Camden Clean Air Strategy
2019-2034

Camden Clean Air Action Plan
2022-2026

CLEAN AIR FOR CAMDEN

Camden

What is this document?

This is a two-part document which sets out **Camden's approach for improving air quality and protecting health** from exposure to air pollution in Camden.

The Camden Clean Air Strategy 2019-2034 sets out our **strategic objectives** for realising the vision for a borough in which no person experiences poor health as a result of the air they breathe.

The Camden Clean Air Action Plan 2022-2026 describes the **actions that we will take over the next four years** (2022-2026). This follows on from the previous Camden Clean Air Action Plan 2019-2022.

This document **goes beyond the legal requirements** by committing to more ambitious air quality standards and including pollution sources not usually addressed by local authorities.

Why does this document matter to you?

- Everyone is affected by air pollution – clean air is important for us all.
- The Camden Clean Air Action Plan 2022-2026 describes what Camden Council and its partners will do to improve air quality over the next four years.
- It also provides useful information, guidance and suggestions to help you protect your own health by avoiding air pollution and reducing emissions from your own activities.
- **It's relevant for everyone**, whether you:
    - Live in Camden
    - Work in Camden
    - Run a business or employ people in Camden
    - Go to school (or take your children to school) in Camden
    - Go to university in Camden
    - Visit Camden

You do not need to read the whole document – the *Contents* (page 3) lays out the different sections of the Camden Clean Air Strategy 2019-2034 and the Camden Clean Air Action Plan 2022-2026 so that you can quickly find the information of most interest to you.

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Foreword

"Camden has never been a place that ignores or accepts injustice. Camden's communities have a rich history of coming together to bring about real social change. We call this our 'rebellious spirit'."

We Make Camden, 2022

The air we breathe affects our health. We have known this for centuries, but it was made painfully clear for all of us when the Covid-19 pandemic first reached the UK in early 2020. Humans are fundamentally reliant upon clean air as a basis for a healthy life, but air pollution damages not only our health but the natural environment too.

There are many parallels to be drawn between Covid-19 and the air quality health crisis, not only in the way that air pollution can affect our bodies, but in the way that it disproportionately affects vulnerable people, poorer communities, and Black, Asian and Minority Ethnic groups.

The pandemic has reminded us of the importance of community, of looking out for our neighbours and the most vulnerable in our society, and we have learned that even small actions and simple lifestyle changes can make a difference to our own health and the health of others. This mentality applies to air quality too – our individual and collective choices have an impact on air quality and how we are exposed to air pollution, but they also affect others.

Unlike Covid-19, air pollution doesn't 'replicate', and if we tackle the sources of human-made air pollution, we will start to remove it permanently from the air and our health will be the better for it.

During the early stages of the pandemic in London, whilst 'lockdown' measures were in place, our streets were noticeably quieter and cleaner. Traffic levels were far lower than before the pandemic, and

this period is still often viewed as a reference point for a more sustainable future: what if our streets could be like this, even once we're out of lockdown.

But we can't just focus on vehicles, because air pollution isn't confined exclusively to our busiest roads. In fact, during the initial Covid-19 lockdown, we observed an increase in particulate matter air pollution from non-road sources including home wood-burning stoves and garden fires, and from sources outside of the city.

Equally we must recognise that air pollution is not solely a problem for the outside world, and that indoor spaces – our homes, schools and workplaces – can contain air which is just as polluted as outdoors. Indoor air pollution is a health risk and one which, again, is likely to be experienced most severely by poorer residents and those with health vulnerabilities.

This highlights the complexity of tackling the air quality health crisis, which requires a concerted effort from us all to reduce emissions across all sectors, and an openness to make personal changes where necessary to protect our health and the health of our neighbours and our community, just like we have done during the Covid-19 pandemic.

We are pleased therefore to present the second in a series of Camden Clean Air Action Plans that will work to realise Camden citizens' vision for a borough with cleaner air which no longer causes harm to those who live, work and learn here.

Our Camden Clean Air Action Plan 2022-2026 builds on the collective momentum we harnessed after the World Health Organization air quality guidelines were first adopted in Camden in 2018. The Action Plan breaks down the challenge ahead into specific outcomes for reducing emissions and public exposure to polluted air, both outdoors and inside buildings.

Although we have a clear definition of the overall scale of our objectives, we have purposefully designed for flexibility in how we achieve these to enable us to respond to community priorities and to ensure others are empowered to fight for clean air.

In this way, the new Camden Clean Air Action Plan can be considered a 'live' document and we will continue to work with Camden's communities, businesses, schools, hospitals, universities and others to explore the full potential of how we can deliver real change to protect everyone's health.

Signed by:

Councillor Adam Harrison, Cabinet Member for a Sustainable Camden

Kirsten Watters, Director of Public Health

June 2022

Executive summary

This document details Camden's long-term strategic objectives for clean air in Camden (the Camden Clean Air Strategy 2019-2034) and the actions we will take over the next four years to improve air quality now and to work towards our strategic objectives (the Camden Clean Air Action Plan 2022-2026).

The context

Our Camden Clean Air Strategy 2019-2034 reaffirms the bold vision for a borough with clean air, and our new Camden Clean Air Action Plan 2022-2026 sets out the actions we will take to realise this vision.

Air pollution affects us all. Many of us may already have health vulnerabilities – such as asthma – which make us more likely to feel the effects of high-pollution episodes or local pollution emissions from roads, wood stoves or construction activity. Some of us may work in environments where we are routinely exposed to higher levels of air pollution, for example if we drive professionally, work outdoors, or work in kitchens or in cleaning jobs.

For people with no existing health conditions it is still important that we do everything we can to reduce our contribution and our exposure to air pollution, because **breathing cleaner air now will be good for our health in the future**.

As well as affecting our health, **air pollution damages the economy and is bad for business**; not only does it cost the NHS and social care systems as much as £20 billion each year in the UK, but air pollution also reduces productivity and increases staff sick leave[1]. Research has shown that the economic benefits of improving air quality outweigh the cost of action[2].

So it is in everyone's interest to work together to improve air quality and to realise Camden's vision **for a borough with clean air, where nobody experiences poor health as a result of the air they breathe**.

Local authorities have a legal duty to measure and improve air quality in accordance with the Environmental Protection Act 1995, and the National Air Quality Objectives and Standards. This document fulfils our statutory obligations, but we recognise that we need to go beyond our statutory requirements if we are to realise the vision above because air pollution can still damage our health even at very low concentrations.

Our Camden Clean Air Strategy 2019-2034 and Camden Clean Air Action Plan 2022-2026 go beyond the legal requirements:

- The Camden Clean Air Strategy 2019-2034 sets out a pathway to achieve stricter air quality objectives, sooner than we are required to meet the UK National Air Quality Objectives and Standards, which are less ambitious
- The Camden Clean Air Action Plan 2022-2026 addresses indoor air quality and occupational exposure to air pollution
- Both documents focus on the need to reduce the inequitable impact of air pollution on some communities and groups

[1] CBI Economics (2020), *Breathing life into the UK economy: Quantifying the economic benefits of cleaner air*. https://www.cbi.org.uk/media/5539/2020-09-cbi-economics-caf-report.pdf
[2] OECD (2019), *The Economic Cost of Air Pollution: Evidence from Europe*. https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2019)54&docLanguage=En

The vision: our strategic objectives

The Camden Clean Air Strategy 2019-2034 is the overarching vision for clean air in the borough. Camden has committed to achieving the revised World Health Organization (WHO) air quality guidelines in response to the We Make Camden[3] call to action and the scientific evidence about the impact of air pollution on health. The Camden Clean Air Strategy 2019-2034 formalises this commitment and sets out the pathway to meeting these targets, including how we will monitor our progress.

The deadline we have set for achieving the WHO limits is 2034 for nitrogen dioxide (NO_2; 10µg/m^3) and fine particulate matter ($PM_{2.5}$; 5µg/m^3), and 2030 for coarse particulate matter (PM_{10}; 15µg/m^3). These self-imposed targets are ambitious and will require considerable effort across all sectors, but they are justified because anything less challenging would mean accepting the fact that pollution would continue to damage our health.

Our Camden Clean Air Strategy 2019-2034 also commits to tackling the disproportionate impact of air pollution upon some communities.

The actions we will take to achieve our vision are set out in a series of Camden Clean Air Action Plans, each of which covers a four-year period.

The action: our plan for the next four years (2022-2026)

The first Camden Clean Air Action Plan 2019-2022 was launched in April 2019 after a co-design process involving a newly-formed 'Camden Clean Air Partnership', comprising community members, businesses, universities, schools, hospitals and other sectors. The Partnership has continued to meet twice each year to review progress in delivering on the Camden Clean Air Action Plan 2019-2022 and to look ahead to new and emerging challenges and opportunities.

Our new Camden Clean Air Action Plan 2022-2026 is the second of these Action Plans, and it sets out the measures to be taken during the next four years by the Council and partners towards fulfilling our Camden Clean Air Strategy 2019-2034.

This new Camden Clean Air Action Plan 2022-2026 continues the 'shared endeavour' principle of collective action through the Camden Clean Air Partnership. We have carried the co-design approach into the development of this new Action Plan, but we've also enhanced our engagement to better involve communities and groups which are typically most affected by air pollution, whilst contributing the least to it.

The Camden Clean Air Action Plan 2022-2026 contains **34 Clean Air Outcomes** which describe specific short- and medium-term interventions to improve air quality and protect public health in Camden. The Clean Air Outcomes work to support the longer-term objectives of the Camden Clean Air Strategy 2019-2034. Each of the Clean Air Outcomes has one or more associated actions which are specific projects, policies, processes, research initiatives, or engagement campaigns that will be taken to support the Outcome. Some Outcomes are the responsibility of Camden Council, some are owned by members of the Camden Clean Air Partnership, and some represent collaboration between the Council and other stakeholders.

The Camden Clean Air Action Plan 2022-2026 reflects our understanding of air quality and the health effects of air pollution in Camden in 2022. We have seen how much the public health situation can change in such a short space of time, and the Camden Clean Air Action Plan 2022-2026 is therefore a 'live' document, meaning that we will allow room for shifting priorities, new science, and the most

[3] https://www.wemakecamden.org.uk/about/

effective use of our resources to do the best we can to improve air quality as quickly as possible, especially for those who are most vulnerable and those who are inequitably impacted by air pollution.

Camden's air quality programme

Camden Clean Air Strategy 2019-2034

The long-term objectives for realising the community vision for a borough in which no person experiences ill health because of the air they breathe

Camden Clean Air Action Plan 2022-2026

The short- and medium-term programme of Camden Council's work towards the long-term objectives of the Camden Clean Air Strategy 2019-2034

7 key themes (action statements)

The seven key areas of focus for our air quality programme as part of the Camden Clean Air Action Plan 2022-2026

Clean Air Outcomes

The 34 interventions or outcomes which characterise our air quality programme as set out in the Camden Clean Air Action Plan 2022-2026

Actions

The projects, policies, processes, research and campaigns we will work on to achieve the Clean Air Outcomes

What can you do to help improve air quality and protect health in Camden?

As well as describing the actions that Camden Council and the Clean Air Partnership will take, the Camden Clean Air Action Plan 2022-2026 also contains helpful information and recommendations for how we can all take steps to reduce our contributions to air pollution and our exposure to it, whether that's as a community organisation, a business, or an individual.

Some examples are given below, and further recommendations are given in the respective sections of the Camden Clean Air Action Plan 2022-2026 (*Information for Individuals and Communities*, *Information for Businesses* and *Information for Schools*).

Individuals and communities

- Try to walk or cycle rather than driving, or take public transport
- Learn about indoor air quality and how to make the air inside your home as clean and safe as possible
- Start a local anti-idling campaign using Idling Action London's free toolkits and resources
- Share information and raise awareness about air pollution from wood-burning and garden fires

Businesses

- Implement a staff travel policy to support and encourage sustainable travel to and from work
- Use a delivery or waste consolidation service to reduce vehicle emissions associated with business operations
- Explore options to improve energy efficiency to cut down on gas consumption for heating, to reduce carbon and air pollution
- Engage staff about the importance of indoor air quality and consider measures to achieve cleaner air indoors

Schools

- Incorporate air quality and health into the curriculum
- Become an Asthma Friendly School
- Engage with parents, teachers and the local community to encourage car-free travel
- Request the creation of a Healthy School Street outside your school

Who has produced this document?

This document has been produced by Camden Council's Air Quality Team with the support of the Camden Clean Air Partnership, and contact details are provided in *Introduction*.

A timeline of air quality in Camden

2018

- **January**: Camden becomes the first local authority to adopt the World Health Organization air quality guideline for particulate matter air pollution, committing to achieve this target throughout the borough by 2030
- **July**: Clean Air Design Day held to launch a new model of participative co-design for air quality strategy and action planning

2019

- **April**: Camden Clean Air Action Plan 2019-2022 launched

2020

- **March**: Covid-19 pandemic redefines our understanding of 'clean air' and despite the circumstances London experiences quieter, cleaner roads and safer streets
- **December**: 'Air pollution' is listed as a cause of death on the death certificate of Ella Kissi-Debrah, marking seven years of tireless campaigning by Ella's mother Rosamund Kissi-Debrah for air pollution to have the recognition it deserves as a major public health risk

2021

- **April**: Coroner's Report to Prevent Future deaths published, calling for stricter air quality limits, faster action to improve air quality, and support from the health sector in making people aware of air pollution as a health risk. Camden Council publishes a statement committing to step up efforts to cut emissions and raise public awareness about air pollution in the borough[4]
- **September**: World Health Organization publishes new air quality guidelines which are much stricter than the former WHO limits and the current legal limits in the UK

2022

- **March**: Camden once again becomes the first local authority to commit to the new World Health Organization air quality guidelines
- **December**: Camden Clean Air Action Plan 2022-2026 scheduled for publication

[4] https://news.camden.gov.uk/camden-councils-statement-on-the-ella-adoo-kissi-debrah-inquest/

Glossary and abbreviations

AQG	Air Quality Guideline (World Health Organization)
AQAP	Air Quality Action Plan
AQFA	Air Quality Focus Area
AQMA	Air Quality Management Area
CAAP	Clean Air Action Plan
CAZ	Central Activity Zone
CCAP	Camden Clean Air Partnership
CCG	Clinical Commissioning Group
CO_2	Carbon dioxide
CTS	Camden Transport Strategy 2019-2041
Defra	The Department for Environment, Food & Rural Affairs
DfT	The Department for Transport
EV	Electric vehicle
GLA	Greater London Authority
IAQ	Indoor air quality
ICEV	Internal combustion engine vehicle
ICS	Integrated Care System
JSNA	Joint Strategic Needs Assessment
LAEI	London Atmospheric Emissions Inventory
LAQM	Local Air Quality Management
LLAQM	London Local Air Quality Management
MAQF	Mayor's Air Quality Fund
MoL	Mayor of London
NHS	National Health Service
NO	Nitrogen oxide
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides – the collective term for nitrogen oxide and nitrogen dioxide
NRMM	Non-road mobile machinery
O_3	Ozone
PM	Particulate matter (often with a number, e.g. PM_{10}, $PM_{2.5}$, PM_1)
SCA	Smoke Control Area
SO_2	Sulphur dioxide
TfL	Transport for London
UKHSA	United Kingdom Health Security Agency
WHO	World Health Organization

Introduction

Why we need a Clean Air Strategy and a Clean Air Action Plan

Air pollution is the largest environmental threat to public health in the UK, and exposure to air pollution is estimated to cause 36,000 premature deaths each year – that's 20 times more than the number of deaths caused by road traffic collisions. Of these, 4,100 are in London, and in Camden particulate air pollution is responsible for 7% of all deaths[5].

Through damage to health and wellbeing, air pollution carries a huge cost for our health and social care systems; estimated at approximately £5.3bn by 2035.

Finally, air pollution damages the economy through lost productivity and poor health. Defra-commissioned research concluded that air pollution costs the UK economy £2.7 billion each year[6].

The impacts of air pollution are severe and far-reaching, but we're not all affected equally. The risk to our health is a result of our existing health circumstances and the extent to which we are exposed to polluted air. People with health vulnerabilities or increased exposure to air pollution are therefore more likely to experience adverse health outcomes from air pollution.

In practice, air pollution has a disproportionate and inequitable impact upon socio-economically deprived communities and Black, Asian and minority ethnic populations.

This document contains the Camden Clean Air Strategy 2019-2034, which is our long-term vision for air quality in Camden, and the new Camden Clean Air Action Plan 2022-2026, which describes the actions we will take over the next four years to fulfil our strategic objectives.

Our vision for clean air: Camden Clean Air Strategy 2019-2034

The Camden Clean Air Strategy 2019-2034 is the overarching vision for clean air in the borough, as informed by the Council's strategic plans for Camden: Camden 2025 and We Make Camden, which contained a call to action for a borough in which no person experiences ill health as a result of the air they breathe. The Strategy is a framework for us to:

- Improve air quality throughout the borough of Camden, meeting the World Health Organization air quality guideline limits everywhere in Camden by 2034
- Tackle the disproportionate and inequitable impact of air pollution in Camden

Our plan for achieving this: Camden Clean Air Action Plan 2022-2026

The Camden Clean Air Action Plan 2022-2026 is the Council's short- to medium-term plan for working towards the strategic objectives as described in the Camden Clean Air Strategy 2019-2034.

It is the second in a series of four Camden Clean Air Action Plans which will achieve the Camden Clean Air Strategy 2019-2034.

[5] In this document 'air pollution' means gases and particles in the air which are harmful to our health. It does not mean carbon dioxide (CO_2), which is a pollutant but which does not have a *direct* effect on health in the kinds of concentrations we typically encounter in the air. CO_2 does affect human health indirectly by driving the climate crisis and global heating.

[6] Valuing the Impacts of Air Quality on Productivity: https://uk-air.defra.gov.uk/assets/documents/reports/cat19/1511251135_140610_Valuing_the_impacts_of_air_quality_on_productivity_Final_Report_3_0.pdf

The new Camden Clean Air Action Plan 2022-2026 was designed in collaboration with the Camden Clean Air Partnership and has been shaped by the contributions of Camden's citizens, communities, and other organisations.

We will report annually on our progress in improving air quality in Camden and on the actions we have committed to in the Camden Clean Air Action Plan 2022-2026 in statutory Annual Status Reports (ASR), which we publish on the Council website[7].

Supporting plans and strategies

We Make Camden

We Make Camden[8] is the refreshed vision for the future of Camden, and builds on the ambitions of Camden 2025 in a way that better reflects what Camden's citizens have said is most important, as well as adapting to the effects of Covid-19.

One of the core missions in We Make Camden is the vision for a borough which is green, clean, vibrant, accessible and sustainable, with a long-term ambition that no one experiences poor health because of the air they breathe in Camden.

Health and Wellbeing Strategy 2022-30

The Strategy[9] sets out the principles, long-term ambitions and short-term priorities of the Camden Health and Wellbeing Board for improving health and reducing health inequalities in Camden.

Living well, in 'connected, prosperous and sustainable communities' is a long-term strategic ambition of the Health and Wellbeing Strategy, and this includes the entitlement to a healthy life through access to clean air.

The need to address childhood asthma is a short-term priority for action in the Health and Wellbeing Strategy, including through measures to tackle air pollution as a wider determinant of respiratory illness.

Camden Transport Strategy 2019-2041

The Camden Transport Strategy[10] (CTS) aims to transform transport and mobility in Camden, enabling people and goods to be transported healthily and sustainably. The CTS sets Camden's long-term objectives and the measures needed to achieve these.

Key priorities of the CTS include increasing walking and cycling, improving public transport, reducing car ownership and use, making streets safe and accessible for all, and improving air quality.

Climate Action Plan 2020-2025

The air quality 'health crisis', which refers to the local impact of air pollution on public health, is separate from the climate emergency, but these two environmental problems are closely linked and many of the causes are the same.

In 2019 Camden Council declared a climate and ecological emergency and committed the organisation to take action to make Camden net zero by 2030, taking forward the recommendations of the Camden Climate Emergency Citizens' Assembly.

[7] https://www.camden.gov.uk/air-quality
[8] https://www.wemakecamden.org.uk/
[9] https://www.camden.gov.uk/documents/20142/0/Camden+HWB+Strategy+%28Feb+22%29+v6.pdf/6084f08a-9dde-db2b-6f37-fa5c766cd4e8?t=1647945138445
[10] https://www.camden.gov.uk/transport-strategies-and-plans

The Climate Action Plan 2020-2025[11] responds to the findings of the Citizens' Assembly. Many of the actions towards a net zero Camden will have significant benefits for local air quality and public health.

Joint Strategic Needs Assessment

The Joint Strategic Needs Assessment[12] (JSNA) is a process for councils and NHS organisations to assess the health, care and wellbeing needs of the local community to inform decision making.

The JSNA Air Quality factsheet for Camden sets out the data and policies relevant for air quality in the borough. It is updated periodically to reflect amendments to our understanding of air pollution and health, and the changing policy landscape. Camden Council and public health colleagues use the JSNA to help in prioritising resources and drawing health sector attention to the importance of air pollution as the largest environmental risk for human health.

Who has produced the Camden Clean Air Strategy and Camden Clean Air Action Plan?

Camden Council's Air Quality Team is responsible for developing and delivering Camden's air quality programme, including the design of strategies and statutory action plans.

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[11] https://www.camden.gov.uk/how-are-we-tackling-the-climate-crisis-in-camden-#rqld
[12] https://www.camden.gov.uk/joint-strategic-needs-assessment

Camden Clean Air Strategy 2019-2034

Introduction

The Camden Clean Air Strategy 2019-2034 sets out Camden's long-term vision for improving air quality and protecting public health from the effects of air pollution whilst also tackling the disproportionate impact that poor air quality has on some groups.

The Camden Clean Air Strategy 2019-2034 covers the period from the publication of our first Camden Clean Air Action Plan (2019-2022) after the Council adopted World Health Organization (WHO) air quality guidelines in January 2018 through to the 2034 deadline for complying with the revised WHO guidelines, which the Council adopted in March 2022.

The Strategy provides a framework and vision for statutory Clean Air Action Plans to deliver the short- to medium-term actions and outcomes needed to achieve the long-term objectives.

Background and context

Camden's citizens' call to action

In the Camden 2025 community vision for the borough, Camden's citizens expressed a desire for Camden to be a 'clean, vibrant, sustainable place to live' where 'no person experiences poor health as a result of the air they breathe'. This has served as our guiding principle since, and the message is echoed in We Make Camden, which captures the current priorities of Camden's citizens.

Air quality and health

Scientists and Government have known for a long time that air pollution is the largest environmental risk for health, and that it causes tens of thousands of premature deaths each year, while degrading quality of life for many thousands more.

In recent years we have also seen how air pollution has a tragic and direct impact upon individuals and families. It is now clear that exposure to air pollution is not an abstract threat, but something that really can trigger deadly illness.

Following the landmark inquest into the death of Ella Kissi-Debrah, the Coroner for Inner South London published a Report to Prevent Future Deaths[13] which identified three significant matters of concern for air quality management:

- Legal air quality limits in the UK are set far higher than the WHO guideline limits, despite Government's knowledge about the impact of air pollution on health.
- The general public has only a limited awareness of air pollution or the sources of information about how to protect health by reducing exposure.
- The health effects of air pollution are not being sufficiently communicated to patients and carers by medical and nursing professionals.

The Coroner called for action on the part of national Government, medical professionals and the healthcare sector, and local authorities, to address these shortcomings. Consequently, the Camden Clean Air Strategy 2019-2034 and Camden Clean Air Action Plan 2022-2026 (and subsequent Action Plans) shall have regard to the Coroner's Report and will strive to fulfil the need for improvement[14].

Air quality and disproportionality

Air pollution does not affect everyone equally. Although we are all at risk, some groups are exposed to higher levels of air pollution and others are more vulnerable to the health damage from pollution exposure. In this way, air pollution has an inequitable health burden. Less affluent neighbourhoods and Black, Asian and minority ethnic communities typically experience worse health outcomes as a result of air pollution exposure.

Exposure to air pollution is known to be an important determinant of asthma and other respiratory health conditions. Research from the UK and from the Netherlands has also shown that communities with higher proportions of people from minority ethnic groups are exposed to higher air pollution concentrations[15].

Data from the Office of National Statistics (ONS) shows that Black, Asian and minority ethnic populations are exposed to higher NOx concentrations[16].

Public health data for Camden shows that approximately 6% of Asian children and young people (0-19 years of age, abbreviated as CYP) are diagnosed with asthma. 5% of Black CYP are diagnosed with asthma and3% of white children are diagnosed with asthma.

[13] https://www.judiciary.uk/publications/ella-kissi-debrah/
[14] https://news.camden.gov.uk/camden-councils-statement-on-the-ella-adoo-kissi-debrah-inquest/
[15] Imperial College London (2015), Ethnic monitories and deprived communities hardest hit by air pollution, https://www.imperial.ac.uk/news/163408/ethnic-minorities-deprived-communities-hardest-pollution/
[16] ONS (2020), *Does exposure to air pollution increase the risk of dying from the coronavirus (COVID-19)?*, https://www.ons.gov.uk/economy/environmentalaccounts/articles/doesexposuretoairpollutionincreasetheriskofdyingfromthecoronaviruscovid19/2020-08-13

The importance of partnership working and the idea of 'shared endeavour'

Air pollution affects everyone, and everyone has a role to play in affecting clean air. No single authority, organisation or group can solve the air quality health crisis alone, so we must work together with shared ambition.

Even if we do not cause or produce much air pollution through our everyday activities, we can still influence others and lead by example. To achieve any vision for cleaner air in Camden we will need to work together, in partnership, with common goals and capitalising on our collective strengths.

We refer to this as the idea of 'shared endeavour' and it characterised the process for co-designing the Camden Clean Air Action Plan 2019-2022 and subsequent Action Plans, as well as the ongoing work by all stakeholders to improve air quality in Camden.

The Camden Clean Air Strategy 2019-2034

Defining principles of the Camden Clean Air Strategy

- **We must do everything we can to realise Camden's citizens' vision for a borough in which no person experiences ill health as a result of the air they breathe**
- **Air pollution can affect anyone, at any stage of life**
- **Some people are more severely affected by air pollution because they are exposed to more of it, or because they have existing health vulnerabilities, and we must tackle this health inequity**
- **We must all take action, collectively and individually, to reduce our contribution and exposure to air pollution**
- **Clean air is better for our health now and in the future**
- **We can address air pollution, the climate crisis and wellbeing together**

Our long-term strategic commitments for improving air quality in Camden

1. **Camden's air quality programme, its strategies, action plans, projects and policies will be guided by the defining principles** listed above and, most importantly, will strive to fulfil the vision for a borough in which no person experiences ill health because of the air they breathe, and the fundamental need to tackle the disproportionate health impacts of air pollution.
2. **Camden Council will commit to achieving the most stringent evidence-based air quality targets available, in as short a timeframe as possible**. Currently, these are the World Health Organization's (WHO) air quality guidelines, published in 2021.
3. **Camden's work to improve air quality will be empirical, data-led and evidence-based**. But we won't avoid taking action if there is insufficient existing evidence when, on the balance of probability, action is likely to deliver against our strategic objectives.
4. **We will ensure the Camden's air quality and climate programmes are interlinked** and that we achieve co-benefits for air quality from climate action, and vice versa.
5. **We will measure and report on changes in air quality (resulting from our actions or otherwise) with transparency and openness** by publishing monitoring data and supporting community groups to undertake their own pollution monitoring projects.

6. **We will not be afraid to deviate from the norm and to push beyond statutory obligations or legal limits if these do not go far enough in protecting public health**. We will use our influence wherever possible to advocate for collective action across different scales to tackle air pollution.

7. **Camden will adopt a participatory approach in developing our action plans, strategies and other programmes of work to improve air quality**. Co-design, partnership working, and the idea of clean air being a shared endeavour are crucial in our work.

Our air quality targets

As described in commitment 2 above, we will do everything we can to achieve the WHO's updated air quality guidelines throughout the borough by 2034 at the latest:

- NO_2: 10µg/m^3 by 2034
- PM_{10}: 15µg/m^3 by 2030
- $PM_{2.5}$: 5µg/m^3 by 2034

Additionally, we have set interim targets for these pollutants to measure ongoing progress:

- NO_2: 30µg/m^3 by 2026 and 20µg/m^3 by 2030
- PM_{10}: 20µg/m^3 by 2026
- $PM_{2.5}$: 10µg/m^3 by 2030

These limits represent annual mean pollutant concentrations, so the years listed are the final years for achieving an annual mean pollution concentration which complies with the WHO guideline limits.

Monitoring progress and compliance with our objectives and targets

We will monitor our progress towards realising the **vision for a borough where air pollution no longer affects citizens' health** by working with Camden's Public Health service to review public health data on conditions associated with air pollution exposure, and by analysing air quality monitoring data and any other information which is available to assess the impact of air quality on public health.

We will assess progress on **tackling the disproportionate impact of air pollution** by factoring in socio-economic and other demographic characteristics (where available) in our analysis as described above.

The lived experience of people in Camden is essential, so we will listen to the feedback we receive about how Camden's citizens think we are doing with respect to our objectives and commitments.

To measure progress against our **air quality targets** we will compare measured air quality in Camden against the targets limits we have committed to achieve.

Air quality is a measure of the amount of air pollutants (NO_2, PM_{10} and $PM_{2.5}$) in the air at a given time. The standard method of assessing air quality is by calculating an annual mean concentration for the different measured pollutants. This is because the scientific evidence typically focuses on the effect of long-term exposure to air pollution on health.

The annual mean concentration is calculated by taking measurements of the amount of pollution throughout a year and then averaging these. The WHO air quality guidelines are recommended maximum annual mean pollutant concentrations which should not be exceeded.

Camden Council operates an air quality monitoring network comprising various different types of sensors and measuring methods, and we will use these to measure whether pollutant concentrations meet or exceed the WHO guidelines.

We will not consider that we have achieved the WHO guideline objectives until every monitoring location at which the pollutants are measured records annual mean concentrations which meet the relevant standards.

Reporting on our progress

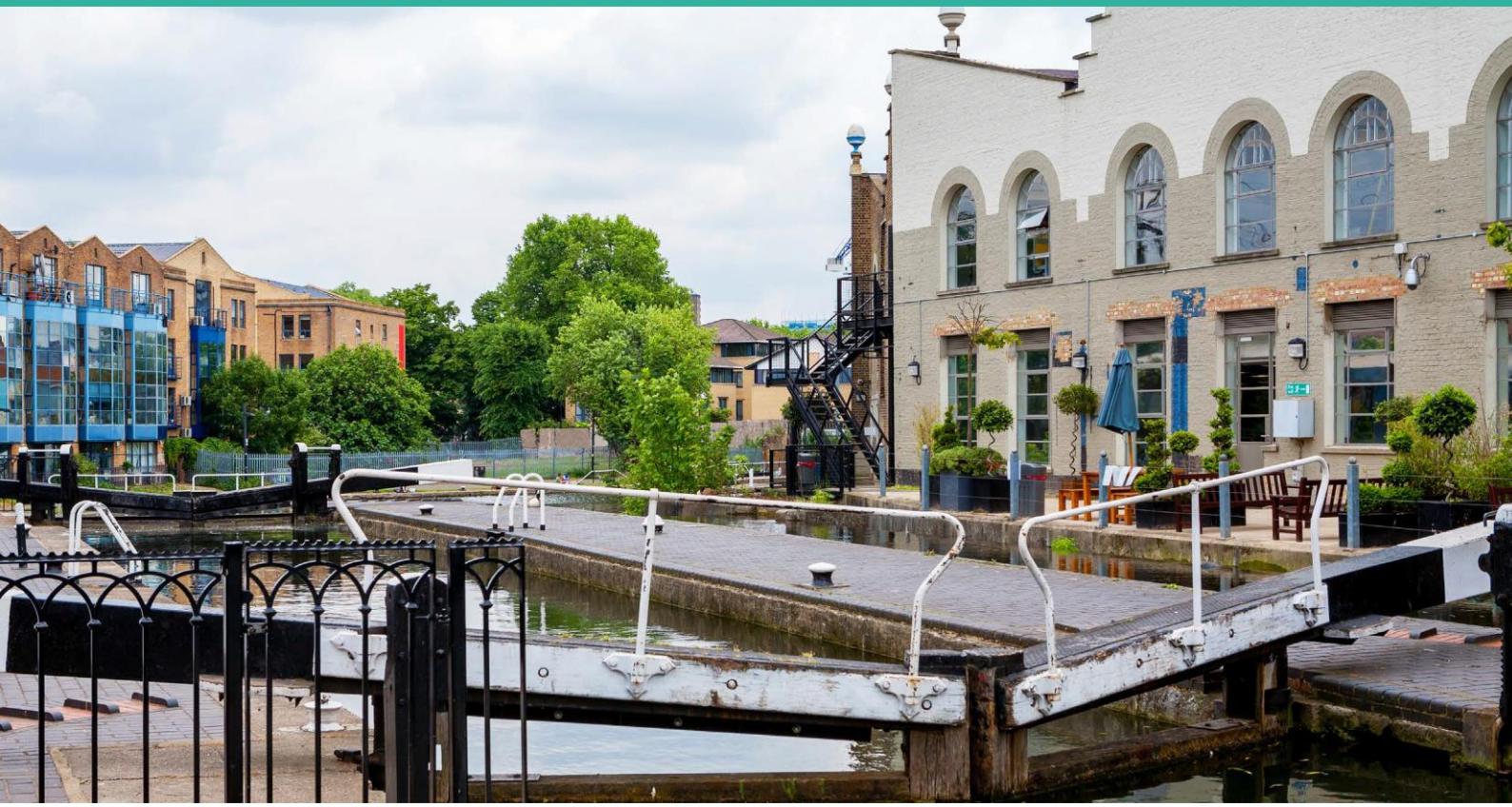
Under the Local Air Quality Management regulations we are legally required to publish an Annual Status Report (ASR) each year, which must provide detail about the actions taken over the previous year to improve air quality. ASRs also contain air quality monitoring data and a review of whether measured pollutant concentrations comply with the UK legal limits.

We will use our ASRs to report on the progress towards our Camden Clean Air Strategy 2019-2034 objectives, including our air quality targets which are much stricter than the legal limits. ASRs are published on the Air Quality webpages of Camden Council's website: https://www.camden.gov.uk/air-quality.

In the next Camden Clean Air Action Plan 2026-2030 and its successor (Camden Clean Air Action Plan 2030-2034) we will include a section to report on our progress against the long-term objectives described here in the Camden Clean Air Strategy 2019-2034.

Additionally, the Camden Clean Air Partnership will continue to hold Camden Council and other stakeholders to account in working towards the long-term objectives expressed in this Strategy.

Camden Clean Air Action Plan 2022-2026



Introduction

The Camden Clean Air Action Plan 2022-2026 is Camden Council's statutory Air Quality Action Plan (AQAP) and has been produced in fulfilment of the legal requirement for local authorities to work towards the UK's air quality objectives under Part IV of the Environment Act 1995 (and associated regulations), and to meet the requirements of the London Local Air Quality Management (LLAQM) framework. It sets out the action we will take to improve air quality in Camden from 2022 to 2026, inclusive.

The Camden Clean Air Action Plan 2022-2026 supersedes the previous Camden Clean Air Action Plan 2019-2022. The key achievements under the Camden Clean Air Action Plan 2019-2022 are described in *Chapter 2: Camden Clean Air Action Plan 2019-2022: What we achieved.*

Structure of the Camden Clean Air Action Plan 2022-2026

Chapter 1: Air quality in Camden sets out the context for why we have produced a Clean Air Action Plan. It covers the fundamental information about how air pollution affects health, how we measure air quality, sources of air pollution in Camden, how air quality has changed, our statutory duties, and the legal limits and World Health Organization guidelines for air pollution which shape our Action Plan and our air quality programme in Camden.

Chapter 2: Camden Clean Air Action Plan 2019-2022 – what we achieved recaps on the achievements of the previous Camden Clean Air Action Plan 2019-2022 and what we learned in delivering it.

Chapter 3: The next four years – Camden Clean Air Action Plan 2022-2026 relates this new Camden Clean Air Action Plan 2022-2026 to the Camden Clean Air Strategy 2019-2034 and sets out the overarching action statements of our Camden Clean Air Action Plan 2022-2026 and the Clean Air Outcomes that we commit to achieving as part of each of these statements in the Action Plan.

Chapter 4: Other important information addresses some key issues in air quality including the subject of trees and air pollution, and the linkages between air quality and the climate crisis.

Chapter 5: Suggestions for taking action provides recommendations for how individuals and community groups, businesses and schools in Camden can all support the action we must all take to improve air quality and protect our health, the health of our families, our neighbours and our community.

Chapter 1: Air quality in Camden

Background and legislative context

The whole of Camden is defined as an Air Quality Management Area (AQMA) which was declared by the Council in 2002 to address nitrogen dioxide (NO_2) and particulate matter (PM_{10}) pollution[17].

Additionally, several Air Quality Focus Areas (AQFA) have been designated in Camden, along Euston Road, Swiss Cottage/Finchley Road, Kilburn High Road, Camden High Street, and Holborn. These are areas with high levels of pollution and human exposure.

Air quality has improved steadily since 2010 due to the actions which have been taken to reduce air pollution, as well as improvements to vehicle engine standards, better regulation of emissions from home wood- and coal-burning, and from large-scale interventions such as the London Ultra Low Emissions Zone (ULEZ). The change in air quality in Camden is described in more detail later in Chapter 1.

Many parts of Camden, including some busy roads, now meet the national objectives for NO_2, PM_{10} and fine particulate matter ($PM_{2.5}$) air pollution. Figures 11-13 in Appendix 2 present maps of modelled pollutant concentrations, based upon data from the London Atmospheric Emissions Inventory (LAEI).

However, there is much more work to be done because everywhere in Camden currently exceeds the World Health Organization's guideline limits for air pollution, and this poses a risk for our health.

This section provides information about the different types of air pollutants, how they affect our health, the major sources of air pollution, how we measure air pollution in Camden, and how air quality in Camden has changed over the past two decades.

What is 'air quality' and 'air pollution'?

Air quality is the cleanliness of the air that we breathe. 'Poor air quality' refers to air which contains high levels of 'air pollution' – gases, particles and chemicals in the air which are harmful for our health.

What are the air pollutants of concern?

In 2022 the main types of air pollutants of concern in Camden are:

Nitrogen oxides (NOx) – an invisible gas which is produced when fossil fuels, such as gas, petrol and diesel, are burned in air. NOx includes NO (nitrogen oxide) and NO_2 (nitrogen dioxide). NO_2 is more closely linked to health effects, so the legal limits for air pollution focus on NO_2 and you will see that we focus on NO_2 in our Camden Clean Air Action Plan 2022-2026 and other information and air quality monitoring data.

Particulate matter (PM) – a general term for airborne solid or liquid particles of varying chemical composition and origin. There are natural sources of PM, but we are mostly concerned about human-made PM. Smaller particles can be breathed deeper into the lungs, so when we talk about PM we usually add a number which represents the size of the particles in micrometres, µg (1 µg is one thousand times smaller than a millimetre). So PM_{10} – which is often called 'coarse particulate matter' – means all particles smaller than 10 micrometres, and $PM_{2.5}$ – 'fine particulate matter' – means all particles smaller than 2.5 micrometres. For comparison, human hair is about 50-70 micrometres in diameter.

Volatile organic compounds (VOC) – a general term for airborne chemical substances which are released from various products, including adhesives (glues), paints, cleaning products, furniture, and

[17] https://uk-air.defra.gov.uk/aqma/details?aqma_ref=24

also from some types of trees (these are called biogenic volatile organic compounds, BVOC). The most well-known VOCs are formaldehyde and toluene. Some VOCs are harmful for health.

Ozone (O_3) at high altitude helps to shield us from UV radiation, but at ground level it is harmful for our health and the environment because it is a respiratory irritant. O_3 is produced by chemical reactions between NOx in sunlight.

Sulphur dioxide (SO_2) was historically a pollutant of concern, but because industrial emissions have reduced so much, SO_2 no longer poses a risk for health in Camden. Nevertheless the Environment Agency continues to measure SO_2 at its Bloomsbury automatic monitoring site.

Sources of air pollution in Camden

Air pollution comes from a huge range of sources. Whenever we burn a fuel or another material we are producing NO_2 and particulates. Particulates are also released when materials are crushed or broken (like on construction sites), from friction (for example between car tyres and the road surface) and also from chemical reactions in the air.

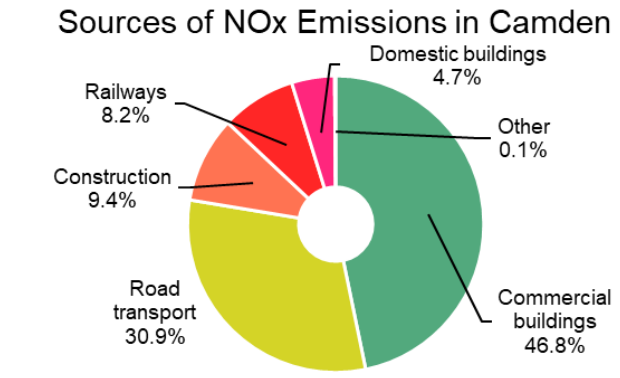
Figure 1 below shows the main emission sources of outdoor air pollution in Camden. Note that the graphs only represent the pollution released or produced within the borough, and do not include any of the particulate air pollution in the air in Camden which comes from further away.

This external source of particulate matter air pollution is described below in *Transboundary air pollution*. The steps we will take to reduce the impact of non-Camden derived PM are described in Chapter 3 in the section about *Reducing emissions from sources outside of our direct control*.

The data used for these graphs are taken from the London Atmospheric Emissions Inventory (LAEI) 2019 'source apportionment' dataset, published in April 2022[18].

Commercial buildings are the largest source of **NOx** (which refers to the combination of NO_2 and nitrogen oxide, NO) emissions in Camden, followed by road transport. Collectively, commercial buildings and road transport produce more than 75% of total NOx emissions.

Construction is the largest source of **PM_{10}** emissions in Camden, closely followed by road transport and then construction activity. 'Other' mostly represents dust which had settled on road surfaces but which is disturbed (and becomes airborne) by the movement of passing vehicles.



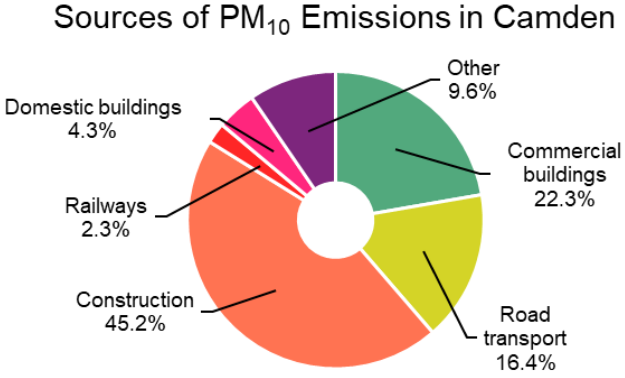
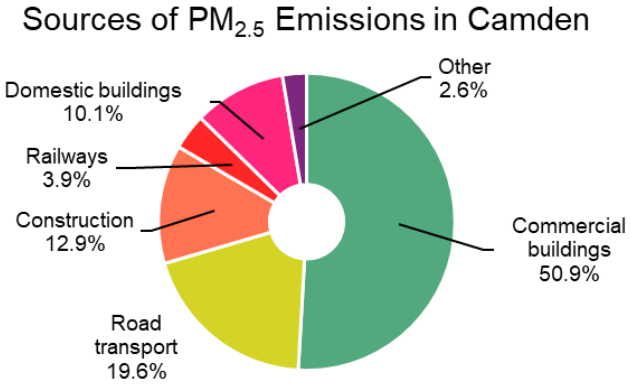


Figure 1 (continued on next page).

[18] London Datastore (2022), *London Atmospheric Emissions Inventory (LAEI) 2019*, https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019

Commercial buildings are by far the largest source of **$PM_{2.5}$** emissions in Camden, contributing half of all $PM_{2.5}$ from activities occurring inside the borough. The majority of this is from commercial cooking, and further information is provided in Chapter 2 in the section about *Reducing emissions from buildings*.



Transboundary air pollution

Particulate matter can be transported many thousands of kilometres from where it is emitted or created to where it is ultimately breathed by humans. In this way, PM affects air quality and public health over a very wide area and at great distance from the source of PM emissions. This is especially true of $PM_{2.5}$, which is the smaller and lighter fraction of airborne particulate matter.

$PM_{2.5}$ is often referred to as a 'transboundary' air pollutant because, after being emitted in one location, it can be carried by the wind to a completely different area where the authority responsible for improving air quality might not have any control over the source of emissions.

In London our air – and our health – is affected by a combination of local sources of air pollution (those listed in the graphs above) and distant 'transboundary' sources of air pollution.

It is estimated that at least 60% of the $PM_{2.5}$ measured over the course of the year at urban non-roadside monitoring sites comes from sources outside of London (from sources elsewhere in the UK and internationally).

Human-made sources of transboundary PM include emissions from power generation and industrial facilities, agriculture (fertiliser use), and emissions from vehicles and buildings in cities.

Natural sources of transboundary PM include desert dust from the Sahara and airborne salts from sea spray.

How does air pollution affect your health?

Breathing in polluted air can have short-term and long-term impacts on our health, at any stage in our lives. Some of these impacts may not be immediately visible and may affect us later in life.

Frequent or continuous exposure to air pollution can harm lung development in children and can increase the risk of developing asthma or other respiratory health conditions, as well as cardiovascular disease (CVD) and lung cancer. Air pollution has also been associated with other health conditions such as dementia, low birth weight, diabetes, and mental health disorders especially during adolescence.

Air pollution can worsen the symptoms of existing health conditions; for example, for an asthmatic child or adult a high-pollution day or exposure to polluted air next to a busy road might cause wheezing or may trigger an asthma attack. Pollution can also cause less serious temporary effects such as eye irritation or headaches.

Figure 2 below from Public Health England (now the UK Health Security Agency) summarises the health risks at different stages of life.

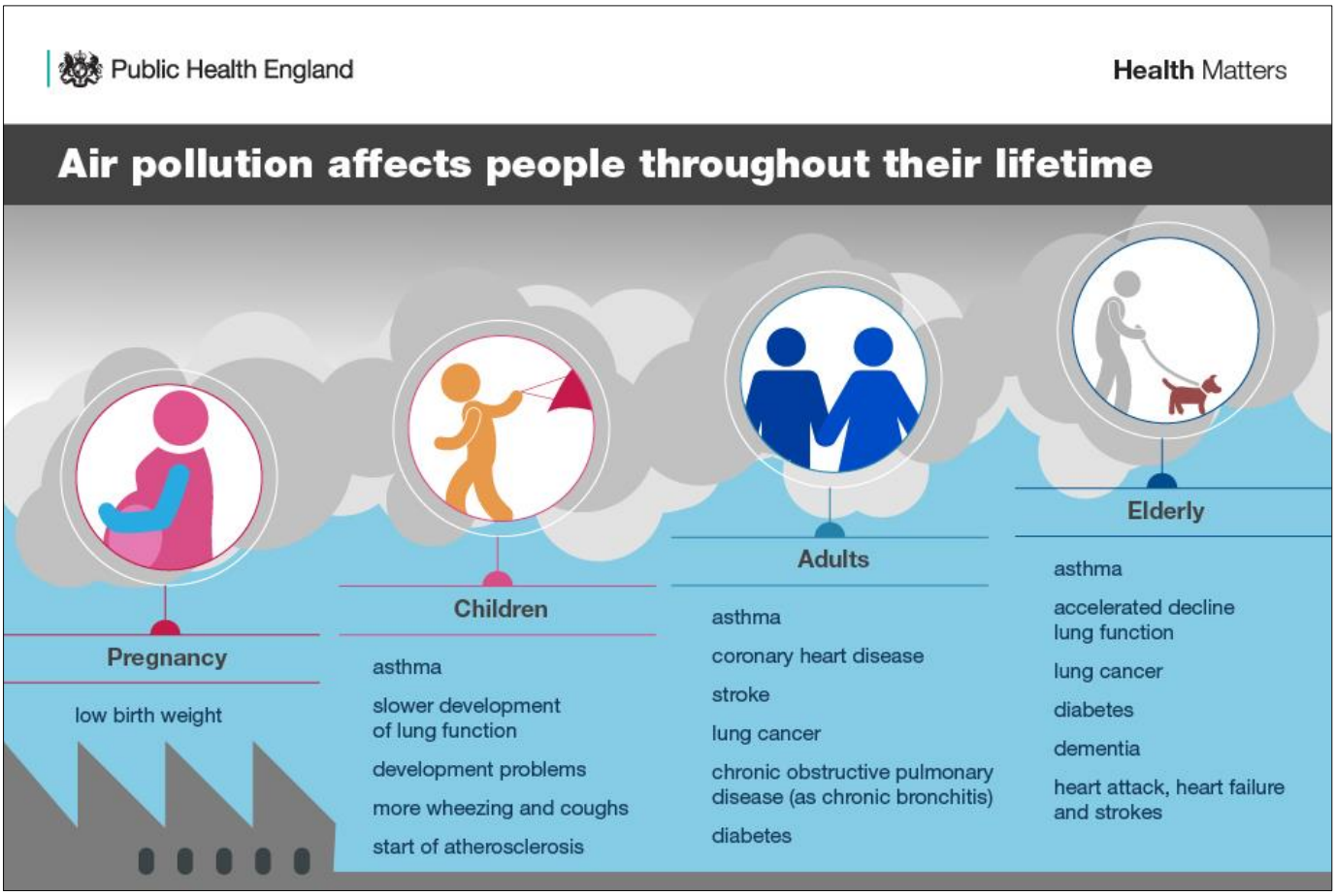


Figure 2: Public Health England (2018), 'Health matters: air pollution', Health effects of air pollution throughout life, https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution#:~:text=The%203%20main%20conditions%20associated,weight%20and%20Type%202%20diabetes

What is the effect of air pollution nationally?

The Royal College of Physicians (RCP) and the Royal College of Paediatrics and Child Health (RCPCH) estimate[19] that air pollution in the UK causes:

- 36,000 premature deaths each year
- £20 billion per year in healthcare costs to the NHS and social care systems

Ricardo-AEA estimated[20] that air pollution in the UK causes:

- Economic costs of £2.7 billion per year (in 2012) from reduced worker productivity

[19] RCP and RCPCH (2016), *Every breath we take: the lifelong impact of air pollution*, https://www.rcplondon.ac.uk/file/2916/download

[20] Ricardo-AEA (2014), *Valuing the Impacts of Air Quality on Productivity*, https://uk-air.defra.gov.uk/assets/documents/reports/cat19/1511251135_140610_Valuing_the_impacts_of_air_quality_on_productivity_Final_Report_3_0.pdf

Measuring air quality in Camden

We measure air quality in a number of different ways. These methods include diffusion tubes, automatic electrical sensors, 'small sensors' and portable sensors.

Diffusion tubes are used to measure NO_2. They are easy to use, affordable and reliable, but they can only measure month-average NO_2 data, meaning that we cannot see how NO_2 levels vary from day to day or week to week.

Automatic air quality sensors are permanent electrical sensors which continuously measure the amount of NO_2 and PM pollution in the air. They are very accurate but due to the size and expense of these sensors we only have a small number across the borough. They are sometimes referred to as 'reference' sites.

From time to time we use other types of air quality sensors to measure specific pollutants in particular locations. These are sometimes referred to as '**small air quality sensors**'. For example, we attached a $PM_{2.5}$ sensor to a building next to the Regent's Canal at King's Cross to measure particulate air pollution produced when wood and coal fuels are burned for heating.

Increasingly we are experimenting with using **portable air pollution sensors**. These enable us to be more reactive with our monitoring whilst also collecting air quality data from environments we had previously not been able to monitor.

From 2017 to 2022 we increased our automatic air quality monitoring coverage in Camden by 50% and our diffusion tube monitoring coverage by more than 1,000%. A map of monitoring locations is shown in Figure 14 in Appendix 3. We use the data from our monitoring network to:

- Assess how air quality is changing over time in Camden
- Monitor our progress towards the legal air quality limits and our WHO targets (our strategic objectives)
- Understand how air pollution levels differ throughout Camden and in the different urban environments found in the borough
- Understand how air pollution levels vary during the course of a day, week, month or year, in different parts of the borough
- Measure the impact of projects or policies on air quality in Camden
- Provide information for the public to raise awareness of air pollution as an important determinant of health, and the actions which can be taken to reduce our contribution to air pollution and our exposure to polluted air

Camden's air quality webpages contain links to our air quality data, which is publicly accessible on the internet[21].

[21] https://www.camden.gov.uk/air-quality

How has air quality in Camden changed?

Our monitoring data shows that NO_2 and PM concentrations have decreased since 2010. Figure 3 below shows annual mean[22] concentrations of NO_2, PM_{10} and $PM_{2.5}$ at our automatic monitoring sites.

From 2010 to 2019 – the last year prior to Covid-19 lockdowns affected traffic levels – NO_2 concentration decreased by at least 45% and $PM_{2.5}$ decreased by 31%. There was significant variability in PM_{10}, where some monitoring sites recorded a decrease of 27-32%, and the monitoring site in Bloomsbury recorded no change from 2010 to 2019.

It is clear that pollution levels can vary enormously from one year to the next, and from one site to another. This is especially the case for NO_2 which is more reactive in the air, meaning that sources of NO_2 have a much more localised effect on air quality and the health of nearby communities.

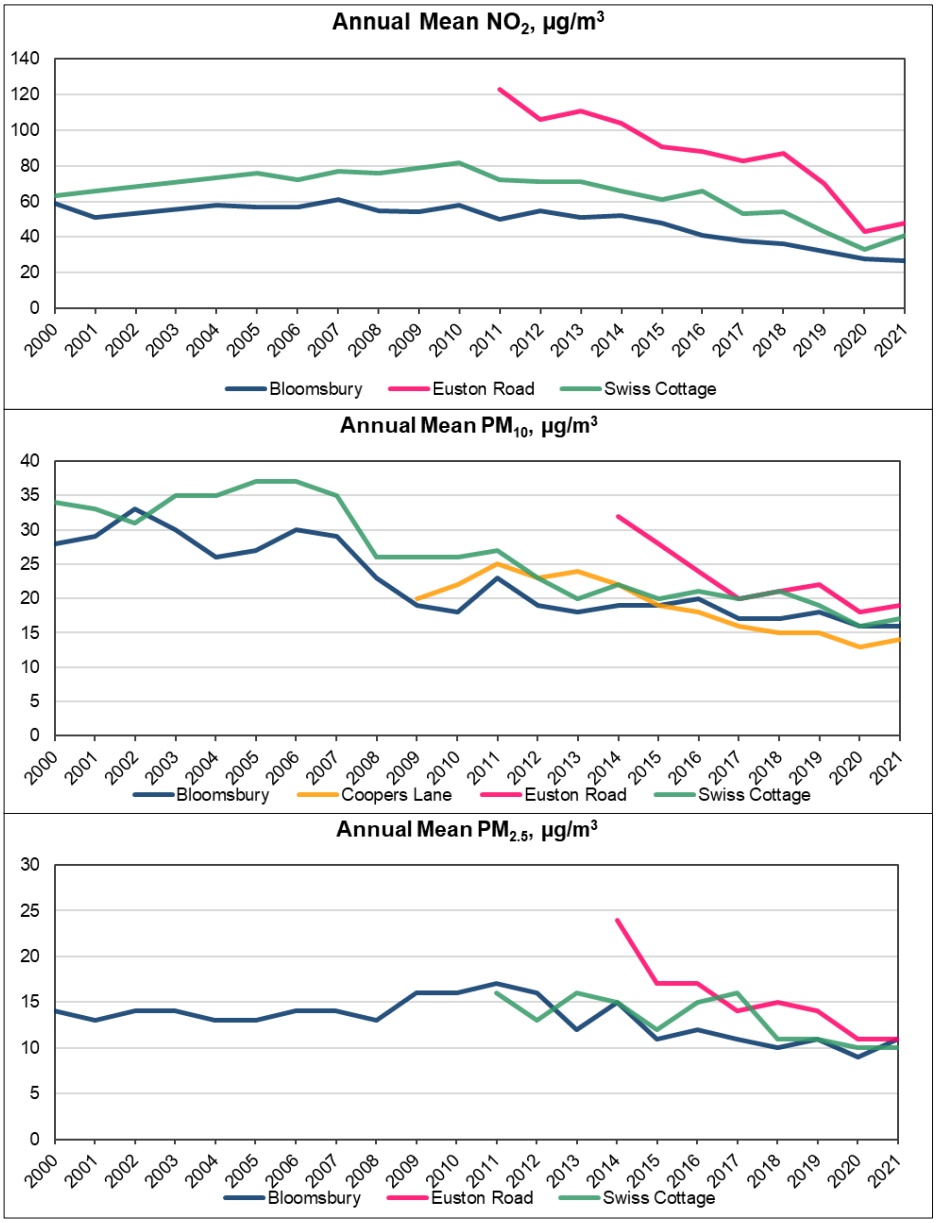


Figure 3

The graphs in Figure 3 show that NO_2 levels decreased steadily from around 2010 until 2020, and then increased again in 2021 due to a rebound in traffic levels after Covid-19 restrictions were eased.

It is clear that the greatest absolutely reduction in NO_2 during the years leading up to 2019 occurred at the Euston Road and Swiss Cottage monitoring sites. These sites are characterised by their proximity to busy roads, and the significant reduction in NO_2 pollution over the past 10 years has largely been driven by measures to reduce road vehicle emissions, including the introduction of progressively tighter engine standards and interventions such as the London Ultra Low Emission Zone (ULEZ).

PM_{10} and $PM_{2.5}$ levels have not reduced as much over this time, and there is greater variability year-on-year. This is due to the significant portion of PM in Camden which comes from sources outside of London, which are affected by weather conditions.

[22] Annual mean pollution concentrations are the average of all the individual hourly measurements taken throughout the year.

What happened to air quality during Covid-19 lockdowns?

Traffic levels on London's busiest roads decreased by about 50% during the first Covid-19 lockdown in March and April 2020. Because road traffic is a significant contributor to air pollution emissions in Camden, the traffic reduction led to a corresponding reduction in NO_2 air pollution levels during the lockdown period.

However, NO_2 concentrations did not reduce to the same extent at non-roadside sites (such as the Bloomsbury monitoring site), where emissions from building heating systems contribute a proportionally higher share of emissions.

This is shown in the segment marked with 'A' in Figure 4, below. Segments B and C mark the November 2020 and winter (January-March) 2021 lockdowns, respectively.

More significant was the fact that particulate levels did not decline during the first lockdown, in spite of the reduction in traffic volumes. Research from Imperial College London determined that this was the result of prevailing weather conditions transporting PM from sources elsewhere in Europe, combined with increased localised and regional PM emissions from domestic wood-burning in homes in the UK and garden waste burning as the population spent more time at home, with garden waste collections affected in some areas.

The lockdown demonstrated the immediate benefits for NO_2 air pollution by reducing fossil fuel-powered vehicles from roads, but also highlighted the complexity of the air quality health crisis by underlining the fact that more action is needed to reduce air quality as a whole (tackling all sources of air pollution) than simply cutting down on road traffic.

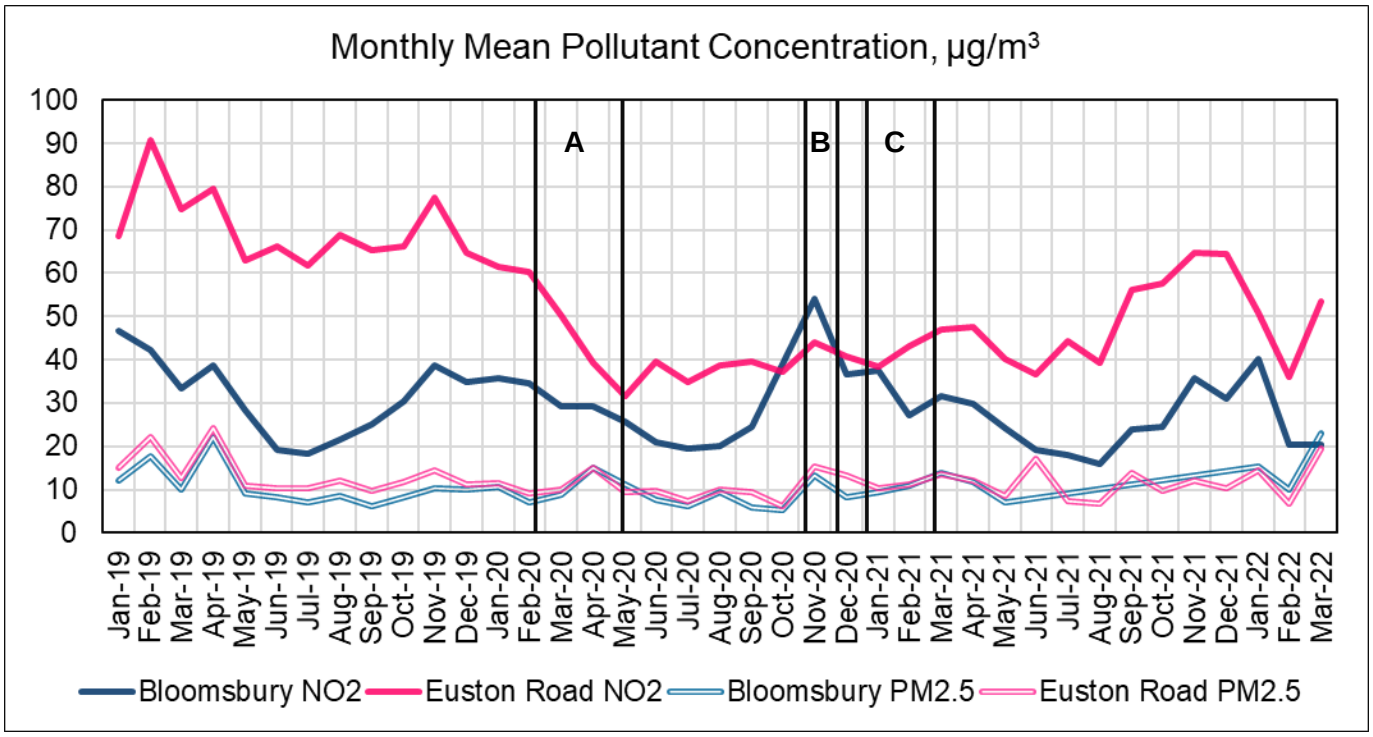


Figure 4: Monthly mean NO_2 and $PM_{2.5}$ concentration measured at Bloomsbury 'urban background' and Euston Road 'urban roadside' monitoring sites (µg/m³)

Air quality targets

Legal limits

The legal limits for air pollution in the UK are set in the national Air Quality Standards Regulations 2010[23]. The limits for the pollutants we measure in Camden are shown in Table 1 below. The standard units used to quantify air pollution are micrograms per cubic metre of air (µg/m^3)[24].

Pollutant	Objective (limit value and number of exceedances)	Averaging period
Nitrogen dioxide (NO_2)	40 µg/m^3	Calendar year (annual mean)
	200 µg/m^3 (not to be exceeded more than 18 times a year)	1-hour mean
Particulate matter PM_{10}	40 µg/m^3	Calendar year (annual mean)
	50 µg/m^3 (not to be exceeded more than 50 times a year)	24-hour mean
Particulate matter $PM_{2.5}$	25 µg/m^3	Calendar year (annual mean)

Table 1: UK legal air quality standards and objectives.

World Health Organization guidelines

The World Health Organization (WHO) is the leading independent global voice on air pollution and health, and it publishes Air Quality Guidelines (AQGs) which are evidence-based pollution limits that the WHO considers necessary to protect public health. The WHO advocates for policy-makers to adopt its guideline limits.

Camden was the first council to adopt the World Health Organization's 2005 air quality guideline for fine particulate matter $PM_{2.5}$, which we committed to in January 2018.

The WHO published updated air quality guidelines in September 2021. The updated AQGs were much stricter, based upon years of extensive scientific research and evidence about the damage that air pollution can cause to human health.

In March 2022, Camden again became the first council to commit to achieving the updated WHO air quality guidelines, as part of our strategic objective to achieve the most stringent evidence-based air pollution targets possible, in the shortest possible time, and our commitment to realising the vision for a borough in which no person experiences ill health because of the air they breathe.

Although the WHO guideline levels are not legally-binding we will regard them as we would the National Air Quality Objectives. Camden has called upon Government to adopt the WHO guidelines in UK law, and we hold ourselves to the same standards as those we expect of other authorities.

Table 2 below shows the current UK legal limits and WHO-derived Camden targets for NO_2 and particulate air pollution. All values represent annual mean pollutant concentration.

Pollutant	Legal limit	Camden target (WHO 2021)	Deadline for Camden target compliance
NO_2	40 µg/m^3	10 µg/m^3	2034
PM_{10}	40 µg/m^3	15 µg/m^3	2030
$PM_{2.5}$	25 µg/m^3	5 µg/m^3	2034

Table 2: UK legal air quality standards, World Health Organization-aligned Camden targets for air quality, and the self-imposed deadline for achieving our targets.

[23] https://uk-air.defra.gov.uk/air-pollution/uk-eu-limits
[24] One microgram is one-millionth of one gram.

To ensure that we drive continual improvement in air quality we have committed to interim targets for these pollutants, set at the handover period from each successive Camden Clean Air Action Plan document. The interim targets are shown below.

Pollutant	2026	2030	2034
NO_2	30 µg/m^3	20 µg/m^3	**10 µg/m^3**
PM_{10}	20 µg/m^3	15 µg/m^3	**15* µg/m^3**
$PM_{2.5}$		10 µg/m^3	**5 µg/m^3**

*Table 3: Camden long-term air quality targets and interim targets. *We are aiming to reach the WHO guideline limit for PM_{10} by 2030, therefore there is no further target for 2034. If the WHO updates its guideline limit for PM_{10} we will assess feasibility of committing to a stricter limit.*

Figure 5 below graphically presents a comparison of the current UK legal limits for air pollution and Camden's adopted targets, which are based on the WHO guideline limits. The values in the graph represent annual mean pollutant concentrations.

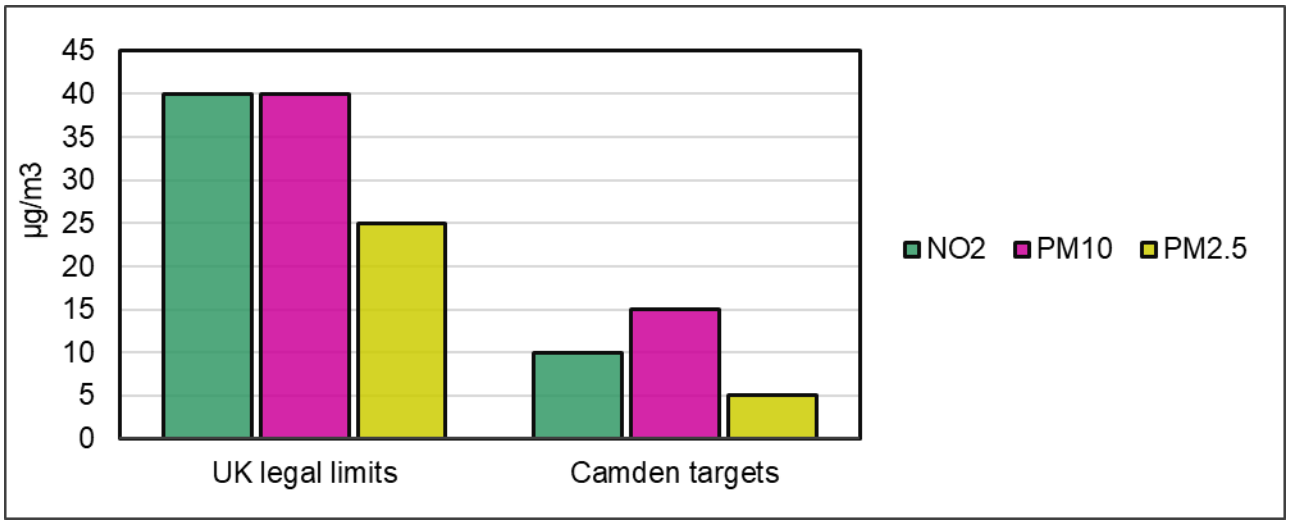


Figure 5: UK legal limits (National air quality objectives) and Camden Council WHO-based targets for annual mean NO_2, PM_{10} and $PM_{2.5}$ (µg/m^3).

Measuring compliance with our targets

We measure compliance and assess progress towards our air quality targets (and the legal limits) by comparing the annual mean pollutant concentrations that we measure at our various air quality monitoring locations to the target levels.

Our commitment is to achieve the WHO guideline limits throughout Camden by 2030 for PM_{10} and by 2034 for NO_2 and $PM_{2.5}$. We do not have air quality monitoring at every location in Camden – to do so would be impossible – so we will use the monitoring site which records the highest level of pollution as an indication of the worst-case scenario for air quality in the borough. Historically this has been our Euston Road monitoring site.

In this way, if our Euston Road automatic monitoring site (or any other air quality monitoring location) records an annual mean NO_2, PM_{10} or $PM_{2.5}$ concentration in exceedance of the relevant WHO limit(s), we will consider that we have not yet met our targets, even if we did achieve the WHO guideline limits at every other monitoring location.

Even if we do everything we can to reduce emissions from within Camden we will still be affected by transboundary air pollution, as described previously. It will be a significant challenge to achieve our air quality targets, and we will need the Government, other local authorities, businesses and organisations nationally and internationally to take steps to reduce air pollution as well.

Finally, it is important to note that the WHO considers there to be no safe level of exposure to $PM_{2.5}$, so even once we have achieved the WHO guidelines we will still work to make further improvements to air quality to continue the progress towards better health outcomes for Camden.

Chapter 2: Camden Clean Air Action Plan 2019-2022 – what we achieved

A new approach for participatory co-design: developing the Camden Clean Air Action Plan 2019-2022

The Camden Clean Air Action Plan 2019-2022 was a ground-breaking approach to air quality management in Camden. For the first time in Camden, and indeed for any UK local authority, a statutory Air Quality Action Plan was designed in collaboration with our communities and other stakeholders in recognition of the fact that we are all affected by air pollution and all have a role to plan in the fight for clean air.

The process for producing the Camden Clean Air Action Plan 2019-2022 kicked off with a Design Day held at Friends House in July 2018, independently chaired by Professor Muki Haklay of University College London, and attended by council officers, community representatives, businesses, clean air advocates, schools, universities, hospitals and other stakeholders.

The Design Day led to a list of draft clean air actions, which we published on a Commonplace platform for further public feedback. People from across the borough added their ideas and shared their lived experience of air quality in Camden, and this informed a draft Camden Clean Air Action Plan which went through formal public consultation in January 2019.

In total, over 900 people engaged in the process for developing the Camden Clean Air Action Plan 2019-2022.

The Camden Clean Air Action Plan 2019-2022 was launched at an event in April 2019, again at Friends House. The Plan set out seven key themes for action to improve air quality from 2019-2022, and to start making headway towards Camden's World Health Organization air quality commitments.

Those key themes are listed below, with an overview of the headline actions which have been delivered from 2019-2022.

1. Reducing construction emissions

- **Enforcing emissions standards for non-road mobile machinery** (NRMM) through Camden's planning system, and participating in the Mayor of London-funded Cleaner Construction for London project led by Merton Council.
- **Ensuring HS2 compliance with assurances relating to construction dust monitoring and management**, through a proactive and engaged approach pushing HS2 Ltd and its contractors to uphold and enhance standards for air quality management.
- **Strengthening Camden's compliance monitoring and enforcement** of construction dust mitigation measures, including through the recruitment of a new Air Quality Officer (Planning) to lead air quality management in relation to planning and development.

2. Reducing buildings emissions

- **Promoting and enforcing smoke control area regulations**[25] by supporting Camden's Environmental Health team in responding to complaints and incidences of smoke from residential and commercial buildings.

[25] https://www.camden.gov.uk/wood-burning-stoves

- **Enforcing Air Quality Positive and Air Quality Neutral guidelines** and other air quality policies of the London Plan.
- **Pushing for greater controls on emissions from buildings and developments** (and associated transport) by coordinating with Camden's Planning service and by updating policies and procedures.

3. Reducing transport emissions

- **Creating 19 new Healthy School Streets**, encompassing 28 schools in Camden.
- **Installing 115 new cycle hangars**, bringing the total to 194 (with storage for 1,163 bicycles).
- **Creating 190 new dockless cycle hire and e-scooter bays**, to provide an option for active travel.
- **Increased the segregated cycling network to 24 kilometres**, with 19 new permeability schemes.
- **Expanding the area of Camden covered by 'Safe and Healthy Streets' traffic reduction schemes to 20%**, up from 12% in 2020.
- **Installing 387 on-street electric vehicle charging points** (EVCPs), including 9 rapid chargers.
- **Updating parking charges and permit schemes** to reduce air pollution from road vehicles.

4. Supporting communities and schools

- **Jointly leading (with City of London) the Mayor of London-funded Idling Action London[26] project** on behalf of 31 London authorities, which included delivering school workshops at 183 schools, 112 driver engagement events, producing training resources for business drivers, two public advertising campaigns and two research projects.
- **Creating a borough-wide traffic management order** (TMO) which came into effect in 2020 and which formally designated Camden as a zero idling borough, significantly enhancing the Council's capacity to engage with idling drivers and issue penalty charges.
- **Supporting schools through the TfL STARS[27] programme**, and by promoting and facilitating 'Play Streets'.
- **Installing electrical power supplies for canal boater**s using the visitor moorings at King's Cross (the Camden Electric Moorings[28]), in partnership with the Canal & River Trust and with funding from the Mayor of London.

5. Reducing emissions from delivery, servicing and freight

- **Reducing emissions from Camden Council's own vehicle fleet** by progressively transitioning from diesel- and petrol-fuelled vehicles to a fully zero exhaust emission capable and biomethane CNG fleet.
- **Supporting and promoting Camden's consolidation centre**, which provides last-mile deliveries to Camden schools and council buildings with e-cargo bikes and an electric van.
- **Including air quality in procurement processes** by developing and applying a vehicle fleet standard for contractors to be used in contract tendering processes.

[26] https://idlingaction.london/
[27] https://www.camden.gov.uk/school-travel-plans
[28] https://www.camden.gov.uk/camden-electric-moorings

6. Continuing public health and awareness raising

- **Expanding the air quality monitoring network in Camden** with new reference standard automatic monitoring sites, diffusion tubes, and small sensors.
- **Continuing to promote *air*TEXT**[29] whilst contributing to projects to review and improve air quality alert services.
- **Publishing our *Improving Indoor Air Quality: Advice for Homes* guidance**[30] to help residents reduce air pollution indoors.
- **Working in partnership with Great Ormond Street Hospital, Royal Free Hospital, and UCLH** to engage staff in air quality initiatives (including Clean Air Day), and implement the Clean Air Hospital Framework.

7. Lobbying

- **Leading the call among local government for stricter air quality targets for the UK**, including lobbying Government throughout the process of developing the Environment Act 2021.
- **Lobbying for action to reduce air pollution from diesel trains** operating in Camden, addressing the urgent need for a clear vision for the rail sector, and short-term measures to cut avoidable pollution from train operation.
- **Engaging with Government (national and regional) and campaigning organisations at every opportunity** to make the case for more ambition on air pollution, better funding and enhanced powers for local authorities to protect communities from the air quality health crisis.

What we learned from the Camden Clean Air Action Plan 2019-2022

The process of creating the Camden Clean Air Action Plan 2019-2022 and delivering the actions we committed to has been a valuable learning experience which has informed the process we have taken in producing the new Camden Clean Air Action Plan 2022-2026. The key learning outcomes are summarised as follows:

- Participatory co-design was a powerful way to engage other stakeholders in action to improve air quality and protect health.
- The Camden Clean Air Partnership was an extremely important body for maintaining momentum, ensuring mutual accountability for delivering on the actions that Camden Council and Partnership members committed to, and exploring opportunities for collaborative working and new projects.
- The policy and scientific landscape around air quality and public health changes quickly and priorities can shift focus beyond the scope of an existing Action Plan.
- Some actions in the Camden Clean Air Action Plan 2019-2022 were too speculative and not sufficiently aligned with a tangible, real-world outcome for improved air quality or reduced pollution exposure.
- Conversely, some actions were too specific or contingent upon anticipated events which did not materialise (for example, expected lobbying opportunities or consultations).
- Online responses to the public consultation on the Camden Clean Air Action Plan 2019-2022 were not demographically representative of Camden, and this has highlighted the need for us to adopt a more proactive approach in speaking directly with different community groups around the borough.

[29] https://www.airtext.info/
[30] https://www.camden.gov.uk/air-quality#tvcr

Chapter 3: The next four years – Camden Clean Air Action Plan 2022-2026

Developing and implementing the Camden Clean Air Action Plan 2022-2026

The Camden Clean Air Action Plan 2022-2026 has been developed with the principle of participatory co-design which commenced during the creation of the previous Camden Clean Air Action Plan 2019-2022.

The Camden Clean Air Partnership has been instrumental in helping to feedback on the progress and impact of the Camden Clean Air Action Plan 2019-2022, holding Camden Council and Partnership members to account, and guiding the process for designing the new Camden Clean Air Action Plan 2022-2026 so that it delivers greater impact.

Camden Clean Air Partnership co-design sessions were held in January 2022 to discuss and agree upon the headline priorities for action over the next four years. Following this, Camden's Air Quality Team shared a set of draft actions ('Clean Air Outcomes', see below) to satisfy the priorities identified during the Partnership co-design sessions and in subsequent correspondence.

Camden's Air Quality Team also held a steering group meeting with Camden Council staff to present the long-term vision and the purpose of the Camden Clean Air Action Plan 2022-2026 in working towards our strategic objectives for clean air in Camden. Officers from a number of teams and services within the organisation attended this meeting, and as a result the Camden Clean Air Action Plan 2022-2026 represents a comprehensive view of the measures that will be taken by Camden Council (as well as members of the Camden Clean Air Partnership) to improve air quality and protect public health.

Consultation and stakeholder engagement

In addition to the hands-on role of the Camden Clean Air Partnership in shaping the design of the Camden Clean Air Action Plan 2022-2026, we will use the public consultation on the draft Action Plan as an important aspect of its creation. Specifically, the consultation approach will target direct engagement with the communities that were under-represented during the design of the previous Camden Clean Air Action Plan 2019-2022.

With support from Camden's Equalities and Disproportionality team a list of community organisations was identified, and these groups will be proactively contacted during public consultation to ensure the Camden Clean Air Action Plan 2022-2026 co-design process achieves a broad participation from Camden's communities.

Structure of the Camden Clean Air Action Plan 2022-2026

Our previous Camden Clean Air Action Plan 2019-2022 detailed 116 actions to improve air quality. After reviewing the progress with the Camden Clean Air Partnership, we have decided that this Action Plan should be focused on 'Clean Air Outcomes' – achievements which relate to a tangible reduction in air pollution from a specific source, or public exposure to a specific source of air pollution or in a specific environment.

We have defined 34 Clean Air Outcomes, and each of these will be achieved by taking specific actions or delivering specific measures to reduce air pollution or pollution exposure (either directly or indirectly). We have given examples of the actions that we may take to achieve the Clean Air Outcomes, however the examples are non-exhaustive and we have allowed sufficient scope for adaptation in our approach as funding and project opportunities arise.

The 34 Clean Air Outcomes are grouped into seven broadly defined themes which are listed below, with an overarching action statement for each:

1. **Construction and development:** Reducing the impact of air pollution from construction and development on public health
2. **Buildings:** Reducing the impact of air pollution from building operation and use (heating, power, and commercial and industrial processes) on public health
3. **Transport:** Reducing the impact of air pollution from transport on public health
4. **Communities and schools:** Supporting and empowering communities and schools to reduce and avoid exposure to air pollution
5. **Indirect emissions and lobbying:** Leading by example, working with others, and advocating for greater action on air quality and health
6. **Public health and awareness:** Helping everyone to be aware of the importance of clean air and the roles we all have in protecting health
7. **Indoor air quality and occupational exposure:** Raising awareness about the causes and impact of poor indoor air quality and workplace air pollution exposure

The following pages present the Clean Air Outcomes and some examples of the actions we will take to deliver on these as part of the Camden Clean Air Action Plan 2022-2026. A full list of the 34 Clean Air Outcomes can be found in the *Clean Air Outcomes Matrix*.

Implementing the plan and monitoring delivery

The Camden Clean Air Action Plan 2022-2026 is a statutory document which forms part of our legal responsibility to measure and improve air quality in Camden. We are bound to the actions and the outcomes that we say we will take, and we will detail what we have done in Annual Status Reports (ASR) which we publish every year as part of our legal responsibilities under the Local Air Quality Management regulations.

Our ASRs are published on the Air Quality webpages on Camden Council's website: https://www.camden.gov.uk/air-quality.

Some of the Clean Air Outcomes and the specific actions will be more difficult to achieve, especially those which are dependent upon external sources of funding or political decisions. Nevertheless we will make every effort to deliver as fully as possible on each of the Clean Air Outcomes, and will report on our progress as described above.

The Camden Clean Air Partnership will continue to hold its members and Camden Council accountable for delivering on the Camden Clean Air Action Plan 2022-2026 and the longer-term strategic objectives of the Camden Clean Air Strategy 2019-2034. The Partnership shall meet twice each year to review progress and to explore new opportunities for projects to reduce air pollution and protect public health from pollution exposure in Camden.

Theme 1: Reducing emissions from construction and development

Overview

Construction and development activity produces local air pollution which poses a particular risk for those in close proximity to construction sites or areas of high development. Construction activity is responsible for 9% of NOx emissions, 45% of PM_{10} emissions and 13% of $PM_{2.5}$ emissions in Camden. In the context of construction emissions, 'dust' is also used to refer to PM_{10}.

Construction and demolition methods

Crushing, cutting, grinding, drilling and breaking concrete and other materials produces airborne particulates, while excavation, earthworks, and open-air storage of rubble or demolition waste can lead to wind-blown dust, adding to local air pollution levels.

The movement of on-site construction machinery can cause dust, which has settled on surfaces, to become airborne again, spreading into the local area where it poses a risk to nearby residents as well as construction workers themselves.

The selection of construction and demolition methods, and the comprehensiveness of mitigation measures, has a significant influence on the magnitude of air pollution emissions and health risk.

Construction machinery (non-road mobile machinery, NRMM)

Construction and development often involves the use of large machines such as excavators, piling rigs, and cranes, and these are typically powered with diesel engines (emitting diesel particulate, sulphates and NOx). Due to the scale of many construction sites, this machinery is often employed for a significant period of time, resulting in the prolonged emission of air pollutants over multiple years.

Generators

Generators used on construction sites are not strictly NRMM but are often considered and regulated alongside other types of construction machinery. Generators are used to power lighting, welfare cabins and other site facilities, and are almost always diesel powered although alternatives exist (such as connecting to mains electricity).

Although generators comprise a relatively small portion of the overall number of pieces of construction machinery, they are responsible for a disproportionate amount of air pollution because of their inefficiency and extended running hours, and the lack of effective emission control measures. Generators are often over-sized and operate below their intended capacity which greatly increases the amount of air pollution produced.

What will we do to reduce the impact of air pollution from construction and development on public health?

1. **Reduce emissions from non-road mobile machinery (NRMM)**
    - We will continue to participate in the London Borough of Merton and GLA-led Cleaner Construction for London NRMM compliance project, which involves a programme of site audits and engagement with contractors, as well as research and developing guidance to set new and updated standards for NRMM.
    - We will continue to improve Camden's planning guidance and planning conditions relating to NRMM.

- We will explore the opportunity to apply the tighter NRMM standards required for construction activity inside the London Central Activity Zone (CAZ) throughout the entirety of Camden, including those areas which are outside of the CAZ.
- We will ensure that all relevant planning applications are subject to planning conditions relating to NRMM standards.

2. **Reduce emissions from construction generators**
   - We will incorporate an on-site power supply hierarchy into our Construction Management Plan pro forma, whereby we require contractors and developers to explore the potential for installing temporary building supplies to provide mains electricity for construction sites, followed by the use of cleaner alternatives to diesel generators if a TBS is not viable.
   - As with NRMM, we will use planning guidance and planning conditions as far as we can to mandate the usage of the highest standard of generators.
   - We will seek opportunities to set borough-wide standards for construction generators and on-site power.
3. **Reduce emissions from construction and demolition processes**
   - We will continually review our Construction Management Plan and the processes and conditions involved in appraising planning applications and proposed demolition and construction methodologies to reinforce the need for proactive and reactive air pollution mitigation in line with (and beyond) current and any future best practice guidance.
   - We will drive improvement in how Camden's own development programme manages and reduces its impact upon air quality and the health of neighbours. This includes activities such as training Development Managers, setting strict standards in tender documents and contracts, and exploring the use of financial penalties for non-compliance.
4. **Reduce emissions from road vehicles servicing construction sites**
   - We will use planning controls and the Construction Management Plan to apply management approaches for construction vehicles which reduce impacts upon site neighbours and surrounding communities.
   - We will use the Construction Management Plan pro forma to signpost contractors and developers to the Idling Action London website and toolkits for avoiding vehicle engine idling and the air pollution this creates, which can be a common problem with vehicles queuing to access construction sites.
5. **Reduce impacts of HS2 and other major development or infrastructure projects**
   - We will proactively and continually review HS2 Ltd. (and its contractors') compliance with the legally-binding assurances relating to vehicle compliance, dust monitoring, and reporting.
   - We will proactively and continually analyse HS2 Ltd.'s construction dust and roadside NO_2 monitoring data and challenge any indication of poor impact management, reporting or lack of community engagement.
   - We will push HS2 Ltd. (and its contractors) to improve its air quality and dust management approaches to reduce impacts upon Camden communities.

What you can do

- Use our air quality e-form to report instances of pollution from construction (or other) activities.
- Contact our Planning Enforcement service if you see that a site is not complying with its construction management plan – generally, any site activities likely to produce dust should involve water spraying

or vacuum extraction to minimise emissions. Stockpiles should be no higher than the height of the site hoarding, and should be covered or watered continuously during dry weather.

- If you are involved in any construction or demolition activity – either as a client, a business owner, an employee or another role – bear in mind the impact that these can have on the health of neighbours, the nearby community and all involved in on-site works. Stipulate high standards of air quality and dust management, hold contractors to account, and engage with others openly and with accountability for impacts.

Further information

Figure 6 below shows the proportional contribution of construction emissions to total NOx (top left), PM_{10} (top centre) and $PM_{2.5}$ (top right) emissions in Camden, and the contribution of specific emission sources of NOx (bottom left) and $PM_{2.5}$ (bottom right) to the generic construction category.

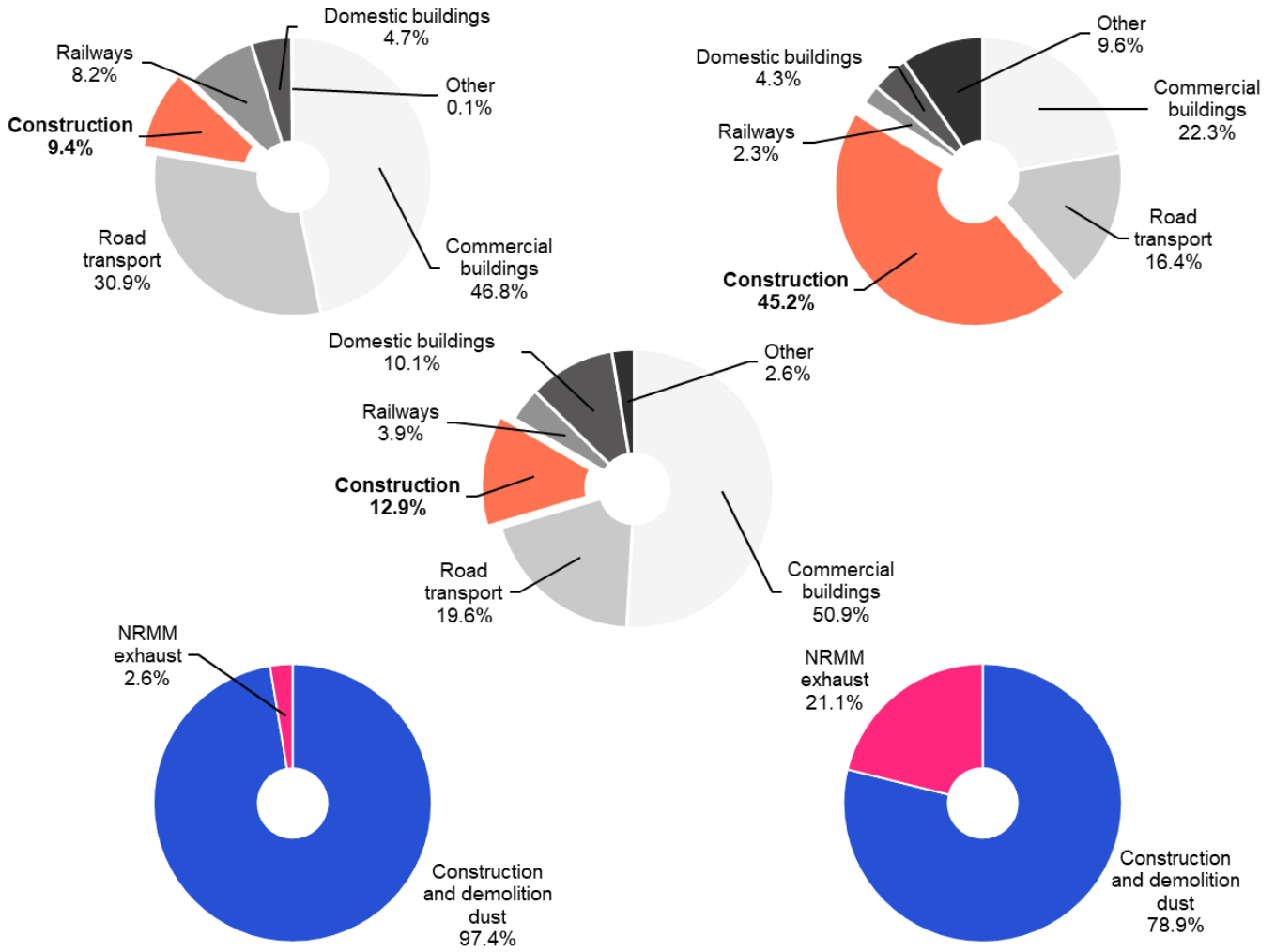


Figure 6: Contribution of construction activities to total air pollutant emissions in Camden, showing NOx (top left), PM_{10} (top right) and $PM_{2.5}$ (centre), and contribution of non-road mobile machinery (NRMM) and construction and demolition dust to total NOx (bottom left) and PM_{10} (bottom right) emissions from construction activities in Camden. Data from the London Atmospheric Emissions Inventory (LAEI) 2019 source apportionment.

Theme 2: Reducing emissions from buildings

Overview

'Building emissions' refers to air pollution produced during the operation and use of buildings (not during their construction), from heating systems, power generation, industrial processes and cooking or food preparation.

Buildings in Camden are responsible for 52% of all NOx emissions and 61% of all $PM_{2.5}$ emissions in the borough.

Heating

Burning natural gas in boilers releases both CO_2 and local air pollutants (NOx and $PM_{2.5}$), and therefore contributes to both the climate and the air quality health crises.

Many older domestic properties contain open fireplaces, while the popularity of wood-burning stoves has increased in recent years. However, burning wood or coal in any kind of appliance – no matter how modern or efficient – produces huge amounts of air pollution.

Many hospitality venues such as restaurants and pubs use gas patio heaters to provide warmth in outdoor spaces. These are very inefficient and produce a considerable amount of air pollution, whilst also costing more to run per unit of heat output than a radiant electric heater (which produces no air pollutants at the point of use).

Onsite power supply and emergency generators

Combined heat and power (CHP) engines have been used for many years as a way of generating onsite electricity whilst also providing heat. However, CHP engines produce air pollution, and the comparative climate benefits of CHP have decreased as the mains electricity supply in the UK has decarbonised.

Many commercial, healthcare and administrative buildings contain essential services for public safety, data or asset security, and for core operations. The most common source of emergency backup power is from diesel generators. Unfortunately, these are poorly regulated and diesel generators produce a considerable amount of air pollution despite the fact that they are typically only switched on for monthly testing and in the extremely rare event of a mains power failure.

Industrial processes

'Industrial processes' includes activities performed at establishments such as dry cleaners, petrol stations, and car workshops, all of which involve the use of chemicals and cleaning products which can release airborne toxins.

Cooking

Commercial cooking is the single biggest source of $PM_{2.5}$ emissions in Camden. Charcoal grills, wood-fired ovens, deep-fat frying, and gas stoves and ovens all produce significant amounts of air pollution. Considering that commercial kitchens are operational for many hours each day, a reduction in pollution emissions from commercial cooking would have significant benefits for air quality in Camden.

What will we do to reduce the impact of air pollution from buildings on public health?

6. Reduce emissions from building heating systems

- We will raise awareness of the impact of building heating emissions on local air quality and public health to encourage residents, landlords and building operators to switch from fossil fuel heating systems to electric heating systems, where possible.
- We will explore synergies with Camden's Climate Programme to capitalise on behaviour change messaging addressing both the climate crisis and air quality health crisis.
- Through Camden's Carbon Management Plan and Climate Programme we will reduce air pollution emissions (in addition to carbon dioxide) from Camden's own non-domestic buildings by replacing gas heating systems and improving building insulation and energy efficiency.
- Camden's housing retrofit decarbonisation programme will achieve co-benefits for air quality and public health.
- We will promote and signpost any grant funding opportunities to support residents, businesses and other organisations to replace or upgrade fossil fuel heating systems with electric alternatives, to reduce air pollution as well as CO_2 (for example, the Camden Climate Fund[31] and other grants as set out in the Council's Housing Renewal Assistance Policy[32]).
- Collaborating with other social landlords to assist with the identification of heat decarbonisation measures.
- Behaviour change to reduce heating use in buildings, for example through the Council's Well & Warm[33] programme and other affordable warmth services (including as part of the Mayor of London-funded Somers Town Future Neighbourhood 2030 programme).
- Push for 100% of relevant planning applications to achieve the Air Quality Neutral benchmark (2022) and subsequent more stringent standards.

7. Reduce emissions from backup diesel generators

- We will explore all available opportunities to reduce and prevent the installation and operation of any further diesel backup generators in Camden, instead requiring or mandating the use of cleaner alternatives such as electric battery storage systems, additional mains power connections.
- Where non-fossil fuel power systems are not viable, we will enforce the use of the cleanest and most efficient generators available, avoidance of over-sized generators, with the minimum possible number of hours of routine testing, and with a requirement to avoid testing at times of forecast or current high levels of air pollution.

8. Reduce emissions from commercial cooking

- We will publish and promote the findings of our 2022 commercial cooking research project to raise awareness among the restaurant, café, catering and takeaway food industry of the impact of commercial kitchens on air quality and public health.
- We will engage with the industry directly to promote activities and approaches which reduce emissions from commercial kitchens.
- We will seek funding for and explore every opportunity to enhance the evidence base about the impact of commercial cooking activities on air quality, and especially the mitigation measures

[31] https://www.camden.gov.uk/camden-climate-fund
[32] https://www.camden.gov.uk/grants-loans-landlords
[33] https://www.camden.gov.uk/energy-efficiency-grants

which can be adopted to reduce these impacts (for example, filtration technologies or alternative cooking techniques).

9. Reduce emissions from wood burning

- We will enforce the existing (and any future) regulations governing the use of solid fuels for domestic heating, as far as we are able to do so.
- We will use every opportunity to advocate for enhanced local powers for local authorities and regional government to go further in restricting the use of wood or coal for heating.
- We will run public awareness raising and behaviour change campaigns to improve public understanding of wood- and coal-burning as a serious source of air pollution and health risk.
- We will use planning controls as far as we can to restrict the installation and use of any new solid fuel heating systems in any building Camden.
- We will seek to restrict and prevent the use of any solid fuel heating systems in Camden leasehold properties.

What you can do

- Don't burn wood, coal or other solid fuels at home, and try to avoid using these fuels for commercial cooking (charcoal grills and wood-fired pizza ovens and major sources of air pollution in Camden; the photograph below shows smoke from a charcoal grill restaurant in the borough).
- Don't burn garden waste and use a green waste collection[34] instead.
- Try to heat your home or workplace efficiently to reduce air pollution and carbon emissions, especially if you have a gas boiler – if you can, turn your thermostat down one degree[35].
- Make sure your boiler is serviced routinely and operating well, which will help to reduce air pollution and carbon emissions, while saving you money on your energy bills.
- If you can, replace your gas boiler with an electric heating system such as a heat pump.
- If you run (or work in) a commercial kitchen, make sure to keep cooking surfaces clean and well-maintained, and ensure your extraction and filtration systems are working as intended.

[34] https://www.camden.gov.uk/garden-waste-collection
[35] https://energysavingtrust.org.uk/advice/thermostats-and-heating-controls/

Further information

Figure 7 below shows the proportional contribution of building emissions to total NOx (top left) and $PM_{2.5}$ (top right) emissions in Camden, and the contribution of specific emission sources of NOx (bottom left) and $PM_{2.5}$ (bottom right) to the generic building category.

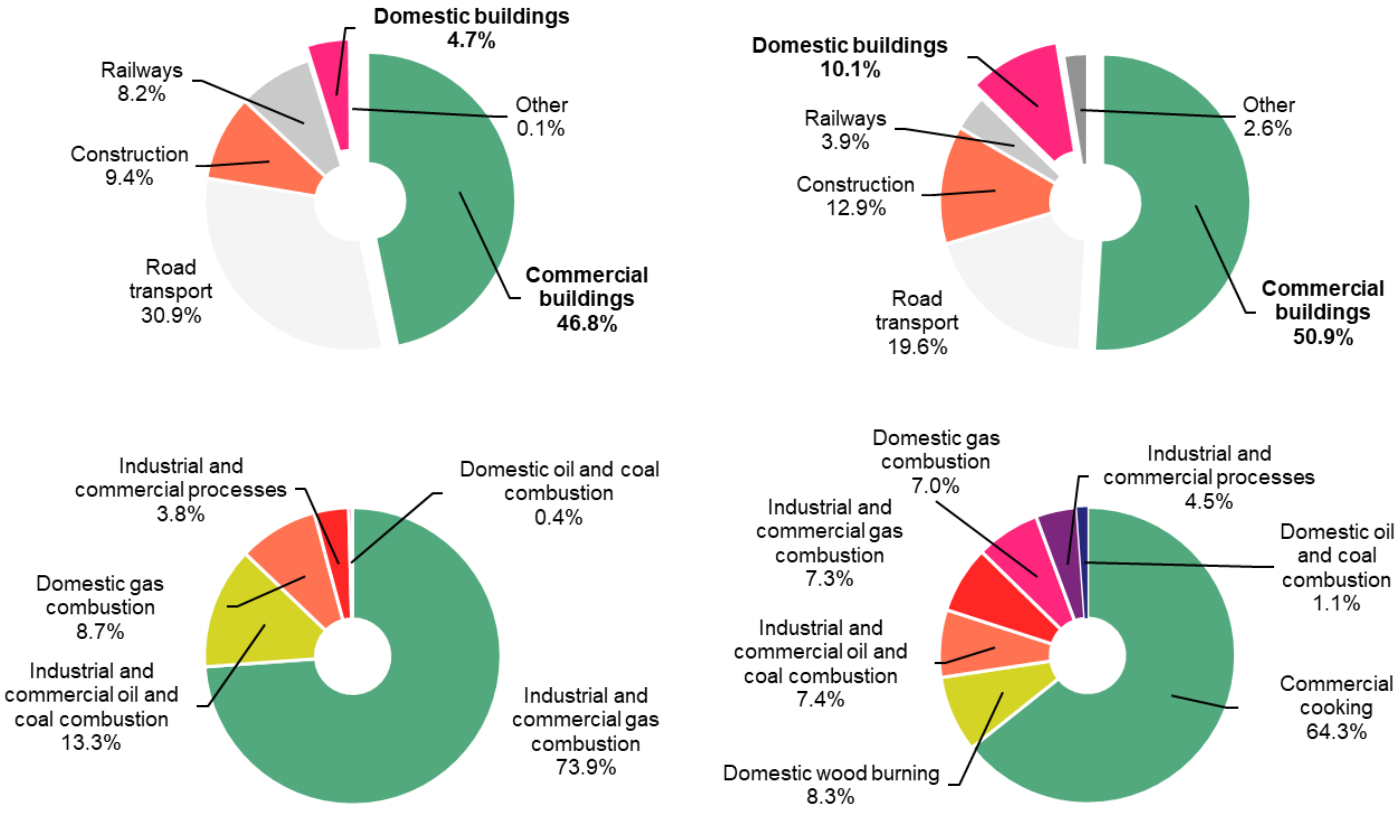


Figure 7: The Contribution of buildings to total air pollutant emissions in Camden, showing NOx (top left) and $PM_{2.5}$ (top right), and contribution of specific categories of buildings and their uses to total NOx (bottom left) and $PM_{2.5}$ (bottom right) emissions from buildings in Camden. Data from the London Atmospheric Emissions Inventory (LAEI) 2019 source apportionment. 'Industrial and commercial processes' means specific sources of air pollution from the use of chemicals or from activities other than space or hot water heating or onsite power generation. This includes sites such as dry cleaners, petrol stations, and car workshops.

Theme 3: Reducing emissions from transport

Overview

Transport produces local air pollution (gases and particles which can affect public health) from a range of different sources. Collectively, transport in Camden is responsible for 39% of all NOx emissions and 24% of all $PM_{2.5}$ emissions in the borough.

Road

Using petrol- or diesel-fuelled vehicles produces NOx and $PM_{2.5}$ pollution and carbon dioxide (CO_2), and therefore contributes to both the climate and the air quality health crises. In Camden, road transport is responsible for 31% of NOx and 20% of $PM_{2.5}$ emissions, as well as 14% of CO_2 emissions.

Cars are the biggest overall polluter, contributing 9% of NOx, followed by vans and light goods vehicles which contribute 7%, and taxis which contribute 4%. The rest is from heavy goods vehicles (4%), coaches (4%), buses (2%) and motorcycles (0.2%). Alternative fuels such as LPG (liquefied petroleum gas) and CNG (compressed natural gas) also produce air pollution but there is less data available about the impact of these fuels in Camden.

Electric vehicles do not produce any exhaust emissions but their use still releases particulate matter air pollution from tyre wear and brake wear, so there is no such thing as a ‘zero emission vehicle’.

Synthetic rubber and other chemical compounds contained within vehicle tyres contribute to water pollution and airborne microplastics.

The overall usage of road vehicles (kilometres driven), vehicle characteristics, driving behaviours, and route selection all influence the amount of pollution produced by road vehicles in Camden, and the public exposure to this pollution. For example, vehicle engine idling increases air pollution around and inside vehicles, therefore presenting a serious health risk for drivers and passengers.

Delivery, servicing and freight

Food and products need to be transported to Camden’s shops, homes and workplaces. Choices about what is bought and how it is delivered will have an impact upon air quality.

Online shopping and household deliveries are increasing across Camden. At the same time, economic growth is a continuous driver for freight movement in and around London. Most delivery vehicles use diesel fuel and travel significant distances. These transport movements have a disproportionate impact on NO_2 and PM emissions in Camden.

Rail

Diesel trains also produce air pollution (about 8% of total NOx and 4% of $PM_{2.5}$ emissions in Camden). Although diesel rail is much more efficient than road or air transport it can still affect local air quality.

What will we do to reduce the impact of air pollution from transport on public health?

10. Reduce emissions from Camden's vehicle fleet

- We will progressively reduce air pollution from Camden's vehicle fleet by transitioning to a fully zero exhaust emissions capable or biomethane compressed natural gas (CNG) powered fleet by the end of 2023.
- We will explore opportunities for using non-vehicular transport where possible. For example, by using e-cargo bikes instead of cars or vans.

- We will reduce emissions from vehicle operations by ensuring Camden's vehicles are used more efficiently, for example by providing and promoting driver training (focusing on sustainability, safety and efficiency), using route planning and telematics software.

11. Reduce emissions from vehicles on roads in Camden

- We will work towards a modal shift away from private vehicles towards walking, cycling and public transport, and enabling a switch from combustion engine vehicles to electric vehicles where vehicle use is unavoidable. This will be achieved by improving cycling and walking infrastructure throughout the borough (for example, cycle lanes, road crossings, and cycle storage hangars), implementing new bus priority measures and other schemes to boost public transport use, installing electric vehicle charging points, and by reviewing and improving parking policy and other policies and processes to promote and encourage sustainable and active travel.
- We will undertake air quality monitoring to evaluate the need for intervention, measure the impact of transport schemes, and refine our approach to transport strategy.
- We will work with the Camden Climate Change Alliance and other partners to engage with and support businesses by providing resources to encourage sustainable travel (for example, promoting Camden's Travel Plan Guide for Businesses)

12. Reduce emissions from vehicle engine idling

- We will reduce emissions from vehicle engine idling by continuing to enforce the borough-wide traffic management order, while considering options for strengthening our enforcement approach.
- We will raise public awareness of vehicle engine idling as an avoidable source of air pollution and support behaviour change campaigns tackling engine idling.

13. Reduce emissions from deliveries, servicing and freight

- We will continue to use zero exhaust emission last-mile delivery services from Camden's consolidation centre, which is used to consolidate and reduce emissions from deliveries of janitorial and stationary equipment to schools and Council buildings.

14. Reduce emissions from rail

- We will engage and work with the rail sector, including Train Operating Companies (TOCs), the Rail Safety and Standards Board (RSSB), Network Rail and the Department for Transport, to highlight the impact that diesel trains have on local air quality and the need for mitigations and long-term ambition to reduce air pollution from passenger rail and rail freight.
- We will continue to call on Government to fully electrify the national railway system, focusing on rail lines which pass through densely populated residential areas such as Camden
- We will work with the rail sector to support monitoring and engagement by sharing our air quality monitoring data and encouraging activities to promote and improve best practice measures to reduce emissions immediately, for example through the avoidance of train engine idling whilst in stations such as St. Pancras.

What you can do

- Walk, cycle or take public transport rather than driving, if you are able to do so.
- Take part in a cycle skills or bike maintenance course[36] to help build your confidence cycling around the borough.

[36] https://www.camden.gov.uk/cycle-skills-and-bike-maintenance-courses

- Never leave your vehicle's engine idling whilst you are stationary at the side of the road or parked ('engines off, every stop').
- Start or join a local community anti-idling campaign to raise awareness among neighbours about the effect that vehicle engine idling has on air quality and public health.
- Choose a click and collect service rather than getting deliveries directly to your home.

Further information

Figure 8 below shows the proportional contribution of transport emissions to total NOx (top left) and $PM_{2.5}$ (top right) emissions in Camden, and the contribution of specific emission sources of NOx (bottom left) and $PM_{2.5}$ (bottom right) to the generic transport category.

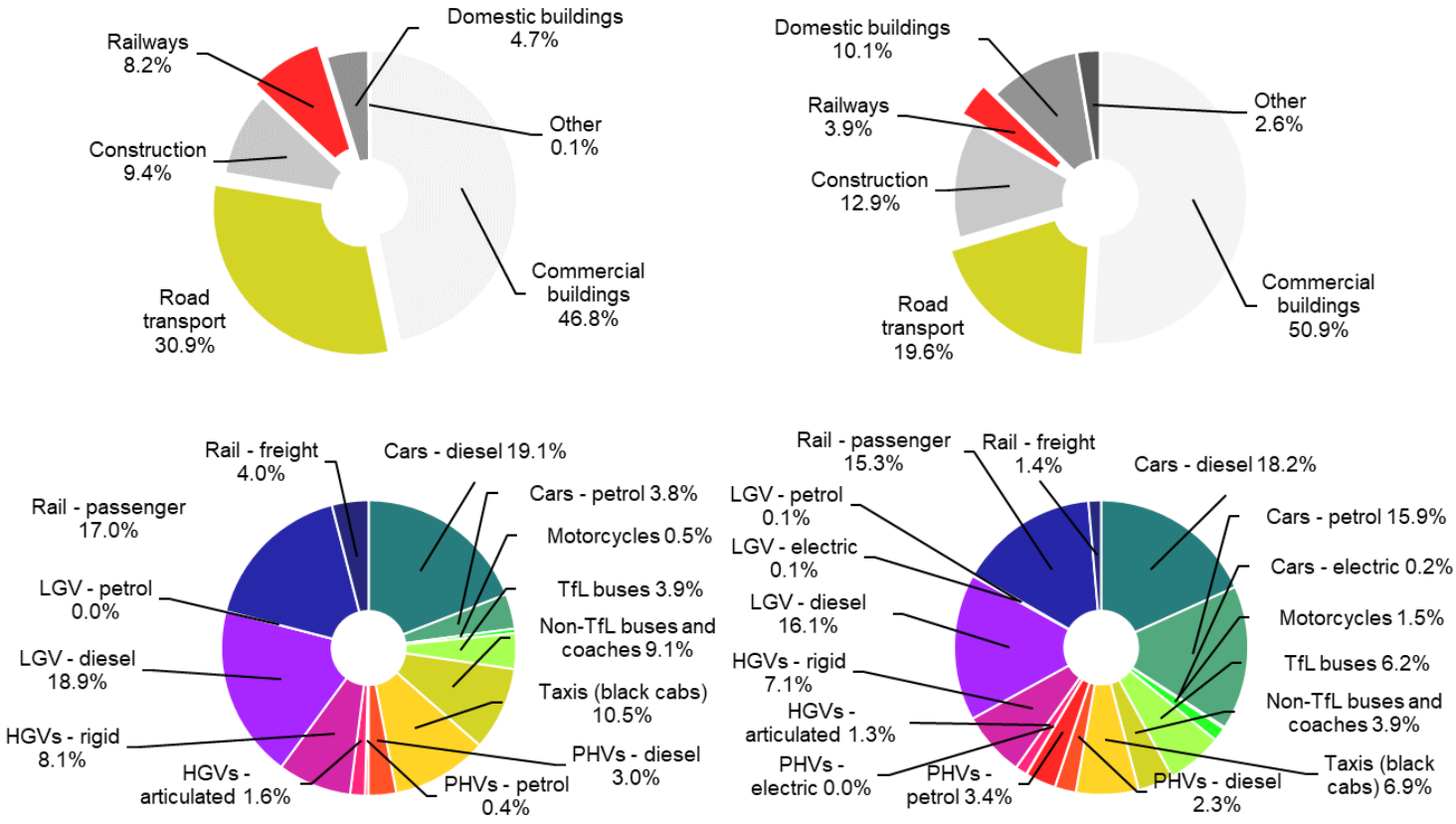


Figure 8: The Contribution of transport to total air pollutant emissions in Camden, showing NOx (top left) and $PM_{2.5}$ (top right), and contribution of specific categories of transport to total NOx (bottom left) and $PM_{2.5}$ (bottom right) emissions from transport in Camden. Data from the London Atmospheric Emissions Inventory (LAEI) 2016 source apportionment. 'HGV' means heavy goods vehicles over 3.5 tonnes, 'LGV' means light goods vehicles up to 3.5 tonnes, and 'PHV' means private hire vehicle.

Theme 4: Supporting communities and schools

Overview

Many of the Clean Air Outcomes listed in the other sections of the Camden Clean Air Action Plan 2022-2026 will lead to a reduction in air pollution near to schools and will help to protect people from air pollution exposure. However, due to the particular vulnerability of children and other members of our communities to health damage from air pollution, we have included a separate section about 'Supporting communities and schools' which contains Clean Air Outcomes that are targeted specifically to protect those who are most vulnerable.

Additionally, communities and schools have an important role to play in the fight for cleaner air.

What will we do to support and empower communities and schools to reduce and avoid exposure to air pollution?

15. **Target interventions to tackle the inequitable impact of air pollution on vulnerable communities and those disproportionately impacted by air pollution**
    - We will focus on health outcomes and ensure vulnerability, inequity and disproportionality is considered in strategy, policy and project development.
    - We will make information about air quality and health more accessible, by getting materials translated, proactively visiting and engaging with community groups and representatives, and learning as we go about how our communities prefer to receive information.
16. **Empower communities to take action locally**
    - We will provide guidance and materials to support local campaigns, for example by sharing Idling Action London resources, engaging community groups in Camden projects such as air quality monitoring projects, supporting community advocacy and awareness-raising.
    - We will promote the Camden School Climate Charter, which includes themes relating to transport and energy that will help schools to reduce impacts upon air quality and public health.
17. **Reduce exposure to air pollution outside schools and support schools in protecting child health whilst at school**
    - We will continue delivering Healthy School Streets (with monitoring where practicable to evaluate impacts on air quality).
    - We will promote actions that schools, parents, pupils and individuals can all take to avoid air pollution whilst moving around Camden (for example, by promoting cleaner air walking routes)
    - We will work with schools to engage with parents and communities about air quality and health.
    - We will support schools to run engagement events and will encourage schools and volunteer groups to lead on local action (for example, we will promote and facilitate anti-idling driver engagement events).
    - We will link up with Camden's school asthma nursing service to ensure teachers can help pupils in the event of an asthma attack.
    - We will promote the Asthma Friendly Schools programme and make linkages between air quality and respiratory health to empower schools, parents and children to safeguard their health from the effects of pollution exposure.
18. **Reduce exposure to air pollution outside hospitals and health centres**
    - We will install anti-idling traffic signage in key locations where practicable.

- We will work with NHS and public health partners to promote and support campaigns such as Play Streets, anti-idling events and other awareness raising measures to reduce pollution from vehicle travel.

19. Reduce emissions from events and filming

- We will work with partners to promote awareness of pollution from temporary generators used in filming and events.
- We will explore options for limiting or prohibiting the use of diesel generators, focusing on avoidance, rationalisation, and emissions reductions.

20. Reduce emissions from ice cream vans

- We will work to install power supplies for ice cream vans at key trading locations, as part of a licensing programme to improve sustainability in this sector.

21. Reduce emissions from street food vending

- We will work to install power supplies for street food traders, to reduce the need for charcoal, wood or gas for cooking, or diesel generators for power.

22. Reduce emissions from canal boats, and support the boating community to protect boater health and the health of canal-side neighbours

- We will engage with canal boaters to encourage usage of Camden Electric Moorings.
- We will raise awareness of indoor and outdoor air pollution from solid fuel burning on canal boats, for example by promoting our 'Healthy Waterways for All' guidance[37].
- We will work with the Canal & River Trust, the GLA, other local authorities, and other organisations to better engage with the boating community about sustainability.

What you can do

- Sign up to the Camden School Climate Charter: https://www.camdencca.org/school-climate-charter/
- Apply for a Healthy School Street for your school: https://www.camden.gov.uk/healthy-school-streets.
- Explore the resources for schools and communities on the Air Quality webpages[38] of Camden Council's website, including information about running anti-idling campaigns and other air pollution campaign ideas.
- Support national awareness days such as National Clean Air Day.
- Join campaigning and action groups such as Mums for Lungs or Choked Up.

[37] https://www.camden.gov.uk/camden-electric-moorings
[38] https://www.camden.gov.uk/air-quality

Further information

Figure 9 below shows hourly average NO_2 concentration at different times of day during weekdays and on Saturdays and Sundays during the 2022 winter term (4 January to 11 February 2022), as measured with a Breathe London[39] air quality sensor on Savernake Road.

It is clear that on weekdays NO_2 levels are highest during rush hour, with peaks at 08.00 (8am) and 17.00 (5pm). School run traffic is a large contributor to these peaks, and this highlights the importance of taking steps to reduce pollution outside and in the vicinity of schools to protect children's health.

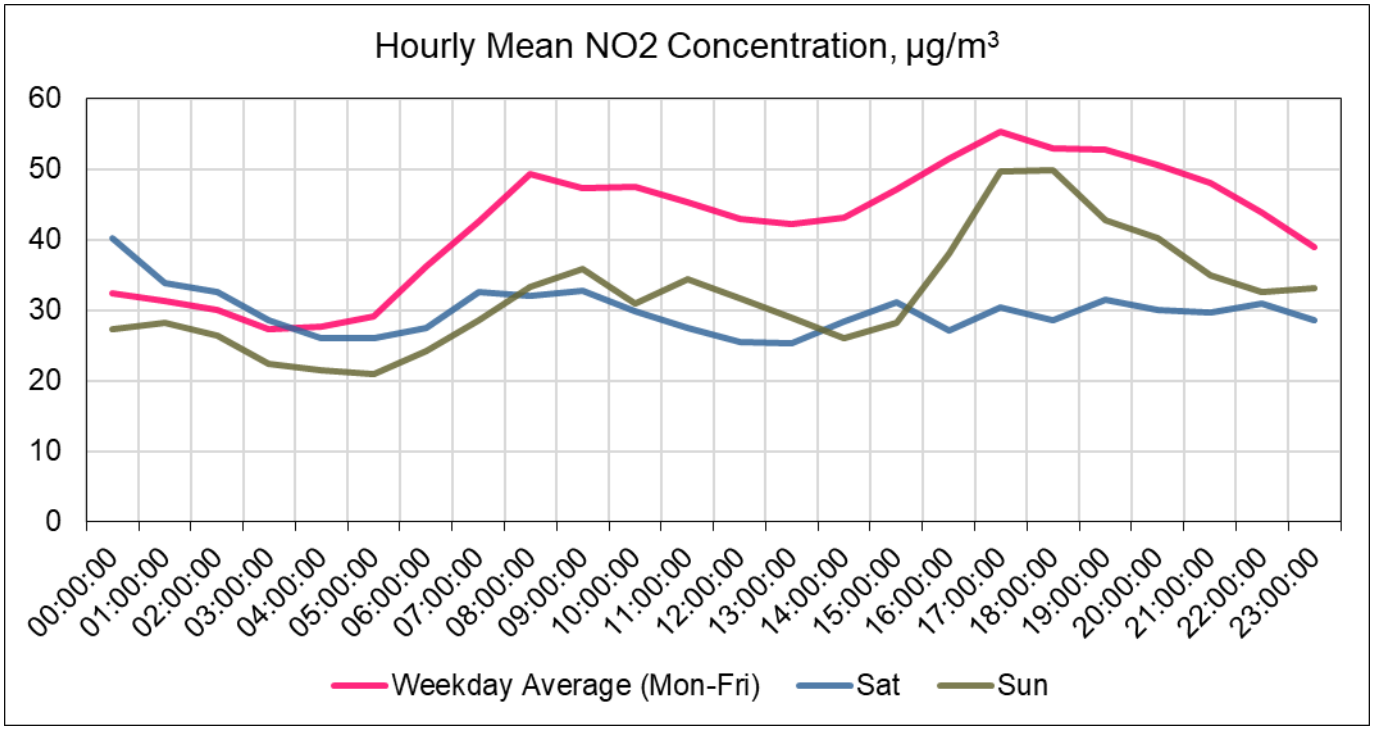


Figure 9: Hourly average NO_2 concentration during weekdays and on Saturdays and Sundays between 4 January and 11 February 2022, measured on Savernake Road, Gospel Oak. The 'Weekday Average' represents the average NO_2 concentration measured for each hour on each weekday within the monitoring period.

[39] Breathe London is an air quality monitoring network which utilises small sensors to expand the coverage of real-time NO_2 and particulate air quality monitoring in London. The network is funded by the Mayor of London and is operated by Imperial College London. For information, including access to the monitoring data, visit the Breathe London website: https://www.breathelondon.org/about

Theme 5: Indirect emissions and lobbying

Overview

If emissions of air pollutants only affected local air quality, it would be easier for regulatory authorities, including councils, to take action to address these and protect public health. Unfortunately this isn't the case, and in any given location the air (and the health of those who breathe it) will be affected by a mixture of local and distance pollution sources.

As described in *Transboundary air pollution* in Chapter 1, particulate air pollution can be transported thousands of kilometres in the air from its point of origin, and a large portion (estimated to be approximately 60%) of the $PM_{2.5}$ in the air in Camden comes from sources outside of the borough.

This means that even if we could remove all sources of $PM_{2.5}$ within Camden there would still be particulate pollution in our air.

However, we can still reduce emissions from elsewhere by leading by example, and by encouraging other authorities, governments, industries and policy-makers to adopt the same level of ambition for clean air as we have in Camden.

Additionally, there are many sources of air pollution which are not regulated (or are poorly regulated) in existing laws in the UK, and this makes it difficult to reduce emissions. Some examples include garden fires, the use of solid fuels (such as wood and coal) for heating and cooking, and the use of diesel generators as a backup source of power for buildings.

What will we do to reduce the public heath impact of indirect emissions and air pollution from sources outside of our direct control?

23. **Ensure Camden councillors, staff and senior management understand the importance of air quality for public health**
    - We will produce a new member briefing pack which provides elected members with the fundamental information about air quality (amongst other environmental topics) so that they understand its vital importance for public health and wellbeing in Camden.
    - We will produce an e-learning module for the Council's Learning & Development hub to help staff respond to Camden's constitutional change, which now places an obligation on all decisions to consider and mitigate the environmental impacts of proposals.
    - We will use internal communications channels to raise awareness of air pollution and to highlight and encourage activities which staff can take – either in their professional capacity or as members of the public – to reduce their contribution and exposure to air pollution.
24. **Reduce indirect emissions through procurement**
    - We will work to ensure air quality is considered in the procurement process for all relevant contracts and services, for example by using contract specifications, minimum standards and social values frameworks.
25. **Use our platform to encourage other local authorities, public and private sector stakeholders to take action on air pollution**
    - We will take every opportunity to engage with other local authorities and stakeholders to encourage action on air pollution, both to reduce emissions in other areas which can affect air quality in Camden, and also to generate consistent and aligned support for regional or national measures to better control emissions which are outside of the regulatory power of any single local authority (or which are not effectively regulated by existing legislation).

- We will encourage others to add their support for ambitious and far-reaching legally-binding air quality targets for the UK, aligned with the WHO's air quality guidelines, so that all authorities and stakeholders can work towards a shared vision for cleaner air and better health.

26. Work with other local authorities, external stakeholders and other levels of government in the UK and internationally on air quality policy and projects

- We will take every opportunity to work in partnership with other local authorities and stakeholders at all scales, from local to international, on projects to tackle sources of air pollution which we currently cannot directly control or upon which we have limited influence.

27. Lobby for action on air quality and health

- We will advocate for adoption of World Health Organization-aligned air quality limits for the UK, both in legislation and local government commitments.
- We will advocate for the powers and funding that local authorities need to effectively regulate and limit air pollution from sources within borough boundaries (for example, from wood-burning, engine idling etc.).
- We will advocate for action to reduce air pollution from railways including the electrification of rail routes in Camden as well as short- and medium-term measures to reduce emissions from trains currently in operation.
- We will advocate for action and regulation of pollution sources outside of Camden (for example, from agriculture, industry, shipping, aviation, power generation).
- We will respond to the latest data and information about air pollution and health to ensure our lobbying activity targets the legislative changes which are needed to protect Camden's communities.
- We will respond to consultations and surveys and advocate for ambitious national legislation, policy and strategy on air quality.
- We will represent the best interests of Camden's communities in responding to consultations and surveys relating to air quality and health, and especially the communities and groups which are disproportionately affected by air pollution.

What you can do

- Use your voice – have your say on any surveys, consultations or requests for feedback on government or other proposals about air quality, public health or the environment.
- Learn about the indirect impacts upon air quality and health from our actions and choices.

Further information

You can read more about some national air quality campaigns and add your voice to the demand for action at the following websites:

- **Asthma + Lung UK:** *Clean air campaigns hub* https://www.blf.org.uk/take-action/clean-air
- **Healthy Air:** *What is the Healthy Air Campaign?* https://www.healthyair.org.uk/
- **Global Action Plan:** *Clean Air Day* https://www.actionforcleanair.org.uk/campaigns/clean-air-day
- **Clean Air Fund:** *We all need clean air to live, grow and thrive* https://www.cleanairfund.org/

Theme 6: Public health and awareness

Overview

No single authority, organisation or individual working in isolation can solve the air quality health crisis in Camden. It will take everyone working towards the shared vision for a borough with cleaner air to achieve the kind of change that is needed to protect our health now and in the future.

Local authorities have an extremely important role in generating the interest and motivation among communities and the public and private sectors to take the action that is needed.

Air quality monitoring

As we have described in *Chapter 1*, air quality monitoring is essential in our understanding of air pollution as a risk for public health in Camden.

Air quality monitoring also has an important role in empowering people to reduce their exposure to polluted environments, and improve our understanding of the distribution of air pollution over time and geographical spaces.

The inquest into the death of Ella Adoo Kissi-Debrah

Ella Adoo Kissi-Debrah lived in Lewisham near to the South Circular. She suffered from asthma, and died in 2013 after being admitted to A&E on over 20 occasions due to acute asthma attacks in the years leading up to her death.

Rosamund Kissi-Debrah, Ella's mother, campaigned for seven years to have air pollution recognised as a contributing factor in Ella's death. This culminated in December 2020 with an inquest by the Coroner for Inner South London who ultimately agreed that air pollution was a factor in Ella's asthma and her death. This meant that 'air pollution' was listed on a death certificate for the first time in the UK, and possibly anywhere in the world.

In April 2021 the Coroner published a Report to Prevent Future Deaths[40] which identified three significant matters of concern for air quality management:

- Legal air quality limits in the UK are set far higher than the WHO guideline limits, despite Government's knowledge about the impact of air pollution on health.
- The general public has only a limited awareness of air pollution or the sources of information about how to protect health by reducing exposure.
- The health effects of air pollution are not being sufficiently communicated to patients and carers by medical and nursing professionals.

The Coroner called for action on the part of national Government, medical professionals and the healthcare sector, and local authorities, to address these concerns.

It was already widely known that air pollution was the largest environmental risk to health in the UK, causing tens of thousands of deaths each year and damaging the health of many thousands more, but it took years of tireless campaigning by Ella's mother for the air quality health crisis to be brought into such acute focus. Rosamund's continued advocacy has gradually led to all levels of government and the health sector to properly recognise the importance (and the lack) of public awareness about air pollution, and the responsibility that all authorities must adopt in addressing this.

[40] https://www.judiciary.uk/publications/ella-kissi-debrah/

The Camden Clean Air Action Plan 2022-2026 contains measures which are directly intended to help in addressing the lack of widespread public awareness about the health risks from exposure to air pollution.

What will we do to help everyone to be aware of the importance of clean air and the roles we all have in protecting health?

28. Raise public awareness about health impacts associated with air pollution

- We will promote *air*TEXT[41] and pollution alerts, while working to improve the quality and usefulness of these services.
- We will work with colleagues across Camden Council to raise awareness of air pollution and links to health, so that staff interacting with residents, customers and service users are able to advise about air quality where appropriate.
- We will raise public awareness of specific sources of air pollution and actions which we can all take to reduce our contribution and exposure to air pollution.

29. Increase air quality monitoring coverage and public access and ownership of data

- We will work towards publishing air quality data from our various monitoring projects, including time-limited monitoring for specific interventions.
- We will work with external stakeholders to enhance monitoring coverage (for example, the 'Camden Sensor Network' in collaboration with Camden Clean Air Initiative and AirScape).

30. Relate Camden's air quality programme to the core objective of protecting and improving public health and the We Make Camden vision

- We will use public health outcomes data to guide strategy, policies, projects and messaging to improve air quality and relate the air quality programme to health and the vision for a borough in which 'no person experiences poor health because of the air they breathe'.

31. Camden and external partners in healthcare and social care will work collaboratively to tackle the impact of air pollution on health

- We will work with Public Health and NHS partners, hospitals, primary care and other healthcare professionals on projects and campaigns to raise public awareness (and awareness in the healthcare sector itself) of air pollution and its effects on health.

What you can do

- Talk to others about air pollution and its effect on health.
- Speak to your doctor if you suspect that you (or your child) have asthma, and mention that you think air pollution may be a factor in this.
- Share resources from our Clean Air for Camden webpages[42] (for example, posters and flyers about health, avoiding and reducing air pollution, and indoor air quality).
- Take part in community air quality activities and projects (such as community air quality monitoring).
- Reduce your own exposure by considering how you travel, how you cook and heat your home.

Further information

You can read more about air pollution in the UK at https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution.

[41] https://www.airtext.info/
[42] https://www.camden.gov.uk/clean-air-for-camden

Theme 7: Indoor air quality and occupational exposure

Overview

The air inside our homes, workplaces and other buildings can be just as polluted as the air outdoors, and in some cases it can be much worse.

We spend about 90% of our time inside, so it makes sense for us to try to keep the air we breathe indoors as clear as possible. It would be counterproductive for us to focus all of our attention on reducing air pollution outside if we don't address pollution inside our homes, workplaces, schools and other indoor spaces.

In this section of the Camden Clean Air Action Plan 2022-2026 we are also considering occupational exposure to air pollution, which means air pollution that people breathe whilst doing their job. Some professions expose people to much more air pollution than others, and people working in the transportation sector (such as drivers), the construction sector (such as machine operators), and the commercial cooking sector (such as chefs) are likely to have higher pollution exposure at work.

The key sources of indoor and occupational air pollution are shown in Table 4 below:

At home	At work	At school
Cooking	**Cooking**	**Cleaning**
Gas stoves (hobs)	Gas stoves (hobs)	Chemical bleaches and disinfectants
Frying/cooking oily or fatty food	Wood-fired pizza ovens	**Arts and crafts materials**
Burning food	Charcoal grills and barbecues	**Canteens/kitchens**
Heating	Fryers	Gas stoves (hobs)
Wood or coal fires/stoves	**Cleaning**	**Heating**
Gas boiler flues (exhausts)	Glass polish and disinfectants	Gas boiler flues (exhausts)
Gas room or patio heaters	**Printers and photocopiers**	**Decorations and furnishings**
Cleaning	**Transport**	Carpets
Chemical bleaches and disinfectants	Road traffic	Soft furnishings
Glass polish and sprays	Diesel trains	Paint
Room sprays and air fresheners	**Construction and building**	
Candles and incense	Generators	
Decorations and furnishings	Diggers and other equipment	
Carpets	Dust from crushed materials	
Soft furnishings	**Chemicals**	
Paint	Dry cleaning	
Black mould	Car painting and bodywork	
Black mould in kitchens and bathrooms	Nail salons	
	Petrol stations	

Table 4: Some of the common sources of indoor air pollution inside homes, workplaces, and schools.

Local authorities have very limited control over the pollution that people are exposed to indoors or at work, but Camden Council is determined to work with partners and other stakeholders to explore opportunities and push for new standards and best practice in managing and reducing indoor air pollution and occupational pollution exposure.

What will we do to raise awareness about the causes and impact of poor indoor air quality and workplace air pollution exposure?

32. Reduce indoor air pollution exposure in homes in Camden

- We will continue to produce and improve our indoor air quality information and guidance, working to make it as accessible as possible for a range of audiences, so that Camden residents have the knowledge and confidence to take steps to improve indoor air quality at home, wherever possible.
- We will lead on, facilitate and support research projects looking at indoor air pollution and exposure in homes, and the impact that this can have on health (for example, the Camden Household Air Monitoring Project, CHAMP).
- We will advocate for strict national standards for indoor air quality in residential properties.

33. Reducing indoor pollution exposure in schools in Camden

- We will produce Camden indoor air quality guidance for schools about cleaning and ventilation.
- We will ensure Camden's schools capital works team considers air quality and pollution exposure when prioritising schools for boiler replacement.

34. Reduce occupational exposure to air pollution in Camden

- We will produce Camden indoor air quality guidance for businesses.
- We will work in collaboration with other organisations and stakeholders to raise awareness of occupational exposure to air pollution and to advocate for regulation of workplace exposure.
- We will explore opportunities for loaning sensors to colleagues as an in-house engagement exercise, combined with webinars and other awareness-raising initiatives.

What you can do

- Download and share our Improving Indoor Air Quality: Advice for Homes guide[43].
- Avoid burning any wood, coal, or other solid fuels at home.
- Contribute to increasing our understanding on indoor air pollution and learn more about indoor air pollution in your home by taking part in indoor air pollution monitoring projects.

Further information

Read our webpages about indoor air quality: https://www.camden.gov.uk/air-quality#tvcr.

Read the Asthma + Lung UK webpages about indoor air quality: https://www.blf.org.uk/support-for-you/indoor-air-pollution/about-indoor-air-pollution.

[43] https://www.camden.gov.uk/air-quality#tvcr

Chapter 4: Other important information

Trees and air quality

Trees and well-designed urban vegetation can bring many environmental and wellbeing benefits, and Camden is committed to enhancing greenspace and tree coverage throughout the Borough. However, the relationship between trees and air quality is complex and tree-planting forms only a small part of Camden's overall air quality programme because this does not tackle the root cause of the air quality health crisis.

Research shows that vegetation is generally of little benefit for urban NO_2 removal as it is not very efficient at removing this pollutant from the air. Air temperature also affects the relationship between trees and air quality.

Planting of trees and other vegetation can assist in the dispersal of pollutants and in providing a barrier between a pollution source and people (or a building), although it does not remove the pollution entirely. Well-placed trees and other vegetation can therefore help to reduce the build-up of air pollution in some urban environments, but poorly-positioned trees or hedges can in some cases can worsen ground-level air pollution by reducing air flow and dispersion, thereby causing pollutants to build up.

Some species of trees also produce biogenic volatile organic compounds (BVOCs) – airborne chemicals which can lead to the production of ground-level ozone (O_3), which is a respiratory irritant and can damage our health, causing increased asthma attacks and inflamed and damaged airways. Poor selection of trees for urban tree-planting can therefore increase urban O_3 and the health risks associated with this.

A similar consideration for health must be taken during the tree selection process, as some species produce considerable amounts of pollen and can therefore trigger hay fever, asthma, and other breathing conditions for people with pollen allergies.

Increasing the number of carefully-selected trees and well-placed trees can have a positive effect in reducing public exposure to air pollution in some environments, as well as bringing additional benefits through increased biodiversity, improved mental health and wellbeing, and absorbing carbon dioxide.

Camden Council has published its Camden Tree Planting Strategy 2020-2025[44], and this sets out the Council's ambition or tree planting, to meet the needs of present and future generations. The Strategy takes into consideration air quality amongst other important factors, and therefore the potential issues outlined above are factor in to decisions about which trees to plant and where.

[44] https://www.camden.gov.uk/documents/20142/5268201/Camden+Tree+Planting+Strategy.pdf/aa3c38f7-1ae8-49bb-7be6-a13d647096ac?t=1627303818956

Air quality and the climate crisis

Air quality and the climate crisis are different problems, but many of the causes are the same, and there are many solutions which will tackle both crises at the same time.

When we talk about 'air quality', 'air pollution' and 'clean air' we are talking about substances in the air which can directly harm our health. We are not talking about carbon dioxide (CO_2), which is a greenhouse gas and causes global temperatures to rise, but which does not affect human health at the concentrations we typically find outdoors.

Road transport and fossil fuel heating systems in buildings (gas boilers, for example) contribute largely to both local air pollution (NO_2 and particulate matter) and CO_2 emissions in Camden. By supporting the shift to electric vehicles and by encouraging a shift towards walking, cycling and public transport we will see a reduction in CO_2 and an improvement in air quality. Similarly, decarbonising heating in buildings by replacing gas boilers with electric heating systems (such as heat pumps) will also help to protect public health from air pollution whilst tackling the climate crisis.

Camden's air quality, climate and transport programmes are closely linked so that our efforts to tackle air pollution will achieve 'co-benefits' for climate, and vice versa.

For more information about the climate crisis, including what Camden Council is doing to tackle it, visit our webpages: https://www.camden.gov.uk/climate-crisis.

Chapter 5: Suggestions for taking action

Overview

This Chapter provides a summary of our suggestions for how you – as individuals, community groups, business, schools and other organisations – can take action to improve air quality and reduce your exposure to air pollution.

We are continually updating our support and advice, and the best place to access all of the resources and our recommendations is on the Air Quality webpages on Camden's website: https://www.camden.gov.uk/air-quality.

Recommendations for individuals and community groups

Why is air quality important for me and my community?

Exposure to air pollution can damage everyone's health at any stage of our lives. It can affect every organ in our bodies and contributes to illnesses related to our breathing and our heart such as asthma, lung and heart disease.

Some people are more at risk from the health effects of air pollution than others. Children, older people, pregnant women, and people with existing health conditions are more vulnerable. Additionally, some people are disproportionately exposed to more air pollution than others, including more deprived communities, and Black, Asian and minority ethnic populations.

It is important that we understand how our health can be affected by air pollution, and how to avoid air pollution and reduce our contribution to it.

What can individuals and communities groups in Camden do to help improve air quality and protect health?

- **Use your voice to raise awareness about air quality and health, and influence others to reduce their contribute and exposure to air pollution:**
    - Have your say on any surveys, consultations or requests for feedback on government or other proposals about air quality, public health or the environment.
    - Talk to others about air pollution and its effect on health
    - Start up a local campaigning and action group or join an existing one such as Bloomsbury Air Action, Mums for Lungs or Choked Up.
    - Support national awareness days such as National Clean Air Day[45].
    - Start or join a local community idling campaign to raise awareness among neighbours about the effect that vehicle engine idling has on air quality and public health.
    - Take part in community air quality activities and projects (e.g. community air quality monitoring).
- **Reduce your exposure to air pollution:**
    - Download and share our Clean Air for Camden guides, and consider how you travel; how you cook and heat your home.
    - Apply for a Healthy School Street for your local school: https://www.camden.gov.uk/healthy-school-streets.

[45] https://www.actionforcleanair.org.uk/campaigns/clean-air-day

- Set up a Play Street on your road[46]. A Play Street closes off a road to traffic for a few hours on a regular basis in order to provide children with a safe space to play freely.
- Use our air quality e-form[47] to report instances of pollution from road, construction or other activities.
- Subscribing to *air*TEXT, a pollution forecasting service[48].

- **Reduce your contribution to air pollution:**
  - Shop locally wherever possible, and choose a click and collect service rather than getting deliveries directly to your home.
  - Make sustainable and active travel choices. Walk, cycle or take public transport rather than driving, if you are able to do so.
  - Never leave your vehicle's engine idling whilst you are stationary at the side of the road or parked.
  - Don't burn wood, coal or other solid fuels at home[49].
  - Don't burn garden waste.
  - Improve energy efficiency in your home, for example by ensuring your boiler is serviced routinely and operating well, or improving insulation, which will help to reduce air pollution and carbon emissions, while saving you money on your energy bills.

[46] https://www.camden.gov.uk/play-streets
[47] https://www.camden.gov.uk/report-air-pollution
[48] https://www.airtext.info/
[49] https://www.camden.gov.uk/wood-burning-stoves

Recommendations for businesses

Why is air quality important for businesses?

Air pollution is bad for business and for the economy in general. Breathing polluted air – whether at work, or elsewhere – can damage health and this increases staff absenteeism and reduces worker productivity (by affecting cognitive function)[50]. A healthier workforce is more productive and takes fewer days of sick leave, so clean air is good for business.

Additionally, with increasing attention on air pollution as the largest environmental risk for health, it makes sense for businesses to appeal to public conscience about the sustainability and health by contributing positively to their surrounding communities and local environment.

What can businesses in Camden do to help improve air quality and protect health?

- **Reduce workplace exposure to air pollution:**
  - Share information about air pollution and the effects on health with your employees.
  - Take part in air quality research projects.
  - Use the British Safety Council's information for employers[51] to help protect the health of your workers (particularly relevant for outdoor workers).
  - Ensure your building or workplace is well-maintained, heating systems are serviced routinely and functioning properly, and ventilation systems are operational.
  - Keep workplaces clean and dust-free, using low- or zero-chemical cleaning products such as those labelled 'low-VOC' or 'non-toxic'. Avoiding using chemical bleaches or disinfectants and glass polish, where possible.
  - Ensure cooking areas and kitchens are well-ventilated and that filtration and extraction systems are operational.
- **Reduce business contribution to air pollution:**
  - Encourage staff to walk or cycle to work.
  - Register as a cycle to work scheme provider and help your employees spread the cost of a new commuting bike through 12 monthly tax-free instalments.
  - Become a member of the Camden Climate Change Alliance and join another 260 businesses working to tackle air pollution and the climate crisis, for example by downloading and implementing CCCA guides such as the Travel Plan Guidance[52].
  - Bid for funding from the Camden Climate Fund to support energy efficiency improvements, such as heating and lighting updates and installation of solar panels.
  - Choose green energy suppliers and environmentally sustainable products.
  - Use free resources from our Clean Air for Camden webpages to address specific sources of pollution for specific audiences, such as fleet emissions, emissions from commercial cooking, and construction sites.
  - Consider how deliveries are made to and from your business; where possible, utilise consolidation centres and use cargo bikes and electric vehicles.

[50] CBI Economics (2020), *Breathing life into the UK economy: Quantifying the economic benefits of cleaner air*. https://www.cbi.org.uk/media/5539/2020-09-cbi-economics-caf-report.pdf
[51] https://www.britsafe.org/campaigns-policy/time-to-breathe-air-pollution-campaign/information-for-employers/
[52] https://www.camdencca.org/new-travel-plan-guide-for-business/

Recommendations for schools

Why is air quality important for schools?

Air pollution can seriously affect the health of children and young people. Approximately 3.5% of children and young people in Camden under the age of 18 have been diagnosed with asthma.

We are exposed to air pollution on our way to and from school, and whilst we are at school. Schools can also contribute to air pollution, but can be powerful advocates for change.

What can schools in Camden do to help improve air quality and protect health?

- Swap school journeys in the car for walking or cycling to reduce congestion and increase exercise. Take a look at Camden Cycling Skills for safe cycling training and find your clean air walking route. Try a family cargo bike[53].
- Don't idle your vehicle outside school gates. Children are more vulnerable to the effects of air pollution and it can have a serious impact on their health.
- Encourage your school to develop a School Travel Plan[54], championing journeys to school by walking, scooting and cycling. Schools which create their School Travel Plans using the TfL STARS accreditation scheme are eligible to receive funding to support their travel plans.
- Encourage your school to apply for a Healthy School Street[55].
- Organise air pollution assemblies or incorporate air pollution into lessons using our free resources[56].
- Take part in community air quality monitoring projects.
- Encourage your school to sign up for the Camden School Climate Charter[57] to gain access to free resources and activities to address both the climate crisis and the air quality health crisis.
- Teachers can sign up to the School Sustainability Peer Support Network[58] to receive guidance and support to address climate and air pollution issues in their schools and the wider community.

[53] https://www.camden.gov.uk/try-a-bicycle-for-4-weeks
[54] https://www.camden.gov.uk/school-travel-plans
[55] https://www.camden.gov.uk/healthy-school-streets
[56] https://www.camden.gov.uk/clean-air-for-camden
[57] https://www.camdencca.org/school-climate-charter/
[58] https://www.camdencca.org/schools/school-online-sustainability-peer-support-network/

Clean Air Outcomes Matrix

- The table below lists the **Clean Air Outcomes** that we will deliver through the Camden Clean Air Action Plan 2022-2026.
- We have listed some of the potential routes and actions for achieving the Clean Air Outcomes under '**Implementation and further information**'. These represent options for realising the Outcomes, and during the course of delivering the Camden Clean Air Action Plan 2022-2026 we may end up taking a different course of action to achieve the same benefit for air quality and health. The actions we do end up taking will be recorded in Annual Status Reports (ASR), published on the air quality webpages of Camden Council's website: https://www.camden.gov.uk/air-quality.
- All outcomes will be delivered by the end of 2026. Some of the more specific potential actions (under 'Implementation and further information') should be taken as representing ongoing activities or processes of continual improvement, unless a delivery deadline is stated (for example '*by end of 2023*').
- '**Responsibility**' shows which organisation, individual or team (within Camden Council) will lead or support delivery of the Clean Air Outcomes.
- '**Cost**' shows a very rough indication of the anticipated cost for achieving the outcome. In many cases this is difficult to estimate.

Outcome ID	Clean Air Outcome	Implementation and further information	Responsibility	Cost
Construction and development: *Reducing the impact of air pollution from construction and development on public health*				
1	Reduce emissions from non-road mobile machinery (NRMM)	• Participate in Cleaner Construction for London NRMM compliance and site auditing project, with all sites with in-scope NRMM being audited at least once. • Improve Camden Planning Guidance and other controls for NRMM. • Explore setting minimum standards throughout Camden aligned with London Central Activity Zone for NRMM. • Ensure 100% of all relevant planning applications are subject to planning conditions relating to NRMM standards	Camden Council (Air Quality, Planning)	Staffing £ Projects ££
2	Reduce emissions from construction generators	• Create power generation hierarchy and incorporate into Construction Management Plan pro forma (by end of 2023). • Improve Camden Planning Guidance and other controls for construction generators. • Explore options for working with the electricity distribution network operator and other stakeholders to facilitate the use of temporary building supplies instead of generators.	Camden Council (Air Quality, Planning)	Staffing ££ Projects ££
3	Reduce emissions from construction and demolition processes	• Review and improve planning controls – tighten Construction Management Plan/S106 processes, planning conditions, and enforcement approaches. • Drive improvement in Camden's own development programme, by training Development Managers and by setting strict standards in tender documents and contracts.	Camden Council (Air Quality, Planning)	Staffing ££

		• Ensure 100% of all relevant sites have real-time dust (PM_{10}) monitoring, with monitoring instrumentation, locations and reporting methodologies approved by Camden Council and with a sufficient period of baseline monitoring.		
4	Reduce emissions from road vehicles servicing construction sites	• Use planning controls and the Construction Management Plan process to manage construction vehicle movements. • Use the Construction Management Plan pro forma to signpost to Idling Action London and other resources.	Camden Council (Air Quality, Transport, Planning)	Staffing £
5	Reduce impacts of HS2 and other major development or infrastructure projects	• Proactively review HS2 compliance with assurances and undertakings. • Analyse and challenge HS2 dust and roadside air quality monitoring data to address any indication of inadequate dust or pollution mitigation. • Push HS2 to improve practices to reduce impacts on communities in Camden.	Camden Council (Air Quality, Camden HS2 Team)	Staffing £
Buildings: *Reducing the impact of air pollution from building operation and use (heating, power, and commercial and industrial processes) on public health*				
6	Reduce emissions from building heating systems	• Raise awareness of the impact of building emissions on local air quality and health to encourage a shift to cleaner heating systems. • Ensure continued alignment of air quality and climate programmes at Camden. • Reduce air pollution from heating emissions from Camden's own buildings, including corporate and residential sites. • Promote and signpost funding opportunities for residents and businesses. • Promote behaviour change to reduce heating use in buildings in Camden, including services to tackle fuel poverty and protect residents' health and wellbeing. • Push for 100% of relevant planning applications to achieve the Air Quality Neutral benchmark (2022) and subsequent more stringent standards.	Camden Council (Air Quality, Climate, Housing Energy Performance, Schools, Planning)	Staffing £££ Projects £££
7	Reduce emissions from backup diesel generators	• Explore options for reducing and preventing installation of diesel backup generators, including through creation of a power generation hierarchy (by the end of 2023). • Enforce the use of the cleanest and most efficient backup power systems possible.	Camden Council (Air Quality, Planning)	Staffing ££
8	Reduce emissions from commercial cooking	• Publish and promote the findings of Camden's 2022 commercial cooking research project and other guidance documents to raise awareness of the impact of commercial	Camden Council (Air Quality, Environmental Health, Markets)	Staffing £££ Projects £££

		cooking on air quality and health, and the measures which can mitigate these impacts (by the end of 2022). • Engage with restaurants, cafés and the hospitality sector directly to promote activities and opportunities to reduce emissions. • Seek funding to enhance the evidence base about air pollution from commercial cooking, in order to better support the sector to reduce impacts.		
9	Reduce emissions from wood burning	• Enforce existing and subsequent regulations governing solid fuel burning in homes. • Advocate for enhanced local powers to tackle pollution from wood and coal burning. • Run public awareness campaigns to improve public understanding. • Use (and tighten) planning controls as far as possible to restrict the installation of new solid fuel heating systems in Camden. • Seek to restrict the use of solid fuel heating systems in Camden leasehold properties.	Camden Council (Air Quality, Environmental Health)	Staffing £££ Projects £££
Transport: *Reducing the impact of air pollution from transport on public health*				
10	Reduce emissions from Camden's vehicle fleet	• Continue the transition to a fully zero exhaust emissions and biomethance CNG fleet (by the end of 2023). • Explore opportunities for non-vehicular transport instead of motorised vehicles. • Ensure drivers are trained to drive efficiently and safely, avoid engine idling, and make use of intelligent routing software.	Camden Council (Air Quality, Camden Fleet, Transport)	Staffing £££ Projects £££
11	Reduce emissions from road vehicles	• Encourage and enable a modal shift away from private vehicles and towards walking, cycling and public transport, and replacement of combustion engine vehicles with electric vehicles, including by improving cycling and walking infrastructure, implementing new bus priority measures and other schemes to boost public transport use, installing electric vehicle charging points and reviewing parking and transport policy. • Undertake air quality monitoring to prioritise projects and evaluate the impact of interventions. • Work with the Camden Climate Change Alliance and other stakeholders to support businesses in promoting and facilitating sustainable travel.	Camden Council (Air Quality ,Transport, Parking)	Staffing £££ Projects £££

12	Reduce emissions from vehicle engine idling	• Continue to enforce borough-wide traffic management order, and strengthen our enforcement approach wherever possible. • Raise public awareness of vehicle engine idling as an avoidable source of air pollution.	Camden Council (Air Quality, Parking)	Staffing ££ Projects £
13	Reduce emissions from deliveries, servicing and freight	• Use zero exhaust emission last-mile delivery services from Camden's consolidation centre.	Camden Council (Air Quality, Transport)	Staffing ££
14	Reduce emissions from rail	• Work with the rail sector to push for mitigation measures to reduce air pollution from diesel rail. • Call on Government to electrify the national railway network, focusing on rail lines passing through populated residential areas. • Encourage monitoring and engagement to promote measures to reduce emissions from diesel trains immediately.	Camden Council (Air Quality)	Staffing £
***Communities and schools**: Supporting and empowering communities and schools to reduce and avoid exposure to air pollution*				
15	Target interventions to tackle the inequitable impact of air pollution on vulnerable communities and those disproportionately impacted by air pollution	• Focus on health outcomes and ensure vulnerability, inequity and disproportionality is considered in strategy, policy and project development. • Make information about air quality and health more accessible by translating materials and engaging proactively with communities (first translated documents published by the end of 2022).	Camden Council (Air Quality)	Staffing ££ Projects ££
16	Empower communities to take action locally	• Provide guidance and materials to support local campaigns such as air quality monitoring projects. • Promote Camden School Climate Charter which includes a theme on transport and energy.	Camden Council (Air Quality)	Staffing ££ Projects ££
17	Reduce exposure outside schools and support schools in protecting child health whilst at school	• Continue delivering Healthy School Streets in Camden. • Promote actions that schools, parents, pupils and individuals can take to avoid air pollution whilst moving around Camden. • Work with schools to engage with parents and communities. • Support schools to run engagement events and encourage local action. • Link air quality work with school asthma nurse services. • Promote Asthma Friendly Schools.	Camden Council (Air Quality, Transport)	Staffing £££ Projects ££
18	Reduce exposure outside hospitals and health centres	• Install anti-idling traffic signage where possible. • Work with the NHS and public health to promote and support anti-idling campaigns and other awareness-raising events about vehicle pollution around hospitals.	Camden Council (Air Quality, Public Health), NHS (NCL CCG), hospitals	Staffing ££ Projects £
19	Reduce emissions from events and filming	• Raise awareness in the events and filming industry about air pollution from temporary generators.	Camden Council (Air Quality, Events)	Staffing ££ Projects £££

		• Explore options for limiting or prohibiting the use of diesel generators for events and filming, focusing on avoidance, rationalisation and emission reductions in licensing and permitting processes (by the end of 2023).		
20	Reduce emissions from ice cream vans	• Seek grant funding (or identify internal funding) to install electrical power supplies for ice cream vans at key trading locations.	Camden Council (Air Quality, Markets)	Staffing £££ Projects £££
21	Reduce emissions from street food vending	• Seek grant funding (or identify internal funding) to install electric power supplies for street food traders.	Camden Council (Air Quality, Markets)	Staffing £££ Projects £££
22	Reduce emissions from canal boats, and support the boating community to protect boater health and the health of canal-side neighbours	• Engage with boaters to encourage use of the Camden Electric Moorings. • Raise awareness of indoor and outdoor air pollution from solid fuel burning on canal boats, promoting guidance and advice for reducing emissions. • Work with the Canal & River Trust, the GLA and other partners to engage with the boating community about sustainability.	Camden Council (Air Quality), Canal & River Trust	Staffing ££ Projects £££
Indirect emissions and lobbying: *Leading by example, working with others, and advocating for greater action on air quality and health*				
23	Ensure Camden councillors, staff and senior management understand the importance of air quality for public health	• Produce a briefing pack for councillors which provides fundamental information about air quality and health (by the end of 2022). • Produce an e-learning module for Camden staff, as part of the obligation to consider and mitigate the environmental impacts of policy proposals (by the end of 2022). • Use internal communications channels to raise awareness of air pollution among Camden staff, and to promote activities which staff can take to reduce air pollution and their exposure to it.	Camden Council (Air Quality, Climate, Strategy, Communications)	Staffing £ Projects £
24	Reduce indirect emissions through procurement	• Ensure air quality is considered in the procurement process for all relevant contracts and services.	Camden Council (Air Quality, Procurement)	Staffing £
25	Use our platform to encourage other local authorities, public and private sector stakeholders to take action on air pollution	• Engage with other local authorities and stakeholders to encourage action on air pollution, to reduce emissions both within and outside of the borough, and to generate support for regional or national measures to reduce air pollution and protect public health. • Encourage others to add their support for ambitious legally-binding air quality targets for the UK.	Camden Council (Air Quality, Climate, Communications)	Staffing £
26	Work with other local authorities, external stakeholders and other levels of government in the	• Work in partnership with other local authorities and stakeholders on projects to reduce air pollution from sources	Camden Council (Air Quality)	Staffing £

	UK and internationally on air quality policy and projects	that we cannot directly control (or have a limited ability to influence).		
27	Lobby for action on air quality and health	• Advocate for adoption of World Health Organization –aligned air quality limits for the UK. • Advocate for the powers and funding that local authorities need to tackle air pollution locally. • Advocate for action to reduce air pollution from railways, including electrification of rail routes in Camden and more immediate measures to tackle pollution from trains currently in operation. • Advocate for action and regulation of pollution sources outside of Camden. • Respond to the latest data and science about air pollution and health to target lobbying activities effectively. • Respond to consultations and surveys and advocate for ambition nationally to tackle air pollution. • Represent the best interest of Camden's communities in responding to consultations and surveys relating to air quality and health, and especially the communities and groups which are disproportionately affected by air pollution.	Camden Council (Air Quality, Legal)	Staffing £
Public health and awareness: *Helping everyone to be aware of the importance of clean air and the roles we all have in protecting health*				
28	Raise public awareness about health impacts associated with air pollution	• Promote *air*TEXT and other pollution alerts and work to improve the quality of these services. • Work across the organisation to raise awareness of air pollution and health so that staff are able to advise customers and service users about air quality where appropriate • Raise public awareness of specific sources of air pollution and how we can all reduce our contribution and exposure to it.	Camden Council (Air Quality, Public Health), NHS (NCL CCG), hospitals	Staffing ££ Projects ££
29	Increase air quality monitoring coverage and public access and ownership of data	• Work towards publishing data from our various monitoring projects. • Work with external stakeholders to enhance monitoring coverage across the borough. • Ensure current and new automatic monitoring sites achieve 90% valid data capture for all pollutants measured.	Camden Council (Air Quality, IT)	Staffing ££ Projects ££
30	Relate Camden's air quality programme to the core objective of protecting and improving public health and the We Make Camden vision	• Use public health outcomes data to guide air quality strategy, policies and projects.	Camden Council (Air Quality, Public Health), NHS	Staffing £

31	Camden and external partners in healthcare and social care work collaboratively to tackle the impact of AQ on health	• Work with Public Health and NHS partners, hospitals and other healthcare professionals to raise awareness about air pollution and its effects on health.	Camden Council (Air Quality, Public Health), NHS (NCL CCG), hospitals	Staffing ££ Projects £
Indoor air pollution and occupational exposure: *Raising awareness about the causes and impact of poor indoor air quality and workplace air pollution exposure*				
32	Reduce indoor pollution exposure in homes in Camden	• Produce and improve our guidance about indoor air quality and health, working to make this as accessible as possible for a range of audiences. • Lead on and support research projects looking at indoor air pollution inside homes in Camden. • Advocate for strict national standards for indoor air quality in residential properties.	Camden Council (Air Quality, Housing)	Staffing ££ Projects £
33	Reduce indoor pollution exposure in schools in Camden	• Produce Camden indoor air quality guidance for schools, focusing on cleaning and ventilation (to be published by the end of 2023). • Ensure Camden's schools capital works team considers air quality and pollution exposure when prioritising schools for boiler replacement.	Camden Council (Air Quality, Schools)	Staffing ££ Projects ££
34	Reduce occupational exposure to air pollution in Camden	• Produce Camden indoor air quality guidance for businesses (to be published by the end of 2023). • Work in collaboration with other organisations and stakeholders to raise awareness of occupational exposure to air pollution and to advocate for regulation of workplace exposure. • Explore opportunities for loaning sensors to Camden staff for in-house awareness raising, in addition to other activities such as webinars and events.	Camden Council (Air Quality)	Staffing ££ Projects £

Appendix 1: Map of Air Quality Focus Areas (AQFA) in Camden, LAEI 2016

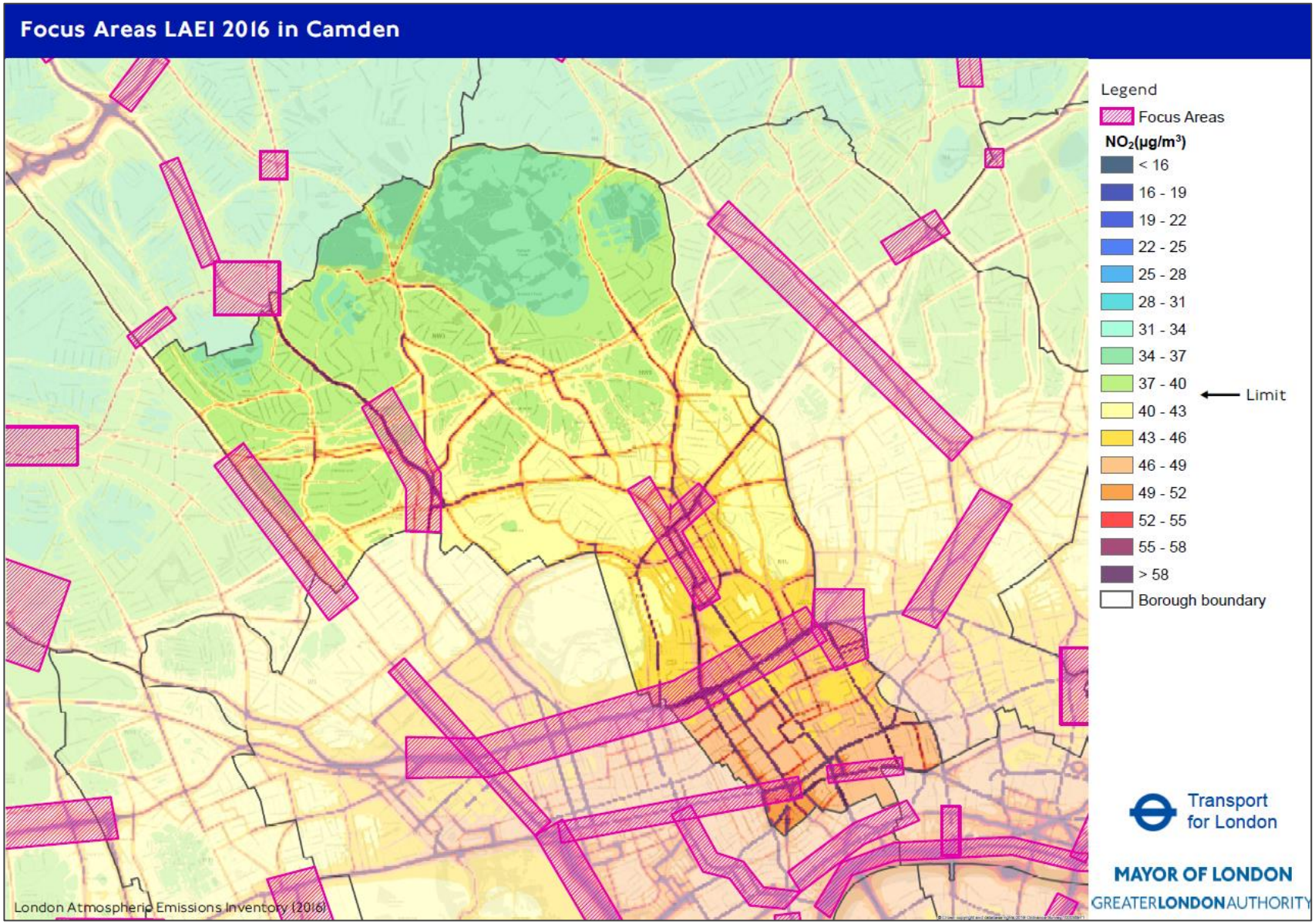


Figure 10: Air Quality focus Areas in Camden

Appendix 2: Maps of modelled air pollution, LAEI 2019

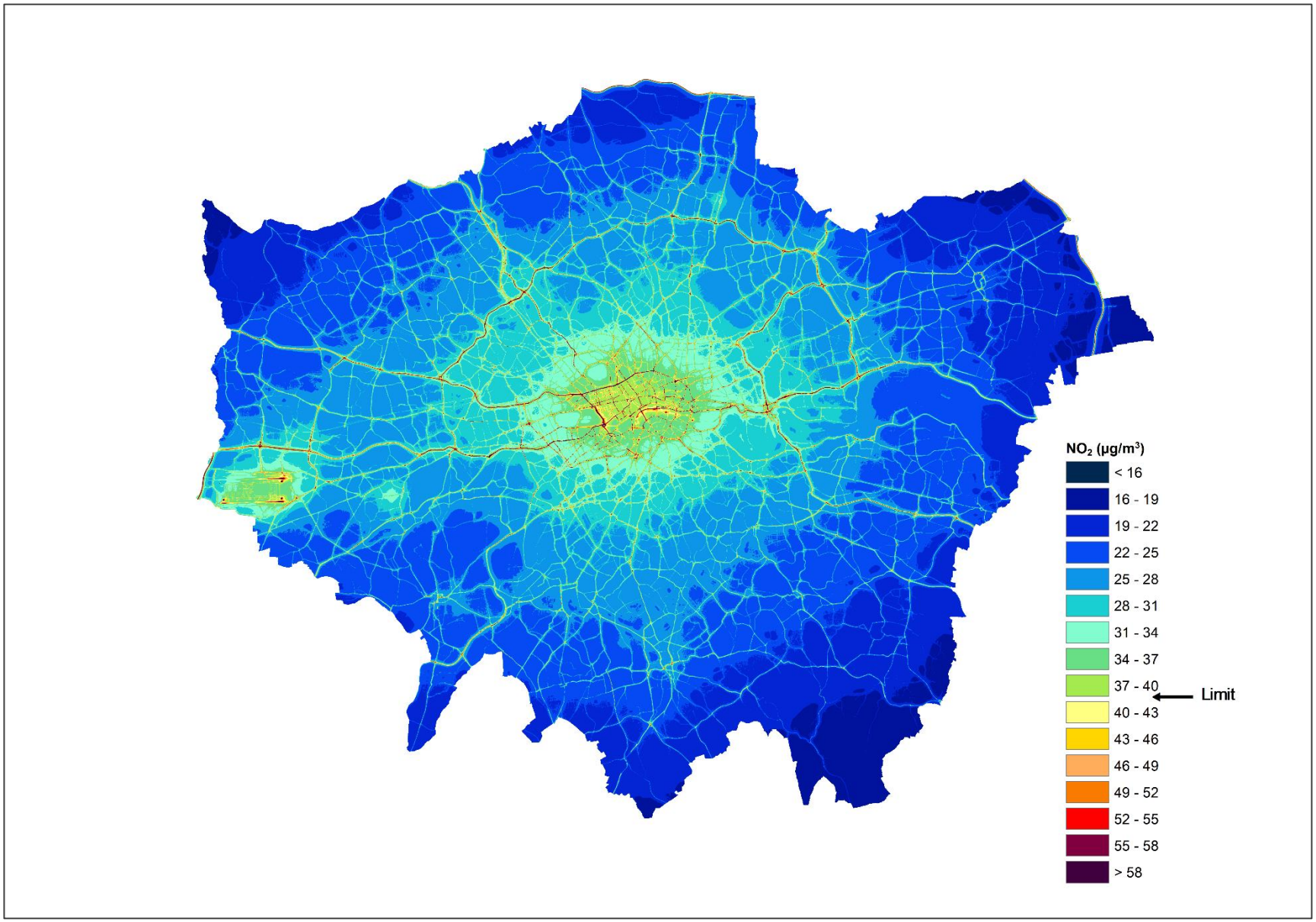


Figure 11: Modelled annual mean NO_2 concentration, LAEI 2019.

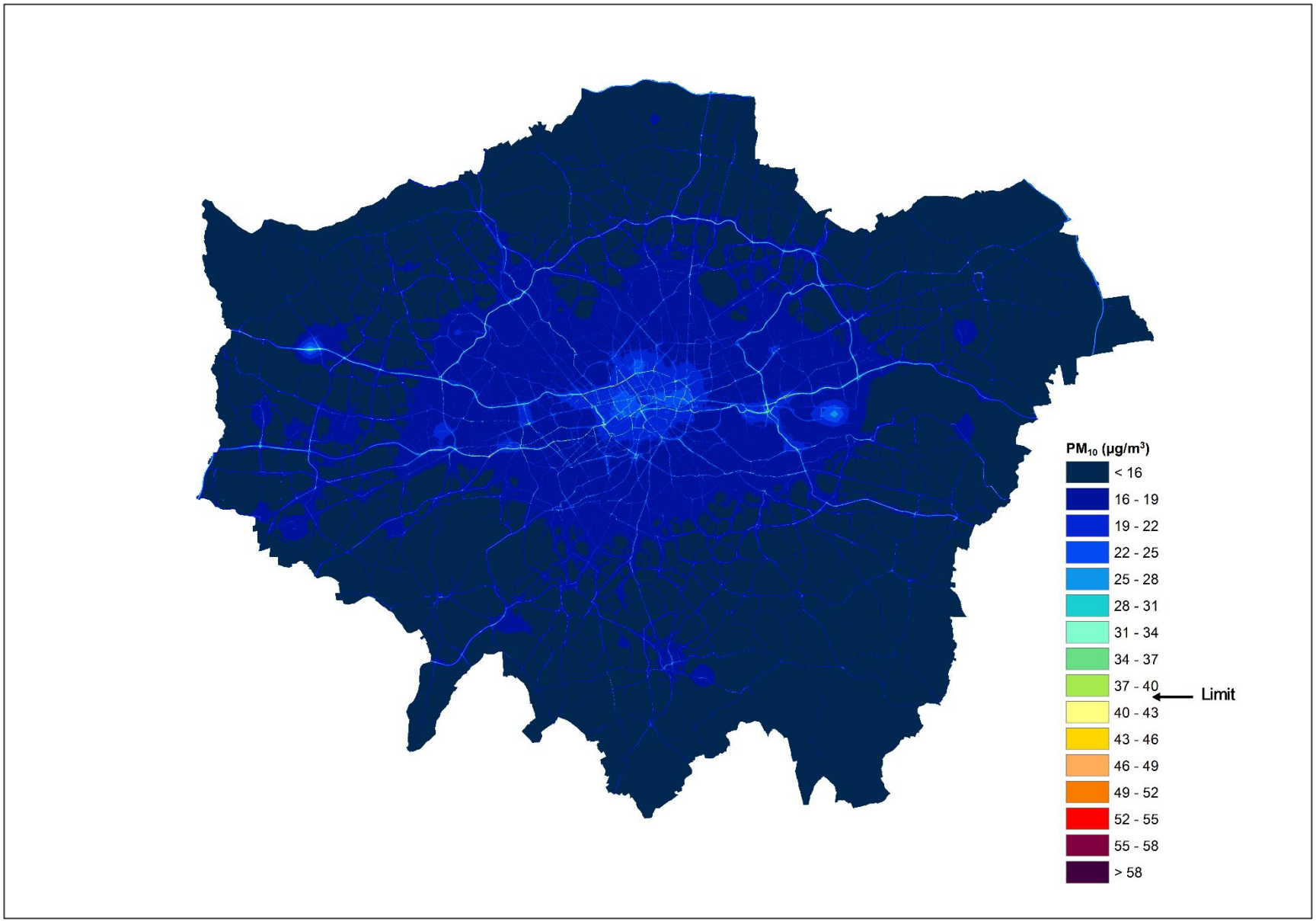


Figure 12: Modelled annual mean PM_{10} concentration, LAEI 2019.

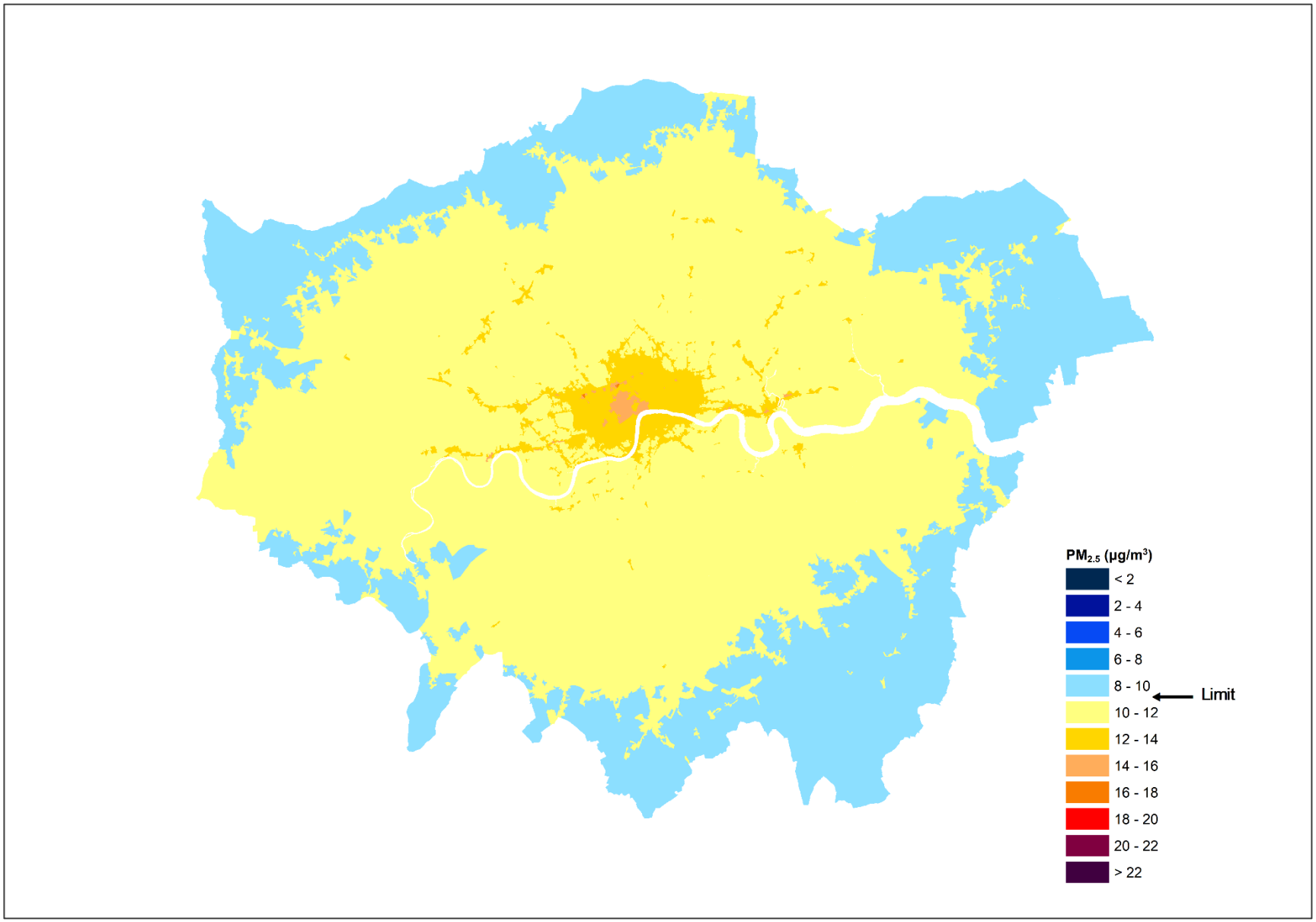


Figure 13: Modelled annual mean $PM_{2.5}$ concentration, LAEI 2019.

Note: The limit indicated on the legend represents the WHO 10µg/m³ interim target rather than the guideline limit.

Appendix 3: Map of air quality monitoring locations in Camden, July 2022

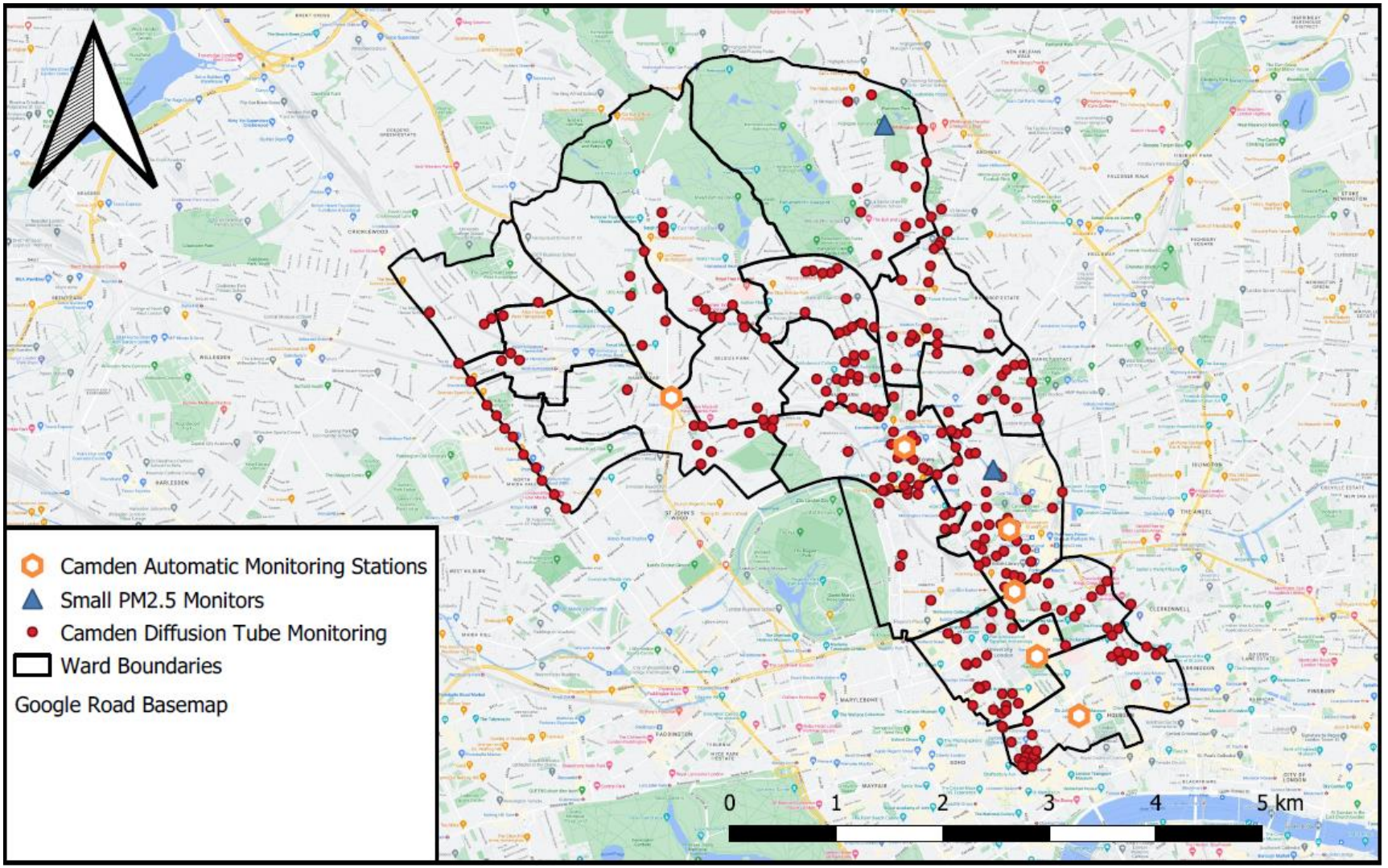


Figure 14: Air quality monitoring locations in Camden, correct as of June 2022.

Appendix 4: London Local Air Quality Management (LLAQM) action planning obligations

As part of our statutory duties under the London Local Air Quality Management (LLAQM) regulatory framework, we are required to deliver 25 obligatory actions which are defined by the Mayor of London and the Greater London Authority (GLA). These actions are aligned with the London Environment Strategy and the Mayor's Transport Strategy.

The 25 actions are listed in Table 5, below.

No.	Action	Covered within the Camden Clean Air Action Plan 2022-2026?
Key selected measures: All boroughs should be focusing on these actions as a priority		
1	Enforcing the non-road mobile machinery (NRMM) Low Emission Zone	Yes
2	Promoting and enforcing smoke control zones	Yes
3	Promoting and delivering energy efficiency retrofitting projects in workplaces and homes	Yes
4	Supporting alerts services such as *air*TEXT, and promoting the Mayor's air pollution forecasts	Yes
5	Reducing pollution in and around schools, and extending school audits to other schools in polluted areas	Yes – we are tackling pollution in and around schools but have not committed to extending school audits because currently we do not have an audit programme or template which actually delivers tangible benefit to schools, beyond the information and guidance that we already provide through other projects
6	Installing ultra-low emission vehicle (ULEV) infrastructure	Yes
7	Improving walking and cycling infrastructure	Yes
8	Regular Car Free Days/temporary road closures in high footfall areas	Yes
9	Reducing emissions from council fleets	Yes
Foundation measures: Boroughs should be delivering all of these to the best of their ability		
10	Enhancing monitoring networks and fulfilling other statutory duties	Yes
11	Ensuring construction emissions are minimised	Yes
12	Reducing emissions from combined heat and power (CHP)	Yes
13	Enforcing Air Quality Neutral policies	Yes
14	Increasing the role of the Public Health department in air quality policy decisions	Yes
15	Encouraging schools to join TfL STARS	Yes
16	Low Emission Neighbourhoods (LENs), although they require a high level of funding so may not be appropriate or viable for all boroughs in the short term	No – currently no additional planned Low Emission Neighbourhoods due to lack of grant funding, however many of the beneficial outcomes of LENs will be realised through the interventions listed in our Clean Air Outcomes Matrix
17	Ensuring that transport and air quality policies and projects are integrated	Yes
18	Discouraging unnecessary idling by taxis and other vehicles	Yes

19	Using parking policy to reduce pollution emissions	Yes
20	Ensuring adequate, appropriate, and well-located green space and infrastructure is included in new and existing developments	Yes
21	Ensuring master-planning and redevelopment areas are aligned with Air Quality Positive and Healthy Streets approaches	Yes
22	Engagement with businesses	Yes
23	Update of procurement policies to reduce pollution from logistics and servicing	Yes
24	Reducing emissions from deliveries to local businesses and residents	Yes
25	Expanding and improving green infrastructure (GI)	

Table 5: obligatory actions for inclusion in Air Quality Action Plans, as defined by the Mayor of London and the Greater London Authority.

Appendix 5: Camden Clean Air Partnership

The Camden Clean Air Partnership was first formed in 2018 to support the development of the Camden Clean Air Action Plan 2019-2022 and the delivery of the actions detailed in that Plan. It is a group of stakeholders representing communities, businesses, the third sector, education, healthcare, and public services, and is a constantly evolving network which expands to include new members with a shared vision for clean air in Camden.

The Partnership has continued to play an active role in monitoring the progress against the actions in the Camden Clean Air Action Plan 2019-2022 and to explore opportunities for new projects and strategy design.

The Partnership supported the design of the new Camden Clean Air Action Plan 2022-2026 and several Partnership members will take action to work towards the Clean Air Outcomes described in this Plan.

The Partnership is not a closed or static group and its membership changes over time to include a broad mix of sectors and groups key to tackling air pollution in Camden.

The Partnership membership in May 2022 is listed in Table 6, below.

Organisation / group
Argent
Bloomsbury Air Action
British Safety Council
Brewery Logistics Group
Camden Air Action
Camden Clean Air Initiative
Camden Town Unlimited and Euston Town BID
Canal & River Trust
Central District Alliance BID
Cross River Partnership (CRP)
East Midlands Railway (EMR)
Great Ormond Street Hospital (GOSH)
Green School Runs
High Speed 2 (HS2)
John Lewis Partnership
King's Cross Estate Services
London Taxi Drivers' Association (LTDA)
Netley Primary School and Centre for Autism
Sarum Hall School
Somers Town Neighbourhood Forum
University College London (UCL)
UCL Hospital (UCLH)
UPS

Table 6: Membership of the Camden Clean Air Partnership, May 2022.

Appendix 6: Camden Clean Air Action Plan 2022-2026 consultation

This section will be completed after the public consultation has concluded, and will provide an overview of the consultation approach and the number of responses received. It will also summarise the changes which were made to the Camden Clean Air Action Plan 2022-2026 following the consultation.

Statutory consultees

Table 7 below shows the statutory consultees which, legally, must be consulted as part of developing an Air Quality Action Plan in London.

Consultee
The Secretary of State for Environment, Food and Rural Affairs
The Environment Agency
Camden citizens
The Mayor of London
Transport for London
Neighbouring local authorities
Other public authorities as appropriate
Bodies representing local business interests and other organisations as appropriate

Table 7: Statutory consultees for the Camden Clean Air Action Plan 2022-2026.

Appendix 7: Imperial College London Student Project

In November 2021 Camden Council's Air Quality Team was contacted by the coordinator for the MSc Environmental Technology course at Imperial College London to discuss a potential student consultancy research project as part of an Urban Sustainable Environment course option.

The brief for the student project was to explore the impact and outcomes of the co-design process used in developing the Camden Clean Air Action Plan 2019-2022, and ultimately to make recommendations for how to make the design process for the new Camden Clean Air Action Plan 2022-2026 more inclusive and accessible, with demographically-representative engagement and consultation activities.

The headline project suggestions were as follows:

Improving accessibility during the co-design and consultation

- Offer flexible choices for time, location and attendance – Camden should offer co-design sessions outside working hours and prayer times, on both weekdays and weekends to encourage as much participation as possible.
- Reward co-designers for their time and contributions – Camden should reimburse transport and childcare costs or consider paying minimum wage for attending co-design events to incentivise a wider range participants, especially those who wouldn't have the means to attend otherwise.

Removing participation barriers

- Engage co-designers with real-life scenarios – Camden should incorporate roleplay events to help co-designers consider issues of air quality from other perspectives. Camden should also invest in tools such as air quality monitors which can be used by focus groups.
- Arrange small-scale co-design events with focus groups – Camden should collaborate with hard-to-reach communities to facilitate an environment where people feel comfortable.
- Incorporate the co-design process in regular community events such as micro co-design activities – community events weekly festivals and street markets constantly attract a diverse mixture of visitors from the local neighbourhood and can be utilised as touching points with communities. For example, setting up a stand in the market where individuals are given tokens to vote for the most crucial air quality-related issue they are facing and encouraged to write down their opinions on post-it notes.

Enhancing the effectiveness of governance

- Diversity awareness needs to be started at the pre-commencement stage – Camden should reach out to organisations and community leaders to establish a more inclusive and diverse network.
- Consistent feedback from co-designers is essential – Camden should have a recap discussion before co-design sessions to ensure any developments are made apparent. Communication channels such as messaging apps and Slack can be used to ease communication.

Facilitating a safe, open and collaborative environment

- Equal power distribution between facilitators and co-designers – Camden should harness its rich history by inviting local artists to create art around the theme of air pollution, as well as facilitating residents to contribute their own experiences of air pollution through the medium of art.
- Help co-designers to feel ownership over the project – invite each focus group to brand itself with a name and logo, as well as a group agreement on conduct to help the co-designers develop a sense of identity and unity.

If you have any comments on this document, please send them to:

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N1C 4AG

Telephone: **0207 974 4887**

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