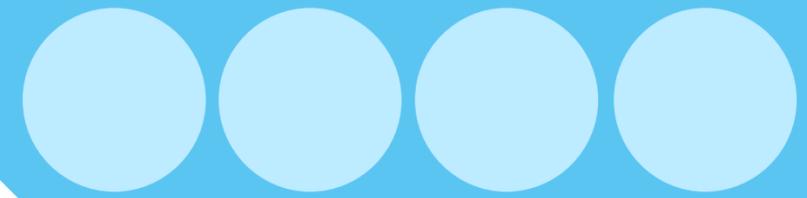
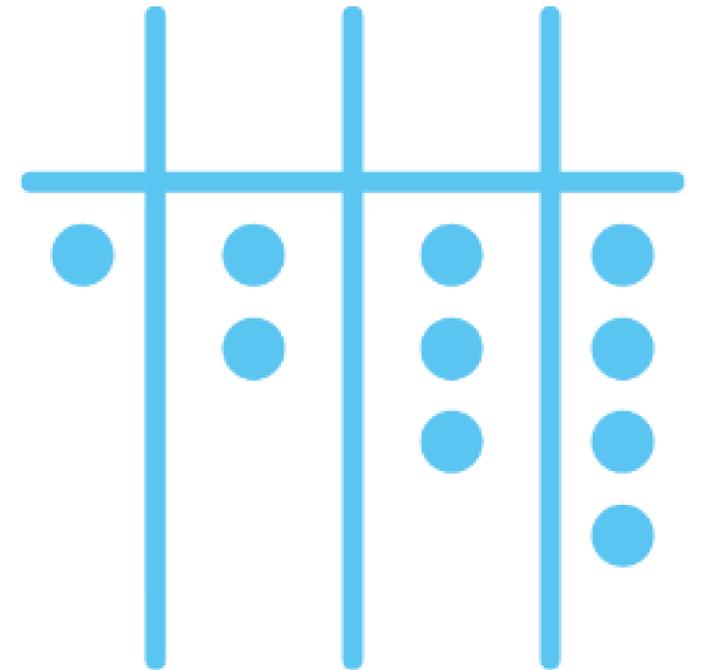


# CRP's Connect 4 Series: Session 5

## Tackling Air Pollution Through Technology



CRP's Connect 4 Series

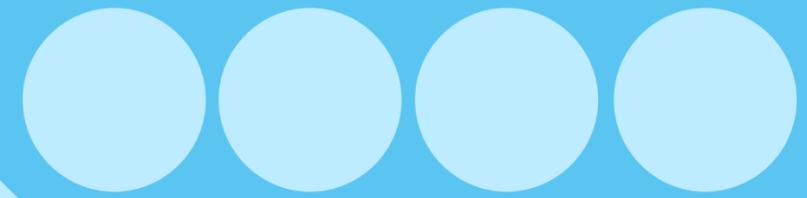


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Department  
for Environment  
Food & Rural Affairs

# Today's Speakers



**Matteo Maccario**



**Gail Rowe**



**Nabil Nazha**



**Sefinat Otaru**



**Discussion  
and  
questions**



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**Please post your  
questions and  
thoughts throughout  
this session in the  
chat box**



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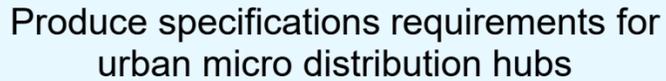
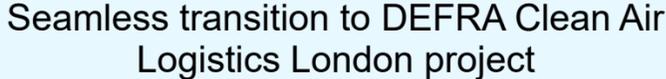


# Annual Report 2021 - 2022

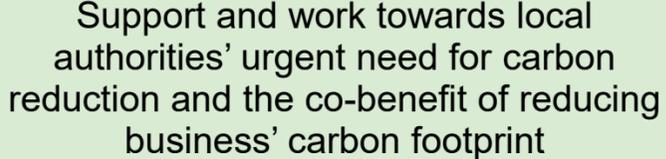
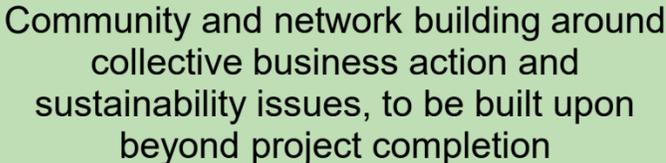
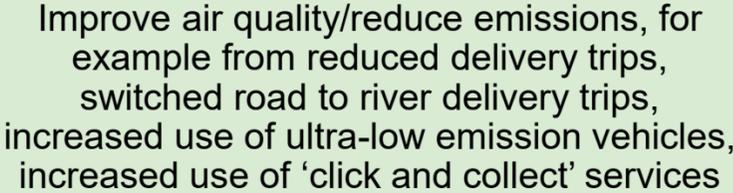
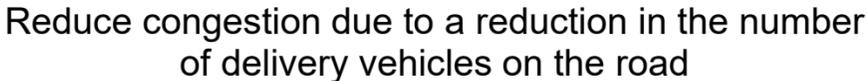
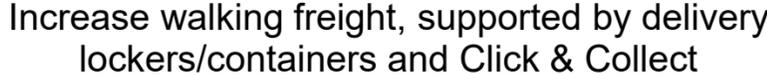
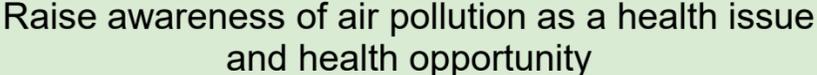
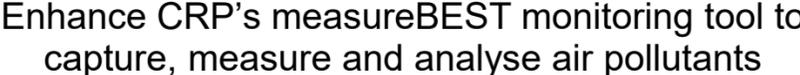
## Business Plan 2022 - 2023

# Targets

## Clean Air Villages 4

	Launch web-based freight management platform		Implement wrap-around Air Quality monitoring system		Produce specifications requirements for urban micro distribution hubs
	Submit final achievements report to DEFRA		Hold final Partners Steering Group Meeting		Develop innovative air quality tools
	Conduct Air Quality monitoring		Innovate in relation to river freight		Seamless transition to DEFRA Clean Air Logistics London project

## Clean Air Logistics London

	Support and work towards local authorities' urgent need for carbon reduction and the co-benefit of reducing business' carbon footprint		Community and network building around collective business action and sustainability issues, to be built upon beyond project completion		Improve air quality/reduce emissions, for example from reduced delivery trips, switched road to river delivery trips, increased use of ultra-low emission vehicles, increased use of 'click and collect' services
	Reduce congestion due to a reduction in the number of delivery vehicles on the road		Reduce delivery costs for businesses, operators, individuals.		Deliver logistics micro hub space
	Implement river pier modification/s		Undertake river trials of bulky goods and parcels		Use of cargo bikes and electric vehicles for ongoing trips
	Increase walking freight, supported by delivery lockers/containers and Click & Collect		Raise awareness of air pollution as a health issue and health opportunity		Enhance CRP's measureBEST monitoring tool to capture, measure and analyse air pollutants

## Data Analysis Services

	Promote CRP's Data Analysis services nationally		Use data to drive holistic town centre policy
---	---	---	---

### Freight Delivering Clean Air

	Improve London's Air Quality through freight-based innovations
---	--

### South Bank Data Analysis

	Provide detailed transport mode analysis to shape place making policies and practices for this neighbourhood
---	--

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.





# Speaker 1

**Matteo Maccario**

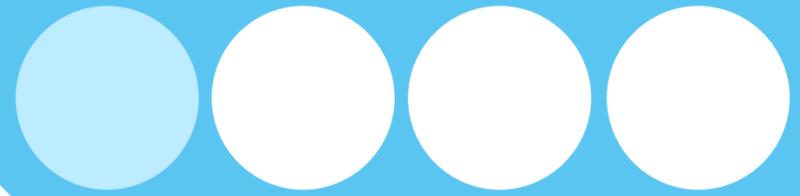
**CEO**

**Pluvo**



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# The Clean Air Solution



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# A Global Health Crisis

**Air pollution is a global problem, it affects everyone.**

## **Toxic** <sup>(1)</sup>

More than 90% of the world's children breathe toxic air every day

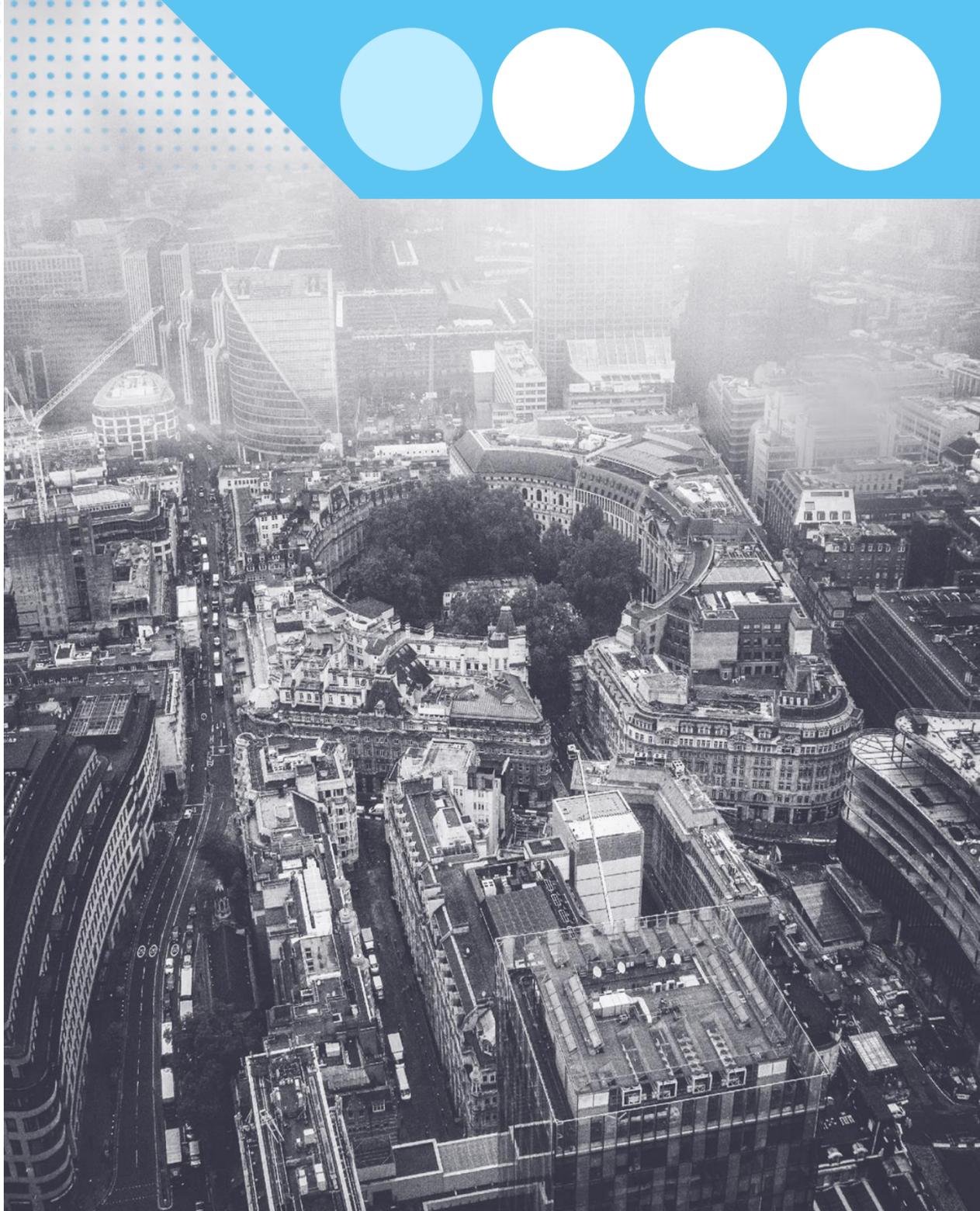
## **On the rise again** <sup>(2)</sup>

Air pollution is returning to and in some cases exceeding pre-COVID levels

## **Reduces life expectancy** <sup>(3)</sup>

Ambient air pollution takes away an estimated 2-3 years off of the average life.

(1, World Health Organization. 2, Economist. 3, WHO)



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# Pluvo's Mission

Create healthy spaces for people to breathe in.



Protect



Educate



Inform



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# The Pluvo Column

## Column Specifications

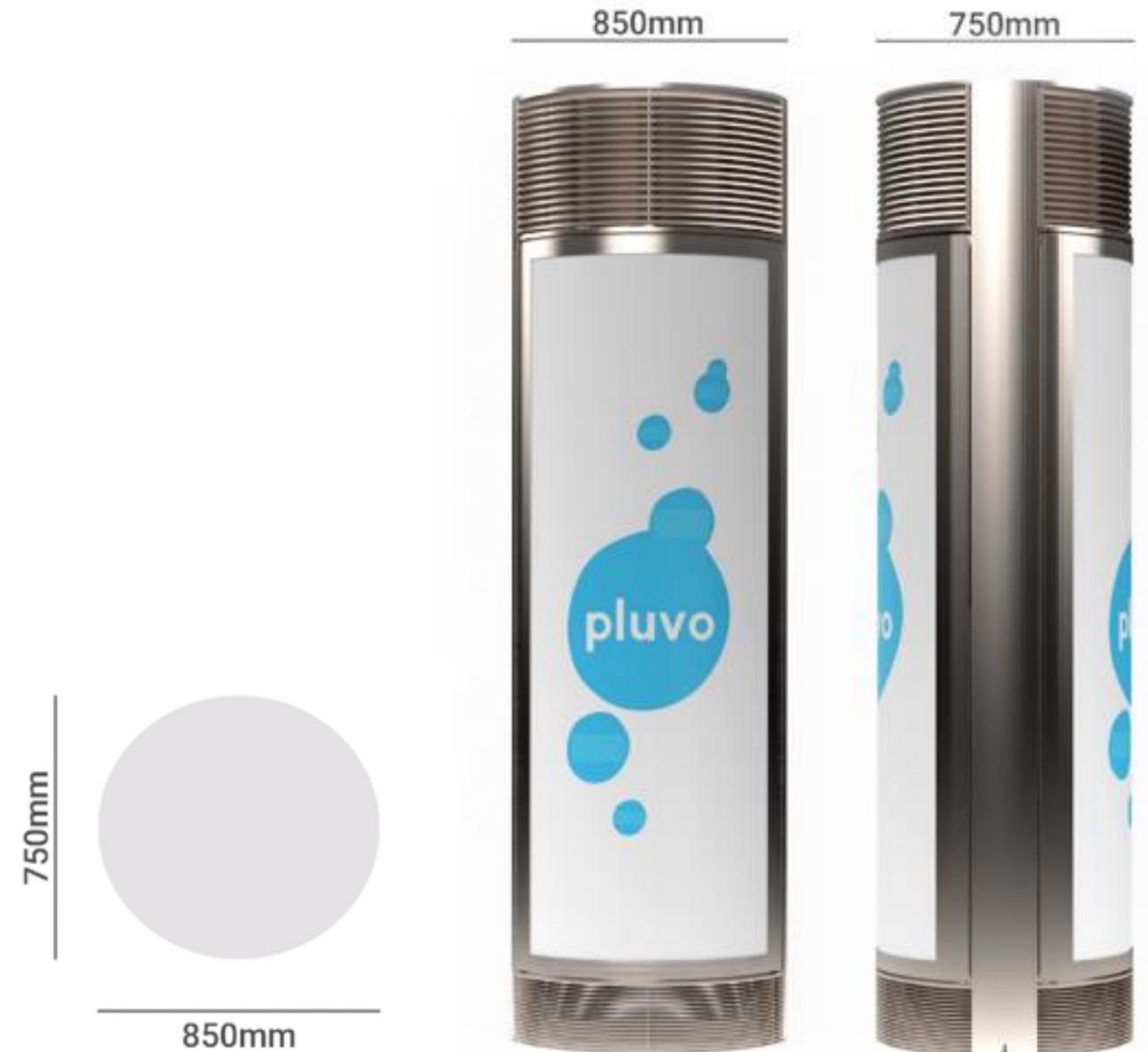
- Column Height: 2692 mm
- Height incl. Antenna: 2710 mm
- Column Footprint: 0.5 m<sup>2</sup>
- Est. Final Weight: ~600 kg

## Operating Parameters

- Max. Luminous Flux: 1100 Lumen
- Est. Operational Power Draw: 1.1 kW
- Max Potential Power Draw: 2.1 kW
- Fan Noise: 50-70 dB

## Installation Requirements

- Power Supply: Single phase, 230V at 50Hz
- Foundation Base Plate (~300mm below FFL)
- 2G, 3G, 4G, or Wi-Fi signal



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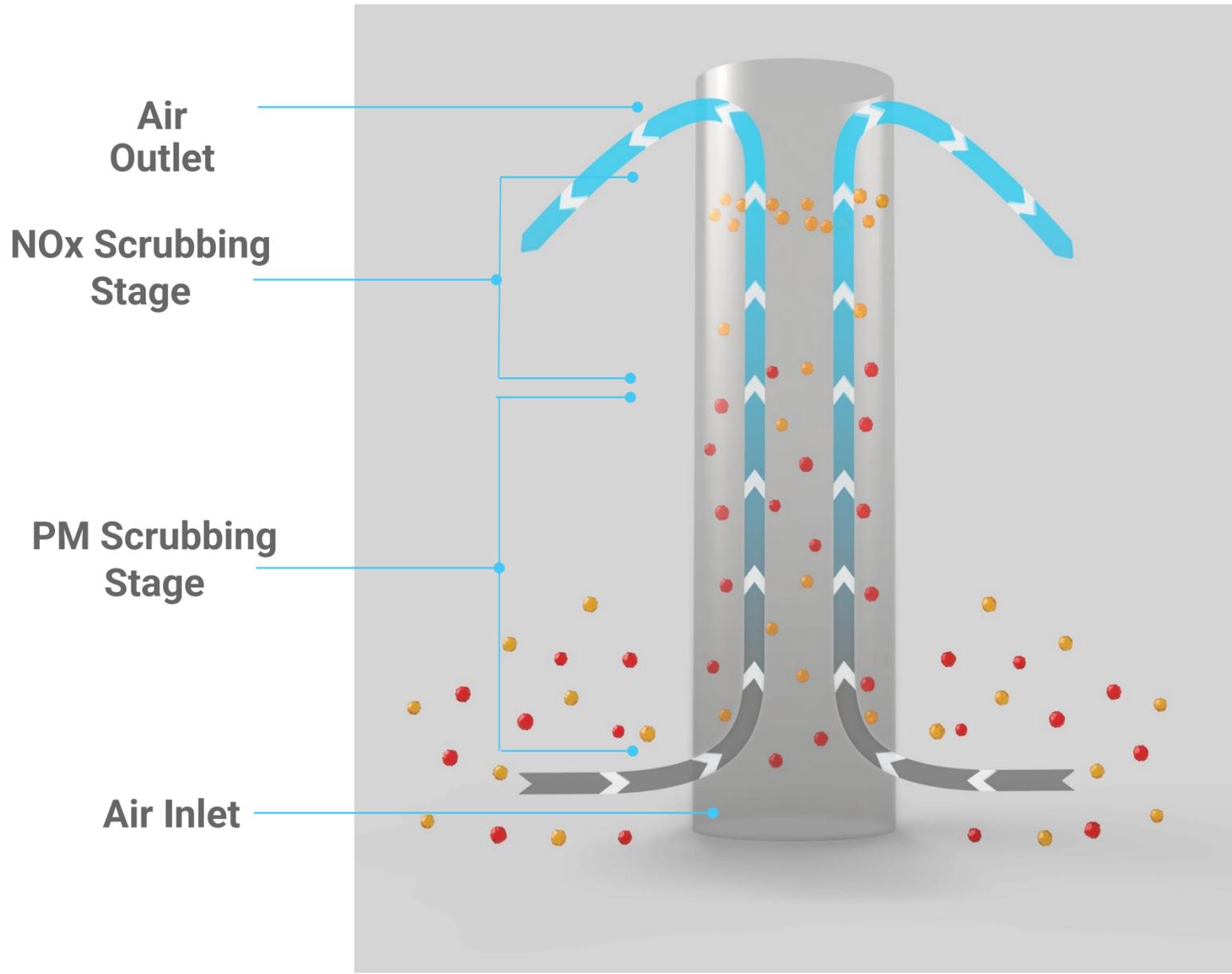


# Air Cleaning Technology

Three-stage filtration process, targeting harmful **particulate matter (PM)** and **gases (e.g. NOx)**. It also helps eliminate airborne viruses, including COVID-19.

Innovative Air Purification	
Air Draw	1 m <sup>3</sup> /s
PM capture	Up to 99%
NOx capture	Up to 99.5%
Virus elimination	Up to 99.4%

*Based on scrubbing stage sub-system rated efficiencies*

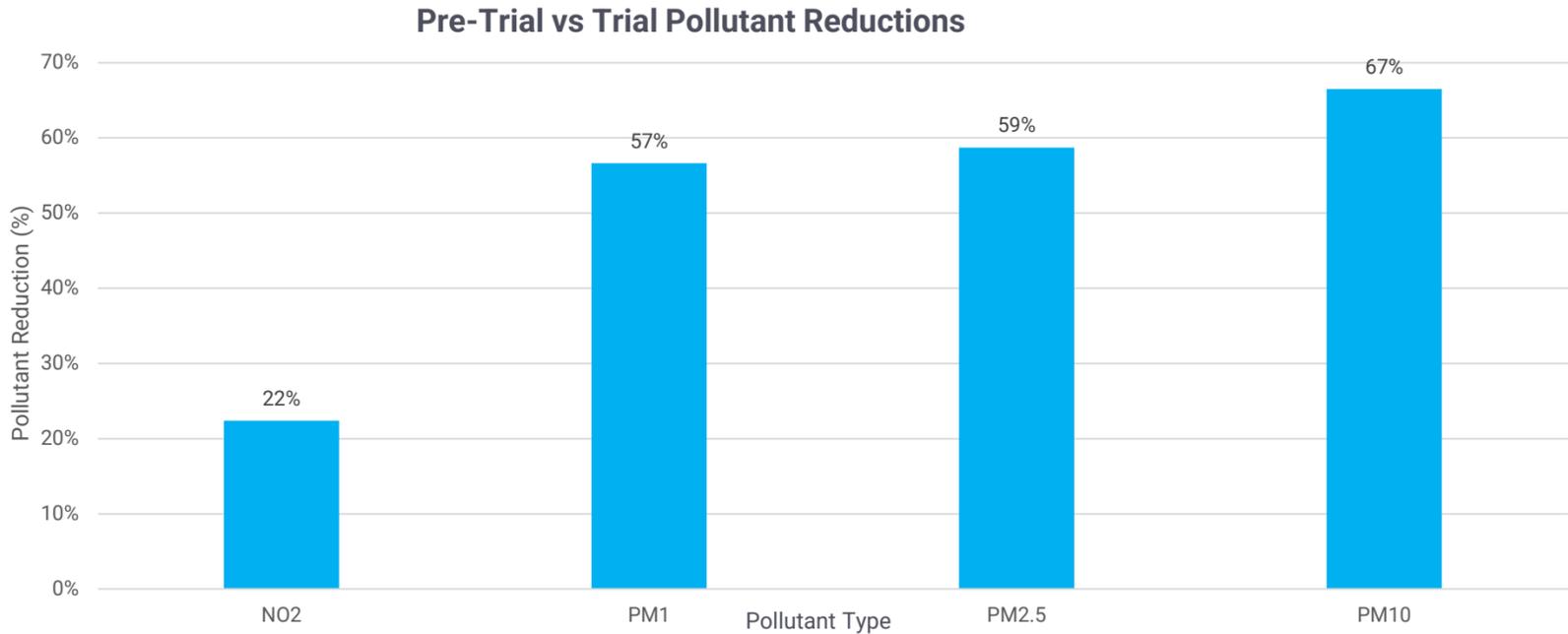


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# Outdoor Trial Results

2020—2021, 6-month outdoor trial, North London.



Note: Indicative results based on readings from a 3<sup>rd</sup> party sensor at ~13 meters distance from Pluvo Column, at hours when the sensor was downwind (+/-20 degrees) of the Column and the unit was on.

Innovate UK



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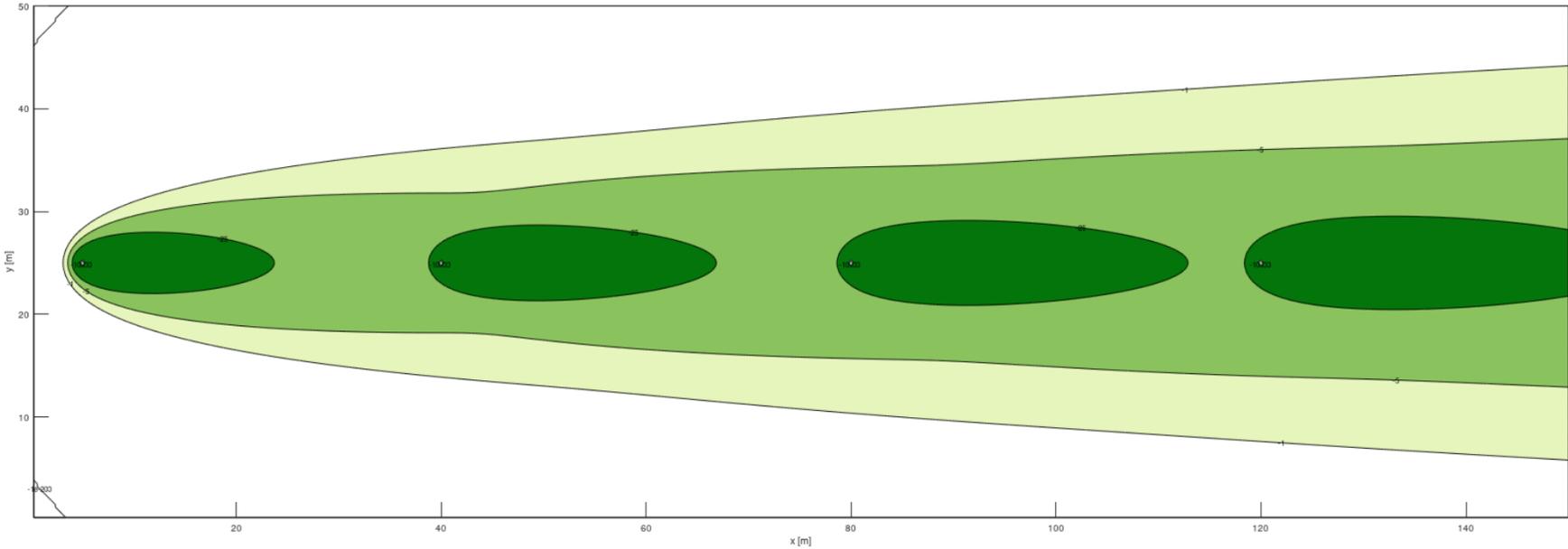


# Transport Hub Impact

Computer simulations of an installed base of just 4 Pluvo Columns would reduce about 3/4 of a railway platform's (dark green), NO2 and PM levels by 25% or more.

Pollutant Reduction

- ≥ 25%
- ≥ 5%
- ≥ 1%



Model based on wind speed of 0.5m/s average wind speed based assuming a platform length of 150 meters.



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# Realtime Air Quality Insights

## A Smart City Sensing IOT Device.

Track pollutant (PM and gas) levels in real-time.

- **Custom Air Quality web dashboards**
- **Data-driven insights & decision-making**
- **Self-monitoring & self-optimizing units.**

The Pluvo Column not only reduces pollutants, it also gives stakeholders insights to help tackle air pollution at its source(s).

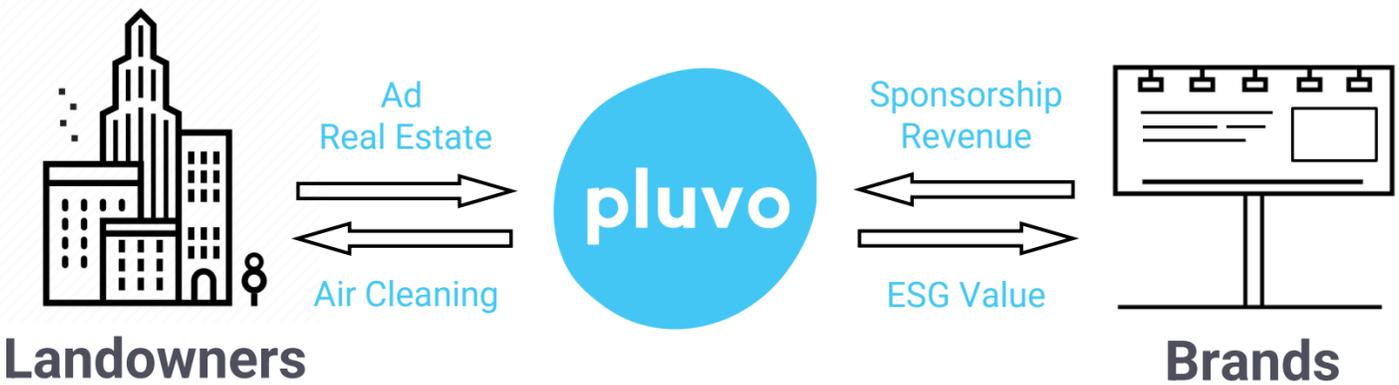


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# Business Model Innovation

We provide a turnkey **clean-air service** that doubles as a high-value **ESG brand sponsorship** & **Public Engagement** platform.



Sponsorship Partner:  
 **kinetic**

*Static Display  
Brand Sponsorship*



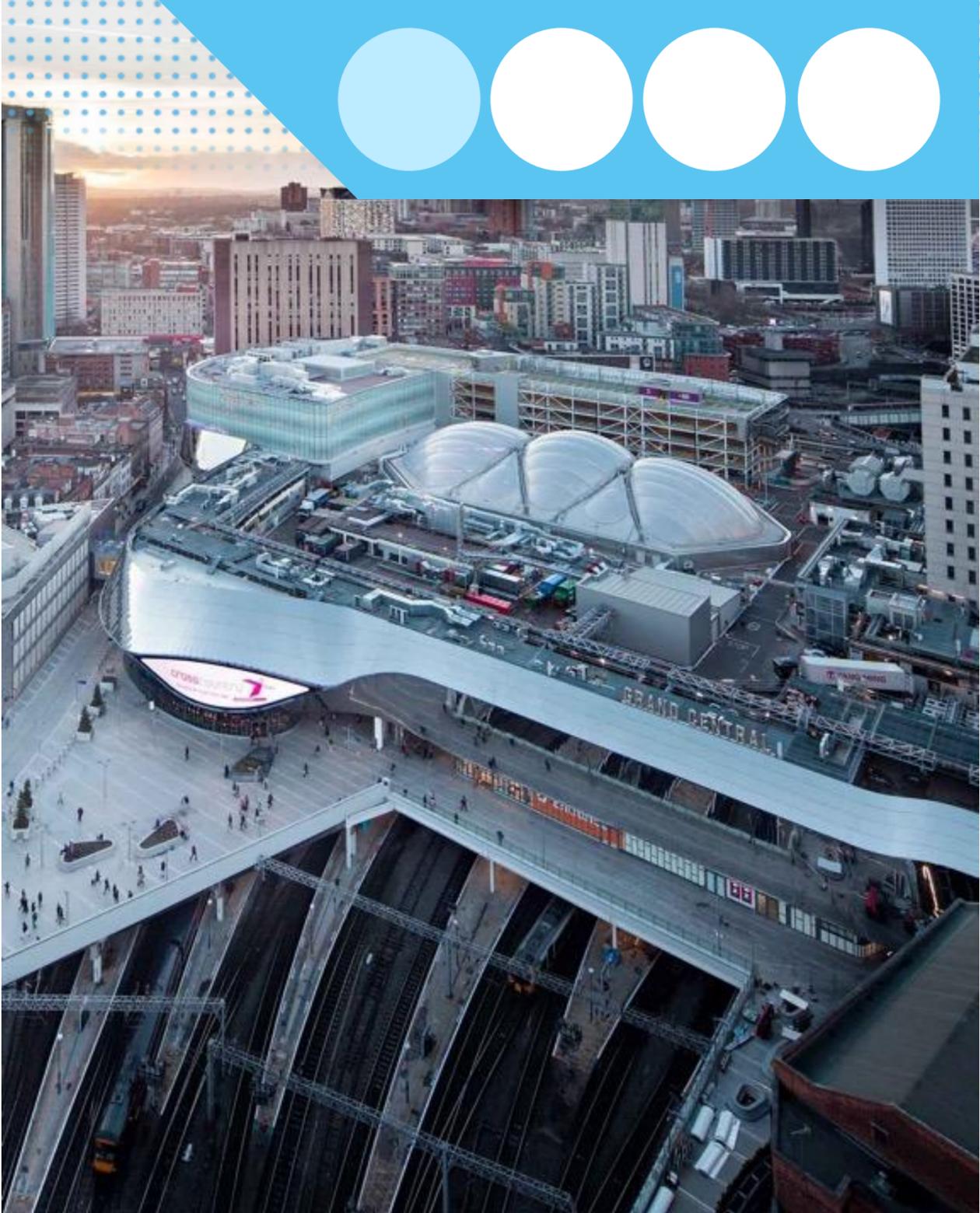
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# Commercial Breakthrough



Signed 'Letter of Intent' for the 1<sup>st</sup> installation of Pluvo Columns at a major UK rail station.



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# Our Value Proposition

## The Pluvo Column:

high impact air purification + monitoring + sponsorship  
offsetting the cost of air quality improvement for both  
staff and customers/the public.



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Let's create healthier  
places together!



*matteo@pluvo.co.uk*



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## Speaker 2

**Gail Rowe and Nabil Nazha**

**Liberty Charge**



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# LIBERTY CHARGE

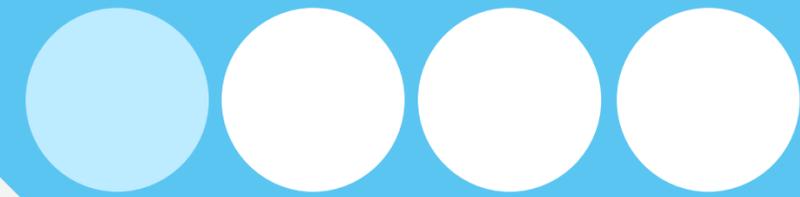
- We deliver an instant privately funded smart EVCP solution for local authority partners
- We're a joint venture with Liberty Global and Zouk
- We offer all charging speeds ranging from 7-50kW
- We provide on street, off street and e-mobility hubs
- We work with Virgin Media O2 to install our Charging Points



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# WHERE WE CAN HELP



## On Street Charging

Working with Local Authorities to implement On-street Charging

- RTPI Chartered Town Planners
- Members of the IET (Institution of Engineering and Technology)
- GIS & Urban Planning specialists



## E-Mobility Hubs

Infrastructure for off-street locations

- Customizable project scope
- Both Fast and Rapid Charge Points
- Dedicated Project Managers



## E-Car Club Charge Points

Working with Car Clubs to enable conversion over to Electric Vehicles

- Privately funded Infrastructure
- Working in partnership with Car Clubs across the UK
- Typically, deploying Fast chargers due to charging/ parking profile



# EV CHARGING SOLUTIONS



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# CHARGING SPEED OPTIONS

Selecting the right speeds for the right places All charging rates based on charging a 50kW EV to 80%

**Slow: 3-5kW**

Home

10-24hrs



**Fast: 7-22kW**

Home and destination

3 – 6 hours



**Rapid: 50kW+**

Destination

Less than 1 hour



**Ultra Rapid: 150kW+**

Transport nodes

Around 20 mins

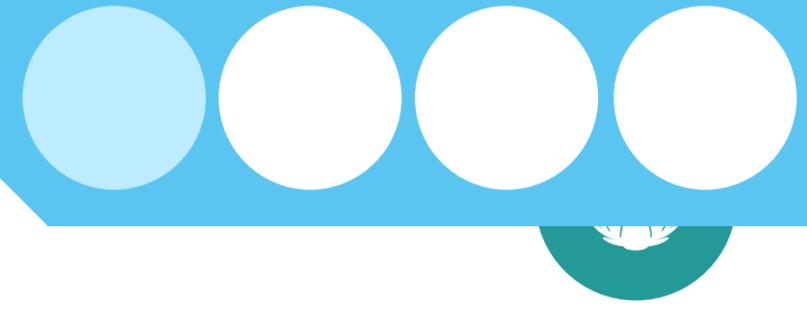


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# INTEGRATED EVCP NETWORKS

Deploying the right EVCP for home, destination and transport hubs



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# PROJECTING DEMAND



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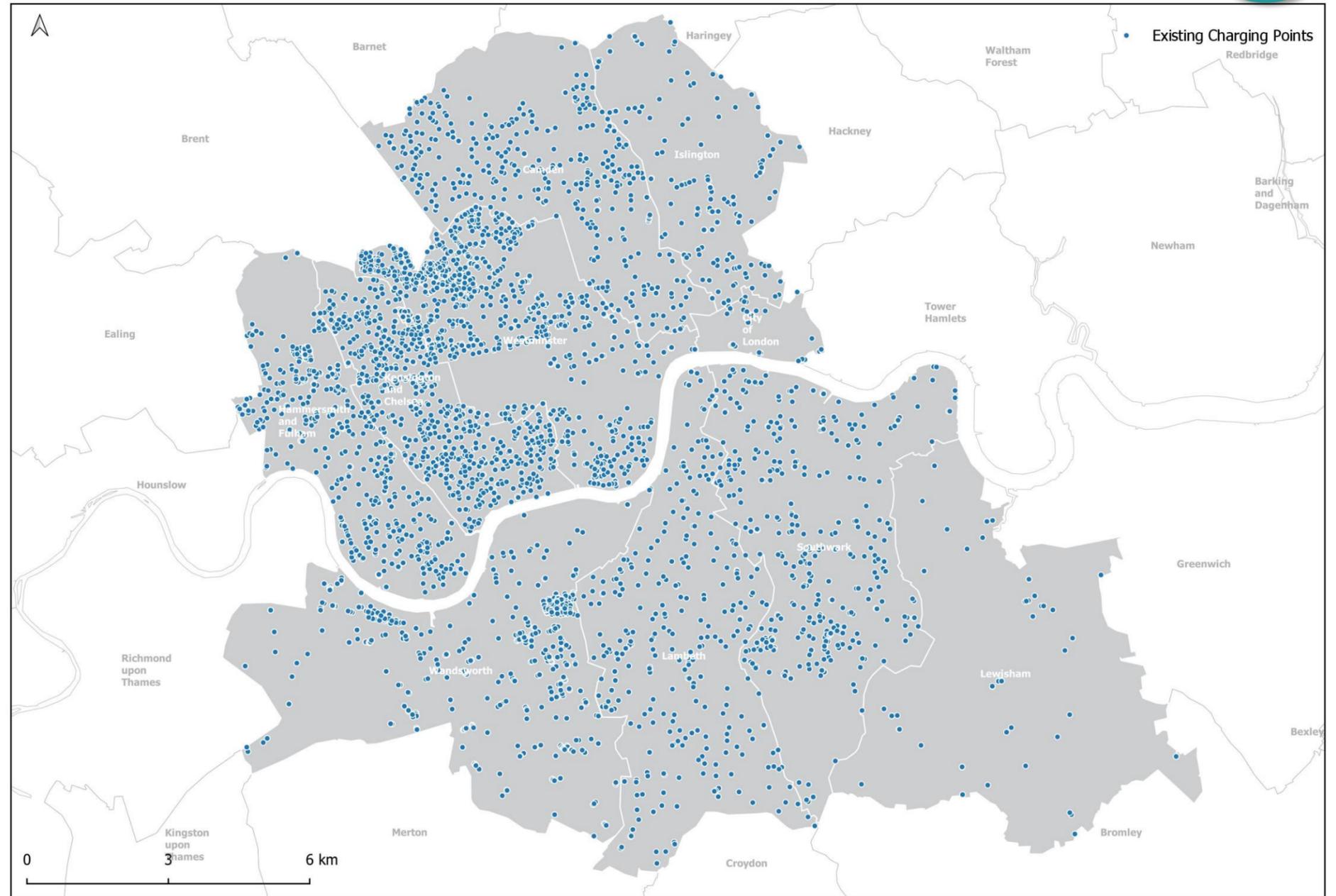


# EXISTING INFRASTRUCTURE

## Existing Charging Points

There are currently 4,596 chargepoints available for residents throughout CRP Partner Boroughs, according to the National Charge Point Registry.

Nevertheless, the vast majority of these charging points are located in either private or restricted parking areas like, for example, dealership forecourts, supermarkets, and workplace car parks.



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# E-MOBILITY



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# E-Mobility – transforming urban landscapes



- E-mobility represents the next stage in the evolution of sustainable travel
- Genuine interchange where people can switch from private cars to e-car clubs, e-scooters and e-bikes
- EV charging and shared/micro-mobility: E-mobility



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# MICROMOBILITY AND E-CAR CLUBS: E-MOBILITY



Wandsworth



Hammersmith and Fulham

www.como.org.uk March 2022 Full

## Driving London Forward: how car clubs can help deliver the Mayor's Transport Strategy

Driving London Forward: how car clubs can help deliver the Mayor's Transport Strategy | Report

### The current position

**623,910**  
 car club members in London  
up from 300,000 in March 2019

**3,482**  
 car club cars shared in London

### The potential

Through our analysis of the travel habits of car-owning households in London and the identification of car-owning households where trip frequencies and characteristics are such that the households could move from private car ownership to car club use, we find:

**650,000**  
 households that could give up a privately-owned car

**21,000**  
 additional car club cars would be needed to meet this demand

### This would enable these benefits:

**300,000**  
 fewer privately owned cars

**194,000**  
 ULEZ non-compliant cars taken out of London

**24 MILLION**  
 less car trips per year

There are 17 London boroughs which have more than 100 car club members



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# E-MOBILITY HUBS



## What should the density of e-mobility and shared mobility hubs be

- Varies from local authority to authority. Could potentially define based on location i.e. e-mobility sites at major transport hubs/train stations and commercial/shopping/leisure locations or population size.
- Scale and type of e-mobility sites also varies from smaller hubs comprised of e-bikes, e-scooters and e-car clubs to larger e-mobility sites comprised of seating, wifi connectivity etc.

## How should local authorities safeguard the land for them?

- Reserve sites/locations where e-mobility solutions can be deployed.
- Engage reputable operators to develop and manage e-mobility locations to ensure longevity.



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# EVIDENCING AIR QUALITY IMPROVEMENTS



## How we quantify the impact of the provision of EV charging networks

- Liberty Charge, like other charge point operators, provide monthly reports to local authority partners on utilization and CO2 savings.
- Liberty Charge can also integrate sensors into our feeder pillars to monitor air quality.

## How does this program interact with/support Breathe London?

- Liberty Charge are currently not interacting with Breathe London.
- We are however keen to collaborate with organisations like Breathe London as one of our key goals is to improve air quality for all.



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**Speaker 3**

**Sefinat Otaru**

**Project Manager**

**Cross River Partnership**



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**CROSS RIVER  
PARTNERSHIP**

Delivering London's Future Together

**CLICK. COLLECT.  
CLEAN AIR....**

*Personal delivery options away from the office*



**CROSS RIVER  
PARTNERSHIP**

Delivering London's Future Together

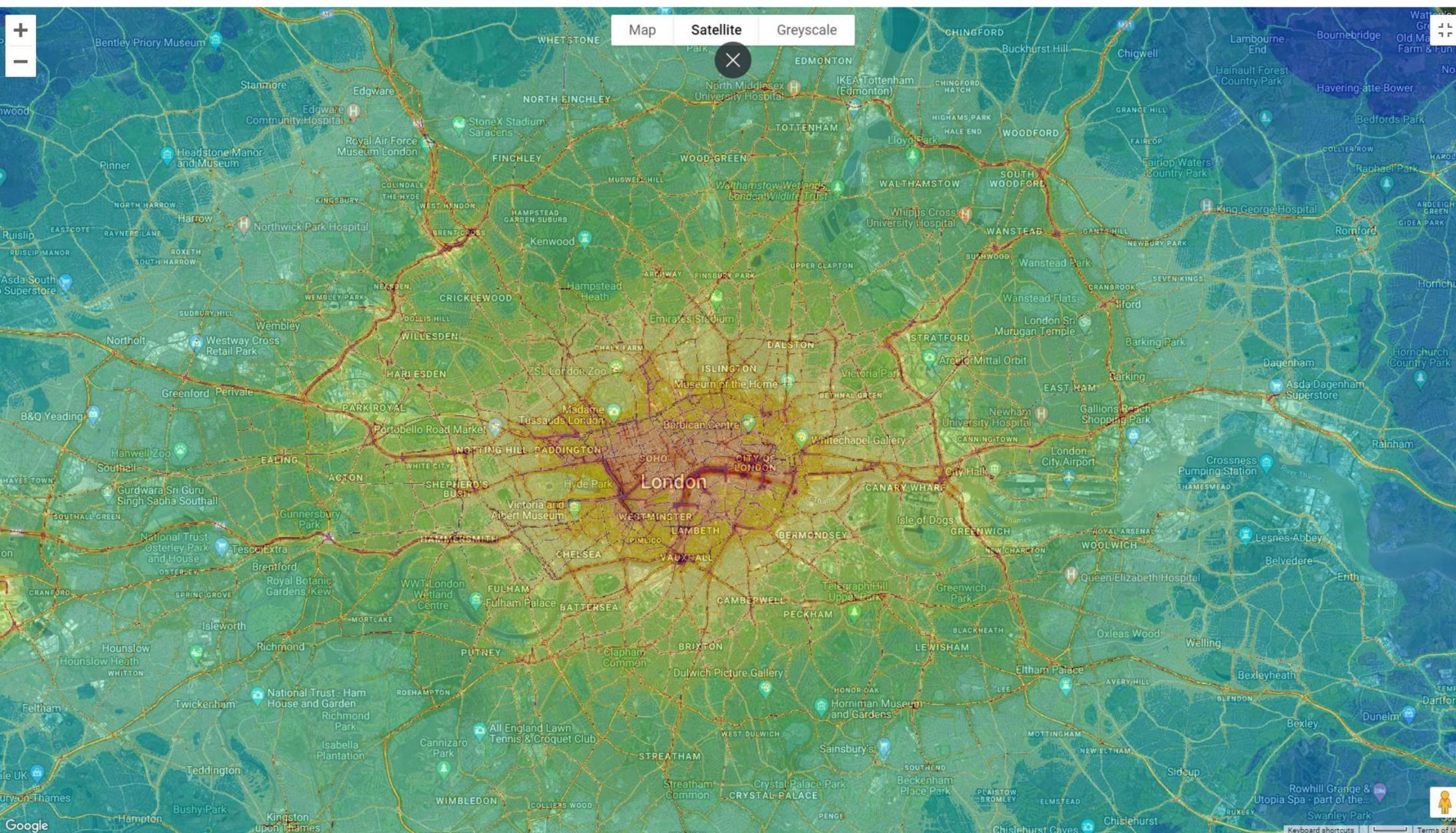
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Department  
for Environment  
Food & Rural Affairs

# Deliveries & Emissions in London



- London air quality and impacts

- WHO PM<sub>2.5</sub> limits:

- 15 µg/m<sup>3</sup> 24 hr-average\*
- 5 µg/m<sup>3</sup> average per year

- WHO NO<sub>2</sub> limits:

- 25 µg/m<sup>3</sup> 24 hr-average
- 10 µg/m<sup>3</sup> average per year

- Impacts:

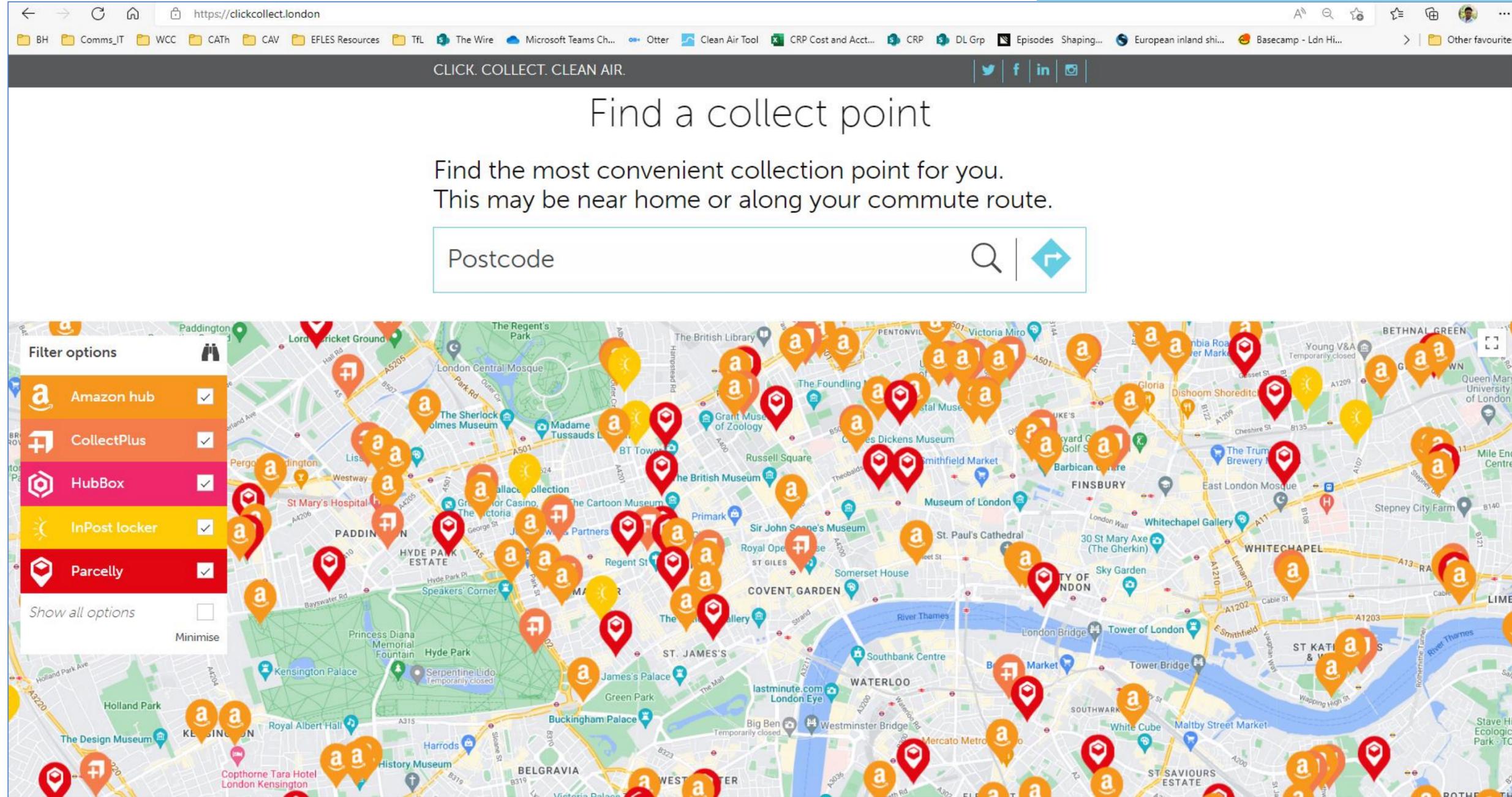
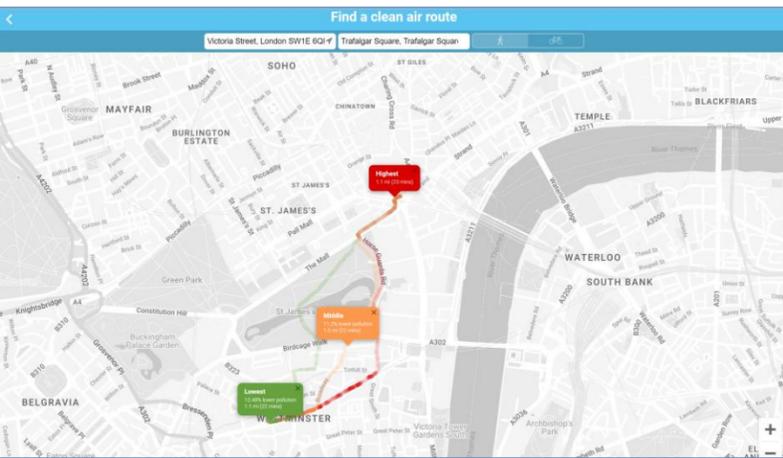
- PM<sub>2.5</sub> -> 3,500 deaths in London
- NO<sub>2</sub> -> 5,900 deaths
- Proximity to busy roads ->
  - 230 stroke-related admissions
  - stunted lung growth in children by 12%

- Air pollution sources

- Industry
- Heating systems
- Road transport
  - 42% of UK's NO<sub>2</sub>
  - 12% of PM<sub>2.5</sub>



# Click. Collect. Clean Air.



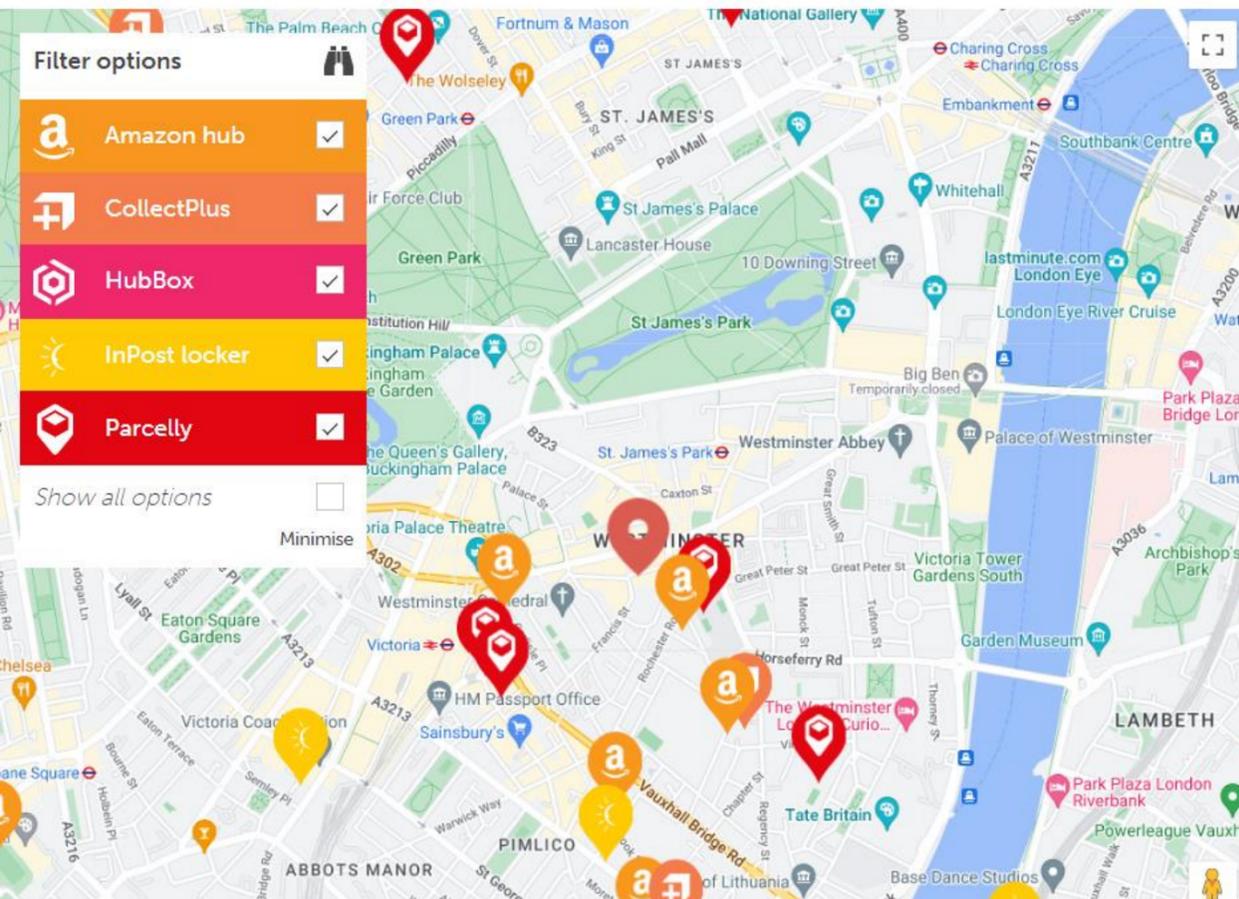
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# https://clickcollect.london

Find the most convenient collection point for you.  
This may be near home or along your commute route.

Victoria Street, London SW1E 6QP, UK



## Making a difference

By redirecting personal deliveries from central London workplaces you'll be helping reduce traffic congestion and improve air quality, making central London a nicer, safer and healthier place for all.

Cleaner air

Less congestion

No more failed deliveries

Convenient

Easy

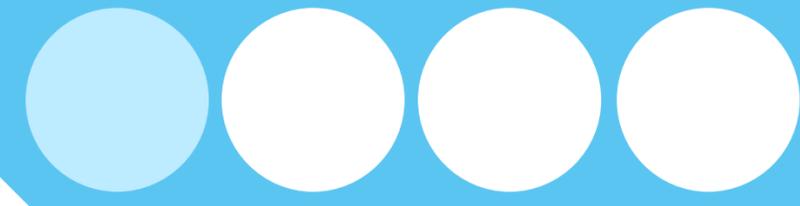
Affordable



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# Click. Collect. Clean Air. Update





Delivering London's Future Together

CLICK.COLLECT.CLEAN AIR.

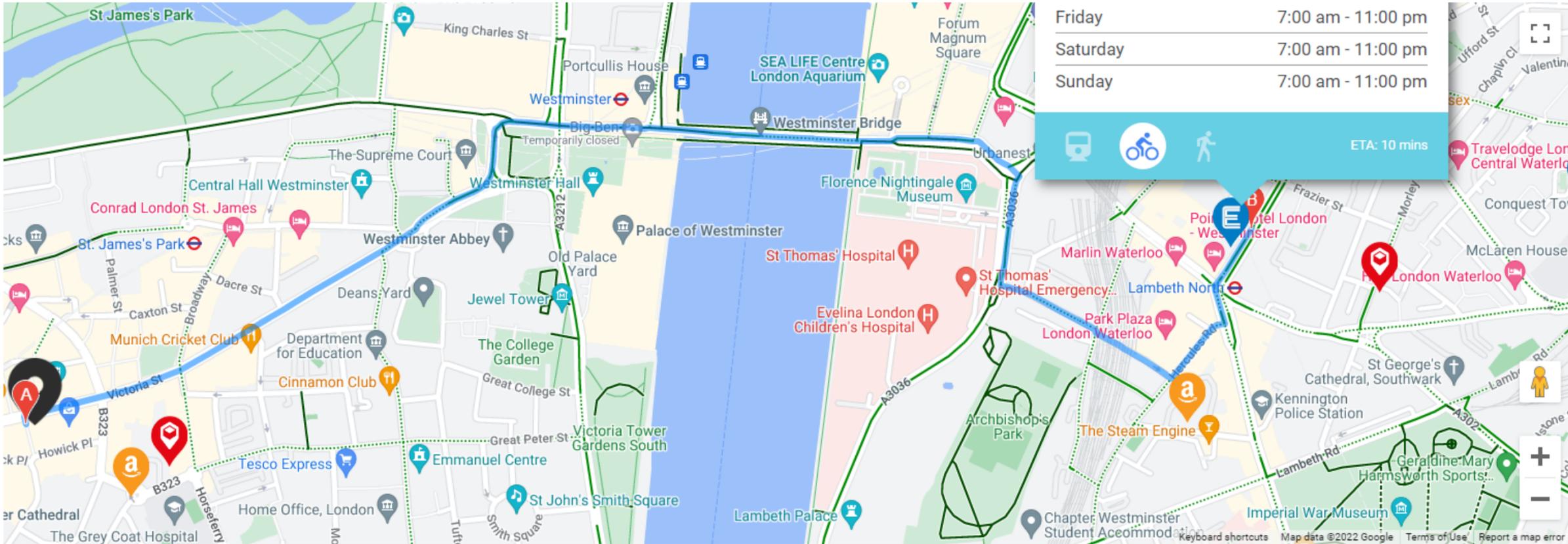
Twitter | Facebook | LinkedIn | Instagram

### FIND A COLLECT POINT

Find the most convenient collection point for you. This may be near home or along your commute route.

Filter options

- Amazon hub
- CollectPlus
- EVRi
- InPost locker
- Parcelly



Friday 7:00 am - 11:00 pm  
Saturday 7:00 am - 11:00 pm  
Sunday 7:00 am - 11:00 pm

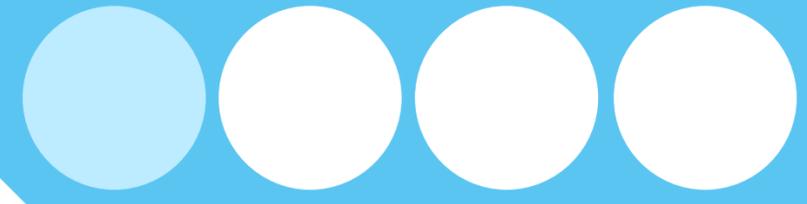
ETA: 10 mins



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# Conclusion



# Questions



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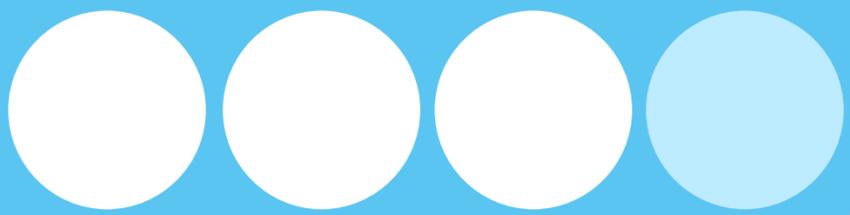


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Cross River Partnership



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[www.crossriverpartnership.org/newsletter](http://www.crossriverpartnership.org/newsletter)



Search 'Cross River Partnership' on YouTube



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