



CLEAN AIR BETTER BUSINESS - CLEANER AIR ACTION FORTNIGHT

A CROSS RIVER PARTNERSHIP PROJECT



9-13 Kean Street London WC2B 4AY Telephone 020 7420 4444
Charity registered in England and Wales No. 1026148, in Scotland No. SC041260.
Registered company in England and Wales No. 2838296. VAT No. 625 994 009

TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
EXECUTIVE SUMMARY.....	3
HEADLINE NUMBERS.....	4
INTERVENTION.....	5
RECRUITMENT	6
TRAINING	6
HOTSPOTS.....	7
ACTION DAYS.....	7
KING'S COLLEGE LONDON MONITORING	8
AIR POLLUTION AVOIDED.....	9
ENGAGEMENT IMPACT.....	10
PEOPLE ENGAGED	11
PEOPLE REACHED	11
RECOMMENDATIONS.....	12
APPENDIX ONE: FEEDBACK FROM PARTICIPANTS	15
APPENDIX TWO: EXAMPLES OF COLLATERAL	16
APPENDIX THREE: ENGAGEMENT RECORDING TOOL.....	17
APPENDIX FOUR: METHODOLOGY.....	18
APPENDIX FIVE: ONLINE MEDIA COVERAGE.....	19

EXECUTIVE SUMMARY

Following the success of Cleaner Air Action Days in the City of London, the Mayor's Air Quality Fund provided funding for the Clean Air Better Business programme (CABB) and Global Action Plan (GAP) to engage drivers around idling behaviour during a 'Cleaner Air Action Fortnight'.

The project was the first of its kind to involve multiple Cross River Partnership (CRP) members taking action on idling vehicles in central London and independently verify the impact through King's College London (KCL) air quality monitoring.

62 Change Makersⁱ from across 10 Business Improvement Districts (BIDs) and Local Authorities (collectively referred to as 'CABB partners') in central London were trained by GAP on air pollution and how to engage effectively with drivers at selected idling 'hotspots'. Armed with myth busting knowledge of air pollution, the Change Makers approached 518 drivers in two days during the #noidling Cleaner Air Action Fortnight (7th-20th March 2016).

Drivers were encouraged to commit to switching their engines off in the future with an information flyer and a branded air freshener to act as a prompt for good idling behaviour. The project engaged 767 people in total and reached 3.8 millionⁱⁱ people through online media platforms.

The KCL monitoring showed a measurable reduction in the size and frequency of air pollution peaks during the action days.

This demonstrator project has built local capability to run subsequent #noidling days across London. CABB partners have the knowledge and materials to recruit more Change Makers and support further action through this positive approach. Statistically significant evidence from KCL shows that engaging drivers on idling is effective in improving local air quality, paving the way for future engagement activities.

ⁱ Either a resident volunteer from the CABB partner's locality, a volunteer from CABB partners and their business members, or a paid ambassador

ⁱⁱ Results were tabulated based on 'potential reach'

HEADLINE NUMBERS

Across the Cleaner Air Action Fortnight, the project:

RECRUITED	81 Change Makers were recruited by CABB partners, supported by GAP and CABB
TRAINED	68 Change Makers trained by Global Action Plan over five workshops
REACHED	3,647,000 people via social media (using #noidling) including support from organisations like the RAC Foundation, Energy Saving Trust, Ocado and UPS 153,734 people via green sector press (Air Quality News, 2Degrees, Social Enterprise Network and the Climate Coalition)
ENGAGED	641 people in 518 vehicles by the side of the road across 10 central London locations
THANKED	188 drivers who had already switched off 246 drivers turned off their engine as a result of our engagement.
CHANGED	448 drivers (89%) took a flyer and/or air freshener 379 drivers (90%) pledged not to idle in future
CUMULATIVE IMPACT	378 tonnes of CO₂ emissions & 32 tonnes of NO_x emissions saved over the year if drivers maintain their personal commitment
FUEL SAVING	19 litres of fuelⁱⁱⁱ saved over two action days, 2,200 litres of fuel saved over the year if drivers maintain their personal commitment.

ⁱⁱⁱ www.edf.org/sites/default/files/9236_Idling_Nowhere_2009.pdf

GLOBAL ACTION PLAN

9-13 Kean Street London WC2B 4AY Telephone 020 7420 4444

Charity registered in England and Wales No. 1026148, in Scotland No. SC041260.

Registered company in England and Wales No. 2838296. VAT No. 625 994 009.

INTERVENTION

Global Action Plan and Clean Air Better Business undertook a co-ordinated, London-wide positive driver engagement project to tackle idling. The project was the first to directly engage with drivers across London on such a large scale and involving so many people. The project used Change Makers to engage drivers around the benefits to health, community and the environment when engines are turned off instead of left idling, and asked them to pledge to turn off in future. Change Makers fall into three main groups:

- Resident volunteers from the CABB partner's locality
- Volunteers from the CABB partners themselves or their business members
- Paid Ambassadors

Beyond the no-idling engagement itself, the project is a gateway to people taking more action to combat poor air quality.

This intensive programme of work was carried out over a three month period supported by a large team from GAP and CABB.

The following CABB partners participated in the Clean Air Action Fortnight:

- **Better Bankside BID**
- **Cheapside Initiative BID**
- **New West End Company**
- **Paddington BID**
- **London Borough of Southwark**
- **London Borough of Wandsworth**
- **Urban Partners London**
- **Victoria BID**
- **We are Waterloo BID**



A final CABB partner, The Fitzrovia Partnership BID, joined for the second week of the Cleaner Air Action Fortnight.

GLOBAL ACTION PLAN

9-13 Kean Street London WC2B 4AY Telephone 020 7420 4444

Charity registered in England and Wales No. 1026148, in Scotland No. SC041260.

Registered company in England and Wales No. 2838296. VAT No. 625 994 009.

RECRUITMENT

Our goal was for the CABB partners (with GAP support) to recruit 140 Change Makers across a three week period in the run up to the action fortnight. This provided a buffer of 28% anticipated attrition between recruitment and training to achieve the target number of up to 100 Change Makers attending a training workshop. In total there were 81 Change Makers recruited. There was an extremely high retention rate (84%) between recruitment and training resulting in 68 people receiving the training.

TRAINING

68 Change Makers were trained over four, two hour training workshops on the 2nd and 3rd March. A condensed one hour training workshop was provided for The Fitzrovia Partnership BID employees during the action fortnight.

The overarching theme of the training was that individuals could be empowered to take action on air pollution. The slogan used was **'You are the key to cleaner air'**.

The workshops introduced Change Makers to the issue of air pollution, how it impacts on health and the extent of the problem in central London.

The most important aspect of the training was taking trainees through the positive approach the Change Makers would use to engage with drivers, enabling them to have a good experience and maximise the likelihood of immediate and future action.

Change Makers were coached through the practicalities of engaging people on London streets safely, how to enter data into the driver engagement measurement tool via Google Docs (or paper version) and role plays on how to deal with various driver responses.

All Change Makers were given a volunteer pack containing information to help them feel confident and knowledgeable on the day. It contained:

- ✓ Common myths around engines and idling (e.g. 'Starting an engine causes more pollution than idling) and how to bust them
- ✓ Flow charts of how to engage drivers differently depending on the situation
- ✓ How to effectively use social media and the #noidling hashtag and tips from previous Change Makers.

During the workshops, Change Makers signed health and safety forms, photo permission forms and a social contract to attend the action days. This increased the likelihood of their participation.



GLOBAL ACTION PLAN

9-13 Kean Street London WC2B 4AY Telephone 020 7420 4444

Charity registered in England and Wales No. 1026148, in Scotland No. SC041260.
Registered company in England and Wales No. 2838296. VAT No. 625 994 009.

HOTSPOTS

Each CABB partner was asked to provide between two and five idling 'hotspots' in their locales, for Change Makers to operate in on the action days. Global Action Plan used map data to choose hotspot locations where CABB partners were unable to provide this information.

ACTION DAYS

On the 9th and 16th of March, Change Makers (47 and 42 respectively) headed to rally points within each CABB partner's locality and met with a Global Action Plan member of staff. They were given branded high-vis jackets, flyers, air fresheners and other engagement materials. Once they had been assigned a partner, they were sent to their designated hotspot for a two hour engagement period. Global Action Plan rally point staff also assisted in engaging drivers where required.

MONITORING

An important aspect of the project was the involvement of the King's College London air quality team.

Four of the action day's hotspots were chosen to assess the impact of driver engagement. Air quality monitors (Micro-aethalometers) were placed at each site during the action days between 8am-10am to measure black carbon levels. They were also deployed in the same locations on the 8th and 15th March to capture a control sample.

The instrument was chosen because:

- A) It is portable and allowed monitoring very close to sources of pollution
- B) It measures black carbon which, at the monitoring locations was coming from exhausts.
- C) It can measure at short time frequencies. It was set to take a reading every 60 seconds to try and identify idling peaks.

A comparison was made between non-action days and action days by analysing the number of black carbon peaks over a certain threshold, to give an indication of the likely incidence of idling.

An extended methodology can be found in Appendix 4.

POLLUTION IMPACT

KING'S COLLEGE LONDON MONITORING

In analysing the results, the KCL team were looking for peaks over the 15-20 (ug/m³) threshold that indicate idling. The two key findings are outlined below.

1. The majority (7/8) of the monitoring sites experienced lower peaks on the action days (orange) than the non-action days (blue). There was one outlier monitoring site (the City monitoring site on the 8th & 9th March).

On the below graph showing the results from the monitoring site in Waterloo, the peaks on the action days are lower than the non-action days overall.

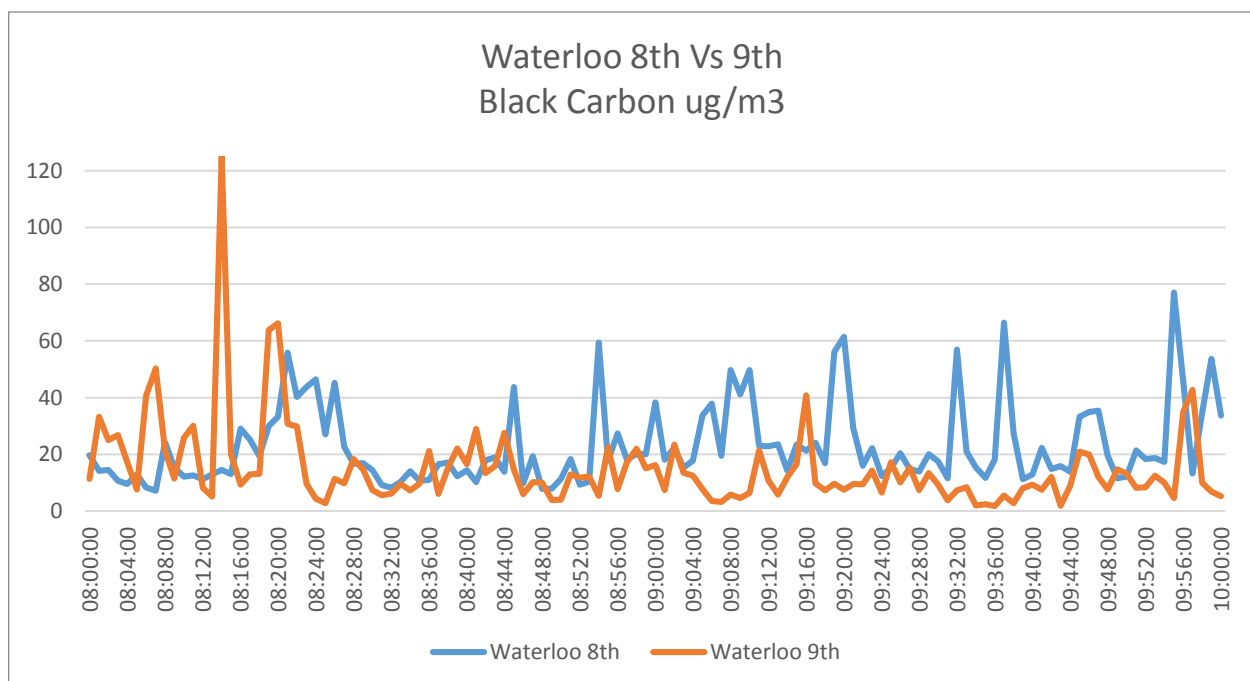


Figure 1. Black Carbon Monitoring on 8th and 9th March at Waterloo, Source: King's College London 2016

2. Overall there were far fewer peaks on the action days than the non-action days. The graph^{iv} below expresses the frequency of peaks on the non-action and action days, grouped into black carbon concentration 'bins' at the Waterloo monitoring site.

^{iv} Graphs from all monitoring sites will be included in the technical report KCL are providing to the Cross River Partnership.

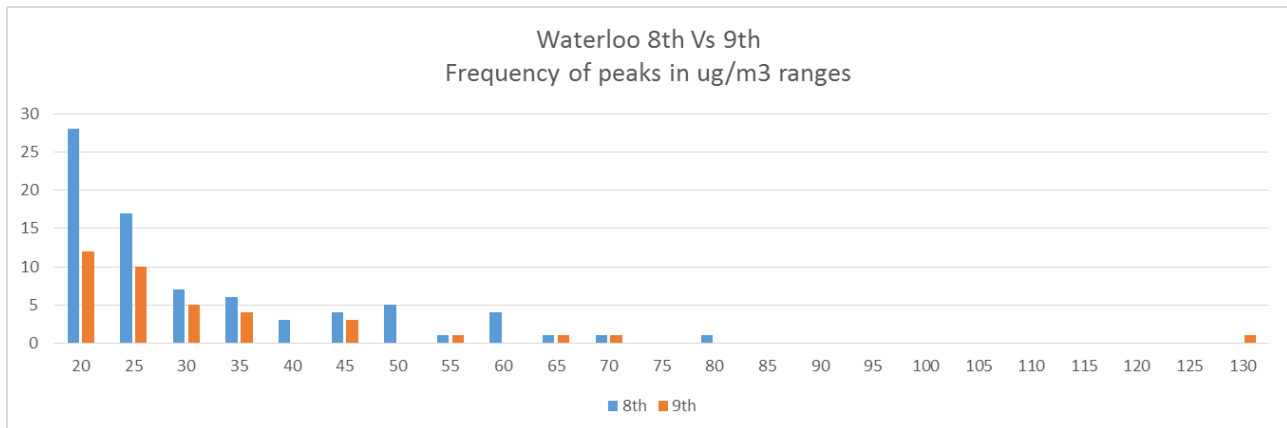


Figure 1. Black Carbon Monitoring on 8th (non-action day) and 9th (action day) March at Waterloo, Source: King's College London 2016

In summary, we can see in the results fewer high pollution episodes and lower peak high pollution episodes at the monitoring sites during the action days. This leads King's College London to conclude that the Cleaner Air Action Fortnight led to a statistically significant reduction in local air pollution.

AIR POLLUTION AVOIDED

Air pollution reduction was also estimated from counts of the numbers and types of vehicles engaged, estimates of the time at which each driver stopped idling and mechanical estimates of emissions from various idling vehicles^v

	CO ₂	NO _x
Emissions avoided on the engagement days	105 kg	0.15 kg
Emissions avoided over a year if drivers stay true to their commitment to stop idling ^{vi}	378 tonnes	32 tonnes

^v http://www.edf.org/sites/default/files/9236_Idling_Nowhere_2009.pdf

^{vi} Note that the likelihood of pledgers upholding their commitment is unknown. Given that whether people uphold their promises is highly contextual there is no way to estimate the likelihood of it happening in this case.

'I UNDERSTAND THAT IDLING CAN CONTRIBUTE TOWARDS SERIOUS ILLNESS, SO I WILL TRY TO REDUCE IDLING IN THE FUTURE.' PARENT, WESTMINSTER

ENGAGEMENT IMPACT

The Cleaner Air Action Fortnight engaged 767 people and reached 3.8 million people through social and other online media. In the tables below are breakdowns engaged and reached figures.

Attendance at the various meetings and workshops was measured through sign in sheets.

The number of drivers and passengers were measured by Change Makers using the measurement tool (Google Form) on their smartphones, with various drop-down menus to log different categories and amounts. A paper version was available to those who did not or could not use the smartphone-configured tool. (See appendix three).

The Twitter reach number is based on the number of overall potential impressions, the total number of times tweets about #noidling were delivered to Twitter streams.

The Facebook reached number is based on data from Facebook Analytics.

The online media numbers are also based on estimated impressions estimated based on page hits and/or total subscribers.



PEOPLE ENGAGED - 767

Cleaner Air Action Day 1 Drivers	274
Cleaner Air Action Day 2 Drivers	244
Cleaner Air Action Day 2 Passengers	96
Drivers engaged via Westminster Marshals ^{vii}	33
Cleaner Air Action Day 1 Passengers	27
Training workshop 3 attendees	25
Training workshop 1 attendees	16
Steering Committee meeting attendees	11
Webinar attendees	11
Training workshop 2 attendees	11
Training workshop 4 attendees	8
Westminster Marshals engaged	7
Training workshop 5 attendees	4
Engaged – Total	767

PEOPLE REACHED - 3,800,779

Twitter week 1	2,198,339
Twitter week 2	1,443,934
Article on Noodls	57,000
Article on 2 degrees	51,000
Article on Social Enterprise Network	25,000
Article and blog on Air Quality News	18,176
Facebook week 1 & 2	4,772
GAP blog	2,000
Climate Coalition e-newsletter	558
Reached – Total	3,800,779

^{vii} The Westminster Marshals assisted the project whilst carrying out their normal duties, which includes asking drivers to switch off their engines. For the second action day they were provided with briefing documents for New West End Company, Paddington BID and Victoria BID. During the second action day they handed out the Cleaner Air Action Day flyers and air fresheners to the drivers they engaged and recorded their engagement figures.

RECOMMENDATIONS

For future projects, to unlock the full potential of the CABB Partners we would want to engage them face to face at project kick off and potentially again at different project phases. This would help improve a number of factors.

Committed time to Recruitment	During the project some CABB partners had very little or no time available for recruiting. Future action days will benefit from all parties agreeing an amount of allocated time and resource for the recruiting phase.
Selecting appropriate hotspots	Some of the hotspots chosen had very little idling during the action days. Where possible, CABB partners should review hotspots in person ahead of action days to maximise Change Maker impact.
Capitalising on communications opportunities early	To maximise project reach, CABB partners should seek consensus at project kick-off concerning lead times required to get action days into CABB partner newsletters, pre-existing comms work and local press. This will help extend the project reach even further; supporting recruitment and call to action during the fortnight.
Celebrating the success of action to date	Change Makers received a 'Thank you' email at the end of Cleaner Air Action Fortnight. To maximise Change Maker retention, we recommend further communications to this group around upcoming air quality projects and what they can do to get involved.

CATALYSING CHANGE

With the project completed, we believe there is lots of scope for future action days on idling and other air quality behaviours. GAP received reports that the CABB partners who participated were really enthused and one CABB partner had requested a commitment to coordinate monthly action days. This suggestion will be put forward at the next CABB steering group meeting.

Interest grew from various parties throughout the project timeline; The Fitzrovia Partnership BID came on-board following the first action day. GAP received enquiries from a number of people wanting to volunteer, including the air quality lead at Friends of the Earth and the facilities manager at Waterloo Station, who wanted his team to get involved. These enquiries came after the training sessions were held, but indicate a wide interest in taking action that directly improves air pollution in London.

A survey to gather feedback was included as part of a 'thank you' email to Change Makers. At time of writing there had been ten responses from the 62 Change Makers that completed an

action day. As this is a small sample size it is difficult to draw conclusions with a high level of confidence, however their responses give us some insight into their attitudes toward the project.

The two main motivators for getting involved; 'Take action on air quality' (9/10 respondents) and 'Improve my local environment' reflects Global Action Plan's approach in empowering people to take action on a local scale.

There was a positive response to the training sessions held; all respondents found them 'Very easy' or 'Easy' to attend and most respondents feeling 'Very confident' or 'Confident' about engaging drivers following the session.

'A REALLY INFORMATIVE, ENGAGING AND ENJOYABLE SESSION', CHANGE MAKER

GAP also received a positive response for the action days themselves with Change Makers reporting that they 'Enjoyed it a lot' (5/10 respondents) or 'Enjoyed it a bit' (5/10 respondents).

Finally, 8 of the 10 Change Makers who initially responded would be interested in doing further Cleaner Air events in future and most felt empowered to take action against air pollution following the action days. This is a strong indicator of the success of the project.

The project was designed to provide enough materials for the CABB Partners to continue running Cleaner Air Action Days as part of Clean Air Better Business. An estimated 3,500 driver packs are available for future engagement and to provide the opportunity to fully embed #noidling Clean Air Action Days locally and create a lasting legacy.

In summary, with statistical evidence showing a reduction in local air pollution, the high level of enthusiasm from CABB partners, interest from third parties and high level of interest in repeat events from Change Makers, there is excellent potential for Clean Air Better Business to hold successful action days in future.



“ It felt satisfying because you are seeing people actually do it when you ask them to switch off. You can smell the difference in the fumes.

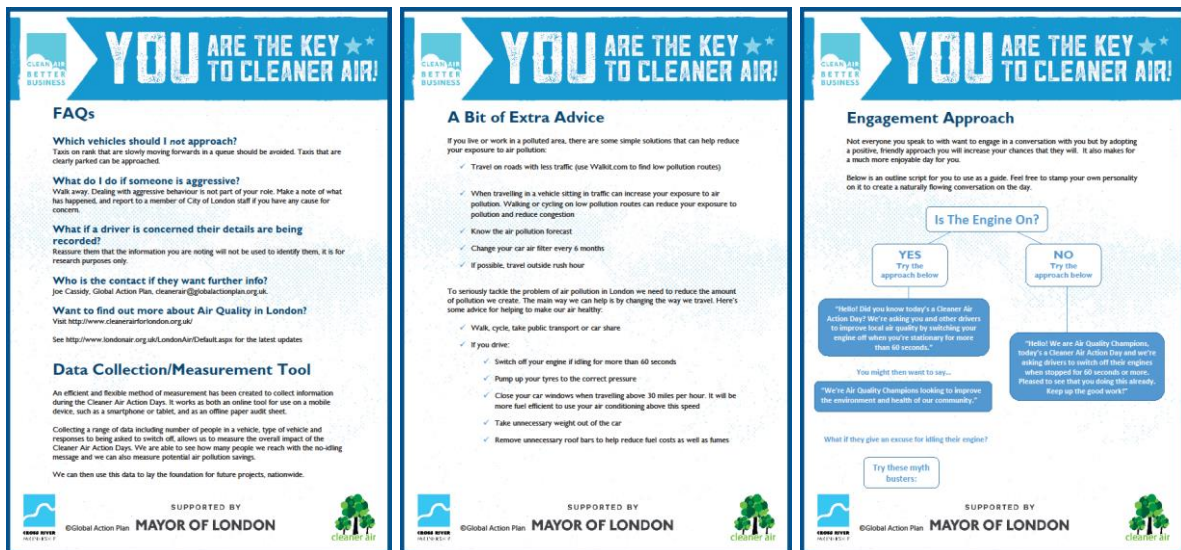
”

APPENDIX ONE: FEEDBACK FROM PARTICIPANTS


Recorded below is a snapshot of comments for participants in the cleaner air action fortnight. We received a really positive response during our engagements, from Change Makers and drivers alike.

Driver that already had his engine off	<i>'I always switch off my engine and ask other drivers to do so too. It's so important!'</i>
Westminster resident, dropping off their child at school	<i>'I understand that idling can contribute towards serious illness, so I will try to reduce idling in the future.'</i>
Odette, WeAreWaterloo employee	<i>'It felt satisfying because you are seeing people actually do it when you ask them to switch off. You can smell the difference in the fumes'</i>
Kyle, NWECC Change Maker	<i>'It feels good to be doing something about it. I think the programme is great'</i>
Rae, local resident	<i>'I have grandchildren in London who will have lost 8% of their lung capacity permanently and it's completely unacceptable'</i>
Will, WeAreWaterloo employee	<i>'The best way to tackle these issues is head-on. Higher level discussions are important but it feels good to speak to people out on the street'</i>
Change Maker in Victoria	<i>'I would quite like to keep a myth-buster sheet as I can think of a few friends and family that would benefit from this'</i>
Karim & Sou, Starbucks employees	<i>'Can I have a flyer please? I think it is very important. I can feel the pollution in London. My skin even reacts to it when it's bad. Great work'</i>

APPENDIX TWO: EXAMPLES OF COLLATERAL



APPENDIX THREE: ENGAGEMENT RECORDING TOOL



YOU ARE THE KEY ★★ TO CLEANER AIR!

CAAD Data Input

*** Required**

1. Date *

Please select the date of the interaction.

Wednesday 9th March Wednesday 16th March

2. Location *

Please select which BID / Council you are in? e.g. NWECC or PaddingtonNow.

NWECC	Southwark Council	Wandsworth Council
WeAreWaterloo	Cheapside	PaddingtonNow
Better Bankside	Urban Partners London	Victoria
		Fitzrovia

3. Idling hotspot *

Please select which hotspot you are in? e.g. B.

B	C	D
E	F	G

If other, please specify location e.g. 9 New Street _____



4. No. of persons in vehicle *

Include the driver plus the number of passengers e.g. 4.


5. Did they take a flyer/air freshener? *

Record whether, when offered, the driver accepted them or not.

Yes No n/a

SUPPORTED BY
©Global Action Plan **MAYOR OF LONDON**



YOU ARE THE KEY ★★ TO CLEANER AIR!

6. When did they switch the engine off? *

Select at which point during your engagement they switched off, if they didn't then select, 'Didn't switch off'. If you come across any other stages of 'switch off' please select the one closest to that.

Before we asked When we asked After my/buster

Didn't switch off n/a

7. Did they pledge to turn off their engine in the future? *

Select 'yes' if they agree to pledge to turn off their engine when idling and select 'no' if they do not agree to turn off their engine when idling and select N/A if you were unable to ask.

Yes No n/a

8. Vehicle type *



Please select the vehicle type that the driver was sitting in. If it does not appear on the list select **Other** and note the vehicle type in the box.

Car	Van	Waste compactor	Motorbike	Ambulance
SUV	Lorry	Refrigerated vehicle	Bus/Coach	Minibus

Other: _____

9. Additional comments

Use this space to add any comments you think are relevant to combating air pollution or simply anything interesting you come across and want to make us aware of.

SUPPORTED BY
©Global Action Plan **MAYOR OF LONDON**

APPENDIX FOUR: METHODOLOGY

Below is an extended version of the methodology listed in brief on page 7. A technical report has been produced by Kings College London and details can be requested from Cross River Partnership's Air Quality Champion.

The instrument used at each monitoring site was a Micro-aethalometer.^{viii}

King's College London have used it repeatedly over multiple projects as it's the most reliable and robust portable monitor available.

The instrument was chosen as:

- A) It is portable and allowed us to monitor very close to our sources
- B) It measures black carbon which, at our monitoring locations will be coming from exhausts.
- C) It can measure at short time frequencies. We had it taking a reading every 1 minute to try and identify idling peaks.



Example of a Micro-aethalometer

The manufacturer's website has detailed information on the principles of operation^{ix}; essentially it draws air onto a filter where black carbon particles are deposited. It shines a wavelength of light through the sample on the filter and detects the rate of change of attenuation of the light source on the other side of the filter, which gives a measurement of the amount of black carbon sampled.

The device measures how much air it is drawing in per minute so is able to calculate the mass per volume of air - micrograms per meter cubed of air - expressed as $\mu\text{g}/\text{m}^3$

Our methodology for the project was fairly simple and involved a couple of assumptions (as all experiments do)

Data collection

Measure black carbon concentrations at the action location on a non-action day between 8am and 10am

^{viii} <https://aethlabs.com/>

^{ix} <https://aethlabs.com/faq>

Measure black carbon concentrations at the same location on the action day between 8am and 10am.

We assume that the level of traffic and the usage of the bay at the action location is similar on the non-action day and action day. In general, weekday traffic in London is the same day to day.

Data analysis

Compare non-action days to action days by comparing the number of peaks over a certain threshold to give an indication of the likely incidence of idling.

Weather will clearly have an effect on measurement. We therefore look for short-lived peaks as indicators rather than the mean averages of the data sets. Whilst weather could raise or lower the mean averages in the data sets, peaks over a threshold can only be from local sources. Since the monitors are only a few feet from their sources, we can have some confidence that the peaks are coming from vehicles at our bays.

The threshold is set at between 15-20 ug/m³, depending on location.

APPENDIX FIVE: ONLINE MEDIA COVERAGE

Outlet	Link
Noodls	http://www.noodls.com/viewNoodl/32289408/westminster-city-council/become-a-change-maker---help-reduce-air-pollution
2 degrees	https://www.2degreesnetwork.com/groups/2degrees-community/resources/100-change-makers-drive-down-pollution-during-cleaner-air-action-fortnight/
Social Enterprise Network	http://www.socialenterprisemark.org.uk/100-change-makers-to-drive-down-pollution-during-cleaner-air-action-fortnight/
GAP blog	https://www.globalactionplan.org.uk/blog/londons-air-quality
AQ News article	http://www.airqualitynews.com/2016/03/09/clean-air-action-fortnight-kicks-off-london/
AQ News blog	http://www.airqualitynews.com/2016/03/15/power-to-the-people-driving-air-quality-behaviour-change/
Climate Coalition e-newsletter	No Web Version Available