Developing a new
Air Quality Strategy
and Action Plan

Consultation on Issues

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Developing a New Air Quality Strategy and Action Plan: Consultation on Issues
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1 Introduction

1.1 In common with many other urban areas Westminster suffers from poor air quality. This is a result of the millions of vehicles that travel through the area and the dense network of roads and buildings which not only emit pollution, but also prevent pollution from dispersing. In addition to pollution that is emitted within the borough, a significant amount of particulate pollution is generated elsewhere and contributes to the concentrations that are measured in Westminster. This is referred to as background pollution. Sources are both man-made and natural, and are also closely linked to weather systems and the geography of London.

1.2 This Air Quality Issues paper is the first stage in the development of the new air quality strategy and action plan. It describes the challenges we face in tackling air pollution, lists the proposed objectives of the new strategy, lists key issues affecting air quality and outlines suggested actions that may form part of the updated action plan.

1.3 The Council’s One City programme is a five year programme with the aim of delivering strong communities, with low taxes and services of the highest quality, which are easy to access and available when people need them. The City Council’s Go Green Programme, a key One City project, sets out the ways in which the City Council intends to lead in creating a more sustainable city. The programme’s aim is to re-establish Westminster as an exemplar ‘green’ authority. The development of the new air quality strategy and action plan forms part of the Council’s Go Green programme.

1.4 Emissions of air pollutants can be harmful to human health, and ecosystems. Air pollution also directly effects the local environment, causing soiling and damage to buildings, odours and reducing visibility. The European Environment Agency states that air pollution is the environmental factor with the greatest impact on health and is responsible for the largest burden of environmental disease.

We know that exposure to nitrogen dioxide (NO₂) and fine particulate matter (PM) increases the risk of cardiovascular and respiratory diseases, cancer, and exacerbates asthma. We also know that the smaller the particles, the more deeply they are able to penetrate into the lungs. The smallest air particles are from combustion sources such as vehicles.

Those most at risk are the elderly, the very young and those with pre-existing cardiovascular and respiratory illnesses. Recent studies have also shown that living close to busy roads can inhibit the development of children’s lung function. It is estimated that each year up to 24,000 in the UK die prematurely as a result of air pollution. In London this amounts to around 1000 - 1500 deaths and a similar number of hospitalisations as a result of air pollution. As a comparator, in London in 2006 there were 231 deaths from road traffic accidents. In addition it is also estimated that man-made

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1 The Committee on the Medical Effects of Air Pollutants (COMEAP) report “Quantification of the effects of air pollution on health in the United Kingdom”.

2 Transport for London Street Management Factsheet: “Casualties in Greater London during 2006”
particulate air pollution reduces the life expectancy of everyone in the UK by 7-8 months, costing up to £8.5 -20 billion per annum.³

The Rogers Review of Local Authorities Regulatory Priorities in 2007 identified air pollution as one of five national priorities for local authorities.

1.5 Standards are set by European legislation for 9 pollutants which have an impact on human health, with further standards set for 3 which are detrimental to ecosystems. The Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 sets out the strategy to reduce levels of pollutants to within the specified levels by certain dates. These specified levels, reproduced in Appendix 1 are referred to as ‘standards’.

1.6 Westminster was the first local authority to declare an air quality management area in respect of the entire borough in 1999. This was in response to concerns at high levels of nitrogen dioxide (NO₂) and particles (PM₁₀). The City Council’s first Air Quality Strategy and Action Plan, published in 2001 was a five year action plan document, which was intended to bring about a reduction in pollution levels. One of the main actions which came out of this plan was Westminster’s pioneering the concept of and lobbying for a London Low Emission Zone. This was introduced by the Mayor of London in February 2008. The 2001 Action Plan has now reached the end of its lifespan and requires updating. Many of the actions have been completed, although some key actions are still being implemented. This Issues paper represents the first stage in the development of an updated air quality strategy and action plan.

1.7 The purpose of this Issues paper is to set out the main issues affecting air quality in Westminster, to seek views on proposed objectives, which will form the basis of the Strategy and the possible actions which could form the basis of the action plan.

The structure of the document

1.8 Parts 1-3 set out the background in terms of air quality in Westminster, whilst Part 4 describes the main issues affecting air quality in Westminster, and sets out proposed actions to form the basis of the new action plan. Part 5 presents an outline for the development of the action plan with next steps and contact details in Part 6.

How to use this document

1.11 This document should be reviewed and comments made on the objectives, issues and actions set out in Part 4. Comments are welcome on any aspect of the document, but we would like to focus particularly on the issues and actions. A response form is also included.

1.12 Further information on air quality in Westminster is available via our website www.westminster.gov.uk/airquality, and also via www.londonair.org.uk.

2. **Air Quality in Westminster**

2.1 Air quality is monitored at a range of sites. These different types of monitoring stations serve different purposes and are classified as either kerbside, roadside or background depending on their distance from the road. Monitoring at a range of sites allows the level of pollutants in a sample area to be checked. It is neither feasible nor useful to monitor air quality at more than a representative sample of sites.

**Modelling**

2.2 Detailed computer models which take into account relevant factors such as the density of buildings, traffic volumes and types, and proximity to main roads are used to calculate air pollution levels across large areas. The models can then predict where pollution levels will be high, making it possible to ‘map’ predicted levels of pollution. It is not possible to be 100% accurate, as air quality is also influenced by factors such as the weather. Data that we collect from our monitoring stations is used to check the accuracy of modelled predictions. This information is used to decide how to tackle pollution in an area. Consultants recently undertook an update of modelling and source apportionment work which tells us more detail about the sources of air pollution, and predictions of patterns in the future\(^4\). This updated work takes account of some of the recent developments in London such as the introduction of the congestion charge and changes in the vehicle fleet coming into London.

**Westminster Statistics**

2.3 The number of people living in Westminster has grown in recent years. Population estimates put the figure of current residents at around 231,900\(^5\). There are a high proportion of adults, with 20-64 year olds comprising 72% of the population. Population forecasts are not always accurate and the reliability of data is an issue, however looking to the future there are predictions which suggest that our population will be as large as 350,000 by 2016. The daytime population of Westminster swells to over one million from the influx of workers and visitors.

2.4 All or most of five Royal Parks are within Westminster, as are twenty one historic squares and gardens, over 11,000 listed buildings and 54 conservation areas which cover 78% of the City’s area. The River Thames forms the southern boundary of the City. Westminster has four of London’s main line railway termini with two, Paddington and Victoria having direct connections to airports, Heathrow and Gatwick respectively; and ten out of twelve London Underground lines, including the network’s busiest underground station at Victoria. Commercial activities can be found throughout the City but are concentrated in the Central Activities Zone and its frontages and in the Paddington area. To the north and west of the Central Activities Zone and to its south as far as the River Thames, housing, in a wide variety of built forms, is the principal land use.

\(^4\) Air Quality Modelling for the City of Westminster, CERC June 2008.

\(^5\) The Government’s mid-year estimates now take account of under-counting in the 2001 Census though not as much as Westminster wish.
Pollution in Westminster

2.5 Poor air quality is a problem in Westminster, as concentrations of two of the regulated pollutants, nitrogen dioxide and particles regularly exceed the air quality standards, and continue to do so despite actions taken to address this by implementing Westminster’s Air Quality Strategy and Action Plan 2001.

Poor air quality is also perceived by residents to be a problem. A survey was recently undertaken to determine residents attitudes to noise. Residents were asked whether they are personally affected by a number of different environmental problems in the area. The highest number of respondents (around a third) said that they are personally affected by poor air quality (35%).

Those residents who said that they are affected by four or more environmental problems were asked which three problems they are most affected by. Rubbish and litter were mentioned by the highest proportion (46%), followed by dog fouling and poor air quality (40% and 39% respectively).

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6 Westminster Noise Survey, GFK NOP Social Research
Westminster commissioned consultants to update modelled pollution levels based upon the most recent London Atmospheric Emissions Inventory 2004 (released in February 2008). The modelling was undertaken for 2004 (the baseline year) and 2010 to predict how pollution will change over that period. They predicted that by 2010, there will still be instances where concentrations of pollution exceed the standards. The different pollutants have different characteristics and are dispersed differently. Therefore the two main pollutants are considered separately.

Predictions for Nitrogen Dioxide

The annual average NO₂ concentrations are predicted to exceed the air quality objective of 40µg/m³ over most of the City in 2010, with concentrations of over 60µg/m³ predicted along several of the busiest roads. The green areas on Figure 2.1 below show the areas expected to be meeting the standard – mainly in parts of Regents Park, Hyde Park and parts of West Kilburn, Maida Vale and St. John’s Wood.

Figure 2.2 shows the number of times for 2010 when the permitted hourly average NO₂ concentrations are predicted to exceed the air quality objective of 200µg/m³ along some of the busiest roads and at some major junctions in the City. This is expressed as the 99.79th percentile of hourly average concentrations.
Figure 2.1 Map of predicted annual average NO₂ concentrations for 2010.
Figure 2.2 Map of predicted exceedances of hourly average NO\textsubscript{2} concentrations
2.8 Predictions for Particles
In 2010 the annual average PM$_{10}$ concentration is predicted to exceed the air quality objective of 40µg/m$^3$ at several of the busiest junctions in the City. (See figure 2.3 below)

There are also predicted exceedances of the 24-hour mean of 50µg/m$^3$ on more than the permitted 35 occasions along some of the major roads and at some busy junctions in the City. (Figure 2.4)

These predictions make it clear that further action to tackle pollution is necessary at both a local and wider level.
Figure 2.3 Map of predicted annual average PM$_{10}$ concentrations in 2010
Figure 2.4 Map of predicted exceedances of 24 hour average PM$_{10}$ concentrations.
2.9 Progress against the standards
Although we have made good progress against the actions set out in the 2001 action plan, including lobbying for the introduction of a Low Emission Zone for London, which was implemented by the Mayor of London in February 2008, it is recognised that this will not be enough to achieve the level of pollution reduction needed to ensure pollution levels are within the standards.

2.10 Source Apportionment
Pollution concentrations are made up of contributions from numerous sources, and in the case of Nitrogen dioxide is also affected by chemical reactions in the atmosphere. The contribution of different sources will vary depending on the relative locations of the sources and the receptor points (at which the pollution levels are being measured or modelled). Nitrogen dioxide (NO₂) is a secondary pollutant formed when nitrogen oxide (NOx), which occurs in vehicles exhausts reacts in sunlight with ozone.

In 2008 Cambridge Environmental Research Consultants undertook pollution source apportionment work in respect of NOx and PM₁₀ for Westminster. The contribution of different source groups to the total NO₂ concentration cannot be calculated due to the fact that some NO₂ is directly emitted, but some is converted from other pollutants by chemical reactions which take place in the atmosphere. However, the contribution to the total NOx concentration can be calculated and these contributions are presented in this section. This work updated previous work undertaken in 2002. The latest modelling and source apportionment was based upon the London Atmospheric Emissions Inventory (LAEI) for 2004\(^7\) (released in 2008). This work quantified the contribution of different pollution source groups to total emissions and to resulting ground level concentrations at fixed points across Westminster (and three points outside Westminster) as shown in the map at figure 2.5, below. It was broken down in various ways – by location, by source type, and by breakdown of traffic sources.

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\(^7\) The Mayor has a role in providing strategic data and information to help London boroughs and developers assess the air quality effects of their proposals. The LAEI is a database with information on emissions from all sources of air pollutants in the Greater London area.
2.11 The work considered emissions originating from within Westminster, from the rest of central London, from the whole of London and from background sources. Concentrations were then measured at eleven separate sites and the contribution to annual average concentrations of both NOx and PM10 were calculated by source location.

2.12 NOx Emissions
NOx emissions generated within Westminster contribute 4% of total NOx emissions for London. For NOx the contributions vary by site, but at most sites, and certainly those located in Westminster, the NOx emissions from within Westminster are the most significant source, as shown in figure 2.6:

Figure 2.5 Source apportionment receptors
The contribution to the total NOx emissions in Westminster from different source groups is shown in figure 2.7, below. This shows that commercial and domestic gas emissions (for example, emissions from gas boilers on domestic or industrial scale) make up 60% of total NOx emissions, with Major Roads at 29%.
Figure 2.8 shows the contribution of these sources to the total NOx concentrations at the different receptor locations. This clearly demonstrates that rail emissions play a much greater part at the receptors close to Paddington (almost to 50% at the station and at Westbourne Park Villas) and Marylebone (almost 25%) than they do at other locations. In other locations major roads are a key factor.

![Figure 2.8 NOx source apportionment by source type](image)

2.13 PM10 Emissions

The total concentration of PM10 at a given location is made up of contributions from emissions from sources such as road traffic and industries as well as a significant contribution from outside London and from resuspension of dust and small particles. PM10 emissions generated within Westminster contribute 3% of total PM10 emissions for London.

In contrast to NOx, the contribution of different source locations to annual average PM10 concentrations is much more affected by background pollution levels. Although this varies at each site, figure 2.9 shows that background sources of PM10 are the largest contributor to overall concentration levels at each site. Understanding that much of the particulate pollution does not originate in Westminster, or even London is important.

It underlines the importance of working together with other authorities, to lobby on issues that have an impact at a regional or national level. This is due to a range of factors. The nature of particulate pollution is such that it disperses over a very wide area. In addition weather systems have a significant influence on pollution concentrations, bringing pollution from a wider area, preventing it from dispersing during episodes of low pressure, or even contributing to photochemical reactions which further increase levels of pollution.
The contribution to the total PM$_{10}$ emissions in Westminster from different source groups is shown in figure 2.9 below. Note that the road traffic contribution includes brake and tyre wear and resuspension components.

Figure 2.9 Westminster PM$_{10}$ emissions by source type

Figure 2.10 shows the contribution of these sources to the total PM$_{10}$ concentrations at the different receptor locations. Clearly road sources have the next largest impact after background.

Figure 2.10 PM$_{10}$ source apportionment by source type
2.14 Progress made under the 2001 action plan

The 2001 action plan set out best and worst case scenario predictions for typical levels of pollution at kerbside, roadside and background sites for both pollutants. These predictions were based upon projected progress with actions as set out in the plan.

Data collected shows that the levels of pollution concentrations did not fall as predicted, and levels consistently exceeded the predictions of even the worst case at all types of site and for both pollutants. The results from the three sites currently in operation show that there are widespread exceedances both as an annual average and over the short term hourly objective, at roadside and kerbside sites. The annual mean concentrations are shown in figure 2.11 below. There is no evidence of a consistent long term downward trend of nitrogen dioxide levels in Westminster although levels in 2007 have fallen compared with 2006. The levels in 2007 show similarity to those of 2003 to 2005. An encouraging trend is a fall in concentration levels at Horseferry Road, which, for the first time since 2002 fell below 40µg/m³ in 2007.

![NO2 Automatic Monitoring Data 2002-2007](image)

Figure 2.11 NO₂ monitoring data 2002-2007

The 2001 plan was intended as a five year action plan. Much progress has been made with most of the actions, and many are still ongoing, although for many of the actions, the timescales have taken longer than originally envisaged. The London Low Emission Zone, which was a central part of the vision of the 2001 action plan, was not operational by 2005 as envisaged in the action plan, but was implemented by the Mayor in February 2008. In addition, although emissions per vehicle have decreased due to technical advances the number of vehicles on our roads continues to increase despite policies to reduce reliance on private cars.
2.15 Progress with key actions taken since 2001

Good progress was made against the actions set out in the 2001 Action Plan.

- Westminster successfully lobbied for the introduction of a London Low Emission Zone, the first phase of which came into operation in February 2008. It aims initially to encourage operators of HGV diesel vehicles to use vehicles of only Euro class III or above. Vehicles not complying with the standard will have to pay a £100 or £200 daily fee or face a significant financial penalty if operated within the London LEZ.

- Approval and publication of the City Council’s Transport Local Implementation Plan. This sets out the City Council’s commitment to achieving the objectives of the Mayor’s Transport Strategy and includes a range of measures to reduce vehicle pollution and encourage a modal shift away from cars.

- A major update and republication of the Council’s Code of Construction Practice that highlights measures to minimise construction site generated pollution.

- Free cycle training given to adults and children, with 167 children and 256 adults participating in 2007/8.

- Progress continues to be made with school travel plans. 14 schools completed travel plans in 2007/8.

- The City Council has launched its own draft travel plan.

- Relaunch of the City Council’s Ecomark club for owners of alternatively fuelled vehicles.

- Installation and launch of the first 12 on street electric vehicle recharging points, as well as provision of a further 48 in Council car parks.

- Inclusion of some policies in the UDP to support air quality including around refuelling facilities and requiring Transport Impact Assessments.

- Undertaken review and update of our fleet strategy in 2008, and it is now being rolled out to contractors’ fleets.

- Produced Supplementary Planning Guidance on Sustainable Buildings.

- Improvements to our network of air pollution monitoring stations.

- Legible London iconic wayfinding signage introduced in the Bond Street area to promote walking routes to popular destinations.

There are many other actions which were identified in the original plan, and which continue to be progressed, and which will continue, but it is time to reconsider Westminster’s strategy in relation to air quality and identify new actions.
3. Legislation and Policies

European

3.1 Air quality legislation and regulation in the UK is largely shaped by European legislation. This is an area in which the European Commission has been active in recent years. A series of directives were introduced to control levels of the pollutants considered harmful to human health, ecosystems or vegetation. In 1996, the Environment Council adopted the Framework Directive 96/62/EC on ambient air quality assessment and management. It set out the basic principles of assessing and managing air quality in Member States. It listed the pollutants for which air quality standards and objectives were to be developed and specified in Member States’ legislation. This was followed by daughter directives, which set the binding limit values, (or in the case of ozone, target values) for each pollutant.8

3.2 In order to inform future policy developments, the European Commission established the Clean Air for Europe (CAFE) Programme to prepare a Thematic Strategy for air quality. The Thematic Strategy sets out the Commission’s vision to protect public health and the environment from the adverse effects of air pollution, over a timescale up until 2020. On 14th April 2008 a New Ambient Air Quality Directive 2008/50/EC was adopted. This new directive merges most of the existing legislation into a single directive, introduces new air quality objectives for PM_{2.5} (fine particles) including an exposure concentration obligation and exposure reduction target. It also allows for the possibility of discounting natural sources of pollution when assessing compliance against limit values and introduces the possibility of time extensions of three years (PM_{10}) or up to five years (NO_{2}, benzene) for compliance with the dates of entry into force of existing limit values, based on conditions and the assessment by the Commission.

National

3.3 The Environment Act 1995 requires the Government to produce a National Air Quality Strategy. It is envisaged that the structures established under the UK Air Quality Strategy and supporting legislation9 will provide the principal means of implementing the UK’s commitments under EC legislation.

3.4 The revised Air Quality Strategy for England, Scotland, Wales and Northern Ireland was published in 2007. It contains a new standard for very fine particles (PM_{2.5}), which represents those particles which measure less than 2.5 micrometres in diameter. There is no ‘safe limit’ for these very fine particles; it is considered that exposure presents a significant risk to health as they may be inhaled very deeply into the lungs.

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9 Air Quality Standards Regulations 2007
3.5 The new exposure reduction approach contained in the Air Quality Strategy 2007, which applies to the very fine particles, is based on the principle that for such pollutants with a very low or zero ‘safe limit’, it is generally more beneficial to public health, and potentially more cost effective to reduce levels across the whole population of an urban area rather than in small areas or hotspots. The Air Quality Strategy addresses this in two ways for PM$_{2.5}$ – a target for overall reduction of levels relative to existing levels (a 15% reduction in average concentrations across the UK between 2010 and 2020) and a ‘concentration cap’ to deliver a minimum level of protection applicable to all areas (in this case levels should not exceed 25µg/m$^3$). This change in policy with regard to these fine particles signifies a move away from the previous method of looking at pollution “hotspots” and towards a more cost-effective approach which will be of greater benefit in reducing overall levels of pollution, including background pollution, which will in turn lead to reduced pollution in hotspots. Westminster’s new strategy must take this change into account.

Regional

3.6 The Mayor of London is required to produce an Air Quality Strategy for London. ‘Cleaning London’s Air’ the Mayor’s Air Quality Strategy was produced in 2002. It sets a strategic framework for dealing with Air Quality problems for London. All London boroughs are required to have regard to the Mayor’s Air Quality Strategy when undertaking their air quality work, and to ensure their local development plans are in general conformity with the Mayor’s London Plan, which is the strategic plan that sets the planning framework for future spatial development in London. The Mayor has set out a number of measures in his Air Quality Strategy, London Plan, Transport Strategy and Energy Strategy for the London boroughs to take forward to improve London’s air quality. The Mayor also works to ensure up-to-date Londonwide data on sources of air pollution are available for the boroughs to

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10 The Greater London Authority Act 1999
use, and produces the London Atmospheric Emissions Inventory for use by boroughs in discharging their Local Air Quality Management duties.

Westminster

3.7 At a local level the Westminster City Plan 2006-2016 sets out an overarching strategy for improving quality of life and wellbeing. It is an umbrella strategy which provides a context for other strategies and plans developed by the Council. It sets out some of the things the ‘Westminster City Partnership’ will do to make Westminster a better place to live work and visit. The plan describes the objective of a cleaner, greener more sustainable city where everyone can enjoy clean streets, open and green spaces and clean air. Improving air quality is recognised as a key longer term action that will help to make the City more ‘liveable’.\textsuperscript{11}

3.8 The Council’s planning policies are contained in the UDP (Unitary Development Plan). This, in conjunction with the revised 2008 London Plan sets the framework for determining applications in Westminster. It will eventually be replaced by the LDF (Local Development Framework). The UDP sets out a number of policies which have an impact on air pollution directly and indirectly. These are included at Appendix 3.

3.9 The City Council’s Local Implementation Plan (LIP) was approved in July 2006. This document is a statutory plan, and sets out how the City Council intends to implement the Mayor of London’s Transport Strategy within the City of Westminster. The LIP proposes a wide range of measures that the City Council intends to implement, which are set in the context of the Mayor of London’s Transport Strategy targets, which are:

- Improving road safety;
- Improving bus journey times and reliability;
- Relieving congestion and improving journey time reliability;
- Improving the working of parking and loading arrangements;
- Improving accessibility and social inclusion on the transport network;
- Encouraging walking by improving the street environment;
- Encouraging cycling by improving conditions for cyclists; and
- Bringing transport structure into a good state of repair.

Interaction of Air Quality and Climate Change

3.10 In 2007 the Air Quality Expert Group (AQEG)\textsuperscript{12} published a report on the links between air quality and climate change\textsuperscript{13}. The AQEG report found that:

\begin{itemize}
\item \textsuperscript{11} Westminster City Plan 2006 – 2016
\item \textsuperscript{12} The Air Quality Expert Group (AQEG) is an advisory group that provides independent scientific advice on air quality, in particular the air pollutants contained in the Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland and those covered by the EU Directive on ambient air quality assessment and management (the Air Quality Framework Directive). It is an advisory non departmental public body reporting to the Secretary of State for Environment, Food and Rural Affairs.
\item \textsuperscript{13} Air Quality and Climate Change: A UK Perspective
\end{itemize}
• Air quality pollutants, such as particulate matter and low level ozone also influence climate change in addition to the main climate change gases (carbon dioxide, nitrogen oxides, methane, HFC’s, PFC’s and sulphur hexafluoride). Control of the gases that lead to the formation of particulate matter and ozone can therefore affect both air quality and climate change. Current international climate change policies do not recognise these impacts.

• Hot summers like the 2003 heatwave are predicted to become the norm by 2040, leading to increased summer smogs (where sunlight reacts with pollutants to form low level ozone close to the ground) unless emissions affecting ozone concentrations are substantially reduced. Episodes of winter smog (where a ‘lid’ of cold air above warm air traps pollution), by contrast, are likely to be less prevalent.

• It is essential that the interlinkages between emissions of air quality and climate change pollutants are recognised in assessments of the impacts of policies and developments for industry, transport, housing etc.

• Most measures that lead to a reduction in demand or an improvement in the efficiency of an activity or product, benefit both air quality and climate change. Such measures should be vigourously promoted.

• Local, National and European policies must recognise the interactions between air quality and climate change pollutants in developing measures to reduce them.

3.11 The UK Government is committed to addressing both the causes and consequences of climate change and has therefore introduced a Climate Change Bill. The Bill will create a new approach to managing and responding to climate change in the UK through: setting ambitious targets, taking powers to help achieve them, strengthening the institutional framework, enhancing the UK’s ability to adapt to the impact of climate change and establishing clear and regular accountability to the UK Parliament and devolved legislatures. The Climate Change Bill was introduced in Parliament on 14 November 2007 and completed its passage through the House of Lords on 31 March 2008. At its second reading in the House of Commons it received clear cross party support. The aim is for it to receive Royal Assent by autumn 2008.

4. Air Quality Objectives

4.1 In putting together this Issues paper a number of objectives have been identified. These are intended to shape the development of Westminster’s updated air quality strategy. The main issues affecting air quality in Westminster have also been listed and will form the basis upon which the action plan will be developed. Figure 4.1 maps the objectives and the main issues affecting local air quality in Westminster.

4.2 The proposed air quality strategy objectives are:

• Lobbying to influence national and regional policy
• Tackling emissions from road transport
• Tackling air pollution from development
• Tackling emissions from rail
• Protecting public health, ecosystems and the fabric of structures.

4.3 Lobbying to influence national and regional policy

The potential for air pollution to disperse over a wide area, and the high levels of background pollution means that sometimes the most appropriate way of tackling it is by working in partnership or through lobbying. This is seen as a broad objective with links to most of the other objectives. It will be an effective way of dealing with many issues, as a greater impact is possible.

A central part of the previous Air Quality Strategy was lobbying to secure the introduction of a Low Emission Zone for London. This is now being implemented by the Mayor in a phased manner with different classes of vehicles being included in stages over the next four years (2008-2012). It is predicted that this will have a positive impact on air quality, and Westminster will continue to lobby for an assessment to be made for private diesel cars to be included within this.
Figure 4.1 shows the proposed Air Quality Strategy Objectives, plus the main issues around each of these key objectives.
4.4 Tackling emissions from road transport

Traffic remains the key source of pollution at present with pollution hotspots around major roads. The source apportionment work undertaken by consultants for Westminster looking ahead to 2010 attributes 32% of NOx and 74% of particles in Westminster to road traffic. (Note in respect of particles this includes minor road sources and brake and tyre sources). There are several aspects to tackling road traffic pollution, including cleaner vehicles, reducing traffic, and encouraging a shift from cars, and this represents the single largest area of work, and one in which there is still much activity and potential for innovation.

4.5 Tackling air pollution from developments

Emissions from buildings are becoming a proportionately more important source of pollution. In 2003 and 2004 the single largest source of NOx emissions came from road transport (43% and 42% in each year), with emission from gas use being responsible for 37% and 38% respectively. By 2010 it is expected that emissions from gas combustion sources (which includes domestic and commercial boilers) will overtake road traffic as the principal source of NOx across Greater London, with gas contributing about 46%, and road traffic contributing about 31% of total NOx emissions in Greater London.\(^{14}\) In Westminster this is even more apparent with total gas emissions contributing 60% of NOx.\(^ {15}\)

Predictions for 2010 for NOx emissions for all sources are for a reduction of 14.7% from 63,162 tonnes in 2004 to 53,908 tonnes in 2010, mainly through a reduction in emissions from road transport (36.8%). This reduction comes about mainly as a result of the Mayor’s air quality and transport strategies and a continuing decline in emissions from road transport as vehicles meeting tighter emissions standards penetrate the UK fleet. Conversely NOx emissions from gas use in 2010 are predicted to have increased by 3.2%.\(^ {16}\)

In addition recent national and regional policies to reduce carbon dioxide and greenhouse gases are leading to pressure to increase the proportion of energy in buildings coming from renewable sources. Some sources, such as biofuels and biomass have negative effects on air quality, especially when compared with the air quality impact of gas combustion. There are concerns that if biomass based heating systems are adopted widely without very substantial improvements in emission standards there may be a damaging impact on air quality, particularly in air quality management areas, and appropriate policies need to be put in place now to protect against this.

There are many other aspects of buildings and developments which have an impact on air quality, from design and location, through to the use of plant and air conditioning. In some cases solutions to air quality issues can in themselves create other problems such as noise, and even increased

\(^ {14}\) London Atmospheric Emission Inventory Report 2004
\(^ {15}\) Air Quality Modelling for City of Westminster, CERC, June 2008
\(^ {16}\) London Atmospheric Emission Inventory Report 2004
pollution and emissions of Carbon Dioxide. Therefore it is important to consider all potential issues for a sustainable solution.

Westminster’s planning policies are currently contained within the Unitary Development Plan (UDP), although this is set to be replaced by the Local Development Framework (LDF) in the medium term. There is therefore a good opportunity to revise and build upon existing policies to ensure that new policies reflect current issues.

4.6 Tackling emissions from rail
The diesel trains which operate from Paddington and Marylebone stations contribute to elevated pollution levels. Although it is known that emissions from rail lines from Paddington, and to a lesser extent from Marylebone have an impact on the pollution levels, because of the diesel engines, little has been done to address this in the past. This could form part of a new area of work.

The main factor that will make a difference is the question of electrification of the Great Western Railway. With only 39% of the UK’s railway electrified the UK lags behind other European countries with its dependence on diesel trains. The Association of Train Operating Companies is now working up case studies on the case for electrification of the Great Western Main Line, amongst others. The DfT have tendered for new replacement locomotives for the High Speed inter-city Trains (HST) to be in service by 2015. They have tendered for diesel or overhead electric. Until a clearer consensus emerges on this, a mid-life ‘refresh’ has just been completed, upgrading the original 1970’s engines of the Great Western Mainline High Speed Trains, with new engines, which are quieter and cleaner.

If Crossrail proceeds, then cleaner, quieter overhead electric trains will replace some of the diesel powered services as far as Maidenhead, (and perhaps Reading). The forthcoming Paddington Station Planning Brief will set out these issues as well as related transport and development issues.

4.7 Protecting public health, ecosystems and the fabric of structures

The impact of air pollution on health is fairly well known. There are also impacts on ecosystems and, through acidification, on the fabric of buildings and other structures. An overarching objective is to address these impacts, which will be achieved by addressing the individual issues which contribute to the air pollution problem.

4.8 The Council’s City Planning Group are currently preparing a draft Tree Strategy in association with arboricultural officers. Its main purpose is to provide guidance to ensure ‘the right tree in the right place’, on both public land including public highway, and private land. The draft will recognise the benefits that trees can bring, including the capacity of species to sequester carbon dioxide (in terms of urban trees this role is limited); to filter, absorb and reduce pollutants (ozone, sulphur dioxide, carbon monoxide, nitrogen dioxide, dust, particulates); and to produce oxygen as a by-product of photosynthesis.
4.9 Integrating sustainability as a theme throughout each of these objectives is vital. Simply considering air pollution (or indeed any environmental issue) as an issue alone carries the risk that it will create other environmental impacts, such as emissions of CO₂ or noise. It is therefore important to understand the links and impacts and to recognise that in dealing with environmental problems there may be conflicting priorities which must be carefully thought through.

4.10 In accordance with the requirements of the European Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, (The SEA Directive), as transposed by the UK Regulations, the Council is carrying out a Strategic Environmental Assessment on the developing Air Quality Strategy and Action Plan. This will help to shape the developing plan, provide for a high level of protection of the environment and will promote sustainable development. Consultation is being undertaken on the first stage of the SEA, the Scoping Report, in tandem with consultation on this air quality Issues paper.

4.11 Issues and actions
The following issues, which are set out in the shaded boxes have been identified as key air quality issues for Westminster. The suggested actions are together intended to form the basis of the future action plan.

<table>
<thead>
<tr>
<th>Issue 1: Traffic emissions</th>
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Source apportionment work undertaken for Westminster has shown the impact of traffic emissions sources at receptor locations to be one of the main sources of NOₓ concentrations (See figure 2.8). It is the second largest source for PM₁₀ concentrations after background pollution (See figure 2.10). The 2001 Air Quality Action Plan focused mainly on reducing pollution from transport. There is still significant scope for action to reduce emissions from road transport.

Actions:

1A Requiring more efficient delivery/service bay design and arrangements in commercial buildings
As part of the work of developing the Local Development Framework the Council is considering a policy requiring efficient design of service/delivery bays in order to achieve quick, efficient servicing, and to minimise engines left running which has a negative impact both on noise and air quality.

1B Piloting a Car Club in Westminster
Across Central London car clubs are becoming more popular as they enable a pay-as-you-go option, which is often a cost effective alternative to car ownership in urban areas. Take up of this on a fairly large scale could have a positive effect on air quality as users consider whether every journey is necessary. An on-street car club scheme is likely to be approved during 2008.
Then there could be a competitive tender process to choose an operator, with the scheme starting later in the year.

On 1st January 2008 the City Council joined Car Plus an organisation established to promote car clubs and their usage. The membership consists of car club operators, local authority and other stakeholders. To date Westminster has relatively few car club spaces, and these are all off street spaces. Any on street scheme would need good coverage across the City, and vehicles which have low emissions of local air pollutants as well as CO₂. The evaluation of any pilot scheme would need to demonstrate reductions in car journeys and ownership, rather than diverting users from public transport.

Currently the City Council is considering a car club scheme based on the provision and usage of on-street spaces. Options for this scheme are being developed and it is proposed that it is launched in late 2008 with up to 100 vehicles planned. TfL has awarded Westminster funding in 2008/09 to assist in the establishment of the City Council’s car club, and also to assist in putting on events and seminars related to this topic.

1C Investigate projects to reduce traffic emissions, such as innovative delivery schemes, freight consolidation centres or delivery & servicing plans. These could potentially be developed jointly with other boroughs through the Central London Freight Quality Partnership & TfL which would be likely to have a better overall impact than simply piloting projects in areas of Westminster. Commercial fleets of delivery and servicing vehicles could both be considered for inclusion, although such a scheme would need the backing of the industry.

1D Actions around idling engines
There are documented examples of problems from certain types of vehicles, such as stationary coaches. In some areas this can contribute a relatively large proportion of emissions. Locations such as Park Lane, the Embankment and Tothill Street coach bays are particular hot spots for idling coaches. The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 (Statutory Instrument 2002 No. 1808) enables authorised individuals to issue a fixed penalty notice to vehicles stationary on a road and can require their drivers to switch off their engine. This could be an area in which a programme of enforcement combined with communications and awareness raising could be effective. One aspect of the previous action plan was around stopping and testing vehicle exhausts. Although it had some results in terms of positive publicity and raising the profile of air quality, it had little actual impact on levels of pollution and was very resource intensive, and so was discontinued.

1E Lobbying for an assessment of the case for expansion of the LEZ scheme to include private vehicles
Across Europe there are a growing number of LEZ schemes. These range from very small local schemes which operate only on certain days or at certain times of the day, sometimes only in very small areas, to the large scale schemes such as in London. They also vary considerably in the vehicles that are covered. In some schemes in Germany for example all vehicles are
covered. The success of the London scheme is being closely watched across Europe. In our previous consultation response on the rollout of the Low Emission Zone the City Council stated its view that active consideration should be given to an assessment of the issue of inclusion of diesel cars in a subsequent stage of the LEZ, and we pressed for a date when this would happen. As more becomes known about the success of the current scheme there will be scope for additional lobbying in this area to ensure any future development of this scheme will bring about the maximum benefits.

1F Lobby for Mayor to review and update Taxi Emissions Strategy and to include private hire vehicles.
Source apportionment work undertaken shows that by 2010 taxis will contribute 19% of all road traffic NOx emissions, and 30% of road traffic PM$_{10}$ emissions. The current taxi emissions strategy requires all 21,000 of London’s black taxi’s to have Euro 3 engines by the middle of 2008 with no additional controls being brought in after this. In fact vehicle engine improvements have already moved on from this. Euro 4 and 5 vehicles are now available and the highest standard ought to be sought. Currently private hire vehicles are not included in the taxi emissions strategy, and the City Council would lobby to ensure that they are included, or brought within a future phase of the low emission zone. Another idea to be promoted could be for the Mayor to develop a new iconic low emission prototype taxi, in the same way as is proposed for buses.

**Issue 2: Alternative Fuels**
Alternative fuels can have a reduced impact in terms of air pollution and carbon dioxide. Westminster has been a leader in the field of electric vehicle recharging, being the first authority to introduce on-street electric vehicles recharging points (Juice Points). There is scope to continue work in this area as well as looking at other alternatives to petrol and diesel.

**Actions:**

2A Promoting wider uptake of electric vehicles.

The provision of suitable infrastructure is key to encouraging the uptake of alternatively fuelled vehicles. The City Council has already installed a total of twelve on street electric vehicle recharging points or ‘Juice points’; two in the Clear Zone area of Covent Garden and a further ten across the City. We also have 48 off-street recharging points in 13 Council car parks. Plans are underway for a phased roll-out of a network of recharging points with some funding in place to support this.

The possibility of a commercial operator installing and managing the electric vehicle recharging infrastructure will be investigated, and the development control system will be reviewed to require major developments to install recharging points. As part of this option WCC could encourage the Mayor or London Councils to draw up an electric vehicle strategy for London and could actively promote the use of electric vehicles by commercial organisations.
Care must be taken that we do not promote these to such an extent that there is a risk of people switching from public transport to electric vehicles, and for this reason the full implications of encouraging increased use of electric vehicles on a larger scale would be assessed prior to actions to promote this.

2B Require all contractors to meet the requirements of Westminster’s updated fleet vehicles policy and fuel hierarchy
Although contractors have previously been required to undertake this it has not been rigorously enforced.

2C Protection of refuelling stations
Protecting existing fuel stations will facilitate any future change of direction regarding alternative fuels. A policy is in place in the UDP to protect filling stations and this is being implemented.

2D Working with fleets of external organisations
Following on from successful work to upgrade our own fleet of vehicles as well as that of our contractors Westminster will be working with other organisations to promote lower-emission alternatives.

2E Continue to work towards supporting greater use of hydrogen fuel for vehicles
Work with TfL and London Hydrogen Partnership to identify opportunities for local actions to accelerate commercial development of hydrogen fuel technology, and further investigate the possibility of providing a hydrogen refuelling facility in Central London.
**Issue 3: Alternatives to cars**
There is a lot of scope in the area of encouraging a modal shift away from cars to reduce emissions by helping to influence people's choices and behaviour. Much of the work that is continuing from the 2001 action plan is in this area, and it is proposed that all of these should continue.

**Actions:**

**3A Promote and support public transport**
Although TfL have direct responsibility for provision of public transport the Council works with TfL to support improvements to bus and tube services in Westminster, both with direct support for Bus Priority measures and through policies affecting major schemes such as Crossrail and Cross River Tram.

**3B Roll out the Legible London signage across Westminster**
In November 2007, The City Council, New West End Company and Transport for London launched a prototype signage system for the Legible London project in the Oxford Street, Regent Street and Bond Street area, as part of the ORB Action Plan. 19 iconic high quality signs have been installed in an area surrounding Bond Street Underground station. A comprehensive evaluation will establish whether the system has increased the number of journeys walked, helped people get to their destinations more efficiently and given people the confidence to try new routes. The results of the evaluation will inform the development of the prototype and future roll out.
3C **Continue with actions to support and encourage walking**

Events such as 'In town without my car' day and 'Walk once a week' are held annually, as well as campaigns with schools to promote walking. Westminster, together with the other Central London Air Quality Cluster Group boroughs\(^{17}\) were involved in the development of less polluted walking routes on Walkit.com. These routes which launched in February 2008, with their clear maps provide a tool that can be used by an individual to help them to manage and reduce their exposure to air pollution, at the same time as being more active. Promoting walking benefits both the individual in health terms, and also contributes to reduced air pollution and CO\(_2\) emissions. Walking also helps people to feel less stressed and less isolated, compared to being in a car. Westminster also runs events promoting walking to schools, families, workers and others as part of walking week, and other walking initiatives.

![Walkit.com](walkit.com)

*a step in the right direction*

3D **Cycling support measures**

The City Council continues to deliver the London Cycle Network Plus (LCN+) programme. There is commitment to the development of nine routes across the City of Westminster. It will prove difficult to develop such routes on the heavy used streets of Westminster but the City Council will ensure that a balanced design of new or enhanced routes is developed to suit the well used and sensitive street environment. Also the City Council implements its successful cycle stand programme and trains adults and children to cycle more safely. The City Council has now implemented well over 5,000 on-street cycle parking spaces, thought to be the highest concentration in the UK. Plans for further stands in Westminster are being implemented especially in the area of the extended western extension zone of congestion charging. It is notable that the City Council has successfully secured Connect2 Lottery Grant Funding for the Westbourne Park Footbridge and access scheme.

3E **School and workplace travel plans**

The City Council is now a member of the North Central Travel Network which has a travel plan co-ordinator in post to assist businesses to develop travel plans. In 2006/07 the schools travel plan advisor worked with a total of 30 schools and 8 school travel plans were produced. This is an area which is set to develop and continue. In addition the City Council has recently completed its own draft staff travel plan.

3F **Promote electric bicycles, scooters and motorbikes as part of co-ordinated New Ride scheme**

Electric bicycles will be promoted as an alternative to more conventional petrol and diesel vehicles.

3G  **On Street Cycle Hire Scheme**
The City Council in partnership with TfL, the London Borough of Camden, the City of London and The Royal Parks are evaluating the feasibility of a central London on street cycle hire scheme, similar to those recently introduced in Paris, Lyon and Dublin.

3H  **Investigate possibilities for increased river and canal transit.**
Westminster does have scope for increased transit by water, although this needs careful planning to ensure that it does not contribute to increased pollution. A possible action area here is to investigate this further.

**Issue 4: Emissions from diesel trains**
The London Atmospheric Emissions Inventory shows there to be higher levels of pollution the whole length of the route of the Great Western services which run into Paddington and Chiltern Railways and other services which run into Marylebone. Westminster's source apportionment work shows the contribution of rail emissions to concentrations in the vicinity of Paddington Station in particular to be high, at close to 50% at both Westbourne Park Villas and Paddington Station. The City Council should lobby on issues of concern.

**Actions:**

4A  **Lobby Government, Department for Transport, Office of Rail Regulator, and Network Rail for longer term solutions that would enable the replacement of diesel with electric.**
There is potential for long term lobbying around the issue of electrification of rail network to minimise or end the need for diesel trains. Currently although there is expected to be some electrification with the Cross Rail project, there will still be certain trains which are likely to run on diesel, because the whole of the lines are not electrified.

4B  **Press Train Operating Companies (TOC’s) operating diesel trains for operational improvements to bring about further reductions in emissions at stations.**
The Paddington Station planning brief presents an opportunity to restate the Council’s concerns about emissions of air pollution and to seek from Train Operating Companies and developers an improvement in terms of emissions.
**Issue 5: Emissions from buildings**

As actions to tackle emissions from road transport become more effective the overall proportion of emissions caused by other sources increases. Therefore the proportion of overall emissions from buildings, particularly from domestic and industrial gas sources is increasing. The 2001 action plan focused heavily on road transport as a source of emissions. It is now necessary to widen the focus to include emissions from buildings, including plant and boiler systems to ensure these emit minimal pollutants.

Existing UDP policies require Environmental Performance Statements and Transport Impact Assessments as part of the planning application process. These assessments are used to ensure development that supports more sustainable travel choices and reduces the need to travel. Air Quality Assessments are increasingly being required by the City Council.

**Actions:**

5A  **Investigate the development of a planning emissions reduction and assessment tool.**
Subject to the availability of funding Westminster proposes to work jointly with the London Borough of Croydon to test the application of a matrix which is being developed to assess emissions from buildings and development sites, based upon a minimal amount of information. There may be potential to use this tool to develop objective air quality emission standards in the same way that noise standards have been built into the UDP. It is hoped that testing of the tool on a sample of Westminster sites would enable an assessment of the robustness of it in a Central London location. It is possible that the tool could be used as a way of baselining current emissions from a site, which would enable a reduction relative to that baseline. The results of testing in Westminster would inform the way in which the toolkit might be used in Westminster.

5B  **Strengthen the Local Development Framework air quality policies to minimise emissions from buildings**
Westminster is in the process of developing its Local Development Framework, and as part of this stronger air quality policies will be included.

5C  **Require Air Quality Assessments (AQA’s) as part of the planning process**
Westminster is beginning to ask for these for certain developments. Although air quality information should already be supplied as part of Transport Impact Assessments and through Environmental Performance Statements, this is not always the case, and these do not require any consideration of the cumulative effects of other development in the area. Developments which are likely to have a significant impact on local air quality are required to submit an AQA. These require information to be provided on the projected impact of the development on air quality, as well as the cumulative impact of that and other applications which are in the pipeline. This information assists Council officers
to take informed decisions on whether to grant applications, and, which mitigation measures are appropriate.

The difficulty with air quality assessments, is that the current policies and guidance makes it difficult to sustain an objection on air quality grounds. The National Society for Clean Air\textsuperscript{18} produced guidance around AQA’s. This was based upon a matrix of significance criteria which will allow a simple calculation of the magnitude of any impact. The problem with this guidance is that a very substantial increase in traffic is necessary before the changes in pollution concentrations are assessed as more than ‘minor adverse’, which is not sufficient to justify a refusal. This is a particular problem in areas where the existing pollution levels are already very close to, or exceeding the national objectives, as in these cases even a very small change in percentage concentration would have a negative impact on local air quality. The most recent set of guidance is the London Council’s Air Quality and Planning Guidance. This introduced the concept of Air Pollution Exposure Criteria (APEC) and would produce the best result for Westminster as it leads to a conclusion that a refusal may be justified for developments that are within 5\% below or above the national objectives. However, many applicants use the Environment Protection UK guidance. There is scope to examine this point in more detail to determine whether there is a case for developing new guidance for air quality management areas, or best ways of ensuring that it is the London Council’s guidance which is used by developers in preparing Air Quality Assessments.

5D Develop Low Emission Strategies
Low Emissions Strategies have the potential to mitigate the transport aspects of development. This is achieved through a package of conditions and obligations to accelerate the take up of low emission transport fuels and technologies in and around new development. This focus is intended to complement the more traditional trip-focused mitigation, which has as its objective a modal shift from cars, and a reduced need to travel. Using the planning system in this way is a new concept, currently being consulted on by the Beacons Low Emissions Strategies Working Group.\textsuperscript{19} This would link well with other actions to promote alternative fuels.

5E Investigating the impact of biomass and biofuel as fuel for buildings in Westminster
As part of the development of the Local Development Framework, work is underway considering the impact of biomass proposals on Westminster and possible future policy changes that may be necessary to minimise the negative air quality impacts that this could have. This sits within the context of research by AEA on behalf of London Councils which demonstrates that biomass generates considerably more air pollution than gas.\textsuperscript{20} Emerging biofuels will require similar consideration and investigation and a policy to be developed.

\textsuperscript{18} Now ‘Environment Protection UK’, or EPUK.
\textsuperscript{20} http://www.londoncouncils.gov.uk/transport/briefings/ReviewofthePotentialImpactonAirQualityfromIncreasedWoodFuelledBiomassUseinLondon.htm?showpage=-1
5F  **Review and update air quality aspects of the sustainable buildings SPG.**
The Westminster Supplementary Planning Guidance document on Sustainable Buildings highlights good practice in relation to low emissions heating and air conditioning systems and encourages developers of all appropriate developments to follow BRE principles and undergo a code for Sustainable Homes Assessment or be BREEAM certified. A review and update of the air quality aspects of this could be undertaken as part of the overall revision of this document at a future point, following the update of the Council's Local Development Framework. This will result in a more joined up approach to air quality.

5G  **Explore options to develop a flagship demonstration Hydrogen fuel cell project to power a building.**
Fuel cells are widely considered to be a key bridging technology towards a sustainable energy future as they are able to use today’s hydrocarbon fuels extremely cleanly with very high efficiency leading to reduced CO₂. Fuel cells operating on hydrogen fuel are a zero emissions technology at point of use (only water is emitted from the fuel cell) and if the hydrogen comes from a renewable source that is even better. This would be costly, but there are likely to be sources of grant funding that could be accessed and it would have very good benefits in terms of CO₂ reductions as well as local air quality. The consideration of this option should investigate the possibilities in relation to both new builds and refurbishment and upgrade of older sites.

5H  **Set objective standards to be achieved as part of the independent review of sustainability for all new buildings**
Currently planning policy requires developers to undertake an independent review of sustainability, although no specific level must be achieved. The scope to require a certain level, rather than simply requiring an assessment should be considered. There is also potential to investigate an alternative sustainability appraisal system to the Code for Sustainable Homes or BREEAM systems, as these both allow you to offset areas against one another which may result in a development which is less good in air quality terms. The revised BREEAM system, will, from August 2008 set threshold levels for some factors, but slightly reduces the weighting for pollution.

### Issue 6: Construction emissions

There is increasing focus on air quality pollution emissions caused by construction sites. Construction emissions are a temporary source which is difficult to quantify by the nature of the fact that they are always changing. Current estimates are that this stands at 7 kilo tonnes of total PM emissions (16% of road transport emissions). A study for the EU estimated that off-road machinery contributed about one third of PM emissions from mobile sources in 2000, projected to increase to 40% by 2020. London Councils and the GLA have developed best practice guidance in relation to emissions of dust and pollution from construction sites. It aims to make mandatory the use of abatement equipment on construction site machinery operating at designated high risk sites.
6A Updating the City Council’s Code of Construction Practice
This has been updated to take account of the London Council’s Best Practice Guidance from November 2006. The new third edition of the code was published in April 2008 and applies by legal agreement to all major construction sites in Westminster.

6B Undertake specific construction site emissions modelling and monitoring
This could be useful specifically to determine the contribution of construction emissions to overall measured concentrations. Owing to the temporary nature of construction sites, research of this nature would be most useful if undertaken for a range of types and sizes of sites, and typical emissions extrapolated.

6C Require contractors to achieve accreditation of their construction machinery before use on site for large sites.
The recently launched ‘non road mobile machinery’ accreditation scheme which is run by the Energy Savings Trust and linked with the London Councils Best Practice Guidance aims to reduce levels of particulate emissions from construction machinery, by encouraging contractors at designated high risk sites to fit appropriate abatement equipment to their machinery in order to achieve accreditation. The Energy Savings Trust provides an independent certification and register service for after treatment equipment to ensure that it satisfies the requirements of the Best Practice Guidance.

7A Develop a policy position statement in relation to diesel v petrol
Currently diesel is being promoted as a low carbon fuel, although it has more negative implications for air quality. This has been recognised in the Council’s fleet vehicles policy and fuel hierarchy, which no longer promotes diesel over petrol.
As part of the development of the strategy it would be useful to develop a position statement on diesel fuel. However any such note must consider the other factors – such as that buses and HGV’s cannot operate on petrol. In 2006 the Clear Zones partnership commissioned EcoLane Transport Consultants to produce a Life Cycle Assessment of Vehicle Fuels and Technologies which considered the CO₂ and air quality impact. It concluded that vehicle size is as important a determinator of emission impact as vehicle fuel/technology type.

Diesel HGV’s, buses etc are being targeted by the Low Emission Zone. An assessment is needed of the impact of the remaining diesel cars on air quality and climate change and the case for targeting these vehicles, as well as the best way of doing so, if appropriate. This links to action 1E (lobbying for an assessment of the case for expansion of LEZ to cover other vehicles) and also 9C (developing an integrated information system detailing CO₂ and air quality emissions for vehicles). With developments in Euro engine classes narrowing the gap in terms of emissions from petrol and diesel, it would be beneficial to include non air quality considerations, such as the fact that some types of vehicle such as HGV’s, cannot operate on petrol.

7B Lobbying to prevent the widespread use of biomass in Central London

Biomass has been promoted as part of the drive towards greater take-up of renewable fuels, as a positive alternative to fossil fuels. There is now evidence to show that biomass systems produce much more air pollution than gas powered systems. Westminster is considering the potential impact that this might have and possible future policy developments and changes to protect against an adverse impact on air quality. This is an example of the type of issue that might threaten future predicted reductions in levels of particle pollution, and which might need a concerted communication and

lobbying drive. Although it is not appropriate to ban this technology in Westminster outright, it is considered that applications which come in proposing this method ought to be required to demonstrate that their emissions are at least as good as gas. There is also the potential for further lobbying here to ensure that across London this is picked up at the appropriate level such as the Mayor of London. This is an area in which guidance is necessary for all authorities as increasing numbers of applications containing biomass boilers are being seen by London authorities and the Mayor’s Energy Strategy is not making a clear enough statement about biomass in Central London.

7C Integrate with Climate Change/CO₂ reduction strategies
Owing to the need to reduce both levels of local pollutants and climate change gases and the similarity of many sources there is scope for closer integration of both issues. In all issues for which energy for fuel is a component, an assessment should be made of CCG’s and Local Pollutants. This should be implemented through all the Councils strategies, plans and procurement process.

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<th>Issue 8: Very small particles (PM&lt;sub&gt;2.5&lt;/sub&gt;)</th>
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<tr>
<td>The UK Air Quality Strategy (2007) contains a new standard to reduce overall exposure to PM&lt;sub&gt;2.5&lt;/sub&gt;. Although not currently part of UK legislation, so therefore not technically required yet, it is likely that local authorities will in the future have to build up monitoring and develop an approach which reduces exposure for the general population to this finest grade of particles. The 2007 UK Air Quality Strategy focuses on providing a general cap on levels and a 15% average reduction and is likely to focus attention away from hotspots to address reducing pollution over wider areas. A reduction in background levels will lead to a reduction in all areas, including in pollution ‘hotspots’. There are also more people affected by background levels than in hotspots.</td>
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Actions:

8A Develop a PM<sub>2.5</sub> Strategy on behalf of Central London Air Quality Cluster Group
This will be developed subject to availability of grant funding. Such a strategy would be very useful in supporting the development of local authority action plans and implementation would lead to exposure reduction.

8B Develop monitoring capability to increase amount of PM<sub>2.5</sub> sites.
It would be sensible to co-locate monitoring sites for PM<sub>2.5</sub> in existing monitoring stations. Funding could be sought for upgrade of monitoring stations, where possible and the introduction of new monitoring sites. Background sites may be more suitable, as the focus is moving away from pollution hotspots. A joint bid for funding may be possible through the Clear Zones partnership with City of London and Camden, as it is more effective to work closely with other boroughs to share monitoring data.
**8C Concentrate on a programme of lobbying to ensure background levels of particles reduce.**

Modelling undertaken for Westminster to predict pollution levels for PM$_{10}$ particles in 2010 showed that concentrations are predicted to exceed the annual average objective levels at some of the busy junctions across the City. The was also a prediction that levels would exceed the 24 hour average objective along some major roads and at some busy junctions. We have a limited capacity to reduce concentrations because they are dispersed over such a wide area. Therefore actions to tackle PM$_{2.5}$ will be heavily influenced by what is happening on a London wide or even wider basis.

A cost effective way of addressing this is to focus on a programme of lobbying on issues of national and regional significance to bring about a reduction in background levels both in London and the UK, and to anticipate policy changes which may threaten this reduction in background levels, or even result in an increase. Such a lobbying programme could be undertaken in partnership with other London boroughs. More research would be needed into potential threats as a first step.

**Issue 9: Communication**

Some of the key actions from the 2001 action plan were around communicating the message about poor air quality to residents, although it is known that this is still not getting through and more is needed.

**Actions:**

**9A Improve communications on air quality issues**

There is a range of possible ways of improving communications, starting with an overhaul of the City Council’s website information, and more frequent updates to residents on actions to tackle air pollution through existing popular methods such as the Westminster Reporter. It is also an area in which local schools could be involved to help ensure that messages are reaching children.

As well as understanding the effects of air pollution and ways of limiting personal exposure it is also important that people understand the contribution that their choices make towards local air quality. There are a number of aspects to this including travel choices, driving styles, vehicle choice and switching off idling engines.

**9B Undertaking research to determine understanding of air quality and gaps in knowledge**

It may be useful to undertake joint research with Clear Zone partners to determine levels of understanding and to ascertain whether there are more effective ways of communicating the message and the necessary change in individual’s behaviour. This will be progressed subject to funding.
9C Developing integrated information on vehicles CO₂ emissions (as per VED bandings) and air quality emissions combined.
Developing this action would promote the importance of air quality considerations as well as CO₂ emissions, when purchasing a new car. This would be most effective if it had industry support and marketing, and could lead to reclassification of the Vehicle Excise Duty (VED) bandings to support a single system which integrates data on greenhouse gas and local pollutant emissions. There is potential for a shared project here with other boroughs/Clear Zone partnership, and is also a potential lobbying issue, but would require funding.

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<th>Issue 10: Health inequalities</th>
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<td>The health inequalities agenda is about ensuring that disadvantaged groups are not disproportionately affected by environmental issues. People on low incomes and those without access to a car are generally locked into their local environment if good transport is not provided at all; or it is such that they cannot afford it. In turn this leads to reduced job opportunities; reduced access to essential services such as health care; reduced access to affordable shopping and other facilities. Air pollution is an area which at a national level is recognised as having a disproportionate impact on certain groups, particularly areas of deprivation. This is typically because areas of deprivation tend to be urban areas, close to busy roads, with less opportunity to access high quality outdoor space and with sometimes a weakened political voice. These circumstances are often compounded by the personal lifestyle choices that are made around exercise, smoking, diet, which mean that those communities will tend to suffer disproportionately from the effects of poor air quality. Westminster has areas of deprivation and this additional angle must be considered fully as part of the development of the strategy.</td>
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Actions:

10A Communications
A communications campaign targeted at certain groups might be beneficial to ensure they are aware of the impact, causes, how they can minimise their personal exposure and how they can reduce their own contribution to the problem of air pollution. This links with the broader communications agenda but is worth mentioning specifically here because of potential links with other agencies.

10B Energy efficiency measures
Focusing on supporting affordable warmth schemes which can reduce demand for fuel in residential areas and support the vulnerable. This could have a positive impact on climate change actions as well as air quality.

5. Developing a Strategy and Action Plan

5.1 The development of the air quality strategy is intended to be based upon the objectives identified in this Issues paper. The strategy must consider and propose solutions for areas of potential conflict, although clearly, as this is an
area in which knowledge and understanding is still developing, this must not prevent future change or action. The Council is also undertaking an SEA on the emerging air quality strategy and action plan and this will help to shape the plan and ensure that it is as robust as possible.

5.2 The action plan will cover a 5 year timeframe, allowing enough time to develop and deliver short and medium term actions, and to begin to deliver longer term actions. This time period will allow analysis of future-year pollution monitoring data against modelled predictions to show how effective the actions are, but will not set a strategy for an overly long period of time.

5.3 The actions that make it into the final plan will have to go through a process of cost effectiveness evaluation. It will have to be shown how they will contribute to achieving the objectives as set out in the strategy, and how they will contribute to delivering the reduction in pollution required.

6. **Next steps and Further Information**

6.1 This consultation will run from **22nd August – 30 September 2008**.

How to respond:

Please respond to:
Nina Miles  
Environment and Projects  
City Planning Group, Planning and City Development  
11th Floor City Hall  
64 Victoria Street  
London, SW1E 6QP

Or by email to airqualitystrategy@westminster.gov.uk

6.2 Responses received will help shape the draft strategy and action plan. There will be a further opportunity to comment on the draft strategy and action plan, which should be early in 2009, ahead of the final strategy and action plan being produced.
## Appendix One – UK Objectives

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Time Period</th>
<th>Objective</th>
<th>To be achieved by</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nitrogen dioxide</strong></td>
<td>1-hour mean</td>
<td>200 µg/m³ not to be exceeded more than 18 times a year 40 µg/m³</td>
<td>31/12/2005</td>
</tr>
<tr>
<td></td>
<td>Annual mean</td>
<td></td>
<td>31/12/2005</td>
</tr>
<tr>
<td><strong>Particulate matter</strong></td>
<td>24-hour mean</td>
<td>50 µg/m³, to be exceeded no more than 35 times a year</td>
<td>31/12/2004</td>
</tr>
<tr>
<td>(PM₁₀)</td>
<td>Annual mean</td>
<td>40 µg/m³</td>
<td>31/12/2004</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25 µg/m³</td>
<td>2020</td>
</tr>
<tr>
<td><strong>Particulate Matter</strong></td>
<td>15-min mean</td>
<td>266 µg/m³, to be exceeded no more than 35 times a year</td>
<td>31/12/2004</td>
</tr>
<tr>
<td>(PM₂.₅)</td>
<td>1-hour mean</td>
<td>350 µg/m³, to be exceeded no more than 24 times per year</td>
<td>31/12/2004</td>
</tr>
<tr>
<td>Exposure reduction</td>
<td>24-hour mean</td>
<td>125 µg/m³, to be exceeded no more than 3 times per year</td>
<td>31/12/2004</td>
</tr>
<tr>
<td><strong>Sulphur dioxide</strong></td>
<td>Annual mean</td>
<td>0.5 µg/m³</td>
<td>31/12/2004</td>
</tr>
<tr>
<td>UK</td>
<td>Annual mean</td>
<td>0.25 µg/m³</td>
<td>31/12/2008</td>
</tr>
<tr>
<td><strong>Lead</strong></td>
<td>Maximum daily</td>
<td>10 mg/m³</td>
<td>31/12/2003</td>
</tr>
<tr>
<td>UK</td>
<td>running 8-hr mean</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Carbon monoxide</strong></td>
<td>Running annual</td>
<td>16.25 µg/m³</td>
<td>31/12/2003</td>
</tr>
<tr>
<td>UK</td>
<td>mean</td>
<td>5 µg/m³</td>
<td>31/12/2010</td>
</tr>
<tr>
<td><strong>1,3 butadiene</strong></td>
<td>Annual mean</td>
<td>2.25 µg/m³</td>
<td>31/12/2003</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The Limit Values remain in force for every year after the target date.
Appendix Two – Glossary

AQA   Air Quality Assessments
AQEG  Air Quality Expert Group
BREEAM Building Research Establishment Environmental Assessment Method
Clear Zone A defined urban area which exploits new technologies and operational approaches to improve quality of life and support economic growth, whilst minimising the adverse impacts of its transport systems
CCZ   Congestion Charging Zone
CH₄   Methane
CO₂   Carbon Dioxide
Defra Department for Environment, Food and Rural Affairs
Euro 1,2,3/I,II,III... Engine emission standards with respect to particles for cars/ heavy goods vehicles.
GLA   Greater London Authority
GHG   Greenhouse Gases
HFC’s Hydrofluorocarbons
LAEI  London Atmospheric Emissions Inventory
LAQM  Local Air Quality Management (system established by the Environment Act 1995 under which Local Authorities required to monitor and assess local air quality)
LCN + London Cycle Network Plus
LDF   Local Development Framework
LEZ   Low Emission Zone
O₃   Ozone
NO₂  Nitrogen Dioxide
NOx  Nitrogen Oxides
PFC’s Perfluorocarbons
PM₁₀  Particles with diameter of 10 micrometres
PM₂.₅ Particles with diameter of 2.5 micrometres
SEA   Strategic Environmental Assessment
SPG   Supplementary Planning Guidance
TfL   Transport for London
UDP   Unitary Development Plan
VED   Vehicle Excise Duty
Appendix Three – UDP Policies

- **STRA 34: POLLUTION - AIR, WATER AND LAND**
  It is the City Council’s aim:
  (A) To improve air quality through Westminster’s Air Quality Management Plan and other measures

- **ENV 5**
  (A) The City Council will encourage new development that does not lead to an increase in local air pollution.

  (B) The City Council will promote measures to improve air quality, in particular encouraging developers to minimise global and local air pollution and emission of odours by:
  1) minimising traffic generated by developments
  2) using natural ventilation systems and lighting wherever possible
  3) using the most energy efficient forms of heating, air conditioning and active ventilation systems
  4) careful design and siting of central heating and ventilation exhausts
  5) avoiding or reducing emissions from the burning of fossil fuels
  6) following the Westminster Considerate Builders’ code of practice to contain dust and fumes on building sites.

  (C) For those developments that require air conditioning systems, the City Council will encourage use of dry rather than wet systems.

  (D) The City Council will monitor air pollutants, including those from motor vehicles, and seek reductions in those pollutants.

  (E) When considering applications for development involving the storage or use of hazardous substances, the City Council will seek the advice of the Health and Safety Executive concerning the nature and severity of the risks presented by potential major hazards to people in the surrounding area.

And in terms of transport policy:

- **TRANS 1: Protecting the Environment from the Effects of Transport Activities** also directly relates to air quality;

  (A) The City Council will seek to improve air quality, reduce the emissions of greenhouse gases and to minimise noise disturbance to residents and workers. This will be achieved through traffic restraint/reduction policies, the implementation of the City Council’s Air Quality Strategy and Action Plan, other measures to reduce ambient noise, the introduction of traffic management and calming measures, and improving provision for and giving higher priority to, walking, cycling, and the use of public transport.

  (B) The City Council will aim to reduce the adverse effects of heavy vehicles within the City primarily through the operation of area-side and local bans and parking controls.