CRP'S LUNCHTIME LAUNCHES

CROSS RIVER PARTNERSHIP
Delivering London's Future Together

Green Logistics London: A Healthier City for All

Thursday 16th December
1:15pm – 2pm

The Fitzrovia Partnership
Business Improvement District

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Today's Panel

Dan Johnson
The Fitzrovia Partnership

Speaker

Ben Marston-Rydings
Head of Operations
EMSOL

Speaker

Susannah Wilks
Director
Cross River Partnership

Speaker

Rachael Aldridge
Communications Project Manager
Cross River Partnership

Chair

Dave Ebbrell
Project Officer
Cross River Partnership

Chat Moderator

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Today's Agenda

1. Cross River Partnership Context and Introduction
2. The Fitzrovia Partnership and Sustainability
3. EMSOL and Air Pollution/Noise Monitoring
4. Clean Air Villages 4

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Please pose your questions and thoughts throughout this session in the chat box to the right

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Rachael Aldridge

Communications Project Manager

Cross River Partnership

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03 Partners

Cross River Partnership is proud to be working collaboratively with all of these public, private and community partners across central London and beyond.

1. Angel London
2. Better Bankside
3. Brixton BID
4. Cadogan
5. Camden Town Unlimited
6. Cheapside Business Alliance
7. Eastern City Partnership
8. Euston Town BID
9. Hammersmith BID
10. Hatton Garden BID
11. Marble Arch BID
12. Central District Alliance
13. Paddington Now
14. South Bank BID
15. Team London Bridge
16. The Fitzrovia Partnership
17. The Northbank BID
18. Vauxhall One
19. Victoria BID

CRP Board Boroughs

Boroughs CRP works with

CRP Lead Accountable Body: Westminster City Council

CRP Strategic Partners:

- Greater London Authority
- Groundwork London
- London and Partners
- Network Rail
- Port of London Authority
- Transport for London

Cross River Partnership's Vision Statement

CRP's vision is to address sustainability challenges collaboratively in London and beyond.
As a testbed for exciting projects in towns and cities, we will share knowledge, evidence, and best practice for the people who live, work and visit these places.

CRP and Green Logistics

2013 - 2019

CLEAN AIR BETTER BUSINESS

Award-winning Mayor of London-supported programme, focusing on the business sector and reducing emissions.

2016 - 2019

MARYLEBONE LEN

Delivering a range of initiatives aimed at tackling the area's poor air quality, including EV charging and an anti-idling campaign.

2018 - 2019

CLEAN AIR VILLAGES 1

Reducing emissions across 10 hotspots of poor air quality across five London boroughs.

2019 - 2020

CLEAN AIR VILLAGES 2

Reducing emissions in 13 hotspots of poor air quality across seven London boroughs.

2020 - 2021

CLEAN AIR VILLAGES 3

Expanding scope to support hospitals and wider communities in 16 different London 'villages'.

2021 - 2022

CLEAN AIR VILLAGES 4

Working with 26 project partners to improve air quality through ambitious freight solutions.

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Dan Johnson

Representing The Fitzrovia Partnership

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Let’s Do Fitzero

PLACEMAKING
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Cities account for over 70% of global emissions and consume two thirds of the world's energy

Policy changes affecting Fitzrovia and how businesses operate

- Nov 2021: **Climate Change COP Conference** in Glasgow
- Most big UK business and financial institutions will be forced to show how they intend to hit climate change targets, under new Treasury rules
- By 2023, they will have to set out detailed public plans for how they will move to a low-carbon
- UK Phasing out new petrol car sales by 2030
- Investment in electric vehicles and EV infrastructure
- **Government Net Zero Strategy (Oct)**
- **Heat and Buildings Strategy** (30 million UK buildings)
  - Phase out installation of new gas boilers from 2035
  - Ensuring all new buildings in England are ready for Net Zero from 2025
  - Financial support to grow heat pump supply chain

Policy changes affecting Fitzrovia and how businesses operate

Environment Bill soon to become Act of Parliament, with significant implications for businesses:

- Provide the **Government with powers to set new binding targets** including for air quality, water, biodiversity, re-forestation and waste reduction
- Establish a **new environmental watchdog** – the Office for Environmental Protection (OEP)
- **Extended Producer Responsibility** for waste production
- **Charges** on single use plastics
- Consistent approach to recycling collection, including food waste
- Powers to **prevent the export of plastic** waste to developing countries
- **Restore and enhance nature** - through 'biodiversity net gain'
- Government will ensure that the new developments will have to **protect and enhance nature**
- **Give people a greater say** in the management of local street trees and
- Enshrine in law biodiversity as part of developments

Change brings opportunities

400,000 new jobs

New markets

£bns government and equity investment

Analysis

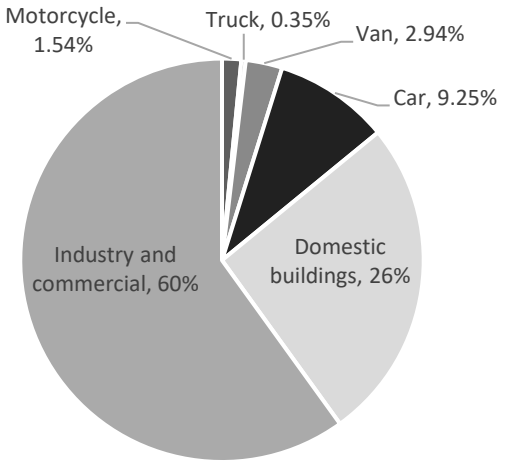
Figure 2 Spatial variation in annual mean NO2 concentration (µg/m3) across Camden

- Fitzrovia has only 3.9sq m of green space per person: the Camden average is 24 sq metres per person

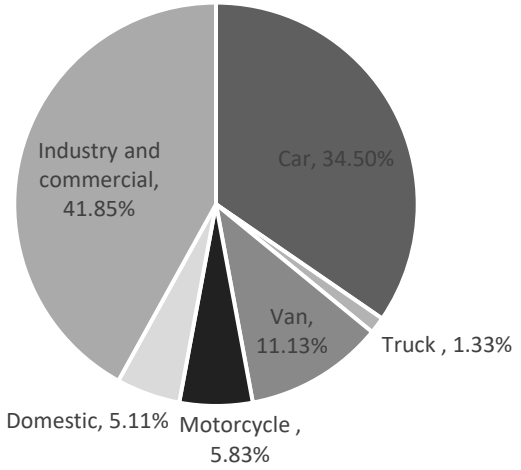
- Fitzrovia has amongst the worst air quality in Camden

Analysis

Fitzrovia Indicative Local CO2 Emissions by Sector



Fitzrovia Indicative Local NOX Emissions



Motorcycle Truck Van Car Domestic buildings Industry and commercial Car Truck Van Motorcycle Domestic Industry and commercial

Road transport accounts for:

14% of Camden's CO2 emissions

50% of NOX

25% of PMs

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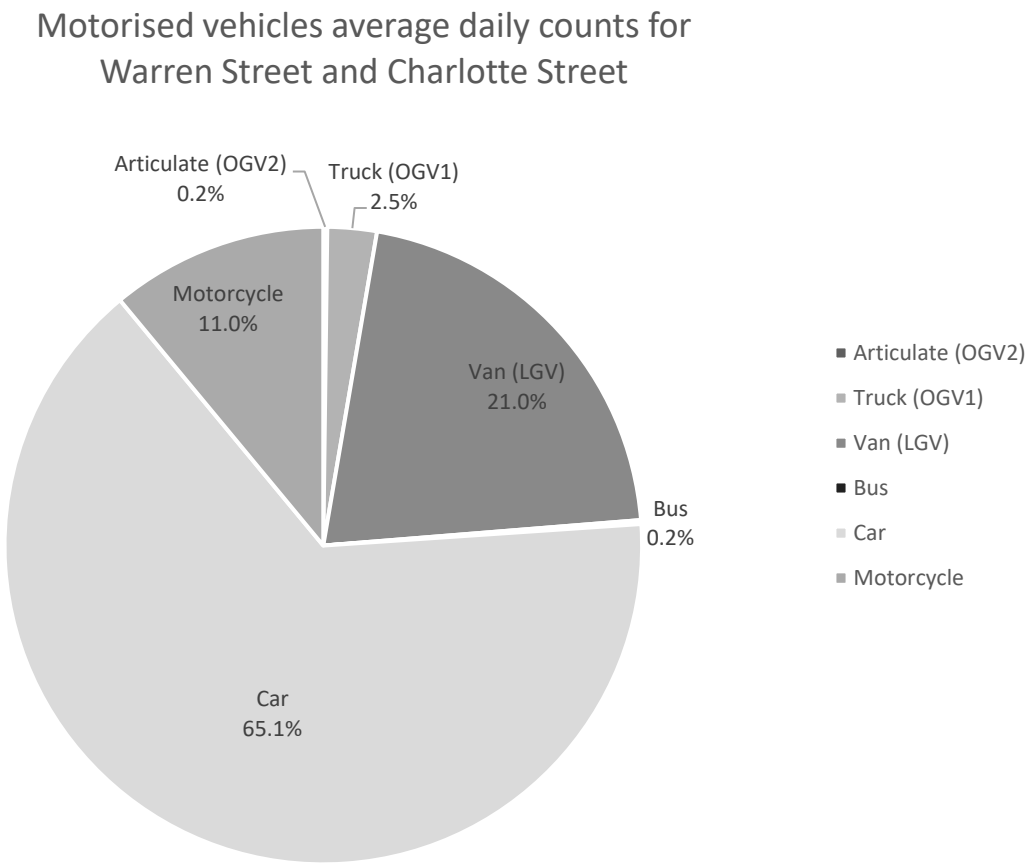
Analysis



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Analysis – roadspace and public realm

Cyclists account for 41% of all traffic on Warren Street and 20% of traffic on Charlotte Street

The volume of motorised vehicles is relatively low: **average of 3 every 2 minutes** on Charlotte Street, increasing to about 3 a minute at peak times

The data indicates it could be possible to make these two streets **traffic free** or pedestrian priority, with timed servicing and delivery access

ARUP

age 1 and 2

VIA VILLAGE

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ARUP

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Let's Do Fitzero

PEOPLE

Every individual and every business needs to contribute

- 5,900 residents
- 38,000 workers
- Property owners
- Small businesses

BUILDINGS

Retrofitting, whole life-cycle zero carbon new build

PLACES

Support sustainable and healthy travel and infrastructure for EVs, support biodiversity

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Short Term – To August 2022

People

1. Expand **Fitzrovia Village Clean Air** offer to include suite of easy to make changes
2. Review Preferred Suppliers for vehicle fleet
3. Review TFP owner supply chains – EVs and high sustainability standards
4. Repeat CAV3 monitoring to understand if ULEZ impacts the area

Place

1. Investment case for public realm
2. Develop permanent “Eateries” and footway widening
3. Contribute to LB Camden transport/freight plans - workshop
4. Identify cycle parking and EV charging point opportunities
5. Introduce recommended e-bike and other zero carbon services
6. Promote the Delivering London click and collect service (under development)

Buildings

1. Sharing and promoting best practice in new build, retrofitting and operation of buildings across each sector
2. Focus on i. retro-fitting/heat pumps and
3. Lobby for investment

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Medium Term – To 2025

People

1. Extend **Fitzero** offer to residents, property owners and non TFP members

Place

1. Micro consolidation
2. Support Camden in completion of cycle routes and the West End Project
3. Secure funding and build Warren Street and Charlotte Street public realm schemes
4. EV charging points
5. Cycle parking
6. Cycle routes
7. Lobby for investment in station and line upgrades

Buildings

1. Focus on i. retro-fitting/heat pumps
2. Promote Green Leases
3. Lobby for investment

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Q&A Session

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Ben Marston Rydings

Head of Operations

EMSOL

Empowering you to improve urban air quality

Reduce air and noise pollution on your sites with EMSOL's targeted data insights

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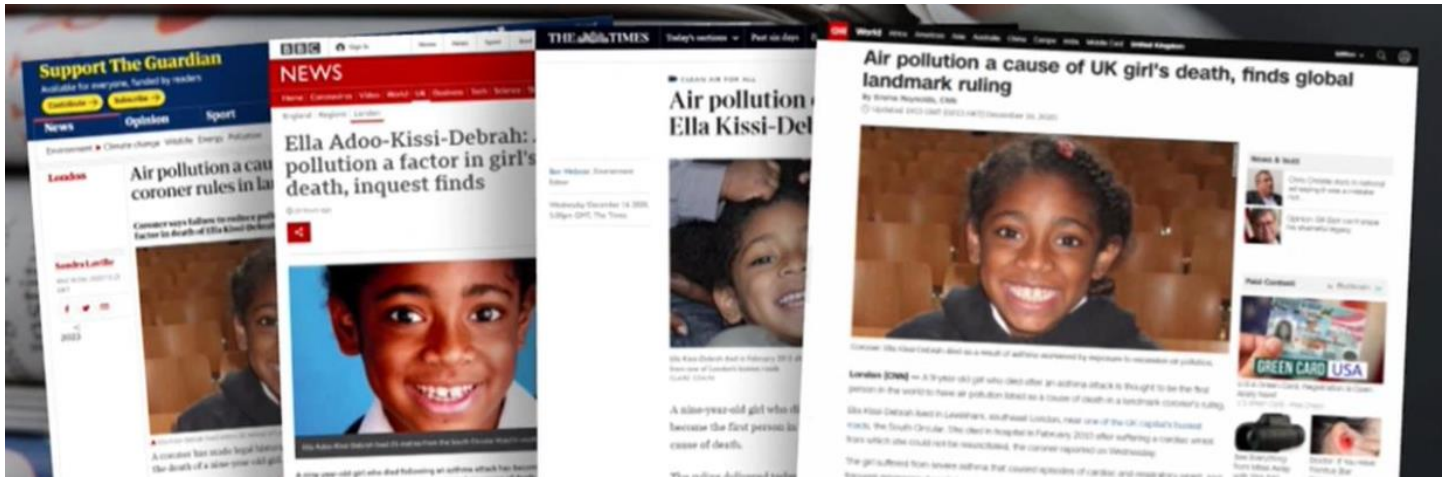
Poor air quality poses a risk to health

The Guardian

Lower UK air pollution limits to prevent deaths, says coroner

sky news

COVID deaths in England's first wave were 70% higher in areas with worst air pollution, study finds



Excessive air pollution contributed to Ella Adoo-Kissi-Debrah's death

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The need to transport goods

- **Road transport is a leading cause of pollution in the capital**
  London suffers from high levels of NO2 and PM pollution.
- **Delivery activity is required**
  To keep services and businesses running solutions must be efficient and ensure organisational needs are met
- **How can organisations ensure that goods are delivered with minimal impact**
  To date it is very difficult to track pollution from specific vehicles and understand real-world real-time impact.

Is river freight a solution?

- **The River Thames provides an opportunity**
  Freight can be delivered while reducing the burden on the capital's road network.
- **The River Thames is the busiest inland waterway in the UK**
  Carrying five million tonnes of freight and reducing an estimated 265,000 lorry movements a year off London's congested roads.
- **However... there are risks of high pollution**
  - Poor emission standards on inland vessels
  - Long in-service lifetime of inland waterways fleet

Is river freight a solution?

- Study on the River Rhine pointed to higher than expected levels of NOx pollution from river freight
- Vessels lacked aftertreatment emissions control systems common in other modern diesel vehicles

Atmos. Chem. Phys., 16, 14285–14295, 2016
www.atmos-chem-phys.net/16/14285/2016/
doi:10.5194/acp-16-14285-2016

Atmospheric Chemistry and Physics
EGU

Emissions of NO, NO_2 and PM from inland shipping

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Received: 6 July 2016 – Published in Atmos. Chem. Phys. Discuss.: 22 July 2016
Revised: 4 October 2016 – Accepted: 20 October 2016 – Published: 16 November 2016

Abstract. Particulate matter (PM) and nitrogen oxides NO_x ($NO_x = NO_2 + NO$) are key species for urban air quality in Europe and are emitted by mobile sources. According to European recommendations, a significant fraction of road freight should be shifted to waterborne transport in the future. In order to better consider this emission change pattern in future emission inventories, in the present study inland water transport emissions of NO_x, CO_2 and PM were investigated under real world conditions on the river Rhine, Germany, in 2013. An average NO_2 / NO_x emission ratio of 0.08 ± 0.02 was obtained, which is indicative of ship diesel engines without exhaust gas aftertreatment systems. For all measured motor ship types and operation conditions, overall weighted average emission indices (EIs), as emitted mass of pollutant per kg burnt fuel of $EI_{NO_x} = 54 \pm 4\ g\ kg^{-1}$ and a lower limit $EI_{PM_1} \geq 2.0 \pm 0.3\ g\ kg^{-1}$, were obtained. EIs for NO_x and PM_1 were found to be in the range of 20–161 and ≥ 0.2–$8.1\ g\ kg^{-1}$ respectively. A comparison with threshold values of national German guidelines shows that the NO_x emissions of all investigated motor ship types are above the threshold values, while the obtained lower limit PM_1 emissions are just under. To reduce NO_x emissions to acceptable values, implementation of exhaust gas aftertreatment systems is recommended.

1 Introduction

Particulate matter (PM) and nitrogen dioxide (NO_2) are key species for urban air quality in Europe. Whereas the exceedance of PM limiting values has attracted considerable public attention during the last decade, NO_2 is a topical problem, which became prominent through the introduction of new European limiting values in January 2010.

The reduction of nitrogen oxide (NO_x = nitrogen monoxide (NO) + NO_2) emissions has historically been one of the key objectives for improving air quality in Europe. NO_x emissions have started to decrease considerably since the mid 1980s in many European areas. However, emissions from mobile sources are still important contributors to air pollution, in particular NO_x. Together with NO_x, non-methane volatile organic compounds (NMVOCs) undergo photochemical reactions that produce secondary pollutants such as ozone (O_3), peroxyacetyl nitrate (PAN) and others (Chameides et al., 1997; Atkinson, 2000).

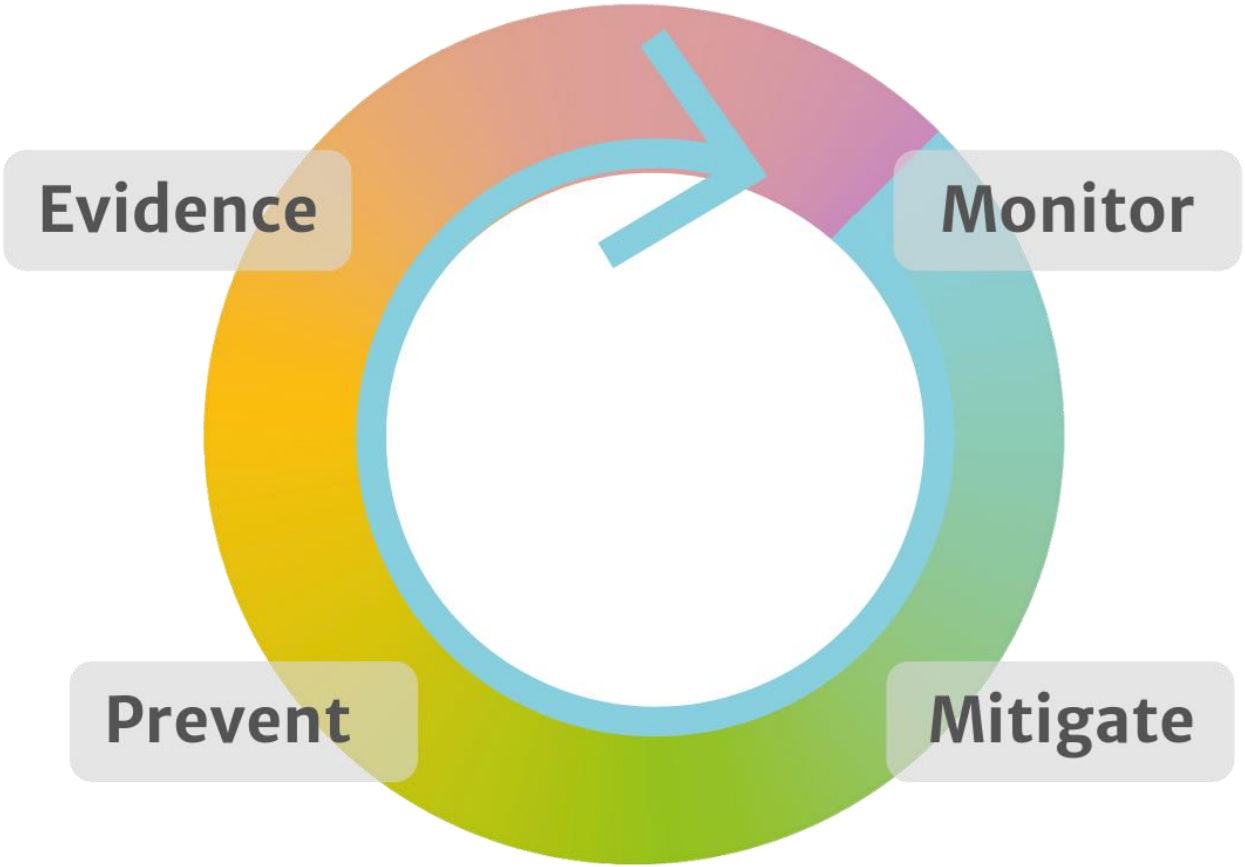
According to the European Commission's White Paper (2011), 30 % of road freight transported over more than 300 km distance should shift to other transport modes such as waterborne or rail transport by 2030, and more than 50 % by 2050 (European Commission, 2011). Accordingly, such a shift will result in an increase of emissions from inland water transportation in the next years.

In Germany today, the contribution of inland navigation to the total freight traffic is about 12 % (BDA, 2015a). In the Rhine corridor the contribution is 16–18 % (BDA, 2015b). With respect to the goods categories "coal, crude oil and petroleum gas"; "ores, industrial rocks and minerals, and other mining products" and "coking plant and petroleum products", inland water navigation is the most important transportation mode. In comparison to road transport, inland navigation has a contribution of 72 % for these goods categories and 52 % for container transport. Inland water navigation is a competitive alternative to road and rail transport because the energy consumption per km and ton of transported goods is only approximately 17 % of road and 50 % of rail transport (ECT, 2015). As a consequence of the lower energy consumption, inland water transportation emits significantly less CO_2 and, therefore, has a direct impact on climate change.

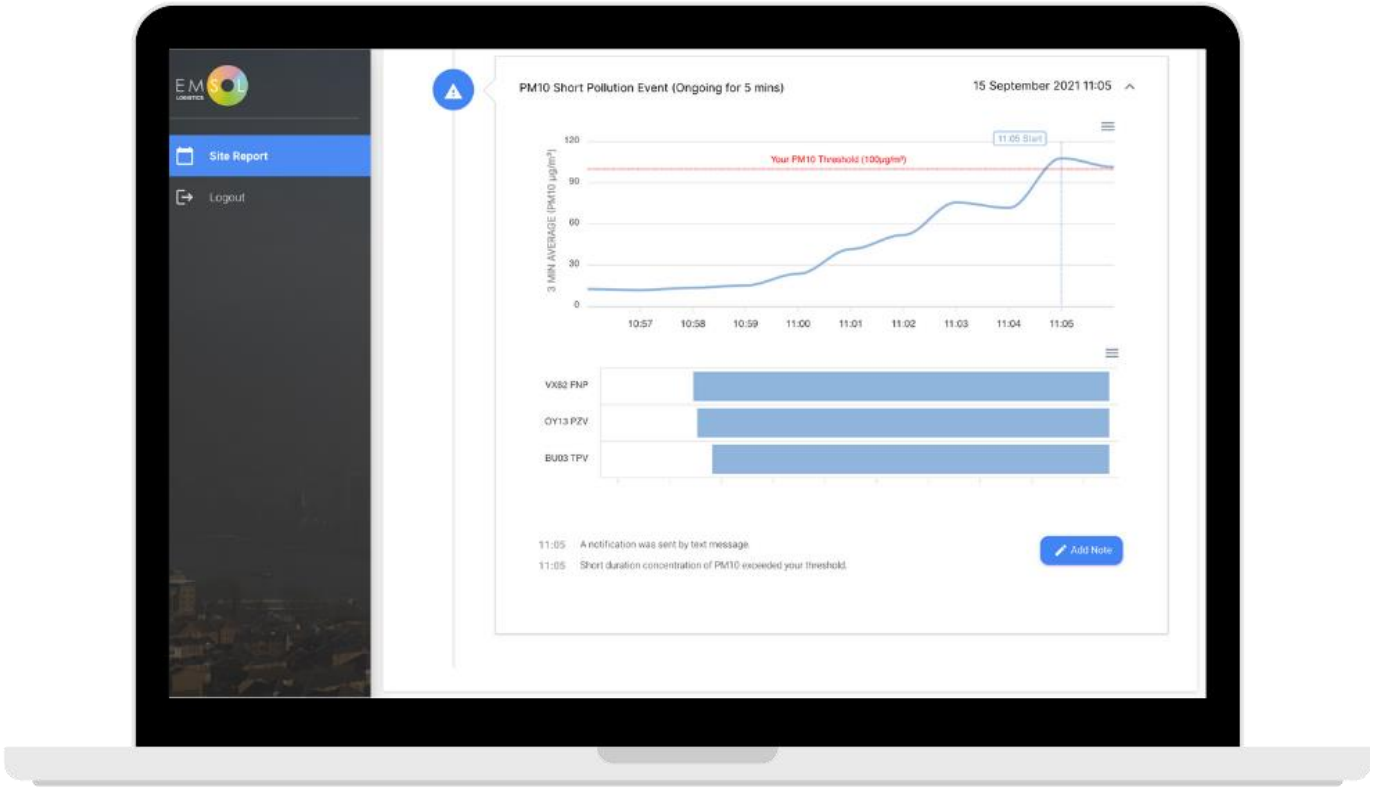
Published by Copernicus Publications on behalf of the European Geosciences Union.

The EMSOL Vision

Simple approach to reducing pollution



Access to real-time targeted insights



- Pollution alerts complimented with real-time vehicle identification
- Full view of vehicles on site
- Visibility of supply chain activity
- Quickly spot issues such as idling

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Project Results

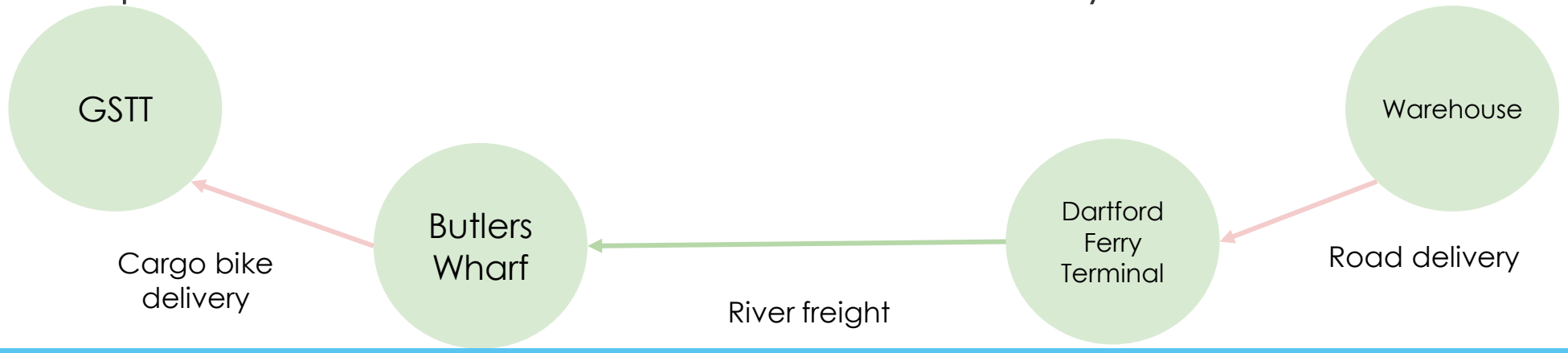
Project overview

Aim

- Measure pollution from river freight to understand the impact of switching away from supply via road.
- How can goods be moved with lower impact on pollution?

The supply chain

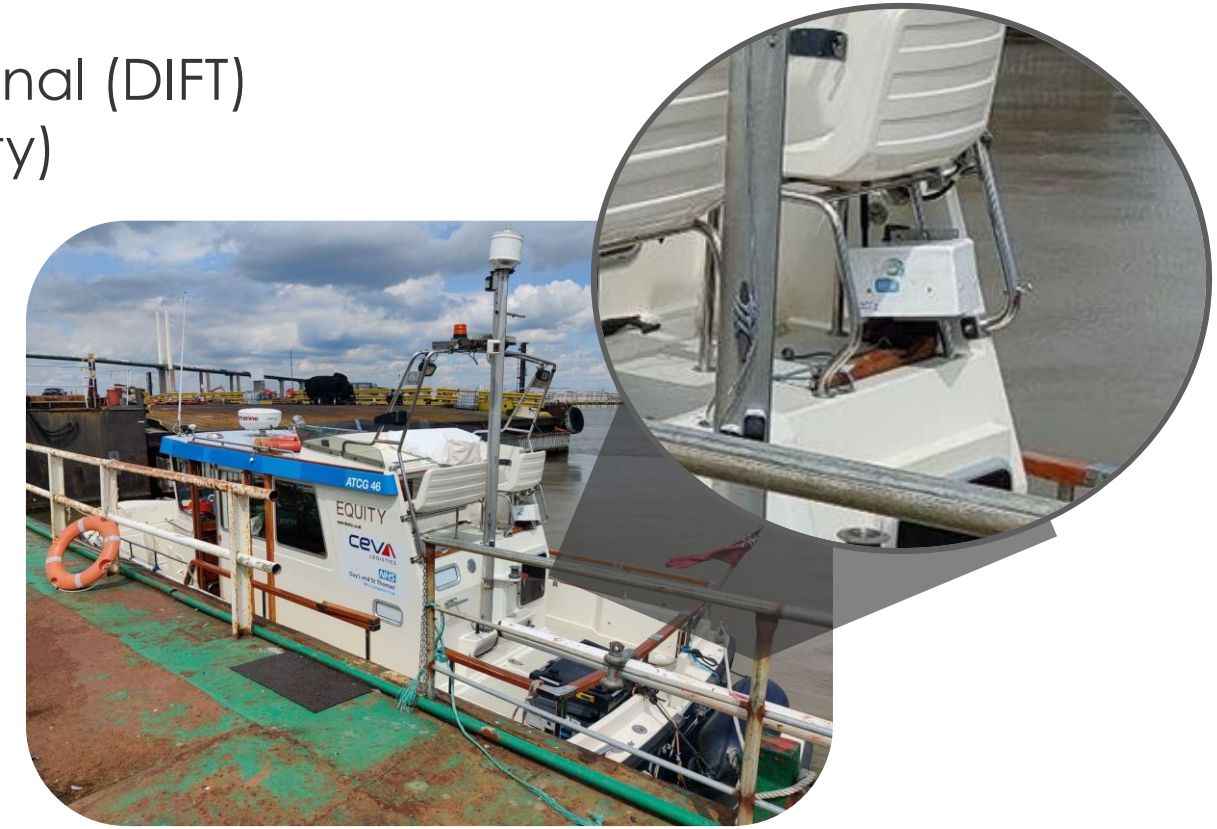
- River freight was used between Dartford and Butlers Wharf
- Low impact last mile solutions used for road delivery



Project overview

Air and noise quality monitoring occurred at:

- Butler's Wharf, London
- Dartford International Ferry Terminal (DIFT)
- Aboard the vessel (only air quality)



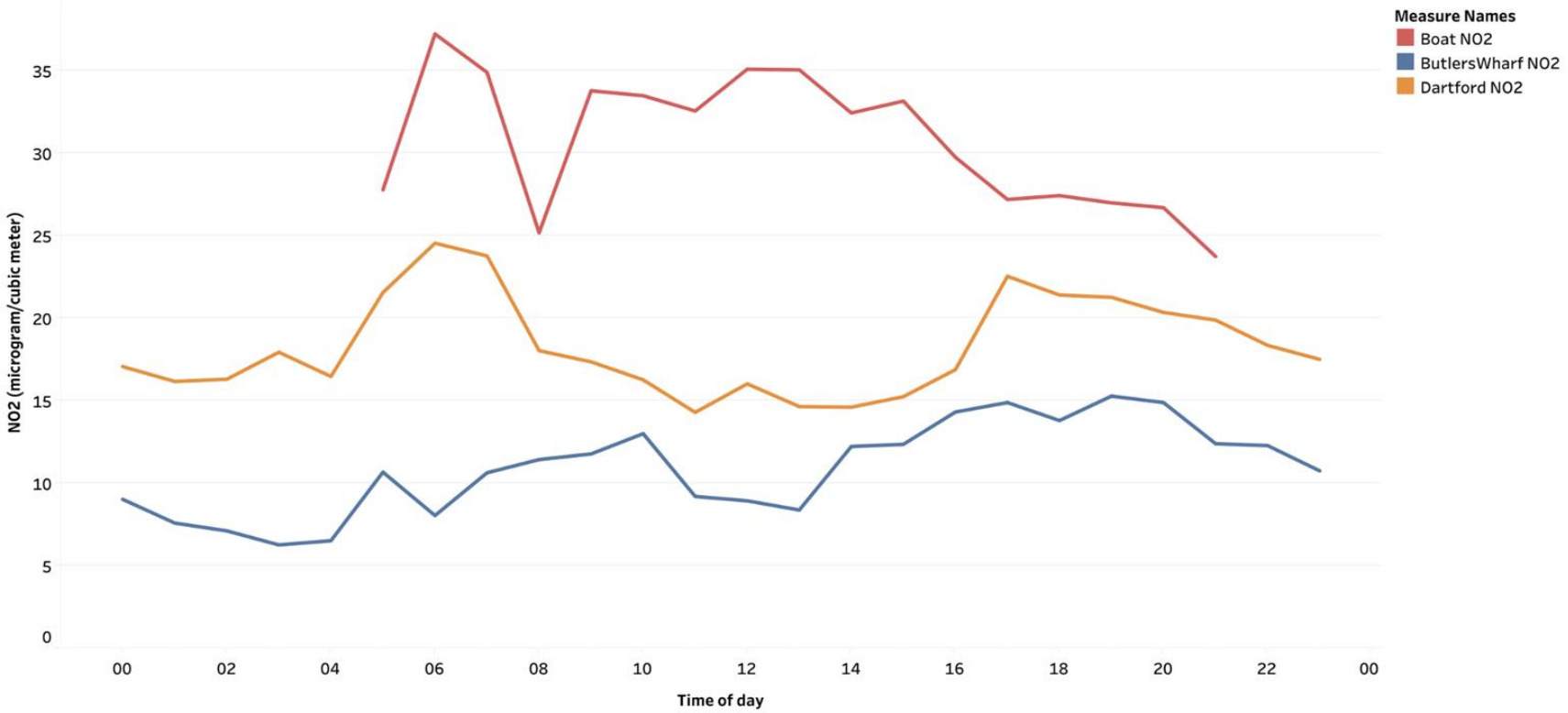
Insights from the project

We will cover

- **Where is pollution the worst?** Comparison of pollution at the three monitoring zones (Butler's Wharf, Dartford, Boat)
- **What impact does the boat have on pollution?** Can we determine the specific impact of the boat on pollution?
- **Which areas saw highest pollution concentrations during boat monitoring**? Mapping the pollution to understand concentrations

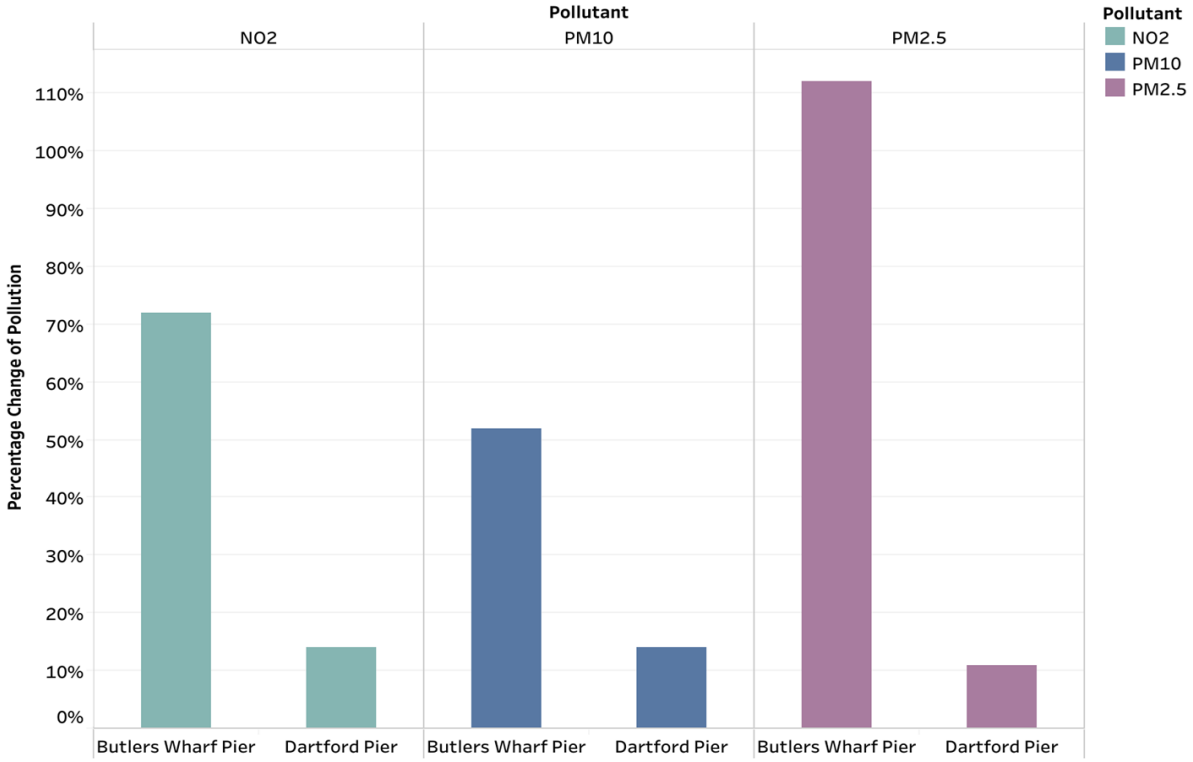
Comparing the three monitoring zones - NO2

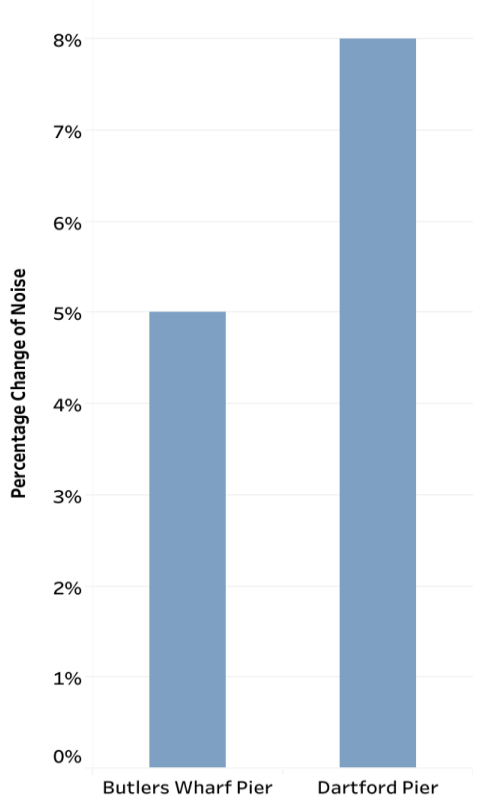
- Pollution on boat and Butler's Wharf consistently higher
- Morning peaks evident on boat and Butler's Wharf



What impact does the boat have on pollution?

This shows the percentage change of pollution caused by the arrival of the boat





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Concentration of pollution higher near Butler's Wharf

Data from onboard monitoring provides an opportunity to track variation in pollution by location. The mapped graphs below show **NO2** across the vessel's journey.

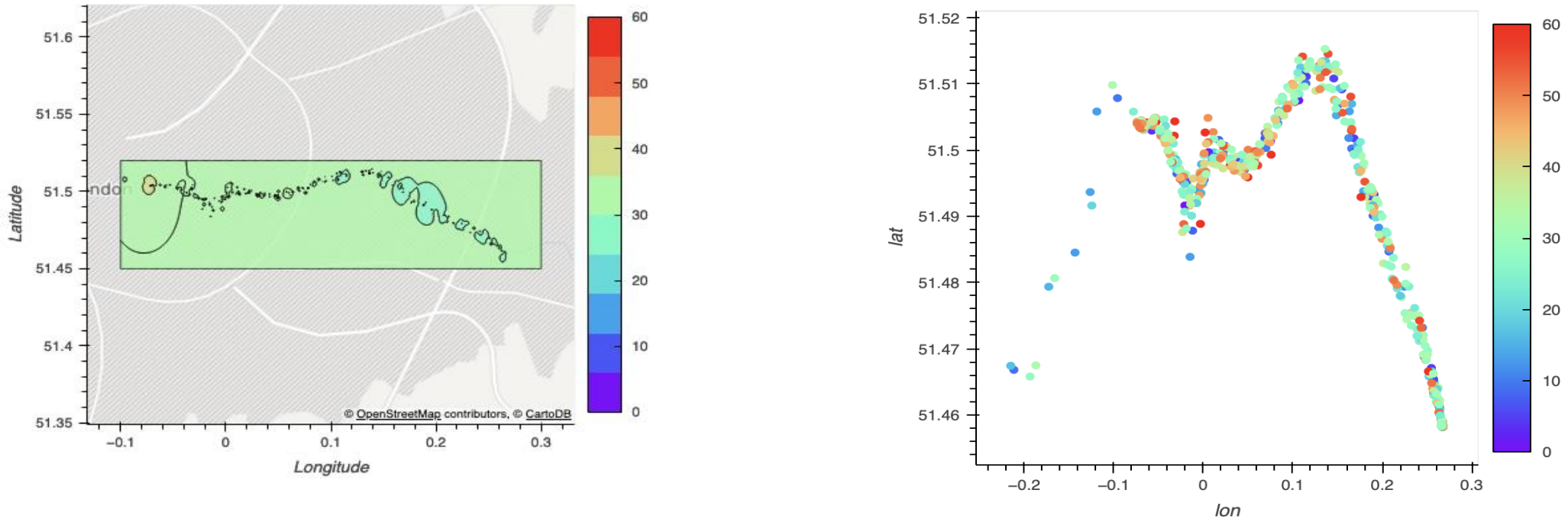

Fig 1. NO2 at the boat from 01/10 to 31/10

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Concentration of pollution higher near Butler's Wharf

Below is **PM10** pollution and confirms higher levels near Butler's Wharf, although concentrations map to curves in the River Thames.

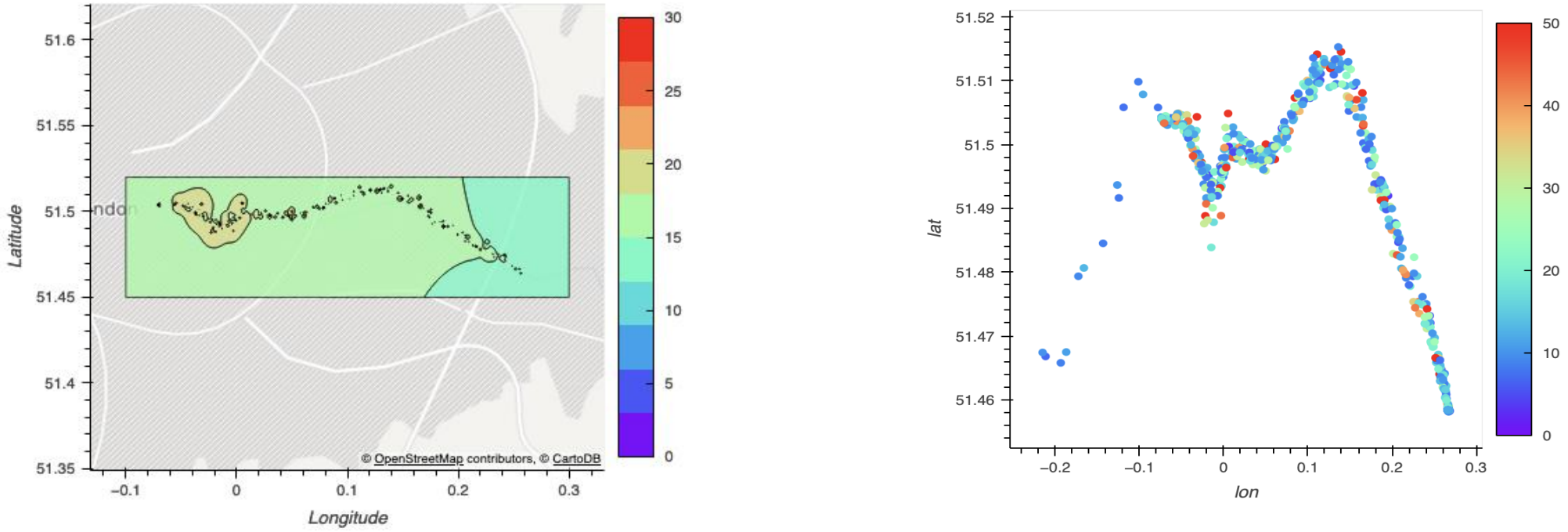

Fig 2. PM10 at the boat from 01/10 to 31/10

Concentration of pollution higher near Butler's Wharf

Below is **PM2.5** pollution and confirms higher levels near Butler's Wharf with concentrations around central London.

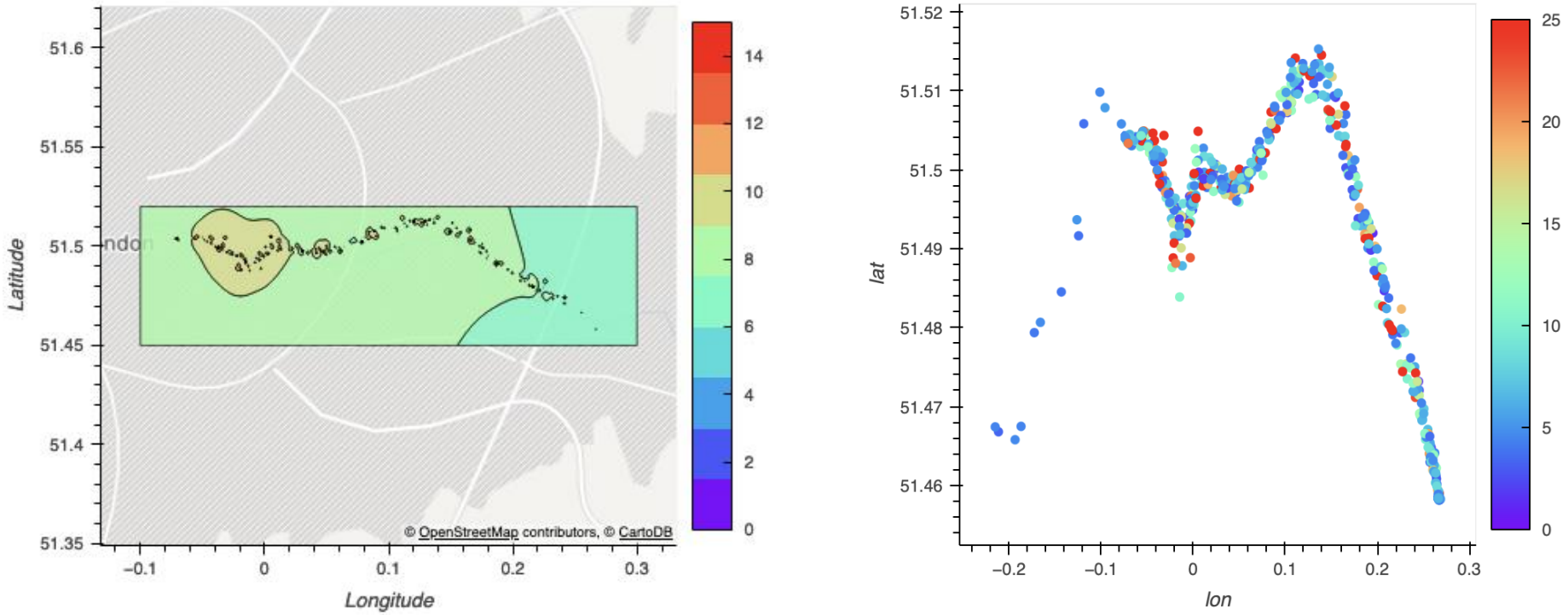

Fig 3. PM2.5 at the boat from 01/10 to 31/10

Insights from the project

Findings

- **Where is pollution the worst?**
  - Pollution concentrations and breaches of WHO limits are highest around Dartford Pier
  - Arrival of the boat also has an impact on NO2 and PM2.5

- **What impact does the boat have on pollution?**
  - Using our methodology, a 10-110% increase in pollution was observed when the boat arrived at the piers

- **Which areas saw highest pollution concentrations during boat monitoring**?
  - Levels were highest at Dartford Pier
  - On the river, the levels increase towards central London

Contact us

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Q&A Session

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Susannah Wilks

Director

Cross River Partnership

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CLEAN AIR VILLAGES

What is Clean Air Villages 4?

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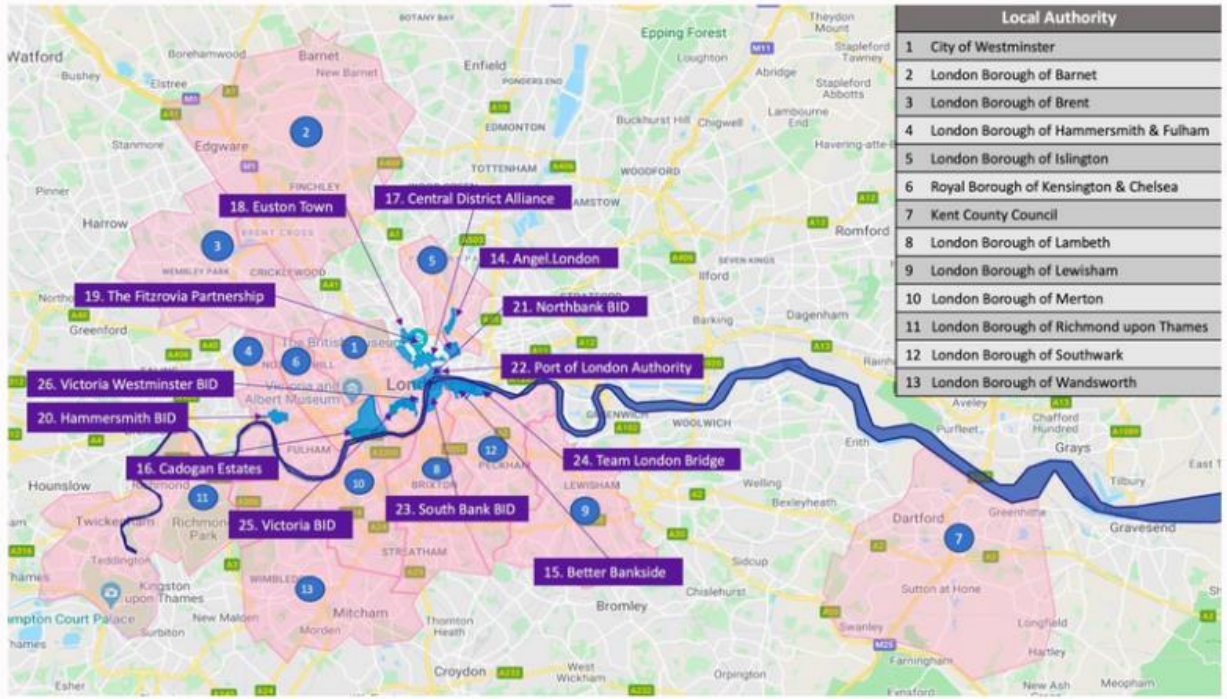
CLEAN AIR VILLAGES 4

Department for Environment Food & Rural Affairs



Local Authority	
1	City of Westminster
2	London Borough of Barnet
3	London Borough of Brent
4	London Borough of Hammersmith & Fulham
5	London Borough of Islington
6	Royal Borough of Kensington & Chelsea
7	Kent County Council
8	London Borough of Lambeth
9	London Borough of Lewisham
10	London Borough of Merton
11	London Borough of Richmond upon Thames
12	London Borough of Southwark
13	London Borough of Wandsworth

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CROSS RIVER PARTNERSHIP
CLEAN AIR VILLAGES

What has Clean Air Villages 4 achieved so far?

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CROSS RIVER PARTNERSHIP
CLEAN AIR VILLAGES

154

1-2-1 meetings

16

events presented at

12

Lunchtime Launch events

Cross River Partnership Lunchtime Launches

10 videos • 14 views • Last updated on Nov 18, 2021

Cross River Partnership

SUBSCRIBE

1 Developing the Future of Freight Logistics in London: CRP Lunchtime Launch 1 — 44:09 — Cross River Partnership

2 Making Monitoring Meaningful: Planning Transport in the Covid Era - CRP Lunchtim... — 40:23 — Cross River Partnership

3 Town Centre Futures - CRP Lunchtime Launch 3 — 43:50 — Cross River Partnership

4 Earth Day: Successful and Sustainable Development in London - CRP Lunchtime... — 46:05 — Cross River Partnership

5 Spatial Mapping: Benefits for Air Quality, Logistics and Healthy Streets - CRP... — 44:06 — Cross River Partnership

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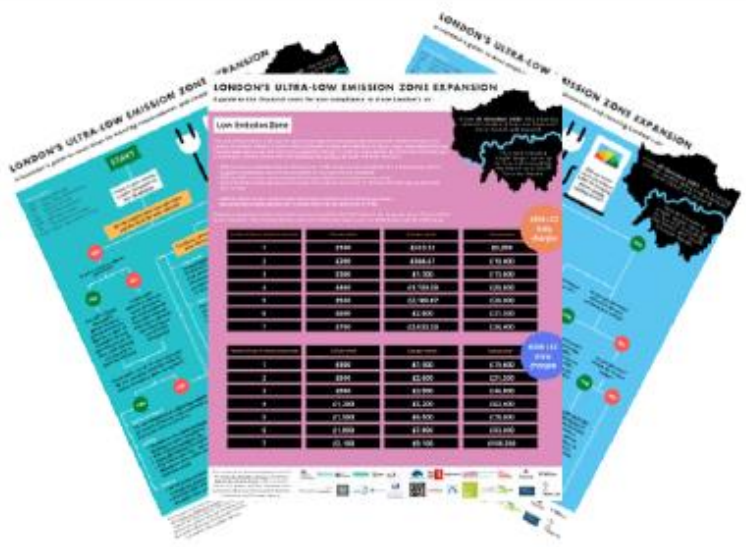
CLEAN AIR VILLAGES

ULEZ Supporting documents



Telematics devices

Shared EV scheme

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Urban Logistics Hub Map:

81 users of the map in November

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CRP Clean Air Villages Directory expansion:

- into new CAV partner areas
- 103 businesses listed
- Christmas countdown promotion

Tailored cargo bike schemes are being developed in 4 partner areas.

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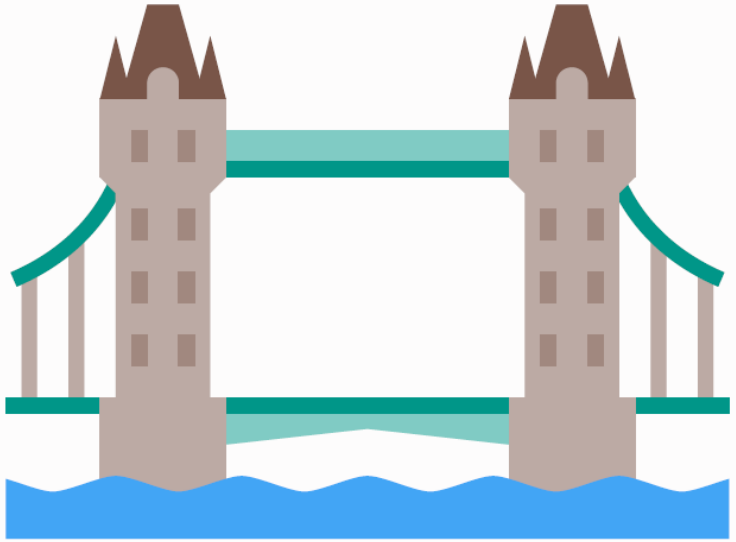
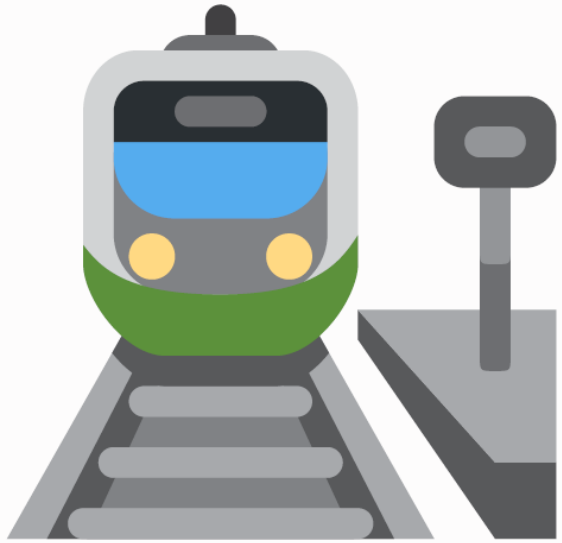
River freight study



Rail freight study



Walking freight study

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Air quality & noise monitoring

Insight : PM10 at the boat

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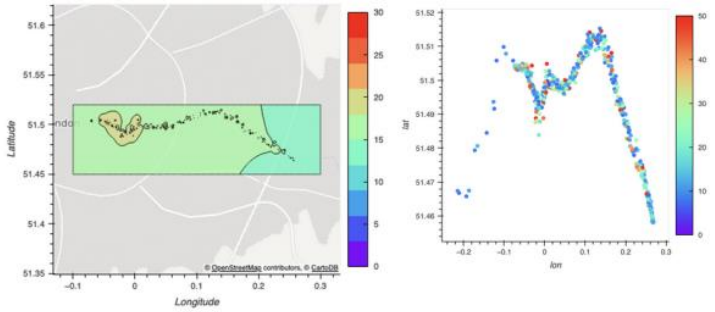


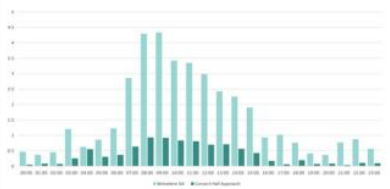
Fig 2. PM10 at the boat from 01/10 to 31/10

Similar to NO2, concentration of PM10 was found to be high at the bends of the river near Butler's Wharf.

Data analysis and monitoring

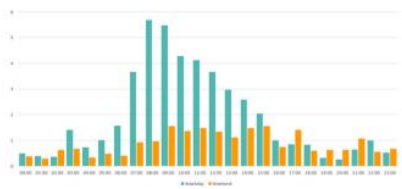
OGV1 Hourly Average Counts (01/08/21 – 31/10/21)

Belvedere Road & Concert Hall Approach OGV1 Hourly Average Counts



- Average hourly OGV1 (truck) counts on Belvedere Road are consistently higher than those on Concert Hall Approach. This is expected, owing to the one-way road system associated with Concert Hall Approach and the narrowness of Concert Hall Approach for trucks.
- The highest OGV1 numbers on Belvedere Road were recorded at 09:00 where counts reached just over 4 OGV1s. Belvedere Road saw between 3 – 4 trucks per hour every hour from 07:00 until 12:00.
- The very small peaks on Concert Hall Approach occur between 08:00 – 09:00, with around 1 truck per hour. This is likely associated with through traffic.

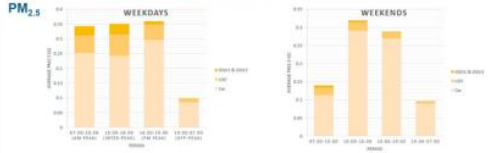
Belvedere Road Weekday Vs Weekend OGV1 Hourly Average Counts



- *Weekday:* Average hourly OGV1 counts have a sustained peak between 08:00 and 09:00; during this period numbers remain around 5. This could be OGV1s delivering to hospitality establishments in the area when they open, or deliveries to local businesses. Numbers then decline gradually to under 1 OGV1 from 16:00 until 05:00, with a slight increase in hourly numbers to just over 1 per hour at 03:00.
- *Weekend:* Average hourly OGV1 numbers are much lower during the weekend. Peaks are observed at 09:00 and 15:00 (exceeding 2 OGV1s). Average OGV1 numbers remain below 2 for the vast majority of the day and night.

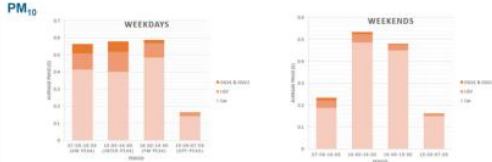
Average Hourly Emissions (01/08/21 – 31/10/21)

$PM_{2.5}$



- Cars are the largest contributor to average hourly **PM2.5** emissions during both the weekdays and weekends.
- Average hourly PM2.5 emissions are greatest from 10:00-16:00 on weekends, but on weekdays, the 16:00-19:00 PM peak period has the greatest hourly average contributions. This may be attributed to a greater number of people traveling for either work or pleasure during these times, and possibly more drop offs and pick ups for the night time economy.
- As with the NOx and CO_2 emissions, LGVs (vans) are the second largest contributor of PM2.5, with most pollution witnessed during inter-peak times (10:00-16:00). This is most likely due to more freight deliveries/servicing during business hours and through traffic.

PM_{10}



- Average hourly **PM10** emissions follow a very similar trend to PM2.5, NOx and CO_2 emissions.
- Cars contribute the largest proportion of PM10 emissions, particularly on weekends.
- Average hourly PM10 emissions were highest during the weekend between 10:00 – 16:00, with around 0.53g of PM10 being emitted in total by all vehicles.
- Average hourly PM10 emissions were highest in the week between16:00-19:00, exceeding 0.59g for all vehicles.
- LGVs (vans) are the second largest contributor of PM10, followed by OGVs (trucks and articulates).

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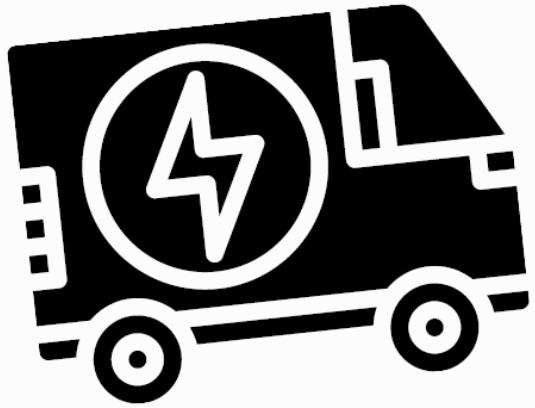
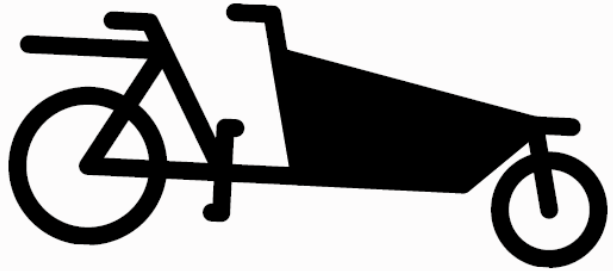
Supplier consolidation





Circular economy

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Lunchtime Launch series

Case studies & toolkits

Work in Progress

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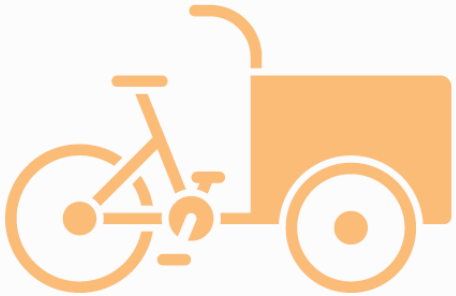
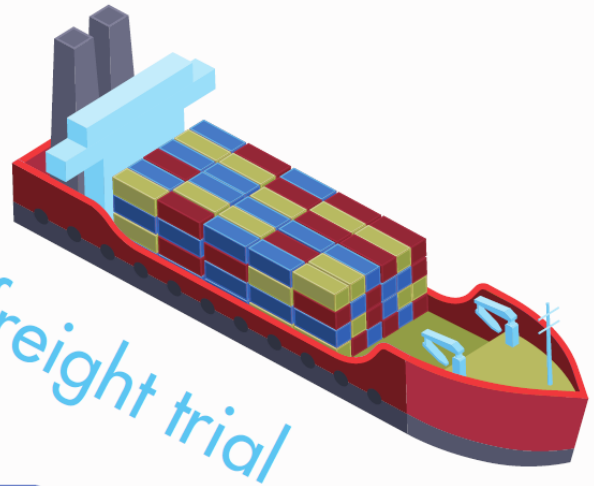
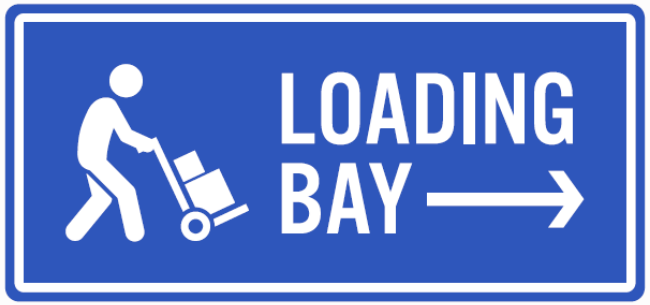
Much more is on the horizon!



Micro hub trial



River freight trial



AQ and noise monitoring of virtual loading bays

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Thank you!

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Q&A Session

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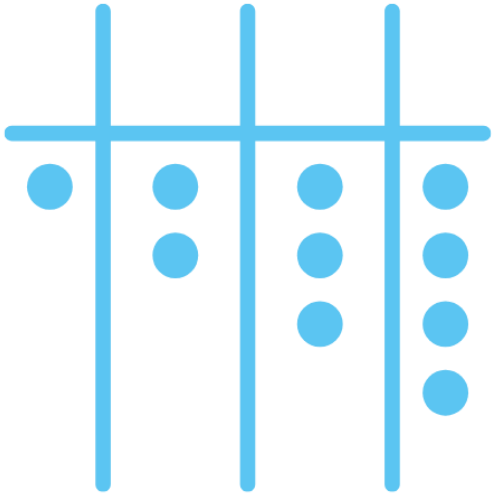
Sign up to the first event of a brand new series!

CRP's Connect 4 Series



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CRP Connect 4 Series: Session 1

Thursday 27th January
4pm – 4:45pm

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Thank You!

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