

# **City of London**

## **Draft Air Quality Strategy**

### **2015 – 2020**



**November 2014**

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This report will be available on the City of London web site <http://www.cityoflondon.gov.uk/air>

## **Foreword**

The quality of air that we breathe in the Square Mile is at a level that is considered to be harmful to health. This is despite a wide range of actions in recent years to reduce levels of pollution. It is estimated that across London 4,000 people each year have their lives cut short by being exposed to London's air. Air quality targets, particularly for the pollutant nitrogen dioxide, are not being met.

This draft air quality strategy outlines steps that we will take at the City of London Corporation between 2015 and 2020 to improve air quality in the Square Mile. We welcome your comments on the contents before 31 January 2015. It builds on actions contained within the City of London Air Quality Strategy 2011.

This document details how we will continue to fulfil our obligations for air quality management and how we will monitor the effectiveness of policies and measures that are introduced to reduce levels pollution. It also outlines how we will take steps to reduce the impact of air pollution on public health until concentrations are at a level that are not considered to be harmful.

Being at the heart of London we do suffer from some of the worst air quality in the country, which is why much of this document outlines how we will work with neighbouring authorities and the Greater London Authority to make our air healthier to breathe. This strategy also details how we will reduce emissions from transport, ensure that new developments are clean and how we will continue to reduce emissions from our own activities.

Many residents and businesses share our concerns about air pollution. They are taking steps themselves to help to both improve air quality, and reduce their own exposure to pollution, through our Citizen Science and CityAir business engagement programmes.

We have a proud history of taking action to improve air quality at the City of London. In 1954 we were the first local authority to introduce a smokeless zone and in 1971 the first to obtain powers to stop the burning of sulphurous fuel. Improving air quality remains a very important issue for us and I hope that we can work together to achieve better air quality for residents, workers and visitors in the Square Mile.

**Wendy Mead CC**

**Chairman of Port Health and Environmental Services Committee**

## Contents

<b>1. Introduction</b> .....	5
1.1 List of policies and actions .....	7
<b>2. Background</b> .....	14
2.1 Legal position .....	14
2.2 Source of pollution .....	14
2.3 Health impacts of air pollution .....	15
<b>3. What is the air quality like in the City?</b> .....	17
3.1 Nitrogen dioxide .....	17
3.2 Small particles (PM <sub>10</sub> ) .....	19
3.3 Fine particles PM <sub>2.5</sub> .....	21
<b>4. What is being done to improve air quality in the Square Mile?</b> .....	23
4.1 Political influence and commitment.....	23
4.2 Working with the Mayor of London.....	26
4.3 Working with other external organisations .....	29
4.4 Reducing emissions from transport.....	32
4.5 Reducing emissions from new developments .....	38
4.6 Leading by example .....	41
4.7 Recognising and rewarding good practice .....	42
4.8 Raising awareness.....	44
<b>5. Air Quality and Public Health</b> .....	47
Appendix 1 .....	49

# 1. Introduction

In March 2011, the City of London Corporation (City Corporation) published its Air Quality Strategy<sup>1</sup> outlining action that would be taken to improve local air quality until 2015. This Strategy supplements the 2011 Strategy, detailing further measures that will be taken by the City Corporation from 2015 up to 2020.

The 2011 Air Quality Strategy focused on measures to reduce levels of air pollution and help the UK government and Mayor of London meet air quality Limit Values, which is a statutory requirement. However, since 2011, the City Corporation has taken on new responsibilities for public health and has placed air quality at the heart of improving the health and wellbeing of residents and workers. So in addition to measures to improve local air quality, this strategy also focuses on increasing public awareness and helping people to reduce their exposure to air pollution, thereby improving public health. It also provides an overview of some of the measures that have already been, and will continue to be implemented to improve air quality and raise public awareness in the Square Mile.

The aims of this Strategy are:

- To build upon actions already taken and continue to reduce the impact of poor air quality on the health of City residents, workers and visitors, particularly those most vulnerable
- To ensure that the City of London's key policies reflect the aims of improving air quality and reducing exposure to air pollution in the Square Mile
- To fulfil statutory obligations for Local Air Quality Management and public health, and assist the UK Government and Mayor of London in meeting air quality Limit Values by 2020
- To encourage and implement cost effective measures to reduce emissions of air pollutants in the Square Mile
- To build public awareness and understanding of air quality through the provision of accurate and timely information
- To recognise, reward and disseminate good practice
- To work in partnership with other organisations, to take a lead and help to shape national and regional air quality policy

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<sup>1</sup> City of London Air Quality Strategy 2011 – 2015 available at [www.cityoflondon.gov.uk/air](http://www.cityoflondon.gov.uk/air)

- To support air quality research and development

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## 1.1 List of policies and actions

Key policies and actions that the City Corporation intends to progress are detailed below. Further information on each policy is included in the body of the document.

### **Policy 1: Air Quality Monitoring**

**The City Corporation will monitor air pollutants to assess compliance with air quality objectives, to evaluate the effectiveness of policies and to provide alerts when pollution levels are high.**

Actions:

1. An annual report of air quality data will be published and placed on the City Corporation web site.
2. Current data from air quality monitors will be made available to the public on the London Air Quality Network web site.
3. The data will be used to generate pollution alerts and messages via the CityAir Smart Phone App and the CityAir App web site.
4. The City Corporation will install a background PM<sub>2.5</sub> monitor during 2015 to further assist in assessing the impact of fine particles on public health.
5. The monitoring requirements of the City will be reviewed annually.

### **Policy 2: Political Influence and Commitment**

**The City Corporation will seek opportunities to influence air quality policy across London to secure lower levels of air pollution in the Square Mile.**

Actions:

6. The City Corporation will explore further options for joint action with politicians in neighbouring authorities.
7. The City Corporation will continue to place air quality as an important political priority and support local and London-wide action through its Supporting London Group, Port Health and Environmental Service Committee and Health and Wellbeing Board.
8. The City Corporation will consider options for using local legislation to help improve local air quality.
9. The City Corporation will make resources available through S106 and LIP funding to improve local air quality.

### **Policy 3: Working with the Mayor of London**

**The City Corporation will work with the Mayor of London on air quality policy and action in order to improve air quality in both the Square Mile and across London.**

#### Actions:

10. The City Corporation will continue to liaise with Greater London Authority and Transport for London over additional action to reduce emissions from buses and taxis.
11. The City Corporation will consider options for supporting the adoption of zero emission capable taxis across London.
12. The City Corporation will apply for further funding from the Mayor's Air Quality Fund as the opportunity arises.
13. The City Corporation will work with the GLA to ensure the proposed Ultra Low Emission Zone criteria are appropriate and cost effective.
14. The City Corporation will define local air quality focus areas, to complement the GLA air quality focus areas, and develop specific plans to improve air quality and reduce exposure in these areas.
15. Once the implications on air quality of the Mayor of London's key proposals are known, for example the ULEZ, the City Corporation will model air quality to 2020 to establish what additional action is required to meet the air quality Limit Values across the Square Mile.
16. The City Corporation will work with the Greater London Authority on a review of Local Air Quality Management (the local government air quality regulatory framework) for London.
17. The City Corporation will aim to become a Mayor of London designated Clean Air Borough as soon as possible.



#### **Policy 4: Working with other external organisations**

**The City Corporation will work with a range of external organisations to encourage action to reduce emissions across the Square Mile and raise awareness of air quality and its potential impact on health.**

Actions:

18. The City Corporation will continue to engage with businesses in the Square Mile under the CityAir programme. This will commence with businesses in the Barbican area with the support of local residents involved in the Citizen Science air quality monitoring programme.

19. The City Corporation will work with businesses in the Cheapside Business area to raise the profile of air quality and obtain support for action to reduce emissions associated with their activities.

20. The City Corporation will work with major City businesses to consider options for phasing out standby generators that run solely on diesel.

21. The City Corporation will work with Change London on their AirSensa project as a way of raising public awareness.

22. The City Corporation will continue to provide the Chair for the London Air Quality Steering Group and work with neighbouring boroughs as part of the Central London Air Quality Cluster Group.

23. The City Corporation will look for opportunities to support research into solutions for improving air quality and reducing exposure.

24. The City Corporation will further develop work with Bart's Health NHS Trust to:

- a. train clinical staff to advise vulnerable patients how to reduce their exposure to high levels of air pollution
- b. reduce emissions associated with the Trust fleet
- c. install greening designed to improve air quality and raise awareness at Bart's hospital sites

### **Policy 5: Reducing emissions from transport**

**The City Corporation will vigorously seek opportunities for significantly reducing emissions associated with road traffic in the Square Mile.**

Actions:

25. The City Corporation will continue to support measures to encourage safe cycling in the Square Mile.

26. The City Corporation will continue to enforce its policy of no unnecessary vehicle engine idling in the Square Mile and erect street signs in areas of concern.

27. The City Corporation will encourage and implement measures that will lead to reduction in emissions from taxis, where practical. This will include support for the introduction of zero emission capable taxis in central London.

28. The City Corporation will look for opportunities to significantly reduce the impact of freight distribution on air quality across central London and specifically work with businesses and the construction and demolition industry to identify opportunities for a reduction in vehicle movements, freight consolidation, zero-emission and low emission last mile deliveries.

29. The City Corporation will ensure that proposed changes to road schemes will be assessed for impact on local air quality.

30. The City Corporation will assess the impact of the projected increased office space and associated traffic on future air quality in the Square Mile.

31. Option for significantly reducing impact on pedestrians of air pollution in Beech Street will be considered in the Barbican Area Strategy Review.

## **Policy 6: Reducing emissions from new developments**

**The City Corporation will ensure that new developments have a minimal impact on local air quality both during the development phase and when occupied.**

Actions:

32. Through the City of London Local Plan, developments that will result in deterioration of the City's nitrogen dioxide or PM<sub>10</sub> levels will be resisted.
33. The City Corporation will require an air quality assessment for developments adjacent to sensitive premises such as residential properties, schools and St. Bartholomew's Hospital.
34. The City Corporation will discourage the use of biomass and biofuels as a form of energy in new developments.
35. All gas boilers in commercial developments will be required to have a NO<sub>x</sub> rating of <40mgNO<sub>x</sub>/kWh.
36. NO<sub>x</sub> emissions from Combined Heat and Power (CHP) plant will be required to meet the emission limits in the GLA document 'Biomass and CHP emission standards' March 2013.
37. All new developments with > 1000m<sup>2</sup> floor space or >10 residential units will need to demonstrate that they are air quality neutral in line with the requirements of the London Plan. If the development is not air quality neutral, off-setting will be required. Guidance will be produced outlining suitable options for offsetting in the Square Mile.
38. The City Corporation will ensure that all boilers, generators and CHP plant are installed to ensure minimal impact on local air quality.
39. The City of London will develop a policy on the use of standby generators for generating energy other than when electricity supplies are interrupted.
40. The City will work with the construction and demolition industry to identify further opportunities of reducing emissions associated with building development.
41. The City will update its best practice guide on minimising emissions from construction and demolition annually in order to reflect best practice. All companies employed in demolition, construction and street works that work in the Square Mile will be required to adhere to it.

### **Policy 7: Leading by example**

**The City Corporation will assess the impact of its activities on local levels of air pollution in the Square Mile and take steps to minimise it wherever possible.**

Actions:

42. The City Corporation will continue to look for opportunities for reducing emissions from its buildings, fleet and contractor's fleet.

43. The City Corporation will ensure that major contracts include standards to reduce impact on air quality.

44. A pro forma air quality questionnaire will be developed for use in major policy reviews.

45. The City Corporation will move away from using diesel in its own fleet wherever practical.

### **Policy 8: Recognising and rewarding good practice**

**The City will promote, reward and disseminate best practice for tackling poor air quality through its award schemes.**

Actions:

46. The City Corporation will continue to run an annual Sustainable City Award for air quality.

47. The City Corporation will continue with its annual Considerate Contractor's Environment Award to encourage best practice and innovation in the industry.

### **Policy 9: Raising awareness**

**The City Corporation will take action to raise awareness amongst City residents and workers about air pollution and provide information on how to reduce exposure on days of high levels of pollution.**

Actions:

48. The City Corporation will continue to work with schools to provide information on how to reduce the impact of air pollution on children's health.

49. The City Corporation will apply for funding for further greening at Sir John Cass primary school.

50. The City Corporation will continue to work with residents in the Square Mile to raise awareness of air quality.

51. The City Corporation will develop a general communications strategy to inform people of action they can take to reduce exposure to air pollution.

52. The City Corporation will continue to support City businesses at events to raise profile of air quality and provide information for reducing exposure.

53. The City Corporation will continue to promote and develop the CityAir Smart Phone App with and CityAirApp.com web site.

### **Policy 10: Air quality and public health**

**Improving air quality and reducing public exposure will remain a key public health priority for the City Corporation until concentrations are at a level not considered to be harmful to health.**

Actions:

54. The City of London will install a PM<sub>2.5</sub> monitor at Sir John Cass School during 2015 and assess the data for its impact on health.

55. The City Corporation will identify exposure hotspots with high footfall and high concentrations.

56. The City of London will ensure that measures implemented to reduce emissions of NO<sub>2</sub> and PM<sub>10</sub> will also lead to reduction in emissions of PM<sub>2.5</sub>.

57. The City of London will continue to explore ways to reduce exposure of the population to air pollution.

58. The City will look at ways to extend the message about poor air quality on days of high pollution.

59. As City Corporation Area Strategies are reviewed they will be assessed for public exposure to air pollution and measures taken to reduce exposure where practical.

## **2. Background**

Despite the implementation of a wide range of action by the City Corporation, and the Greater London Authority (GLA), to improve air quality, the health based targets for nitrogen dioxide are not being met in the Square Mile. The target for fine particles (PM<sub>10</sub>) is generally met in the City, except along Upper and Lower Thames Street. This road carries a lot of though traffic and is a street canyon so pollution can get trapped at street level and is not rapidly dispersed. Section 3 of this document presents data from air quality monitoring stations in the Square Mile from 1999 to 2013 and demonstrates how the data compares to the health based targets.

### **2.1 Legal position**

The European Union sets what it calls 'Limit Values' for a range of pollutants that are considered to be harmful to health and the environment. The European Commission can take action against any Member State if the air quality does not meet the Limit Values throughout its territory by a specified date. The UK government is responsible for meeting the European Union Limit Values across the UK, with the Mayor of London being responsible for meeting them in London. The City Corporation has a statutory obligation to support this through local action.

The annual average Limit Value for nitrogen dioxide is not being met across London. It is also not being met in a number of other large Cities across the UK. As a result, in February 2014, the European Commission launched legal proceedings against the UK for its failure to meet this Limit Value, and submit a credible plan outlining how the Limit Value would be met by the extended date of 1 January 2015<sup>2</sup>. There is also an hourly-average Limit Value for nitrogen dioxide. This hourly average value is not being met in central London adjacent to busy roadsides, including some roads in the City of London.

### **2.2 Source of pollution**

The quality of the air in the Square Mile is affected by a number of factors. Being at the heart of London, it is heavily influenced by emissions generated across Greater London and further afield. Up to 80% of the particulate pollution measured away from busy roads has come from outside of the City. This highlights the importance of London-wide action to support the local action being taken by the City Corporation. Under certain weather conditions small particles can be brought to London from the

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<sup>2</sup> [http://europa.eu/rapid/press-release\\_IP-14-154\\_en.htm](http://europa.eu/rapid/press-release_IP-14-154_en.htm)

European continent, and even from as far afield as Africa. This occurred in April 2014 during what was referred to as the 'Saharan dust' pollution episode, when very high levels of tiny particles affected the whole of London and the south-east.

Looking at sources generated within the City itself, the main contributor to local air pollution is road traffic. Diesel vehicles, and in particular taxis, buses and vans contribute the largest proportion. Offices make up over 70% of all buildings in the Square Mile and many of the vehicles in the City are servicing business needs. Pollution from heating buildings and from demolition and construction sites also impacts on local air quality. Further detail on sources of air pollution can be found in the 2011 Air Quality Strategy.

### **2.3 Health impacts of air pollution**

Exposure to air pollution has a range of impacts on health. Short term exposure mainly affects people who are already classed as 'vulnerable'. It can exacerbate asthma, affect lung function and lead to an increase in hospital admissions for people with respiratory and cardio-vascular conditions. Long-term exposure on the other hand affects the whole population, particularly the long-term exposure to fine particles, PM<sub>10</sub> and PM<sub>2.5</sub>.

Exposure to PM<sub>2.5</sub> is considered to be a significant cause of disease in London. Public Health England (PHE) published a report in 2014 'Estimating Local Mortality Burdens Associated with Particulate Air Pollution'. The report states that:

*'current levels of particulate air pollution have a significant impact on health. Measures to reduce levels of particulate air pollution, or reduce exposure of the population to such pollution, are regarded as an important public health initiative.'*

In addition to the above, the World Health Organisation has classified diesel exhaust specifically as a Group 1 carcinogen.

There has been a great deal of research into the health impacts of air pollution. The City Corporation published a report in 2014 summarising the most recent research papers on the health impacts of different pollutants. The report is available on the City Corporation web site <sup>3</sup>.

Since April 2013, the City Corporation, like other local authorities across the UK, has had a responsibility for improving public health. This was introduced by Health and Social Care Act 2012. The City Corporation has recognised that reducing the impact of poor air quality on the health of residents, workers and visitors is important and as

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<sup>3</sup> [www.cityoflondon.gov.uk/air](http://www.cityoflondon.gov.uk/air)

a consequence has placed this as a high priority in its public health work plan. Section 5 of this strategy details how the City Corporation is taking this forward.

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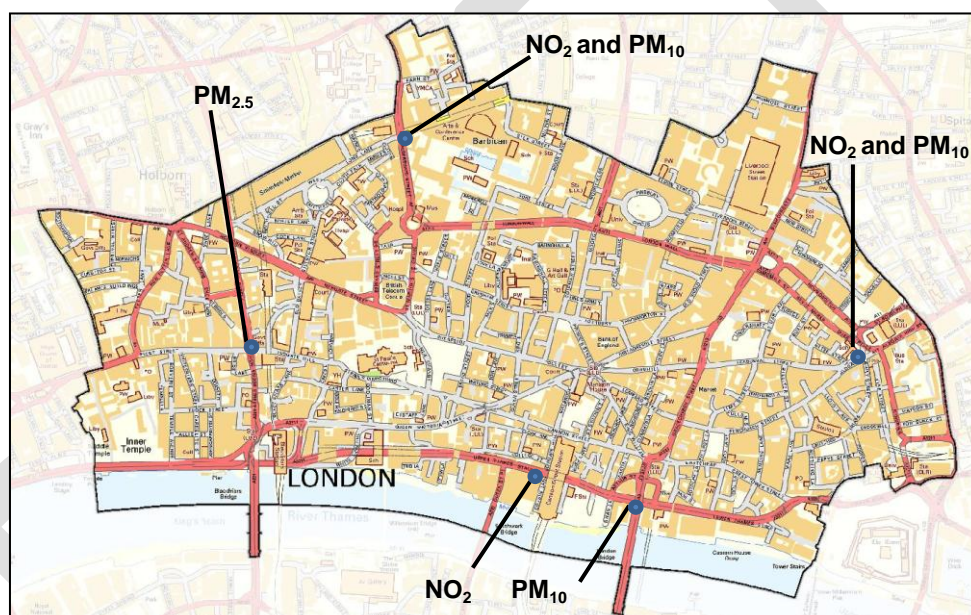
### 3. What is the air quality like in the City?

The City Corporation has been monitoring air quality for a number of years at a range of roadside and background locations across the Square Mile. The focus is on nitrogen dioxide, PM<sub>10</sub> and PM<sub>2.5</sub> as these are the pollutants of concern.

Monitoring is an important part of air quality management and fulfils the following roles:

- To check compliance against air quality objectives and Limit Values
- To assess long term trends and the effectiveness of policies to improve air quality and public health
- To provide alerts to the public when pollution levels are high.

Figure 3.1 shows the location of monitoring stations and pollutants monitored.



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Figure 3.1 Location of continuous monitoring stations

### 3.1 Nitrogen dioxide

#### 3.1.1 Monitoring data

Data from City monitoring stations reveals that background concentrations of nitrogen dioxide (Senator House and Sir John Cass School) have reduced very slightly since the 2011 strategy was published. However, roadside concentrations (Upper Thames Street and Beech Street) have remained high. This is likely to be due to the failure of vehicle Euro Standards to meet the required reduction in

emissions of oxides of nitrogen (NO<sub>x</sub>) in diesel vehicles. There has also been an increase in the use of use of diesel in the overall fleet partly due to national policy to encourage lower carbon fuels. The annual variation in concentrations is also influenced by the weather.

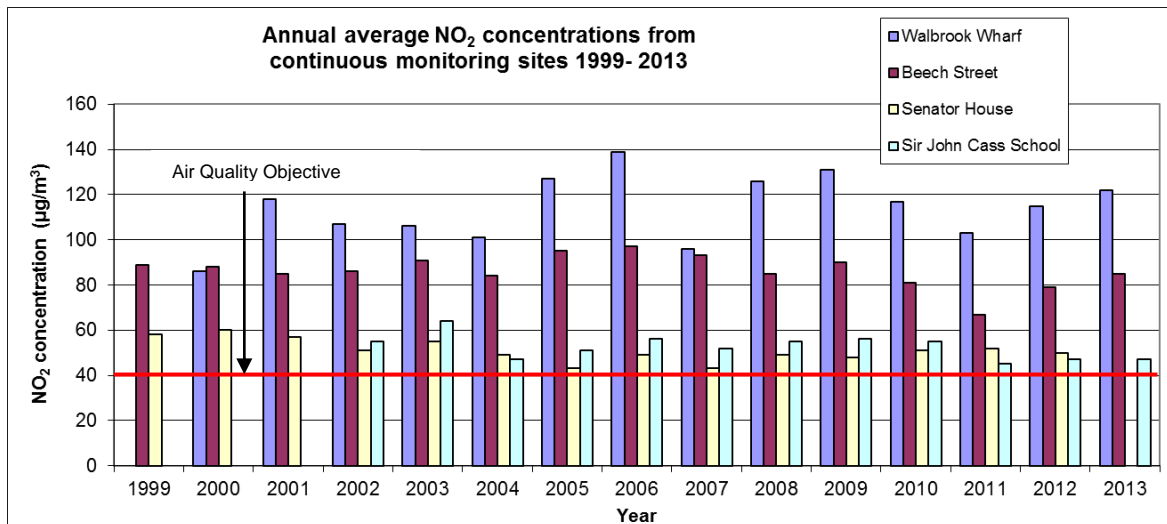


Figure 3.2 Annual Average Nitrogen Dioxide 1999 to 2013

### 3.1.2 Modelled concentrations

Air quality monitoring only provides data for specific locations so the data is supplemented by computer modelling. Modelling is also used to predict what air quality may be like in the future.

Figure 3.3 shows modelled concentrations across the City for 2015 using data from the 2008 London Atmospheric Emissions Inventory. This is administered by the GLA. The Limit Value for annual average nitrogen dioxide is 40µg/m<sup>3</sup> and the computer model predicts that this will not be met anywhere. Concentrations adjacent to busy roads and junctions can be three times that experienced in the City away from roads.

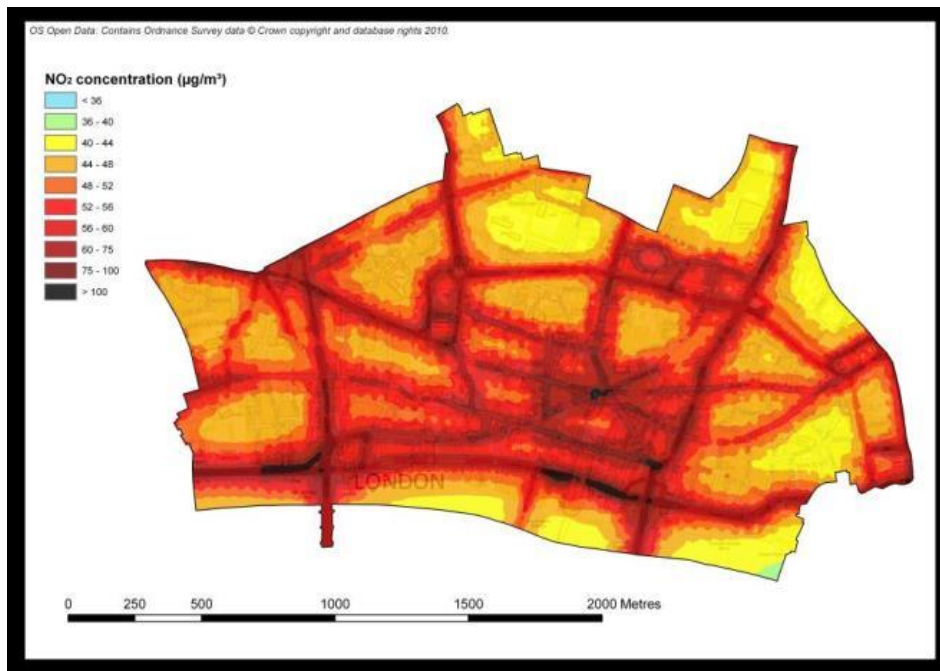


Figure 3.3 Modelled concentrations of annual average nitrogen dioxide in 2015

## 3.2 Small particles (PM<sub>10</sub>)

### 3.2.1 Monitoring data

Annual average concentrations of PM<sub>10</sub> tend to meet the 40  $\mu\text{g}/\text{m}^3$  objective everywhere. However the City Corporation monitor along Upper Thames Street recorded a breach in 2013 due to a number of ‘pollution incidents’ which were caused by air from outside the Capital being imported in and containing high levels of particulate matter. In 2013 there were eight ‘pollution incidents’ of high PM<sub>10</sub> totalling 31 days. These had an impact on both the 24-hour average objective and the annual average, as can be seen in figures 3.4 and 3.5.

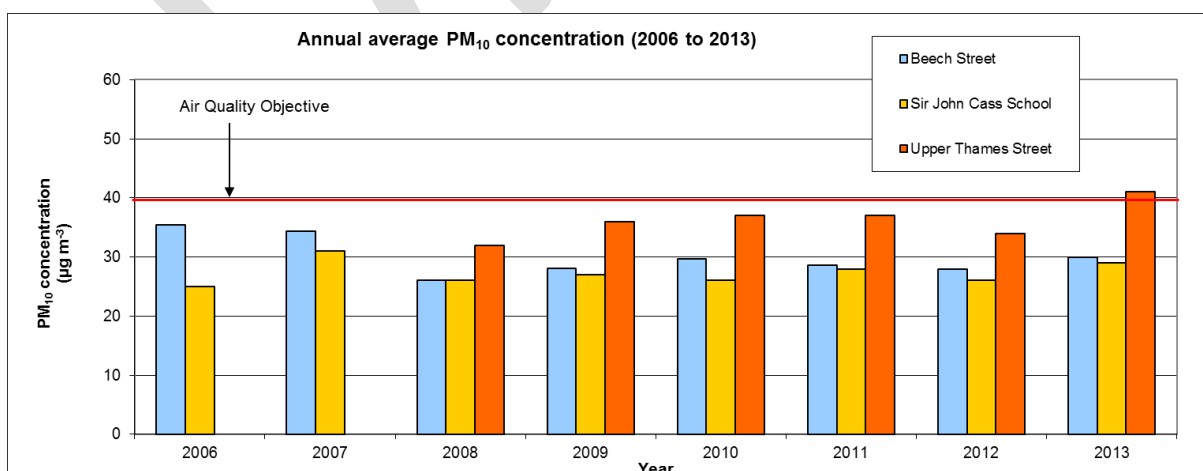


Figure 3.4 Annual Average PM<sub>10</sub> Concentrations 2006 to 2013

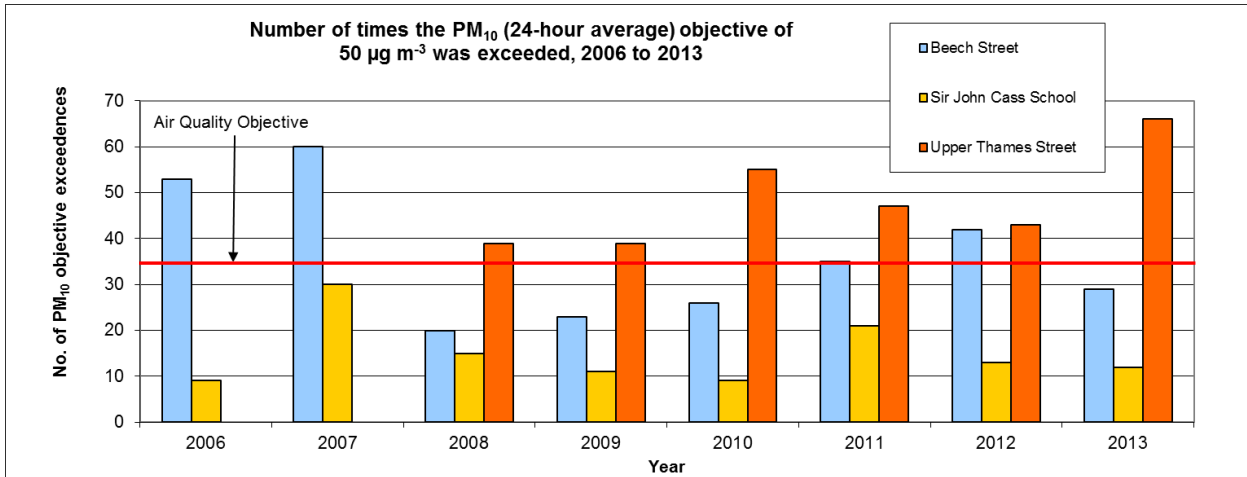


Figure 3.5 Number of days the 24 hour limit was breached 2006 to 2013

### 3.2.1 Modelled concentrations

There is less variation in modelled concentrations of small particles across the City as there are a number of different sources that contribute to the problem, not just road traffic.

Figure 3.6 shows the modelled number of days that the PM<sub>10</sub> daily average level is likely to be exceeded in 2015. The limit is set at 35 days and the map reveals that this could be breached in just a small area along Victoria Embankment.

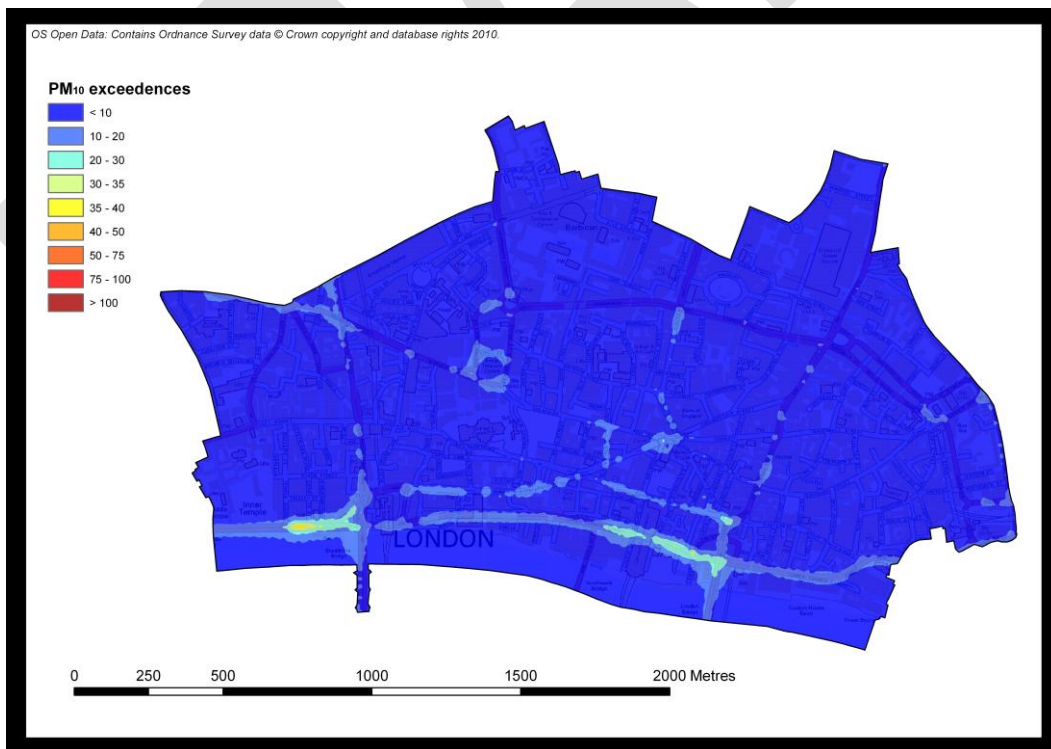


Figure 3.6 Modelled concentrations of daily average PM<sub>10</sub> exceedences, 2015

### 3.3 Fine particles PM<sub>2.5</sub>

#### 3.3.1 Monitored data

PM<sub>2.5</sub> is measured in Farringdon Street. Table 1 shows the annual mean PM<sub>2.5</sub> in this area for 2011 - 2013.

Annual Mean Concentration of PM <sub>2.5</sub> (µg/m <sup>3</sup> )		
2011	2012	2013
<b>29</b>	<b>30</b>	<b>27</b>

Table 1 Annual Average PM<sub>2.5</sub>

#### 3.3.2 Modelled concentrations

Modelled concentrations of annual average PM<sub>2.5</sub> reveal that levels across the City in 2015 should be below the annual average Limit Value of 23µg/m<sup>3</sup> with the possible exception of the City's busiest road Victoria Embankment / Upper and Lower Thames Street. However, the monitored data suggests that concentrations may be higher than the computer modelling data so the City Corporation will be installing an additional PM<sub>2.5</sub> analyser during 2015 to check concentrations in an alternative location in the City.

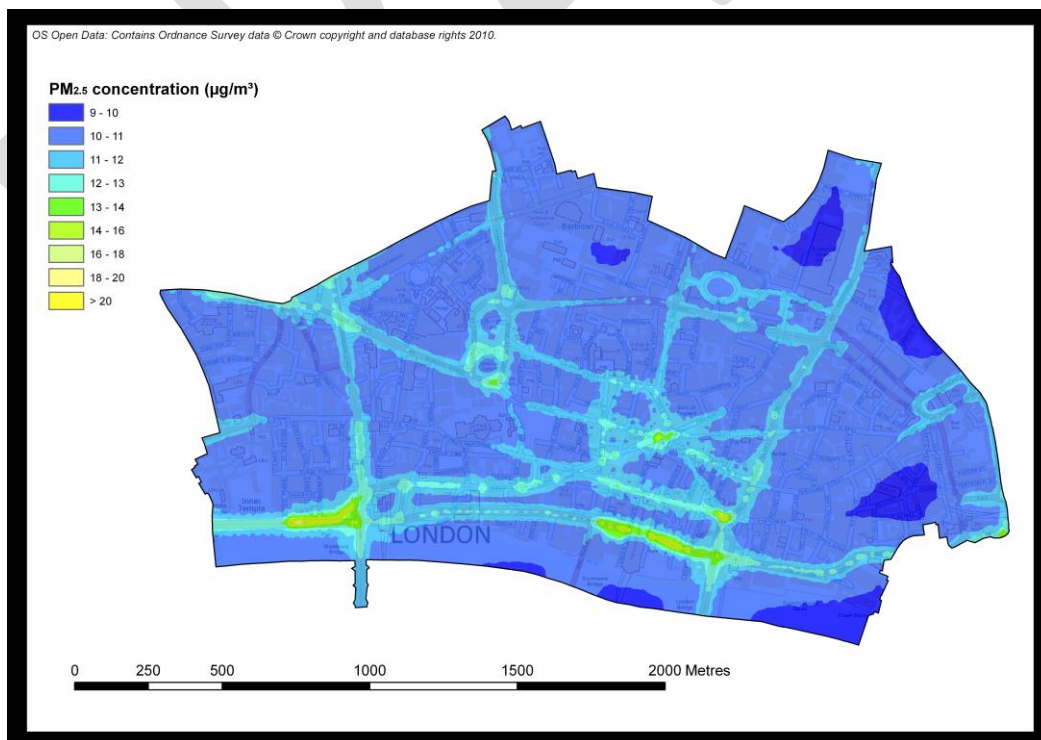


Figure 3.7 Modelled concentrations of annual average PM<sub>2.5</sub>, 2015



### **Policy 1: Air Quality Monitoring**

**The City Corporation will monitor air pollutants to assess compliance with air quality objectives, to evaluate the effectiveness of policies and to provide alerts when pollution levels are high.**

Actions:

1. An annual report of air quality data will be published and placed on the City Corporation web site.
2. Current data from air quality monitors will be made available to the public on the London Air Quality Network web site.
3. The data will be used to generate pollution alerts and messages via the CityAir Smart Phone App and CityAirApp.com web site.
4. The City Corporation will install a background PM<sub>2.5</sub> monitor during 2015 to further assist in assessing the impact of fine particles on public health.
5. The monitoring requirements of the City will be reviewed annually.

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## **4. What is being done to improve air quality in the Square Mile?**

The City Corporation has been taking a wide range of action to both improve local air quality and to help people to reduce their exposure to pollution. This section highlights some of the action that has been, and continues to be taken, as well as outlining further measures that will be implemented up to 2020.

### **4.1 Political influence and commitment**

Improving local air quality is an important political priority and is contained in the City's Corporate Plan as a Key Policy priority KPP3: Engaging with London and national government on key issues of concern to our communities (which includes air quality).

This aim is being managed at a strategic level at three forums :

#### **Supporting London Group:**

This Senior and Chief Officer committee, chaired by the Town Clerk, has received presentations and reports concerning the need for the City Corporation to lead on improving air quality in the Capital. It has endorsed reports containing actions that have subsequently been approved by elected Members and receives regular updates on progress.

#### **Port Health and Environmental Services Committee**

This Committee, which comprises elected representatives from all wards in the City, oversees the work of the Port Health and Public Protection Service. This includes the Environmental Health function, and consequently air quality. The Committee approved the original Air Quality Strategy in 2011, and its Members, particularly the Chairman and Deputy Chairman, have a keen interest in the issue.

#### **Health and Wellbeing Board**

Public Health responsibilities were returned to local authorities in April 2013 and this led to the creation of Health and Wellbeing Boards (HWB). The Board recognises that air quality in the City is important to residents and workers, so has included this as its third most important priority in the Action Plan approved in September 2014.

In addition to the above, the City Corporation has been taking action to try and influence air quality policy across London.

- In March 2012 the City Corporation hosted a breakfast meeting for City of London, London Borough of Camden and City of Westminster officers and politicians to advance closer working between the authorities and develop an improved dialogue with the Greater London Authority and Transport for London.

- In June 2012, the Leaders of the City Corporation, Westminster City Council and London Borough of Camden sent a joint letter to the Mayor of London to ask him to take additional action to reduce emissions from buses and taxis.
- In April 2013, the then Chairman of Port Health and Environmental Services wrote to the Mayor of London to confirm the City Corporation's commitment to taking action to improve air quality by signing up to the Mayor of London 'Cleaner Air Borough' criteria.
- In June 2014 the City of London Remembrancer's Department submitted a written response to the House of Commons Environmental Audit Committee inquiry into air quality.
- In July 2014, the Lord Mayor hosted an air quality reception at Mansion House with the Mayor of London and London Councils. The event highlighted the need for coordinated action from all levels of government to improve air quality across London.

The current Mayor of London, Boris Johnson, the previous Lord Mayor, Alderman Fiona Woolf and the current Chairman of London Councils Transport and Environment Committee Julian Bell at the Air Quality Reception at Mansion House



- In November 2014, the City Corporation will host an air quality breakfast seminar for London borough politicians to determine whether there is common ground between London boroughs and the City Corporation on some areas of air quality policy.



## **Policy 2: Political Influence and Commitment**

**The City Corporation will seek opportunities to influence air quality policy across London to secure lower levels of air pollution in the Square Mile.**

Actions:

6. The City Corporation will explore further options for joint action with politicians in neighbouring authorities.

7. The City Corporation will continue to place air quality as an important political priority and support local and London-wide action through its Supporting London Group, Port Health and Environmental Service Committee and Health and Wellbeing Board.

8. The City Corporation will consider options for using local legislation to help improve local air quality.

9. The City Corporation will make resources available through S106 and LIP funding to improve local air quality.

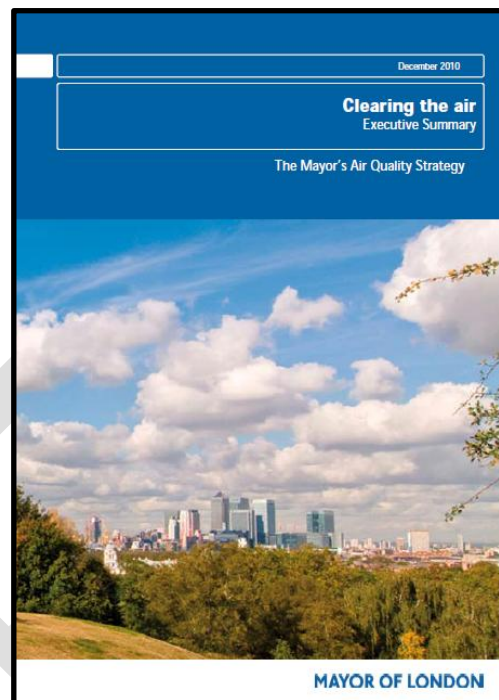
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## 4.2 Working with the Mayor of London

### 4.2.1 Mayors Air Quality Strategy

As part of his legal obligation to meet air quality Limit Values across London, the Mayor of London published an Air Quality Strategy in 2010 'Clearing the Air' and has taken a wide range of action to reduce levels of air pollution across the Capital.

A great deal of action has been focussed on road traffic such as the London-wide Low Emission Zone, a 15 year age limit for black taxi cabs, a 10 year age limit for Private Hire Vehicles and the roll out of a cleaner bus fleet. Non-traffic measures include the requirement for new developments to be 'air quality neutral' as detailed in the London Plan, emission standards for boiler systems and construction plant and the retrofit of London homes to improve energy efficiency.



### 4.2.2 Transport Emissions Roadmap

The Mayor published a Transport Emissions Roadmap in September 2014<sup>4</sup>. The document outlines all the measures being taken by the Mayor to reduce emissions from transport across London. It also lists the following ten areas that will be considered to help London achieve compliance with the EU Limit Values for nitrogen dioxide by 2020 and 2025. The document highlights that the measures will need to be developed to understand their feasibility, impact and funding requirements:

1. Ultra Low Emission Zone (ULEZ)
2. The future of the (London) Low Emission Zone
3. Making traffic management and regulation smarter
4. Helping Londoners tackle air pollution
5. Driving the uptake of low emission vehicles
6. Cleaner electricity for London's transport
7. Transforming London's fleet
8. Delivering a zero emission taxi and Private Hire Vehicle fleet
9. Transforming London's public and commercial fleets
10. Low emission neighbourhoods

<sup>4</sup> [www.tfl.gov.uk/cdn/static/cms/documents/transport-emissions-roadmap.pdf](http://www.tfl.gov.uk/cdn/static/cms/documents/transport-emissions-roadmap.pdf)

At the time of writing this draft document there have been no formal announcements about any of the above. However, it is anticipated that details will soon be available on the proposed an Ultra-Low Emission Zone for central London, the requirement for zero emission capable taxis from 2018 and further measures to reduce emissions from the London bus fleet, including an all-electric bus for London.

#### **4.2.3 Air Quality Focus Areas**

The Mayor of London has identified 187 'Air Quality Focus Areas' across London. These are areas where the Greater London Authority and Transport for London will focus action to improve air quality. In the Square Mile the TfL Air Quality Focus areas are on TfL roads: Farringdon Road to New Bridge Street at Blackfriars and from Monument, Gracechurch Street and Bishopsgate to Houndsditch.

The criteria used by TfL to determine air quality focus areas are available on the Greater London Authority web site<sup>5</sup>.

#### **4.2.4 Mayors Air Quality Fund**

In February 2013 the Mayor of London announced a new Mayor's Air Quality Fund (MAQF). The fund has provided match-funding for London local authorities and partners for innovative schemes and projects designed to improve air quality. £6 million of funding was made available from 2013/14 to 2015/16, with the expectation this will continue to £20 million over 10 years.

The City Corporation was awarded £280,000, over 3 years, from the Mayor's Air Quality Fund for air quality improvement work in the City, and a further £100,000 over the three years as part of a joint project with Bart's Health NHS Trust and the London Boroughs of Newham, Tower Hamlets and Waltham Forest. London local authorities are required to work towards achieving a set of criteria in order to be eligible for funding from the MAQF. This criteria will lead to London Boroughs being designated a 'Clean Air Borough' by the GLA.

#### **4.2.5 Local Air Quality Management Review**

The framework for measuring air quality, and working towards air quality objectives in local government is known as Local Air Quality Management. The process is under review nationally and the review of the London scheme is being led by the Greater London Authority. The City of London is part of the review board.

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<sup>5</sup> <https://www.london.gov.uk/sites/default/files/Cleaner%20Air%20for%20London%20-%20AQ%20Focus%20Area%20methodology.pdf>

### **Policy 3: Working with the Mayor of London**

**The City Corporation will work with the Mayor of London on air quality policy and action in order to improve air quality in both the Square Mile and across London.**

Actions:

10. The City Corporation will continue to liaise with Greater London Authority and Transport for London over additional action to reduce emissions from buses and taxis.
11. The City Corporation will consider options for supporting the adoption of zero emission capable taxis across London.
12. The City Corporation will apply for further funding from the Mayor's Air Quality Fund as the opportunity arises.
13. The City Corporation will work with the GLA to ensure the proposed Ultra Low Emission Zone criteria are appropriate and cost effective.
14. The City Corporation will define local air quality focus areas, to complement the GLA air quality focus areas, and develop specific plans to improve air quality and reduce exposure in these areas.
15. Once the implications on air quality of the Mayor of London's key proposals are known, for example the ULEZ, the City Corporation will model air quality to 2020 to establish what additional action is required to meet the air quality Limit Values across the Square Mile.
16. The City Corporation will work with the Greater London Authority on a review of Local Air Quality Management (the local government air quality regulatory framework) for London.
17. The City Corporation will aim to become a Mayor of London designated Clean Air Borough as soon as possible.

## 4.3 Working with other external organisations

In addition to working closely with the GLA, the City Corporation also works with a range of other organisations on actions and policy development to improve air quality.

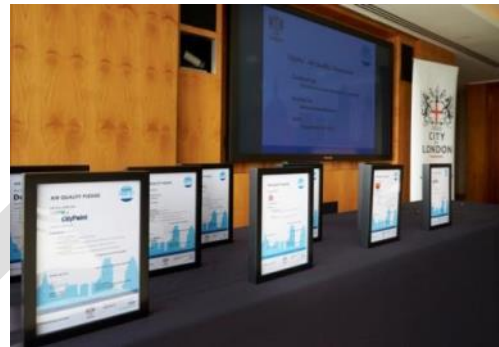
### 4.3.1 Business engagement

The City Corporation has been engaging with the City business community to get their help for improving air quality and raising staff awareness through the CityAir programme.

Over 50 premises have been engaged to date, which represents over 40,000 employees. Best practice guidance has been produced with City businesses and is available on the City Corporation web site.

The CityAir programme has been extended across central London and further businesses are engaged in the Square Mile as the opportunity arises.

In March 2014, 18 City businesses received certificates outlining their commitment to taking action to help to improve local air quality as business air quality champions.



### 4.3.2 Bart's Health NHS Trust

The City Corporation has been leading an air quality engagement project with Bart's Health NHS Trust to improve local air quality, reduce emissions associated with Bart's activity and raise awareness amongst vulnerable people. To date, over 1000 people at Bart's hospitals have been engaged and given advice on how to reduce their exposure to poor air quality. Work with the hospital trust is on-going. The next phase of the work is to train clinical staff to give out appropriate advice to vulnerable patients.



### 4.3.3 London Air Quality Steering Group

The London Air Quality Steering group was established to direct and influence strategic air quality policy across London. Members include London Boroughs, the Environment Agency, Greater London Authority, Transport for London and London Councils. The City Corporation provides the Chair for this group.

The City Corporation also works with seven neighbouring authorities as part of the Central London Air Quality Cluster Group.

#### **4.3.4 London Universities**

The City Corporation has worked with the Environment Research Group at King's College London on a range of projects such as real world vehicle emission testing and the development of the CityAir Smart Phone App. Kings College London is also one of the partners for the Sustainable City Award for air quality.

The City Corporation has worked with Imperial College London on research into the potential impact of a 20mph speed limit on air quality and is currently working with University College London on a Citizen Science air quality monitoring programme for residents.

#### **4.3.5 Change London**

The City Corporation is on the advisory board of Change London for their air quality monitoring project <http://www.airsensa.org/> which aims to create a UK-wide network of urban air quality monitors, starting in Greater London, to monitor and visualise air at an individual street level. The City Corporation provides advice on monitoring and engagement from a local government perspective.

### **Policy 4: Working with other external organisations**

**The City Corporation will work with a range of external organisations to encourage action to reduce emissions across the Square Mile and raise awareness of air quality and its potential impact on health.**

Actions:

18. The City Corporation will continue to engage with businesses in the Square Mile under the CityAir programme. This will commence with businesses in the Barbican area with the support of local residents involved in the Citizen Science air quality monitoring programme.

19. The City Corporation will work with businesses in the Cheapside Business area to raise the profile of air quality and obtain support for action to reduce emissions associated with their activities.

20. The City Corporation will work with major City businesses to consider options for phasing out standby generators that run solely on diesel.

21. The City Corporation will work with Change London on their AirSensa project as a way of raising public awareness.

22. The City Corporation will continue to provide the Chair for the London Air Quality Steering Group and work with neighbouring boroughs as part of the Central London Air Quality Cluster Group.

23. The City Corporation will look for opportunities to support research into solutions for improving air quality and reducing exposure.

24. The City Corporation will further develop work with Bart's Health NHS Trust to:

- a. train clinical staff to advise vulnerable patients how to reduce their exposure to high levels of air pollution
- b. reduce emissions associated with the Trust fleet
- c. install greening designed to improve air quality and raise awareness at Bart's hospital sites

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## 4.4 Reducing emissions from transport

The 2011 Air Quality Strategy details that over 75% of local emissions of PM<sub>10</sub>, and 67% of local emissions of NO<sub>x</sub>, comes from road vehicles. There are high levels of pedestrian flow in the City with many business journeys made on foot, and journeys to the City using other forms of transport completed on foot.

Approximately 350,000 people commute to the Square Mile during the working week, nearly 90% of these by public transport, with only 6% by private car. Car ownership among City residents (38%) is the lowest of any local authority area in the United Kingdom. There has been a significant increase in cycling as a mode of travel in central London, including the City. The City Corporation is implementing appropriate changes to road layouts and public realm enhancement schemes to create safe and efficient cycling routes and greater space for pedestrians.



The road network is used intensively; particularly during the working week as vehicles support the needs of City businesses. The Square Mile is located with the Congestion Charge Zone and over 290,000 vehicles enter the zone every day. There are now 23,000 licensed taxis in Greater London with the majority of activity concentrated in central London. The City is served by 54 bus routes.

The busiest roads in the Square Mile are managed and controlled by Transport for London (TfL) which is one of the GLA group of organisations accountable to the Mayor of London. These are:

- Mansell Street / Goodmans Yard / Minories
- Victoria Embankment / Blackfriars Underpass/ Upper Thames Street/ Lower Thames Street/ Byward Street/ Tower Hill
- Farringdon street/ Ludgate Circus/ New Bridge Street/ Blackfriars Bridge

The mix of vehicles in the City is quite different to most other London Boroughs with taxis and goods vehicles dominant. Due to the amount of development in the Square Mile there are also a lot of construction vehicles. Nearly all of these vehicles are diesel.

City Corporation transport policy is outlined in the Local Implementation Plan, which was published in December 2011. It contains eight key transport objectives. Two are relevant to improving air quality:



LIP 2011.1: To reduce the pollution of air, water and soils and excessive noise and vibration caused by transport in the City.

LIP 2011.4: To reduce the adverse effects of transport in the City on health, particularly health impacts related to poor air quality and excessive noise and the contribution that travel choices can make to sedentary lifestyles.

#### 4.4.1 20mph

In July 2014, a 20mph speed limit was introduced across the Square Mile. Figure 4.1 shows the extent of the 20mph area.

Air quality improvement was an important consideration in the decision. A 20mph speed restriction should help to improve traffic flow and reduce stop / start conditions. This in turn should reduce the amount of particulate pollution associated with traffic. Imperial College London conducted a study into the potential impact on local air quality of a 20mph speed restriction. A copy of this report is available on the City of London web site [www.cityoflondon.gov.uk/air](http://www.cityoflondon.gov.uk/air)

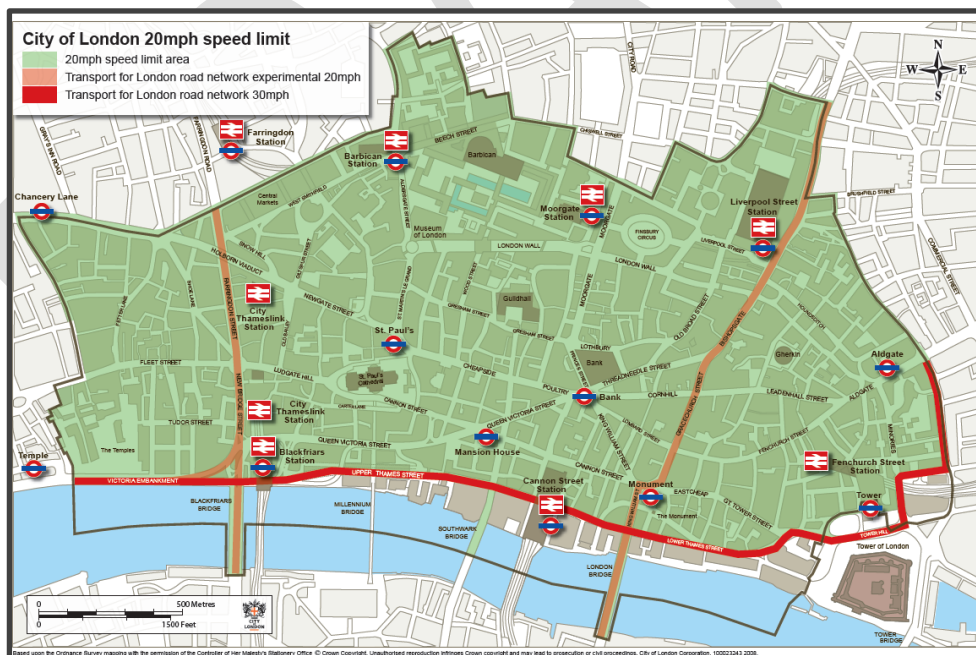


Figure 4.1: 20mph speed limit in the City of London

#### **4.4.2 Cyclists**

An estimated 10,000 people commute to the City by bike on a regular basis. The City Corporation supports cycling and the aim is to for at least 10% of people who commute to the City to travel by. Cycling is encouraged by the provision of:

- Free public cycle parking in all off-street public car parks.
- Free public cycle parking at on-street cycle parking racks throughout the City.
- Regular free cycle training and maintenance training

#### **4.4.3 Pedestrians**

Most people move around the City by foot. In the working week there is a great deal of demand for space for pedestrians. The 350,000 people that commute into the City today is expected to increase to 428,000 by 2026. This is due to the introduction of more office space and also Crossrail, which is anticipated to bring more people into the Square Mile. The City Corporation is introducing a number of schemes designed to improve conditions for pedestrians.

The City has developed 16 Area Enhancement Strategies which are designed to improve the streets and public spaces in the Square Mile. The Area Enhancement Strategies for Cheapside, the Barbican, the Riverside Walk and Fleet Street are currently being updated.

In addition to this, greater provision for pedestrians is being made by improving access routes and the streetscape around stations, with particular focus on Bank and the Crossrail station entrances at Farringdon, Lindsey Street, Moorgate and Liverpool Street.

#### **4.4.4 Taxis**

Hackney carriages (black taxi cabs) make up 25.8% of the traffic flow in the City of London between 0700 and 1900 hours <sup>6</sup>. The 2011 Air Quality Strategy<sup>7</sup> reveals that they contribute around 50% of local PM<sub>10</sub> from vehicles and 24% oxides of nitrogen (NO<sub>x</sub>).

Transport for London is the regulatory authority for the appointment and regulation of Taxi drivers. TfL is also responsible for the authorisation of all Taxi Ranks and Taxi Rest Bays in London excluding the City of London, where it is the responsibility of the Commissioner of Police for the City of London. There are 32 Taxi Ranks in the City of London, providing 128 spaces.

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<sup>6</sup> 2010 Traffic Composition Survey, JMP Consultants Ltd for the City of London

<sup>7</sup> [www.cityoflondon.gov.uk/air](http://www.cityoflondon.gov.uk/air)

In 2006, a taxi availability survey was conducted in the City of London. The study revealed that approximately 34% of the taxis on the roads are available for hire around the main railway stations. On other City roads the proportion is around 22%. While taxis are running (plying for hire) they are wasting fuel, adding to local congestion and increasing local levels of pollution.

The City Corporation, in line with the guidance issued by TfL, would like to reduce the amount of time that taxis spend running by encouraging taxi drivers to make better use of ranks and encourage the public to use ranks wherever possible. As a consequence, the City Corporation is installing new and improved taxi ranks, in consultation with the taxi trade, to help to reduce the amount of plying for hire by taxis in the Square Mile. The ranks will be publicised locally and taxi drivers encouraged to use them. If this is successful the City Corporation will consider further measures to encourage taxi drivers and the public to use ranks.

In addition to installing new taxi ranks and publicising their location, the City Corporation has appointed Living Streets to run a project called Fare Mile aimed at encouraging workers in the City to walk short journeys rather than use a taxi <http://www.faremile.org.uk/>.

The project is a pilot and if it is deemed to be successful it will be extended, subject to funding.



#### 4.4.5 Freight

The transportation of goods, whether to and from offices or construction and demolition sites is a significant source of air pollution in the Square Mile. The 2011 Air Quality Strategy details that 24% PM<sub>10</sub> and 33% NO<sub>x</sub> emissions associated with traffic is from the movement of freight. The City Corporation is developing a freight strategy which will consider opportunities for reducing emissions associated with delivering goods.



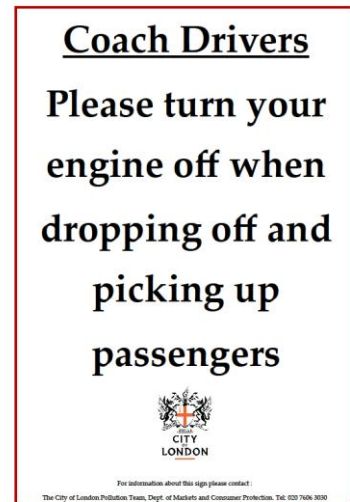
#### 4.4.6 Road schemes

Changes are currently being made to Aldgate Gyratory, which includes the installation of a public space. The road design with the most positive benefit on

improving air quality at Sir John Cass Primary School is being implemented. Bank junction is also being redesigned and a key objective is to reduce local levels of pollution by reducing the number of motorised vehicles using the area.

#### 4.4.7 Enforcement

In January 2012, the City Corporation announced that it would issue Fixed Penalty Notices to drivers who refuse to turn their vehicle engines off when asked to do so by authorised officers. The City undertook a widespread publicity campaign to reduce the amount of vehicle idling and has produced a set of posters aimed at specific vehicle types. Letters were sent to coach companies, taxi operators and key delivery companies to outline the requirement to turn vehicle engines off when parked. The City Corporation has been working closely with construction sites to ensure drivers do not leave engines running. Construction sites display City of London 'no idling' posters and give leaflets out to drivers. Areas that have a problem with delivery vehicles leaving engines on have been targeted by delivering letters by hand to all businesses in the area asking them to ensure drivers of delivery vehicles turn their engines off. Other drivers are approached as officers see them as they walk around the City.



Signs (A boards) asking drivers to turn engines off have been erected in areas of concern in the City. These have proved to be effective in most locations. Civil Enforcement Officers speak to drivers who leave their engines running unnecessarily and ask them to turn them off.

#### 4.4.8 Beech Street

Beech Street is an enclosed road (tunnel) near the Barbican centre that is heavily used by pedestrians. As a consequence levels of pollution emitted by vehicles using the road can build up as they take longer to be dispersed. The road is washed to keep it clean and a programme of additional street washing was introduced to see if it had an impact on level of fine particles in the tunnel. It was found to be efficient so has been continued.



## **Policy 5: Reducing emissions from transport**

**The City Corporation will vigorously seek opportunities for significantly reducing emissions associated with road traffic in the Square Mile**

Actions:

25. The City Corporation will continue to support measures to encourage safe cycling in the Square Mile.

26. The City Corporation will continue to enforce its policy of no unnecessary vehicle engine idling in the Square Mile and erect street signs in areas of concern.

27. The City Corporation will encourage and implement measures that will lead to reduction in emissions from taxis, where practical. This will include support for the introduction of zero emission capable taxis in central London.

28. The City Corporation will look for opportunities to significantly reduce the impact of freight distribution on air quality across central London and specifically work with businesses and the construction and demolition industry to identify opportunities for a reduction in vehicle movements, freight consolidation, zero-emission and low emission last mile deliveries.

29. The City Corporation will ensure that proposed changes to road schemes will be assessed for impact on local air quality.

30. The City Corporation will assess the impact of the projected increased office space and associated traffic on future air quality in the Square Mile.

31. Option for significantly reducing impact on pedestrians of air pollution in Beech Street will be considered in the Barbican Area Strategy Review.



## 4.5 Reducing emissions from new developments

The Square Mile is in a constant state of redevelopment. Spatial planning is key to improving air quality in the long term and the City Corporation has been taking a range of action through planning policy to reduce the impact of new developments on local air quality.

### 4.5.1 Planning policy

The City of London Core Strategy (development plan document) requires new developments to:

*‘positively address local air quality’, particularly nitrogen dioxide and particulates PM<sub>10</sub> (the City’s Air Quality Management Area Pollutants)*

The City Corporation discourages the use of biomass as a source of fuel due to the level of particulates emitted compared to gas. It also requires low NO<sub>x</sub> emission gas boilers and low NO<sub>x</sub> CHP technology.

Air quality assessments are required for developments adjacent to sensitive premises such as school, hospital and residential areas. Assessments are also required if there is a proposal to use biomass or biofuel as a source of energy.

The City Corporation has developed a short guide for minimising emissions from combined heat and power plant and standby generators

There is minimal car parking space associated with all new developments. This discourages people from driving into the City.

### 4.5.2 Construction and demolition

At any given time there are many active demolition, construction and refurbishment sites in the Square Mile. There are also a large number of street works supporting the new developments. The development is essential in order for the City to maintain itself as a world class business and financial centre. The City Corporation has a code of practice for construction and demolition detailing the environmental standards that it expects the industry to work to. The Code is enforced through development control.



Minimising emissions to air is integral to the City Corporation code of practice. The guidance, which is available on the City Corporation web site, reflects the best practice guidance issued by the Mayor of London: The Control of Dust and Emissions from Demolition and Construction<sup>8</sup>. The City of London Code of Practice

<sup>8</sup> <https://www.london.gov.uk/priorities/environment/clearing-londons-air/useful-documents>

is updated regularly to reflect best practice in the industry and is now in its 7th edition. There are regular checks on all large construction sites to ensure that they adhere to the code.

Despite this, there are still a significant amount of emissions associated with the construction industry, particularly the use of non-road mobile machinery on site. The City Corporation has started to work with Sir Robert McAlpines to establish what additional measures may be available to reduce emissions even further.



#### **4.5.3 Chimneys**

The City Corporation ensures that all chimneys on new developments are installed to ensure adequate dispersion of pollutants and issues authorisations for this under the Clean Air Act 1993.

### **Policy 6: Reducing emissions from new developments**

**The City Corporation will ensure that new developments have a minimal impact on local air quality both during the development phase and when occupied.**

Actions:

32. Through the City of London Local Plan, developments that will result in deterioration of the City's nitrogen dioxide or PM<sub>10</sub> levels will be resisted.
33. The City Corporation will require an air quality assessment for developments adjacent to sensitive premises such as residential properties, schools and St. Bartholomew's Hospital.
34. The City Corporation will discourage the use of biomass and biofuels as a form of energy in new developments.
35. All gas boilers in commercial developments will be required to have a NO<sub>x</sub> rating of <40mgNO<sub>x</sub>/kWh.
36. NO<sub>x</sub> emissions from Combined Heat and Power (CHP) plant will be required to meet the emission limits in the GLA document 'Biomass and CHP emission standards' March 2013.

37. All new developments with > 1000m<sup>2</sup> floor space or >10 residential units will need to demonstrate that they are air quality neutral in line with the requirements of the London Plan. If the development is not air quality neutral, off-setting will be required. Guidance will be produced outlining suitable options for offsetting in the Square Mile.

38. The City Corporation will ensure that all boilers, generators and CHP plant are installed to ensure minimal impact on local air quality.

39. The City of London will develop a policy on the use of standby generators for generating energy other than when electricity supplies are interrupted.

40. The City will work with the construction and demolition industry to identify further opportunities of reducing emissions associated with building development.

41. The City will update its best practice guide on minimising emissions from construction and demolition annually in order to reflect best practice. All companies employed in demolition, construction and street works that work in the Square Mile will be required to adhere to it.

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## 4.6 Leading by example

### 4.6.1 Own buildings and fleet

The City Corporation has been reducing emissions from its buildings and fleet for a number of years. Since 2008, PM<sub>10</sub> emissions from the City Corporation's own fleet have reduced by over 50% and NOx by over 40%. This has been achieved by improved management, a reduction in size of the fleet and the purchase of, newer cleaner vehicles. Similarly emissions of PM<sub>10</sub> and NOx from City buildings have reduced over the same time period by over 15%



### 4.6.2 Procurement

The City Corporation Responsible Procurement Strategy requires that for large contracts over £250k, at least 10% of the qualitative contract award evaluation criteria must address responsible procurement. This includes the use of zero emission vehicles. The potential use of zero emissions vehicles, and application of the principles enshrined in the Zero and Low Emission procurement directory, commissioned by the City Corporation in 2012<sup>9</sup>, are factored into contract award criteria and specifications each time the City conducts sourcing projects.

#### **Policy 7: Leading by example**

**The City Corporation will assess the impact of its activities on local levels of air pollution in the Square Mile and take steps to minimise it wherever possible.**

#### **Action:**

42. The City Corporation will continue to look for opportunities for reducing emissions from its buildings, fleet and contractor's fleet.
43. The City Corporation will ensure that major contracts include standards to reduce impact on air quality.
44. A pro forma air quality questionnaire will be developed for use in major policy reviews.
45. The City Corporation will move away from using diesel in its own fleet wherever practical.

<sup>9</sup> [www.cityoflondon.gov.uk/air](http://www.cityoflondon.gov.uk/air)

## 4.7 Recognising and rewarding good practice

### 4.7.1 Sustainable City Awards

The City Corporation runs a national annual Sustainable City Awards scheme. The awards are given to organisations that demonstrate excellence in sustainable development. There are 12 categories, one of which is air quality.

The Sustainable City award for air quality has been popular, previous winners include a campaign organisation, an organisation that works with artists and scientists to produce contemporary art, a government organisation and a City business.

## The Sustainable City Awards



The UK's foremost Sustainability awards

### 4.7.2 Considerate Contractors Environment Award

The Considerate Contractors Scheme was pioneered by the City Corporation in 1987. It aims to encourage building and civil engineering contractors working in the City to carry out their operations in a safe and considerate manner.

Building sites and street works are judged annually on the basis of their overall performance during that year. A wide range of awards are given including a Environment Award, which rewards best practice and encourages innovation in minimising the impact on the local environment, including air quality.

### 4.7.3 Clean City Award

In 2013, to celebrate European Year of Air, there was a Clean City Award for air quality awarded to a City business that has taken positive action to reduce emissions of air pollutants. Impact on local air quality is now part of the judging criteria for future awards.



Nomura International receiving the 2013 Clean City Award for air quality from the Lord Mayor

### **Policy 8: Recognising and rewarding good practice**

**The City will continue to promote, reward and disseminate best practice for tackling poor air quality through its award schemes.**

Actions:

46. The City Corporation will continue to run an annual Sustainable City Award for air quality.

47. The City Corporation will continue with its annual Considerate Contractor's Environment Award to encourage best practice and innovation in the industry.

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## 4.8 Raising awareness

In addition to taking action to reduce emissions and improve local air quality the City Corporation also takes action to increase public understanding about air pollution, its causes, and effects and how concentrations vary both spatially and from day to day. Armed with the right information people can take any necessary steps to avoid high levels of air pollution to reduce the impact on health. The City Corporation has been working with different communities in order to do this.

### 4.8.1 Working with residents

In October 2013, residents in the Barbican Estate began to monitor local levels of air pollution under a Citizen Science programme with University College London. One of the key aims was so they could understand how pollution varies in an urban environment, both spatially and under different weather conditions.

Over 70 households became air quality champions and monitored nitrogen dioxide on the balconies of their flats, at street level and at podium level in the Barbican Estate. The image below shows the location of nitrogen dioxide monitoring that took place over a year.

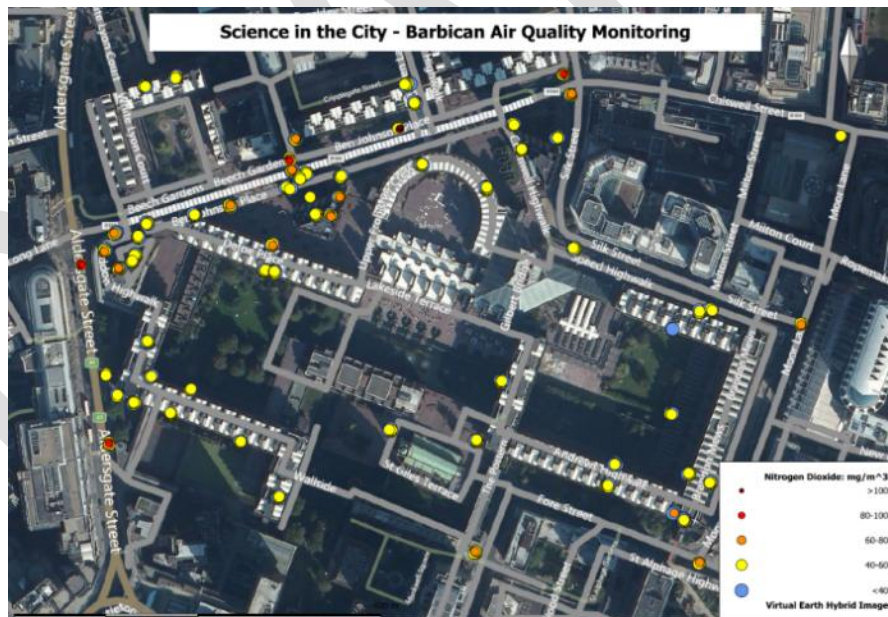


Figure 4.2 Air quality monitoring locations around the Barbican Estate

Appendix 1 contains further data from the Citizen Science monitoring programme.

A similar Citizen Science monitoring scheme has commenced with the residents in Mansell Street.

#### 4.8.2 Working with Schools

During 2013/2014, the City Corporation worked with Sir John Cass Primary school to both improve local air quality and work with the school children to raise awareness. Friends of City Gardens, a local community group, helped to install over 170 plants designed to improve air quality, in addition to several ivy screens. Detailed air quality monitoring is underway around the school and an entire school engagement programme has been undertaken.



Energy saving measures were implemented at the school, which will help reduce the schools own emissions of air pollutants. When pollution levels are high the school receives a notification so children that are susceptible to poor air quality can be protected. The work was implemented as part of the Greater London Authority Schools Clean Air Zones Programme.

#### 4.8.3 Working with businesses

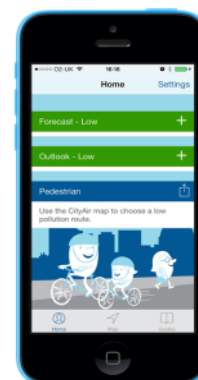
Through the CityAir business engagement programme, the City Corporation has been raising awareness of air pollution with City workers. A number of business events have been supported such as the one pictured at 99 Bishopsgate.



#### 4.8.4 Providing information via CityAir Smart phone App

The City Corporation promotes airTEXT, a free message service to alert users when pollution levels are high in London.

The City Corporation also has its own Smart Phone App 'CityAir', which provides advice to users when pollution levels are high. People who do not own a Smart Phone can use the web site [www.Cityairapp.com](http://www.Cityairapp.com)



Users can sign up as a different user e.g. a pedestrian, jogger or vulnerable person and receive tailored messages. The App recommends action to reduce personal exposure, contains a map of current pollution levels and has a function to guide users along low pollution routes. There have been over 5,000 downloads to date.

CityAir also has an active Titter account @\_CityAir to help raise awareness about air pollution.



## **Policy 9: Raising awareness**

**The City Corporation will take action to raise awareness amongst City residents and workers about air pollution and provide information on how to reduce exposure on days of high levels of pollution.**

Actions:

48. The City Corporation will continue to work with schools to provide information on how to reduce the impact of air pollution on children's health.

49. The City Corporation will apply for funding for further greening at Sir John Cass primary school.

50. The City Corporation will continue to work with residents in the Square Mile to raise awareness of air quality.

51. The City Corporation will develop a general communications strategy to inform people of action they can take to reduce exposure to air pollution.

52. The City Corporation will continue to support City businesses at events to raise profile of air quality and provide information for reducing exposure.

53. The City Corporation will continue to promote and develop the CityAir Smart Phone App with and CityAirApp.com web site.

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## 5. Air Quality and Public Health

One of the key changes since the publication of the 2011 Air Quality Strategy is the requirement for local government to undertake health improvement functions from April 2013. This was introduced by Health and Social Care Act 2012.

A Public Health Outcomes Framework has been introduced and consists of a set of indicators compiled by the Department of Health. These measure how effectively the activities of each local authority are at addressing the determinants of health. One of these indicators is Air Pollution and this is measured against levels of tiny particles (PM<sub>2.5</sub>). PM<sub>2.5</sub> is the mass concentration of particles less than 2.5 micrometers in diameter. This size of particle can penetrate deep into the lungs.

Short term exposure to high levels of air pollution can cause a range of adverse effects: exacerbation of asthma, effect on lung function, an increase in hospital admissions for respiratory and cardio-vascular conditions and increases in mortality. Long-term exposure to air pollution increases mortality risk. The relative risks associated with long term exposure are higher than short term exposure. Public Health England has stated that exposure to PM<sub>2.5</sub> is a significant cause of disease in London, and at least as important as road accidents, communicable disease, liver disease and suicide.

### What action has the City Corporation taken?

- Air pollution is a concern for City residents and during a public consultation event held by the City Corporation to identify issues which would form the priorities in the Joint Health and Wellbeing Strategy (JHWS), air quality was ranked as the third highest public health concern for City residents. As a consequence, the City of London **JHWS has identified improving air quality as a key priority to improve the health and wellbeing of City residents and workers.**
- The City's Health and Wellbeing Board has been appraised of the health impacts of air quality in the Square Mile and **an analysis has been undertaken of how the Health and Wellbeing Board can assist in improving air quality and reducing public exposure.** A report was presented to the Board in January 2014 and recommendations are being implemented. The report can be viewed at [www.cityoflondon.gov.uk/air](http://www.cityoflondon.gov.uk/air).
- A report has been produced bringing together the **latest papers on the health impacts of air pollution.** This report confirms that of all the pollutants, particulate matter has the greatest impact on health. However, particulate matter (PM), nitrogen dioxide, (NO<sub>2</sub>) and ozone (O<sub>3</sub>) have been found to be certain causes of death and disease, rather than probable causes as previously understood. The report is available at [www.cityoflondon.gov.uk/air](http://www.cityoflondon.gov.uk/air).

- The City Corporation has been and will continue to **monitor PM<sub>2.5</sub>** in Farringdon Street and add an additional PM<sub>2.5</sub> monitor at Sir John Cass Primary School.
- Air quality information sheets are produced for different City communities as required.

### **Policy 10: Air quality and public health**

**Improving air quality and reducing public exposure will remain a key public health priority for the City Corporation until concentrations are at a level not considered to be harmful to health.**

Actions:

54. The City of London will install a PM<sub>2.5</sub> monitor at Sir John Cass School during 2015 and the data will be assessed for its impact on health.

55. The City Corporation will identify exposure hotspots with high footfall and high concentrations.

56. The City of London will ensure that measures implemented to reduce emissions of NO<sub>2</sub> and PM<sub>10</sub> will also lead to reduction in emissions of PM<sub>2.5</sub>.

57. The City of London will continue to explore ways to reduce exposure of the population to air pollution.

58. The City will look at ways to extend the message about poor air quality on days of high pollution.

59. As City Corporation Area Strategies are reviewed they will be assessed for public exposure to air pollution and measures taken to reduce exposure where practical.

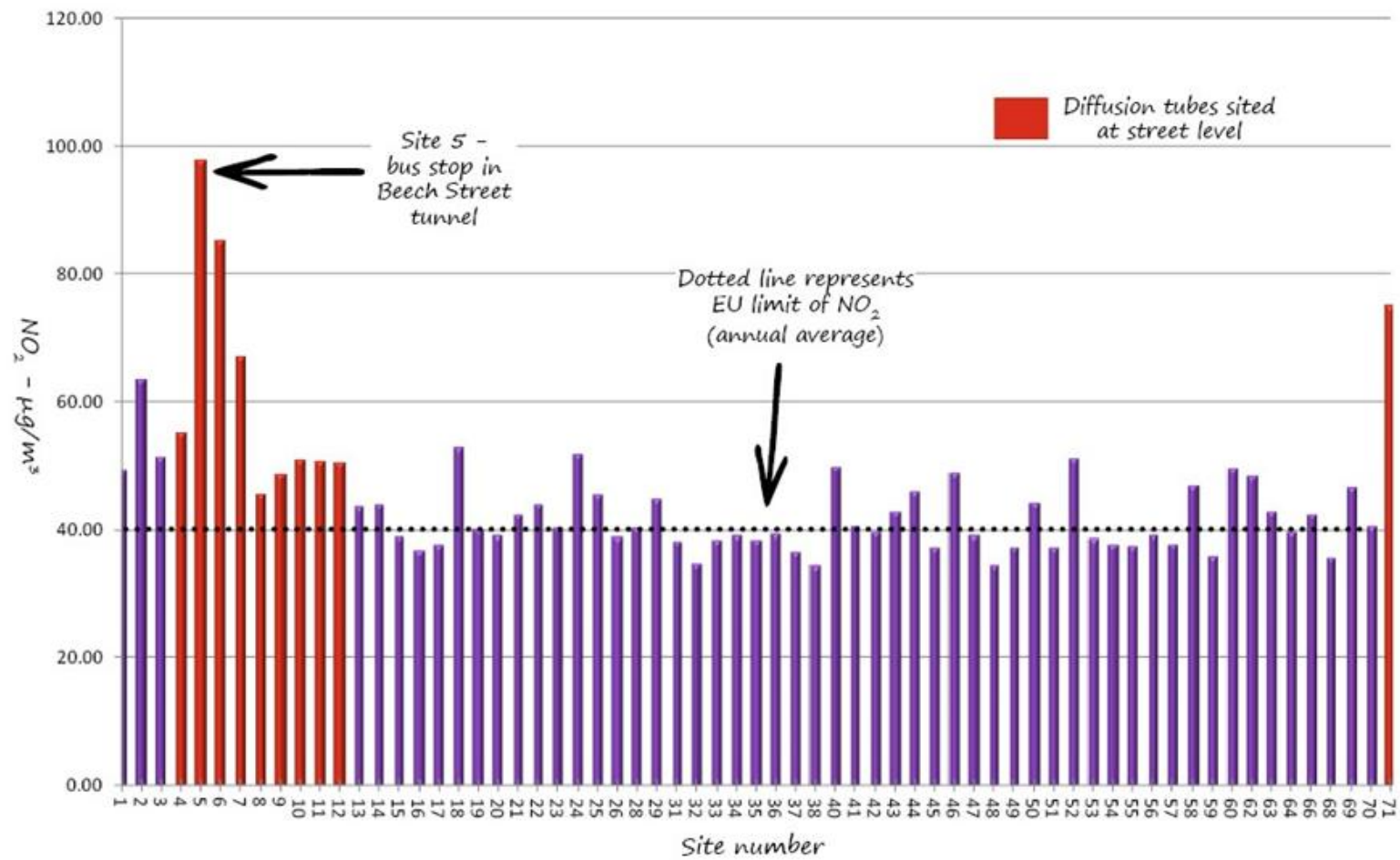


## Appendix 1

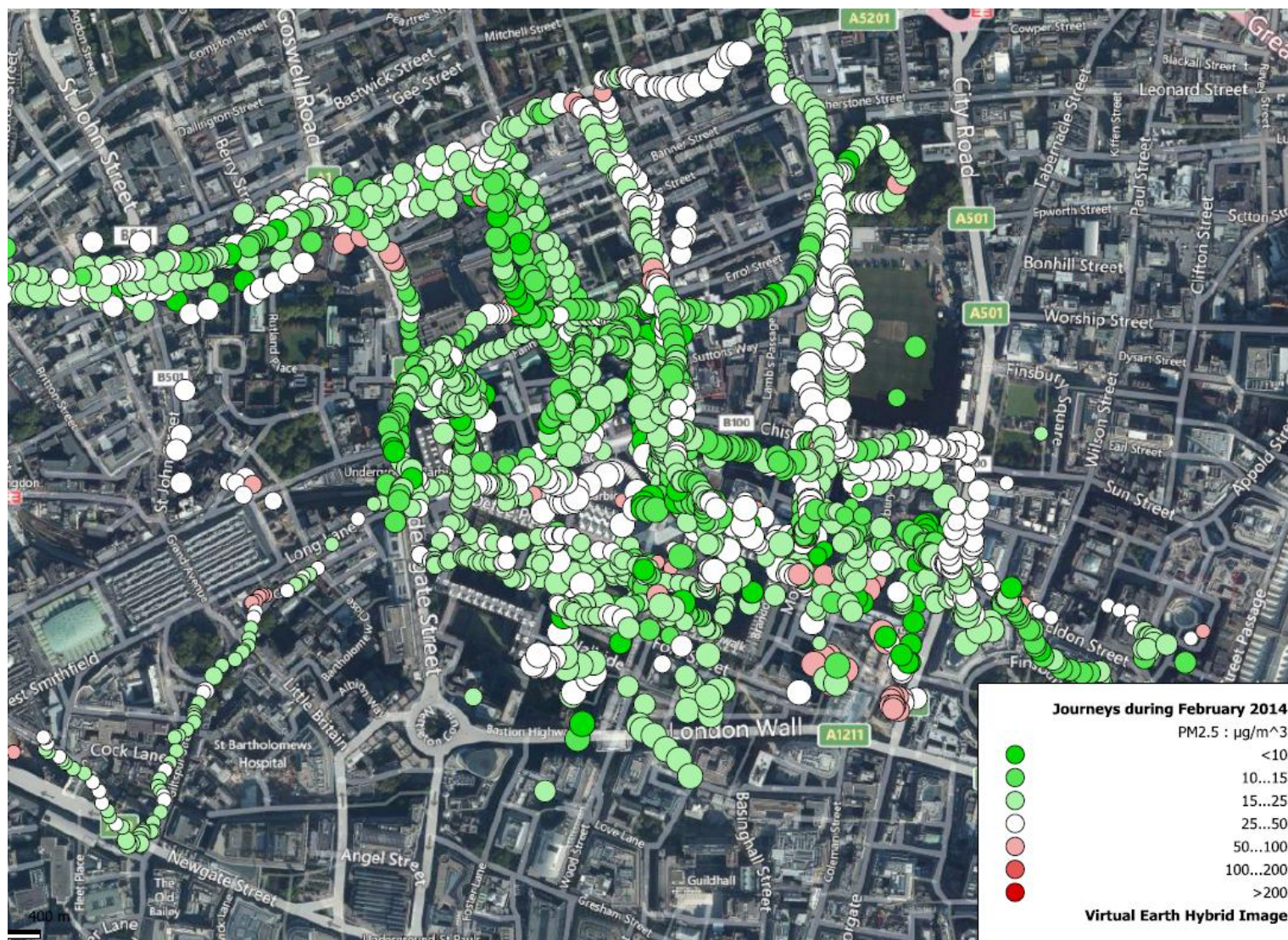
### Citizen Science Air Quality Monitoring Results

DRAFT

Average monthly  $\text{NO}_2$  measurements at each site around the Barbican Estate October to July 2014



## Personal Exposure Monitoring by the Barbican Residents February 2014





## Personal Exposure Monitoring by the Barbican Residents, including during the 3 days of the April 2014 particle pollution episode

