City of London
Air Quality Strategy

Delivering Healthy Air in the City of London

Draft for Consultation

2025 – 2030

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This report will be available on the City of London Corporation website.

Foreword

The City of London Corporation has long been at the forefront of tacking air pollution. We have been measuring air quality for over 60 years and in 1954, following the infamous London Smogs, we published our own legislation to ban the production of smoke in the City. This paved the way for the national Clean Air Act of 1956. The form and source of air pollution has changed since the 1950's and, though much improved, remains at a level that impacts on health.

We have been taking more focussed action to improve air quality for over 20 years, and I have great pleasure in presenting our fourth Air Quality Strategy for consultation. It outlines action that we will take to continue to achieve better air quality for our communities. Our last Air Quality Strategy, supported by national and regional action, delivered around a 40% reduction in the pollutants nitrogen dioxide and fine particles (PM_{10}). This was measured using our extensive network of monitoring equipment.

The data we collect is compared to health-based standards. The current national standards for PM_{10} are achieved across the Square Mile, and the annual mean standard for nitrogen dioxide is only exceeded adjacent to the busiest roads. With continued action, it is likely that the national standard for nitrogen dioxide will also be met everywhere in the next two to three years.

However, we are not complacent. Since the current national air quality standards were set, research has shown that air pollution has an impact on health at lower levels than previously thought. This has been reflected in air quality guidelines issued in 2021 by the World Health Organisation. The aims of the strategy therefore go beyond the national standards and instead take us on a pathway to meet these guidelines. This goes beyond our statutory obligation.

Most of the pollution we breathe in the Square Mile comes from beyond our boundary. The draft strategy therefore is very collaborative in nature, detailing work that we will do with external partners to support and initiate action to improve air quality. We will also continue to demonstrate leadership, for example through the implementation of our ambitious Climate Action Strategy, which aims to achieve net zero across the City's operations by 2027.

We will manage emissions of pollutants from construction sites; ensure new developments are low emission; tackle unnecessary vehicle engine idling and reward the best practice of our partners. We will continue to press for additional powers to manage remaining sources of pollution; support research into new technologies and consider how we can help to manage pollutants associated with diesel standby generator plant. We will also be turning our attention to activities that emit relatively high levels of very fine particles ($PM_{2.5}$), such as commercial cooking.

An important aspect of our work is engagement with our communities. We will continue to work with our schools, residents, and business communities, raising awareness about the health impacts of air pollution and what steps can be taken to help us to deliver the aims of this strategy.

We look forward to hearing your thoughts on our proposals to achieve our vision of having air quality in the Square Mile that is healthy to breathe.

Mary Durcan CC
Chair, Port Health and Environmental Services Committee

Air Quality Strategy 2025 – 30: Delivering Healthy Air in the City of London

Our definition of healthy air: Concentrations of nitrogen dioxide (NO_2) and particulate matter (PM_{10} and $PM_{2.5}$) that meet national health-based standards and are on a pathway to meet the 2021 World Health Organisation (WHO) Air Quality Guidelines.

Why us? The City of London Corporation has a statutory obligation to improve air quality and protect public health. Improving air quality and ensuring good health and wellbeing is supported by our Corporate Plan 2024 to 2029.

Who we will work with: Residents, workers, schools and nurseries, businesses and Business Improvement Districts, North-East London NHS Trust and Barts Health NHS, the Greater London Authority, Transport for London, London Councils, London Boroughs, the UK Government, the Environment Agency, London's Universities, Charities, Port of London Authority, Cross River Partnership, and other stakeholders as they arise.

Our Vision

The Square Mile has air that is healthy to breathe.

Our Aims

- **Over 90% of the Square Mile meets an annual average [1] of 30µg/m^3 for nitrogen dioxide by 2030[2].**
- **To support national and regional action that leads to the Square Mile meeting an annual average of 15µg/m^3 for PM_{10} by 2030[3].**
- **To support national and regional action that leads to the Square Mile meeting an annual average of 10µg/m^3 for $PM_{2.5}$ by 2030[4].**

Our Key Outcomes (Corporate Plan 2024-2029)

- Leading Sustainable Environment
- Providing Excellent Services
- Diverse Engaged Communities

Demonstrating success: Annual reports will be published detailing progress with each action and with the strategy aims.

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[1] Measured as the *mean*.
[2] World Health Organisation 2021 2nd interim target
[3] World Health Organisation 2021 Air Quality Guideline
[4] National air quality standard to be achieved by 2040 and World Health Organisation 2021 4th interim target.

Contents

1 Introduction 1
2 Air Quality Monitoring 7
3 Leading by Example 15
4 Collaborating with Partners 20
5 Reducing Emissions 23
6 Public Health and Raising Awareness 29
Appendix 1: Actions to deliver the Air Quality Strategy 32
Appendix 2: Air Quality Standards and Guidelines 41
Appendix 3: London Atmospheric Emission Inventory 44
Appendix 4: Monitoring Data, Further Assessment 49
Appendix 5: Air Quality Partner Commitments 56
Appendix 6: Air Quality Policies in the Draft City Plan 2040 58
Technical Glossary 59

1 Introduction

The City of London, also known as the Square Mile, is the historic heart of London. It is home to approximately 8,600 permanent residents with a working population of around 614,500 people. In addition to workers and residents, each year the City of London welcomes millions of visitors. The City of London Corporation (City Corporation) is the governing body for the Square Mile. It manages a wide range of functions including 11,000 acres of open space which provide green lungs for the Capital.

Although much improved, air pollution remains at a level where it impacts on health. The pollutants of current concern are nitrogen dioxide (NO_2), a colourless and odourless gas that is a product of fuel combustion, and particulate matter, of which there are a wide range of sources. Particulate matter is referred to as PM_{10} and $PM_{2.5}$, which are particles with a diameter of 10 micrometers (μm) or 2.5μm respectively.

The City Corporation is required by statute to monitor these air pollutants through a framework called London Local Air Quality Management (LLAQM). Following detailed air quality monitoring, the whole of the Square Mile was declared an Air Quality Management Area (AQMA) in January 2001 for annual mean concentrations of nitrogen dioxide and PM_{10}, and 1-hour concentrations of nitrogen dioxide. This was due to levels in 2001 being higher than the national standards. Once an AQMA has been designated, there is a requirement to develop and implement an Air Quality Action Plan (AQAP). The national standards were originally set in European Directives and transposed into domestic legislation.

The Environment Act 2021 set new national standards for the pollutant $PM_{2.5}$. Guidance that followed includes new responsibilities for local government to assist with national efforts to reduce emissions of this pollutant. These requirements are reflected in this strategy.

The City Corporation has had an AQAP in place since 2002. In 2011, the AQAP was incorporated into an Air Quality Strategy. The strategy outlined steps that would be taken to both improve local air quality and reduce the impact of air pollution on public health. The strategy is updated every five years, as a minimum, with updates published in 2015 and 2019. This strategy builds upon previous action and includes new responsibilities for helping to reduce concentrations of $PM_{2.5}$.

A significant improvement in air quality has been experienced across the Square Mile since the initial AQMA designation in 2001. The current national standards for PM_{10} are met across the Square Mile, and the annual mean standard for nitrogen dioxide is only exceeded adjacent to the busiest roads. The new national standard for $PM_{2.5,}$ 10μg/m^3 as an annual mean to be achieved by 2040, is not currently achieved in the Square Mile.

Since 1987, the World Health Organisation (WHO) has issued air quality guidelines for air pollutants that have a damaging impact on health. As evidence about the adverse health

impacts of air pollution advances, the air quality guidelines are revised. The guidelines are designed to offer quantitative health-based recommendations for managing air quality. They are not legally binding, but they do provide an evidence-based tool to inform legislation and policy in WHO Member States, of which the UK is one.

Table 1.1: World Health Organisation Recommended Air Quality Guidelines and Current National Standards

Pollutant	National Standard (annual mean µg/m^3)	2021 WHO Guidelines (annual mean µg/m^3)				
		Interim Target				Guideline
		1st	2nd	3rd	4th	
Nitrogen dioxide (NO_2)	40	40	30	20	-	10
PM_{10}	40	70	50	30	20	15
$PM_{2.5}$	10*	35	25	15	10	5

* To be achieved by 2040

The aims of this strategy are:

- Over 90% of the Square Mile meets an annual mean of 30µg/m^3 for nitrogen dioxide by 2030*.
- To support national and regional action that leads to the Square Mile meeting an annual mean of 15µg/m^3 for PM_{10} by 2030.
- To support national and regional action that leads to the Square Mile meeting an annual mean of 10µg/m^3 for $PM_{2.5}$ by 2030.

* Where total area includes roads, pavements and public spaces but excludes buildings.

These aims support the Corporate Plan outcome of providing a leading sustainable environment, providing excellent services and diverse engaged communities. The strategy will be delivered across five areas:

1. **Air quality monitoring**
2. **Leading by example**
3. **Collaborating with partners**
4. **Reducing emissions**
5. **Public health & raising awareness**

A complete table of actions to deliver the aims of the strategy is presented in Appendix 1, with further information on air quality standards and guidelines outlined in Appendix 2.

1.1 Source of Air Pollution in the Square Mile

The quality of the air in the City of London is influenced by a range of sources, from both inside and outside of the Square Mile.

To assist with the development of targeted measures, the Greater London Authority (GLA) and Transport for London (TfL) have developed a database of emission sources across London. This is called the London Atmospheric Emissions Inventory (LAEI)[5]. The data in the inventory is approximate and should not be viewed as absolute. It has been developed as a guide to assist in decision making for tackling the main sources of air pollution. The City Corporation has also undertaken its own research to look in more detail at emissions of $PM_{2.5}$ in the Square Mile[6].

Nitrogen oxides (NO_x) refers to nitric oxide (NO) and nitrogen dioxide (NO_2), both of which are formed during the combustion of fuels. Nitric oxide reacts with other gases in the air to form nitrogen dioxide. These reactions take place quickly and are reversible, so the two gases are referred to together as nitrogen oxides.

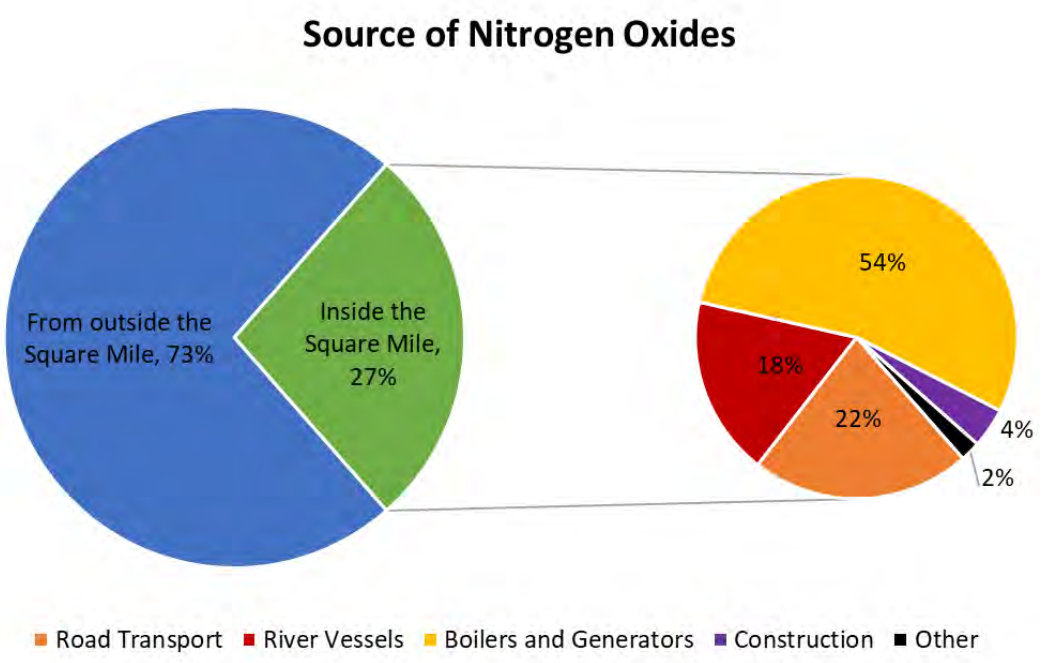
Figure 1.1 presents approximate emissions of NO_x that impact on air pollution measured in the Square Mile[7]. Approximately 75% of the nitrogen oxides in the Square Mile come from outside the boundary. The remaining 25% is made up of emissions from combustion plant such as boilers, generators, combined heat, and power plant (CHP), road transport, river vessels and construction activity. Appendix 3 details how emissions sources in the Square Mile have changed over time.

[5] Greater London Authority (2021), London Atmospheric Emissions Inventory 2019, London Datastore

[6] Ricardo Energy & Environment (2022), City of London – $PM_{2.5}$ Emissions Inventory and Source Apportionment, ED16224

[7] Cambridge Environmental Research Consultants (2024), Determination of the area of the City of London exceeding the NO_2 air quality limit value in 2022 using modelling and measurements, FM1424.

Figure 1.1: Emission Sources, Nitrogen Oxides



Particulate matter can travel large distances, with up to 33% transported to the UK from other European countries. Additionally, around 15%, comes from natural sources such as pollen, sea spray and desert dust. The remaining amount, approximately 50%, comes from anthropogenic sources such as solid fuel burning and road transport[8].

Figure 1.2 details the approximate origin of PM_{10} measured in the Square Mile. Over 90% is generated outside the boundary with the largest source within the Square Mile being associated with construction activity.

[8] Department for Environment Food & Rural Affairs (2024), Emissions of air pollutants in the UK – Particulate matter (PM_{10} and $PM_{2.5}$)

Figure 1.2: Emission Sources, PM_{10}

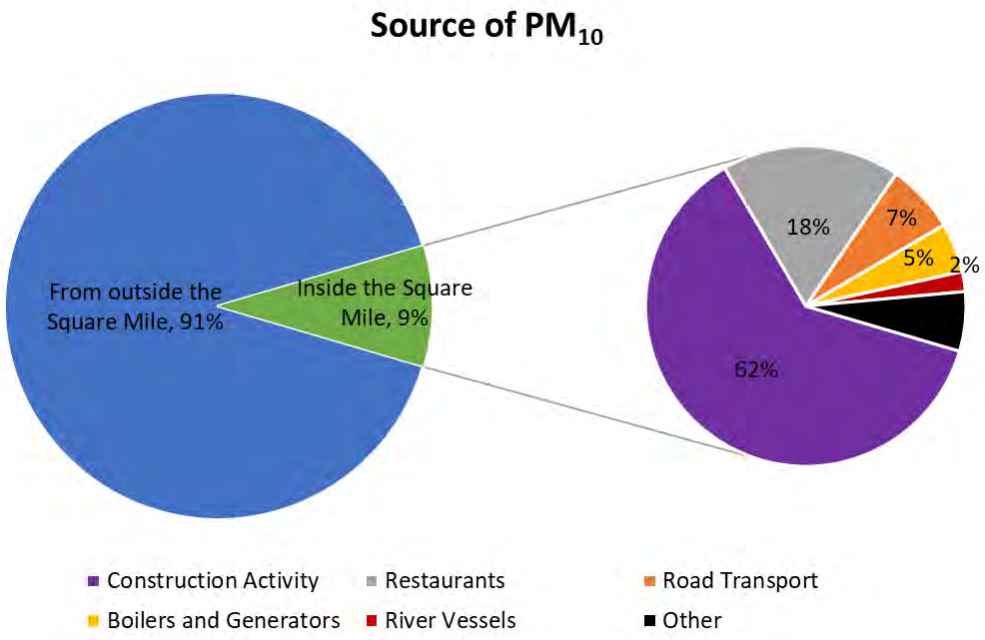
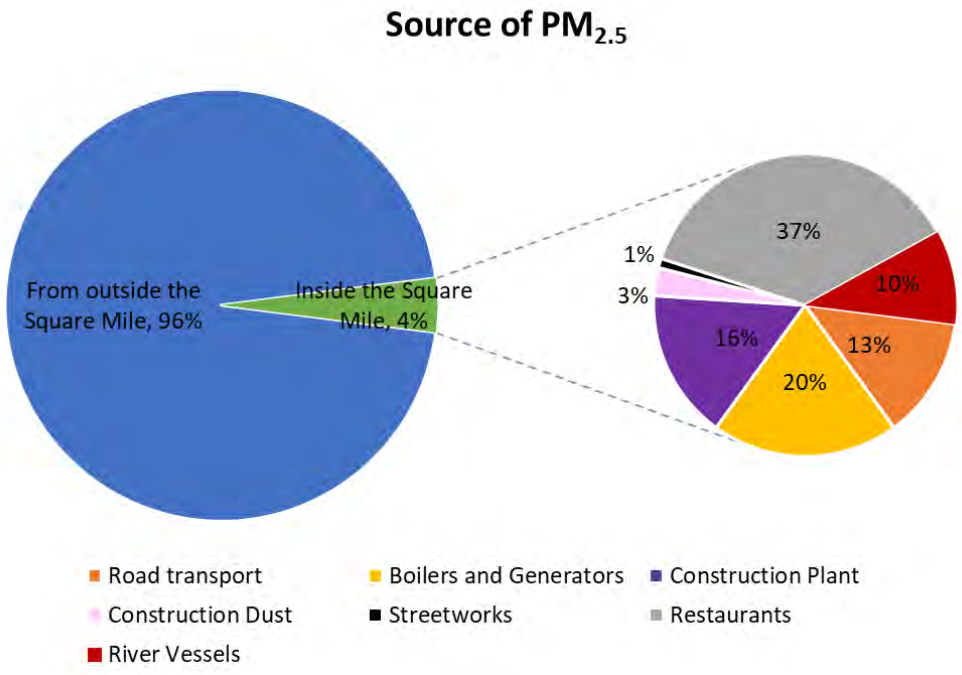


Figure 1.3 shows the approximate origin of $PM_{2.5}$ measured in the Square Mile. 96% of that measured comes from outside the City of London boundary. Of the remaining 4%, the main contributor to local $PM_{2.5}$ is commercial cooking, both from the fuel used and the food itself.

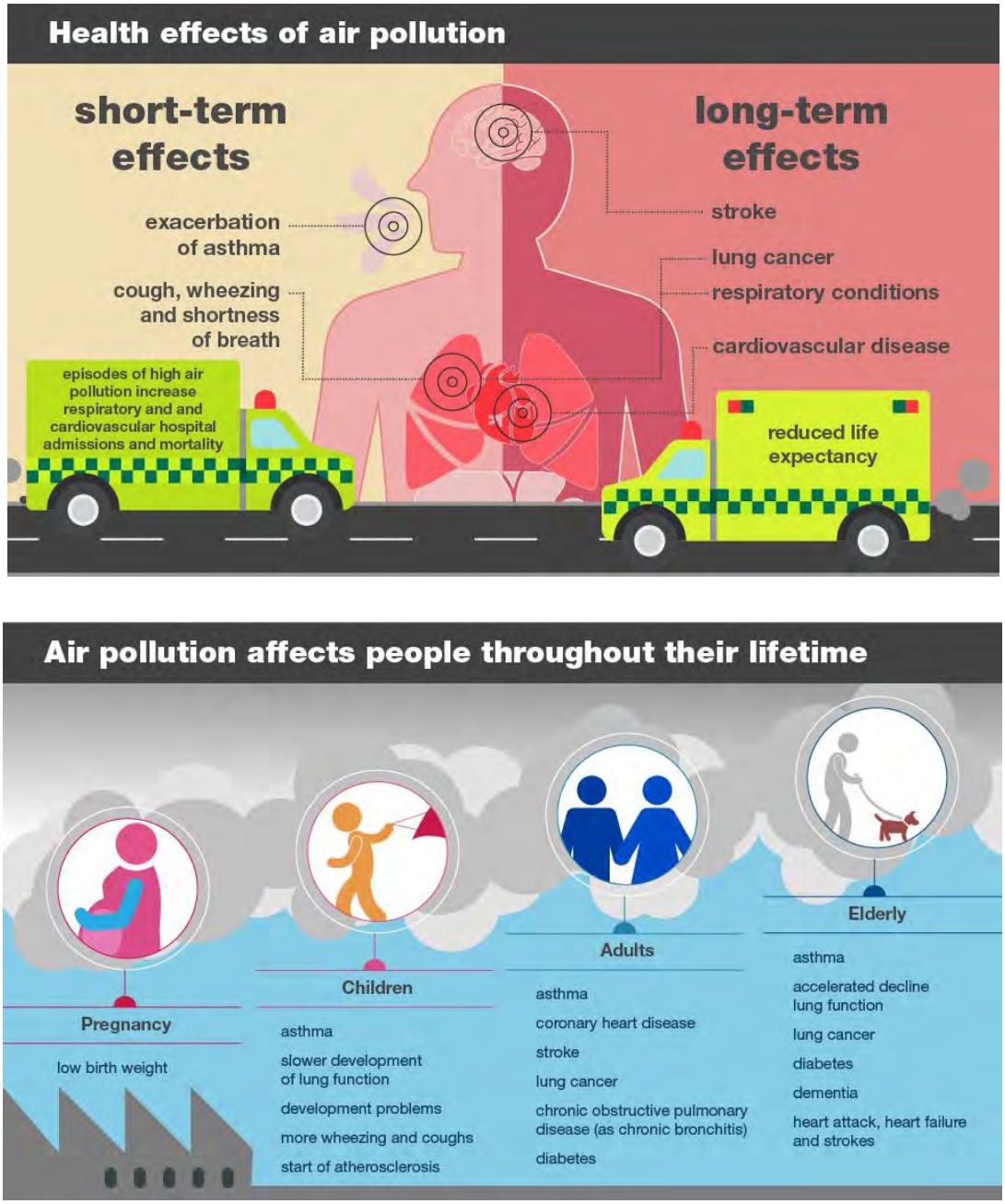
Figure 1.3: Emission Sources, $PM_{2.5}$



1.2 Health Impacts of Air Pollution

Air pollution is associated with a range of adverse health impacts, with the evidence base strengthening year on year. Elevated concentrations of air pollution particularly affect society's most vulnerable populations; children, the elderly, and those with existing medical conditions. Long-term exposure to air pollution can cause chronic conditions such as cardiovascular and respiratory diseases as well as lung cancer, leading to reduced life expectancy. Short-term acute exposure can impact on lung function, exacerbate asthma, and lead to an increase in respiratory and cardiovascular hospital admissions and mortality.

Figure 1.4: Health Effects of Air Pollution[9]



[9] Source: UK Health Security Agency (2018), Health matters: air pollution

2 Air Quality Monitoring

Commitment:
The City Corporation will monitor air quality to assess compliance with national air quality standards and internal air quality targets.

The City Corporation has been monitoring air quality for over 60 years. Monitoring is a vital component of air quality management and fulfils the following functions:

- to assess compliance against air quality standards and health guidelines, and consequently the impact on health;
- to assess long term monitoring trends and the effectiveness of policies and interventions to improve air quality;
- to raise public awareness and create alerts when levels of air pollution are high.

Air pollution monitoring is undertaken across the Square Mile using two methods: automatic analysers and passive monitoring. The pollutants nitrogen dioxide, PM_{10}, $PM_{2.5}$ and ozone (O_3) are monitored using automatic analysers. The Aldgate School monitoring site (pictured) houses equipment to measure nitrogen dioxide, PM_{10}, and $PM_{2.5}$. Full details of the automatic monitoring sites are provided in Appendix 4, and their locations are presented in Figure 2.1.

Passive diffusion tube samplers are devices which are exposed to the air for a month and then analysed in a laboratory later. They are used to measure NO_2 and in 2023 there were over 70 monitoring locations, see Figure 2.2. The locations selected for air quality monitoring are reviewed annually.

Full details of past monitoring locations can be found in the City Corporation Annual Status Reports (ASRs). All City Corporation automatic monitoring data is currently available on the Air Quality in England website, and diffusion tube results are available on the City Corporation website.

All 2023 monitoring data included in this draft strategy is provisional. All data undergoes rigorous checks before it is certified. The certified data for 2023 will be included in the final strategy which will be published in autumn 2024.

Figure 2.1: City Corporation Automatic Monitoring Sites

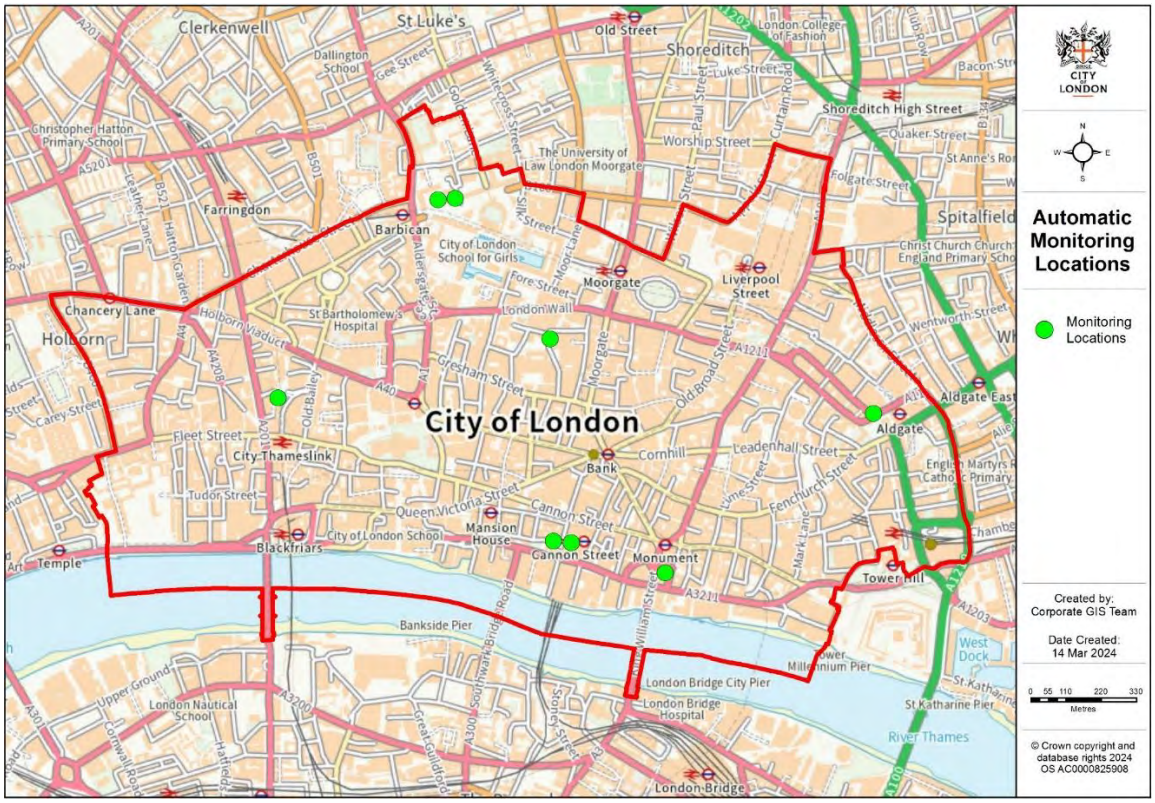
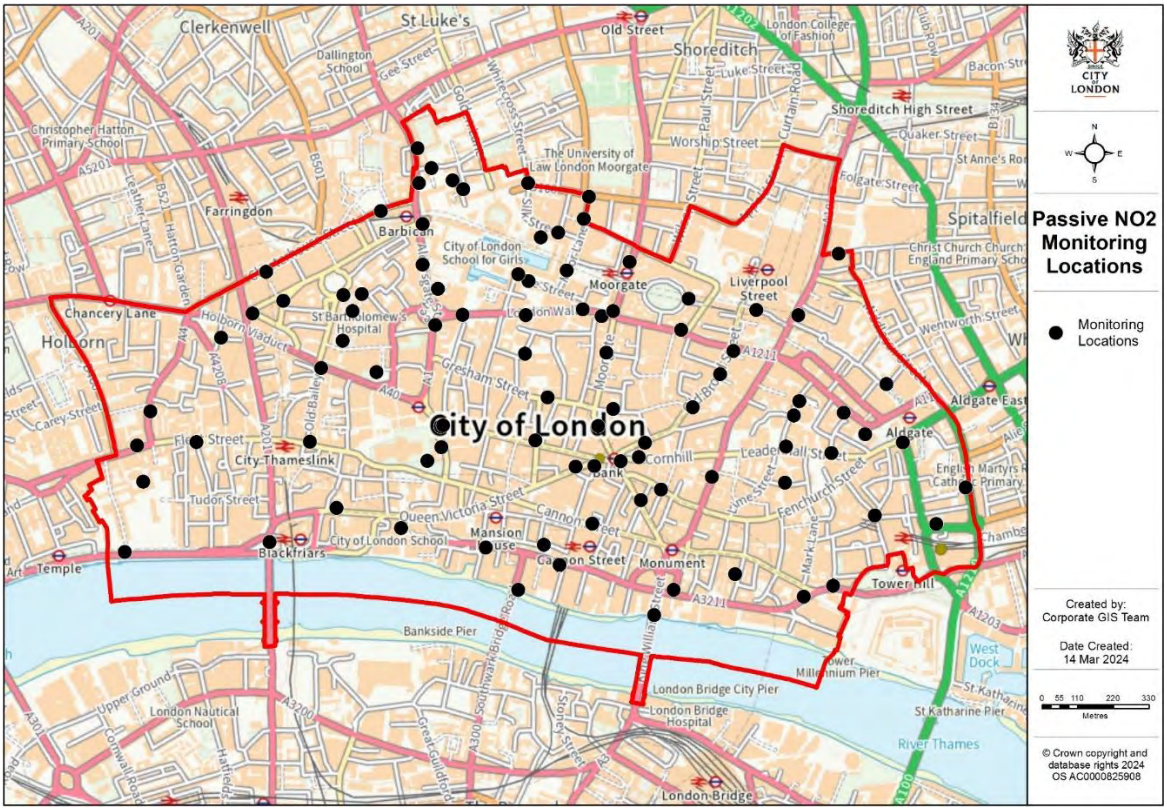


Figure 2.2: City Corporation Passive Nitrogen Dioxide Monitoring Sites



2.1 Nitrogen Dioxide, NO_2

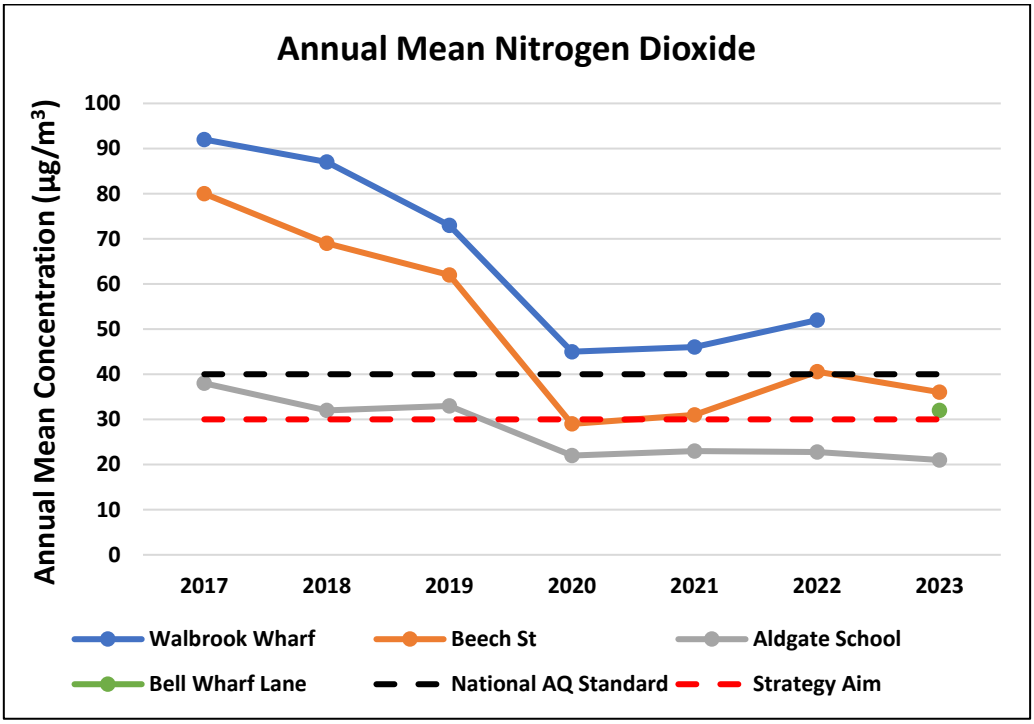
2.1.1 Continuous Monitoring

Figure 2.3 details annual mean nitrogen dioxide concentrations at City Corporation monitoring sites for the past seven years. To see how concentrations have changed over the past 15 years, see Appendix 4.

Concentrations have significantly reduced at all three locations measured. The lowest annual mean concentrations were experienced during the COVID-19 pandemic of 2020. Since 2020 there has been, as expected, a small rebound in roadside concentrations, though concentrations have not returned to pre-pandemic levels.

The final year where monitoring data was collected at the Walbrook Wharf location was 2022. This location has now been decommissioned due to changes in office accommodation, with a new monitoring site established nearby on Bell Wharf Lane.

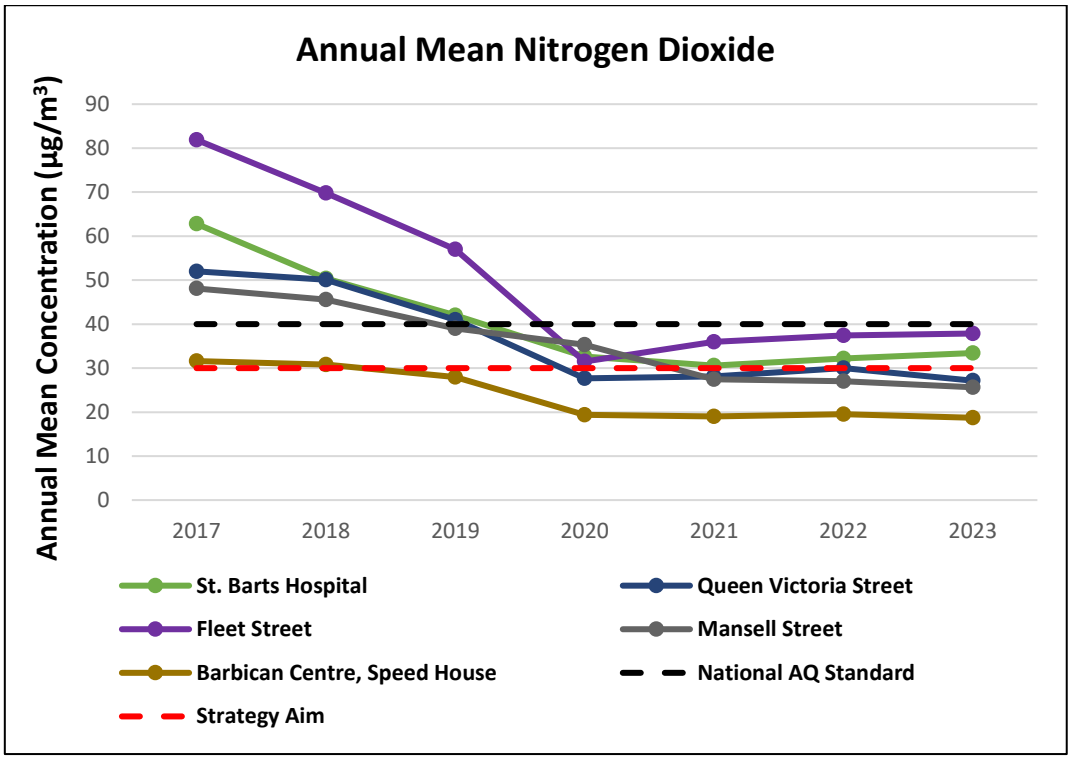
Figure 2.3: Annual Mean Nitrogen Dioxide



2.1.2 Non-continuous (Passive) Nitrogen Dioxide Monitoring

Data for five locations where nitrogen dioxide has been measured long-term using passive diffusion tubes is presented in Figure 2.4. All five sites have been compliant with the national annual mean standard since 2020, with three of the sites meeting the strategy aim for levels below 30µg/m^3 in 2023.

Figure 2.4: Annual Mean Nitrogen Dioxide, Passive Monitoring

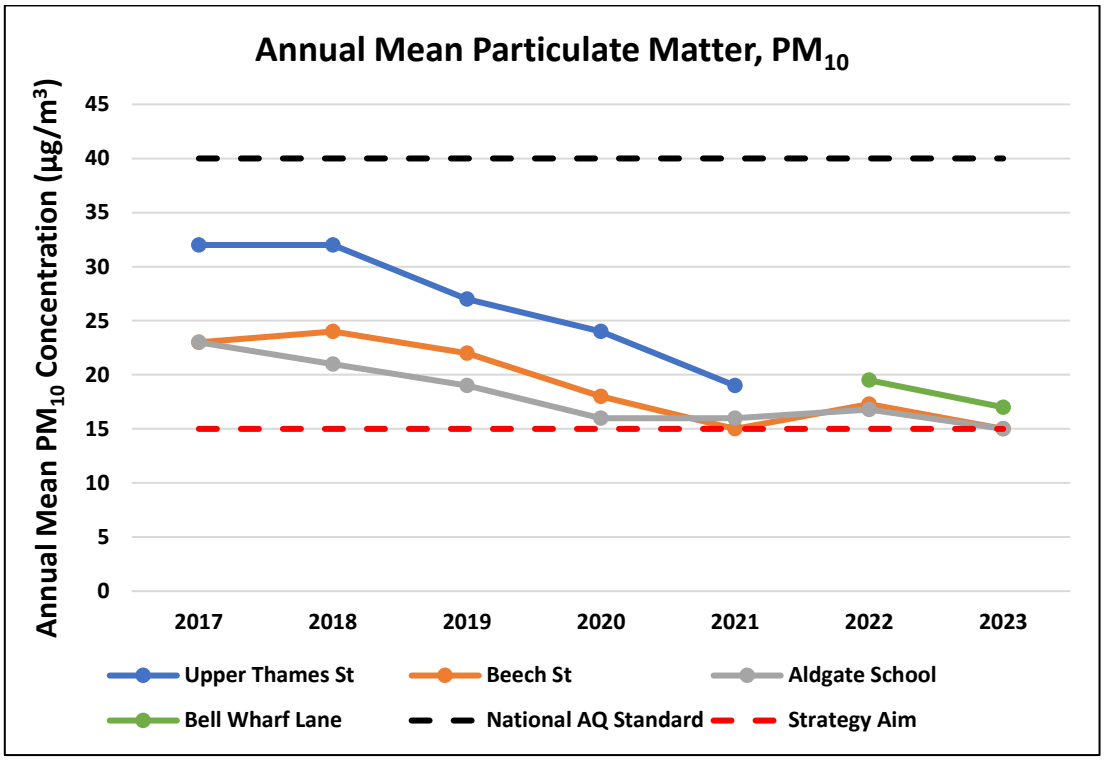


2.2 Particulate Matter, PM_{10}

Annual mean PM_{10} concentrations have also reduced. Compliance with the national PM_{10} annual mean standard has been achieved at all sites for the past seven years. The aim to achieve an annual PM_{10} concentration of 15µg/m^3 by 2030 was met at Beech Street in 2021, and at the Aldgate School in 2023.

2021 was the final year where monitoring data was collected at the Upper Thames Street location. This monitoring site has since been decommissioned, with a new monitoring site established nearby on Bell Wharf Lane.

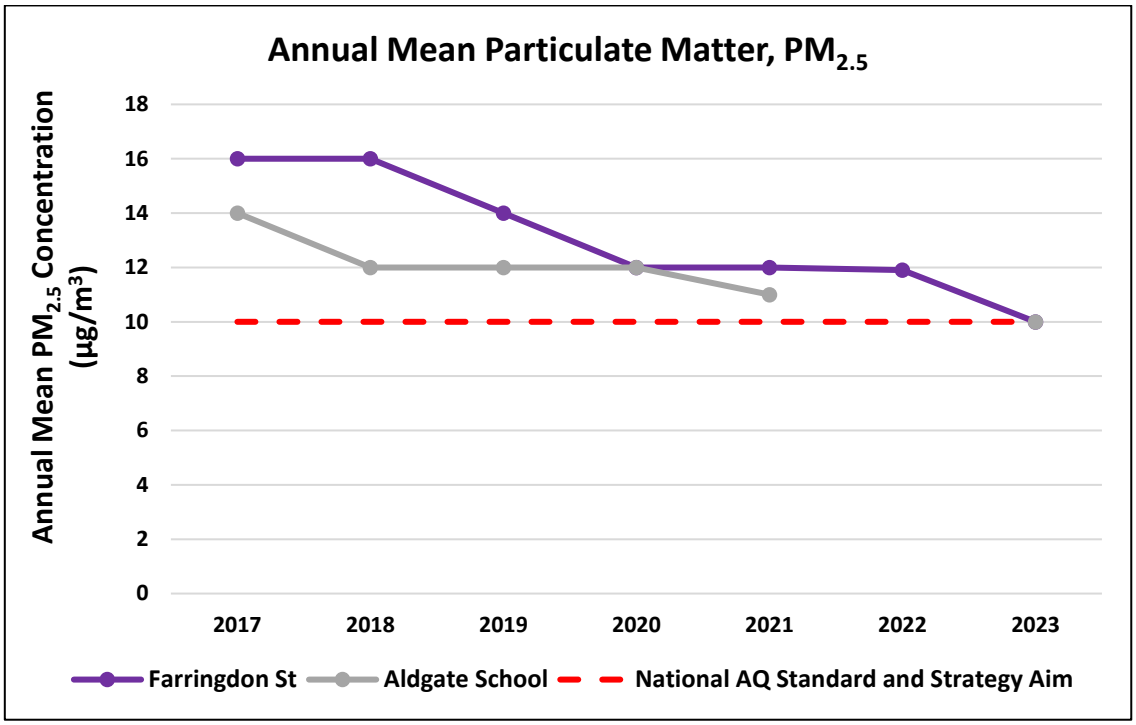
Figure 2.5: Annual Mean PM_{10}



2.3 Particulate Matter, $PM_{2.5}$

Both monitoring sites breach the new national standard of 10µg/m^3 that is to be achieved by 2040. Similar concentrations of $PM_{2.5}$ have been monitored at the two monitoring sites since 2020.

Figure 2.6: Annual Mean $PM_{2.5}$



Notes:.

The 2022 result for The Aldgate School is not available due to poor data capture for the year.

2.4 Dispersion Modelling

Air quality monitoring provides data for specific locations. The monitoring data is supplemented by computer modelling to enable the assessment of a wider geographical area. In addition, modelling is also used to predict future concentrations of air pollution which assists with action planning.

The LAEI estimates both concentrations and emissions for each of the 32 London Boroughs and the City Corporation. Analysis of the current LAEI data for the City Corporation is presented in Appendix 3.

2.4.1 Demonstrating Success

Whilst air quality in the Square Mile is undoubtably improving, there is further work to be done to ensure that the aims of this strategy are achieved.

One aim of the previous strategy was to ensure that the national air quality standard for annual mean nitrogen dioxide (40µg/m^3) was achieved in over 90% of the Square Mile by 2025. An annual assessment has been undertaken since 2018 to track progress. The most recent assessment completed is for 2022. Data for 2023 will be available for the final

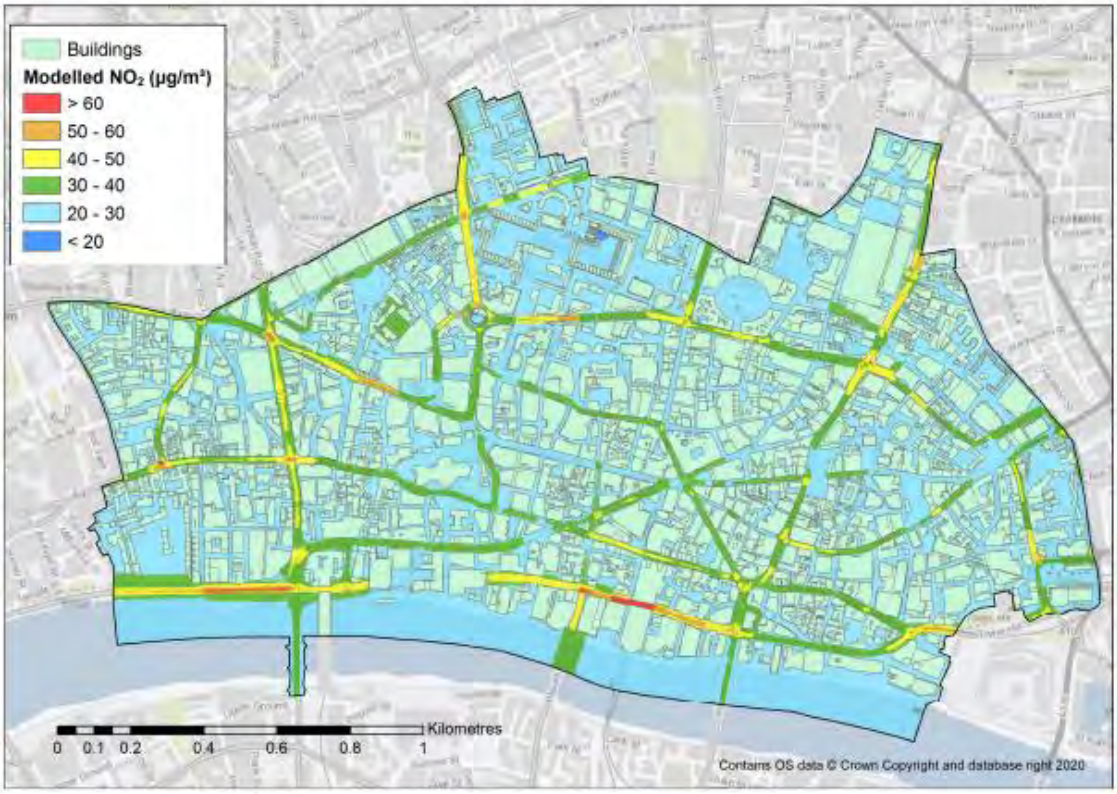
version of the strategy. As can be seen in Table 2.1 the target was met ahead of time in 2020.

Table 2.1: Nitrogen Dioxide Assessment Statistics, 2018-2022

Year	Publicly Accessible Area Meeting the Annual Mean Nitrogen Dioxide Standard, 40µg/m^3
2018	30%
2019	67%
2020	93%
2021	94%
2022	93%

One of the aims of this strategy is for over 90% of publicly accessible areas in the Square Mile to meet a nitrogen dioxide annual mean of 30µg/m^3 by the end of 2030. In 2022, 76% of the Square Mile was below 30µg/m^3.

Figure 2.7: Modelled Annual Mean Nitrogen Dioxide, 2022



2.5 Air Quality Monitoring on the wider City Corporation Estate

In addition to monitoring air quality in the Square Mile, the City Corporation also undertakes periodic monitoring at the City Markets, Open Spaces (public parks) and in 2024 will commence monitoring on the City Bridges.

Monitoring generally takes place to assess levels of pollution that users of the sites are exposed to. For Open Spaces, it is also done to see how air pollution impacts on

ecosystems. In Epping Forest, nitrogen dioxide and ammonia will be measured for 12 months starting in April 2024. These sites will be located near roads, in the forest itself and in locations that are sensitive to nitrogen pollutants such as heathlands and sites that are home to vulnerable species of moss. The data will be assessed to see whether levels of pollution might be damaging habitats. A similar study was undertaken in 2004.

Air Quality Monitoring

We will

Undertake monitoring of nitrogen dioxide, PM_{10}, $PM_{2.5}$ and ozone using continuous analysers at a minimum of five locations.

Maintain a nitrogen dioxide monitoring network utilising diffusion tubes, ensuring a high degree of spatial coverage.

Review all monitoring locations annually.

Ensure the live data from the continuous monitoring network is made available to the public.

Undertake an annual assessment to demonstrate progress with the aims of this strategy.

3 Leading by Example

Commitment:
The City Corporation will lead by example to improve local air quality and reduce exposure to air pollution.

Improving air quality is a priority for the City Corporation with the development and implementation of air quality policy being overseen by the Port Heath and Environmental Services Committee. The City Corporation Health and Wellbeing Board supports measures for improving local air quality. The City's Joint Strategic Needs Assessment recognises the significance of air pollution on public health.

The City Corporation Corporate Plan 2024 to 2029[10] details the City Corporation's commitment to act as a leader on environmental sustainability. Climate action and resilience, air quality, and sustainability are all aspects of ambitious targets for the entire City to be net zero by 2040.

3.1 City Corporation Fleet

The City Corporation has been reducing emissions from its own fleet for several years. This has been achieved by improved management, a reduction in size of the fleet and the purchase of newer, cleaner vehicles. The City Corporation owns or leases 122 vehicles. The majority of these are not used in the Square Mile. At the time of writing, forty of the vehicles are fully electric or hybrid.

Since January 2016, a policy has been in place that diesel vehicles cannot be purchased or leased if there are low or zero tailpipe emission options available. A fuel hierarchy is in place for new vehicles:

1. Full electric
2. Plug-in hybrid
3. Petrol hybrid (regenerative braking)
4. Petrol
5. (Euro 6/ VI) Diesel Fleet Operator Recognition Scheme Accreditation

The Fleet Operator Recognition Scheme (FORS) is a voluntary accreditation scheme designed to help fleet operators improve standards in their organisation. Bronze, Silver, or Gold accreditation is awarded to organisations based on a range of criteria including emissions and fuel efficiency. The City Corporation has been awarded the Gold FORS accreditation standard for over a decade.

3.2 Procurement Strategy

The City Corporation Procurement Strategy 2020 to 2024 and Responsible Procurement Policy, support the aims of this strategy by:

[10] City Corporation (2024), Our Corporate Plan 2024-2029

- Ensuring that suppliers minimise air and noise pollution associated with contracts;
- Procuring vehicles, plant and equipment with the lowest emissions and pollutants possible.
- Large contracts include a 'no vehicle engine idling' policy.

Contracts that use vehicles are required to put additional measures in place to help reduce air pollution. For example, the City Corporation's waste collection contract uses a fully electric fleet of dustcarts. There is a flexible approach with a menu of options, detailed below, which are periodically reviewed:

- Set ambitious targets for the reduction of nitrogen oxides, PM_{10} and $PM_{2.5}$ emissions from vehicles over the life of the contract.
- Set an ambitious target for increasing the use of zero tailpipe emission vehicles over the life of the contract.
- Set a target for a reduction in the number of motorised vehicle trips that form part of the services.
- Develop a logistics approach that avoids vehicle movements during peak congestion and pedestrian footfall times, 07:00–10:00, 12:00–14:00, 16:00–19:00.
- Use technology that supports air quality improvement e.g., gear shift indictors, stop-start ignition, software to monitor green driving.
- Green driver training for Contractor Staff used on the Contract, offer safer urban driving courses to drivers.
- Another innovative action to support the Air Quality Strategy that the City would reasonably deem of an equivalent level of ambition.

3.3 Climate Action Strategy

The City Corporation has an ambitious Climate Action Strategy (CAS)[11] supported by a £68 million investment. Annual carbon emissions from the City Corporation's own operations have already been reduced by 66% between 2018/2019 and 2021/2022[12]. Since 2018, 100% of the electricity purchased by the City Corporation has been from renewable sources, and in 2020 the City Corporation became the first UK local authority to sign a 15-year Power Purchase Agreement to purchase electricity from a new solar farm of 49.9MW capacity. At the time of writing, more than half of the City Corporation's electricity comes from this renewable source.

The CAS contains the following commitments which support the aims of this strategy:

- Net zero by 2027 in the City Corporation's operations
- Net zero by 2040 across the City Corporation's full value chain
- Support the achievement of net zero by 2040 in the Square Mile

Measures underway to achieve the aims of the CAS include:

- Transforming the energy efficiency of operational buildings through the adoption of best available technologies

[11] The City of London Corporation (2020), Climate Action Strategy 2020-2027

[12] The City of London Corporation (2024), Taking Climate Action: Our Progress 2023

- Maximising use of renewable energy
- Accelerating the move to net zero carbon and improving energy efficiency in tenanted buildings
- Developing a Square Mile Local Area Energy Plan

3.4 Transport Strategy

The City Corporation Transport Strategy[13] has delivered a reduction in the number of motor vehicles in the Square Mile[14]:

- The total number of motor vehicles decreased by 26% between 2017 and 2022.
- The number of freight vehicles decreased by 14% between 2017 and 2022.

At the time of writing, the City Corporation 25-year Transport Strategy is undergoing a review. The proposed approach is to continue to improve air quality through traffic reduction and support the transition of the remaining vehicles on City streets to low and zero emission.

The focus of the Transport Strategy is:

1. Prioritising the needs of people walking, making streets more accessible and delivering high quality public realm.
2. Making the most efficient and effective use of street space by reducing motor traffic, including the number of delivery and servicing vehicles.
3. Seeking to ensure that no one is killed or seriously injured while travelling on City streets, including measures to deliver safer streets and reduced speeds.
4. Enabling more people to choose to cycle by making conditions for cycling in the Square Mile safer and more pleasant.
5. Improving air quality and reduce noise, including by encouraging and enabling the switch to zero emission capable vehicles.

3.5 Rewarding Best Practice

The City Corporation runs award schemes to recognise stakeholder best practice.

3.5.1 The Clean City Awards Scheme

This scheme has been devised to encourage and reward sustainable business and it celebrated its 30th anniversary in 2024. The awards focus on driving action across the following areas:

- Air quality and climate action
- Communication and engagement
- Resource efficiency and circular economy
- Transitioning towards a Plastic Free City

[13] The City of London Corporation (2019), City Streets: Transport for a changing Square Mile, City of London Transport Strategy
[14] The City of London Corporation (2023), City Streets 2023 summary report

The 2024 winner of the Air Quality and Climate Action Award was 20 Fenchurch Street Ltd through their work to reduce the environmental impact of light pollution. Project Go Dark reduced energy use by 3,3780kW over a 13-month period by turning office lights off when not needed.

Figure 3.1: 2024 Air Quality and Climate Action Award Winners, 20 Fenchurch Street Ltd[15]

3.5.2 Considerate Contractors and Street works Schemes.

The Considerate Contractors and Street works schemes are open to contractors undertaking building and civil engineering, or street works in the Square Mile. Members of both schemes agree to follow a Code of Conduct which exceeds the legal minimum requirement and ensures that general standards of work are improved.

There are annual awards attached to membership of the schemes. The Considerate Contractors Award includes a category for exceptional or innovative environmental practice. The 2023 Environment Award was given to the Mace Group for their work at Stonecutter Court.

3.6 Proposal for New Regulatory Powers

Whilst there is a great deal of action underway to reduce emissions from road traffic, there is currently a lack of effective control to deal with emissions from combustion plant (boilers, generators, non-road mobile machinery [NRMM] and CHP).

Monitoring has revealed that there can be a significant local impact on levels of air pollution from some combustion plant. The City Corporation identified the need for a practical, local authority focused piece of legislation to deal with this form of pollution and put the proposals together in a Private Members Bill. The Emissions Reduction (Local Authorities in London)

[15] 20 Fenchurch Street Ltd, courtesy of Clive Totman

Bill[16] had its first reading in the House of Lords and is used as a basis for pressing for new powers to manage emissions of pollutants from combustion plant.

Leading by Example

We will:

Fulfil the City Corporation's Climate Action Strategy commitments.

Reduce emissions from the City Corporation's fleet.

Deliver the City Corporation Transport Strategy to reduce emissions from vehicles in the Square Mile.

Encourage the use of zero tailpipe emission vehicles through the City Corporation supply chain.

Deliver the Clean City Awards and Considerate Contractors Environment Award Schemes to reward exceptional and innovative practice to improve air quality.

Work with external organisations to promote the proposals in the Emissions Reduction (Local Authorities in London) Bill.

[16] UK Parliament (2019), Emissions Reduction (Local Authorities in London) Bill

4 Collaborating with Partners

Commitment:
The City Corporation will work with a wide range of external partners on air quality policy and action to improve air quality across the Square Mile and Greater London.

As a significant amount of air pollution monitored in the Square Mile is not generated within its boundary, the City Corporation works with a wide range of partners to improve air quality. This collaborative work is an essential component of air quality management.

4.1 Designated Air Quality Partners

The Environment Act 2021 introduced the new concept of designated Air Quality Partners (AQPs) into the Local Air Quality Management (LAQM) framework. An AQP is required to assist a local authority with any reasonable request to work towards reducing air pollution emissions.

The designated AQPs relevant to the strategy are listed in Table 4.1, and the actions being taken by the AQPs to reduce air pollution are detailed in Appendix 5.

Table 4.1: Designated Air Quality Partners

The Mayor of London: The Greater London Authority	The London Environment Strategy was published with an aim for London to have the best air quality of any major city by 2050. The City Corporation works closely with the GLA to knowledge share and develop targeted actions to reduce air pollution.
The Mayor of London: Transport For London	Through the Mayor of London, the City Corporation also works very closely with TfL. TfL is the integrated transport authority responsible for meeting the Mayor's commitments on transport. It runs the day-to-day operation of public transport, including the licencing of taxi cabs and private hire vehicles.
The Environment Agency	The Environment Agency (EA) is a public body with responsibilities for the protection and enhancement of the environment. The EA regulates several operations that have the potential to affect air quality negatively under the Environmental Permitting Regulations. This includes combustion plant that are subject to the requirements of the Medium Combustion Plant (MCP) Directive. All new MCP should now comply with the regulations, and all existing MCP above 1MWth should have a permit in place by 1 January 2029.
The Port of London Authority	The Port of London Authority (PLA) is the custodian of the tidal Thames. The relative proportion of the river's contribution to London's emissions has been increasing as emissions from road vehicles have fallen due to newer cleaner vehicles. Initially published in the 2018, the PLA Air Quality Strategy was the first strategy developed by a port.

4.2

4.3 Additional Partnerships

In addition to the designated AQPs, the City Corporation works very closely with a range of other partners on actions to improve air quality and raise awareness.

Table 4.2: Additional Partnerships

London Boroughs and London Councils	The City Corporation sits within the Central London Air Quality Cluster Group which is comprised of 7 London Boroughs plus the City Corporation. The group meets quarterly to discuss best practice and deliver joint programmes for improving air quality. The City Corporation also chairs the London Air Quality Steering Group. The group aims to direct and influence air policy across London. Members include London Councils, London Boroughs, the EA, the GLA, TfL, the PLA, and the UK Health Security Agency (UKHSA).
Cross River Partnership	Cross River Partnership (CRP) supports public, private, and voluntary organisations to address challenges around air quality, transport, placemaking and wellbeing. The chair of the Port Health and Environmental Services Committee co-chairs the CRP Board, and officers engage with CRP on a range of pan London projects.
Universities and Research Groups	The City Corporation sits on the Air Pollution Research in London (APRIL) steering group. APRIL identifies priority areas for research to improve air quality in London and other major cities, supports the development of new scientific research and communicates the latest research findings. In addition, the City Corporation commissions and supports research that aids understanding and improvement of air quality.
Third Sector	The City Corporation works with a range of non-government and non-profit-making organisations, with particular focus on health messaging and community engagement.
Businesses operating in the Square Mile	The City Corporation works with a range of organisations in the Square Mile to quantify and where possible reduce, air pollution emissions from their activities. This includes, but is not limited to, the construction, restaurant, finance, accounting, and legal sectors.

An example of a collaborative project is *Clean Air Thames* where the City Corporation worked with the PLA and CRP. For the project, a 34-year-old river vessel was retrofitted with pollution emission reduction technology. For the vessel, Driftwood II, this resulted in reductions for all pollutants monitored, including nitrogen dioxide and particulate matter.

Collaborating with Partners

We will:

Work with designated and non-designated Air Quality Partners to collaborate on policies and measures to improve air quality across the Square Mile and Greater London.

Support research into measures to improve air quality and into the health impacts of air pollution.

5 Reducing Emissions

Commitment:
The City Corporation will implement a range of measures to reduce emissions of air pollutants across the Square Mile

5.1 Transport Emissions

The movement of people and goods in and around the Square Mile contributes to air pollution. The road network is used intensively; particularly during the working week as vehicles service City businesses. The Square Mile is located within the London Low Emission Zone, the Congestion Charge Zone, and Ultra Low Emission Zone.

The City of London is very well served by public transport. There are a high number of bus routes passing through the Square Mile, with most buses being hybrid or fully electric. A high number of Hackney Carriages are present. At the time of writing almost 8,500 licensed taxis are zero tailpipe emission capable (ZEC), which accounts for over half of the fleet.

5.1.1 Idling Vehicles Engines

The City Corporation takes a wide range of action to deal with unnecessary vehicle engine idling. This includes:

- Responding to complaints and engaging directly with drivers.
- Issuing Penalty Charge Notices where appropriate. In 2023 11 warning notices and 4 Penalty Charge Notices were issued for unnecessary engine idling in the Square Mile.
- Distributing information leaflets.
- Installing street signs and place signs on lamp posts.
- Writing directly to companies.
- Working with local businesses.
- Enforcement at street works and construction sites.

Since pioneering the volunteer led Idling Action Days in 2015, the City Corporation has overseen pan London Idling Action, and continues to work with other London boroughs on programmes to tackle unnecessary vehicle engine idling across the capital.

5.1.2 Parking Charges

The City Corporation operates an emission based on-street and off-street parking charging system. Older, more polluting vehicles pay a higher charge to park in the Square Mile, see table 5.1.

Table 5.1: Parking Charges as of 2024

Vehicle Type	On Street, Mon-Fri (p/hr)	Off Street (p/hr) *	Off Street Annual Season Ticket (per quarter)	Smithfield Overnight (up to 3-hours)
Electric or hydrogen or hybrid	£5.00	£4.50	£2,500	£1.80
Petrol vehicles registered from 2005	£7.20	£5.00	£2,650	£2.00
Diesel vehicles registered from 2015	£7.20	£5.00	£2,650	£2.00
Other vehicles	£10.00	£7.00	£3,650	£3.50

*City Corporation car parks: Baynard House, London Wall, Minories and Tower Hill

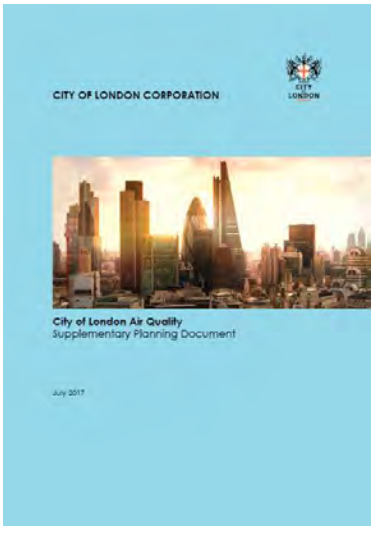
5.2 Non-Transport Emissions

Non-transport sources make a significant contribution to air pollution in the Square Mile. As emissions from road vehicles have declined in recent years, the relative proportion of emissions from non-transport sources had increased.

5.2.1 New developments

The Square Mile is in a constant state of redevelopment with planning policy being an important mechanism for improving air quality. The City Corporation is developing a new Local Plan, the City Plan 2040. This sets out the Corporation's vision, strategy, and objectives for planning, together with policies that will guide future decisions on planning applications.

The draft City Plan 2040 supports the City Corporation's drive to improve local air quality. The draft proposals relating to air quality are detailed in Appendix 6.



The City Corporation published an Air Quality Supplementary Planning Document (SPD) in July 2017. The SPD provides developers with information on air quality assessments, and how to mitigate air pollution through appropriate building design, method of construction and choice of heating and energy plant.

The SPD will be updated to align with the City Plan 2040, following its adoption. The update will include the latest best practice guidance and technological advances.

5.2.2 Construction and Demolition

At any given time, there are many active demolition, construction, and refurbishment sites in operation in the Square Mile. There are also many short-term street works. The City Corporation has a Code of Practice (CoP) for construction and demolition[17], detailing environmental standards and operational techniques that it expects all contractors to adhere to.

Construction has been identified by the LAEI as the highest source of PM_{10} emitted in the Square Mile. Therefore, close management and mitigation of construction emissions is a priority for the City Corporation. The CoP reflects best practice guidance issued by the Mayor of London[18]. Regular on-site checks are completed on all large construction sites to ensure compliance with the CoP.

5.2.3 Non-Road Mobile Machinery (NRMM)

NRMM is a broad category which includes mobile machines and equipment, or vehicles not intended for transporting goods or passengers on roads.

The City of London is within the Central Activity Zone (CAZ) of the London NRMM Low Emission Zone. The NRMM Low Emission Zone requires that all engines used on construction sites with a power rating of between 37kW and 560kW must meet a specified emission standard.

Table 5.2 details the dates by which equipment used during construction is required to meet the specified standard. Construction sites across the Square Mile are regularly inspected to ensure compliance.

Table 5.2: NRMM Low Emission Zone Requirements

	NRMM Low Emission Zone Area	
	Greater London	**CAZ / Canary Wharf / Opportunity Area**
Before January 2025	Stage IIIB	Stage IV
From 1 January 2025	Stage IV	Stage IV
From 1 January 2030	Stage V	Stage V

NRMM is also used in short-term street works. The emission standards used on construction sites don't apply to street works. The City Corporation has been pressing for new powers to deal with this unregulated source of pollution through its Emissions Reduction (Local Authorities in London) Bill.

[17] City of London Corporation (2019), City of London Code of Practice for Deconstruction and Construction Sites, Ninth Edition

[18] Mayor of London (2014), The Control of Dust and Emissions During Construction and Demolition: Supplementary Planning Guidance

5.2.4 Commercial Heat and Power

The largest source of nitrogen oxide emissions in the Square Mile is gas boilers providing heat and hot water to commercial premises. Back-up or standby diesel generators are an additional source which, although only used periodically, do contribute to air pollution in the Square Mile[6].

The London Plan requires major developments to be net zero-carbon. The 'Be Clean' section of the energy hierarchy process, below, has driven a design shift from gas boilers to air source heat pumps in commercial buildings:

1. Connect to local existing or planned heat networks.
2. Use zero-emission or local secondary heat sources.
3. Use low-emission CHP (only where there is a case for it).
4. Use ultra-low nitrogen oxide gas boilers.

The installation of diesel fuelled backup generators in new developments is assessed through the planning process. Developers are asked to consider alternatives where possible. In 2024, a project to investigate the existing stock of backup generators in the Square Mile commenced. The aim of the project is to gather information, and to ensure any Environmental Permit requirements managed by the Environment Agency are complied with.

5.2.5 Commercial Cooking

Research undertaken by the City Corporation to assess $PM_{2.5}$ emission sources in the Square Mile revealed that commercial cooking is the largest source at 37%[6]. Work is underway to consider how emissions from this sector can be reduced.

5.2.6 Chimneys

Under the Clean Air Act 1993[19], a gas boiler with a rating of 366.4 kilowatts or more is required to have its chimney height approved by the local authority. The City Corporation ensures that chimneys of large boilers are sited and operate in a way that leads to maximum dispersal of pollutants.

5.2.7 Environmental Permitting Regulations

Local authorities regulate a variety of industrial operations to control emissions to air. In the Square Mile, the only operations subject to this are one dry-cleaning operation and the energy centre at Barts Hospital.

Larger combustion plant, boilers, generators, and combined heat and power plant are regulated by the EA. The requirement for a permit depends upon the size of the plant, and in the case of standby generators, how often they are used. All new medium sized plant, put into operation on or after 20th December 2018, will have a permit to operate with conditions designed to minimise pollution. All existing plant between 5MWth and 50MWth

[19] Clean Air Act 1993. (c.11). London: The Stationery Office.

should have a permit in place by 1st January 2024 and all plant above 1MWth by 1st January 2029[20].

5.2.8 Smoke Control

The whole of the Square Mile is a Smoke Control Area (SCA) which means it is an offence to emit smoke from the combustion of fuel from any premises. Exemptions are allowed, for example, for a short period during start-up of an engine. The SCA has been in place since 1954[21]. In a SCA, only fuels that are on the list of authorised fuels or 'smokeless' fuels, can be burnt, unless an 'exempt appliance' is used. Authorised fuels, smokeless fuels and exempt appliances are listed on the Department for Environment, Food and Rural Affairs (Defra) website.

The City Corporation is responsible for enforcing the sale of domestic solid fuels in accordance with domestic solid fuel regulations[22]. Compliance checks are undertaken regularly in shops to ensure only certified solid fuel with the correct labelling is sold.

[20] The Environmental Permitting (England and Wales) (Amendment) Regulations (EPR) 2018 SI 110, the Medium Combustion Plant Directive (MCPD) EU/2015/2193

[21] City of London (Various Powers) Act 1954. (2 & 3 Eliz. 2. c. xxviii). London: HMSO

[22] The Air Quality (Domestic Solid Fuels Standards) (England) Regulations 2020 (SI 2020 No. 1095)

Reducing Emissions

We will:

Develop further action to reduce annual average concentrations of nitrogen dioxide on all City Corporation roads to below 40µg/m^3.

Take action to discourage unnecessary vehicle idling and enforce anti-idling policies across the Square Mile.

Ensure City Corporation vehicle parking charges favour low and zero tailpipe emission vehicles.

Assess planning applications for air quality impact.

Revise the City Corporation Supplementary Planning Document for Air Quality to reflect the City Plan 2040 and London Plan Guidance.

Ensure emissions from construction sites are minimised.

Manage and mitigate emissions from non-road mobile machinery.

Reduce emissions associated with standby power generation across the Square Mile.

Develop and implement a plan to mitigate emissions of $PM_{2.5}$ from commercial cooking.

Ensure that where possible chimney stacks terminate above the height of the nearest building.

Ensure that the City Corporation's prescribed processes comply with emission control requirements.

Promote and enforce the requirements of Smoke Control Areas and regulate the sale of solid fuel.

6 Public Health and Raising Awareness

Commitment:
The City Corporation will continue to raise awareness about air pollution and provide information on how to reduce exposure to pollution.

Although air quality is improving in the Square Mile, it remains at a level that has a detrimental impact on health. The City Corporation therefore takes a wide range of action to increase public awareness and understanding about air pollution. With the right information, people can take steps to avoid high levels of air pollution to reduce the impact on their health.

The City of London Joint Health and Wellbeing Strategy[23] has identified improving air quality as a key priority to improve the health and wellbeing of residents and workers.

A Public Health Outcomes Framework has been introduced and consists of a set of indicators compiled by the UK Health Security Agency. One of these indicators is Air Pollution, and this is measured against levels of particles ($PM_{2.5}$). The City of London Health profile for 2022 shows that the City of London has a proportion of mortality attributable to particulate air pollution of 8.3%. This is higher than both London as a whole (7.1%) and England (5.8%).

6.1 Provision of Information

The City Corporation uses a range of methods to inform businesses, workers, and residents about air pollution. This includes social media, the City Corporation website and providing information at events. In addition, an e-newsletter is produced every month.

The City Corporation has an X account @_CityAir. This helps to raise awareness about air pollution and support campaigns such as anti-vehicle idling and National Clean Air Day.

Overall levels of air pollution in the Square Mile vary from day to day in response to weather conditions. Levels of air pollution each day are defined as either 'low', 'medium', 'high' or 'very high' which reflects banding devised by the Government[24]. High levels of air pollution occur in the City of London on a small number of days in any year and instances of very high levels of air pollution are now very rare.

The City Corporation's free Smart Phone App 'CityAir' provides advice to users when pollution levels are high or very high. People can sign up and receive tailored messages to help them avoid high levels of air pollution. The App includes a map of current pollution

[23] The City of London Corporation (2017), Joint Health and Wellbeing Strategy: 2017-2020

[24] Department for environment, Food and Rural Affairs (2013), Update on Implementation of the Daily Air Quality Index: Information for Data Providers and Publishers

levels and has a function to guide users along low pollution routes. The City Corporation also supports the provision of the AirText messaging service. AirText is promoted to residents and workers who use the service to receive alerts by email, text, and voicemail.

The Mayor of London provides information about levels of pollution through a range of outlets. TfL broadcasts advice whenever air pollution is moderate, high, or very high, and information is sent directly to schools, healthcare professionals, and care homes across London.

As part of a Defra funded project, and in collaboration with the three London boroughs: Hackney; Tower Hamlets and Newham, a web-based information tool 'Air Aware' has been developed. Air Aware aims to improve awareness of air quality and highlights ways in which people can reduce their exposure, and their emissions, of air pollution. A group of residents from all participating boroughs helped design the website to ensure it contained information relevant to them and their communities.

6.2 National Clean Air Day

National Clean Air Day is held in June each year. A range of activities are carried out nationally to raise awareness of air pollution and inspire behaviour change. National Clean Air Day is supported by the City Corporation and each year a diverse schedule of events and activities are run by the air quality team.

6.3 Working with Schools and nurseries

Air quality is measured at all schools and nurseries in the Square Mile. Annual reports are produced containing the monitoring data, and all schools and nurseries are offered awareness raising support and information on how to reduce exposure on routes to and from school.

6.4 Working with businesses

Around 614,500 people work in the City of London. Through the CityAir business engagement programme, the City Corporation has been raising awareness of air pollution with workers. This includes supporting events and providing information for internal dissemination.

6.5 Indoor air quality

As concentrations of ambient air pollution improve, attention is turning to indoor air quality. Whist there is no statutory obligation for local authorities to review and assess indoor air

quality, they are encouraged, through government guidance, to provide information to residents. The City Corporation has produced an information leaflet on the sources and health impacts of indoor air pollution.

The City Corporation is also part of a consortium of 16 London boroughs working on a project to assess indoor air quality and the impact of household behaviour change.

Public Health and Raising Awareness

We will:

Prepare annual air quality briefings for colleagues and for the Director of Public Health.

Disseminate information about air quality.

Run events in support of National Clean Air Day.

Work with schools and nurseries in the Square Mile.

Work with businesses to raise awareness of air pollution amongst workers.

Raise awareness of the health impacts of poor indoor air quality.

Appendix 1: Actions to deliver the Air Quality Strategy

Table Key

Dept. = Department responsible

CHB = Chamberlain's

Env = Environment

IG = Innovation and Growth

Cost =Approximate cost to the organisation per annum:

✓ = <£10,000, ✓✓= £10,000 - £50,000, ✓✓✓ = >£50,000

		Action	Detail	Timeline	Outcome	Dept.	Cost
Air Quality Monitoring	1	Air quality monitoring.	Undertake monitoring of nitrogen dioxide, $PM_{10,}$ $PM_{2.5}$ and ozone using continuous analysers at a minimum of five locations in the Square Mile. Maintain a nitrogen dioxide monitoring network utilising diffusion tubes, ensuring a high degree of spatial coverage across the Square Mile. Review all monitoring locations annually.	Present to 2030	An effective monitoring network providing accurate, trusted, and accessible data. Monitoring data to demonstrate compliance with statutory obligations and assessing the impact of interventions.	Env	✓✓
	2	Air quality data dissemination.	Ensure live data from the continuous monitoring network is made available to the public.	Present to 2030	Better informed public who can make decisions based on available data.	Env	✓✓
	3	Compliance assessment.	Undertake an annual assessment to demonstrate progress with the aims of this strategy.	Annually	Meet statutory obligations for reporting. Track progress with meeting the aims of this strategy.	Env	✓✓

		Action	Detail	Timeline	Outcome	Dept.	Cost
Leading By Example	4	Fulfil the City Corporation's Climate Action Strategy commitments.	Improve the energy efficiency of operational buildings. Maximise the use of renewable energy sources across operational buildings. Accelerate the move to net zero carbon and improving energy efficiency in tenanted buildings. Develop a Square Mile Local Area Energy Plan.	Present to 2030	Reduced emissions from the City Corporation's operations.	IG	✓✓✓
	5	Reduce emissions from the City Corporation's fleet.	Increase the proportion of electric, hybrid and other low emission / zero tailpipe emission vehicles in the fleet. Work to reduce the size of the corporate fleet. Maintain the Freight Operator Recognition Scheme Gold accreditation.	Present to 2030 Annually	Reduced emissions from the City Corporation's fleet.	Env CHB	✓✓✓
	6	Deliver the City Corporation Transport Strategy.	Prioritising the needs of people walking, making streets more accessible and delivering a high-quality public realm. Making the most efficient and effective use of street space by reducing motor traffic, including the number of delivery and servicing vehicles. Enabling more people to choose to cycle by making conditions for cycling	Present to 2030	Reduced emissions from transport across the Square Mile.	Env	✓✓✓

			in the Square Mile safer and more pleasant. Encouraging and enabling the switch to zero tailpipe emission capable vehicles.				
	7	Encourage the use of zero tailpipe emission vehicles through the City Corporation supply chain.	Apply a menu of options for air quality to assist in reducing air pollution from major contracts. Review the menu of options every two years.	Present to 2030 Biannually	Reduced emissions associated with the City Corporation's contracts.	CHB Env	✓
	8	Deliver the Clean City Awards and Considerate Contractors Environment Award Schemes.	Reward businesses that take positive action to improve air quality through an annual award. Reward building and civil engineering projects that demonstrate exceptional or innovative practice	Annually	Reduced emissions from City businesses.	Env	✓✓
	9	Work with external organisations to promote the proposals in the Emissions Reduction (Local Authorities in London) Bill.	Work with Defra to highlight the need for additional powers for local authorities. Respond to consultations promoting the proposals in the Bill.	Present to 2030	Closed gap in regulatory powers for tackling sources of pollution in the Square Mile.	Env	✓✓

		Action	Detail	Timeline	Outcome	Dept.	Cost
Collaborating With Partners	10	Work with designated and non-designated Air Quality Partners to collaborate on policies and measures to improve air quality across the Square Mile, and Greater London.	Support the activities of the Mayor of London air quality department. Monitor air pollution along the river and support the delivery of the Port of London Air Quality Strategy. Support the Environment Agency with the implementation of the Medium Combustion Plant Directive. Work with Cross River Partnership on collaborative projects. Work on joint projects with the Central London Air Quality Cluster Group. Chair quarterly meetings of the London Air Quality Steering Group.	Present to 2030	Collaboration and the development and implementation of cross London policies for improving air quality.	Env	✓✓
	11	Support research into measures to improve air quality and into the health impacts of air pollution.	Identify priority areas for research to improve air quality and communicate the latest research through membership of APRIL. Investigate the impact of tall buildings on levels of air pollution at street level Subject to funding, commission and support research that aids the understanding and improvement of air quality.	Present to 2030	Improved understanding of how air pollution behaves in a complex urban environment. Increased understanding and support for new technologies and other solutions for reducing air pollution	Env	✓✓

		Action	Detail	Timeline	Outcome	Dept.	Cost
Reducing Emissions	12	Assess options for reducing annual average concentrations of nitrogen dioxide on all City Corporation roads to below 40µg/m^3.	Identify all roads that breach the national standard for nitrogen dioxide. Assess options for reducing emissions of air pollutants to ensure compliance.	2025 - 2027	All roads in the Square Mile that meet the annual average national standard of 40µg/m^3.	Env	✓✓✓
	13	Take action to discourage unnecessary vehicle idling and enforce anti-idling policies across the Square Mile.	Issue Penalty Charge Notices for unnecessary vehicle engine idling. Respond to complaints and erect signs in hot spot areas. Provide awareness training to advise drivers to switch off when parked. Work with London boroughs on pan London action to deal with unnecessary engine idling	Present to 2030	Reduced emissions from unnecessary vehicle idling in the Square Mile. Raised awareness amongst drivers and increased support for anti-idling policy.	Env	✓
	14	Ensure City Corporation parking charges favour low and zero tailpipe emission vehicles in the Square Mile.	On-street and off-street parking charges applied based on vehicle emissions.	Present to 2030	Parking policies that favour low and zero emission vehicles.	Env	✓
	15	Assess planning applications for air quality impact.	Review all relevant planning applications for air quality impact. Require air quality assessments for major developments. Encourage the use of non-combustion technology. Apply stringent emission standards for combustion plant where non-combustion plant is not feasible.	Present to 2030	New developments that do not have a negative impact on local air quality.	Env	✓

		Require all new developments to be Air Quality Neutral as a minimum, and Air Quality Positive where relevant. Require developers to consider alternatives to diesel standby generators. Update the Supplementary Planning Document for Air Quality to reflect the latest guidance.	2025			
16	Ensure emissions from construction sites are minimised.	Ensure compliance with the Code of Practice for Deconstruction and Construction Sites. Inspect construction sites and respond to complaints.	Present to 2030	Reduced emissions from construction activities and plant.	Env	✓
17	Manage and mitigate emissions from non-road mobile machinery.	Undertake inspections of all sites to ensure compliance with the NRMM Low Emission Zone. Support the Mayor of London NRMM Beyond Construction project to understand emissions from NRMM used for roadworks and licenced events.	Present to 2030 2025 - 2026	Reduced emissions associated with construction and demolition operations.	Env	✓
18	Reduce emissions associated with standby power generation across the Square Mile.	Work with building owners to investigate options for reducing emissions and an alternative means of providing emergency back-up power.	2025 - 2026	Reduced emissions from generators.	Env	✓
19	Develop and implement a plan to mitigate emissions of $PM_{2.5}$ from commercial cooking.	Run an awareness raising campaign for mobile food vendors and commercial cooking establishments.	2025 - 2026	Reduced emissions of particulate pollution associated with commercial cooking.	Env	✓

			Work with neighbouring authorities on proposals to mitigate emissions from commercial cooking operations.				
	20	Ensure that where possible chimney stacks terminate above the height of the nearest building.	Where combustion plant is installed, good dispersion of emissions will be required.	Present to 2030	Emissions from chimney stacks have minimal impact on ground level concentrations of air pollution.	Env	✓
	21	Ensure that the City Corporation's prescribed processes comply with emission control requirements.	Carry out risk-based inspections of prescribed processes in the Square Mile.	Present to 2030	Regulated operations that comply with the requirements of the legislation.	Env	✓
	22	Promote and enforce the requirements of Smoke Control Areas and regulate the sale of solid fuel.	Enforce smoke control provisions and raise awareness of the requirements across the Square Mile. Annual inspections of retail premises that sell solid fuel Engage with food premises to ensure the correct appliances and compliant fuels are used.	Present to 2030	A reduction in the amount of smoke, PM_{10} and $PM_{2.5}$ emitted in the Square Mile.	Env	✓

		Action	Detail	Timeline	Outcome	Dept.	Cost
Public Health and Raising Awareness	23	Prepare annual air quality briefings for colleagues and for the Director of Public Health.	Annual summary report detailing air quality data and action being taken to tackle air pollution.	Annually	Better informed colleagues.	Env	✓
	24	Disseminate information about air quality.	Promote the free CityAir Smart Phone App, the AirText service and Air Aware. Disseminate an e-newsletter. Raise awareness through social media channels. Bi-monthly community engagement at City of London libraries.	Present to 2030 Monthly 2025	Better informed public able to take steps to reduce exposure to poor air quality.	Env	✓
	25	Run events in support of National Clean Air Day.	Run up to three events each year.	Annually	Better informed individuals able to take steps to reduce exposure to poor air quality.	Env	✓
	26	Work with schools and nurseries in the Square Mile.	Monitor air pollution at all schools and nurseries. Provide ongoing advice and support and produce annual information reports for each school and nursery.	Annually	Reduced the impact of air pollution on the health of children in the Square Mile.	Env	✓
	27	Work with businesses to raise awareness of air pollution amongst workers.	Engage with business through the CityAir business engagement programme.	Present to 2030	Raised awareness of air pollution amongst workers in the City of London	Env	✓✓
	28	Raise awareness of the health impacts of poor indoor air quality.	Disseminate a leaflet about indoor air quality. Work with a consortium of 16 London boroughs to investigate residential indoor air quality.	Present to 2030 2024-2026	Improved understanding of how to improve indoor air quality. Identify sources of air pollution in residential properties.	Env	✓

Appendix 2: Air Quality Standards and Guidelines

National Context

In the UK, the responsibility for meeting air quality standards is devolved to the national administrations. The Secretary of State for Environment, Food and Rural Affairs has responsibility for meeting these in England. The Air Quality Standards Regulations 2010[25] contains the relevant standards and compliance date for different pollutants.

Table A2.1: UK Air Quality Standards

Pollutant	Standard	Concentration (mean)	Date to be achieved
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times per year	1-hour	1 January 2010
	40µg/m^3	Annual	1 January 2010
Particulate Matter, PM_{10}	50µg/m^3 not to be exceeded more than 35 times per year	24-hour	31 December 2004
	40µg/m^3	Annual	31 December 2004
Particulate Matter, $PM_{2.5}$	20µg/m^3	Annual	1 January 2020
	20% reduction in concentrations	Annual	Between 2010 and 2020
Ozone	100µg/m^3 not to be exceeded more than 10 times per year	8-hour	31 December 2005

The Environment Act 2021, set additional legally binding targets for $PM_{2.5}$ in England.

Table A2.2: The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023

Pollutant and Metric	Standard	Target Year
$PM_{2.5}$ annual mean concentration	Interim target: 12µg/m^3	2028
$PM_{2.5}$ annual mean concentration	Legally binding target: 10µg/m^3	2040
$PM_{2.5}$ population exposure	Interim target: 22% reduction in exposure compared to 2018	2028
$PM_{2.5}$ population exposure	Legally binding target: 35% reduction in exposure compared to 2018	2040

The Air Quality Standards Regulations[25] requires the UK to complete an air quality assessment annually and to report the findings. The annual Air Pollution in the UK report[26] provides a high-level summary of compliance, against the pollutants stated above and

[25] The Air Quality Standards Regulations 2010 (SI 2010 No. 1001)

[26] Department for Environment, Food and Rural Affairs (2023), Air Pollution in the UK 2022

many others, alongside background information on the UK's legal and policy framework and how air pollution is assessed.

For further information about national air quality legislation please see footnotes[27] and [28].

Local Authority Context

The statutory process for action by local authorities is the Local Air Quality Management (LAQM) Framework. The framework sets local limits for air pollution prescribed in the Air Quality (England) Regulations 2000 (as amended in 2002)[29]. Local authorities are required to assess the quality of ambient air. If it does not comply with the relevant concentrations, an Air Quality Management Area (AQMA) must be declared, and an Air Quality Action Plan (AQAP) published to address the areas of poor air quality. This strategy fulfils the role of an AQAP.

In London, the Greater London Authority (GLA) provides technical and policy context to all London boroughs plus the City Corporation. This London specific guidance is called London Local Air Quality Management (LLAQM) framework.

Table A2.3: LAQM Air Quality Standards in England

Pollutant	Standard	Averaging Period
Nitrogen dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean
	40µg/m^3	Annual mean
Particles (PM_{10})	50µg/m^3 not to be exceeded more than 35 times a year	24-hour mean
	40µg/m^3	Annual mean
Particles ($PM_{2.5}$)	Work towards reducing emissions/concentrations of ($PM_{2.5}$)	Annual mean

International Context

The above sets out the national context in terms of air quality legislation. On an international scale, the World Health Organisation (WHO) sets Air Quality Guidelines (AQGs) for ambient air pollutants[30]. They are designed to offer quantitative health-based recommendations for managing air quality. They are not legally binding, but they do provide an evidence-based tool to inform legislation and policy in WHO Member States, of which the United Kingdom is one. Current air quality targets in the UK are based on the 2005 guidelines.

[27] House of Commons (2024), Air Quality: policies, proposals, and concerns

[28] Department for Environment, Food and Rural Affairs (2023), Air quality strategy: framework for local authority delivery

[29] The Air Quality (England) (Amendment) Regulations 2002 (SI 2002 No. 3043)

[30] World Health Organisation (2021), WHO global air quality guidelines: Particulate matter ($PM_{2.5}$ and PM_{10}), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide

As evidence about the harmful health impacts of air pollution advances, the air quality guidelines are revised. The latest set of guidelines were published in September 2021. The 2021 guidelines are more stringent than those set in 2005 for nitrogen dioxide and particulate matter, $PM_{2.5}$ and PM_{10}. They are presented in Table A2.4 below.

In addition to the guidelines, interim targets have been set to guide the reduction of air pollution towards the achievement of the guidelines. This recognises the difficulty that some countries will face in meeting the new recommendations. The WHO considers there to be no safe limit of exposure to $PM_{2.5}$, and any reduction in $PM_{2.5}$ leads to positive health outcomes.

Table A2.4: World Health Organisation Recommended Air Quality Guidelines

Pollutant	Averaging Period	2021 Guidelines					2005 Guidelines
		Interim Target (µg/m^3)				AQG (µg/m^3)	AQG (µg/m^3)
		1st	2nd	3rd	4th		
Nitrogen dioxide (NO_2)	Annual mean	40	30	20	-	**10**	40
	24-hour*	120	50	-	-	**25**	-
PM_{10}	Annual mean	70	50	30	20	**15**	20
	24-hour*	150	100	75	50	**45**	50
$PM_{2.5}$	Annual mean	35	25	15	10	**5**	10
	24-hour*	75	50	37.5	25	**15**	25
* 99th Percentile, equates to 3-4 exceedance days per year.							

Appendix 3: London Atmospheric Emission Inventory

The Greater London Authority maintains a database of emission sources across London known as the London Atmospheric Emissions Inventory (LAEI). At the time of writing, the latest release of the LAEI has a baseline of 2019 and forecast years of 2025 and 2030. It should be noted that 2025 and 2030 are predictions from the baseline of 2019 and so the data should not be treated as absolute. The forecasts are based upon Mayor of London and wider national policies.

Pollutant Concentrations

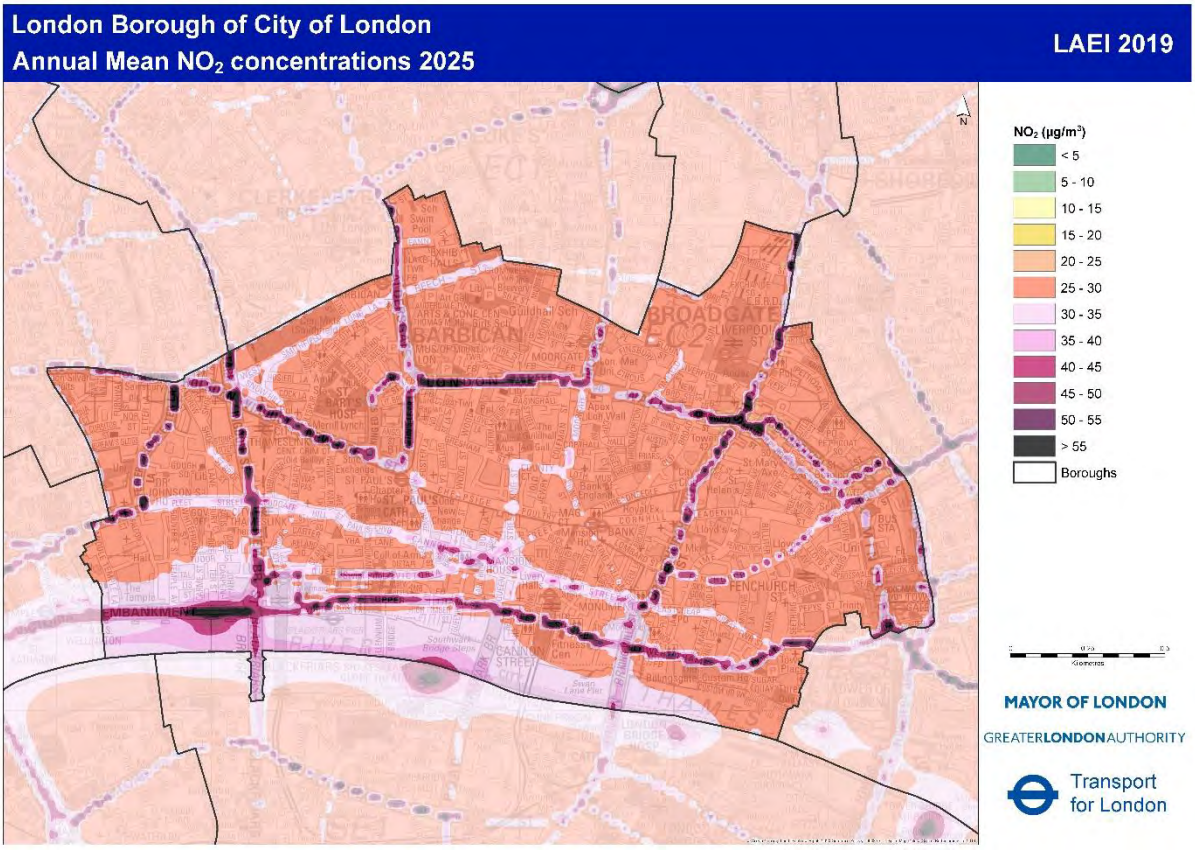
Figures A3.1-A3.3 present computer modelled concentrations of nitrogen dioxide and particulates, PM_{10} and $PM_{2.5}$, across the City of London for 2025 and 2030. Both 2025 and 2030 have been presented as they align with the implementation of this strategy. The forecasts do not include the measures detailed in Appendix 1.

Figure A3.1 shows that the majority of the Square Mile is predicted to be below the nitrogen dioxide annual mean standard of 40µg/m^3 in 2025. The areas that remain in exceedance are the main road links. Away from the transport sources concentrations are between 25 and 30µg/m^3. This is confirmed by monitoring data.

When compared to nitrogen dioxide, there is less geographical variation in modelled concentrations of particulate matter. Figure A3.2 shows that the majority of the Square Mile will have an annual mean concentration for PM_{10} in 2025 of between 15 and 20µg/m^3. This is significantly below the PM_{10} annual mean standard of 40µg/m^3. Slightly elevated concentrations are predicted in the carriageway of busy road links such as Farringdon Street, Bishopsgate, and Upper/Lower Thames Street.

Figure A3.3 shows that the majority of the Square Mile will have an annual mean concentration for $PM_{2.5}$ in 2025 of between 10 and 12.5µg/m^3. Like the PM_{10} concentration maps, slightly elevated concentrations of $PM_{2.5}$ are expected in the carriageway of the busiest roads.

Figure A3.1: Annual Mean Nitrogen Dioxide Concentrations, 2025 and 2030



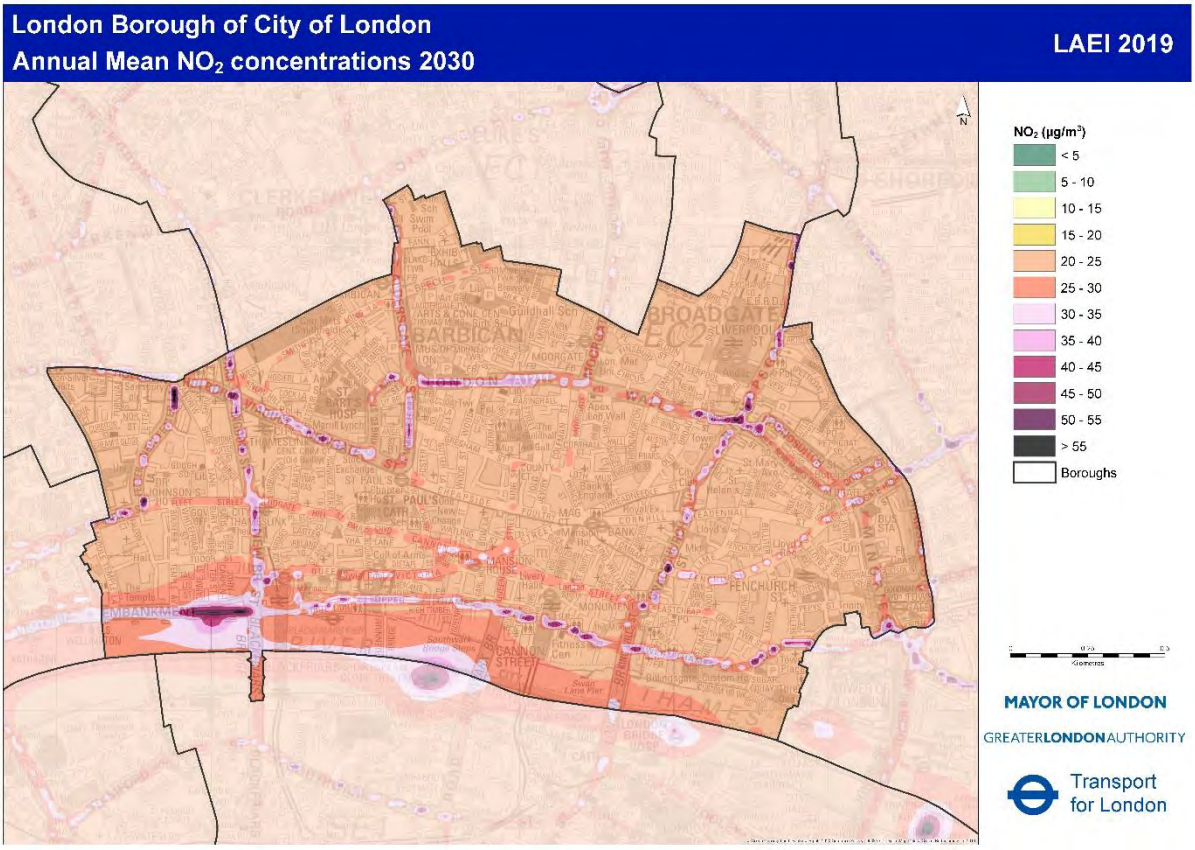
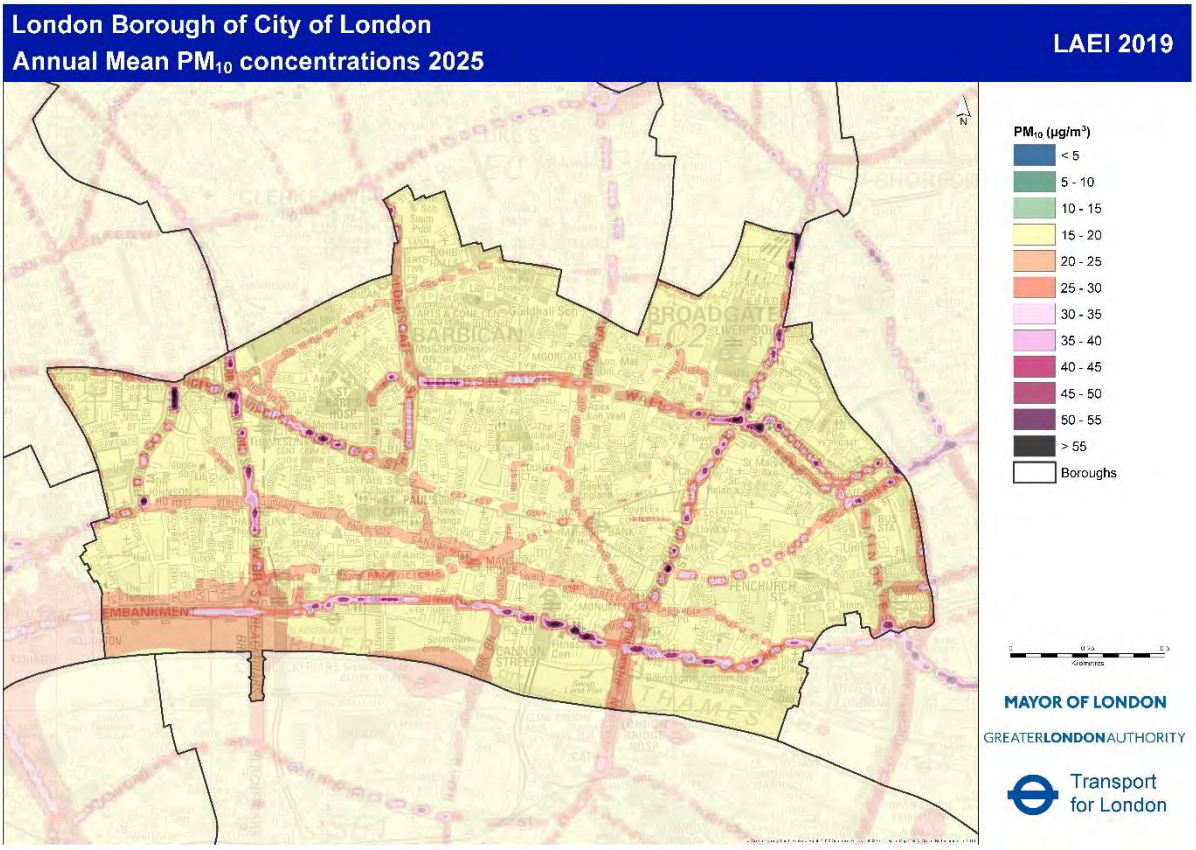


Figure A3.2: Annual Mean PM_{10} Concentrations, 2025 and 2030



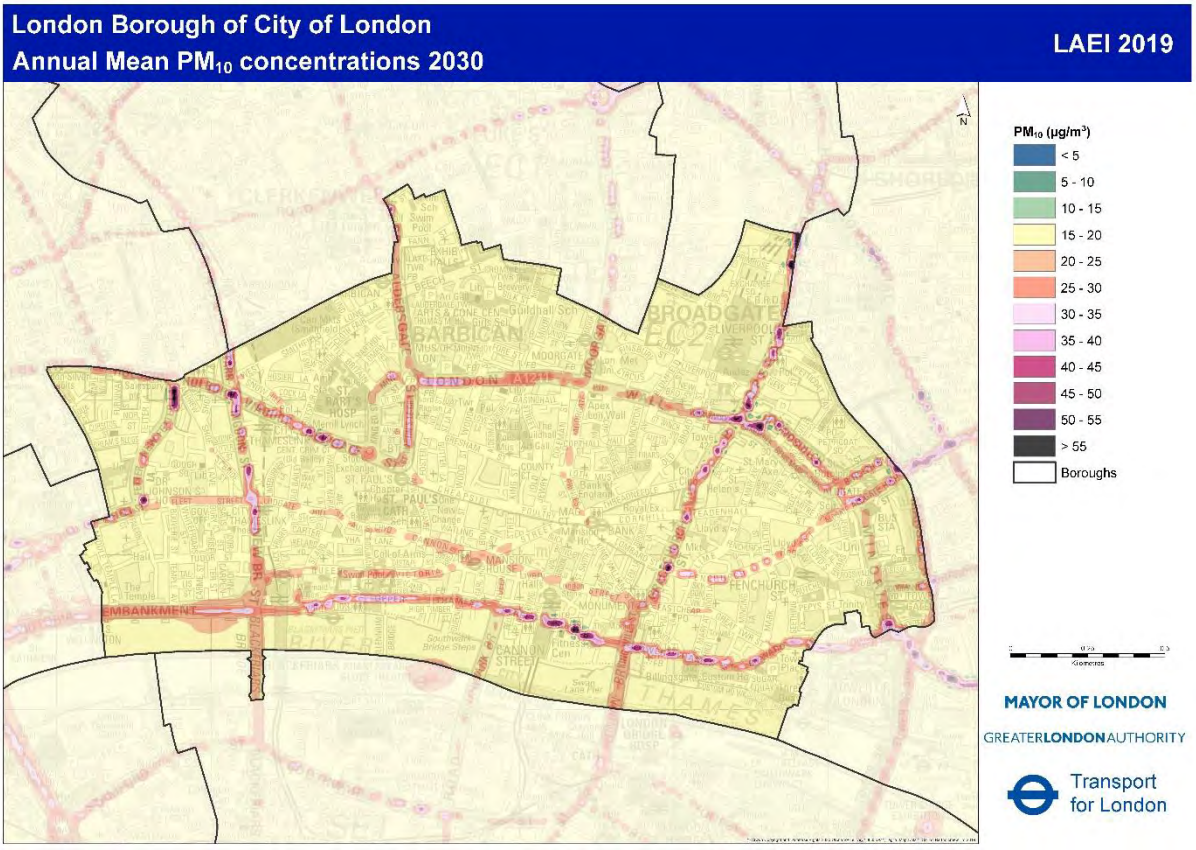
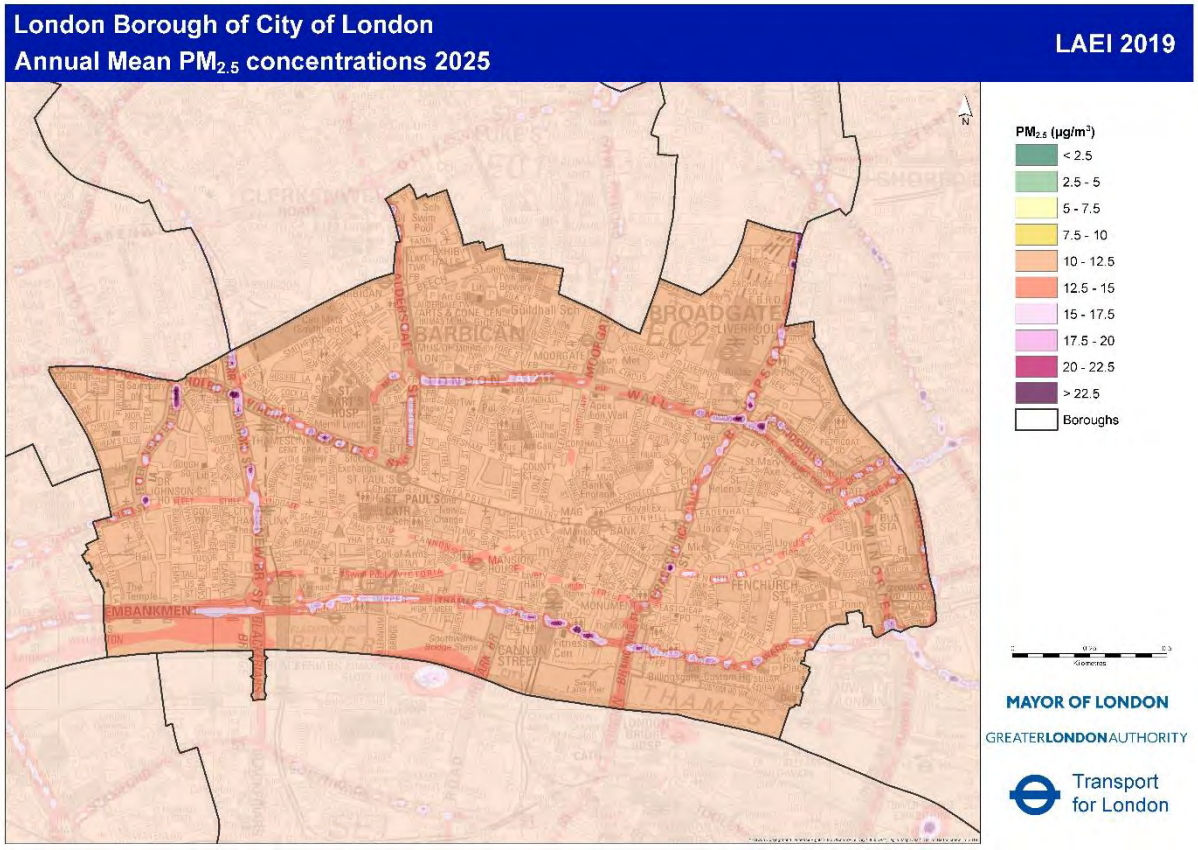
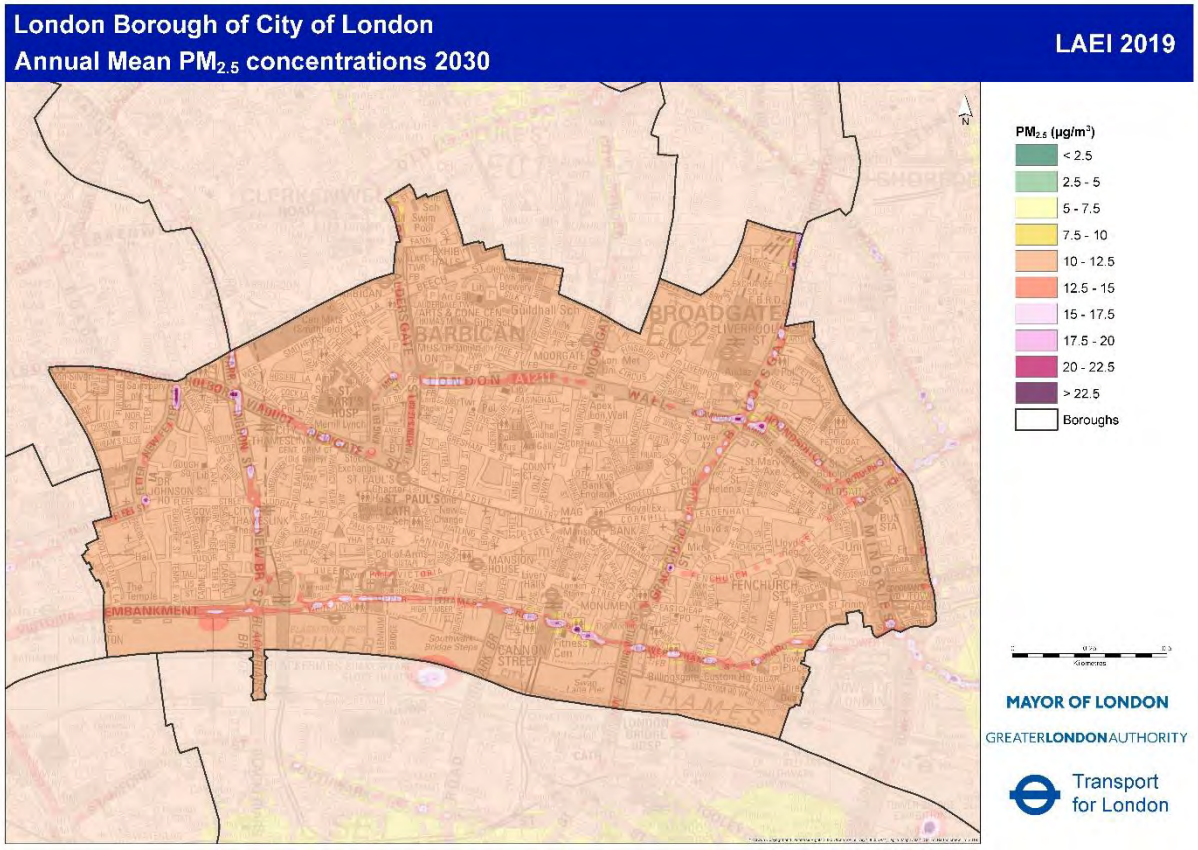


Figure A3.3: Annual Mean $PM_{2.5}$ Concentrations, 2025 and 2030

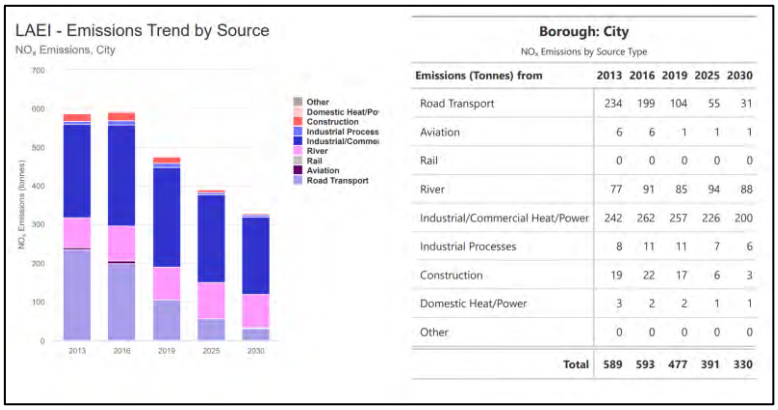




Pollutant Emissions

Figures A3.4-A3.6 show how emissions of nitrogen oxides and particulates originating in the Square Mile have changed from 2013 to 2019 and are predicted to change by 2030. The data allows identification of areas where targeted improvements can be made and is used as a tool to guide action.

Figure A3.4: LAEI Emissions, Nitrogen Oxides

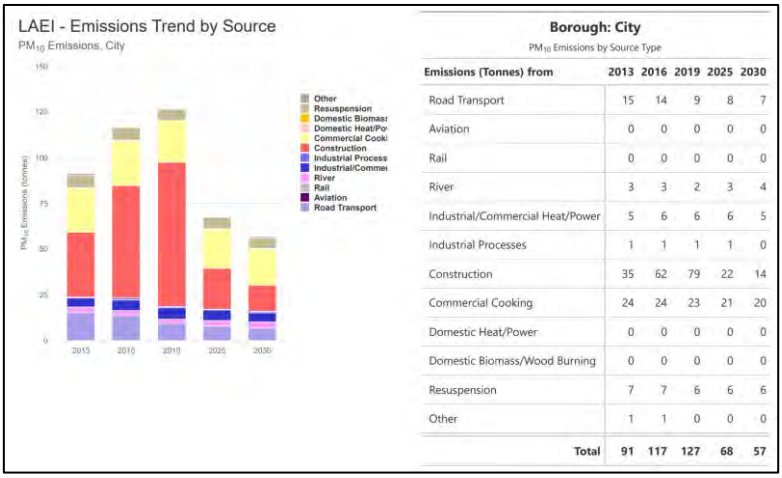


Borough: City

NO_x Emissions by Source Type

Emissions (Tonnes) from	2013	2016	2019	2025	2030
Road Transport	234	199	104	55	31
Aviation	6	6	1	1	1
Rail	0	0	0	0	0
River	77	91	85	94	88
Industrial/Commercial Heat/Power	242	262	257	226	200
Industrial Processes	8	11	11	7	6
Construction	19	22	17	6	3
Domestic Heat/Power	3	2	2	1	1
Other	0	0	0	0	0
Total	**589**	**593**	**477**	**391**	**330**

Figure A3.5: LAEI Emissions, Particulates, PM_{10}

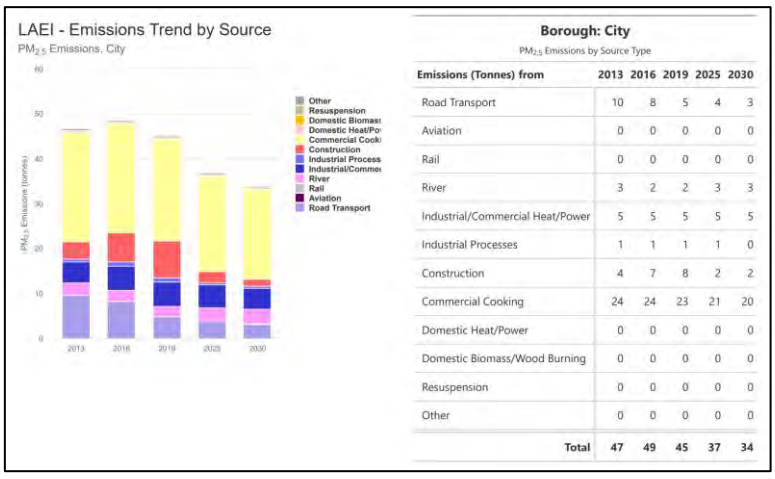


Borough: City

PM_{10} Emissions by Source Type

Emissions (Tonnes) from	2013	2016	2019	2025	2030
Road Transport	15	14	9	8	7
Aviation	0	0	0	0	0
Rail	0	0	0	0	0
River	3	3	2	3	4
Industrial/Commercial Heat/Power	5	6	6	6	5
Industrial Processes	1	1	1	1	0
Construction	35	62	79	22	14
Commercial Cooking	24	24	23	21	20
Domestic Heat/Power	0	0	0	0	0
Domestic Biomass/Wood Burning	0	0	0	0	0
Resuspension	7	7	6	6	6
Other	1	1	0	0	0
Total	**91**	**117**	**127**	**68**	**57**

Figure A3.6: LAEI Emissions, Particulates, $PM_{2.5}$



Borough: City

$PM_{2.5}$ Emissions by Source Type

Emissions (Tonnes) from	2013	2016	2019	2025	2030
Road Transport	10	8	5	4	3
Aviation	0	0	0	0	0
Rail	0	0	0	0	0
River	3	2	2	3	3
Industrial/Commercial Heat/Power	5	5	5	5	5
Industrial Processes	1	1	1	1	0
Construction	4	7	8	2	2
Commercial Cooking	24	24	23	21	20
Domestic Heat/Power	0	0	0	0	0
Domestic Biomass/Wood Burning	0	0	0	0	0
Resuspension	0	0	0	0	0
Other	0	0	0	0	0
Total	**47**	**49**	**45**	**37**	**34**

Appendix 4: Monitoring Data, Further Assessment

The automatic and passive monitoring sites used for assessing long term changes over 15-years, are detailed in Table A4.1 and Table A4.2.

Table A4.1: Automatic Monitoring Sites

Site Name	Site ID	Site Type	Pollutants Monitored
Farringdon Street	CT2	Roadside	$PM_{2.5}$
The Aldgate School*	CT3	Urban Background	NO_2, PM_{10} $PM_{2.5}$
Beech Street	CT4	Roadside	NO_2, PM_{10}
Walbrook Wharf**	CT6	Roadside	NO_2
Upper Thames Street***	CT8	Roadside	PM_{10}
Guildhall	CT9	Urban Background	O_3
Bell Wharf Lane	CTA	Roadside	NO_2, PM_{10}

Notes:

* Previously known as Sir John Cass Foundation Primary School.

** Walbrook Wharf was decommissioned in January 2023 with the NO_x analyser relocated to Bell Wharf Lane.

*** Upper Thames Street was decommissioned in September 2021 with the PM_{10} analyser relocated to Bell Wharf Lane in May 2022.

Table A4.2: Long-term Passive Nitrogen Dioxide Monitoring Sites

Site Name	Site ID	Site Type
St Bartholomew's Hospital	CL5	Urban Background
Queen Victoria Street	CL38	Roadside
Fleet Street	CL39	Roadside
Mansell Street	CL40	Roadside
Barbican Centre, Speed House	CL55	Urban Background

Nitrogen Dioxide

Annual Mean Standard

A comparison of nitrogen dioxide annual mean concentrations between 2009 and 2023 is detailed in Table A4.3. Over a 15-year period, significant reductions have been experienced at all sites. The greatest reduction in concentrations between 2009 and 2023 was 79µg/m^3 at Walbrook Wharf, and in terms of percentage reduction the greatest was 63% at the Aldgate School.

Table A4.3: 15-year Reduction of Nitrogen Dioxide Concentrations

Site ID	Site Type	Annual Mean		Concentration Reduction	
		2009	2023	µg/m³	%
CL5	Urban Background	42.7	33.4	9.3	22%
CL38	Roadside	66.9	27.1	39.8	59%
CL39	Roadside	102.3	37.9	64.4	63%
CL40	Roadside	66.8	25.6	41.2	62%
CL55	Urban Background	42.6	18.7	23.9	56%
CT3	Urban Background	56	21	35.0	63%
CT4	Roadside	90	36	54.0	60%
CT6	Roadside	131	52 (2022)	79.0	60%
CTA	Roadside	-	32	-	-

Over the 15-year period, the average reduction at roadside sites was 55.7µg/m^3, compared to an average reduction of 18.0µg/m^3 at urban background locations. This average reduction can be seen in Figure A4.3. When compared against national nitrogen dioxide average concentrations, although concentrations have reduced significantly, average roadside and urban background concentrations have always been higher than national averages.

Figure A4.1: Annual Mean Nitrogen Dioxide, 2009 to 2023: Automatic Monitoring Sites

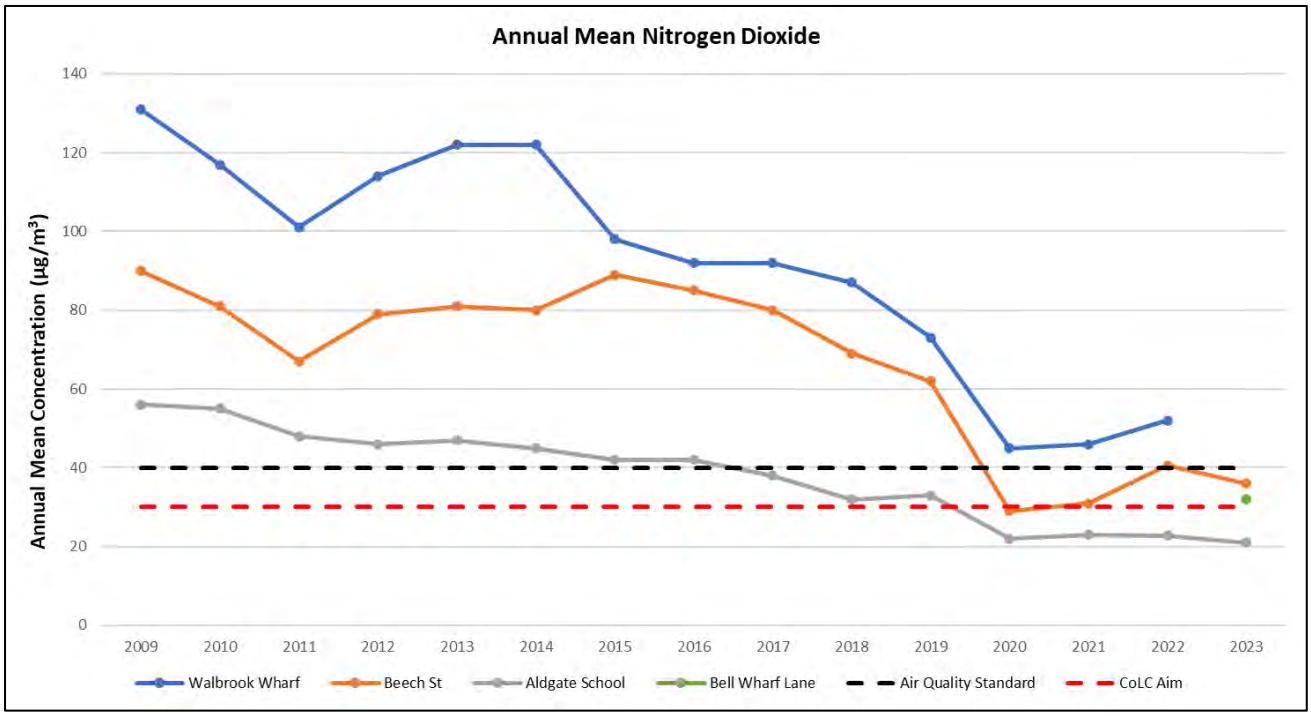


Figure A4.2: Annual Mean Nitrogen Dioxide, 2009 to 2023: Long-term Passive Sites

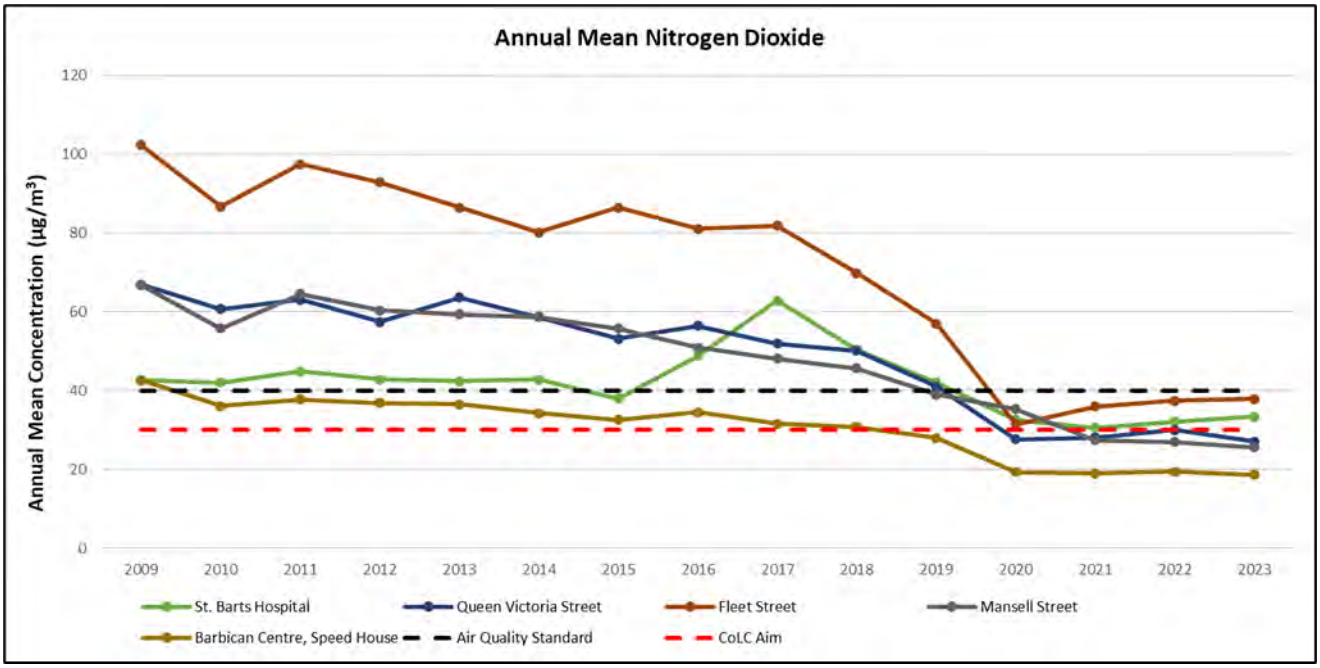
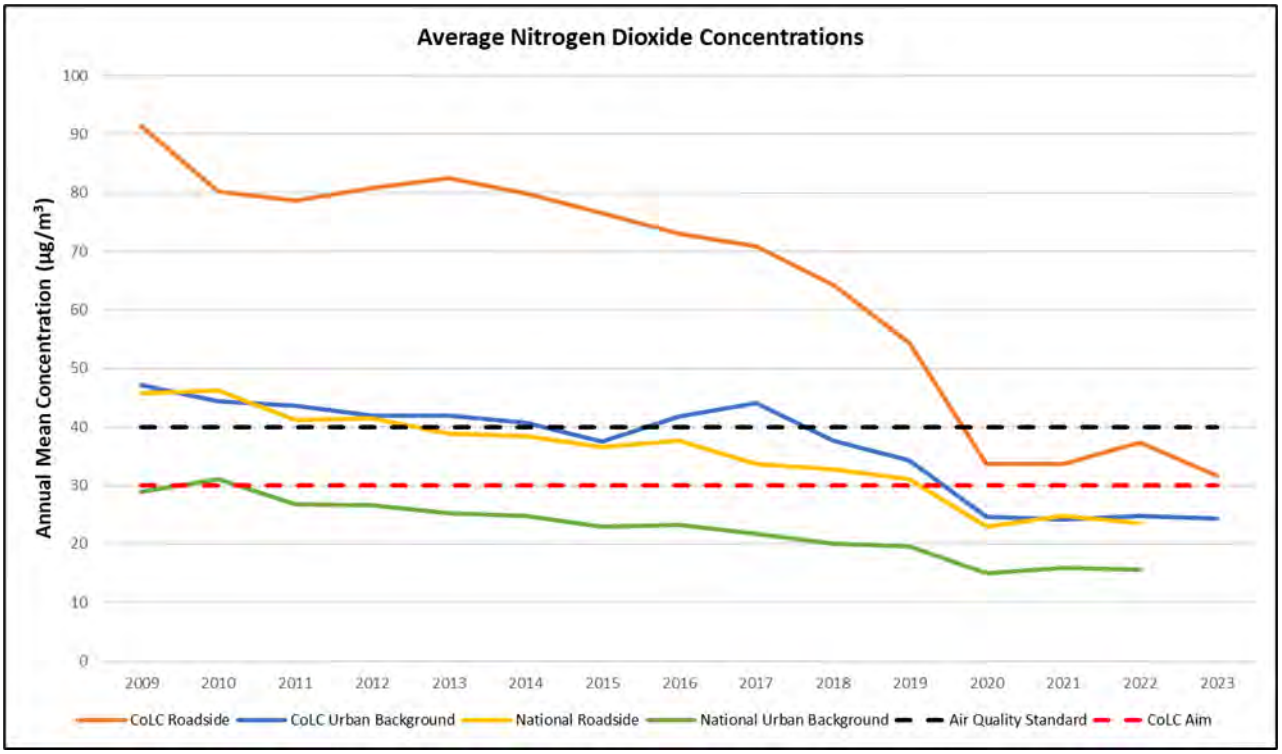


Figure A4.3: Average Annual Mean Nitrogen Dioxide Concentrations, 2009 to 2023: City of London and National Trends

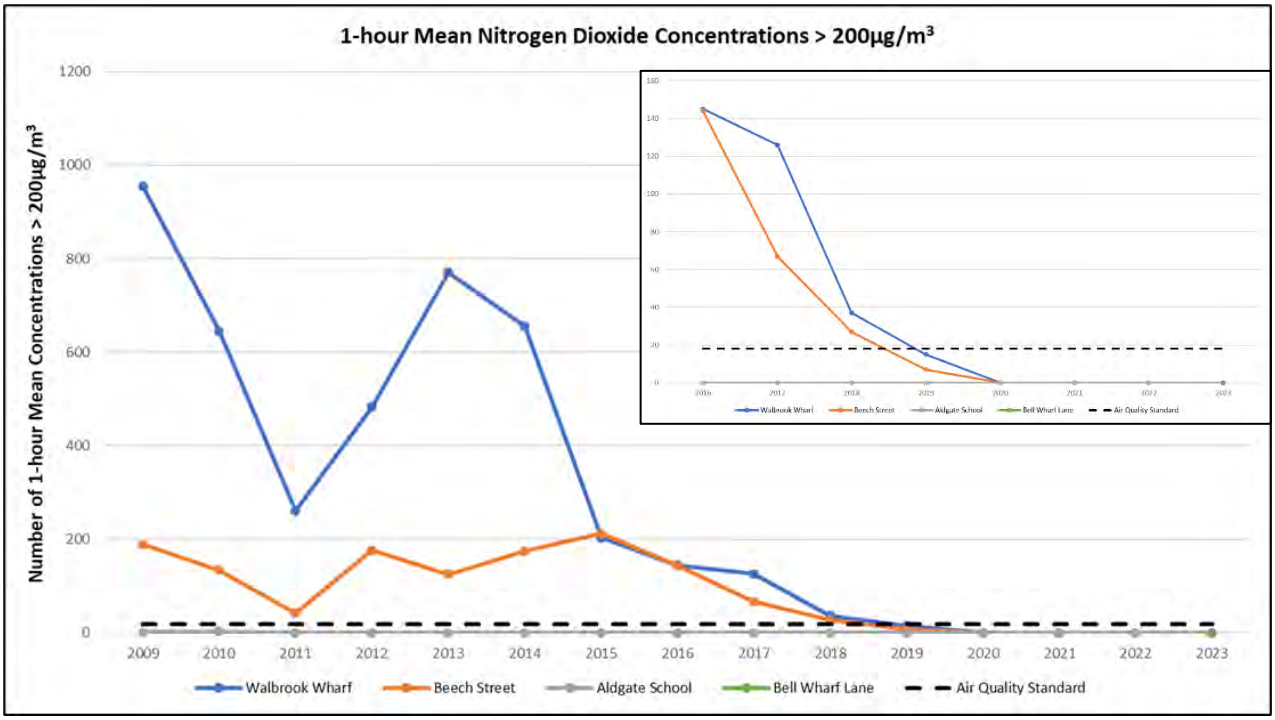


One Hour Standard

In addition to the annual mean standard for nitrogen dioxide, the 1-hour air quality standard of 200µg/m^3 is also assessed in the Square Mile. To achieve compliance there must be no more eighteen instances of the 1-hour concentration in a year. To accurately assess compliance against the 1-hour standard, automatic analysers are used to assess hourly monitoring data, but due to their passive nature, diffusion tubes are not. As per LLAQM guidance[31], a proxy annual mean concentration of 60µg/m^3 can be used to predict if there is likely to be an exceedance of the 1-hour standard at a passive nitrogen dioxide monitoring site.

Figure A4.4 details 1-hour mean concentrations greater than 200µg/m^3 at the automatic monitoring sites. There has been a significant reduction achieved at both roadside monitoring locations. In 2009 there were almost 1,000 1-hour concentrations greater than 200µg/m^3 monitored at Walbrook Wharf, the site achieved compliance in 2019. The Aldgate School has continually reported compliance with the 1-hour standard, and all automatic sites have reported compliance since 2019.

Figure A4.4: 1-hour Mean Nitrogen Dioxide, 2009 to 2023



[31] Mayor of London (2019), London Local Air Quality Management (LLAQM): Technical Guidance 2019 (LLAQM.TG (19))

Particulate Matter, PM_{10}

Annual Mean Standard

Over a 15-year period, significant reductions in annual mean PM_{10} concentrations have been experienced at all sites, primarily at roadside monitoring locations. Annual mean concentrations at Upper Thames Street and Beech Street have declined by 17µg/m3 and 13µg/m3 respectively, and experienced similar percentage reductions of 47% and 46%. The Aldgate School, an urban background monitoring location, experienced a smaller overall reduction in terms of concentration and as a percentage over the 15-year monitoring period of 3µg/m3 and 17%.

Over the 15-year period, there was only one exceedance of the 40µg/m^3 annual mean air quality standard at Upper Thames Street in 2015. In addition, the aim of achieving an annual mean of 15µg/m^3 was met at Beech Street in 2021 and at The Aldgate School in 2023.

24-Hour Standard

In addition to the annual mean standard for PM_{10}, the 24-hour air quality standard of 50µg/m^3 applies. To achieve compliance there must be no more thirty-five instances of the 1-hour concentration in a year. Figure A4.6 details instances of 24-hour mean concentrations greater than 50µg/m^3. There has been a significant reduction at both roadside locations in the time-period, and there have been no instances of non-compliance since 2016. The Aldgate School has continually reported compliance with the 24-hour standard for the 15-year period.

Figure A4.5: Annual Mean PM_{10}, 2009 to 2023

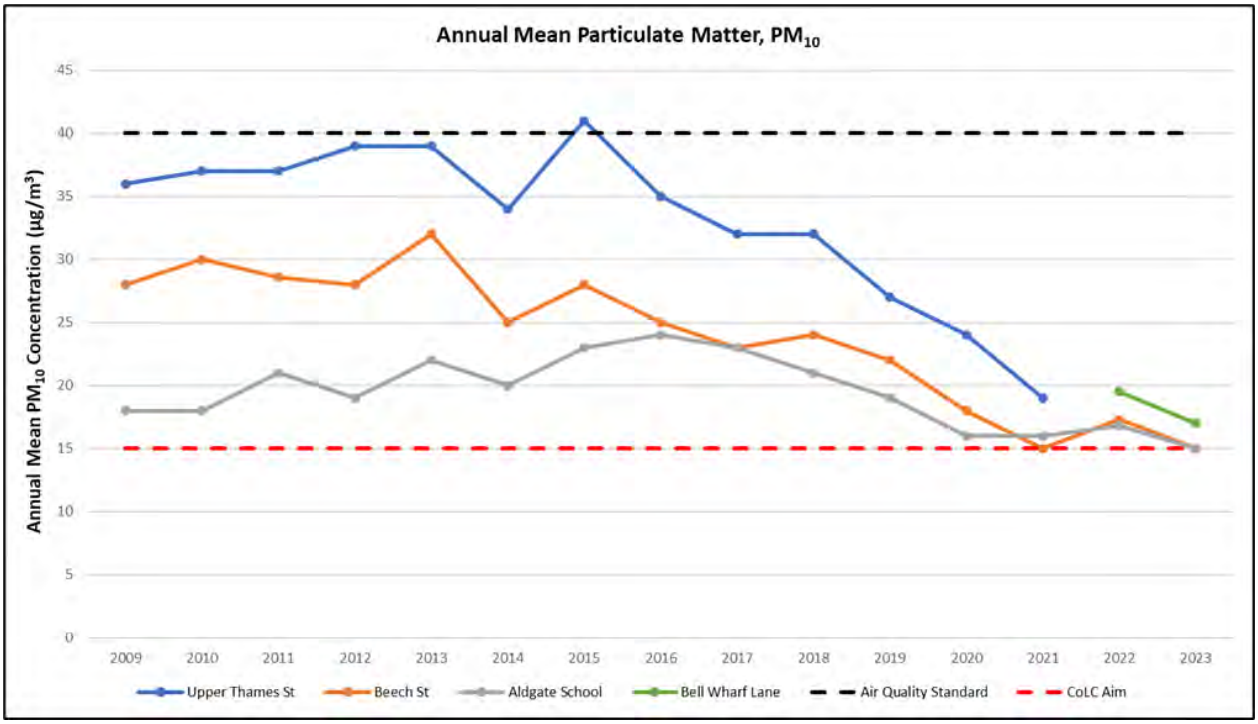
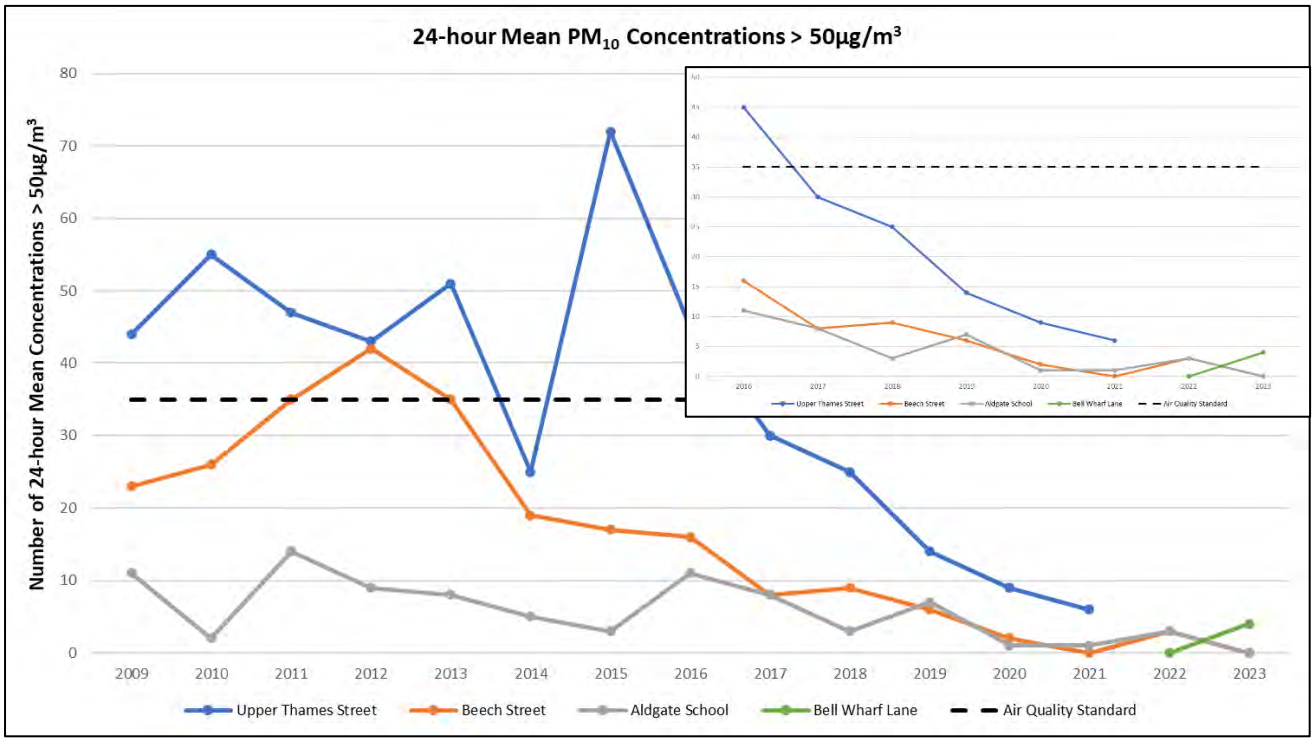


Figure A4.6: 24-hour Mean PM_{10}, 2009 to 2023



Particulate Matter, $PM_{2.5}$

The $PM_{2.5}$ analysers at both Farringdon Street and the Aldgate School were installed in 2016, therefore all results for the two sites have been presented in Figure 2.6 in the main report. The annual mean concentrations for the two monitoring sites do not vary significantly, with the greatest difference between the two sites being 4µg/m^3 in 2018.

Compared to nitrogen dioxide and PM_{10}, $PM_{2.5}$ has a smaller variation between a roadside and urban background site. This is partly due to concentrations of $PM_{2.5}$ being lower than other pollutants, and due to increased dispersion of $PM_{2.5}$ rather than a simple source and concentration relationship.

Ozone

Ozone has been measured at the Guildhall since March 2022. Although this is not a requirement through the LLAQM framework, it is measured as it has an impact on health at high levels.

Ozone is primarily a secondary pollutant, therefore there are no major emission sources in the Square Mile. Most of the ozone is instead formed in the air from reactions between other pollutants. Pollutants photochemically react outdoors in the presence of sunlight to produce ground-level ozone. Similar reactions can occur with nitrogen oxides as a precursor.

In addition to the annual mean, a comparison against the 8-hour air quality standard is presented in Table A2.1.

Table A4.4: Ozone Monitoring Results

	2022	2023
Annual Mean (µg/m^3)	54.1	52.5
100 µg/m^3 not to be exceeded more than 10 times per year	22	22

Appendix 5: Air Quality Partner Commitments

The Environment Act 2021[32] introduced the concept of Air Quality Partners (AQPs) into the LAQM framework. AQPs are public bodies that are required to assist local authorities with reasonable requests and contribute to AQAPs.

The City Corporation has identified three AQPs:

1. The Environment Agency;
2. The Port of London Authority;
3. The Mayor of London:
    a) The Greater London Authority; and
    b) Transport for London

Engagement with these organisations has taken place to ascertain the actions they are currently taking to reduce pollutant emissions from the operations that they are responsible for. The information received from each AQP is summarised overleaf. Active engagement will continue with each AQP throughout the delivery of the strategy.

[32] Environment Act. (c.30). London: The Stationery Office.

Table A5.1: Air Quality Partner Information

The Environment Agency (EA)

- We continue to implement the requirements for the Medium Combustion Plant (MCP) Directive and domestic legislation of Specified Generators (SG). These will apply MCP Directive Annex II Emission Limits; applied to new and existing combustion plant depending on the date they are put into operation and the thermal capacity. Compliance with Emission Limit Values for existing MCP with a rated thermal input greater than 5MWth is the 1 January 2025. For existing MCP with a rated thermal input less than 5MWth, which is more likely to be plant located within the City of London and its surrounding, the compliance date is 1 January 2030.

- MCP that are also Specified Generators may have stricter Emission Limits than specified in the MCP Directive Annex II or Schedule 25B EPR where they are necessary to ensure Air Quality Standards are met. In the City of London this situation may apply to reciprocating engines providing combined heat and power to residential and commercial premises.

- We have implemented BAT for new standby back-up generation on Part A (1) Installations and may require the use of abatement (beyond BAT) for large arrays of diesel back-up standby, such as Data Centres, to manage short term peak NO_2 immediately adjacent to these regulated facilities. Implementation of the Waste Incineration BAT conclusions has reduced emissions of NO_2 from existing waste incineration plant by at least 10% by the end of last year, which will reduce the transboundary contribution from incineration plant within the capital and its surroundings. This work will have less reduction on emissions of $PM_{2.5}$ as Waste Incineration Plant are low emitters of particulate matter due to the high capture efficiency of flue gas abatement systems.

- In terms of plant that are regulated by the EA the following is relevant to the Square Mile:
  - There are three issued permits for MCP/SG, all of which are standard rules and have been appropriately consulted on
  - There are no new or current MCP applications in our systems located within the City of London boundary or within 800m of it.
  - There is one Industrial Emissions Directive Environmental Permitting Regulations installation permit of aggregated MCP to >=50MWth (UBS AG Broadgate EPR/ZP3238DK) which was subject to Best Available Techniques and consultation.

The Port of London Authority (PLA)

- The PLA has an Air Quality Strategy (Air Quality Strategy for the Tidal Thames: June 2020) which details an action plan for reducing emissions on the Thames. Since the 2018 and 2020 strategies were published, 14 actions have been completed and 13 are still ongoing, with the aim of raising awareness, knowledge sharing and monitoring emissions on the river. More information on the progress of the previous strategy actions will be detailed in the upcoming 2024 strategy update.

- The PLA conduct quarterly and annual river-side monitoring of the river from London Gateway to Richmond. This is done via real-time monitoring and passive NO_2 monitoring. Monitoring allows us to track progress against our PM and NO_x emission reduction targets which reflect the objectives of the Clean Maritime Plan, Clean Air Strategy and Climate Change Act 2008:
  - 20% reduction by 2026
  - 40% reduction by 2030
  - 50% reduction by 2040
  - 80% reduction by 2050

- The updated Air Quality Strategy is to be published in 2024 with updated actions that plan to deliver emission reduction river wide.

- In 2024 the PLA's Net Zero River Plan will be published, which has been created with the input of river operators on the Thames. It is an action plan to facilitate the achievement of net zero ambitions on the river, working in partnership with stakeholders.

- The PLA fleet currently consists of 29 vessels which have been involved various trials to demonstrate the effectiveness of certain technologies to reduce emissions to air.

Recent changes to the PLA fleet include:	
In 2022 a workboat vessel was retrofitted with selective catalytic reduction (SCR) technology to test pre and post emissions. Results showed a reduction in both NO_x and PM emissions.	Following a successful trail in 2021, the whole of the PLA fleet transition to hydrotreated vegetable oil (HVO) fuel in 2022 instead of diesel fuel.

Future changes to the PLA fleet include:	
The Director of Marine Operations is currently conducting a fleet review. This review will consider the sustainability of the current fleet.	Funding has been secured to operate an unmanned hydrogen fuelled survey vessel. It is estimated that this will be part of the fleet by 2025.

- Internally, we are exceeding our targets of emission reduction thanks to our transition to biofuel (HVO) in 2022. This transition reduced our scope 1 emissions by 50%, putting us two years ahead of our target schedule. Our river-side monitoring network and newly developed Maritime Emissions Platform by RightShip is allowing us to track against our targets more effectively from 2023. By 2026 we do aim to hit our targets of emission reduction of 20% NO_x and PM port wide. The Net Zero River Plan and Thames Vision are our action plans for achieving our targets outlined for beyond 2026, with the goal of aiding our operators reach their internal net zero targets as well as the overarching government target of net zero by 2050.

The Greater London Authority (GLA) and Transport for London (TfL)

- The Mayor's Transport Strategy sets the ambitious target of 80% of trips made by sustainable modes such as public transport, cycling and walking by 2041. The Mayor and TfL will continue to invest in making it easier and safer to travel by these modes, which will also have air quality benefits.

- Between 2016 and 2020, TfL replaced older buses and new buses, and retrofitted mid-life buses with new exhaust systems meeting Euro VI emissions. Since January 2021, the entire bus fleet has met or exceeded this standard. Upgrading the fleet to meet the latest Euro VI emissions has significantly reduced the contribution from TfL buses to transport-related NO_x emissions, with the proportion of transport NO_x emissions coming from TfL's buses reducing from 15% to around 4%.

- TfL has been introducing zero-emission buses from 2016 onwards and there are now over 1,300 zero-emission buses in the fleet that operate across London. TfL has a target of converting the entire bus fleet to zero-emission no later than 2034 or accelerate to 2030 with additional government funding. Most buses operate in London for between 10-14 years. After this time, existing vehicles leave the fleet (once a route contract has ended) and new zero-emission buses will join.

- There are 35 current bus routes that pass through the Square Mile. Of these routes, 97% operate a mix hybrid and fully electric vehicles and 17% of routes operate solely fully electric vehicles. Additionally, it is planned for the diesel route and three hybrid routes to become fully electric in 2024/25.

Vehicle Type	Routes
Diesel	1
Hybrid	27
Electric/Hybrid	1
Electric	6

Engine Type	Routes
Euro V+SCRT	5
Euro V+SCRT / Euro VI	2
Euro VI	21
Electric / Euro VI	1
Electric	6

- TfL contracted bus operators are responsible for maintaining the vehicles they operate. TfL monitors air quality in London but does not monitor individual bus emissions as buses have been type approved by the Vehicle Certification Agency to the latest Euro standards and have On Board Diagnostics (OBD) for monitoring in service by the DVSA.

- Currently 8,419 licensed taxis are zero emission capable (ZEC), which accounts for over half of the fleet. Since January 2018, all vehicles new to licencing have been required to be ZEC. As a result of the specified age limits for taxi vehicles, which is set out as a maximum of 15 years for Euro 6 vehicles, by January 2033 at the latest the whole fleet will be ZEC.

- For more information regarding the schemes delivered by the Mayor of London, please visit the GLA Air Quality website, Mayors Transport Strategy and London Environment Strategy. These strategies outline the ambitious work delivered by the Mayor to improve air quality across London.

Appendix 6: Air Quality Policies in the Draft City Plan 2040

Draft Policy HL2: Air Quality

1. Developers will be required to effectively manage the impact of their proposals on air quality. Major developments must comply with the requirements of the Air Quality SPD for Air Quality Impact Assessments (AQIAs);

2. Development that would result in a worsening of the City's nitrogen dioxide or PM_{10} and $PM_{2.5}$ pollution levels will be strongly resisted;

3. All developments must be at least Air Quality Neutral. Developments subject to an EIA should adopt an Air Quality Positive approach. Major developments must maximise credits for the pollution section of the Building Research Establishment Environmental Assessment Method (BREEAM) assessment relating to on-site emissions of oxides of nitrogen (NO_x);

4. Developers will be expected to install non-combustion energy technology where available

5. A detailed AQIA will be required for combustion based low carbon technologies (e.g. biomass, combined heat, and power), and any necessary mitigation must be approved by the City Corporation;

6. Developments that include uses that are more vulnerable to air pollution, such as schools, nurseries, medical facilities, and residential development, will be refused if the occupants would be exposed to poor air quality. Developments will need to ensure acceptable air quality through appropriate design, layout, landscaping, and technological solutions;

7. Construction and deconstruction and the transport of construction materials and waste must be carried out in such a way as to fully minimise air quality impacts possible. Impacts from these activities must be addressed within submitted AQIAs. All developments should comply with the requirements of the London Low Emission Zone for Non-Road Mobile Machinery;

8. Air intake points should be located away from existing and potential pollution sources (e.g. busy roads and combustion flues). All combustion flues should terminate above the roof height of the tallest part of the development to ensure maximum dispersion of pollutants and be at least three metres away from any publicly accessible roof spaces.

Technical Glossary

Annual mean: The average concentration of a pollutant measured over one year.

1-hour mean: The average concentration of a pollutant measured over one hour.

8-hour mean: The average concentration of a pollutant measured over eight hours.

24-hour mean: The average concentration of a pollutant for a single day.

µm: Micrometer, equal to one millionth of a meter.

µg: Microgram, equal to one millionth of a gram.

µg/m^3: Microgrammes per cubic metre. A measure of concentration in terms of mass per unit volume. A concentration of 1µg/m^3 means that one cubic metre of air contains one microgram of pollutant.

kW: Kilowatts, unit of electric power.

MW: Megawatt, equal to 1,000 kilowatts.

MWth: Megawatt thermal, unit of thermal power.

Emission: The release, direct or indirect, of an air pollutant into the atmosphere.

Concentration: The amount of a particular air pollutant in the air.