation	What we will do	Who we will reach	Learning & awareness	Behavioural Action	Ultimate Impact	Methods of measuring
<p>2.</p> <p>FARE CITY & MUMS FOR LUNGS</p>	<p>Engage with market management & traders: Engage on air quality issues & wider sustainability measures.</p>	<p>Market management & market traders</p>	<p><i>Management & traders to increase awareness of sustainability measures that can be implemented to improve current practices</i></p> <p><u>Benchmark:</u> - Identify x3 measures that could improve sustainability of current practices (e.g. separate recycling bins)</p> <p><u>Impact:</u> 1. Discussions with market manager re. the benefits of switching to an electric motorcycle 2. Multiple talks with traders to develop additional actions for improved practice: - Water filter for onsite pizza oven emissions - Low emission charcoal for onsite pizza oven</p>	<p><i>Management & traders to trial new sustainability practices during CAM project e.g. Water filter for Pizza oven.</i></p> <p><u>Benchmark:</u> - Minimum x1 sustainability measure implemented for the CAM weekend.</p> <p><u>Impact:</u> 1. Low emission charcoal trialled at CAM weekend. 2. Market manager viewed & trialled an electric motorcycle</p>	<p><i>Management & traders implement long-term changes to increase sustainability of practices at the market</i></p> <p><u>Benchmark:</u> - Minimum x1 sustainability measure retained beyond the CAM weekend.</p> <p><u>Impact:</u> 1. Market manager purchased an electric motorcycle, used for the majority of market day trips. 2. x1 trader has altered their market day route to avoid congestion & reduce their contribution to local air pollution.</p>	<p>- Pre and post CAM market management and trader surveys on awareness and behaviour</p> <p>- Monitoring of practices at the market</p>
<p>3.</p> <p>FARE CITY, MUMS FOR LUNGS & WHEELS FOR WELLBEING</p>	<p>Engage with local businesses: Businesses based at the market/in the vicinity of the market were informed about the CAM and asked about their current practices</p>	<p>Local businesses</p>	<p><i>Local businesses are made aware of the CAM project and of additional projects that are taking place e.g. Bikes for Business</i></p> <p><u>Benchmark:</u> - Minimum x5 local businesses agree to be surveyed and sign up for project updates</p> <p><u>Impact:</u> 1. x10 local businesses surveyed and sign up for project updates - Majority of businesses surveyed consider that air pollution is an important issue, & would consider using sustainable modes to address it.</p>	<p><i>Local businesses are invited to attend workshops (e.g. disability awareness workshop, air quality workshop) & the CAM weekend.</i></p> <p><u>Benchmark:</u> - Minimum 50% (5/10) of surveyed businesses to attend either a workshop or participate in the CAM weekend.</p> <p><u>Impact:</u> 1. x3 (30%) local businesses attended disability awareness & air quality workshops 2. x3 local businesses participated in the CAM weekend (displayed accessibility signage on their premises).</p>	<p><i>Following the CAM local businesses engage with additional programmes/ associate partners including Zipcar, Our Bike, Bikes for Business</i></p> <p><u>Benchmark:</u> - Minimum 50% of participating local businesses to engage with additional programmes and/or improve the sustainability of current practices as a result of the project</p> <p><u>Impact:</u> 1. x1 (1/3, 33%) local business introduced to an EV provider (email and in-person) about trialling a shared van scheme.</p>	<p>- Pre and post CAM local business surveys</p> <p>- Monitoring of local business uptake of additional programmes</p>

Inputs What we will invest	Outputs		Outcomes - Impact			Monitoring & Evaluation
	Activities	Participation	Short Term Results	Medium Term Results	Long Term Results	
Who is doing what Lead & Supporting Organisation	What we will do	Who we will reach	Learning & awareness	Behavioural Action	Ultimate Impact	Methods of measuring
<p>4.</p> <p>FARE CITY, MUMS FOR LUNGS & MALTBY STREET MARKET</p>	<p>Engage with the local community: Engagement to raise awareness of the CAM project, what it is, and why it is happening.</p>	<p>Local community: Residents and key community representatives</p>	<p><i>Greater awareness of how the use of ZTE transport can reduce local air pollution and contribute to improved health outcomes for local people, via meetings & project literature</i></p> <p><u>Benchmark:</u> - Meet with community members to discuss the impact of local air pollution.</p> <p><u>Impact:</u> 1. x250 flyers with food discount distributed to local properties; x5 in-person conversations. - Resident associations emailed (no meetings). 2. Three social media CAM weekend ads (Instagram & Facebook) targeting local postcodes were posted by Mums for Lungs: Combined totals: - Unique link clicks: 3,460 - Reach: 16,200 - Impressions: 55,700</p>	<p><i>Local residents attend CAM weekend activities e.g. Trader stalls, Mums for Lungs, workshop & Pedal Me activities.</i></p> <p><u>Benchmark:</u> - x10 local residents to attend the CAM & engage with activities (e.g. presenting flyer)</p> <p><u>Impact:</u> - No discount flyers presented on CAM weekend by the local community. - No confirmed residents engaged with CAM activities in the market.</p>	<p><i>Local community become more involved with the market and sustainability actions e.g. community & business joint use of Our Bike programme</i></p> <p><u>Benchmark:</u> N/A</p> <p><u>Impact:</u> N/A</p>	<p>- Monitoring of engagement with local community e.g. contacts and flyering</p>
<p>5.</p> <p>WHEELS FOR WELLBEING & FARE CITY</p>	<p>Accessibility & visual impairment (VI) audit of Maltby street market: Audits presented to market management to improve market accessibility and inclusivity.</p>	<p>Market management, market traders, & market businesses</p>	<p><i>Awareness raised on how inaccessible certain areas of the market currently are</i></p> <p><u>Benchmark:</u> - Audit recommendations to be discussed with market management.</p> <p><u>Impact:</u> 1. Market management gained an understanding of specific issues & remedial actions that could improve market accessibility 2. Audit reports printed & exhibited at CAM weekend for public display.</p>	<p><i>Management agreed to implement report recommendations to make Maltby st Market more accessible.</i></p> <p><u>Benchmark:</u> - Implement a minimum of 50% audit recommendations ahead of the CAM weekend</p> <p><u>Impact:</u> 1. 50% of recommendations were implemented: Disability awareness workshop conducted & Accessible toilet signage permanently installed</p>	<p><i>Recommendations are extended beyond the trial weekend & discussions set up with Southwark Council to improve public realm accessibility</i></p> <p><u>Benchmark:</u> - Management considers a long-term plan for improved market accessibility.</p> <p><u>Impact:</u> 1. x1 project partner now regularly using the market owing to the project 2. Project has initiated email contact with Southwark council re: accessibility improvements in surrounding public realm of the market</p>	<p>- Survey Market management & traders on experiences and views on accessibility. Monitor actions. - Half day Accessibility & VI audit</p>



Inputs What we will invest	Outputs		Outcomes - Impact			Monitoring & Evaluation
	Activities	Participation	Short Term Results	Medium Term Results	Long Term Results	
Who is doing what Lead & Supporting Organisation	What we will do	Who we will reach	Learning & awareness	Behavioural Action	Ultimate Impact	Methods of measuring
7. WHEELS FOR WELLBEING	CAM inclusive cycle ride: x10 disabled cycle users travelled 16.8 km from Herne Hill to Maltby Street on a range of non-standard cycles to attend the market.	Disabled cycle users, market management, market traders & market businesses	<p><i>For disabled cycle users to experience a market which they may not ordinarily do so</i></p> <p><u>Impact:</u> 1. Riders were made aware that the market was inclusive of their needs. 2. Market management gained a better understanding of how measures respond to the needs of users</p>		<p><i>Disabled cycle users have the opportunity to visit other destinations with the programme that they may not have ordinarily visited.</i></p> <p><u>Impact:</u> - WFW to develop a destination rides programme as a result of the CAM weekend ride.</p>	Planned feedback with ride attendees
8. MUMS FOR LUNGS	Air Quality talk: Project-specific trader talk on air quality held in advance of the CAM weekend.	Market management, market traders, & market businesses	<p><i>Provide traders with insights to help inform their choices with a view to participating in the trials</i></p> <p><u>Benchmark:</u> - Minimum 50% of traders (5/10) to attend the workshop. Aim for a good level of interaction between traders & workshop staff.</p> <p><u>Impact:</u> 1. x7 traders (70%) & x1 local businesses attended the air quality workshop. 2. Attendees gained an understanding of how air pollution impacts people in the local area & how they could help reduce it by adapting behaviours</p>			<p>Monitor impact of trader talks on trial and CAM.</p> <p>Pre & post CAM surveys with market traders</p>
9. MUMS FOR LUNGS	CAM weekend stall: Stall with MfL representatives and literature aiming to raise awareness of local air quality issues.	Market customers	<p><i>Conduct CAM weekend air quality talks and engagement activities with customers</i></p> <p><u>Benchmark:</u> - Minimum x50 customer interactions, good level of engagement may include taking MfL and/or project literature</p> <p><u>Impact:</u> 1. x over 50 customer interactions on issues of air quality and its impact</p>			Monitoring the number of interactions with market customers

APPENDIX 8.1_FC CAM MALTBY STREET TRADER CARBON EMISSIONS TABLE_ICE MODE (CURRENT)

Cleaner Air Market 2022 - Greenhouse gas emission calculations for transport modes

ORIGINAL TRANSPORT MODE

Calculations for Scope 1 and Scope 2 Greenhouse gas emissions in accordance with the GHG Protocol.

KEY INFO					
Trader	Patty Pies	Kegarmo	Beefsteaks	Duck Frites	
Service					
ORIGINAL TRANSPORT MODE					
VEHICLE 1					
Vehicle type	UBER/Bolt – Toyota Prius, 2018	Vauxhall Astra 1.4 petrol	Van: 2020 Ford Transit 340 L1H1	Ford Custom Transit 2017 Diesel	
Vehicle category	Business travel-land - Medium Car	Hatchback - Lower Medium Petrol Car	Vans - Class III (1.74 to 3.5 tonnes)	Van - Vans Class III (UK GHG Factors)	
Fuel	Hybrid	Petrol	Diesel	Diesel	
Notes					
CO2e emissions - based on vehicle type (UK GHG Factors)					
Kg CO2e kg/km (UK GHG factors)		0.11	0.17	0.27	0.27
One way trip to market distance - km		4.60	13.50	6.50	11.20
Return distance from market - km		9.20	27.00	13.00	22.40
Number of return trips per market weekend		2.00	2.00	2.00	2.00
TOTAL return distance all trips per market weekend - km		18.40	54.00	26.00	44.80
51 market weekends trip distance - km	938.40		2754.00	1326.00	2284.80
Kg CO2e based on vehicle type per return market trip		1.01	4.72	3.45	5.94
Kg CO2e based on fuel consumption per market weekend including all trips		2.02	9.45	6.90	11.88
Kg CO2e based on vehicle - 51 market weekends	102.82		481.87	351.77	606.13
VEHICLE 2					
Vehicle type		N/A	N/A	N/A	N/A

Notes:

Addresses of specific trader locations have not been included in line with General Data Protection Regulation (GDPR)

CO2e has been used as opposed to CO2. This is referred to as Carbon Dioxide Equivalent which incorporates other greenhouse gases in addition to carbon dioxide.

GHG refers to greenhouse gases which are gases that trap heat contributing to climate change.

Calculations are made for Scope 1 and 2 GHG emissions. For Scope 3 only Transmission and Distribution electricity emissions have been included.

All GHG emission factors are taken from the 2021 UK GHG emissions factors dataset.

GHG emissions are estimates based on available data and stated assumptions.

Embodied carbon of the transport modes have not been included due to lack of data.

It is more accurate to calculate emissions based on litres of fuel consumed, however in the absence of this data calculations have been based on vehicle type taken from the 2021 UK GHG Emission factors dataset.

Vehicle load weight has not been factored in. For example, the Renault Kangoo ZE manufacturer 'Weight Unladen' data states the vehicle is 1630kg. Therefore this has placed it under the UK GHG Emission factor category of Class II (1.305 to 1.74 tonnes).

Vehicle age has not been factored in which may affect vehicle carbon intensity. Although more difficult to measure, reporting on litres of fuel consumed could bypass this uncertainty in future.

ICE' refers to Internal Combustion Engine modes of transport

BVE' refers to Battery Electric Vehicle

Assumptions:

Journey length has been based on input from vendors and use of the Google Maps route planner between the start and final destination. Averages distances have been used where route distances vary between the inbound and outbound route.

In the absence of detailed fuel data average biofuel blends have been used where appropriate for both Petrol and Diesel from the UK GHG Factors dataset.

It is assumed there are 51 market weekends per year as the weekend prior to Christmas is closed.

UK grid averages have been used as no data regarding use of Green or Renewable Tariffs have been provided.

APPENDIX 8.2_FC CAM MALTBY STREET TRADER CARBON EMISSIONS TABLE_BVE (ZTE) MODES (PROPOSED)

Cleaner Air Market 2022 - Greenhouse gas emission calculations for transport modes

ZERO TAILPIPE EMISSION TRANSPORT MODE

Calculations for Scope 1 and Scope 2 Greenhouse gas emissions in accordance with the GHG Protocol.

KEY INFO	Patty Pies	Kegarmo	Beefsteaks	Duck Frites
Trader	Patty Pies	Kegarmo	Beefsteaks	Duck Frites
Service				
ZERO TAILPIPE EMISSION TRANSPORT MODE				
VEHICLE 1				
Vehicle type	Urban Arrow XL cargo bike	Renault Kangoo ZE (Standard Wheelba	Van: MAXUS eDeliver9 LH (72kWh)	Van: MAXUS eDeliver9 LH (72kWh)
Vehicle category	Electric Cargo Bike - none assigned on	Small Passenger Van - Van Class II (UK 4	Vans - Class III (1.74 to 3.5 tonnes)	Vans - Class III (1.74 to 3.5 tonnes)
Fuel	Electric	Electric	Electric	Electric
Notes	*See 'Note 1' at bottom of 'Notes table'			
Vehicle start point	Normal site	Normal site	Normal site	Normal site
CO2e emissions based on energy consumption OR vehicle type				
Cargo Bike Kwh per km - data from Pedal me, not independently verified (https://pedalme.com)	0.02			
Kg CO2e per kwh UK Grid Average - UK GHG Factors	0.21			
Kg CO2e per kwh UK Transmission & Distribution - UK GHG Factors	0.02			
Kg CO2e per km for EV vehicle type		0.05	0.07	0.07
Kg CO2e per km UK Transmission & Distribution for EVs - UK GHG Factors		0.00	0.01	0.01
Total Kg CO2e per km (including direct and T&D)	0.003929	0.054600	0.076600	0.076600
One way trip to market distance	4.60	13.70	6.50	11.20
Return distance for market - km	9.20	27.40	13.00	22.40
Number of return trips per market weekend	2.00	1.00	2.00	2.00
TOTAL return distance all trips per market weekend - km	18.40	27.40	26.00	44.80
51 market weekends trip distance - km	938.40	1397.40	1326.00	2284.80
Kg CO2e based on vehicle type per single market day return trip	0.04	1.50	1.00	1.72
Kg CO2e based on vehicle type per market weekend including all trips	0.07	1.50	1.99	3.43
Kg CO2e based on vehicle - 51 market weekends	3.69	76.30	101.57	175.02
VEHICLE 2				
Vehicle type	Urban Arrow XL cargo bike	Urban Arrow XL cargo bike		
Vehicle category	Electric Cargo Bike - none assigned on	Electric Cargo Bike - none assigned on	UK Emissions Factors	
Fuel	Electric	Electric		
Notes	*See 'Note 2' at bottom of 'Notes table'			
Vehicle start point	Normal site	Normal site		
CO2e emissions based on energy consumption OR vehicle type				
Cargo Bike Kwh per km - data from Pedal me, not independently verified (https://pedalme.com)	0.02	0.02		
Kg CO2e per kwh UK Grid Average - UK GHG Factors	0.21	0.21		
Kg CO2e per kwh UK Transmission & Distribution - UK GHG Factors	0.02	0.02		
Kg CO2e per km for EV vehicle type				
Kg CO2e per km UK Transmission & Distribution for EVs - UK GHG Factors				
Total Kg CO2e per km (including direct and T&D)	0.003929	0.003929	0.000000	0.000000
One way trip to market distance	4.60	13.30		
Return distance for market - km	9.20	26.60		
Number of return trips per market weekend	2.00	1.00		
TOTAL return distance all trips per market weekend - km	18.40	26.60		
51 market weekends trip distance - km	938.40	1356.60		
Kg CO2e based on vehicle type per single market day return trip	0.04	0.10	0.00	0.00
Kg CO2e based on vehicle type per market weekend including all trips	0.07	0.10	0.00	0.00
Kg CO2e based on vehicle - 51 market weekends	3.69	5.33	0.00	0.00
VEHICLE 3				
Vehicle type	Urban Arrow XL cargo bike	Urban Arrow XL cargo bike		
Vehicle category	Electric Cargo Bike - none assigned on	Electric Cargo Bike - none assigned on	UK Emissions Factors	
Fuel	Electric	Electric		
Notes	*See 'Note 3' at bottom of 'Notes table'			
Vehicle start point	Pedal Me Depot return to normal site	Pedal Me Depot		
CO2e emissions based on energy consumption OR vehicle type				
Cargo Bike Kwh per km - data from Pedal me, not independently verified (https://pedalme.com)	0.02	0.02		
Kg CO2e per kwh UK Grid Average - UK GHG Factors	0.21	0.21		
Kg CO2e per kwh UK Transmission & Distribution - UK GHG Factors	0.02	0.02		
Kg CO2e per km for EV vehicle type				
Kg CO2e per km UK Transmission & Distribution for EVs - UK GHG Factors				
Total Kg CO2e per km (including direct and T&D)	0.003929	0.003929	0.000000	0.000000
One way trip to market distance	3.00	2.60		
Return distance for market - km	6.00	5.20		
Number of return trips per market weekend	1.00	1.00		
TOTAL return distance all trips per market weekend - km	6.00	5.20		
51 market weekends trip distance - km	306.00	265.20		
Kg CO2e based on vehicle type per single market day return trip	0.02	0.02	0.00	0.00
Kg CO2e based on vehicle type per market weekend including all trips	0.02	0.02	0.00	0.00
Kg CO2e based on vehicle - 51 market weekends	1.20	1.04	0.00	0.00
TOTALS				
TOTAL Kg CO2e based on fuel consumption per market day including all trips	0.17	1.62	1.99	3.43
TOTAL Kg CO2e based on vehicle - 102 market days	8.58	82.67	101.57	175.02

*Patty Pies: Market equipment was stored at the Pedal Me and delivered to the market, however it was returned to the Patty Pies base Winemakers instead of returning to the depot. Therefore the one way and return distance is based on the mean distance.

Notes:

Addresses or specific trader locations have not been included in line with General Data Protection Regulation (GDPR)

CO2e has been used as opposed to CO2. This is referred to as Carbon Dioxide Equivalent which incorporates other greenhouse gases in addition to carbon dioxide.

GHG refers to greenhouse gases which are gases that trap heat contributing to climate change.

Calculations are made for Scope 1 and 2 GHG emissions. For Scope 3 only Transmission and Distribution electricity emissions have been included.

All GHG emission factors are taken from the 2021 UK GHG emissions factors dataset.

GHG emissions are estimates based on available data and stated assumptions.

Embodied carbon of the transport modes have not been included due to lack of data.

It is more accurate to calculate emissions based on litres of fuel consumed, however in the absence of this data calculations have been based on vehicle type taken from the 2021 UK GHG Emission factors dataset.

Vehicle load weight has not been factored in. For example, the Renault Kangoo ZE manufacturer 'Weight Unladen' data states the vehicle is 1630kg. Therefore this has placed it under the UK GHG Emission factor category of Class II (1.305 to 1.74 tonnes).

Vehicle age has not been factored in which may affect vehicle carbon intensity. Although more difficult to measure, reporting on litres of fuel consumed could bypass this uncertainty in future.

ICE' refers to Internal Combustion Engine modes of transport

BVE' refers to Battery Electric Vehicle

*Note 1: No UK GHG Emission factory category for Cargo Bikes applies so UK Grid average electricity factors have been used.

Only used for outbound journeys which is a shorter distance than the inbound journey. Vehicle load weight has not been factored in. For example the Renault Kangoo ZE manufacturer Weight Unladen data states the vehicle is 1630kg. Therefore this has placed under the UK GHG Emission factor category of Class II (1.305 to 1.74 tonnes).

*Note 2: No UK GHG Emission factory category for Cargo Bikes applies so UK Grid average electricity factors have been used.

Only used for inbound journeys which is a shorter distance than the outbound journey. No UK GHG Emission factory category for Cargo Bikes applies so UK Grid average electricity factors have been used.

*Note 3: No UK GHG Emission factory category applies so UK Grid average electricity factors have been used.

No UK GHG Emission factory category applies so UK Grid average electricity factors have been used.

Cargo bike depot but returning to normal site

Assumptions:

Journey length has been based on input from vendors and use of the Google Maps route planner between the start and final destination. Average distances have been used where route distances vary between the inbound and outbound route.

In the absence of detailed fuel data average biofuel blends have been used where appropriate for both Petrol and Diesel from the UK GHG Factors dataset.

It is assumed there are 51 market weekends per year as the weekend prior to Christmas is closed.

UK grid averages have been used as no data regarding use of Green or Renewable Tariffs have been provided.

APPENDIX 8.3_FC CAM MALTBY STREET TRADER CARBON EMISSIONS COMPARISON TABLE

Cleaner Air Market 2022 - Summary of greenhouse gas emission calculations for transport modes

PATTY PIES	Original ICE Transport Mode Kg CO2e	New BEV Transport Mode Kg CO2e	GHG Emission Savings Kg CO2e	GHG Emission Savings tonnes CO2e	Percentage reduction
Total GHG emissions per market weekend including all return journeys (Kg CO2e)	2.0	0.2	1.8	0.00	91.7%
Total annual GHG emissions based on 51 market weekends (Kg CO2e)	102.8	8.6	94.2	0.09	91.7%
KEGARMO	Original ICE Transport Mode Kg CO2e	New BEV Transport Mode Kg CO2e	GHG Emission Savings Kg CO2e	GHG Emission Savings tonnes CO2e	Percentage reduction
Total GHG emissions per market weekend including all return journeys (Kg CO2e)	9.4	1.6	7.8	0.01	82.8%
Total annual GHG emissions based on 51 market weekends (Kg CO2e)	481.9	82.7	399.2	0.40	82.8%
BEEFSTEAKS	Original ICE Transport Mode Kg CO2e	New BEV Transport Mode Kg CO2e	GHG Emission Savings Kg CO2e	GHG Emission Savings tonnes CO2e	Percentage reduction
Total GHG emissions per market weekend including all return journeys (Kg CO2e)	6.9	2.0	4.9	0.00	71.1%
Total annual GHG emissions based on 51 market weekends (Kg CO2e)	351.8	101.6	250.2	0.25	71.1%
DUCK FRITES	Original ICE Transport Mode Kg CO2e	New BEV Transport Mode Kg CO2e	GHG Emission Savings Kg CO2e	GHG Emission Savings tonnes CO2e	Percentage reduction
Total GHG emissions per market weekend including all return journeys (Kg CO2e)	11.9	3.4	8.5	0.01	71.1%
Total annual GHG emissions based on 51 market weekends (Kg CO2e)	606.1	175.0	431.1	0.43	71.1%
TOTALS FOR 4 TRADERS	Original ICE Transport Mode Kg CO2e	New BEV Transport Mode Kg CO2e	GHG Emission Savings Kg CO2e	GHG Emission Savings tonnes CO2e	Percentage reduction
Total GHG emissions per market weekend including all return journeys (Kg CO2e)	30.2	7.2	23.0	0.0	76.2%
Total annual GHG emissions based on 51 market weekends (Kg CO2e)	1542.6	367.8	1174.8	1.2	76.2%

APPENDIX 8.4_FC CAM CARBON EMISSIONS COMPARISON TABLE (EXTERNALLY DERIVED)

Greenhouse gas emission Comparison Chart

Data source - *How bad are bananas; The Carbon Footprint of Everything* by Mike Berners-Lee (2020)

Unit or Action	grams of CO2e	kg of CO2e	Tonnes of CO2e
Transport related or other			
Travelling a mile by electric bus	6		
Boiling an electric kettle	40		
Travelling a mile on the London Underground	68		
Leaving a lightbulb on for a year (5W low energy)		15	
London to Glasgow and back by train		64	
London to Glasgow and back by plane		368	
Annual footprint of an average Malawian			0.2
Producing a tonne of steel at a foundry (global average)			1.8
Food related			
A local and seasonal apple	32		
A portion of locally grown potatoes (200g)	56		
Tea with cows milk	71		
A banana	110		
An orange	150		
A locally grown seasonal punnet of strawberries (250g)	490		
1kg of rubbish to landfill	590		
A loaf of bread (800g)	630		
A locally brewed pint of beer	650		
1kg of Lemons shipped from Spain		0.9	
A pint of UK cows milk		1.1	
A kilogram of tomatoes grown locally in season		1.3	
A 10 inch margherita pizza		1.4	
A box of 6 eggs		2	
A 4-ounce beef burger		3.2	
1kg of chicken from the UK		3.8	

APPENDIX 8.5_FC CAM FUTURE CARBON EMISSIONS TABLE (BY MODE)

Vehicle Emission Intensity Calculations

Electric Cargo Bike - Urban Arrow XL	Kwh or Kg CO2e
*Cargo Bike Kwh per km	0.017
**Kg CO2e per kwh UK Grid Average	0.21
**Kg CO2e per kwh UK Transmission & Distribution (T&D)	0.02
Total Kg CO2e per km (including direct and T&D)	0.00

*Data provided by Pedal Me - <https://pedalme.co.uk/carbon-emissions/> (not independently verified).

**Data from UK Greenhouse gas reporting: conversion factors 2021

(<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>)

Electric Van - MAXUS eDeliver9 LH (72kWh)	
*Kg CO2e per km - Class III (1.74 to 3.5 tonnes)	0.07
*Kg CO2e per km - UK Electricity Transmission & Distribution for Evs	0.01
Total Kg CO2e per km (including direct and T&D)	0.08

*Data from UK Greenhouse gas reporting: conversion factors 2021

(<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>)

Diesel Van - Ford transit 10 Standard Wheel Base	
*Kg CO2e per km - Class III (1.74 to 3.5 tonnes)	0.27
Total Kg CO2e per km	0.27

*Data from UK Greenhouse gas reporting: conversion factors 2021

(<https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2021>)

REPORT FORMAT

Instructions to identify approximate carbon footprint of market transport mode

- 1) Select closest distance to your market (3, 5 or 10 km)
- 2) Select vehicle type
- 3) Identify number on table

Further step to calculate carbon footprint incorporating number of trips please multiply with number selected from chart.

- 4) Multiply number by number of trips required including return trips.

eg: A 5 km journey in a Diesel Van totals 1.33kg CO₂e. Multiply 1.33 with the number of trips required.

[Number from chart] _____ X [Number of trips] _____ = _____

Carbon footprint of each vehicle type over different distances

Kg CO ₂ e per distance travelled	Electric Cargo Bike	Electric Van	Diesel Van
3 km journey	0.01	0.23	0.80
5 km journey	0.02	0.38	1.33
10 km journey	0.04	0.77	2.65

SCENARIO EXAMPLE:

If you travelled 5 km distance by diesel van, it would emit 1.33kg of carbon emissions, which is more emissions than would be produced by sending 2kg of rubbish to landfill. In comparison, if you travelled the same distance by electric cargo bike, it would emit only 0.02kg of carbon emissions, which is less than the energy required to boil an electric kettle. In terms of the proportionate reductions, if a 10 km trip in a diesel van was replaced by an electric van the carbon emissions would drop from 2.65kg to 0.77kg. That's a reduction of 71%. Alternatively, if the diesel van was replaced by an electric cargo bike, then the carbon emissions would drop from 2.65kg to 0.04kg, a reduction of 99%.

Carbon footprint of market journeys over 1 year

Kg CO ₂ e per distance travelled	Electric Cargo Bike	Electric Van	Diesel Van
Total for 3 km	2	47	162
Total for 5 km	4	78	271
Total for 10 km	8	156	541

Please note the following assumptions have been made:

- Over the course of a year there is 51 markets excluding a market weekend over the Christmas period.
- 51 market weekends equates to 102 market days, each of which will include a return trip totalling 204 journeys.

SCENARIO EXAMPLE:

If you travelled a 10 km return trip to market all year with a diesel van it would emit 541kg of carbon emissions, which is significantly over the carbon emissions of a return flight from London to Glasgow. In comparison, if you travelled the same distance by electric van, it would emit 156kg of carbon emissions, which is 71% less. In comparison, travelling by cargo bike would emit just 8kg of carbon emissions, the equivalent of leaving a 5w lightbulb on for just over six months.

APPENDIX 8.7_FC CAM FUTURE CAMs, TRANSPORT MODE, CARBON FOOTPRINT COMPARISON TABLE

Carbon footprint of overall market trader journeys in Kg CO2e

Mode	Number of market traders travelling 3km			
	1	10	30	50
Electric Cargo Bike	0.02	0.24	0.71	1.18
Electric Van	0.46	4.60	13.79	22.98
Diesel Van	1.59	15.92	47.75	79.59

Please note the following assumptions:

- Total numbers of market traders are for estimation purposes
- The mean trader distance per journey is 3km
- Two journeys have been included for each trader to account for the return journey

Carbon footprint transport mode comparison grid

	Electric Cargo Bike	Electric Van	Diesel Van
Electric Cargo Bike >		19.5 times less CO2e	67.5 times less CO2e
Electric Van >	19.5 times more CO2e		3.5 times less CO2e
Diesel Van >	67.5 times more CO2e	3.5 times more CO2e	



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