

Camden's Clean Air Action Plan 2013-2015



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1. Introduction

This document presents a revised and updated Clean Air Action Plan (CAAP) for Camden. The plan brings together a variety of actions to help reduce the key air pollutants in Camden - Nitrogen Dioxide (NO₂) and Particulate Matter with a diameter of 10 micrometers (PM₁₀) - which arise from traffic, boilers and other sources. Since 2000, the whole of the London Borough of Camden has been designated an Air Quality Management Area (AQMA) for PM₁₀ and NO₂. Whilst we are currently meeting the national short and long term objectives for PM₁₀, Camden (and most of London) continues to fail in meeting the national short and long term objectives for NO₂.

Camden is also working to assess and address PM_{2.5}, which is the smallest fraction of particulate matter, because research suggests that particulates of this size have the worst health impacts.

Protecting local air quality has a vital role to play in safeguarding public health and the environment, as well as enhancing quality of life for society. Camden is committed to improving air quality in the borough and this commitment is outlined in **The Camden Plan** as well as our environmental sustainability plan, **Green Action for Change (2011 – 2020)**.

Air pollution is a shared problem, with vehicles crossing borough boundaries and pollutants blowing in from elsewhere in London, the UK, and Europe. In addition, many sources of pollution, as well as policies and technology to reduce pollution, are managed regionally, nationally or at a European level. For example, public transportation, taxis and many major roads (such as the Euston Road and Finchley Road) are managed by Transport for London (TfL). It is therefore essential to work in partnership to achieve the shared aim of reducing air pollution, as well as continuously doing all we can and challenging others to do more to address this issue. This CAAP provides information on the air quality situation in the London Borough of Camden, and outlines the work that is taking place to reduce levels of air pollution in the borough.

Camden's role has four main strands:

- Working to reduce emissions from our own estate and operations.
- Helping residents and visitors to reduce emissions and exposure.
- Using planning policy and regulation to reduce air pollution.
- Using our influence to lobby for increased financial and regulatory support for the mitigation of air pollution.



Supporting Plans and Strategies

A number of Council plans and strategies support the Clean Air Action Plan:

- **The Camden Plan**, the five-year vision for Camden.
- The **Local Development Framework**, which sets out our strategy for managing growth and development in the borough.
- Camden's Environmental Sustainability Plan, **Green Action for Change 2012 - 2020**, which specifies the Council's policies and measures with regards to reducing CO₂ emissions, waste and other environmental impacts.
- **Camden's Parking and Enforcement Plan**, which sets out policies designed to reduce inter-borough and intra-borough car journeys and to encourage the take up of lower polluting vehicles.
- **The Camden Transport Strategy 2011-2031**, which outlines how the Council will deliver the borough's transport policies, programmes, and environmental objectives focused around reducing air pollution and carbon dioxide emissions, and fulfils Camden's statutory obligations related to the Mayor's Transport Strategy.

2. Air quality in context



National and Regional Air Quality Regulations

The UK Air Quality Strategy (AQS), released in July 2007, provides the overarching strategic framework for air quality management in the UK and contains national air quality standards and objectives established by the Government to protect human health. The AQS objectives take into account EU Directives that set limit values which member states are legally required to achieve by their target dates. The objectives for ten pollutants have been prescribed within the AQS based on the Air Quality Standards (England) Regulations 2007, these are presented in Table 1.

The Mayor of London has a statutory duty to reduce the levels of the seven locally managed pollutants to achieve the Government's air quality targets. The Mayor of London's Air Quality Strategy, 'Clearing the Air', was published in December 2010 and includes measures for buses, taxis and extending the Low Emission Zone, as well as supporting Local Authorities to reduce the impact of new developments, raise awareness of air quality and improve energy efficiency.

Table 1: Air Quality Objectives set out in the UK Air Quality Strategy

Pollutant	Concentration	Measured by	Deadline
Particles (PM ₁₀)	50 µg/m ³ not to be exceeded more than 35 times a year	24 hour mean	31.12.2004
	40 µg/m ³	Annual mean	31.12.2004
Particles (PM _{2.5}) Local Authorities currently do not have specific obligations for this pollutant	25 µg/m ³	Annual mean	2020
	15% reduction in concentrations at urban background	Annual mean	Between 2010 - 2020
Nitrogen dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1 hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Carbon monoxide	10 mg/m ³	Running 8-hour mean	31.12.2003
Sulphur dioxide	350 µg/m ³ not to be exceeded more than 24 times a year	1 hour mean	31.12.2004
	125 µg/m ³ not to be exceeded more than 3 times/yr	24 hour mean	31.12.2004
	266 µg/m ³ not to be exceeded more than 35 times a year	15 minute mean	31.12.2005
Benzene	5 µg/m ³	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Lead	0.5 µg/m ³	Running annual mean	31.12.2004
	0.025 µg/m ³		31.12.2008

The Health Impacts of Air Pollution

“Clean air is considered to be a basic requirement of human health and well-being. However, air pollution continues to pose a significant threat to health worldwide.”

World Health Organisation

Air pollution is associated with a number of adverse health impacts, and air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. A range of studies and reports have confirmed the links between air pollution and ill health and premature death, including those outlined below. Health Impacts Research:

Health Impacts Research

- A study in 2010 by the Mayor of London confirmed that an estimated 4,267 premature deaths in London in 2008 could be attributed to long term exposure to particulate matter.
- Recent research published by the World Health Organisation (WHO) has confirmed for the first time that diesel fumes have carcinogenic properties, to a similar level as passive smoking. This is particularly significant as the number of diesel vehicles is on the increase in the UK; in 2012, sales of diesel cars outstripped that of petrol for the first time ever¹.
- Research published by the Aphekom group of scientists in 2011, has shown that living close to roads travelled by 10,000 or more vehicles per day (on average) could be responsible for some 15-30% of all new cases of asthma in children.



Air Pollution and Environmental Inequity

National research² based on results from the Health Survey for England has shown that there is a link between poor air quality and low income in urban areas. The Marmot Review of Health Inequalities post-2010 states that sixty-six per cent of carcinogenic chemicals emitted into the air are released in the 10 per cent most deprived wards, and that poorer communities experience a higher prevalence of cardio-respiratory and other diseases, which evidence suggests are exacerbated by poor air quality.

Furthermore, a 2006 Defra report states that “it is clear that English AQMAs have disproportionately more deprived communities than England as a whole. This adds to the weight of evidence that deprived communities are likely to be in areas of higher pollution. However, it also suggests that AQMAs may be a means for helping to address inequalities (by disproportionately benefiting more deprived communities) on the assumption that they would successfully tackle the identified air quality problems across the whole AQMA³.”

¹Source: The Society of Motor Manufacturers and Traders (www.smmmt.co.uk).

²Environmental equity, air quality, socioeconomic status and respiratory health, 2010.

³Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006.

Characteristics of the Key Pollutants

Table 2: Characteristics of key pollutants⁴

Pollutant	Composition	Sources	Effects	Interventions and policies
Particulates	<p>PM₁₀ is particulate matter smaller than 10 micrometres (µm, or 0.001mm) in diameter,</p> <p>PM_{2.5} is that smaller than 2.5 µm.</p>	<p>Particulate matter is made up from a wide range of substances. It has both man-made and naturally occurring sources.</p>	<p>Strongly linked to health problems, including asthma, lung cancer and cardiovascular illness.</p>	<p>UK-wide technical emissions controls have begun to reduce PM emissions from exhausts, and London's Low Emission Zone has begun to ensure that vehicles that produce the most PM are significantly reduced in central London.</p> <p>However, few improvements have been made with tyre and brake materials.</p>
	<p>PM₁₀ is considered the threshold below which particles can be drawn into the lungs. Smaller PM_{2.5} is considered an even greater health risk due to being able to get deeper into the lungs and bloodstream. There is currently no specific air quality objective for PM_{2.5} but it is anticipated this fraction may be subject to regulation in future.</p>	<p>In central London, road vehicles are responsible for around 80% of PM₁₀ and PM_{2.5}.</p>	<p>Day to day variations in particulate pollution levels are strongly associated with variations in daily deaths, hospital admissions for respiratory and cardiovascular diseases and asthma.</p>	<p>In Camden, policies and projects to reduce PM include:</p> <ul style="list-style-type: none"> • Smarter Driving training, which reduces fuel consumption as well as tyre and brake wear • Promotion of new vehicles, fuels and technologies • Promotion of sustainable travel • Regulation of small industrial processes Regulation of planning, particularly demolition and construction.
Oxides of nitrogen	<p>NO_x refers to the combination of NO and NO₂ (nitrogen monoxide and nitrogen dioxide).</p> <p>During hot and sunny weather, NO_x and volatile organic compound (VOCs) emissions (primarily produced by vehicles and industrial processes using solvents), react in the atmosphere to form ground level ozone.</p>	<p>Around half of NO_x in Greater London comes from road transport.</p> <p>In central London, workplace gas use dominates.</p> <p>In outer London, domestic gas use is a major contributor.</p>	<p>NO₂ has been strongly linked with emphysema, bronchitis, and heart disease.</p> <p>Though there is some evidence that hospital admissions are related to concentrations of nitrogen dioxide, it has not yet been considered robust enough to quantify the effect.</p>	<p>More NO₂ is being emitted, as a proportion of NO_x, because numbers of diesel vehicles have increased.</p> <p>Technologies being developed such as 'selective catalytic reduction traps' (SCRT) are becoming available for larger vehicles with high replacement cost (such as buses and lorries), but, at around £10,000 per vehicle, are as yet unlikely to see wider use in family cars.</p>

	<p>Ozone is one of the main constituents of photochemical smog, with higher concentrations in summer when sunlight and temperatures are higher.</p>	<p>In outer London, domestic gas use is a major contributor</p>	<p>Overloading of nitrogen has also been connected with the degradation of sensitive habitats and deteriorating biodiversity.</p>	<p>Boilers and diesel vehicles are key areas of focus for Camden. Policies and projects to reduce NOx include:</p> <ul style="list-style-type: none"> • Strict regulation of large new boilers and Combined Heat and Power systems • A range of programmes and support to reduce domestic commercial and Council energy use • Promotion of and innovation in new vehicles, fuels and technologies • Promotion of sustainable travel and smarter driving • Using parking controls and other regulation to de-incentivise diesel and reduce engine idling.
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⁴This table is a modified version of one that appeared in 'Something in the Air', reproduced with permission from The Policy Exchange.

Climate change – Synergies and Conflicts

The UK AQS acknowledges the links between air quality and climate change, recommending a joined up approach for dealing with both issues. Carbon dioxide (NO₂), the main greenhouse gas responsible for climate change, shares common emission sources with air pollution, notably the combustion of fossil fuels for transportation, heat and power. Climate change is predicted to have direct and indirect impacts on human health, including potential negative effects on air quality (hot weather can increase ground level ozone, for example).

There are, therefore, many shared aims for those working to reduce air pollution and climate change. However, there are numerous areas where reducing carbon and air pollution can be at odds. For example, when diesel is used as a vehicle fuel it emits less NO₂ but more air pollution than petrol, and the same can be true where power is generated locally through Combined Heat and Power (CHP) or Biomass Boilers.

Both air quality and climate change are consistently highlighted as key areas of concern for residents in Camden, and the council has committed to cutting carbon by 40% by 2020. In order to ensure that progress is made in both of these priority areas, Camden has adopted a joined up approach to ensure that wherever possible projects deliver both air quality and carbon benefits. For example, sustainable transport and alternative fuels such as electric and bio-methane have air quality and carbon benefits. Additionally, because the carbon benefits of CHP are so significant, Air Quality and Planning officers work closely to ensure that CHP installed in the borough are the best in class in terms of air pollution, and last year Camden worked with Environmental Protection UK to develop a CHP guidance note to ensure that CHP in Camden and elsewhere in the UK is as low-polluting as possible.

Examples of planned joint working across these agendas during 2013-15 include a project to link with our existing business-focused Camden Climate Change Alliance to deliver a business-focused air quality project, and financial support provided from Transport's Local Implementation Fund to deliver air quality projects with a range of mutual benefits.



3. Air quality – a shared problem

Air Quality in London

Air quality is a cause of concern across London, and indeed in most major cities across the UK and Europe, many of whom breach the objectives for NO₂. All of the 33 London boroughs have declared AQMAs, and there are 226 Air Quality Action Plans across the UK. Air quality is poorest in the centre of London, where there is the heaviest concentration of traffic and buildings.

Partnership Working

Air pollution is a complex problem with a wide variety of sources, solutions and areas of responsibility which sit across the three tiers of Government (local, regional and national), as well as with companies such as vehicle manufacturers and those with significant fleets. The air quality responsibilities of the three tiers of Government are:

- **Central Government**

The Department for Environment Food and Rural Affairs (Defra) manages air quality nationally. It is responsible for the UK Air Quality Standards and for reporting to EU on progress with meeting the European limit values. Defra also provides guidance, support and some funding for boroughs to manage air quality locally.

Central Government is also responsible for delivering the framework and support for technological advances to improve air quality, such as developing a national framework for NO_x-abatement technology so that this can be enforced at the local level. The next phase of the London LEZ, scheduled for 2015, is dependent on this framework being in place.

- **Greater London Authority (GLA) and Transport for London (TfL)**

The Mayor of London has a legal responsibility to prepare and to keep under review an Air Quality Strategy for the Greater London area. The GLA is responsible for delivering the Mayor's Air Quality Strategy, the latest version of which was published in December 2010. The GLA is increasingly working more closely with London boroughs on joint initiatives to improve air quality.

The GLA coordinates the bi-annual London Atmospheric Emissions Inventory, which outlines the sources of the key pollutants across London and at the borough level. The next Inventory will be for 2010 and will be released at the end of 2012.

TfL is part of the GLA group. It is responsible for planning and running London's public transport services including the bus network, maintains key roads (including the Euston Road and Finchley Road) and regulates London taxis and private hire vehicles.



- **Local Government**

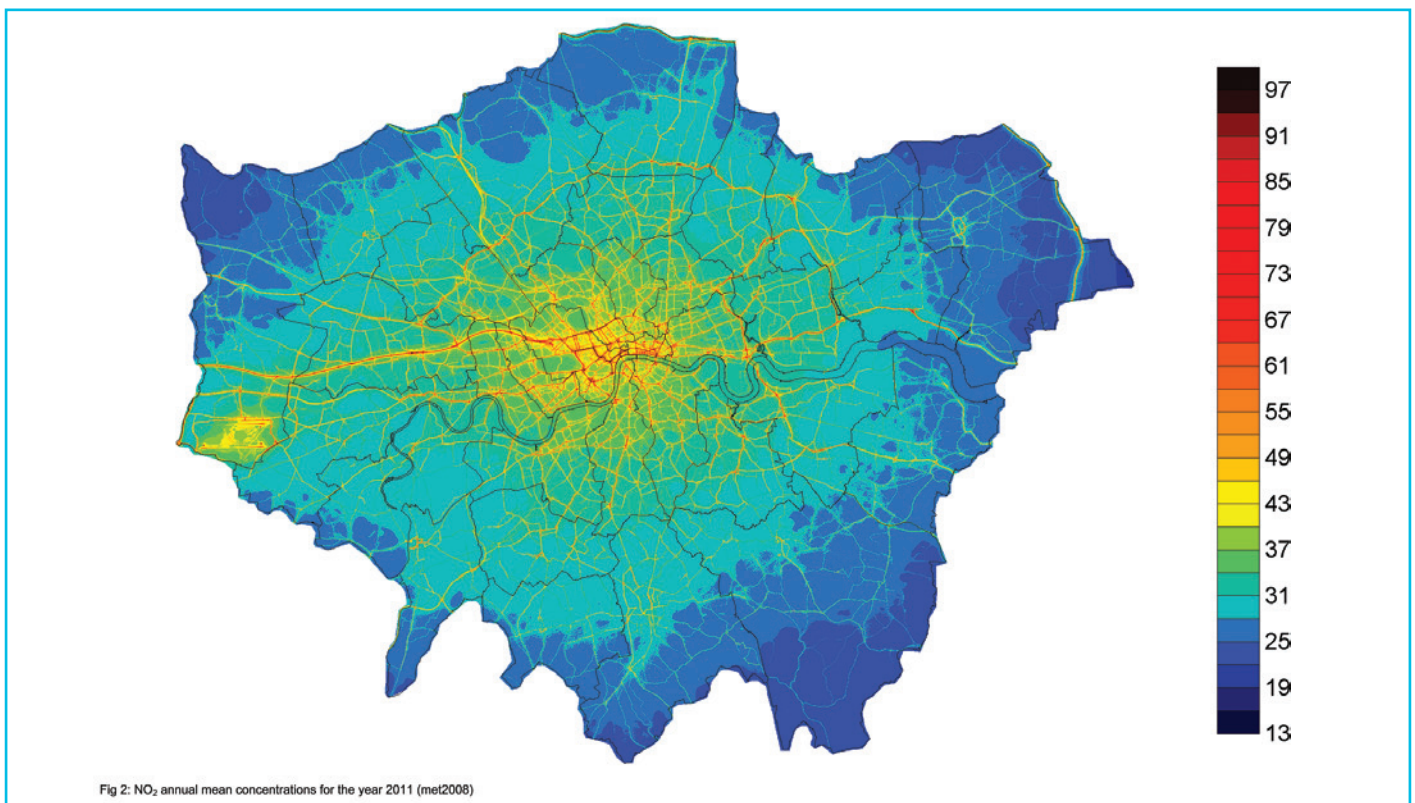
Councils are responsible for Local Air Quality Management, which involves monitoring and reporting on air pollution, and delivering on an Action Plan.

LB Camden will continue to both challenge and work in partnership with a variety of public and private organisations to improve air quality. In addition to TfL, the GLA, and Defra, other partners include: other London boroughs and the Central London Air Quality Cluster Group, the Central London Freight Quality Partnership, Camden businesses, Health and environmental organisations, vehicle manufacturers and community groups.

NO₂

In central London, NO₂ objectives are consistently breached at both urban background and kerbside sites. In outer London, urban background sites tend to be within the limit values but these are still breached at the kerbsides of busy roads. The below map uses data from the monitoring sites across London to model where NO₂ objectives have been breached in 2011, yellow, orange, and red signifies areas that are breaching the objective. This demonstrates that this is a London-wide problem, and that the main areas of concern are central London, and along the most heavily trafficked roads.

Figure 1 Modelled 2011 annual mean NO₂ concentration



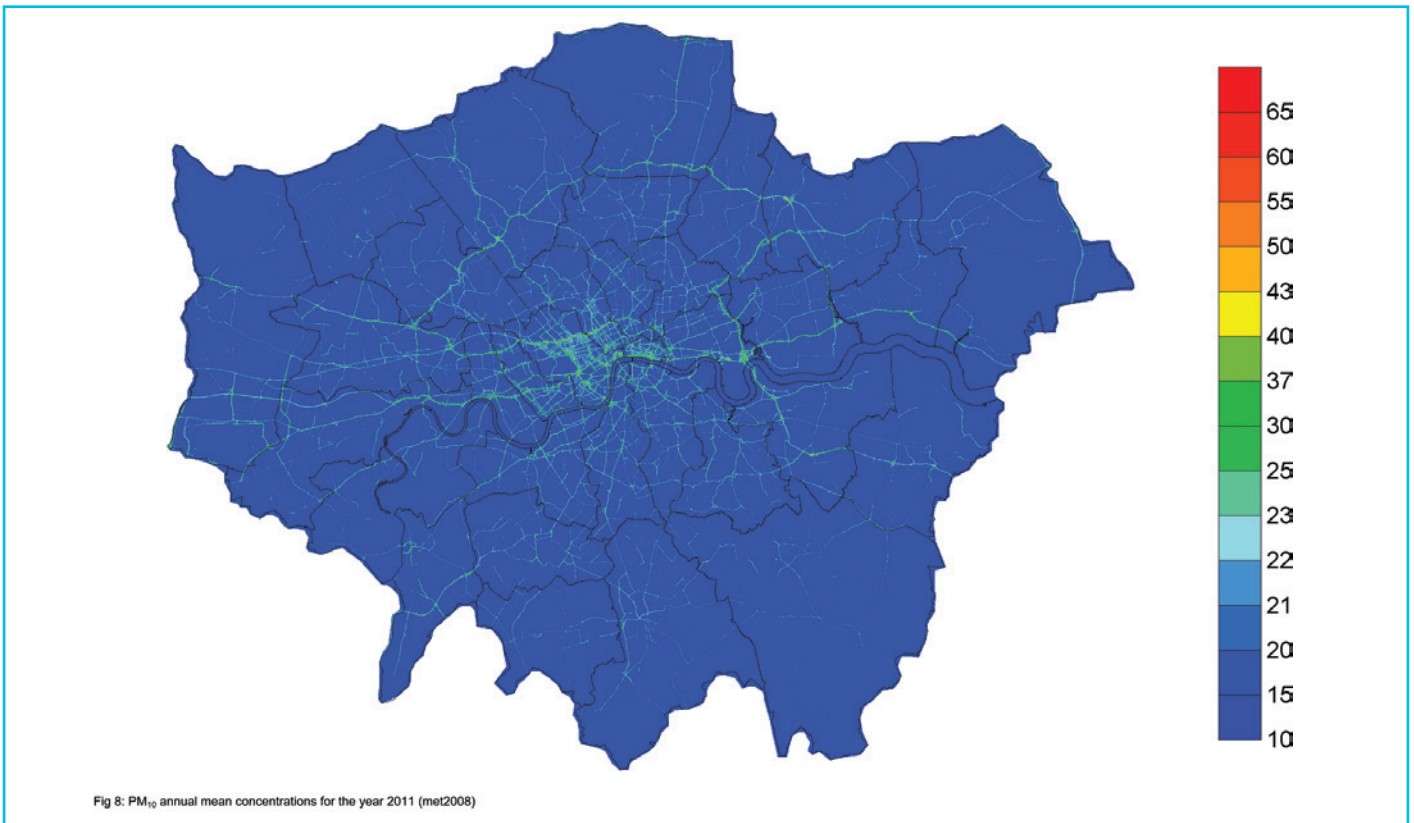
Particulate Matter

The annual PM₁₀ limit value is being met across London, with the limit value for daily mean PM₁₀ concentrations being met at the majority of monitoring locations, but exceeded intermittently at a small number of sites, such as by large junctions on the busiest roads. Figure 2 shows modelled annual mean concentrations of PM₁₀ in 2011, and demonstrates that this objective is being met across London.

Although there is no local limit value for PM_{2.5}, there is a national annual mean objective of 25 µg/m³ which is being met across the 12 monitoring stations in London which are equipped with the technology to monitor this fraction.

In 2011, TfL launched the Clean Air Fund project to target PM₁₀ in problem areas. This Fund paid for a range of projects and included trials of technological solutions such as dust suppressants to target PM₁₀ on problem roads. At the time of writing this Action Plan, the reports on these trials and projects had not yet been published, but they are due to be made available in early 2013.

Figure 2 Figure 2 Modelled 2011 Annual Mean PM₁₀

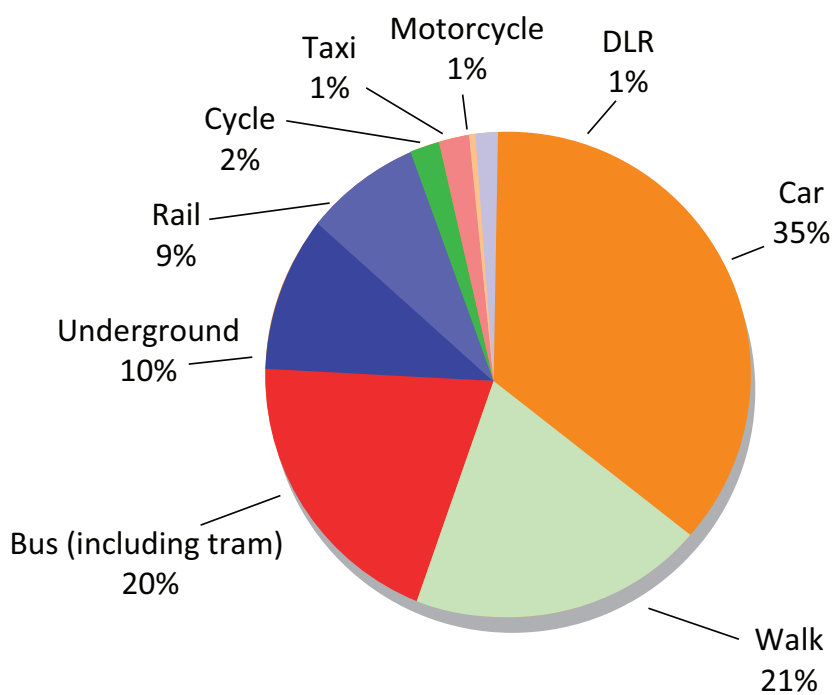


Key Polluters

Road transport

Vehicles are a major source of both PM₁₀ and NO₂ in Camden and the rest of Central London. Figure 3 demonstrates the breakdown of journeys by transport type in London.

Figure 3: Modal shares of daily journeys in London 2010



Some modes of transport emit a far higher proportion of air pollution than others, and understanding this helps inform the focus of actions in this plan. Focus areas for transport are (source apportionment from The Mayor's Air Quality Action Plan 2010):

- **Taxis**, which are responsible for 25% of PM₁₀, and 10% of NO₂. There have been a number of policies put in place recently to reduce taxi emissions, such as introducing a 15 year age limit and tighter emissions testing, however, taxis still represent a disproportionate amount of PM₁₀, especially when compared to the number of journeys this represents (1% of total journeys).
- **Buses**, which have made great improvements with regards PM₁₀ and now only contribute 10% of central London totals, but contribute 40-50% of NO₂.
Public transportation is clearly crucial for environmental, economic and social reasons, and much of Camden's work supports a shift from cars to public transport. However, as buses are such a significant source of NO₂ in central London, and tend to be concentrated on our most polluted roads, this is an area that needs further improvement if we are to meet the air quality objectives, TfL are currently working on a range of initiatives to improve this, such as buses fitted with Nox-abatement technology and the purchase of new hybrid buses, and Camden will continue to work closely with TfL to push for further improvements.
- **Cars**, which contribute 23% of PM₁₀ and 20% of NO₂.
The way to address this is to encourage a shift from cars to other sustainable forms of transport, and where cars are used, to encourage smarter driving and alternative fuels.
- **Heavy goods vehicles and vans** which contribute about 30% of NO₂ and 20-30% of PM₁₀. Although the Mayor's Low Emission Zone has delivered some improvements in PM₁₀ from larger vehicles, they remain an important source of pollution in Central London.

It is important to note that the combustion of fuel is not the only source of Particulate Matter from road vehicles. It is also created by tyre and brake wear, and accounts for approximately 40% of the PM₁₀ from vehicles. This is an area that has not seen any improvement in recent years (unlike exhaust fumes which has improved somewhat as a result of particulate filters and improved/alternative fuels).



Other sources

Air pollution also comes from non-road sources. In central London, the most significant source is domestic and commercial boilers, which are a key source of NO₂ (around 40%) and a small source of PM₁₀. This can be reduced through energy efficiency and by ensuring new boilers are low-NO_x. Small industrial processes and construction are also responsible for a small proportion of PM₁₀ in Central London and these are regulated by Local Authorities.

4. Air quality in Camden

Pollution Monitoring in Camden

Camden has four automatic monitoring sites in the borough, as well as sixteen NO₂ diffusion tubes. Details of our monitoring sites can be found at www.camden.gov.uk/laqm.

Camden is meeting the objectives for all pollutants other than NO₂. Long term trends reveal that Camden continues to breach the annual mean air quality objective for nitrogen dioxide, although concentration levels at three of the four automatic monitoring sites decreased between 2010 and 2011, it is too early to tell if this represents a downward trend. In 2011, the annual NO₂ objective was exceeded at all of LB Camden's four automatic monitoring sites, with particularly high readings at the new monitoring station installed in 2010 on the Euston Road, which is part of the roads network managed by TfL.

The hourly objective for NO₂ was breached at both Swiss Cottage and Euston Road monitoring sites in 2011 but not at the Bloomsbury and Shaftesbury Avenue sites.

Although Camden is meeting the objectives for PM₁₀, it remains a pollutant of focus within the Air Quality Management Area.

This is for two reasons

- Firstly, because levels are modelled to be very close to the objective on parts of the Euston Road. Camden will be installing a particulate monitor towards the end of 2012, in order to effectively assess this situation. The monitor will record both PM₁₀ and PM_{2.5}.
- Secondly, the medical evidence indicates that particulates are detrimental to health at any level, and World Health Organisation Guidelines state that annual PM₁₀ should not exceed 20 µg/m³ (which is half of the current national Air Quality Objective for this pollutant).



Sources of Air Pollution in Camden

The most recent London Atmospheric Emissions Inventory (LAEI) data for Camden is from 2008 and details the sources of NO_x and PM₁₀ emissions in the borough, these are shown in chart form in Figures 4 and 5 below. These charts illustrate that road transport and gas boilers are the main sources of NO_x, and road transport is responsible for 60% of PM₁₀.

Figure 4: Sources of NO_x in Camden (LAEI data)

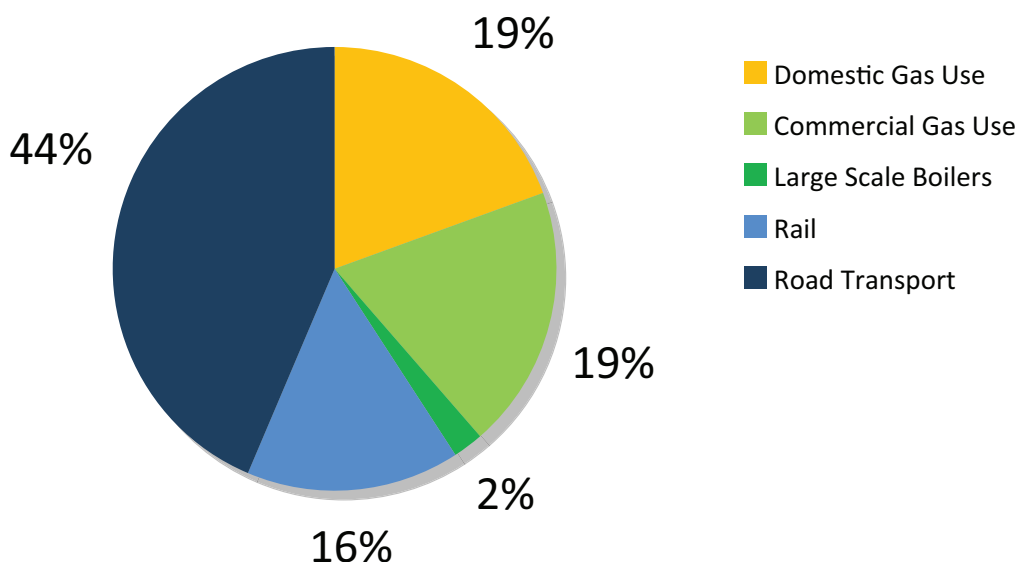
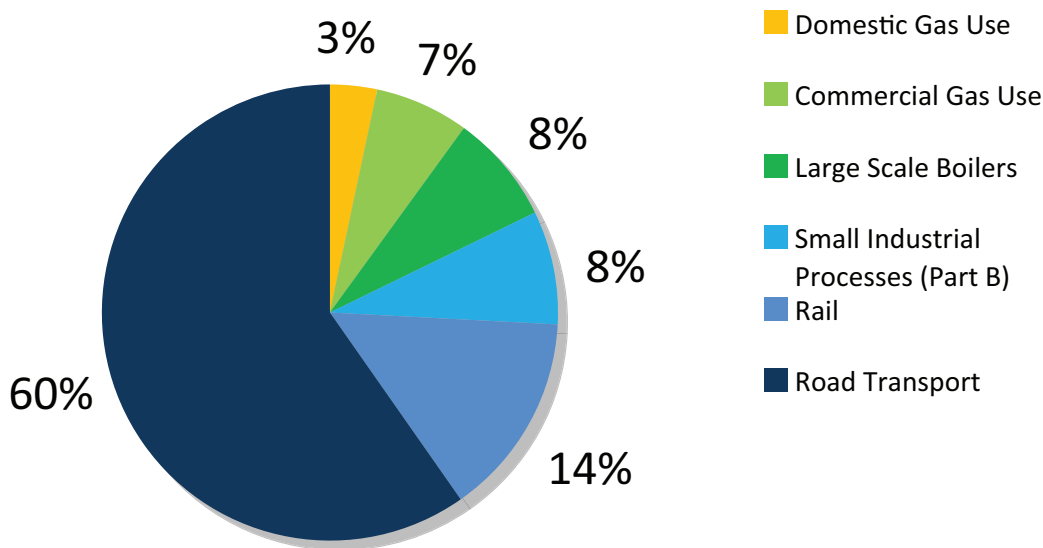


Figure 5: Sources of PM10 in Camden (LEAI data)



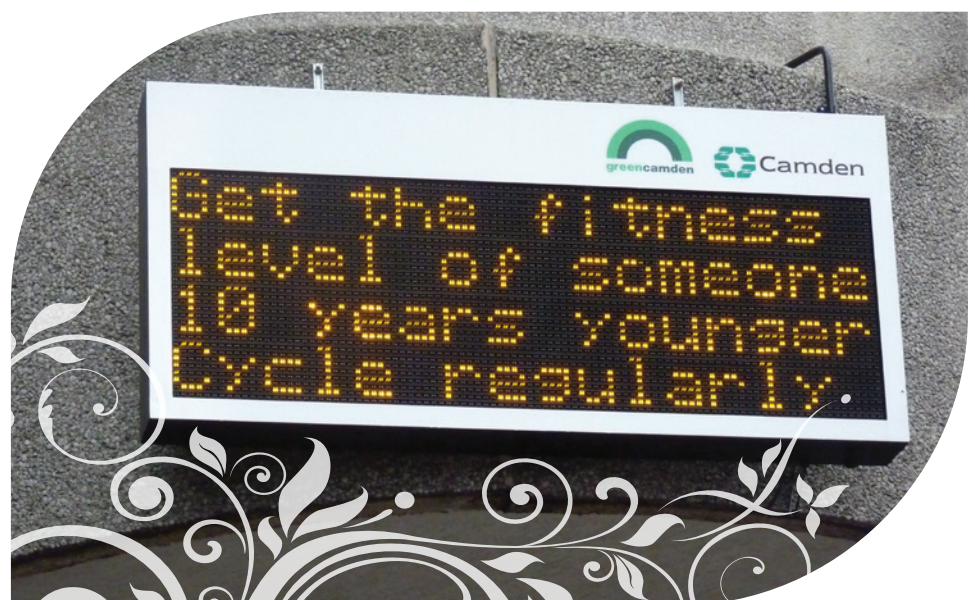
Informing Residents When Pollution is Elevated

In the UK, most air pollution information services use the index and banding system recommended by the UK Committee on Medical Effects of Air Pollutants (COMEAP). The system uses an index numbered 1-10 divided into four bands (Low-Very High) to provide more detail about air pollution levels in a simple way. The index includes information about the impact of pollution upon the general population and at risk individuals (those who are likely to be sensitive to the effects of air pollution). The full index can be found at <http://uk-air.defra.gov.uk/air-pollution/daqj>.

Air quality bulletins can enable sensitive individuals (people who suffer from heart disease or lung diseases, including asthma) to take preventative measures when air pollutants are elevated, to avoid negative effects on their health.

This index is used as the basis for subscribers to the free London-wide airTEXT scheme, who receive alerts when pollution levels are forecast to be elevated. More information can be found at www.airtext.info.

In 2012, Camden Council installed London's first live LED air quality sign on the Euston Road. This sign advises when air pollution reaches moderate or above, and provides a range of sustainable travel advice. The sign has generated interest in the media and social media and there has been a general increase in air quality related enquiries to the Council over the past year.



5. Action plan

This Plan identifies initiatives to be implemented by LB Camden and our partners to reduce NO₂ and PM₁₀ emissions from the four main emission sources in the borough – road transport, gas boilers, new developments and small industrial process.

The overarching aims of the Plan are to:

Continue to meet the EU objectives for Carbon Monoxide, Sulphur Dioxide, Benzene, 1,3-Butadiene, Lead and PM₁₀.

Continue to reduce concentrations of PM₁₀; and to meet the EU Objective for NO₂.

The key objectives of the Plan are to:

- Encourage reductions in fossil fuel use, the adoption of clean fuels and technology and promote energy efficiency.
- Raise awareness about air quality in Camden and promote lifestyle changes which can help reduce levels of air pollution and exposure to air pollution.
- Improve the health and well-being of the local population.
- Work in partnership with national and regional bodies, and with local public and private organisations, to foster improvements in air quality.
- Lead by example and reduce NO₂ and PM₁₀ emissions associated with the Council's own buildings and transport services.
- Ensure actions which serve to reduce NO₂ and PM₁₀ emissions complement actions to mitigate CO₂ emissions, and vice-versa.

The Plan comprises five sections:

1. Reducing transport emissions.
2. Reducing emissions associated with new development.
3. Reducing emissions from gas boilers and industrial processes.
4. Air quality awareness raising initiatives.
5. Lobbying and partnership working.

Progress against this Plan will be reviewed annually.

SECTION 1: Reducing transport emissions

Why this issue is important

Road transport accounts for approximately half of the emissions of NO₂ and PM₁₀ in Camden, as well as contributing to climate change.

What is already being done

- Significant reductions in car use and increases in walking and cycling over the last ten years. Data from Camden's annual screenline surveys shows that cars recorded crossing these screenlines have reduced by 34%, whilst cycling has increased by 225%.
- Expansion of car club membership reaching 6,700. There are 265 car club spaces in LBC. Research suggests that the availability of car clubs dramatically reduces car ownership.
- Delivery of an innovative electric vehicles project wherein local businesses were offered free two-week trials of electric vehicles, resulting in two commitments to purchase vehicles, and dissemination of a high-quality video which has been viewed over 10,000 times.
- Installation of twenty seven on-street charging points for electric vehicles and 10 off-street charging points as part of the London-wide Source scheme operated by TfL.
- Free smarter driving training provided to Camden residents and businesses.
- Progressive environmental improvements in the Council's own vehicle fleet and upgrade and promotion of the bio-methane refueling station at the Camden Transport Depot at York Way.
- Over the last two years the borough has been carrying out a comprehensive Parking Policy Review (PPR). The objectives of the PPR are wide ranging and include measures to improve air quality. Some of the measures introduced include:
 - Increasing the range of emissions-based charging by lowering the tariff for the least polluting vehicles and increasing the tariff for the more polluting vehicles
 - retention of the 90% discount for electric car owners and the introduction of the discount for electric motorcycle owners
 - introduction of a £10 additional charge for diesel vehicles
 - an offer of free annual car club membership and £50 worth of driving hours to the first 150 residents willing to give up their resident permit.

Actions

Actions	Measure/indicator	Timeframe	Benefits
1. Undertake measures to increase walking and cycling in the borough.	<ul style="list-style-type: none"> Percentage reduction in resident trips made by car and motorcycle Percentage increase in cycling as a proportion of traffic flow 	Ongoing	<ul style="list-style-type: none"> Encourages sustainable and healthy modes of transport Reduces traffic congestion Reduces emissions (air pollutants and CO₂)
2. Undertake travel awareness initiatives which make links with improving air quality.	<ul style="list-style-type: none"> Number of events/yr (and number of attendees where possible) Inclusion of air quality information/advice in relevant communications 	Ongoing	<ul style="list-style-type: none"> Encourages sustainable and healthy modes of transport Reduces traffic congestion Reduces emissions (air pollutants and CO₂)
3. Use car-clubs as a means to encourage residents to give up owning a car and to drive less.	<ul style="list-style-type: none"> Number of new car club members 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants and CO₂) Reduces traffic congestion
4. Work in partnership with schools and businesses by providing advice to encourage the adoption of travel plans.	<ul style="list-style-type: none"> Number of travel plans produced/yr 	Ongoing	<ul style="list-style-type: none"> Encourages sustainable and healthy modes of transport Reduces traffic congestion Reduces emissions (air pollutants and CO₂)
5. Support the uptake of low emission (electric and bio-methane) vehicles.	<ul style="list-style-type: none"> Uptake of low emission vehicles Number of electric charging points Number of times Camden electric vehicle trials video is viewed 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants and CO₂) Encouraging sustainable fuels to the market
6. Provide guidance and information about low emission vehicles to residents and local businesses.	<ul style="list-style-type: none"> Number of people using Camden's web-based advice 	Ongoing	<ul style="list-style-type: none"> Encouraging sustainable and healthy transport modes
7. Undertake awareness-raising to encourage drivers to employ smarter driving techniques and switch off their engines, and raise awareness about the impact of tyre and break wear.	<ul style="list-style-type: none"> Incorporating messages into relevant communication channels and campaigns 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants and CO₂) Fuel savings for residents and businesses

<p>8. Increase the proportion of low emission vehicles in our fleet, and reduce fuel usage.</p>	<ul style="list-style-type: none"> • % change in emissions (kg) from Council vehicle fleet/annum against 2008/9 baseline 	<p>Ongoing</p>	<ul style="list-style-type: none"> • Reduces emissions (air pollutants and CO₂) • Fuel savings for LBC
<p>9. Review Camden's Corporate Travel Plan and introduce new measures to reduce staff travel by car.</p>	<ul style="list-style-type: none"> • Number of events/promotions to encourage walking and cycling 	<p>Plan reviewed by April 2013</p>	<ul style="list-style-type: none"> • Reduces emissions (air pollutants and CO₂) • Fuel savings for LBC
<p>10. Update and adhere to Camden's Green Fleet Policy.</p>	<ul style="list-style-type: none"> • % of vehicles purchased/leased in line with policy 	<p>Policy updated by January 2013</p>	<ul style="list-style-type: none"> • Reduces emissions (air pollutants and CO₂) • Fuel savings for LBC • Encouraging new vehicle technologies onto the market
<p>11. Undertake a feasibility study into a freight consolidation centre for Camden's deliveries.</p>	<ul style="list-style-type: none"> • Development of study with proposals for next steps 	<p>April 2013</p>	<ul style="list-style-type: none"> • Reduces emissions (air pollutants and CO₂) • Reduces congestion
<p>12. Seek opportunities to improve the sustainability of Camden's fleet through the Carbon Management Plan (CMP).</p>	<ul style="list-style-type: none"> • Number and type of projects funded through the CMP 	<p>2013-2020</p>	<ul style="list-style-type: none"> • Reduces emissions (air pollutants and CO₂) • Fuel savings for LBC
<p>13. Develop and trial technologically advanced cargo cycle vehicles in public/private partnership.</p>	<ul style="list-style-type: none"> • Development of vehicle and operation of trial 	<p>June 2013</p>	<ul style="list-style-type: none"> • Reduces emissions (air pollutants and CO₂) • Reduces congestion

SECTION 2: Reducing emissions associated with new development

Why this issue is important

PM₁₀ and NO₂ emissions can arise during the construction and operational phases of new development, with the impacts influenced by the size and location of the development. The land-use planning system plays a central role in managing the environmental impacts of new development and contributes to the protection and long-term improvement of air quality. This is achieved by ensuring that new developments do not have a negative impact on local air quality, and that public exposure to air pollutants is reduced in areas which breach the Government's air quality standards.

What is already being done

- Production of Supplementary Planning Guidance on air quality and the successful use of a combination of planning conditions and legal obligations to help mitigate impacts on air quality associated with transport, energy use and construction practices at new developments.
- Development and dissemination of a best practice guidance note for Combined Heat and Power (CHP).
- Requiring air quality impact assessments for planning applications associated with increased transport and boiler emissions.
- Requiring developers to control and monitor dust emissions at large construction sites in accordance with best practise measures.
- Requiring that housing developments are car free or car capped (466 car free and 81 car capped developments conditioned in the last 3 years).
- Requiring that major developments meet a 20% renewable energy target.



Actions

Actions	Measure/indicator	Timeframe	Benefits
14. Require developers to undertake an air quality assessment (AQA) in circumstances where a new development could have a negative impact on air quality, and provide an air pollution mitigation plan where necessary.	<ul style="list-style-type: none"> Number of planning applications assessed and regulated through AQAs 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants)
15. Require developers to submit Construction Management Plans in accordance with the London Best Practise Guidance to Control Dust and Emissions from Construction and Demolition. Through onsite pollutant monitoring, ensure that large developments are adhering to the CMP requirements.	<ul style="list-style-type: none"> Number of Construction Management Plans and monitoring requirements included for relevant developments 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants)
16. Continue to use planning conditions and obligations to require developers to adopt measures which will reduce transport emissions, such as requesting travel and business plans, installing electric vehicle recharging infrastructure, and allocating car club bays.	<ul style="list-style-type: none"> Number of sites with reduced parking Number of sites with cycle parking facilities Number of sites with EV charging points and car club spaces 	Ongoing	<ul style="list-style-type: none"> Reduces congestion Encouraging sustainable and healthy transport modes
17. Review and update Camden's air quality policies and guidance in line with the National Planning Policy Framework April 2012, and revised Best Practice Construction Guidance from the GLA, which is due end at the end of 2012.	<ul style="list-style-type: none"> Guidance updated and followed 	April 2013	<ul style="list-style-type: none"> Reduces air emissions and exposure
18. Require development sites to meet the Mayor of London's energy hierarchy, with high standards of sustainable building design and construction, and consideration of CHP and renewables. Developers must ensure that best practice requirements for controlling NO _x and PM ₁₀ emissions from biomass boilers and CHP are met.	<ul style="list-style-type: none"> Number of biomass boilers/ CHP installed with conditions/ obligations set to control emissions 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants) Encourages renewable energy technologies

SECTION 3: Reducing emissions from gas boilers and industrial processes

Why this issue is important

Domestic and commercial gas boilers are the a major source of NO₂ and a significant source of PM₁₀ emissions in Camden. Reducing gas consumption and improving energy efficiency in buildings is a key route to minimising emissions from gas boilers. Camden has been actively promoting the benefits of energy efficiency measures for a number of years. This has primarily focused on saving heat in homes in response to statutory requirements to improve energy efficiency and reduce fuel poverty. More recently this has been linked to requirements to reduce the borough's CO₂ emissions.

Small industrial processes also contribute a rising proportion of particulate matter emissions in Camden. The Council has a statutory duty to regulate emissions to air from industrial processes in accordance with the Environmental Permitting Regulations. This legislation requires site operators to adopt the best emission control practices in order to protect local air quality.

What is already being done

- Extensive Carbon Management Plan to reduce carbon in Camden's corporate estate by 40% by 2020. Gas consumption in Camden's corporate buildings has reduced by 16% (2,053,805kgs) between 2009/10 and 2011/12.
- Provision of a program of advice and support for residents to reduce energy use via Green Camden, with over 3,000 home energy visits completed which provide immediate energy saving measures as well as guidance on additional methods to reduce energy use.
- Support for businesses and institutions through the Camden Climate Change Alliance, with a membership of over 200 organisations.
- 9,000 council properties benefitting from either loft or cavity wall insulation.

Actions

Actions	Measure/indicator	Timeframe	Benefits
19. Camden will promote the adoption of fuel saving measures to residents through the Green Camden campaign.	<ul style="list-style-type: none"> Number of residents receiving advice Number of home energy visits 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants and CO₂) Reductions in number of residents in fuel poverty Fuel savings
20. Camden will promote the adoption of fuel saving measures to businesses through the Camden Climate Change Alliance.	<ul style="list-style-type: none"> Number of new business subscribed to Climate Change Alliance/yr 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants and CO₂) Energy savings for businesses Promotion of sustainable and healthy transport modes
21. Ensure forthcoming planned awareness-raising projects (Campaign Days, Business project, and Clean Air for Schools) include awareness raising about the link with boilers and air quality, to reduce boiler usage and ensure newly installed boilers are low-NOx.	<ul style="list-style-type: none"> The forthcoming detailed campaign plans will include specific measurable outcomes 	April 2014	<ul style="list-style-type: none"> Improvements in levels of awareness and understanding Reduces emissions (air pollutants and CO₂)
22. Continue to undertake energy efficiency improvement work in the Council's own buildings.	<ul style="list-style-type: none"> Progress with insulation and improvement programmes 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants and CO₂) Reduces number of residents in fuel poverty Fuel savings
23. Reduce gas consumption from Camden's Corporate Property (excluding housing).	<ul style="list-style-type: none"> Reduction in gas consumption 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants and CO₂) Energy savings for LBC
24. Ensure that all Part B Installations in the borough maintain the highest standards of air pollution emission control.	<ul style="list-style-type: none"> Number of Part B Installations meeting compliance 	Ongoing	<ul style="list-style-type: none"> Reduces emissions (air pollutants)

SECTION 4: Raising Awareness

Why this issue is important

Informing people about local air quality can help to protect those members of the community who are most sensitive to the health impacts associated with air pollution. Increasing public understanding of the sources and effects of air pollution can also motivate lifestyle changes which can help improve air quality, for example promoting sustainable travel as method of reducing air pollution.

What is already being done

- Air Quality Summit held in November 2011 with over 120 attendees and a panel of high profile expert speakers, the event was also streamed on Camden's website.
- Innovative schools arts and film project undertaken which has created high-quality pupil-led films for dissemination across London.
- Securing funding for research on air quality perceptions and the development of appropriate messaging and other communication tools.
- Installation of an LED air quality sign on the Euston Road, which advises of elevated levels of pollution and provides sustainable travel advice.



Actions

Actions	Measure/indicator	Timeframe	Benefits
25. Continue to disseminate up to date information about air quality and investigate new methods of informing the public about air pollution levels.	<ul style="list-style-type: none"> Number of people visiting Camden's air quality webpages 	Ongoing	<ul style="list-style-type: none"> Improvements to public health through reductions in air pollution related illness Encourages sustainable and healthy transport modes
26. Continue to monitor air pollution levels across the borough and review our air quality monitoring network every year.	<ul style="list-style-type: none"> Continued monitoring 	Ongoing	<ul style="list-style-type: none"> Improvements in levels of awareness and understanding Enables targeted and relevant projects and initiatives
27. Continue to monitor, maintain and refresh the LED air quality sign.	<ul style="list-style-type: none"> Increase in air quality enquiries Uptake of campaigns/webpages that have been advertised on the sign 	2012 - 14	<ul style="list-style-type: none"> Improvements to public health through reductions in air pollution related illness Improvements in levels of awareness and understanding Encourages sustainable and healthy transport modes
28. Develop and deliver a communications strategy which ensures maximum co-benefits from the multiple planned projects.	<ul style="list-style-type: none"> Communications strategy in place Successful and coordinated approach to delivering the varied project schedule 	Strategy in place by February 2013	<ul style="list-style-type: none"> Improvements to public health through reductions in air pollution related illness Encourages sustainable and healthy transport modes Improvements in levels of awareness and understanding
29. Work directly with 2-3 schools for the "Clean Air Zones for Schools" project, to raise awareness and deliver direct improvements to pupils (such as green screens/energy efficiency measures/reduction in idling), and ensure that schools not involved in CAZ4S benefit from shared information and dissemination of resources. This project will be delivered in partnership with the GLA and several other London boroughs.	<ul style="list-style-type: none"> Number of students reached Amount of exposure reduced/awareness raised Development of replicable models for other schools Effective dissemination of outputs to other schools 	April 2014	<ul style="list-style-type: none"> Encourages sustainable and healthy transport modes. Improvements in levels of awareness and understanding

<p>30. Deliver an AQ business campaign.</p> <p>This project will be delivered in partnership with the GLA and several other London boroughs.</p>	<ul style="list-style-type: none"> • Number of businesses signed up to campaign 	<p>April 2014</p>	<ul style="list-style-type: none"> • Encourages sustainable and healthy transport modes • Improvements in levels of awareness and understanding
<p>31. Deliver a “Campaign Days” project to encourage behaviour change when air quality is particularly elevated.</p> <p>This project will be delivered in partnership with the GLA and several other London boroughs.</p>	<p>TBC</p>	<p>April 2014</p>	<ul style="list-style-type: none"> • Encourages sustainable and healthy transport modes • Improvements in levels of awareness and understanding
<p>32. Seek funding for air quality projects.</p>	<ul style="list-style-type: none"> • Number of successful funding bids 	<p>Ongoing</p>	<ul style="list-style-type: none"> • Improvements to public health through reductions in air pollution related illness • Encourages sustainable and healthy transport modes • Improvements in levels of awareness and understanding
<p>33. Seek opportunities to strengthen the link between public health and air quality through joint working and policy development with Public Health in Camden.</p>	<ul style="list-style-type: none"> • Policies, relationships and processes in place to ensure air quality is considered wherever relevant. 	<p>Ongoing</p>	<ul style="list-style-type: none"> • Improvements to public health through reductions in air pollution related illness • Improvements in levels of awareness and understanding

SECTION 5: Lobbying and partnership working

Why this issue is important

Whilst the Council is in the ideal position to monitor air pollution and manage many direct interventions to reduce emissions and raise awareness, some important areas are not within the control of the council, and need to be addressed at a regional, national or European level. Examples include areas such as public transport, taxis, vehicle manufacturing, Low Emission Zones and pollution retrofit technology. It is therefore crucial that Camden uses its influence to ensure that suitable policies, regulation and projects occur at regional, national and European levels.

What we are already doing

- Working with the Mayor of London and central London boroughs to press for further action on air quality, particularly in relation to buses and taxis.
- Official Camden responses provided to relevant consultations (such as the Mayor's Air Quality Plan) in order to influence policy development.
- Partnership working on projects with the GLA, TfL, other London Boroughs, bio-methane provider Gasrec, and electric vehicle companies such as NISSAN and VAUXHALL.



Actions	Measure/indicator	Timeframe	Benefits
34. Continue to support measures introduced by the Mayor to improve air quality.	<ul style="list-style-type: none"> • Full participation in joint projects, attendance at meetings, etc. 	Ongoing	<ul style="list-style-type: none"> • Helps to improve policy and context for reducing emissions
35. Continue to partner with other local authorities to lobby TfL and the GLA on reducing air pollution from taxis and buses.	<ul style="list-style-type: none"> • Engagement with relevant authorities and improvement in performance of taxis and buses 	Ongoing	<ul style="list-style-type: none"> • Helps to improve policy and context for reducing emissions
36. Lobby national government to implement a national NO ₂ -abatement technology framework, to fund research into tyre and brake wear to do more to incentivise less polluting vehicles (such as electric and bio-methane) and de-incentivise the most polluting vehicles and fuels (especially diesel), and to provide financial and strategic support for air quality.	<ul style="list-style-type: none"> • Lobbying undertaken and commitments obtained. 	Ongoing	<ul style="list-style-type: none"> • Helps to improve policy and context for reducing emissions
37. Work with TfL and the GLA to explore options for encouraging increased uptake of bio-methane.	<ul style="list-style-type: none"> • Increased usage of bio-methane refuelling station 	Ongoing	<ul style="list-style-type: none"> • Helps to improve policy and context for reducing emissions

6. Glossary

AQMA	Air Quality Management Area – area where it is predicted that the air quality objective are unlikely to be met by specified deadlines	LGV	Light Goods Vehicle - vans
Biomass	Solid, liquid or gaseous fuel derived from virgin or recycle plant material for example wood logs or pellets, straw or used cooking oil, bio-methane	LEAI	London Atmospheric Emission Inventory – an inventory produced by the Greater London Authority which quantifies emissions from different sources for each local authority in London
CHP	Combined Heat and Power Plant – Decentralised energy system which generates electricity and heat	LEZ	London Low Emission Zone – zone created around the boundary of London which only allows entry to heavy goods vehicles, buses and coaches which meet certain exhaust emission standards for PM10.
CO	Carbon Monoxide – gas formed from the incomplete combustion of fossil fuels such as oil and gas	µg/m ³	Micrograms per metre cubed – measurement terms used to describe concentration of pollutants
CO ₂	Carbon Dioxide – gas formed from the complete combustion of fossil fuels, main greenhouse gas responsible for climate change	NAQS	National Air Quality Standards
COMEAP	Committee on the Medical Effects of Air Pollution	NO ₂	Nitrogen Dioxide – pollutant created high temperature combustion as a result of the oxidation of nitric oxide (NO)
DEFRA	Department of Food and Rural Affairs	NOx	Nitrogen Oxides – term used to describe both nitrogen oxide and nitric oxide
EPUK	Environmental Protection UK	PM ₁₀ , PM _{2.5}	Airborne particles (PM ₁₀ less than 10 µm, PM _{2.5} less than 2.5 µm)
GLA	Greater London Authority	SO ₂	Sulphur Dioxide – gas produced from burning of coal and oil
HGV	Heavy Goods Vehicles - lorries	TfL	Transport for London – section of the GLA concerned with delivering the Mayor of London's transport strategy
LAQM	Local Air Quality Management		

Contact

Corporate Sustainability Team

Environment and Transport
Culture and Environment
London Borough of Camden

Telephone: 020 7974 6801

Email: airquality@camden.gov.uk

Web: camden.gov.uk/airquality

Town Hall Extension (Environment)
Argyle Street
London
WC1H 8EQ