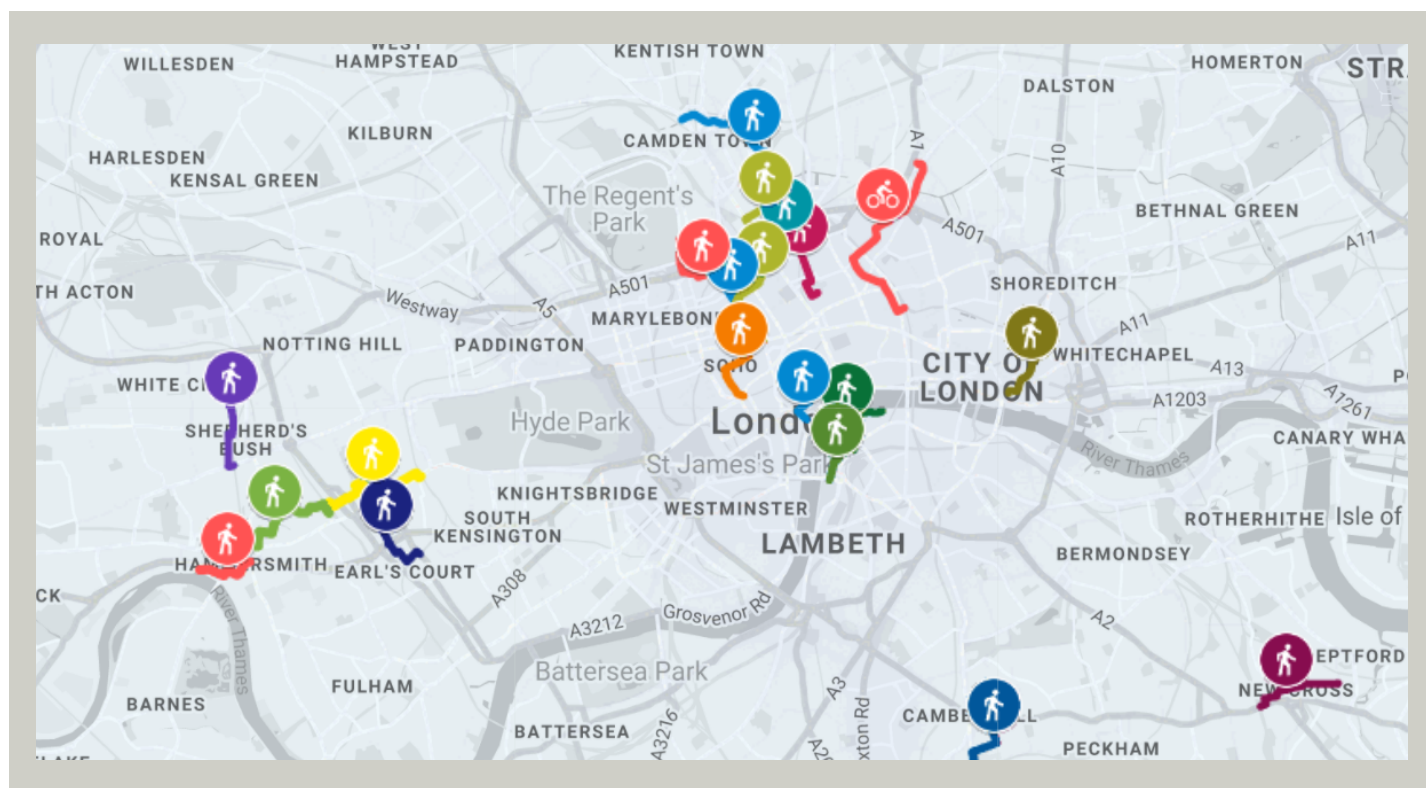


DEVELOPING NEW CLEAN AIR ROUTES



WHY CREATE A CLEAN AIR ROUTE?

Clean Air Villages 3, was a Defra Air Quality grant-funded programme, which aimed to reduce emissions by working directly with businesses, hospitals and communities.

14 new Clean Air Routes were developed for the project's pollution 'hotspots' (Villages). Monitoring undertaken by Tranquil City in 2020 demonstrated that by taking a Clean Air Route, *people can reduce their exposure to harmful nitrogen dioxide by up to 41%*. The purpose of this monitoring was to:

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

There is **significant public demand for healthier, less polluted and more sustainable routing options**. Those new to cycling should be able to find quieter and less dangerous routes to gain confidence, while parents should be able to find healthy and safe walking routes to school.

WHAT IS A CLEAN AIR ROUTE?

Road vehicles are the main driver of London's pollution problem. Harmful gases such as nitrogen dioxide can aggravate asthma and other respiratory conditions. A Clean Air Route is a walking or cycling route **designed to help people trying to avoid busy and polluted roads**. These serve as less-polluted alternatives to popular commuter routes, often between stations and key destinations.

HOW WERE THE ROUTES SELECTED?

Working with local authority and private partners across 11 London boroughs, Cross River Partnership (CRP) identified popular walking and cycling routes between key destinations and transport hubs. Development of cleaner alternative routes was informed by modelled data, combined with local knowledge. Seven modelled layers were used to assess the quality of each route, including the average annual concentration of nitrogen dioxide (NO_x) and the Healthy Streets Index score.

THE HEALTHY STREETS INDEX

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

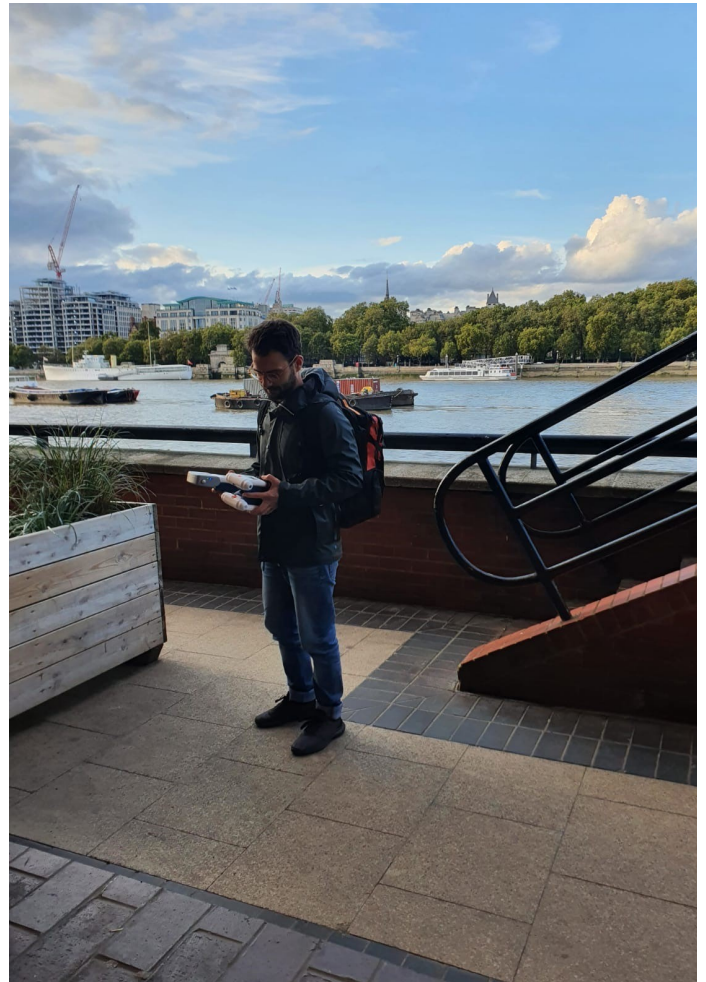
Once initial route pairs were selected, site visits were conducted to identify any concerns regarding accessibility and safety.



Aeroqual Series 500 handheld air quality sensors used for the CAR monitoring.

WHAT IS A 'ROUTE PAIR'?

The 'standard' route from A to B, often along main roads—typically the route suggested by popular journey planners—and the corresponding Clean Air Route alternative which makes use of quieter side streets.



Member of Tranquil City team collecting data for a CAR.

MONITORING

Monitoring was carried out by Tranquil City using Aeroqual Series 500 handheld air quality sensors. The primary pollutant of concern was NO_x. Levels of particulate matter (both PM₁₀ and PM_{2.5}) were also monitored. Each route pair was monitored simultaneously to enable **direct comparison between pollution levels along the standard route and Clean Air Route**. Each route was monitored up to six times to improve the accuracy of the results.

CLEAN AIR ROUTE MONITORING RESULTS



The Tooting Clean Air Route; the standard route is in red, the CAR in blue.

SPOTLIGHT: THE TOOTING CLEAN AIR ROUTE

In Tooting, CRP worked with St George's Hospital to develop a simple alternative for patients, staff and visitors travelling to the hospital from Tooting Broadway station. Our research has shown that this Clean Air Route can **reduce exposure to nitrogen dioxide by almost 40%**.

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

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

Exposure to quieter and greener environments has been shown to **improve health and wellbeing**, as well as creating a safe and enjoyable experience for pedestrians and cyclists.

These benefits would be even greater if the Clean Air Routes were included as part of a regular routine.

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

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

NEXT STEPS

Each of the new routes have been added to [CRP's Clean Air Route Finder](#), an interactive journey planner developed in partnership with King's College London and Imperial College London to help identify low pollution walking and cycling routes in London.

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

This case study forms part of the Clean Air Villages 3 (CAV3) project, funded by the Defra Air Quality Grant. You can view a detailed monitoring report for the new [Clean Air Routes here](#).

CLEAN AIR ROUTE SUMMARIES

- [Farringdon Station to Islington Green, Islington](#)
- [Monument to Liverpool Street Station, City of London](#)
- [Tottenham Court Road Station to Piccadilly Circus, Westminster](#)
- [Euston Station to Charlotte Street, Fitzrovia](#)
- [King's Cross to Great Ormond Street Hospital, Camden](#)
- [White City Place to Goldhawk Road Station, Hammersmith and Fulham](#)
- [Holloway Road to Sobell Leisure Centre, Islington](#)
- [Thames Riverside to Richmond Station, Richmond](#)
- [New Cross Gate to Deptford High Street, Lewisham](#)
- [Seven Sisters to St Ann's Hospital, Haringey](#)
- [Tooting Broadway to St George's Hospital, Wandsworth](#)
- [King's College Hospital to Camberwell Green, Lambeth](#)
- [Wimbledon Station to South Wimbledon Station, Merton](#)
- [Waterloo Station to St Thomas' Hospital, South Bank](#)
- [Waterloo Station to OXO Tower, South Bank](#)

ABOUT THE CLEAN AIR ROUTE FINDER

The [Clean Air Route](#) Finder initiative was first established in 2016 as a journey planner developed by Cross River Partnership and King's College London to help identify low pollution walking and cycling routes in London.

The route finder retrieves up to three alternative walking or cycling routes and calculates the total modelled pollutant dose along each route for nitrogen dioxide (NO₂) and PM₁₀ and PM_{2.5} particulates using a combination of average concentrations, distance and ventilation rate for walking or cycling. The sum of these modelled dose differences are then presented as a relative percentage difference in green/orange/red.

Interested in developing a Clean Air Route for your business, school or community?

Please contact Project Lead Sefinat Otaru: sefinatotaru@crossriverpartnership.org

Clean Air Villages 3 was a Central Government-funded, behaviour change programme, which aims to reduce emissions by working directly with businesses, hospitals and communities. In its third year (2020-21) the project worked across 16 air pollution 'hotspots' (villages) within twelve London boroughs. In 2021-22, the project is expanding into new areas as part of Clean Air Villages 4. For more information about the project, and to access further resources and case studies, please visit: crossriverpartnership.org/projects/clean-air-villages-3/



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