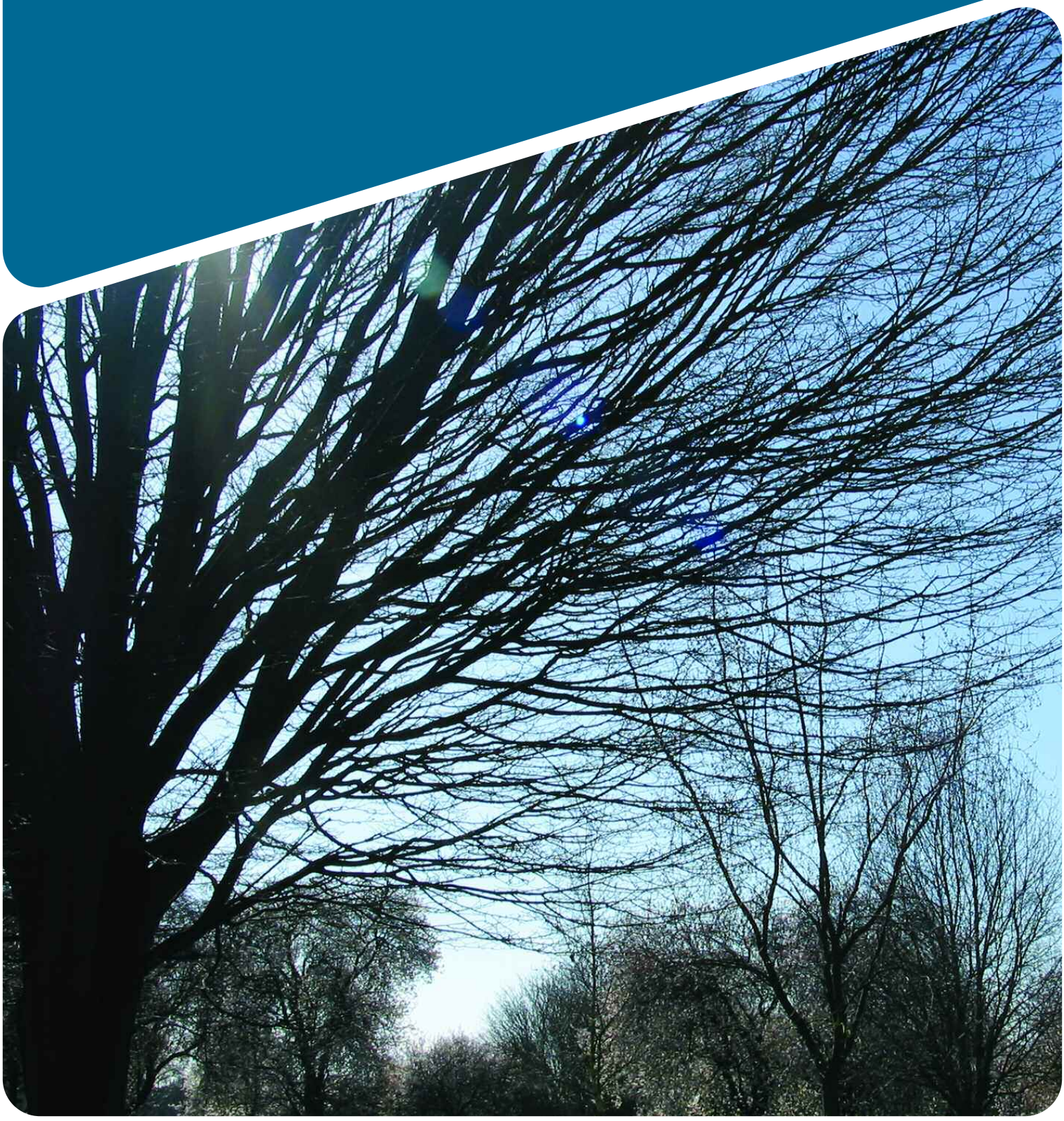
Hounslow

THE LONDON BOROUGH OF HOUNSLOW

AIR QUALITY ACTION PLAN

MAY 2005



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Executive Summary

This document, together with appendices and a detailed database on air quality improvement measures, presents an air quality action plan for the London Borough of Hounslow. A series of options have been identified and an assessment is being made of their suitability for implementation in Hounslow.

Hounslow requires an Air Quality Action Plan because it is forecast that annual average concentrations of nitrogen dioxide (NO_2) in several parts of the Borough will exceed the national target for 2005 and thereafter. This target defines a level of pollution which experts consider represents an acceptable level of risk to human health. In accordance with regulations a series of Air Quality Management Areas (AQMAs) have already been declared.

The process of air quality assessment and AQMA declaration has been described in earlier reports that are available from the Borough Council. These showed that the main sources of oxides of nitrogen in the Borough are road traffic and activities associated with Heathrow airport. However, other sectors also make important contributions to the overall pollutant load in the Borough, including emissions from domestic and commercial premises. It is important to consider all of these sources in the Plan in the interests of developing a proportionate and cost-effective response to air quality problems in the Borough.

A number of other plans have been considered during the development of this plan. These include:

- The Mayor of London's Air Quality Strategy
- The West London Air Quality and Transport Plan
- The West London Sub-Regional Development Framework
- The West London Economic Strategy
- The London Plan
- BAA's Action Plan for Heathrow.
- The Aviation White Paper
- Various local plans.

A major part of the work presented here has thus been to collate these and other plans and to develop a strategy that will ensure, to the extent possible, that they deliver the air quality improvements expected of them. Without such a strategy it would be wholly inappropriate to consider additional measures that themselves may not be adequately implemented.

Given that there are a large number of measures considered in the plan, it has been appropriate to group them into a series of packages, as follows.

First, a series of packages designed at reducing emissions from road transport;

1. Switching to cleaner technologies – promoting use of public transport, cycling, etc., shifting freight from road to rail, etc.
2. Tackling through traffic;
3. Promotion of cleaner vehicle technology;

Secondly, two packages that deal with emissions from specific sources within or bordering the Borough;

4. Measures specific to Heathrow Airport;
5. Measures concerning local industries and other businesses

The next package deals with actions that need to be undertaken by the Council to promote more effective use of resources in the Borough;

6. Improving eco-efficiency of current and future developments, including properties owned or run by the Council;

The final package covers actions of a more general nature, for example, implementation of the Mayor's Air Quality Strategy in the Borough;

7. Actions to be taken corporately, regionally and in liaison with the Mayor.

A number of specific measures are described under each package. For each measure an appraisal has been made of the following, more complete information on which is given in an accompanying database, the Hounslow Action Plan Tracker:

a) Costs;
b) Effects on NO_2 concentrations;
c) Effects of these measures on other issues:
    i. Emissions of other pollutants;
    ii. Noise;
    iii. Congestion;
    iv. Attractiveness of public transport;
    v. Social inclusion;
    vi. Local economic vitality;
    vii. Other effects;
d) Which (if any) other plans already include consideration of the measures;
e) Who should take responsibility for implementation of each measure.

Although appropriate according to relevant guidance, assessment of costs and effects of the measures is, at the present time, approximate. Data are based on experience elsewhere, knowledge of Hounslow and expert judgement. It is accepted that the data given may need to be revised and comments from stakeholders will continue to be welcomed.

The information given under items (a) through to (d) in the list provides a basis for prioritising measures. Discussion is continuing on the precise schedule for implementation of the plan, including details of:

a) Who will take the lead in implementation for each measure and who will provide support;

b) What specific actions need to be undertaken to implement the measure;
c) How success will be measured;
d) How progress on each measure will be reported.

Information on these issues is recorded in the Action Plan Tracker Database and will be reported in the annual review required by central government.

List of Abbreviations

µg/m^3	Micrograms (10^{-6}, 0.000001, grams) of pollutant per cubic metre of air.
ALG	Association of London Government
AQMA	Air Quality Management Area
ATM	Air Traffic Movements
AUN	Automatic Urban Network (of pollution monitors)
BAT	Best Available Techniques
CAA	Civil Aviation Authority
CO	Carbon monoxide
COMEAP	Committee on the Medical Effects of Air Pollutants
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
EPAQS	Expert Panel on Air Quality Standards
EPU	Environmental Protection Unit
EU	European Union
GLA	Greater London Authority
GTP	Green Travel Plans
HA	Highways Agency
HATF	Heathrow Area Transport Forum
HDVs	Heavy Duty Vehicles (including buses, etc., as well as trucks)
HGVs	Heavy Goods Vehicles
HIMP	Health Improvement and Modernisation Plan
HSE	Health and Safety Executive
ICAO	International Civil Aviation Organisation
ILIP	Interim Local Implementation Plan
IPC	Integrated Pollution Control
IPPC	Integrated Pollution Prevention and Control
LA	Local Authority
LA21	Local Agenda 21
LDVs	Light Duty Vehicles (cars and small vans)
LEZ	Low Emission Zone
LPG	Liquefied petroleum gas
LTP	Local Transport Plan
MAQS	Mayor's Air Quality Strategy
MCA	Multi-criteria assessment
NAEI	National Atmospheric Emissions Inventory
NO	Nitric oxide
NO_2	Nitrogen dioxide
NOx	Oxides of nitrogen (the mixture of NO and NO_2 in the atmosphere)
NSCA	National Society for Clean Air and Environmental Protection
O_3	Ozone
PAH	Polycyclic aromatic hydrocarbons
Pb	Lead
PMx	Particulate matter with a diameter of *x* micrometres (typically 10, as in PM_{10}) or less
ppb	Parts (of pollutant) per billion (of air)
SERAS	South East & East of England Regional Air Services Study
SO_2	Sulphur dioxide
SPG	Supplementary Planning Guidance
SUN	Statutory Urban Network (of pollution monitors)
T5	Heathrow Terminal 5
TfL	Transport for London
UDP	Unitary Development Plan
UNECE	United Nations Economic Commission for Europe
VOCs	Volatile Organic Compounds
WID	Waste Incineration Directive
WLA	West London Alliance

Contents

1 Introduction

1.1 About this report

This document sets out the actions that London Borough of Hounslow will take with the aim of improving air quality in the Borough. Statutory requirements under the Environment Act 1995 oblige Hounslow to do this.

Currently this document is in draft form. This means that Hounslow has not yet reached its final decision regarding the actions to be taken. These decisions will be made following a period of wide consultation involving Councillors, the community and other relevant parties. The consultation period will allow these parties to contribute to the plan. After this the final version of the plan will be adopted by the Council and will become a part of the Borough's policy.

1.2 Why is there a need to take action?

Air pollution is a problem that is experienced in very many cities and countries around the world. Unfortunately, Hounslow is one of these places along with around 120 other local authorities in the UK. During the 1990's it was increasingly recognised that air pollution was becoming a problem in the UK and so legislation was enacted to deal with it.

The legislation accepted that one of the most worrying aspects of air pollution was its tendency to affect public health if it was allowed to go unmanaged. Therefore, strategic measures for achieving a set of air quality objectives have been adopted. The objectives are to improve air quality to a level where even the most vulnerable are protected from its health effects and the measures are a set of national policies aimed at reducing the impacts of many different pollution sources. These measures have led to very significant reductions in the amount of pollution produced and should lead to overall improvement in the UK pollution levels for several years to come.

However, even after taking these actions, some localised areas (such as Hounslow) will still experience air pollution that is unacceptably high. Rather than continue to take action nationally to deal with these localised pollution problems, the current approach is to deal with them through local actions. If these are found to be insufficient to deal with pollution then it may be necessary to consider further local or national actions.

For several years now, Hounslow has been taking action with the aim of understanding and managing the air pollution problems within the Borough. Hounslow is now using this information to develop a local Air Quality Action Plan (AQAP), which is the subject of this document.

1.3 Purpose of the report

This report provides an overview of measures that are being implemented as a result of national legislation and through local plans such as those agreed with the Mayor of London and Heathrow Airport. It also includes a number of new initiatives that the Council and other bodies could undertake to improve air quality in the Borough. A large amount of additional information is available in the appendices to the main report. A separate Access database (the Hounslow Action Plan Tracker) also contains details on the options to reduce air pollution. The plan at this stage is in development and will be finalised once stakeholders have been given the opportunity to comment on the measures discussed.

1.4 Our approach to developing the Hounslow AQAP (Air Quality Action Plan)

We believe that final AQAP should be a realistic and workable plan for improving air quality in the Borough. Our approach to developing such a plan has included the following:

1. Due regard to the available official guidance
    - Part IV of the Environment Act 1995, Local Air Quality Management Policy Guidance, Defra, 2003.
    - Air Quality: Planning for Action, Part 2 of the NSCA's Guidance on the Development of Air Quality Action Plans and Local Air Quality Strategies, NSCA, 2001.
2. Consideration of the policies and actions within neighbouring London Borough's and those of the GLA.
3. Consultation with relevant Borough officers across several departments and other relevant stakeholders.
4. Commissioning consultants to provide guidance and opinion.

1.5 The structure of this report

The remainder of this report is structured as follows:

- Chapter 2 describes the relevant legislation on air quality.
- Chapter 3 describes in detail the air pollution problems in Hounslow
- Chapter 4 discusses the existing national, regional and local policies that take air quality into account
- Chapter 5 describes how the draft plan has been developed to this point
- Chapter 6 sets out the options for reducing air pollution in Hounslow
- Chapter 7 suggests how the plan would be implemented
- Chapter 8 provides useful sources of further information

There are also several appendices to this report that are arranged as follows:

- A review of compliance for this report against the action plan checklist developed by DEFRA.
- A summary of the legislation on air quality standards.
- A description of the consultation process so far.

- Review of sources of air pollution outside the control of the London Borough of Hounslow.
- Further information on those local and other plans that already exist that are expected to affect air quality
- A description of the approach for evaluating the air quality impacts of the measures considered in the plan.

A third report provides outputs from the Action Plan Tracker system. At the present time the information given is only preliminary, but it demonstrates how the following will be reported:

- Estimates of costs,
- Effects on air quality,
- Other social, economic and environmental impacts,
- Timescales for implementation,
- Responsibility for implementation.

2 Air Quality in Hounslow

2.1 National air quality legislation governing Hounslow

Part IV of the Environment Act 1995 provides the framework for local authorities' duties to manage air quality. The Air Quality Regulations 2000 and Air Quality (Amendment) Regulations 2002 prescribe the air quality objectives (a set of standards and the dates for achieving them). For each objective, local authorities have to consider present and future air quality and assess whether the objectives are likely to be achieved. This activity is called Review & Assessment and the methods by which this must be done are set out in Part IV of the Environment Act 1995, Local Air Quality, Technical Guidance, Defra, 2003.

A location where the prescribed objectives are not likely to be achieved and where members of the public might reasonably be exposed must be designated as an Air Quality Management Area (AQMA) by means of an order under section 83(1) of the 1995 Act.

Within an AQMA, section 84(1) of the Act requires local authorities to carry out a further assessment of air quality (to provide further data on the problem) within 12 months of the designation order. Section 84(2) requires that they also produce an AQAP setting out the action that the authority will take in pursuit of the air quality objectives. There is no prescribed timescale for the submission of the plan other than suggesting its submission to Defra 12-18 months following the designation order.

Local authorities are required to continuously manage air quality in their areas to check if there have been any changes in respect of the pollutants and to also produce progress reports on review & assessment and action planning. They may choose to combine both progress reports in one report. In local authorities with a designated AQMA, Defra's expectation is that these progress reports are produced annually.

Local authorities are not legally obliged to meet the air quality objectives but they must demonstrate that they are working towards them. The Secretary of State for Environment Food and Rural Affairs has reserve powers under section 85 of the Act (to be used as a last resort) to require local authorities to take action where they are failing to make sufficient progress.

In addition to Hounslow's statutory duty to comply with this national legislation, the Borough has one further duty regarding air quality. The Mayor of London has produced an air quality strategy for London and the Borough must have regard to this document to ensure that its AQAP is in general conformity with the regional strategy.

2.2 Air quality in Hounslow

Following national guidance, assessment of pollutant levels in Hounslow was carried out in four stages, each one informing the next as to the pollutants of

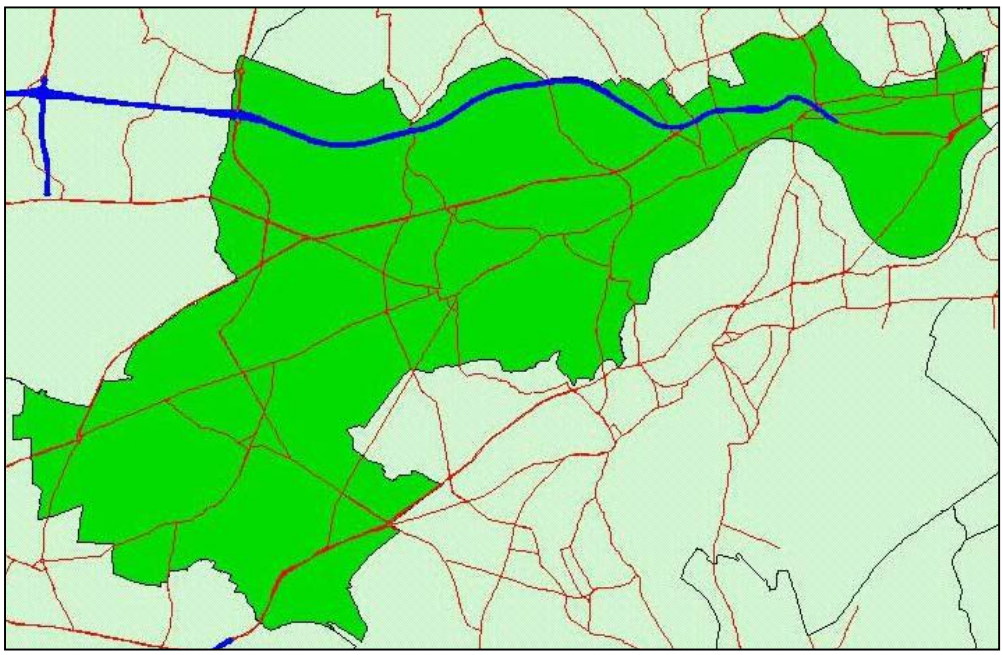
concern and areas where problems were anticipated. The forth stage required detailed dispersion modelling of emissions from sources including road traffic, industry, aviation and the domestic and commercial sectors. Air quality data collected at sites within the Borough were used to validate the analysis and predictions were made as to the likelihood of the Government's air quality objectives being met in the Borough.

The modelling studies predicted that the annual average nitrogen dioxide objective for 2005 (40 µg/m^3) would not be met across large parts of the Borough. This pollutant is associated with harmful effects on human health. Nitrogen dioxide (NO_2) may worsen asthma symptoms, reduce lung function and increase reactivity to natural allergens. The highest public exposures to this pollutant occur close to major roads and Heathrow airport. Public exposure to other pollutants is estimated to be within the current standards. However there is an increasing focus on managing levels of the pollutant PM_{10} because of the importance of its health effects. PM_{10} is a class of particulate matter less than 10 micrometers in diameter (i.e. 10 millionths of a meter across and smaller). This size is small enough to pass deep into the airways of exposed individuals and is linked to a range of negative health effects. The European Union and the UK Government are currently reviewing the need for further protection against this pollutant. Therefore, although the current standards for PM_{10} are being achieved Hounslow will seek to ensure that action plan measures adopted for reducing NOx emissions will also have a positive effect on PM_{10} concentrations.

2.3 Declaration of the AQMA

An air quality update was presented to the Executive of the Council in July 2004 where it was shown that more of the borough was predicted to exceed the prescribed standard for Nitrogen Dioxide. The decision was taken to declare the whole Borough an Air Quality Management Area and this decision will be ratified at the Borough Council Meeting of July 26th 2005.

Figure 1 – LB Hounslow whole borough AQMA indicating the M4 motorway and other major roads in the borough (Source LB Hounslow)



Although the AQMA is declared because of nitrogen dioxide concentrations, Hounslow will continue to review and assess the other key pollutants to ensure that they are given adequate consideration. Hence, there may be a need to vary the declared AQMA in future.

2.4 Projected air quality in Hounslow

Figure 2 presents the projected annual mean NO_2 concentrations within the Borough in 2005, as estimated in the fourth stage of Review & Assessment.

The mapped concentrations clearly demonstrate the high concentrations that are forecast across the AQMA. Even in locations where they do not exceed the 40 $\mu g.m^{-3}$ standards, they are close to it. It is forecast that the standard will be exceeded very significantly around Heathrow and busy roads.

Results in Figure 2 predict that reductions of the order of 15$\mu g.m^{-3}$ NO_2 are required in the AQMA (for example at properties along Twickenham Road) in order to achieve the objective of 40 $\mu g/m^3$. As with all predictive data there is some uncertainty but even taking this into account it is clear that the air quality objective will not be met at all relevant locations within the Borough. The Council will continue to monitor trends in NO_2 levels and will periodically re-assess the likely future pollutant levels. It should be noted that, as a result, it may become necessary to amend the boundaries of the AQMAs and the Action Plan.

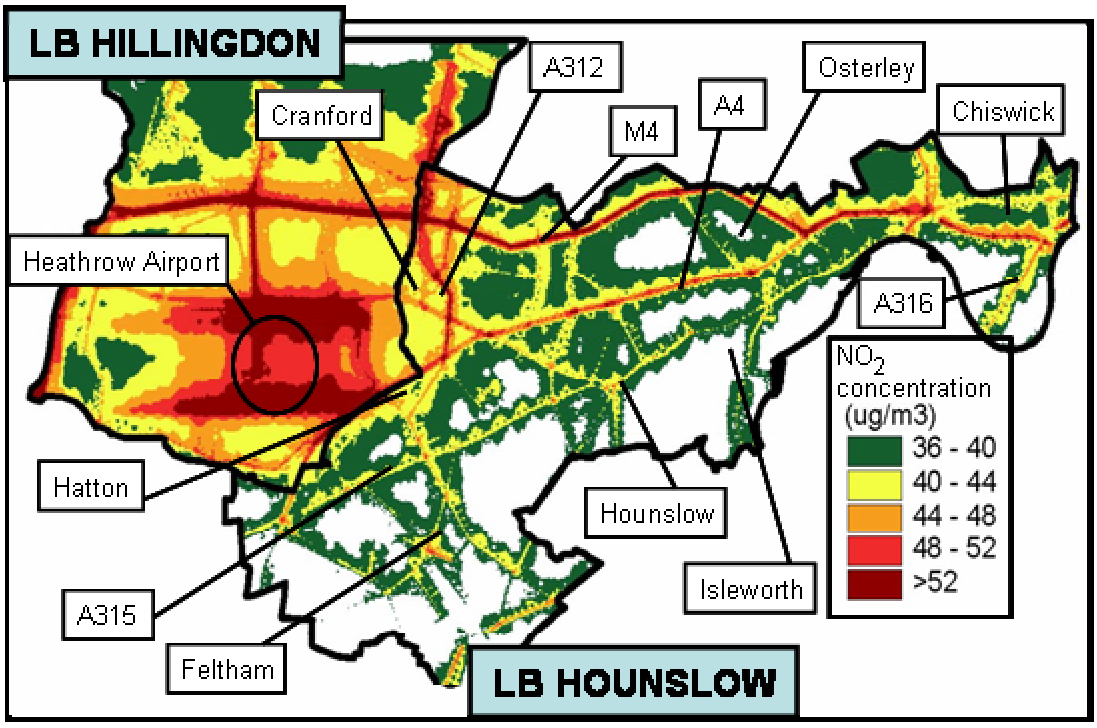


Figure 2 – Projected annual mean NO_2 concentrations in and around London Borough of Hounslow in 2005 (source: CERC 2002)

The reduction of NO_2 pollution is not straightforward due to the complexity of its properties in the atmosphere. Box 1 below provides more information.

Special characteristics of the pollutant, nitrogen dioxide (NO_2)

NO_2 and another closely related compound, nitric oxide (NO) are emitted from all combustion processes such as vehicle engines or heating systems. Together, NO and NO_2 are referred to as NOx. The compounds have complex non-linear relationships with other pollutants in the atmosphere, particularly ozone. Because of these properties *a given reduction in total NOx levels will result in a smaller reduction in NO_2* under most conditions. Therefore, much larger NOx reductions are required to achieve a given reduction in NO_2 pollution.

2.5 Sources of Air Pollution in Hounslow

2.5.1 Emissions

In order to develop an action plan that is targeted on efficient mechanisms for pollution control, it is essential to understand how different sources of pollution contribute to concentrations in the AQMAs. Since the fates of NO_2 and NO are interlinked in the atmosphere, the following discussion concerns sources of NOx (i.e. the sum of these two compounds). Table 1 presents the estimated sector breakdown of NOx emissions in 2005 within the Borough. Values in the Table are taken from the London Atmospheric Emissions Inventory (GLA, 2001). The Table makes no reference to Heathrow Airport, as the Airport is located within the London Borough of Hillingdon, and hence makes no contribution to emissions within the Borough. The Airport is, however, considered below, when account is taken of concentrations within the Borough.

These results show that road transport is the dominant source of NOx in the Borough, contributing up to two thirds of the total emissions. Within this sector, heavy goods vehicles, (HGVs) are estimated to contribute up to 22% of total Borough emissions and cars 27%. Buses, coaches and light goods vehicles are also significant sources contributing 15% to the total.

Stationary combustion sources are the other significant source sector in the Borough. Emissions from domestic gas use contribute 17% to total emissions while emissions from industrial and commercial gas use (mainly for heating) contribute another 14%.

Other sources in the Borough make little contribution to total emissions.

Table 1 – Sector breakdown of annual NOx emissions in 2005 within LB Hounslow.

Sector	Sub-sector	Emission (tonnes/year)	Percentage of total emissions (%)
Stationary combustion sources	Part A processes	17	1%
	Part B processes	24	1%
	Boilers	3	<1%
	Industrial and commercial gas use	254	14%
	Domestic gas use	302	17%
	Agriculture	9	1%
	Sub-total	***609***	***33%***
Road transport	Motorcycles	4	<1%
	Taxis	30	2%
	Cars	495	27%
	Buses & Coaches	139	8%
	LGV	128	7%
	Rigid HGVs	271	15%
	Articulated HGVs	126	7%
	Sub-total	***1193***	***65%***
Other transport emissions	Rail	3	<1%
	Road transport cold start emissions	17	1%
	Sub-total	***20***	***1%***
All	**Grand total**	**1822**	**100%**

2.5.2 Concentrations

These sources contribute to the predicted ambient NOx concentrations shown in Figure 2 to a varying extent depending on source characteristics, location of receptors and meteorology. To illustrate this Table 2 presents the contribution of different sources to predicted ambient NOx concentrations at two relevant locations, one close to Heathrow airport (Cranford) and one at the eastern end of the AQMA close to the M4 and A4 (Glenhurst road).

Table 2 – Sector breakdown of annual mean NOx concentration in 2005 at two illustrative receptor locations within the London Borough of Hounslow.

	Close to Heathrow (Cranford)	Close to major roads (M4 & A4) (Glenhurst road)
Background[1]	18%	14%
Major roads	35%	61%
Industry	5%	3%
Airport	25%	5%
Other[2]	17%	17%
Total	100%	100%

Source: CERC, 2002.
Notes
1) This fraction is a contribution from the region surrounding the Borough. It is largely due to road vehicle emissions in the London region and to the west.
2) This fraction includes contributions from traffic on minor roads and the combustion of natural gas mainly for heating in domestic, commercial and industrial situations.

The contributions from each sector are discussed below.

2.5.3 Background contribution

The atmosphere in Hounslow includes pollutants generated from other Boroughs in London and other parts of the UK, and indeed, the rest of Europe, in addition to emissions from local sources. Estimates in Table 2 suggest that these background contributions contribute between 14% and 18% of NOx concentrations across the Borough. By definition, Hounslow does not have direct control over these contributions.

Hounslow would need to work in partnership with a wide range of stakeholders in order to secure reductions in emissions from sources outside its direct control. Where there are not forums already in existence through which to achieve this aim, Hounslow will strive to form them as part of the action plan. One of the most important actions in the plan will be to ensure that there is effective dialogue between the Council and other stakeholders, and that measures that are already agreed will be implemented effectively and in a timely fashion.

2.5.4 Major roads

The contribution of traffic on major roads in the Borough is key. Table 3 presents a breakdown of the contribution from vehicles by vehicle type.

Table 3 – Major road sub-sector breakdown of annual mean NOx concentration in 2005 at two illustrative receptor locations within the London Borough of Hounslow.

	Close to Heathrow (Cranford)	Close to major roads (M4 & A4) (Glenhurst road)
Car/Taxi	35%	37%
Light Goods Vehicle	9%	10%
Heavy Goods Vehicles	40%	37%
Bus/Coach	16%	16%
Total	100%	100%

Source: CERC 2002.

The contributions from different vehicle types are very similar at the two sites suggesting that the characteristics of the vehicle fleet using the Borough may be very uniform. Once more these values demonstrate that heavy goods vehicles and cars are the dominant contributors.

Roads within the Borough are managed variously by Hounslow, Transport for London (TfL) and the Highways Agency. Figure 3 illustrates this for the main roads in the Borough and Table 4 presents the contributions to total NOx from traffic on roads managed by each of these authorities.

Table 4 – Breakdown by highways authority of annual mean NOx concentration in 2005 at two illustrative receptor locations within the London Borough of Hounslow.

	Close to Heathrow (Cranford)	Close to major roads (M4 & A4) (Glenhurst road)
Highways Agency	37%	67%
TfL	40%	22%
LB Hounslow	33%	11%
Total	100%	100%

Source: CERC 2002.

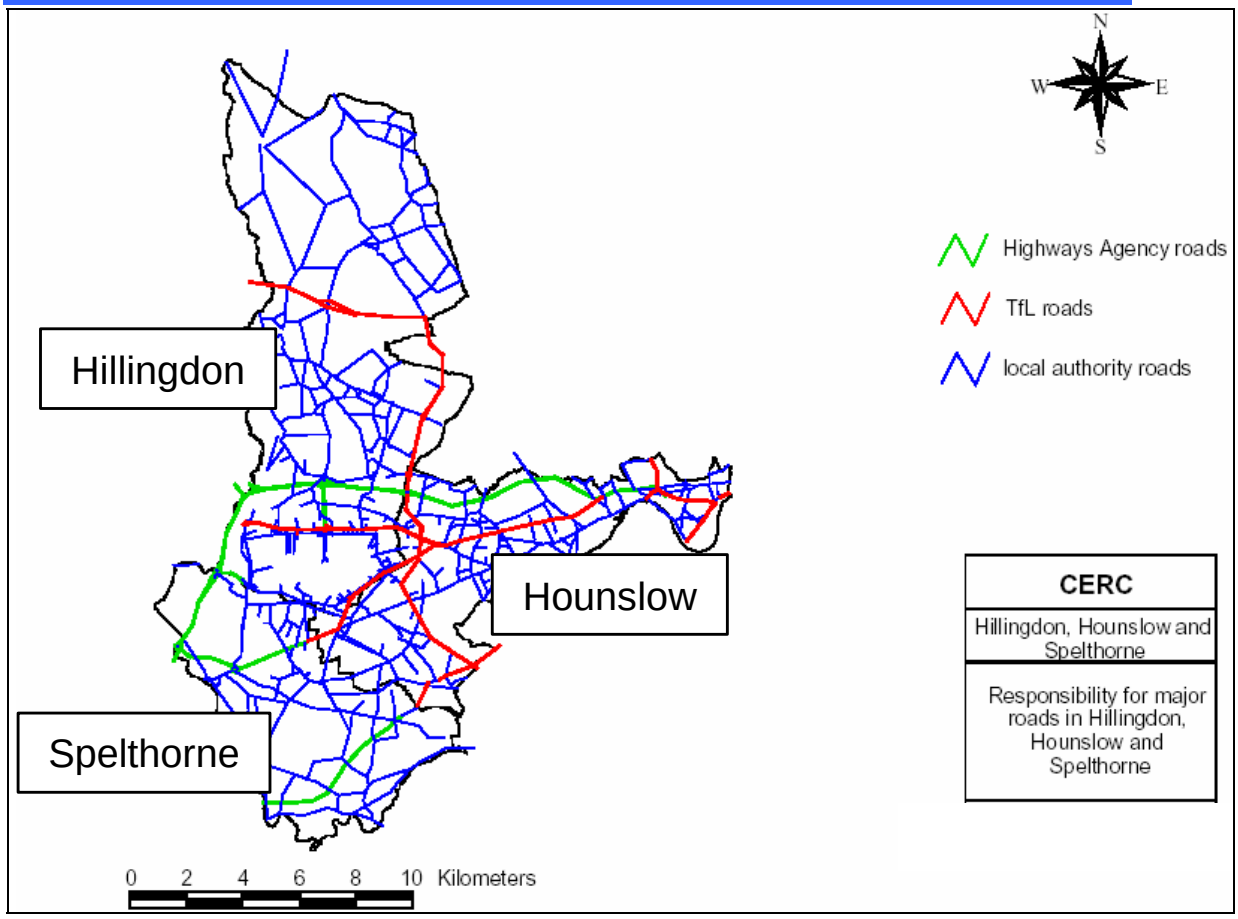


Figure 3 – Illustration of the authority with responsibility for different roads in Hounslow (source: CERC 2002).

The table demonstrates that although major roads generate emissions of NOx sufficient to cause the observed widespread exceedances of the air quality standard, in many cases the traffic is not under the direct control of the Borough. Both the Highways Agency and Transport for London would have to take action to reduce emissions in order to achieve the air quality objectives in the Borough. Each authority (now including Hounslow) has specific traffic-based objectives, some of which may conflict with those set nationally for air quality. Through this plan it is therefore essential to establish an appropriate basis for factoring air quality into wider decision making.

2.5.5 Industry

Table 1 shows that industrial process emissions are very minor contributors to total NOx in the Borough. Industry is regulated partly by the Environment Agency and partly by local authorities, with the Agency responsible for larger and more complex plant. Legislation of the past 20 years, such as the recent EU Directives on IPPC (Integrated Pollution Prevention and Control) and waste incineration, combined with trends such as the move away from traditional fuels (coal and oil) to natural gas, has led to a major decline in the importance of industry as a pollution source.

However, these industries can have significant effects on air quality by generating local pollution in the immediate vicinity of a plant and through raising background levels of pollution. Hounslow could, via the planning process, ask for conditions more stringent than those that would typically be defined as Best Available Techniques (BAT) under IPPC if a plant is operating in or close to "sensitive" areas.

2.5.6 Heathrow Airport

Heathrow is owned and operated by BAA Heathrow, a subsidiary company of BAA plc. The company provides facilities for over 450 organisations and companies. It is the largest airport in the UK and in 2000 served 64 million passengers and handled 1.3 million tonnes of air freight. The generation of a large number of flights brings with it corresponding volumes of surface traffic. Heathrow is situated in close proximity to residential areas and air pollution levels around Heathrow are predicted to exceed national air quality objectives in 2005. Table 5 details the predicted NOx emissions at the airport in 2005 and Table 6 illustrates the predicted contribution of each sub-sector to the total fraction due to the airport.

Table 5 – Sector breakdown of annual NOx emissions in 2005 at BAA Heathrow.

Sub-sector	Emission (tonnes/year)	Percentage of total emissions (%)
Airside fleet	546	16%
Auxiliary power units	478	14%
Heating	219	7%
Aircraft on ground	1543	47%
Aircraft between 0-20m	374	11%
Road transport (idling)	8	<1%
Road transport (travelling)	150	5%
Total	**3319**	**100%**

Source: GLA, 2003.

Table 6 – Breakdown by airport activity of annual mean NOx concentration in 2005 at an illustrative receptor location within the London Borough of Hounslow.

	Close to Heathrow (Cranford)
Road vehicles	18%
Airborne aircraft[1]	51%
Taxiing & aircraft holding	13%
Heating	4%
Other[2]	13%
Total	100%

Source: CERC 2002.

Notes

1) Evidence suggests that aircraft emissions from 0-50m altitude are the most significant contributors to this sub-sector.

2) Includes the airside fleet and APUs.

Values in these tables illustrate that aircraft emissions when holding, taxiing or during take-off are the major sources of the contribution the airport makes to predicted NOx concentrations in Cranford. Road traffic at the airport and activities of the airside support fleet are also significant sources and contributors to pollutant levels close to the airport. This analysis only looks at one location but Figure 2 illustrates that there is a large area on the western boundary of the Borough which experiences high levels of NO_2 due to airport activities and road traffic.

Following the decision to approve the construction of the new Terminal 5 (T5) at Heathrow, due to be open for full operation in 2008, and the Government's support in principle for further expansion of the airport it is currently difficult to envisage how or when the air quality exceedances around Heathrow may be eliminated.

2.5.7 Other

The remaining contribution to total NOx levels (Table 2) comes from emissions from traffic on minor roads and the combustion of natural gas for heating in domestic, commercial and industrial situations. Hounslow would have the capacity to influence these activities through a raft of measures aimed at 'eco-efficiency.' These can be defined as measures aiming at more efficient use of energy in the built environment and in making journeys within the Borough.

2.5.8 Summary

- Over large areas of the Borough it is predicted that the annual mean national air quality objective for NO_2 will not be achieved. As a result, Air Quality Management Areas have been declared. Significant reductions of NO_2 concentrations will be required to achieve the objective.
- Due to the complexity of processes in the atmosphere very significant reductions in total NOx emissions will be needed to achieve the required reduction in NO_2 levels.
- Road traffic (and in particular cars and HGVs) accounts for 65% of all NOx emissions in the Borough and up to 2/3rds of NOx concentrations experienced in parts of the Borough.
- Domestic/commercial/industrial gas usage accounts for 33% of all NOx emissions in the Borough and may contribute close to 17% of NOx levels in parts of the Borough.
- Heathrow airport is a major NOx source just outside of the Borough. At the western Borough boundary airport activities contribute around a quarter of the total NOx pollution with aircraft emissions as the dominant sub-sector source.
- Background concentrations due to other emissions outside of the Borough contribute 15-20% of the NOx pollution.

- Hounslow does not have direct control over activities at Heathrow, on roads managed by the Highways Agency and Transport for London, industry regulated by the Environment Agency or on activities leading to background pollutant levels in the Borough. The Heathrow and major road emissions dominate the NOx levels in the Borough.
- Hounslow will need to have an effective dialogue and agreed implementation plans with a wide range of stakeholders in order to secure reductions in emissions from sources outside its direct control.

3 Existing Policies that Take Air Quality into Account

Policies at a number of levels already have significant effects, both positive and negative, on air quality in the Borough. This Chapter identifies the most important of these, particularly where they dictate actions required for inclusion in this plan. Further details of some of the plans for Hounslow are given in Appendix 5.

3.1 National and European Policy

The main areas of national policy with an effect on air quality in addition to the air quality strategy and associated European legislation are:

- The 10 year transport plan;
- The introduction of IPPC (Integrated Pollution Prevention and Control);
- The EU's Waste Incineration Directive (WID), Noise Directive, Solvent Emissions Directive, National Emissions Ceilings Directive, Large Combustion Plant Directive and AutoOil programmes as implemented in the UK;
- Energy and climate change policy, for example, implementation of the UK's obligations under the Kyoto Protocol;
- UK policies on aviation, including the White Paper on the Future of Aviation.

In most cases there are opportunities for significant benefits between these policies and improved air quality. In the context of Hounslow, the Noise Directive would seem to be particularly relevant to the area surrounding Heathrow, not just in respect of aircraft noise but also because of the high volume of road traffic using the area. Climate change policy should benefit air quality across the Borough, particularly if stronger action is to be taken on energy efficiency, for example in building regulations.

3.2 The Mayor's Air Quality Strategy (MAQS)

The key issues addressed through the MAQS are:

- Reducing traffic, for example, through the use of congestion charging,
- Improving public transport,
- Promoting the use of cleaner road vehicles including buses and consultation out on taxis,
- Low emission zones (LEZs),
- Traffic management,
- Industrial and transboundary sources,
- Construction and construction vehicles,
- Energy and heating.

The Mayor expects Boroughs to contribute to the policies and proposals, by requiring measures to be addressed through air quality action plans.

The Mayor's plan highlights the fact that Heathrow Airport is one of the major sources of air pollution in London. Also, that the area surrounding Heathrow is one of the major areas in Greater London for exceedance of the air quality objective for annual average NO_2 (along with Central and Inner London, and the M25). The MAQS includes a number of policies and proposals for the reduction of emissions arising from the operation of Heathrow Airport including,

- Minimising emissions from aircraft by encouraging the adoption of the newest, cleanest aircraft designs, minimising emissions during taxiing and idling, and using taxation to encourage further reductions;
- Minimising emissions from direct airport activities from improvements to airside, delivery and freight vehicles, heat and power supplies and construction activities;
- Improving public transport use to and from the airport by both passengers and staff. In particular, the Mayor is leading the drive to construct a new Cross-London rail link, Crossrail 1, linking Heathrow with Central London and beyond; and
- Minimising emissions around the airport from road traffic using major road corridors, through the London-wide measures set out in the Strategy.

3.3 The London Plan

The London Plan, as the spatial development strategy for the whole of London, provides the strategic framework for planning over the medium to long term across the capital. It therefore has the potential to make a major impact on air quality policy across the capital. Integration of development and transport provision are particularly key areas. Like the present action plan, this will require a multi-Agency approach. Within Hounslow, the main policy tools for implementation of the London Plan will be the Unitary Development Plan, the Local Development Framework (to replace the Unitary Development Plan) and the Borough Transport Strategy.

3.4 Sub Regional Development Framework

The purpose of the Sub-Regional Development Framework (SRDF) is to provide non-statutory guidance on the application of policies in the London Plan to the West London sub-region. Because of its consistency with the London Plan, any policies and proposals in it will be given statutory weight by inclusion the first alterations to the London Plan, which will be completed in 2006, and in the Local Development Frameworks (LDFs) being prepared by boroughs.

The SRDF is intended to expand the role of the sub-region in delivering key elements of the London Plan and to present an integrated view of the future of the sub-region

3.5 West London Joint Air Quality and Transport Action Plan

The West London Alliance (WLA) provides a forum for six councils, Brent, Ealing, Hammersmith and Fulham, Harrow, Hillingdon and Hounslow. The group is linked by a number of common objectives, one of which is to work together on environmental matters. Richmond upon Thames, although not a member of the Alliance, has worked with the WLA to ensure integration in transport and environmental issues across West London.

As a consequence of the WLA producing a general environmental strategy, a draft Air Quality Strategic Plan 2002-2005 was developed, outlining actions aimed at improving air quality. Given that many of the actions to improve air quality specifically relate to transport, there is close liaison between the air quality and transport groups that steer the West London Transport Strategy.

The West London Transport Strategy could thus play a prominent role with respect to this plan, and the most logical strategic approach to West London's air pollution problems (to the extent that they are a function of transport emissions) is to continue working through the WLA.

A baseline study has been produced (Air Quality and Transport Actions, West London Baseline Study, February 2003) outlining the air quality and transport actions that are currently being undertaken across West London. The study surveyed each partner in the WLA and reports on their status with regard to the eight key action areas of the draft Air Quality Strategic Plan which are:

- Transport and air quality action assessment
- Low emission zones – examination and support
- Transit schemes – support and development
- Land use planning integration
- Bus corridor improvements
- Sustainable and integrated transport action
- Freight movements – quality partnerships
- Heathrow terminal 5

It is anticipated that progress against the baseline will be monitored and that the Strategic Plan will evolve into a more detailed action plan containing relevant actions from this air quality action plan and those of other WLA partners.

3.6 West London Economic Strategy

West London is home to almost 1.5 million people, blue-chip multinationals, thriving small and medium enterprises, Heathrow Airport and Wembley and is set to grow and change. The London Plan forecasts major increases in population, homes and jobs. The West London Economic Development Strategy was developed by the West London Partnership and harness the opportunities forecasted by the London Plan and to fulfil the requirements for West London sustainability. It provides the rationale for a programme to support West London's economy and long-term fiscal competitiveness. The

strategy exists to complement and support the delivery of the vision of the London Plan and the forthcoming Sub-Regional Development Framework.

3.7 Heathrow Airport and the BAA Action Plan

As part of the conditions of the approval for the building of a 5th Terminal (T5) at Heathrow, the operator, BAA Heathrow, was required to produce an action plan aimed at reducing emissions to air. This action plan was submitted to Hounslow and neighbouring authorities in 2002. The plan focuses on reducing emissions over six key areas namely:

- Aircraft operations management;
- Airside vehicle fleet management;
- Better understanding of airport emissions and their impacts;
- Surface access;
- Land use planning;
- Emissions from fixed point sources and construction.

As part of the T5 approval BAA are required to keep this action plan under review and to submit the results of the review to the London Boroughs of Hillingdon and Hounslow.

Any changes or major developments at Heathrow Airport will need to be reflected in the Work Package 4, Measures Specific to Heathrow Airport. Therefore this work stream will be revised accordingly.

3.8 Local Policies

A number of local policies already stress the need for action on air quality. These will be discussed in more detail in Appendix 5.

In development of this plan consideration needs to be given to the main objectives and actions for each of these policies, and any information on costs and effectiveness that may be available through them.

3.9 Responsibilities for Different Policy Areas

Responsibility for policy in different areas is shown in the Table below. The following key identifies each organisation and plan from the abbreviations used.

Key

Defra	Department for environment, food and rural affairs (jointly responsible with the DfT for achieving the NAQS)
ODPM	Office of the deputy prime minister (responsible for national planning policy)
DfT	Department for Transport (responsible for national transport policy, including policy on aviation)
GLA	Greater London Authority (responsible for London-wide air quality, noise, biodiversity, energy, transport & spatial planning strategies and the coordination of London Borough efforts to achieve their objectives).
WLA	West London Alliance (a joint policy forum for London Boroughs of Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon and Hounslow)
HA	Highways Agency (responsible for managing the national motorway network)
EA	Environment Agency (responsible for environmental regulation, enforcement of environmentally-focussed legislation and developing policy)
MAQS	Mayor's Air Quality Strategy (sets out London-wide policies that Boroughs must take account of).
TfL	Transport for London (responsible for managing London's major road network).
LA21	Local Agenda 21 (Hounslow's agenda for promoting sustainability in all activities within the Borough).
AQ	Air Quality
MES	Mayor's Energy Strategy (sets out London-wide policies that Boroughs must take account of).
RMS	Route Management Strategy (The HA process of deciding work programmes for key motorway routes).
WID	Waste Incineration Directive (legislation regulating the environmental impact of waste incineration).
IPPC	Integrated Pollution Prevention and Control (legislation regulating the environmental impact of industrial activity).
NAQS	National Air Quality Strategy (sets out the policies that contribute to improved air quality).
LAQM	Local Air Quality Management (the technical and policy framework for managing UK air quality at the local authority level.)
AQAP	Air Quality Action Plan (a Borough-level plan for improving air quality in an attempt to achieve the objectives of the NAQS).
SED	Solvent Emissions Directive (legislation regulating work practices and emissions of polluting solvents)
LCPD	Large Combustion Plant Directive (further legislation regulating the environmental impact of particularly large industrial installations)

Table 7 – Responsibility for policy in various areas relevant to the action plan

Source	Sub-source	National	Regional				Local	
		Defra, ODPM, DfT	GLA	WLA	HA	EA	LB Hounslow	BAA Heathrow
Roads	Heavy goods vehicles Private vehicles Buses Taxis Light Goods Vehicles Infrastructure	1. 10 year transport plan/Transport strategy 2. Emissions standards 3. Fuel quality standards 4. Energy and climate change policy 5. National planning guidance	1. MAQS 2. London Plan 3. TfL plans	1. Joint AQ and transport action plan 2. Freight quality partnership	1. Implements national policy 2. RMS		1. Transport strategy 2. Unitary development plan 3. LA21	BAA action plan for Heathrow
Industry	Regulated industry	1. WID 2. IPPC 3. Energy and climate change policy 4. SED 5. LCPD	1. MAQS 2. MES			Regulator implementing national policy	Regulator implementing national policy	

Table 7 – Responsibility for policy in various areas relevant to the action plan (continued)

Source	Sub-source	National	Regional				Local	
		Defra, ODPM, DfT	GLA	WLA	HA	EA	LB Hounslow	BAA Heathrow
Airport	All activities	1. White paper on the future of aviation 2. Support in principle for a 3rd runway at Heathrow providing the legally binding environmental standards (including air quality) are met.		Joint AQ and transport action plan			1. Strong opposition to 3rd runway. 2. Provision of adequate compensation to the Hounslow community for current environmental impacts.	1. 3 new runways should be developed at the south-east airports. 2. A 3rd runway at Heathrow should be among them. 3. Acceptance that new developments must effectively protect the environment. 4. BAA action plan for Heathrow
Other	Heating	1. Climate change and energy policy	1. MES 2. MAQS				1. Community plan 2. LA21	

3.9.1 Policy Notes:

- The policy table does not formally mention the NAQS or the LAQM activities within the Borough. This is because the policies in the matrix are key methods *through which the NAQS and LAQM objectives will be achieved*. A fundamental part of developing the air quality action plan (a requirement within LAQM) is assessing which of these policies are best suited to tackling the local pollution problems. Further LAQM duties will include monitoring whether progress is being made through these policies and adapting the AQAP accordingly.
- It must be noted that, at the local level, there are directly opposing policies regarding the development of a 3rd runway at Heathrow Airport. LB Hounslow will continue to strongly oppose this development for many reasons, not least being the fact that activities associated with the airport are one of the major sources of air pollution in the Borough. However, BAA Heathrow considers the development necessary for its economic well-being. The Government (in its Aviation Policy paper) supports the 3rd runway in principle, *providing that all environmental obligations are met*. In practice this means that massive reductions in airport emissions will be necessary leading to much improved air quality in parts of the Borough. LB Hounslow would welcome such improvements but believes they should occur as a matter of course to deal with the currently polluting airport activities. Regardless of the air pollution generated by the airport, LB Hounslow will continue to oppose development of a 3rd runway at Heathrow.

The purpose of the AQAP is to influence the priority, location and extent to which existing policies should be pursued.

3.10 Conclusions

It would clearly be wrong to develop air quality policy in Hounslow independently of the policies listed above. To do so would ignore two things. Firstly, that joined-up policy making offers substantial benefits in terms of cost-effectiveness. For this reason the impacts of options for air quality improvement on transport, noise and climate change (amongst other issues) are considered in the discussion of options that follows in later chapters of this action plan. Secondly, that coherent actions taken across London stand a far better chance of success than a series of isolated and disjointed measures.

The need to take account of a diverse range of actions across the Council and other organisations means that implementation of the plan will need to include monitoring of activities carried out by a variety of stakeholders. This imposes a significant networking responsibility on those responsible for the implementation of the Air Quality Action Plan. An efficient mechanism for doing this has been developed via EMRC's Action Plan Tracker database.

4 Development of the Action Plan

4.1 Guidance on Achieving the Standards

Guidance has been issued by both DEFRA and the National Society for Clean Air and Environmental Protection (NSCA); references are listed in Section 7.3. The DEFRA guidance lists four factors that have to be considered in the selection of options:

- Air quality improvement;
- Non air quality effects;
- Cost effectiveness;
- Perception and practicability.

Air quality improvement: Analysis starts by considering the sources of air pollution that lead to exceedance of the air quality standards to quantify the improvements required (see Section 2.5). In the case of NO_2 the link between emission and concentration needs to take account of chemical processes in the atmosphere – there is not a simple linear relationship between reduced emissions of NOx and reduced concentrations of NO_2.

Non air quality effects: An action plan should be designed to account for other policies. By doing so it should account also for the social, economic and broader environmental impacts of the measures considered.

Cost-effectiveness: Measures proposed in an action plan must be cost-effective, in other words, they need to be closely targeted on the problem being addressed and should not waste money, either by being inefficient, or by causing significant and negative secondary effects.

Perception and practicability: To be successful an action plan needs to gain wide support across the community. The guidance considers four groups of stakeholders, the public, industry and commerce, elected representatives and external agencies. Each of these groups has different views and concerns when a specific measure is recommended to improve air quality, and so needed to be involved in the consultation process.

The NSCA guidance describes the following stages for action planning, those shown in bold being the stages that this document is mainly concerned with:

- Establish baseline conditions
- **Involve all relevant stakeholders**
- **Generate a list of options**
- **Consider the costs and effects of these options**
- **Prioritise options**
- Evaluate and monitor the plan
- Continue consultation on the plan during its implementation.

4.2 Objectives for Hounslow's Plan

The objectives for Hounslow's action plan, reflecting the guidance identified above, are described in Box 1. They are purposefully described in very broad terms, recognising that many of the measures that may be adopted for improvement of air quality have additional environmental, social and economic impacts (and vice-versa) that need to be accounted for.

Box 1: Objectives for Hounslow's Air Quality Action Plan

Hounslow believes that action by the Council alone will not be sufficient to achieve the air quality objectives laid down in the National Air Quality Strategy. However, Hounslow will pursue the air quality objectives, whilst

…improving the quality of life and health of the residents and workers in Hounslow,

…acting in a cost-effective manner, through careful selection of options

…integrating this work with other Council Strategies and the activities of Council Departments, regional bodies, outside Agencies and other interested parties,

…taking account of the needs and views of local people,

…and acting, where possible, to stimulate local employment and the local economy.

4.3 Development Process

The development of the plan has been guided by AEA Technology's AirAction system, proceeding through the stages shown in Figure 4.

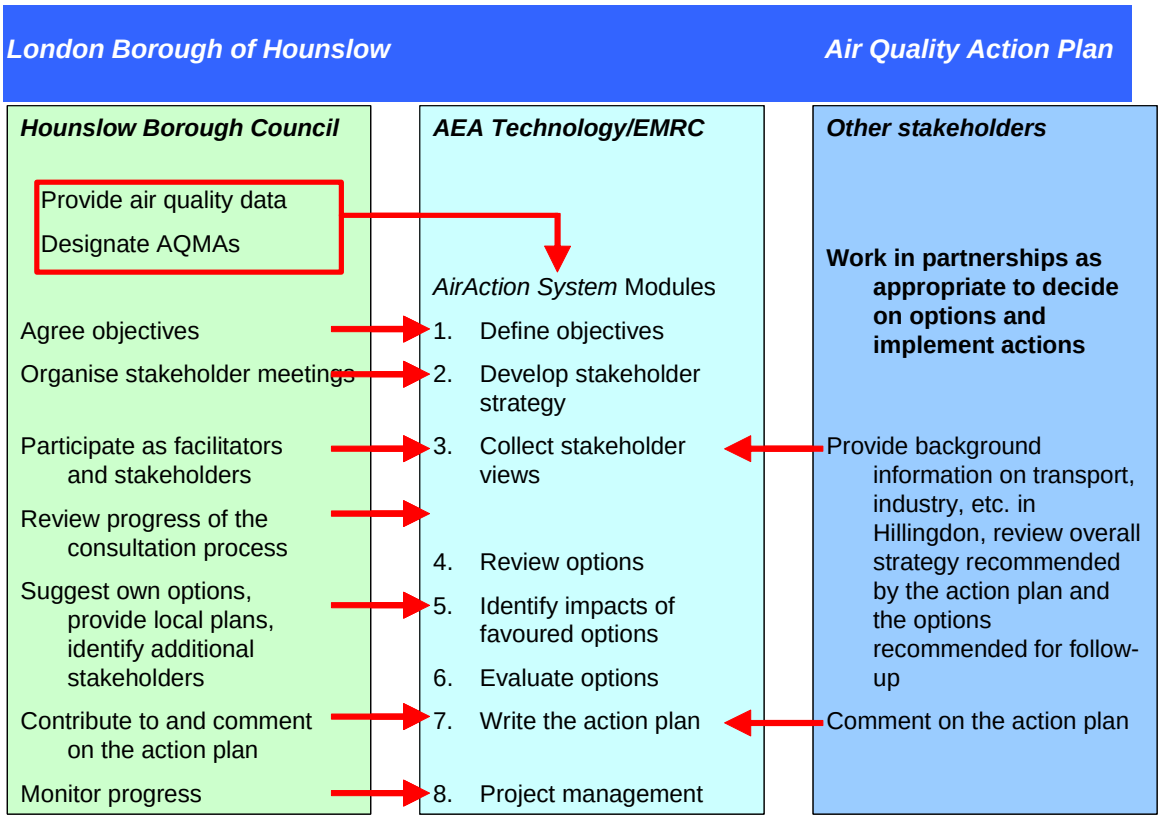


Figure 4 – Scheme adopted in the development of this plan following earlier analysis of air quality in Hounslow.

4.3.1 Consultation

So far, the plan has been subject to only limited consultation, with the Highways Agency and with other representatives from other Departments in Hounslow Council (Appendix 3). During the further development of the plan it will be necessary to expand the consultation process, bringing in other agencies, residents and businesses. A structure for the consultation process is shown in Figure 5.

4.3.2 Identification of Options

Several sources of information have been used to identify options for the plan, including:

- The Mayor's Air Quality Strategy;
- BAA's Action Plan for Heathrow Airport;
- AEA Technology's AirAction Options Database, drawing on numerous research and other reports for UK government and the European Commission;
- The Action Plan developed by the London Borough of Hillingdon;
- Other reports listed in Section 7.

In addition, other options have been identified in the consultation process. Many of these have a more local character than those contained in the sources listed above, demonstrating the value of effective consultation.

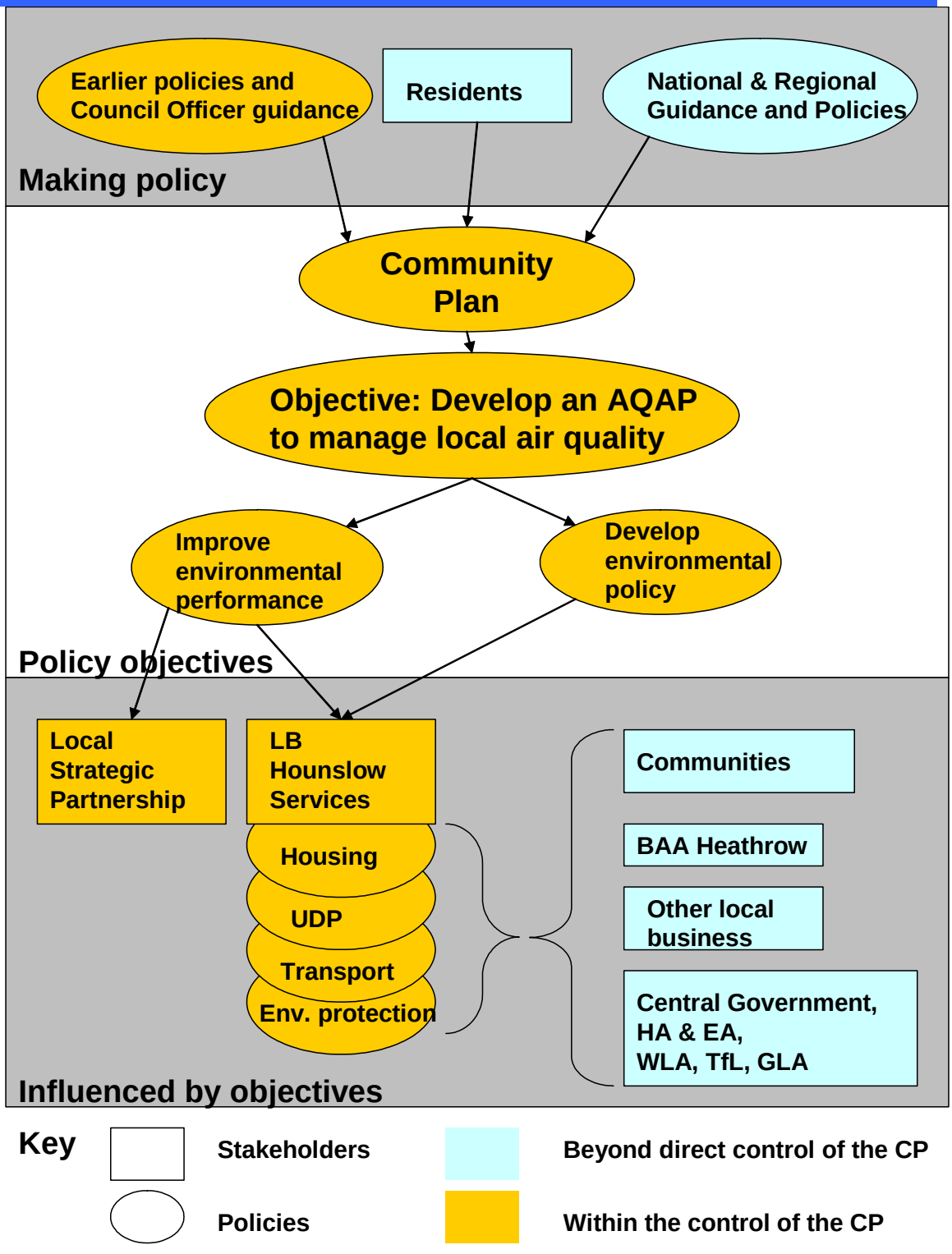


Figure 5 – Structure for consultation on the action plan

4.3.3 Option Appraisal

Consideration of options in the development of this plan seeks to take an integrated approach in accounting for the different attributes of each option relative to:

- Cost.
- Effectiveness in reducing NOx emissions;
- Effectiveness relative to NO_2 levels in the Hounslow AQMAs;
- Potential to implement the option before 2005, and then 2010;
- Additional (non-NO_2) benefits of the measure;
- Disbenefits linked to the measure;
- Complementarity of measure with local and regional development objectives.

Additional benefits and disbenefits of air quality improvement measures were assessed in terms of:

- Other (non-NOx) air pollutants
- Noise
- Congestion
- Attractiveness of public transport
- Social inclusion
- Economic vitality of local businesses
- Other (to pick up impacts that may be very specific to certain options).

This listing had been developed building on previous work with other local authorities, particularly Hillingdon. Assessment of these impacts is not an exact science. Each impact was assessed for each measure on a scale of -3 (possible serious negative impact) to 0 (no effect thought likely) to +3 (possible significant benefit). Results are contained in the database that accompanies this report.[1]

Over 200 options have been considered and evaluated in terms of cost-effectiveness for air quality improvements and other effects during the development of the plan to the present stage. The methods used for determining the effectiveness of each measure in reducing concentrations are discussed in Appendix 6.

Cost-effectiveness has been assessed in two stages. The first stage considered options in terms of costs and effectiveness in controlling NO_2 with no reference to other effects, based on the following matrix:

[1] A more precise view of the effects of the options considered in this plan should be developed over time. The necessarily broad scope of this action plan has prevented this level of assessment at the present time.

% improvement in air quality	<0.01%	0.01 - 0.1%	0.1 - 1.0%	1 – 5%	5-10%	>10%
<£0						
£0						
£0 - 1,000						
£1,000 - 10,000						
£10,000 - 100,000						
£100,000 - 1 million						
£1 million - 10 million						
>10 million						

High cost-effectiveness
Moderate cost-effectiveness
Low cost-effectiveness

Figure 6 – Cost-effectiveness matrix.

The top row of the matrix contains measures that reduce costs, these typically being options that improve efficiency the use of energy or some other resource.

The second stage factored in consideration of additional benefits, disbenefits and complementarity with other plans. So, were an option to be highly recommended on grounds of cost-effectiveness with respect to controlling NO_2, but have secondary impacts of a serious and negative nature, it could be reasonable to exclude it from the plan. Similarly, if an option has significant secondary benefits, its prioritisation could be increased. The process is illustrated by a series of case studies presented in 1.

Specific information relating to option appraisal has been summarised in a database (EMRC's Action Plan Tracker). The data contained within the database are first estimates for each measure in Hounslow. Information reflects experience elsewhere, to the extent that this is possible and expert judgement where data are lacking. Subsequent development of actions to be taken to implement selected options will also use the Action Plan Tracker, providing a central store of information on options for Hounslow.

4.3.4 Development, Implementation and Monitoring and Future Development of the Action Plan

An initial implementation plan is provided below in 6. The Action Plan should be regarded as flexible and open to adjustment as new information or new techniques for pollution control become available. Prior to undertaking some of the options that are listed in the plan it will be necessary to commission specific feasibility studies, particularly where costs will be high. If any option is found impracticable, for example on cost grounds, or has impacts that were not foreseen or are far more significant than originally thought, the plan should

clearly be adapted. Equally, if experience elsewhere (for example, with respect to congestion charging in central London) shows that an option not included in the plan is more attractive than originally thought, it may be appropriate to adopt that option.

4.4 Relationship between Air Quality Action Plans and Local Transport Plans

In circumstances where transport emissions are the major reason for exceedance of air quality objectives, DEFRA recommends that consideration be given to full integration of the Action Plan with the Local Transport Plan (LTP). This recommendation is not applicable here for a variety of reasons:

- It would fail to recognise the role played by other (non-road traffic) sources. Restriction of abatement options to surface transport-related sources would reduce the cost-effectiveness of the plan and make it far more difficult to achieve the air quality objectives.
- Vehicles using major trunk roads in and around the Borough (M4, A40, M25) are largely outside the remit of the LTP.
- Some management activities that need to be carried out as part of this action plan (for example, more detailed air quality modelling, maintained involvement of stakeholder groups concerned about air quality) are outside the scope of an LTP.
- Differences in the timescales for development of LTPs and the air quality strategy would cause significant problems.

This does not, however, mean that transport planning in the Borough is immaterial to the development of the air quality action plan. It is simply the case that development of a separate air quality plan has a number of advantages that would otherwise be lost.

5 Options for Improving Air Quality

5.1 Packages of Measures

This Chapter identifies the options considered of most relevance for improving air quality across Hounslow. For ease of understanding (both here and for subsequent implementation), options have been grouped into a series of packages:

Package 1: Switching to Cleaner Transport Modes
Package 2: Tackling Through Traffic
Package 3: Promotion of Cleaner Vehicle Technology
Package 4: Measures Specific to Heathrow Airport
Package 5: Measures Concerning Local Industries and Other Businesses
Package 6: Improving Eco-efficiency of current and future developments, including properties owned or run by the Council
Package 7: Actions to be Taken Corporately, Regionally and in Liaison with the Mayor

Given the large number of measures considered, more detailed information has been compiled in the separate database referred to elsewhere in this report.

For some local authorities where exceedances of the air quality standards are small (either in terms of concentration or geographic area) it will be possible to produce an action plan targeted on specific sources, such as a given length of road or a factory. These plans may thus only need to consider one or two options, and feasibility studies may already exist that are specific to the problem. The plans can thus be very brief and contain a lot of high quality information on the costs, effectiveness and other impacts of the proposed measures.

This is not the case in Hounslow, because the AQMA covers a wide area (it is not restricted to major roads or Heathrow Airport) and a very major reduction in emissions of NOx is needed. On this basis it is necessary to consider a series of options covering different sectors and geographic areas. The quality of information at this stage of the planning process is inevitably not of the quality of plans that are able to focus on one or a few options. The need to consider a series of options also leads to the following alternative positions:

- The fewer options that are contained in the plan, the stronger they will need to be applied. A restricted plan could require measures to be introduced in an extreme way that may compromise its cost-effectiveness.
- The more options that are included, the more difficult the plan will be to implement.

Section 5.2 provides a review of the type of information considered in the development of the option lists. Following the listing of packages and measures in Section 5.3 three case studies are given for illustration in Section

5.5. The case studies are intended partly to demonstrate the factors that are being taken into consideration during the development of the plan and partly to improve understanding of the links to the Action Plan Tracker database that has been developed alongside this report.

5.2 Further Details on Measures Proposed Under Each Package

The Action Plan Tracker Database being prepared for Hounslow by EMRC provides the following details for each option in each package:

- Costs,
- Effectiveness in reducing NOx emissions and NO_2 levels,
- Prioritisation ranking,
- Reasons for rejection (where appropriate),
- Other impacts (on other air pollutants, social inclusion, congestion, attractiveness of public transport, noise and economic vitality).
- Other plans that include the same measure,
- Stakeholder comments,
- Implementation process for each option with a monitoring mechanism.

A database format is preferred for presenting these data because it enables much easier searching and assessment of the information provided, and unites all information collected on individual options from the time that they are first identified to the time when implementation is complete. The alternative would have been to present information in a series of very long tables in this report – this was considered much less useful.

The information presented here and in the database on both the costs and effectiveness of options is preliminary. Where possible, data have been taken from examples of schemes that have already been implemented, but as these are often not taken from cases in London, there are questions concerning the reliability of the extrapolation exercise. Development of the plan has recognised uncertainties where they are unavoidable, believing that it is better to start from some estimate of cost-effectiveness (etc.) than not, in order to provide insight on the prioritisation process. In general it is most appropriate to interpret figures as being relative across the overall set of options taken into consideration, rather than actual.

5.3 Description of Each Proposed Package

Each package is listed below, with a description of:

- Responsibility and implementation mechanism
- Effect on air quality
- Cost-effectiveness
- Possible sources of funding
- Timescale
- Target
- Barriers to success, or opportunities

The actions listed here are generally vague in terms of precisely where and to what extent it would be appropriate to apply them under the remit of an air quality action plan for the London Borough of Hounslow. In the context of Hounslow where air quality problems are so widespread and where only limited control can be exercised by the local council, it seems more appropriate that these questions continue to be considered by those stakeholders concerned with implementation of the measures.

It will also be noted that many of the measures listed are already being implemented in London in one way or another. This is often for reasons unrelated to air quality improvement. A good example relates to public transport improvements which are aimed primarily at reducing congestion and transport problems.

It is to be hoped that the extreme situation of Hounslow will be noted and resourced accordingly, not just by Central Government but also by other Agencies with a national or regional remit.

The tables are structured in such a way as to highlight the role of Hounslow in implementation of the plan. The first group of measures identified in each package are those that Hounslow can undertake on its own. This is followed by a second group that need to be implemented by other bodies, and with which Hounslow can work in partnership. The third group relates to lobbying activities, measures that Hounslow has no direct control over, but may be able to influence, particularly when liaising with other partners, such as GLA.

5.4 Key to the Tables of Measures in Each Package

5.4.1 Fast access to the packages

Note 1: When using the electronic version of this plan, to return to this page, click on:
Return to list of packages

5.4.2 Impact on air quality (NO_2)

Improvement in NO_2 concentrations has been assessed using the method described in Appendix 6

5.4.3 Costs

At this stage costs have been estimated as:

Low	potentially several thousand pounds per year or in total
Medium	potentially several tens of thousand pounds per year or in total
High	potentially hundreds of thousand or millions of pounds per year or in total

5.4.4 Timescale

Short term:	Within 2 years
Medium term	Within 2 to 5 years
Long term	Longer than 5 years

Package 1: Switching to Cleaner Transport Modes

Aim
Private cars contribute 27% of the total NOx emissions from road transport in the Borough, and have a disproportionate impact on communities living close to the road network. Hounslow, working with the Borough Transport Strategy and the West London Alliance, will pursue all opportunities to promote alternative modes of transport. Monitoring of this package will be against annual targets. Measures that will be pursued are listed below although this package will be subject to review and amendment as part of the reviewing process of the Air Quality Action Plan.

Lead
Borough Transport Strategy/West London Transport Strategy

Probable Partners
Hounslow Fleet Management
Hounslow Transport Planning
Hounslow Education
Transport for London (TfL)
West London Alliance
Heathrow Area Transport Forum
Local Bus Operators
Coach Operators
Train Operators
Primary Care Trust

Return to list of packages

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
HOUNSLOW DIRECT ACTIONS			
1.1 Establish a Green Travel Plan for Hounslow	0.5 - 0.1 small to slight Hot-spot	Low-medium Borough Spending Plan	Internal lead – Environmental group Implementation Timescale – short Barriers to/opportunities for success – resourcing, internal resistance?
1.2 Improve access to, and quality of, public transport travel information	1 - 0.5 medium to small Borough-wide	Low	Internal lead – Transport planning Implementation Timescale – short Barriers to/opportunities for success –since a voluntary measure uptake may be small
1.3 Development more dedicated cycle (priority) lanes and signalling	1 - 0.5 medium to small Borough-wide	Medium-High Borough Spending Plan	Internal lead – Transport planning Implementation Timescale – medium Barriers to/opportunities for success – consistent with national and local objectives
1.4 Extend provision of more parking for motorcycles, mopeds and bicycles at public sites and new developments.	1 - 0.5 medium to small Borough-wide	Medium-High Borough Spending Plan	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success – targets congestion and consistent with national and local objectives
1.5 Improve provision for pedestrians	1 - 0.5 medium to small hot-spots	Low-Medium Borough Spending Plan	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success –
1.6 Introduce more Safe Routes to School throughout the Borough with special regard to the schools within the highest exceedance areas	1 - 0.5 medium to small hot-spots	Medium Borough Spending Plan	Internal lead – transport planning Implementation Timescale – short Barriers to/opportunities for success – consistent with local objectives
1.7 Require Green Travel Plans for new businesses within the Borough employing more than a specified number of people.	0.5 - 0.1 small to slight Borough-wide	Medium	Internal lead – Development planning Implementation Timescale – already part of planning? Barriers to/opportunities for success – Development plan lever for new businesses

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
1.8 As 1.7but for existing businesses	0.5 - 0.1 small to slight Borough-wide	Medium	Internal lead – Development planning Implementation Timescale – already part of planning? Barriers to/opportunities for success – May be difficult to influence existing businesses
PARTNERSHIP WORKING			
1.9 Improve access to, and quality of, public transport travel information on regional basis	1 - 0.5 medium to small Borough-wide	Low Potentially via Transport bids	Internal lead – ? Implementation Timescale – medium to long Barriers to/opportunities for success – since a voluntary measure uptake may be small
1.10 Improvements in overall public transport service (facilities, cleanliness, safety, frequency, reliability) across the Borough and West London, and particularly in declared AQMAs	1 - 0.5 medium to small Borough-wide	High Potentially via Transport bids	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success – – since a voluntary measure uptake may be small
1.11 Support multi modal travel by further development of public transport interchanges for rail/cycle/bus/walking both within Hounslow and the West London area;	1 - 0.5 medium to small Borough-wide	High Via West London Transport Spending Plan	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – since a voluntary measure uptake may be small
1.12 Development of efficient and high quality bus corridors	1 - 0.5 medium to small hot-spots	High Potentially via West London Transport bid	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – need to re-prioritise limited existing road capacity
1.13 More night buses	0.5 - 0.1 small to slight Borough-wide	High No funding identified	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success – like many public transport schemes rate of uptake is based on individual choice and other transport modes may need to be actively discouraged (i.e. charging) to encourage the switch.

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
1.14 Monitor progress with green travel plans	See actions 1.7, 1.8	Low, assuming monitoring mechanism is built into future plans	See actions 1.7, 1.8
1.15 Reassess car parking provision for new developments	0.5	Low assuming it is built into development strategy	Internal lead – Development planning Implementation Timescale – long Barriers to/opportunities for success – pressure from developers for additional car parking space
LOBBYING IN PARTNERSHIP			
1.16 Subsidise bus, train and underground fares in order to achieve significant modal shift;	1 - 0.5 small to slight Borough-wide	High No funding identified	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – a popular fiscal measure that would tend to encourage modal shift
1.17 Research into novel mechanisms for reducing emissions, e.g. creation of markets for car parking spaces, emission trading systems	?	Could provide very cost-effective mechanisms for emission controls.	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – lack of funding for research into novel mechanisms for emission controls.

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Package 2: Tackling Through Traffic

Aim

A substantial amount of the NOx emissions from road transport in Hounslow arise from traffic passing through on the strategic road network. Hounslow will work in partnership with neighbouring authorities, the West London Alliance and road regulators to smooth traffic flow and ease congestion. Monitoring of this package will be by evaluation of the measures in terms of air quality impacts and assigning targets to measures on a year by year basis. Measures that will be pursued are listed below although this package will be subject to review and amendment as part of the reviewing process of the Air Quality Action Plan.

Lead

Borough Transport Strategy
West London Transport Strategy
Establishment of Cross-discipline “Roads” Group

Potential Partners:

Hounslow Transportation team
TfL
West London Alliance members
Heathrow Area Transport Forum
Highways Agency
Neighbouring Boroughs such as Slough, Spelthorne, South Bucks
Primary Care Trust.

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Action/Measure	Potential NO_2 reduction (µg/m3)	Costs	Comments
HOUNSLOW DIRECT ACTIONS			
2.1 Introduce Home Zones/20 mph in residential areas subject to significant amounts of through traffic that should use alternative routes.	>1 - 1 large to medium hot-spots	Medium-High	Internal lead – Development planning Implementation Timescale – already part of planning? Barriers to/opportunities for success – Home zones have other priorities but can help and are consistent with national objectives
2.2 Support the West London Transit Scheme project if appropriate	>1 - 1 large to medium Borough-wide	High	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success –
2.3 Ensure the provision of sufficient signage and details of spaces for public car parks;	Small? Borough-wide	Medium	Internal lead – ? Implementation Timescale – short Barriers to/opportunities for success –
2.4 Creation of Clear Zones	>1 - 1 large to medium hot-spots	Medium-High No funding identified	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – potential to reduce congestion may be small unless overall journey numbers are reduced
PARTNERSHIP WORKING			
2.5 Develop best practice advice to ensure air quality assessments are made for proposals for new transport infrastructure and changes to traffic management	0.5 small hot-spots	Low	Internal lead – Development planning Implementation Timescale – short Barriers to/opportunities for success – Key option for amplifying links between transport development planning and environmental groups
2.6 Implement schemes along the high exceedance corridors designed to smooth traffic flows	>1 - 1 large to medium hot-spots	High Potentially via West London Transport bid	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – feasibility needs to be proven
2.7 Improve coordination of road works and provide more effective signing around them.	0.5 small hot-spots	Medium No funding identified	Internal lead – ? Implementation Timescale – medium Barriers to/opportunities for success –
2.8 Implement high occupancy vehicle lanes and freight priority schemes along the major exceedance corridors such as the M4 and A4	>1 - 1 large to medium hot-spots	High Potentially via West London Transport bid	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – feasibility needs to be proven

Action/Measure	**Potential NO_2 reduction (µg/m3)**	**Costs**	**Comments**
2.9 Implement tram system along the A4 in line with Council Policy	1 - 0.5 medium to small hot-spots	High, but already policy	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success – financing is needed
2.10 Implement measures such as variable message signing and other measures to smooth traffic flows on the HA/TfL routes M4 and surrounding link roads;	>1 - 1 large to medium hot-spots	Medium-High Potentially via West London Transport bid	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success – feasibility needs to be proven
2.11 Influence Route Management Strategy to take account of air quality	>1	?	Internal lead – transport planning Implementation Timescale – long
2.12 Use of speed limits on major roads at the optimal level for NOx and PM_{10} emissions for the current traffic profile;	>1 - 1 large to medium hot-spots	Medium-High Potentially via West London Transport bid	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – average speed may already be close to optimum, other experiences show that reducing congestion on main roads is a more effective end of using speed control
2.13 Identify air quality congestion-related hotspots throughout West London and the appropriate measures for delivering improvement in both congestion and air quality	>1 - 1 large to medium hot-spots	High Potentially via West London Transport bid	Internal lead – transport planning Implementation Timescale – ongoing Barriers to/opportunities for success –
LOBBYING IN PARTNERSHIP			
2.14 Support rail projects that have the potential effect to cut through traffic e.g. Crossrail, implementation of stopping service on Piccadilly line at Turnham Green.	1 - 0.5 medium to small Borough-wide	High No funding identified	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – uncertain future for such schemes
2.15 Use of fiscal measures, such as road pricing, for reducing traffic on major road networks	>1 - 1 large to medium Borough-wide	High No funding identified	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – government has studied national level schemes and is currently supportive but couldn't come in before 2015

Action/Measure	Potential NO_2 reduction (µg/m3)	Costs	Comments
2.16 Establishment of cross-agency regional group to address air quality issues with regards to roads	>1 - 1 large to medium Borough-wide	Medium No funding identified	Internal lead – transport planning Implementation Timescale – short Barriers to/opportunities for success – Key option in order to deal with the regional traffic that passes through the Borough.
2.17 Build over the arterial routes and scrub tunnel emissions	>1 Large Hot-spots	High Creation of new real estate	Internal lead – Development planning Implementation Timescale – long Barriers to/opportunities for success – Potentially massive disruption while building and would probably require specific Government support. Potentially large land grab required just to build.
2.18 Lobby for Air Track link to Staines and the West	1	High, but would only be implemented for strategic transport reasons	Internal lead – Transport planning Implementation Timescale – long Barriers to/opportunities for success – Potentially massive disruption while building and would probably require specific Government support. Potentially large land grab required just to build.

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Package 3: Promotion of Cleaner Vehicle Technology

Aim

Hounslow will lead by example in cleaning its fleet and trialling new technologies for reducing NOx and particle emissions. It will also work with funding agencies and businesses to promote the use of cleaner technology on a Borough and regional basis and put in place measures to minimise the impact of freight across the region. Monitoring of this package will be by evaluation of the measures in terms of air quality impacts and assigning targets to measures on a year by year basis. Measures that will be pursued are listed below although this package will be subject to review and amendment as part of the reviewing process of the Air Quality Action Plan.

Lead

Fleet Management Team
Sustainability Steering Group
Freight Quality Partnership
Heathrow Area Transport Forum

Potential Partners

London Borough of Hounslow Fleet Management
LB Hounslow Transport Planning
Transport for London (TfL)
West London Alliance (WLA)
Heathrow Area Transport Forum (HATF)
Energy Savings Trust (EST)
Low Emission Zone (LEZ) Steering Group
Fuel Companies/suppliers
West London Freight Quality Partnership (WLFQP)
Chamber of Commerce
Hospitals

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Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
HOUNSLOW DIRECT ACTIONS			
3.1 Implement an Action Plan via the BAA Heathrow Clean Vehicle Programme to make improvements in the Council vehicle fleet with regard to reducing emissions.	0.5 - 0.1 small to slight Borough-wide	Potentially cost neutral	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – demonstrates council leadership. Service providers may want longer contract periods to pay for improvements
3.2 Get local businesses and freight operators in Hounslow to sign up to the Clean Vehicle Programme and develop and implement action plans for reducing emissions;	1 - 0.5 medium to small Borough-wide	Low	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – rate of uptake will be low without demonstrated cost savings
3.3 Train local authority drivers to minimise emissions, and consider opening training opportunities to other drivers working for businesses in Hounslow;	1 - 0.5 medium to small Borough-wide	Should lead to cost savings	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – as a national scheme it has the potential to produce pollution, GHG and cost savings. Relies on self-regulation
3.4 Implement Idling Vehicles Regulations and actively promote the use of the Dirty Diesel Hotline for reporting smoky vehicles spotted in Hounslow;	0.5 small Borough-wide	Low-Medium No funding identified	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – enforcement issues
3.5 Implement the recommendations of the London Low Emission Zone Feasibility Study jointly with the GLA, ALG and TfL.	>1 - 1 large to medium Hot-spots	High Funding via TfL (Boroughs input yet to be agreed)	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – limited impacts in Hounslow
3.6 Install signs in waiting areas of Council premises, bus garages, coach stations, railway crossings (with timings) and major leisure venues, etc. advising drivers to switch off engines when stationary;	0.5 - 0.1 small to slight hot-spots	Low Funding not identified	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – enforcement issues

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
3.7 Trial new technology where appropriate e.g. greater use of electric vehicles in Council fleet, and act as a point of information for businesses and major fleet operators and other stakeholders in Hounslow for cleaner vehicle technologies, national schemes and grant systems for the use of alternative fuels;.	0.5 - 0.1 small to slight Borough-wide	Medium funding not identified	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – as a Borough with extensive AQ problems pilot studies could be encouraged here
3.8 Participate in joint Vehicle Emissions Testing programme with other organisations..	1 - 0.5 medium to small Borough-wide	Medium Borough Spending Plan	Internal lead – environmental group Implementation Timescale – ongoing? Barriers to/opportunities for success – very low detection rates but may act well as awareness raiser.
3.9 Provision of low or zero emission buses for schools within the high exceedance areas;	0.1 slight hot-spots	High	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – service provider contract issues
3.10 Focusing on areas and corridors of high exceedance within residential areas, banning or restricting of traffic, or particular types of traffic, from identified roads;	>1 - 1 large to medium hot-spots	Medium Borough Spending Plan	Internal lead – transport planning Implementation Timescale – long Barriers to/opportunities for success – traffic restriction orders are possible for different class of vehicle
3.11 Discounts for residents with low emission vehicles in Parking Management Areas;	1 - 0.5 medium to small Borough-wide	Potential loss in revenue	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – social equity implications?
PARTNERSHIP WORKING			
3.12 Develop sub-regional Bus Quality Partnerships focussed on addressing the contribution of buses and coaches to emissions.	0.5 small Borough-wide	High	Internal lead – transport planning Implementation Timescale – medium Barriers to/opportunities for success – service provider contract issues

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
3.13 Provision of low emission buses in the West London/Heathrow region	0.5 small Borough-wide	High	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – service provider contract issues
3.14 Ensure freight developments in the West London area are subjected to an air quality assessment before implementation;	0 negligible hot-spots	Medium	Internal lead – development planning Implementation Timescale – short Barriers to/opportunities for success – consistent with London Plan objectives
3.15 Develop a Freight Strategy to include reducing the air quality impact of freight maximising opportunities to move freight from road to other modes e.g. canals.	>1 - 1 large to medium Borough-wide	Medium	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – consistent with London Plan objectives
3.16 Facilitate the uptake and use of alternative fuels, including water-diesel emulsion. This should include development of appropriate alternative refuelling infrastructure where necessary e.g. charging points for electric vehicles	>1 - 1 large to medium Borough-wide	Medium-High	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – London level study indicates that this is a potentially important measure for the city. It is complementary with zoning/traffic management measures and requires no additional upgrading of existing diesel engines. European level WG has finalised a fuel standard to facilitate roll-out.

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
LOBBYING IN PARTNERSHIP			
3.17 Lobby national government to, a) introduce policies with the aim of accelerating the uptake of existing cleaner vehicles and fuels and b) Introduce even cleaner vehicles and fuels into the future fleet. Relevant measures may include: • Provide incentives through the fuel duty system for water-diesel emulsion and other such fuels. • Make vehicle excise duty reductions for retrofitting for smaller vehicles more significant; • Extend the fuel duty differential guarantee; • Increase and extend PowerShift and CleanUp retrofitting grants; • Operate a national incentive-based vehicle scrappage scheme for older vehicles; • Pressure to introduce Low Emissions Zones into all large urban areas;	>1 - 1 large to medium Borough-wide	High	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – Government is obliged to achieve the AQ objectives and the national picture suggests the quicker uptake of cleaner fuels and vehicles is required. Highly effective measures between now and 2010 with national level benefits.

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
3.18 Ensure fiscal encouragement of the adoption of low and zero emissions vehicles through the provision of discounts when entering any proposed LEZ or Congestion charging zone;	>1 - 1 large to medium Borough-wide	High	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – need to ensure the technical standard and pricing of LEZ of congestion zone are adjusted in future to maintain regulatory pressure.
3.19 Promote best practice in terms of emissions management with the train operators, the Strategic Rail Authority and Network Rail;	0 negligible Borough-wide	May lead to cost savings through fuel efficiency	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – very little to be added achieved by Hounslow pressure?

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Package 4: Measures Specific to Heathrow Airport

Aim

Heathrow Airport is a significant contributor to the NOx emissions in the Borough. Hounslow, along with neighbouring authorities, will pursue all opportunities to reduce emissions arising from Heathrow and its associated activities. Monitoring of this process will be by quantification of measures with regard to air quality improvements, use of local monitoring data and air quality modelling and by review of the Emissions Inventory provided by BAA Heathrow on a bi-annual basis. Measures that will be pursued are listed below, although, like elsewhere, this package will be subject to review and amendment as part of the reviewing process of the Air Quality Action Plan.

There is emphasis here on working with other Boroughs, national government, the airport operator and major airlines to reduce emissions from the airport. This is likely to be far more effective than developing a separate series of actions for Hounslow to carry out in isolation of other activities.

Lead

Aviation Team
Environmental Protection
Neighbouring Local Authorities
Central Government
European Union

Potential Partners

Heathrow Air Quality Working Group (HAQWG: Hillingdon, Hounslow, Spelthorne, Slough and BAA Heathrow)
Aircraft Technical Emissions Working Group (ATEWG: BA, BAA, Hillingdon, Hounslow, Slough, Spelthorne, academic institutions, Dept for Transport, DEFRA, CAA)
Heathrow Area Transport Forum (BAA, regional transport operators, local authorities)
West London Freight Quality Partnership (WLFQP)

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Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
HOUNSLOW DIRECT ACTIONS			
4.1 Continue to insist that existing problems are resolved and oppose any further expansion at Heathrow that leads to negative air quality impacts	>1 Large Western Borough	Existing council policy	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – consistent with Government policy for the airport. Influence on the technical working groups
4.2 Assess the health impact of Heathrow Airport and associated activities	Not applicable Necessary for demonstrating effect of poor air quality to encourage action by stakeholders	Low	Internal lead – environmental group Implementation timescale – Short Barriers to/opportunities for success – Could be completed quickly using methods consistent with recent health impact assessments t the European level.
4.3 Provide feedback on Airport Masterplan. Ensure air quality considerations are properly considered in Heathrow Airport's Master Plan	Not applicable Necessary to monitor progress and lobby for further action	Low	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – consistent with Government policy for the airport. Influence on the technical working groups

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
PARTNERSHIP WORKING			
4.4 Support London Borough of Hillingdon in various actions, e.g.: • Auditing ATM limits and BAA Heathrow Air Quality Action Plan • Pursuing emission reductions on the airport, • Quantifying impacts of the BAA Air Quality Strategy and Surface Access Strategy • Develop best practice guidelines to ensure air quality impact assessments are integral part of development proposals, and that appropriate mitigation is taken	>1 Large Western Borough	Low - Medium	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – Actions are in the adopted AQAP for Hillingdon
4.5 Work with other Boroughs to evaluate best practice from European and International airports with regard to the minimisation of air quality impacts and assess feasibility of application at Heathrow,	1 - 0.1 medium to slight Western Borough	Low	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – Action is in the adopted AQAP for Hillingdon
4.6 Work with other Boroughs and BAA to: • Review air quality monitoring regime at Heathrow and identify potential gaps • Strengthen the existing BAA 5 year action plan • Establishment of code of practice for airlines best operating practice to maximise reduction of emission	>1 large Western Borough	Low	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – Would require the cooperation of BAA

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
4.7 Work with the Mayor to • introduce a Heathrow specific LEZ to reduce emissions; • Accelerate take up of cleaner vehicle technology; • Set target for modal shift • Specify emissions criteria for vehicles routinely using the airport • Minimise the air quality impact of freight deliveries to and from Heathrow • Promote use of bus priority, guided buses and high occupancy vehicle lanes in the Heathrow area	>1 - 1 large to medium Borough-wide	High	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – consistent with Government policy for the airport. Influence on the technical working groups
LOBBYING IN PARTNERSHIP			
4.8 Lobby Central Government to pursue more stringent emission standards for plant, aircraft and airside vehicles	>1 large Western Borough	High	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – Government is acting somewhat on this issue as part of the EU Presidency
4.9 Reducing fares on the Heathrow Express to achieve modal shift	1 - 0.5 medium to small Western Borough	Medium	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – service provider contract issues
4.10 Review air port passenger duty (APD) with a view to public transport improvement	>1 - 1 large to medium Western Borough	Medium but revenue generating	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – legal issues?

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
4.11 Work with National Government to ensure the use of all relevant fiscal measures to reduce emissions from and around Heathrow in order to achieve the 2010 EU limit, this could include a surface access charge and/or a landing charges scheme differentiated by emission levels	>1 large Western Borough	High but potential revenue could produce cost neutrality	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – consistent with Government policy for the airport. Influence on the technical working groups. Could face opposition from stakeholders wanting to maintain the economic competitiveness of Heathrow airport.

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Package 5: Measures Concerning Local Industry and Other Businesses

Aim

Industrial process emissions account for only 2% of NOx emissions in the Borough. More important are emissions from industrial and commercial facilities associated with natural gas use for space heating, providing 14% of total Borough emissions. Hounslow will continue to work with industry and business to reduce emissions where possible and will also seek to improve dissemination of information from this sector to the public. Monitoring of this package will be by auditing of set targets on annual basis. Measures that will be pursued are listed below although this package will be subject to review and amendment on an annual basis.

Lead

Sustainability Steering Group
Environmental Protection

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Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
HOUNSLOW DIRECT ACTIONS			
5.1 Install Combined Heat and Power where appropriate within the Borough;	0.5 small Borough-wide	High but potential saving through energy efficiency	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – limited opportunities? Negative public perception of combustion sources.
5.2 Improve public dissemination of industrial pollutant emissions data and other relevant information, for example on performance against permit conditions;	0 negligible Borough-wide	Low	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success –
5.3 Ban bonfires on all industrial sites;	0.1 slight Borough-wide	Low	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – legal issues?
5.4 Adopt a best practice strategy for all proposed demolition and development projects. This will include the use of low emission vehicles and equipment and the use of dust minimisation techniques. This may be achieved by responding to the consultation on London wide Construction Guide in development	0.1 slight hot-spots	Low	Internal lead – development planning Implementation Timescale – ongoing Barriers to/opportunities for success – consistent with Borough and London Plans.
5.5 Continued regulation of part B processes and maintenance of part B register. Ensure register is available on-line check against Rob	0 negligible Borough-wide	Low	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – Industry may challenge the need to go beyond established BAT in view of the overall contribution from this sector towards AQ
5.6 Introduction of Environmental Award system for local industries and businesses probably on a West London basis?	0.1 slight Borough-wide	Low	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success –

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
5.7 Encourage businesses to participate in environmental management schemes and to continue to improve environmental performance	0.1 slight Borough-wide	Low	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – Borough needs to show leadership on implementing EMS.

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Package 6: Improving Eco-efficiency of current and future developments including properties owned and run by the Council

Aim

The planning system has an important role to play in offering long-term air quality improvements. Hounslow will use both the planning system along with additional guidance in order to secure further improvements both locally and regionally. Hounslow will also continue to secure improvements through the Energy Efficiency Programme. Monitoring of this package will be by auditing of set targets on annual basis. Measures that will be pursued are listed below although, like others, this package will be subject to review and amendment on an annual basis.

Lead

Planning
Energy efficiency programme
Environmental Protection

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Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
HOUNSLOW DIRECT ACTIONS			
6.1 Provide a consolidated platform for advising businesses and the public of the risks of air pollution, ways of reducing pollution, and campaigns such as Bike to Work Week, bringing together information currently spread around several departments of the Council and other bodies.	>1 - 1 large to medium Borough-wide	Medium	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – Key option for strengthening links between environmental, transport and development planning groups
6.2 Work with existing buildings and housing stock to secure improvements in emissions	0.5 small Borough-wide	Medium Potential cost savings	Internal lead – ? Implementation Timescale – ongoing Barriers to/opportunities for success –
6.3 Expanded use of existing mechanisms such as section 106 agreements for improvements in air quality. The agreement will relate to the location of the development with regards to exceedance areas, the scale of development and the projected emissions;	>1 - 1 large to medium hot-spots	Low	Internal lead – development planning Implementation Timescale – ongoing Barriers to/opportunities for success – Key option for future LAQM via development planning group.
6.4 Introduce, review and update Air Quality Supplementary Guidance when appropriate	0.5 small Borough-wide	Low	Internal lead – development planning Implementation Timescale – short Barriers to/opportunities for success – Key option for future LAQM via development planning group.
6.5 Quantify cumulative effects of new developments within AQMA	0 negligible Borough-wide	Low	Internal lead – development planning Implementation Timescale – short Barriers to/opportunities for success – Key option for future LAQM via development planning group.

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
6.6 Develop supplementary planning guidance for sustainable design and construction ideally using a London wide model	0.5 small Borough-wide	Low	Internal lead – development planning Implementation Timescale – short Barriers to/opportunities for success – Key option for future LAQM via development planning group.
6.7 Raise awareness of sustainable waste management practices	0 negligible Borough-wide	Low	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success –
PARTNERSHIP WORKING			
6.8 Development of West London Air Quality SPG to ensure consistency across Borough boundaries, explore opportunities for joint section 106 agreements	0.5 small Borough-wide	Low	Internal lead – development planning Implementation Timescale – short Barriers to/opportunities for success – Key option for future LAQM via development planning group.

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Package 7: Actions to be taken corporately, regionally and in liaison with the Mayor

Aim
Given that air quality is both a cross-discipline and a cross-boundary problem, Hounslow will ensure the aims of the Air Quality Action plan are incorporated into both Borough and regional strategies. Measures that will be pursued are listed below although this package will be subject to review and amendment on an annual basis.

Lead
Sustainability Steering Group
LSP

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Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
HOUNSLOW DIRECT ACTIONS			
7.1 Ensure that the London Development Framework, Local Implementation Plan (for transport), the Community Plan and future corporate strategies incorporate the Borough air quality action plan and local air quality strategy measures where appropriate;	1 - 0.5 medium to small Borough-wide	Medium	Internal lead – development planning Implementation Timescale – medium Barriers to/opportunities for success – Key option for strengthening links between environmental, transport and development planning groups
7.2 Develop an environmental management system for LB Hounslow.	0.5 small Borough-wide	Medium but potential cost savings	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – Key option to manage and monitor the AQAP and to demonstrate leadership within the Borough
7.3 Explore links with Access Hounslow for better coordination of environmental protection and action within Hounslow	0.5 small Borough-wide	Medium	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success – Key option to manage and monitor the AQAP and to demonstrate leadership within the Borough
7.4 Implement an integrated procurement strategy so that purchase of goods and services is evaluated against London sustainability targets. This to include support to environmental industries in London, where appropriate.	1 - 0.5 medium to small Borough-wide	Low	Internal lead – environmental group Implementation Timescale – medium Barriers to/opportunities for success – service provider contract issues
7.5 Provide air quality information to interested parties and link with other health initiatives	0 negligible Borough-wide	Low	Internal lead – environmental group Implementation Timescale – short Barriers to/opportunities for success –
PARTNERSHIP WORKING			
7.6 Implement infrastructure for effective and integrated distribution of goods in London.	1 - 0.5 medium to small Borough-wide	High	Internal lead – development planning Implementation Timescale – ongoing Barriers to/opportunities for success – feasibility needs to be proven

Action/Measure	Potential NO_2 reduction ($\mu g/m^3$)	Costs	Comments
7.7 Ensure consistency of Action Plan measures and explore all opportunities for regional measures for reducing emissions;	>1 - 1 large to medium Borough-wide	Medium	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – requires a regional agency
7.8 Development of regional Air Quality Strategy to tackle cross-boundary issues and include all National Air Quality Strategy pollutants, climate change etc	>1 - 1 large to medium Borough-wide	Medium	Internal lead – environmental group Implementation Timescale – ongoing Barriers to/opportunities for success – requires a regional agency

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5.5 Illustration of the Decision Making Process Used to Recommend Options

The following case studies demonstrate the link between the options listed in this report and the Hounslow Action Plan Tracker (APT) database that summarises information on their costs and effectiveness. Additional provision exists in the APT database for inclusion of:

- Stakeholder comments on each option,
- A time defined and specific set of actions for each option, and
- Information on the monitoring of the progress of the plan in the SOFT (Situation, Opportunities, Faults and Threats) format.

This expands the tool into a management system that can keep track of progress with the plan from inception to delivery.

5.5.1 Case study 1: Provision of low emission buses on scheduled routes

Provision of low emission buses on scheduled services is included in Package 3, Promotion of Cleaner Vehicle Technology.

Estimated costs

Both unit and total costs for the provision of low emission buses are dependent on numerous factors, for example:

- The number of cleaner buses introduced, which could theoretically range from one bus to replacement of the whole fleet.
- Existing plans for replacing the bus fleet, including schedule and procurement policy with respect to emissions.
- Strategy adopted for the option – using cleaner buses preferentially in the areas with the highest exceedances vs. replacing all existing vehicles ahead of schedule irrespective of the routes that they use.
- Availability of subsidies for advanced technologies.
- Approach taken to costing new vehicles – they demand high capital costs but are likely to have lower maintenance and running costs. Ideally we would know the incremental cost of running a new clean fleet against an older, more polluting fleet.
- The allocation of costs to the Hounslow AQMA for cleaner buses that pass through other AQMAs and hence may benefit other action plans.

In the face of these unknowns any estimate of cost is clearly going to be very approximate until a much more detailed plan becomes available. The database estimate is £1 million in a range of £1-10 million.

Estimated effect on air quality

Emissions from public transport are estimated to make up 8% of all NOx emissions in the Borough. The benefit of cleaner buses is dependent on the quality of the vehicles being replaced and numerous other factors (as for the costs) though there is potential for very significant gains. As a ball park figure based on trends in emission factors, we estimate a potential 25% saving in emission from public transport, which would give a 2% reduction in emissions

across the Borough. There is, again, significant uncertainty in this estimate, but as a ball park estimate it seems reasonable. The estimated impact on NO_2 is assessed using the method described in Appendix 6.

Other impacts

These are characterised on a scale of -3 (significant negative impact) to +3 (significant benefit). Again, this evaluation is not precise, but it does serve to highlight areas where important benefits or disbenefits will occur. The scores given in the database and associated rationale were as follows:

Table 8 – Assessment of non-NOx impacts of the introduction of low emission buses.

Factor	Score	Rationale
Attractiveness of public transport	+2	through new vehicles replacing old
Congestion	0	emphasis is on meeting demand in a cleaner way, though better buses may of course encourage modal shift
Economic vitality	+1	through reductions in noise and air pollution, making local facilities more pleasant to use
Noise	+2	some older buses are very noisy
Other air pollutants	+3	more modern and fuel efficient vehicles will emit significantly less of several pollutants, including fine particles, linked to transport
Social inclusion	0	does not offer additional services

Conclusion

Whilst the cost of this measure applied on a wide basis could be high (in the order of a million pounds or more) it also seems to offer a significant reduction in emissions and potentially Borough-wide air quality benefits.

A similar measure, providing low emission school buses in the AQMA, is not so beneficial, largely because the benefits of such vehicles may be limited through restricted use (the morning and afternoon school runs). It is not known how these buses would be used during the rest of the day.

5.5.2 Case study 2: Work in partnership with BAA Heathrow and the Heathrow Air Quality Working Group in monitoring the BAA Heathrow Air Quality Action Plan

This measure is included in Package 4, Measures specific to Heathrow Airport.

Estimated costs

The Council is already involved in close liaison with the airport, and so the additional costs of this measure may be low, though some further effort from Hounslow would be required. An illustrative cost of £5,000 for set up and annual costs of £5,000 are included in the database.

Estimated effect on air quality
The BAA plan contains a number of significant measures that could overall have a major impact on emissions at the airport – an estimate of 25% is given elsewhere in the database, from consideration of the savings made by businesses that seek to reduce their environmental impact. However, given that this specific measure is about monitoring the Heathrow plan it has no separate air quality benefit of its own.

Other impacts
The broad scope of the Heathrow Air Quality Action Plan means that it should have a variety of impacts, many of which are likely to be beneficial, though against the background of the airport looking for expansion it is not clear how much the benefits of these actions will be negated by other activities. However, given that this is a monitoring activity it has no other obvious impacts in itself.

Conclusion
It may be asked why a measure that will inevitably involve some cost, but for which additional air quality benefits will not arise (assuming that the airport does implement its plan in full) should be recommended at all. The reason is simply that the Council needs to factor progress on Heathrow's action plan into its own decision making in order to satisfy local demand for independent appraisal of BAA's work and to understand how specific policies have performed. This understanding could help to refine Hounslow's own plan.

5.5.3 Case study 3: A measure rejected - Closure of industrial plant

This measure is not recommended for further investigation as industry should be effectively controlled under existing legislation (for example, on Integrated Pollution Prevention and Control, IPPC). Any problems that arise should be dealt with by the regulators (Environment Agency and Local Authorities). The closure of well controlled industries would have negative effects on the economy and employment and would be of very limited benefit.

6 Implementation of the Plan

6.1 Plan Management

The structure of the plan is shown in Figure 7. A small number of coordination and management actions (identified below) occupy a top tier, above a series of seven packages. Coordination and management includes activities such as:

- Review of the Action Plan following further consultation and experience gained in implementing measures, for example with respect to which measures work well and which measures are problematic
- Provision of annual progress reports to DEFRA
- Continued air quality monitoring and review and assessment

Each package contains a number of measures (as listed in Section 5, above), such as specific improvements to public transport, promotion of energy efficiency, etc. Each of these measures requires definition of a series of actions for its implementation.

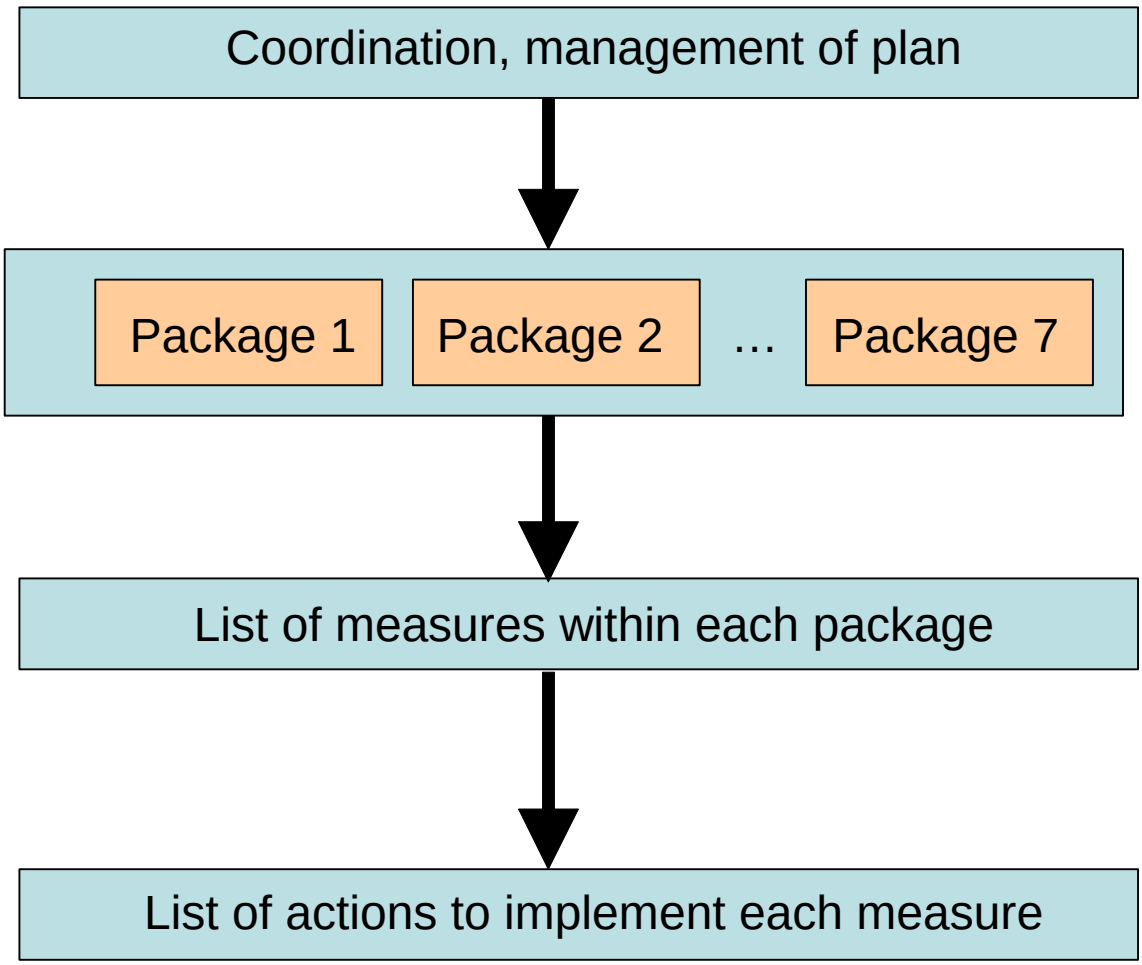


Figure 7 – Structure of the action plan

The process for implementation and monitoring of the plan is shown in Figure 8. The air quality action plan (AQAP) sits under the Community Plan. Once the AQAP has been adopted a series of actions will push its implementation. Progress will be monitored and reviewed. This will lead to revision of some parts of the plan, strengthening some areas and reducing, perhaps eliminating others, where experience begins to show very limited effectiveness or much higher costs than originally forecast.

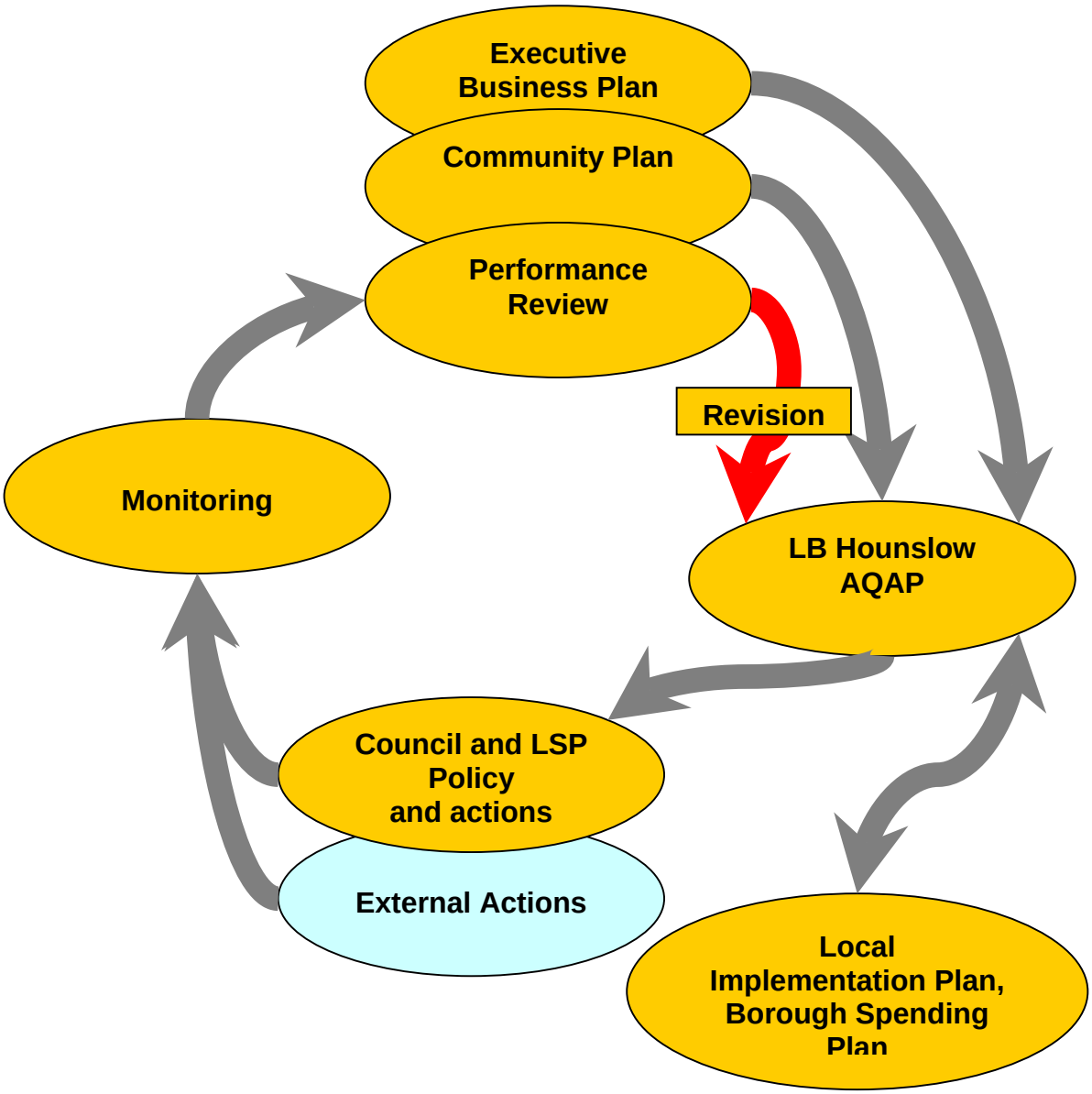


Figure 8 – AQAP management cycle

6.2 Resourcing the Plan

6.2.1 Funding

Given the large number of measures contained in the plan, implementation will be a complex task. For the plan to generate improved air quality it is therefore essential that sufficient resources are given both to its management and to the options adopted under it.

Despite the brevity of this section, adequate resourcing is critical to the success of the plan. There is no point in taking forward an adventurous and apparently dynamic plan if it will not be backed up by adequate funding for staff and the options selected for adoption.

6.2.2 Borough Spending Plan Bids

Many of the measures in the action plan are clearly transport related and the implementation of these actions will be intrinsically linked with the delivery of the Borough Transport Strategy. Transport for London, through the Borough Spending Plan (BSP), will provide a major source of funding for local transport improvements. In addition, a bid for air quality work under the 2005/06 BSP was made which will go towards the funding of the AQAP. On the West London basis, bids are made for air quality every year, however this is a competitive bid and there is no guarantee of success.

6.2.3 West London Transport Spending Plan Bids

It is envisaged that regional transport actions will be addressed via bids for funds on a West London basis. The West London Air Quality and Transport group has been successful in this over the past two bids and will continue to use this approach to obtain funding for regional transport actions.

6.2.4 Section 106 Agreements

Another source of funding for the action plan is the Section 106 Planning Obligations. It is recognised by government in their guidance note that where the impact of air emissions from a proposed development cannot be addressed by the imposition of planning conditions, it may be appropriate to enter into a planning obligation under Section 106 whereby a financial contribution is made to mitigate or offset the impact on air quality.

6.2.5 Supported Capital Expenditure

Since 1997/98, Government support for capital expenditure on air quality management has been provided by awards of Supplementary Credit Approvals (SCAs). In the past few years, this has provided an important source of funding for much of the air quality work being carried out. From 2004/05, support for air quality capital expenditure will be provided as ring fenced Supported Capital Expenditure (Revenue) SCE and replaces SCAs. Projects aimed at developing or implementing elements of AQAP such as consultation workshops, public information campaigns and measures which have been included in the AQAP, for which there is no other source of funding, are eligible for SCE bids.

6.2.6 BAA Heathrow

It is anticipated that BAA would be responsible for financing measures that are specific to Heathrow Airport, Further consultations and discussions with neighbouring authorities and BAA via the Heathrow Air Quality Working Group would be required to formulate the necessary implementation mechanism.

6.2.7 National Government and Proposal for a Third Runway at Heathrow

As referred to in other parts of the Action Plan, the Government, via the 'Future of Air Transport' White Paper, have recognised the need for urgent action in the Heathrow area with regard to improving air quality, even without the addition of a third runway. Hounslow should clearly take a prominent role in the '*urgent programme of work*' referred to, in order to reassure residents and others in the area that their concerns are taken into account and that all possible measures are looked into for improving air quality in this area. Hounslow will require additional funding from Government or the airport for this work.

6.2.8 Regional Actions

Whenever possible, actions that involve regional joint partnership working will be progressed on the basis of shared resources to reduce cost of implementation.

6.2.9 Staffing

The actions required under this plan clearly require a significant amount of new work to be carried out by council staff in coordination of the plan. This clearly requires a significant commitment by the council to dedicate staff to this work.

6.3 Management of the Plan

Given the large number of options written into the plan, and the variety of different organisations and council departments that will be involved in the implementation of various options, the overall delivery of the plan needs to be well planned and co-ordinated. It is proposed that EMRC's (Ecometrics Research and Consulting) Action Plan Tracker is used as the principal management tool for tracking progress with each option.

An onus for the team responsible for this plan is thus to establish an effective mechanism for the exchange of information between the different parties involved using the Tracker to monitor progress.

The central coordination activities are listed in the table below. In all cases timescales are short and/or ongoing (e.g. continued monitoring of air quality. Management could be significantly strengthened and made more efficient by some of the measures identified under Packages 1 to 7, for example, establish links with the Access Hounslow programme for better environmental coordination.

Table 9 – Actions to be taken to ensure effective management of this action plan

Activity	Responsibility	Funding	Timescale	Target
M1. Develop and maintain management system for implementation of the plan	Environmental Strategy Unit		Ongoing Short	Develop SMART targets for each measure
M2. Identify and secure all potential funding for Action Plan initiatives e.g. • Environmental Strategy via SCE • Transportation via BSP and West London Transport • Planning via section 106 • Highways via Car parking surplus • EU funding opportunities	Individual departments	Potentially SCE BSP Section 106 EU structural funds	Ongoing	
M3. Maintain, and where necessary expand, the existing air quality monitoring network	Environmental Strategy Unit	Potential SCE bid	Ongoing Short	Review monitoring network and identify any potential gaps
M4. Review and assessment of air quality in line with DEFRA guidance	Environmental Strategy Unit	Potential SCE bid	Ongoing	
M5. Prioritise measures, providing a schedule for implementation	Environmental Strategy Unit		Short	Prioritised list of measures, implementation schedule
M6. Provide progress report to DEFRA on annual basis	Environmental Strategy Unit		Ongoing annually Short	Ensure mechanism in place to quantify and review measures
M7. Review and adapt the action plan according to opportunity and circumstance	Environmental Strategy Unit		Ongoing	Maintain awareness of new initiatives
M8. Maintain consultation process to disseminate information on progress against defined targets to other stakeholders	Environmental Strategy Unit	Potential SCE bid	Ongoing Short	Define consultation process
M9. Examine potential for the development of regional action plan on cross boundary issues	Environmental Strategy Unit and neighbouring authorities		Ongoing	
M10. Examine potential for Internal AQAP Implementation Steering Group	Environmental Strategy Unit		Short	

6.4 Initial Implementation Plan

6.4.1 Management issues

This air quality action plan will develop over time to reflect progress against the air quality objectives and changing circumstances within the Borough. Progress and development of the action plan will be reported to the Executive of the Council.

The initial implementation of the Action Plan involves identifying actions which could be carried out in the short term within the next 24 months. Many of the measures are either in the process of being implemented, or they are being regarded as high priorities because of local concerns. An example of this is the expansion of the Safe Routes to School Programme, where funding has already been set aside for the work. These actions are the 'quick wins' to show that the plan is capable of delivering results, and this in turn encourages and promotes public participation.

Development of a detailed implementation programme for each option is key to the success of the plan as it will determine the effectiveness of each of the measures included in it. The implementation programme is especially important in Hounslow because of overlap with other action plans and strategies led by other bodies. Without effective collaboration there are serious dangers of confusion between different parties leading to a reduction in the cost-effectiveness of the plan as a whole.

It may become apparent during the implementation process that some options are either not working, or are inadequately resourced. Decisions will need to be taken as to whether these options should be taken forward or abandoned in favour of others that are proving more successful.

6.4.2 Initial actions for Hounslow

The following highlights some of the options that Hounslow will pursue in the early stages of plan implementation to demonstrate leadership of the process:

Package 1: Switching to cleaner transport modes

- Promote information on public transport, cycling and car club options.

Package 2: Tackling through traffic

- Hounslow to liaise with HA, GLA (including TfL) and WLA to clarify roles and define how it will operate with existing fora in the future.

Package 3: Promotion of cleaner vehicle technology and practices

- Provide training for local authority drivers to minimise emissions, and consider opening training opportunities to other drivers working for businesses in Hounslow.

Package 4: Measures specific to Heathrow Airport

- Hounslow to liaise with BAA Heathrow to clarify role and define how it will operate with existing fora in the future.

Package 5: Measures concerning local industry and other businesses

- Adopt a best practice strategy for all proposed demolition and development projects. This will include the use of low emission vehicles and equipment and the use of dust minimisation techniques.

Package 6: Improving eco-efficiency in the Borough

- Hounslow to develop sustainable procurement guidelines.
- Hounslow to integrate Air Quality Specific Planning Guidance into its spatially planning and to clarify how it will use Section 106 agreements to pursue air quality improvements.

Package 7: Actions to be taken corporately, regionally and in liaison with the Mayor

- Establish an Environment Coordination Office for more effective integration of actions to improve environmental performance within and outside the Council.

Assessment and Development

- Hounslow to assess the air quality impact of the First Steps above as part of its review and assessment duties.
- Based on information gathered during the first year of plan implementation, Hounslow to develop a plan for implementation in future years.
- Hounslow to continue to contribute to and influence the Project for the Sustainable Development of Heathrow ('Project Heathrow').

7 Useful Sources of Information

7.1 Websites Specific to Hounslow

Borough Council's website:
http://www.Hounslow.gov.uk/
Air quality website:
http://www.hounslow.gov.uk/home/a-z_services/a/airpollution.htm
List of Part B industrial processes:

7.2 Websites for Neighbouring Councils

7.2.1 London Borough of Brent:

Borough Council's website:
www.brent.gov.uk
Air Quality site:
http://www.brent.gov.uk/ehealth.nsf/97adad6ff206607c8025663c0065c536/1c834ed875d1754d80256a81002f416c!OpenDocument

7.2.2 London Borough of Ealing:

Borough Council's website:
www.ealing.gov.uk
Air quality site:
http://www.ealing.gov.uk/services/pollution+control/air+quality+.asp

7.2.3 Hammersmith and Fulham Council

Borough Council's website:
http://www.lbhf.gov.uk
Air quality site:
http://www.lbhf.gov.uk/index3.htm

7.2.4 Harrow Council

Borough Council's website:
http://www.harrow.gov.uk/portal/homepage.jsp?g11n.enc=UTF-8
Air quality site:
http://www.harrow.gov.uk/content/environment/pollution/air_quality/air_quality.jsp

7.2.5 London Borough of Hillingdon:

Borough Council's website:
www.hillingdon.gov.uk
Air quality site:
http://www.hillingdon-air.info/

7.2.6 London Borough of Richmond Upon Thames

Borough Council's website:
http://www.richmond.gov.uk/
Air quality site:
http://www.richmond.gov.uk/depts/env/envplanning/health-special/airquality.htm

7.2.7 Slough Borough Council:

Borough Council's website:
www.slough.gov.uk
Air quality site:
http://www.slough.gov.uk/LocalEnvironment/airindex.asp

7.2.8 Borough of Spelthorne:

Borough Council's website:
www.spelthorne.gov.uk
Air quality site:
http://www.spelthorne.gov.uk/web/services/environment/air-quality.html

7.2.9 Surrey County Council:

County Council website:
http://www.surreycc.gov.uk
Air quality site:
http://www.surreycc.gov.uk/sccwebsite/sccwspages.nsf/LookupWebPagesByTITLE_RTF/Air+quality?opendocument

7.2.10 Three Rivers District Council:

District Council website:
http://www.threerivers.gov.uk/

7.3 National Air Quality Strategy

Guidance on action planning has been produced by DEFRA and the Welsh Assembly (jointly) and by the NSCA in an initiative supported by DEFRA:

- Part IV of the Environment Act 1995: Local Air Quality Management Draft Policy Guidance. DEFRA/Welsh Assembly, 2002.
- Air Quality Action Plans: Interim Guidance for Local Authorities, NSCA, 2000.
- Air Quality: Planning for Action. Part 2 of the NSCA's Guidance on the Development of Air Quality Action Plans and Local Air Quality Strategies. NSCA, 2001.
- Air Quality Action Planning Helpdesk, funded by DEFRA and run by Casella Stanger and TTR (Transport Travel Research) Ltd.: http://www.stanger.co.uk/jointprojects/DEFRA-Home.asp?jointprojectid=10

- Further information on the national air quality strategy can be found at http://www.defra.gov.uk/environment/airquality/index.htm
- Further guidance for local authorities can be found at: http://www.airquality.co.uk/archive/reports/reports.php?action=category&section_id=6
- In developing the strategy DEFRA has commissioned a substantial amount of research, which is accessible at: http://www.airquality.co.uk/archive/reports/reports.php?action=category&section_id=2
- The Environment Agency has also provided guidance on improving urban environments in the documents 'Our Urban Future: Putting the environment at the heart of urban renewal' and the more detailed assessment 'The Urban Environment in England and Wales'.

7.4 Information on EU Legislation

Information on the legislation developed on air quality by the European Commission can be accessed through:
http://europa.eu.int/comm/environment/air/index.htm

7.5 Local Plans and other Documents

AEA Technology and others (2003) The London Low Emission Zone Feasibility Study: A summary of the Phase 2 report to the London Low Emission Zone Steering Group. Prepared for the Association of London Government, Mayor of London, Transport for London, Department for Transport and DEFRA.

BAA (2002) Heathrow Air Quality Strategy and Action Plan 2001-2006.

DfT (2002) The Future of the Air Transport in the United Kingdom: South East, Department for Transport, July 2002.

DfT (2003) The Future of Air Transport. White Paper produced by the Department for Transport, December 2003.

Laxen, D. (2002) Appraisal of BAA Heathrow Air Quality Strategy and Action Plan, 2001-2006. Prepared by AQC (Air Quality Consultants) on behalf of the London Borough of Hillingdon, November 2002.

GLA (2002) Cleaning London's air, The Mayor's Air Quality Strategy.

GLA (2003) Green light to clean power, The Mayor's Draft Energy Strategy.

GLA (2004) The London Plan.

ORBIT – Transport solutions around London', Orbit study final report, Government Office for the South East, November 2002.

SERAS (South East and East of England Region Air Services Study). http://www.dft.gov.uk/stellent/groups/dft_aviation/documents/page/dft_aviation_503769.pdf

Sub-Regional Transport Strategy of the Association of Councils in the Thames Valley

SWARMMS: 'London to the South-West and South Wales Multi Modal Study', Government Office for the South West, May 2002.

WS Atkins, Thames Valley Multi-Modal Study (TVMMS) Final report, January 2003.

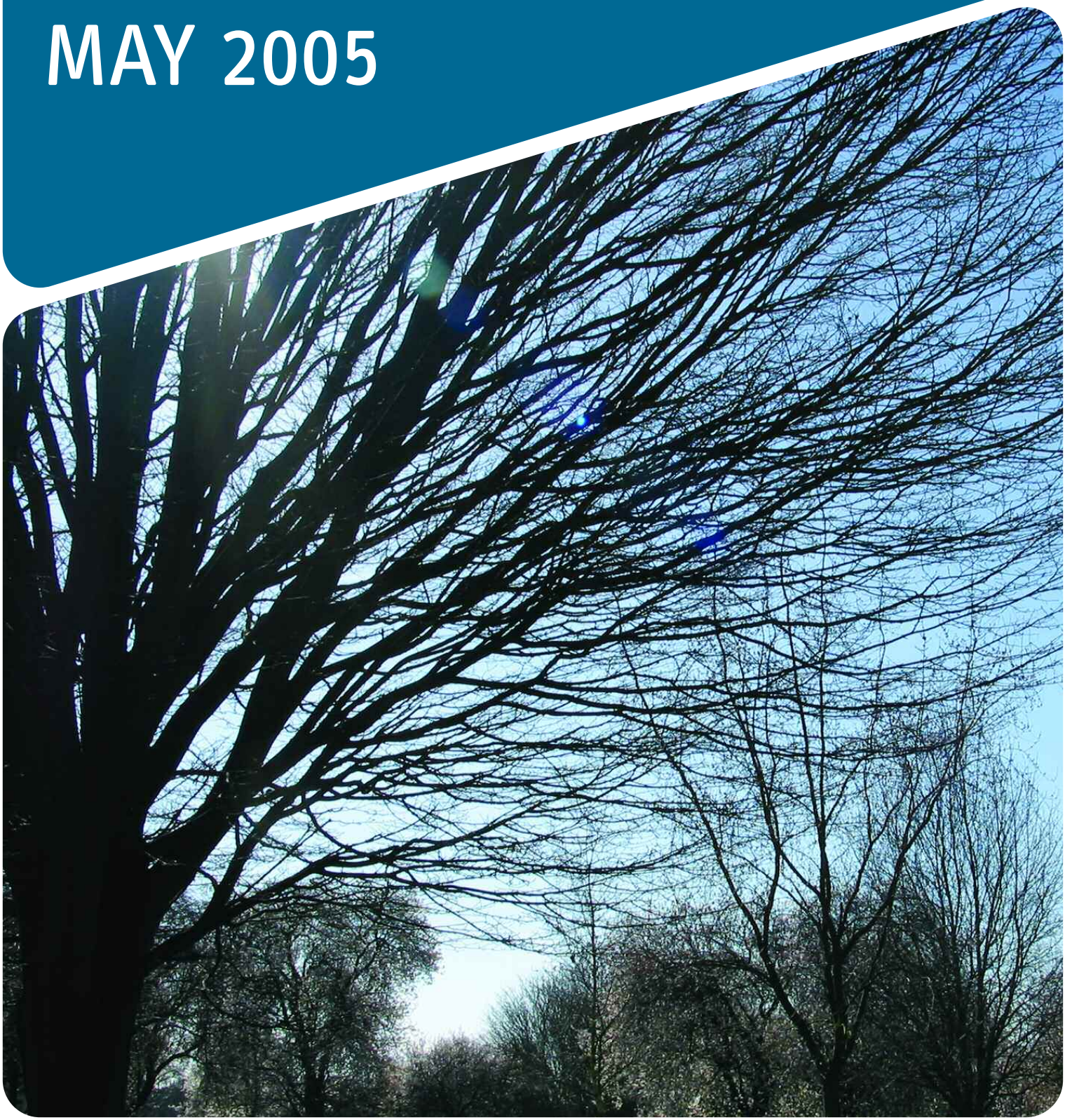
WLA (2003) Air Quality and Transport Actions: West London Baseline Study. West London Alliance, Draft Final Report, January 2003.

Hounslow

THE LONDON BOROUGH OF HOUNSLOW

AIR QUALITY ACTION PLAN APPENDICES

MAY 2005



Appendix 1: Action Plan Appraisal Checklist

The following checklist is published by DEFRA on the air quality management website. It has been completed here as a check that the plan has taken account of the many issues required by DEFRA and to guide reviewers.

	Reference Location	**Comments**
1. Local Authority Information	Inside front cover	
2. Process Adherence to Guidelines and Consideration of Policies		
Have Statutory Consultees been consulted:		
Secretary of State		In progress
Environment Agency		In progress
Highways Agency		In progress
Transport for London		In progress
Contiguous Authorities		In progress
Have other local authority departments been consulted		
Transport	Appendix 3	
Planning	Appendix 3	
Education	Appendix 3	
Have other relevant consultees been consulted		
Public Authorities	Appendix 3	In progress
Business Interests	Appendix 3	In progress
Members of the public	Appendix 3	In progress
Has a statement of the problem causing the AQMA, as identified in the Stage 4, been clearly stated?	Section 2.2 to 2.4	
Have the principal sources of the pollutants causing the exceedance been identified?	Section 2.5	
Have other local authority plans/policies been considered?	Section 3, Appendix 5	
Has an options timescale been included?	Section 5, Action Plan Tracker output	Timescales are defined as short, medium or long. Further work on this issue needs to be done during implementation
Have costs of options/plan been set out?	Section 5, Action Plan Tracker output	More information in database
Have impacts been assessed?	Action Plan Tracker output	More information in database

For each general pollutant source, a number of measures have been identified by DEFRA. The list provided is not intended to be exhaustive and local authorities are instructed to include additional measures that they may have considered.

	Reference Location	**Comments**
3. Process – Checklist of Measures		
Evidence to support the local authorities' selection or rejection of each considered measure will be sought by identifying the following issues:		
Have options been considered?	Section 5	
How many options have been considered?	Section 5	The total number of measures considered exceeds 200
Have transport impacts been assessed?	Section 4.3.3, Action Plan Tracker output	
Have air quality impacts been assessed – Were these modelled or measured?	Section 5, Appendix 6, Action Plan Tracker output	Modelled
Have socio-economic impacts been assessed?	Section 4.3.3, Action Plan Tracker output	
Have other environmental impacts been assessed (noise, odour etc.)?	Section 4.3.3, Action Plan Tracker output	
Have costs been assessed?	Section 4.3.3, Section 5, Action Plan Tracker output	

Each set of measures listed in the DEFRA checklist is now mapped to the package of measures identified in Chapter 4. The Hounslow Plan contains a number of measures beyond those listed here.

Road Transport Measures		
Physical traffic management: speed & flow	Package 2	
Re-routing and road hierarchy	Packages 1, 2	
Access control & clear zones	Package 2	
Low emission zones	Packages 3, 4	
Road user charging	Packages 3, 4	
Parking management & charging	Packages 3, 4	
UTMC Systems	Package 2	
Infrastructure development	Packages 1, 2, 4	
Reallocated road space	Package 1	
Public transport initiatives – Bus	Package 1	
Public transport initiatives – Rail	Package 1	
Public transport initiatives – other	Package 1	
Development of cycling and walking	Package 1	
Partnerships & travel plans (workplace & school)	Package 1	
Promotion, education & awareness raising	Packages 1, 3	
Fleet management & clean fuels	Package 3	
Land use planning	Packages 6, 7	

Freight measures	Packages 2, 3, 4	
Roadside emissions testing	Package 3	
Compulsory purchase		Rejected
Other Transport Measures		
Passenger rail	Packages 1 to 4	
Freight rail	Packages 1 to 3	
Maritime and ports		Not relevant
Inland waterways		Not relevant
Other...		
Industrial Measures		
Local abatement	Package 5	
Emission reduction	Package 5	
Closure		Rejected
Relocation		Rejected
Other...	Package 5	
Domestic Measures		
Energy conservation	Package 6	
Fuel improvement	Package 6	
Fuel switch	Package 6	
Appliance improvement	Package 6	
Smoke control		Statutory duty of the Council already, but not a priority for this plan
Nuisance policy (bonfires etc.)	Package 5	
Airport Measures – Airside Activity		BAA was required to produce an action plan for air pollution under the terms of the T5 enquiry.
Aircraft on stand	Package 4	
Aircraft ground movements	Package 4	
AC take-off / landing	Package 4	
Aircraft composition	Package 4	
Airside vehicles	Package 4	
Point source Emissions	Package 4	
Airport Measures – Surface Access	Package 4	
4. Appropriateness and Proportionality		
Do measures seem appropriate to the problem? Has the right balance been struck?		We have sought to balance the measures across all sources, not just Heathrow Airport and the major roads
How have measures been assessed?	Section 4, Appendix 6, Action Plan Tracker output	

Are the measures likely to achieve the stated goal? This may be the adoption of a new AQ measure or a tightening of an existing measure.		It will be extremely difficult to meet the target. A precise response is not possible because of uncertainty relative to developments of the major transport links in the AQMA, including Heathrow.
Have the wider impacts been appraised appropriately?	Section 4, Action Plan Tracker output	
Was the method of assessing costs appropriate?	Section 4, Action Plan Tracker output	
Is it likely for LAQM objectives to be met? How will success be measured? What impact will wider initiatives/policies have on the measures?		It will be extremely difficult to meet the target. A precise response is not possible because of uncertainty relative to developments of the major transport links in the AQMA, including Heathrow.
Is it likely for Directive values to be met? How will success be measured? What impact will wider initiatives/policies have on the measures?		As above.
Do the chosen measures comply with wider Government Policies?	Section 3, Appendices 4, 5	Measures are in accordance with other national, London-wide and local policies

	Reference Location	**Comments**
5. Implementation		
Are measures realistic in light of the objective deadline(s)?		It will be extremely difficult to meet the standards around Heathrow, particularly if further development of the airport is permitted. It is very unlikely that all of the measures identified will be in place before the EU compliance deadline of 2010.
Have responsibilities been assigned to the relevant party? Does the assigned party have the necessary powers?	Sections 5, 6	Preliminary allocation of responsibility
Has financing been secured and who will pay. Is this realistic?	Section 6	Financing is secure for some options but not others.

Appendix 2: The UK's Air Quality Strategy and EU Directives

Ambient air quality standards for the protection of human health under UK and European Union (EU) legislation are shown in Table A2.1 and Table A2.2 respectively. These are the maximum permitted concentrations of various pollutants in locations outside the workplace where people are likely to be exposed for a significant amount of time.

In some cases the UK's air quality strategy seeks early implementation of the EU's limit values, reflecting the belief that standards can and should be achieved more quickly in the interests of protecting public health. The UK's standard of 40µg/m^3 for NO_2 to be met as an annual mean concentration by 31st December 2005 is described as a provisional target. The same figure is adopted in the EU Directive, though the compliance date is set back to 2010, and the EU standard is final, not provisional.

The UK air quality strategy is periodically reviewed to ensure that the standards it sets are achievable, and maintain a reasonable level of protection of human health taking into account the latest research. EU legislation is currently under review through the CAFE (Clean Air For Europe) Programme of EC DG Environment.

Reference is made in the tables to a number of permitted exceedances of several of the standards in any year. This reflects the fact that periodic events (climate, bonfire night, etc.) make it unlikely that the standards given could be met at all times. By permitting a maximum number of exceedances, a higher level of overall protection is provided for public health than would be given if the standards were raised to a level that could reasonably be met at all times.

DEFRA announced in August 2002 that they will set new UK targets for PM_{10} for 2010. Table A2.1 shows the targets that apply to London. The targets outside London are set lower, permitting 7 exceedances each year of the 24 hour mean rather than 10, and setting the annual mean target to 20 µg/m^3 rather than 23 µg/m^3. These limits recognise that it will be more difficult to reduce pollutant levels in London than elsewhere in England, partly because of the size of the conurbation and the amount of traffic that it attracts, and partly through the proximity of the south-east of England to emission sources in the rest of Europe.

Further information on the standards is available at the DEFRA and EC websites, addresses for which are given in Section 7 of the plan.

Table A2.1 - UK air quality standards for the protection of human health

Pollutant	Objective	Measured as	To be achieved by
Benzene	16.25 µg/m^3 (5 ppb)	Running Annual Mean	31-Dec-2003
	5 µg/m^3 (1.5 ppb)	Running Annual Mean	31-Dec-2010
1,3-Butadiene	2.25 µg/m^3 (1 ppb)	Running Annual Mean	31-Dec-2003
Carbon monoxide (CO)	10 mg/m^3 (8.5 ppm)	Running 8 Hour Mean	31-Dec-2003
Lead (Pb)	0.5 µg/m^3	Annual Mean	31-Dec-2004
	0.25 µg/m^3	Annual Mean	31-Dec-2008
Nitrogen dioxide (NO_2)	200 µg/m^3 (105 ppb) Up to 18 exceedances / year	1 Hour Mean	31-Dec-2005
	40 µg/m^3 (21 ppb)	Annual Mean	31-Dec-2005
Ozone (O_3)	100 µg/m^3 Up to 10 exceedances of running 8 hour mean / year	Running 8 hour Mean	31-Dec-2005
PAHs	0.25 ng/m^3	Annual mean	31-Dec-2010
Particles (PM_{10})	50 µg/m^3 Up to 35 exceedances / year	24 Hour Mean	31-Dec-2004
	40 µg/m^3	Annual Mean	31-Dec-2004
Particles (PM_{10})	50 µg/m^3 Up to 10 exceedances / year	24 Hour Mean	31-Dec-2010
	23 µg/m^3	Annual Mean	31-Dec-2010
Sulphur dioxide (SO_2)	266 µg/m^3 (100 ppb) Up to 35 exceedances / year	15 Minute Mean	31-Dec-2005
	350 µg/m^3 (132 ppb) Up to 24 exceedances / year	1 Hour Mean	31-Dec-2004
	125 µg/m^3 (47 ppb) Up to 3 exceedances / year	24 Hour Mean	31-Dec-2004

Table A2.2 - EU air quality standards for the protection of human health

Pollutant	Objective	Measured as	To be achieved by
Benzene	5 µg/m^3 (1.66 ppb)	Annual Mean	2010
1,3-Butadiene	No EU standard		
Carbon monoxide (CO)	10 mg/m^3 (8.5 ppm)	Running 8 Hour Mean	2005
Lead (Pb)	0.5 µg/m^3	Annual Mean	2005
Nitrogen dioxide (NO_2)	200 µg/m^3 (105 ppb) Up to 18 exceedances / year	1 Hour Mean	1-Jan-2010
	40 µg/m^3 (21 ppb)	Annual Mean	1-Jan-2010
Ozone (O_3)	120 µg/m^3 (60 ppb) Up to 25 exceedances / year averaged over 3 years	Maximum daily 8 Hour Mean	2010
Particles (PM_{10})	50 µg/m^3 Up to 35 exceedances / year	24 Hour Mean	1-Jan-2005
	40 µg/m^3	Annual Mean	1-Jan-2005
Indicative PM_{10} levels for 2010	50 µg/m^3 Up to 10 exceedances / year	24 Hour Mean	1-Jan-2010
	20 µg/m^3	Annual Mean	1-Jan-2010
Sulphur dioxide (SO_2)	350 µg/m^3 (132 ppb) Up to 24 exceedances / year	1 Hour Mean	1-Jan-2005
	125 µg/m^3 (47 ppb) Up to 3 exceedances / year	24 Hour Mean	1-Jan-2005

Appendix 3: Consultation

This appendix lists the stakeholders who have so far engaged in the development of the plan and meetings held specifically in relation to the development of the air quality action plan.

Table A3.1. List of stakeholders consulted during the development of the action plan.

Stakeholder	Attended meetings	Provided written comments
Highways Agency		
Michele Hackman (Environmental Management) & Paul McCrery (M4 Route Management)	1/7/04	
London Borough of Hounslow		
Chris Calvi-Freeman (Transport Policy)	24/6/04	
Rob Gibson (Environmental Policy)	24/6/04	
Michael Bell (Planning Policy)	23/6/04	
John Heath (Health and Safety – Employee travel plan)	23/6/04	
Faye Munro (Community Planning)	16/6/04	
Lucy Griffiths (Environmental Strategy)	16/6/04	
Kevin Chapman & Rod Willis (Environment Direct Services)	21/6/04	

Table A3.2. Meetings and other publicity events arranged around development of the air quality action plan

A number of meetings have been held with stakeholders associated with Heathrow Airport during the development of the neighbouring London Borough of Hillingdon's air quality action plan. In the interests of efficiency, Hillingdon and Hounslow will continue to work together in developing the Local Authority position and plan with respect to the airport.

Appendix 4: Pollution Sources Outside the Control of the London Borough of Hounslow

Hounslow will need to work in partnership with a wide range of stakeholders in order to secure reductions in emissions from sources outside its direct control. Where there are not forums already in existence through which to achieve this aim, Hounslow will strive to form them as part of the Action Plan.

A4.1 Heathrow

A4.1.1 General

Heathrow is owned and operated by BAA Heathrow, a subsidiary company of BAA plc. The company provide facilities for over 450 organisations and companies. It is the largest airport in the UK and in 2000 served 64 million passengers and handled 1.3 million tonnes of air freight. The generation of a large number of flights brings with it corresponding volumes of surface traffic. Heathrow is situated in close proximity to residential areas and air pollution levels around Heathrow are predicted to exceed national air quality objectives in 2005 (see Section 1 of the main body of this plan). Problems are forecast in the SERAS report even as far ahead as 2015. Airport policy is determined at national and international levels. The airport itself sits within the London Borough of Hillingdon. Overall, therefore, Hounslow has little direct influence to control pollutant emissions from the airport.

A4.1.2 BAA Heathrow Air Quality Action Plan

As part of the conditions of the approval for the building of a 5th Terminal at Heathrow, BAA Heathrow was required to produce an action plan aimed at reducing emissions to air. This action plan was submitted to Hounslow and neighbouring authorities in 2002. The plan focuses on reducing emissions over six key areas namely aircraft operations management, airside vehicle fleet management, better understanding of airport emissions and their impacts, surface access, land use planning, emissions from fixed point sources and construction.

As part of the T5 approval BAA are required to keep this action plan under review and to submit the results of the review to the London Boroughs of Hillingdon and Hounslow.

A4.1.3 Terminal 5 (T5)

Approval for construction of Terminal 5 at Heathrow was granted in 2001, and is scheduled for completion by 2008. This will bring about a major increase in the size of the airport, with passenger numbers forecast to rise from 64 million to 89 million and aircraft movements from 460,000 to 480,000 each year (levels are capped under planning conditions for the site). The inspector at the public inquiry into Terminal 5 accepted that it would have a significant impact on the environment and suggested a package of measures that should be adopted in mitigation. Planning conditions imposed following the T5 public inquiry include:

- Undertake an air quality action plan within one year of consent being given;
- Agree an air traffic movement limit of 480,000 movements per year;
- Extend the Heathrow Express and Piccadilly Line before T5 opens;
- Make provision for further rail services linking Heathrow directly to main line rail services;
- Agree a cap on total and work-related car parking of 42,000 and 17,500 spaces respectively;
- Agree conditions to reduce the impact of construction;
- Reduce the need for airside generators; and
- No widening of the M4, as had been requested.

To improve public transport links, the Secretary of State for Transport has approved extensions of the Heathrow Express (linking existing terminals to Paddington) and the Piccadilly line into Terminal 5. However, there is currently no approval to link Heathrow directly by rail to stations to the west. Following the decision to approve the construction of the new Terminal 5 (T5) at Heathrow, it is currently difficult to envisage how or when the air quality exceedances around Heathrow may be eliminated.

A4.1.4 Aviation White Paper

In this White Paper the Government recognised that air travel is likely to continue to grow rapidly in future and that, for a variety of important reasons, this growth and its impact needs to be managed.

Major airports, particularly in the London region, are already operating at or close to capacity, and it is feared that failure to allow for increased capacity could have serious economic consequences, both at national and at regional level. However, it is recognized that simply building more capacity to meet demand is not a sustainable way forward and growth must be balanced by the need to have regard to the environmental consequences of air travel. Therefore, the Government has sought to set out a balanced approach providing a strategic framework for the development of air travel in the UK for the next 30 years.

This approach is intended to:

- Recognise the importance of air travel to national and regional prosperity;
- Reflect people's desire to travel further and more often by air, and to take advantage of the affordability of air travel and the opportunities this brings;
- Reduce and minimise the impacts of airports on those who live nearby, and on the natural environment;
- Ensure that, over time, aviation pays the external costs its activities impose on society at large – in other words, that the price of air travel reflects its environmental and social impacts;
- Minimise the need for airport development in new locations by making best use of existing capacity where possible;
- Respect the rights and interests of those affected by airport development;
- Provide greater certainty for all concerned in the planning of future airport capacity.

The Government notes that aircraft engines and traffic on local roads and the airport surface contribute emissions and to pollution close to airports. The most significant pollutants in this case are nitrogen dioxide (NO_2) and particulates (PM_{10}). Nationally the contribution of air transport sector to these impacts is small, but locally their effect can be very significant. The Government believes more needs to be done to reduce and mitigate the impacts of air transport and airport development.

At the European and global levels, the Government will press for new solutions and stronger action by international bodies.

For local impacts, the White Paper prescribes a range of measures to be applied. These include new legislation and economic instruments as well as improved technology and stringent planning conditions attached to airport development. ***"The Government's under-pinning objectives are to limit and, where possible, reduce noise impacts over time, to ensure air quality and other environmental standards are met, and to minimise other local environmental impacts."***

The White Paper's significance in LB Hounslow
Not surprisingly, the Government has concluded that a strategy to future air transport provision is required in South-East England. The following list identifies those points of particular relevance to Heathrow Airport.

- The first priority is to make best use of the existing runways and capacity but there is an urgent need for additional runway capacity in the South East, which could be met by two new runways by 2030.
- *"The further development of Heathrow is supported, including a further new runway and additional terminal capacity to be delivered as soon as possible (within the 2015-2020 period) after a new runway at Stansted Airport, but only if stringent environmental limits can be met. An urgent programme of work and consultation will be started to examine this issue further and to consider how best use can be made of the existing airport."*

Irrespective of these conclusions, it is the view of the London Borough of Hounslow that Heathrow Airport has reached the limit of its sustainable development from a social, economic, transportation, environmental, health and safety perspective. Further development will have a major detrimental impact on the local environment. Furthermore, irrespective of a decision on a third runway, the area requires a package of restitution measures to tackle the existing problems of noise, air quality and transport infrastructure.

The Paper does not authorise or preclude particular developments but does indicate the Government's view on how future planning applications may be decided.

Focusing closely on the local impacts of airport activities the Government requires that aviation and airport development at Heathrow are managed so that:

- *"Noise impacts are limited, and where possible reduced over time;*
- *Local air quality is maintained within legal limits across all relevant pollutants in order to protect human health and the wider environment;*
- *Loss of landscape and built heritage is avoided wherever possible, and otherwise minimised and mitigated to the greatest extent possible;*
- *All relevant water quality and other mandatory environmental standards are met;*
- *Surface access to airports is designed to help limit local environmental impacts*
- *Impacts on biodiversity, such as disturbance of habitats and species, are minimised."*

As the documentation supporting Hounslow's Action Plan demonstrates, there are widespread exceedances of the annual mean air quality objective for NO_2 at residences all around the airport. In addition, Government evidence suggests that achieving this objective at all locations in the Borough even by the 2015-2020 period will be extremely challenging.

The Government suggests that all of the following actions will be required:

- *"Applying increasingly stringent technical standards to limit emissions and noise at source;*
- *Encouraging airport operators, airlines and air traffic managers to adopt the cleanest and quietest operational practices;*
- *Withdrawal of the noisiest and dirtiest aircraft, replacing them with aircraft capable of better environmental performance;*
- *Using economic incentives to encourage noise and emissions reductions, and the use of best available technology;*
- *Working with industry and universities to research, develop and introduce cleaner and quieter technology; and*
- *Using land-use planning and management measures at and around airports, including avoiding new housing development in areas exposed to high levels of noise."*

The Government has reviewed existing appraisals of the environmental impact of Heathrow Airport and has studied in greater detail the scale of actions needed to reduce emissions from aviation as well as from other principal sources (i.e. road traffic). A companion document to the White Paper presented the results (**Air Quality Assessments Supporting the Government's White Paper "The Future of Air Transport", DfT, December 2003.**) This sets out in detail the Government's assumptions regarding airport and traffic activity and technology in the 2015-2020 period. Clearly there are significant uncertainties in predictions made this far ahead. Nevertheless, results indicate how far emissions will need to be reduced from current levels.

The following table illustrates the predicted number of people still experiencing NO_2 levels above 40$\mu g/m^3$ in 2015 based on a range of actions taken.

Main actions taken	No. of people exposed to >40µg/m^3
• Baseline activity and emission factors updated • 20% reduction in airport-related landside vehicle emissions • 30% reduction in aircraft average holding time • Air transport movements at 655,000 per year • 3rd short runway to the north • Aircraft NOx emissions improved 31% from best current levels by introduction of a emissions-based landing charge.	11,122
• All of the above plus, • Displaced landing roll plan for certain classes of aircraft • Emissions-optimised speed limits on the M4 and M4 spur.	9,425
• All of the above plus, • Aircraft NOx emissions improved by a total of 34% from best current levels (i.e. an additional 3%) through the emissions-based landing charge • 50% reduction in airside emissions • 23% reduction in employee-related vehicle trips to LHR • 29% reduction in airport-related passenger trips from a £20 access charge • No growth in non-airport related traffic on the M4 and M4 spur over current levels	6,584
• All of the above plus, • Reallocate all westerly departures from northern runway to southern runway, all westerly arrivals on the northern runway (all easterlies unchanged, respecting the Cranford Agreement) • Air transport movements of 550,000 per year and road traffic scaled down	2,272
• All of the above plus, • Introduction of displaced start of take-off roll on southern runway.	1,689
• All of the above (except displaced start of take-off roll) plus, • Zero emissions for M4 between M25 (J4A) and Cranford (J3) (M4 and the spur placed in tunnel, with vent stacks which have scrubbers which are 100% effective at removing NOx) • All emissions for the M4 spur (right into CTA) turned off (see above) • Displaced start of take-off roll for all southern runway westerly departures (Assumes southern runway extended by 1km to west but retain easterly departures on the southerly runway at the existing start of roll point.)	16

There is no current commitment to the actions identified in the table, but they do demonstrate that to get close to achieving the air quality objective around the airport (including a 3rd runway) by 2015 would be challenging, requiring:

- Upgrades to the aircraft and airside fleet and their take-off and landing practices with air transport movements held at 550,000 per year.
- Reductions in road transport movements in and around the airport with passenger movements subject to a £20 access charge.
- New road infrastructure to place key sections of the M4 and airport spur in tunnels and air treated with scrubbers.

The Government notes that "*even with full implementation of this package of tough measures, and making aggressive assumptions about future developments in aircraft and motor vehicle technology, the evidence of our further work suggests that substantial areas around Heathrow, containing the homes of many hundreds or thousands of people, would be subject to exceedances of the mandatory air quality limit value. Such exceedances would not be acceptable, and would be against the law. However, our overall assessment is that, within the 2015–2020 timescale, there would be a substantially better prospect of avoiding exceedances, in particular because it would allow more time to develop improved technologies, for both aircraft and road vehicles, to tighten standards, and to achieve widespread use of the improved technologies in road and aircraft fleets*."

Consequently the Government has, together with the airport operator and relevant bodies and agencies, started a programme to consider how existing capacity at Heathrow combined with the addition of a third runway can be developed in an environmentally and socially sustainable manner.

The results also demonstrate the options for improving air quality that are at the disposal of the UK Government and BAA as the operator of Heathrow airport. They will need to implement some of these options, or ones of similar scale, to achieve compliance with the current air quality objectives in Hounslow regardless of whether a 3rd runway is developed or not.

A4.1.5 BAA's New Modelling Work

BAA plc, in their consultation response, undertook new modelling work with regard to the proposal for a third runway at Heathrow. This new work suggests fewer residents would be exposed to levels above the European Union limit than the original DfT SERAS estimation. The evidence provided by the BAA SERAS Response shows that even under an optimistic emissions reduction scenario (which may be neither realistic or achievable), a new runway at Heathrow would lead to exposure of the population to levels of nitrogen dioxide above the European Union Directive limit. It follows that if a third runway at Heathrow would prevent compliance with the air quality legislation, as BAA's own modelling shows would be the case, the Government should not contemplate proceeding with a third runway at the airport.

A4.2 Roads in the Borough

Roads in the Borough are the responsibility of the Highways Agency, Transport for London and the Borough Council, as shown in Figure A4.2. Each of these bodies has specific objectives, some of which will conflict with those set nationally for air quality. Through this plan it has therefore been essential to establish an appropriate basis for factoring air quality into wider decision making.

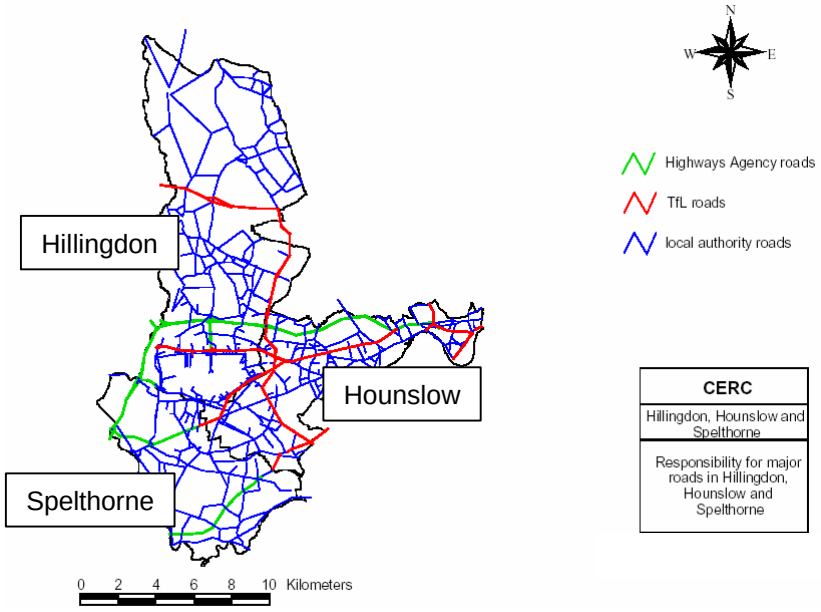


Figure A4.2. Control of major roads in and around Hounslow's AQMA

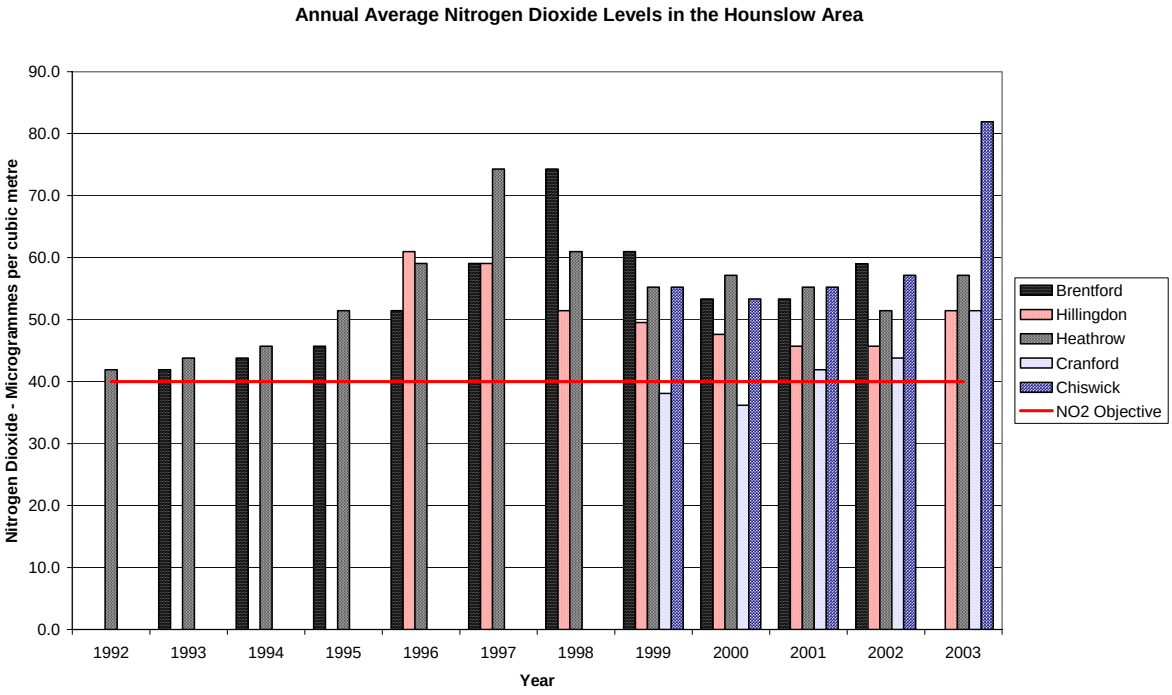
Recognising the importance of through-traffic in the Borough, Hounslow will need to ensure it is fully involved in discussions around any implementation measures that may arise from:

- TVMMS (the Thames Valley Multi-Modal Study)
- M4 Route Management Study
- M25 Widening and other schemes
- Congestion Charging
- Possible extension of Central London Congestion Charging to Heathrow
- London Low Emission Zone Study (Hounslow has played an active role on the steering group for this work).

The views expressed by the London Borough of Hounslow with respect to the M4 Route Management Study, were as follows:

The issues

Many relevant receptors (residents) in LB Hounslow experience concentrations in excess of the annual mean standard for NO_2 and prediction suggests that it is highly likely that the national objectives for 2005 and even 2010 will not be achieved at all relevant locations without action focussed on reducing the major sources of emissions which are the airport and traffic on the major roads. This is illustrated below by the results from Hounslow's air quality monitoring stations (see the figure below).



These monitoring stations are all within populated areas so it is assumed that tens of thousands of Hounslow residents are exposed to excessive pollution.

Hounslow is currently developing an Air Quality Action Plan (AQAP), which will include a variety of measures aiming to improve the sustainability of Council activities as well as those of other stakeholders in and around the borough. It is clear that these actions must include emissions reductions at the airport and on the road network, in particular the major transit routes through the borough including the M4. Besides the current air pollution, traffic in the borough is also a major source of noise and other impacts such as the division of communities.

A major factor in taking action is that the Council is not the executive highway authority for the major roads (TfL and the HA are responsible). This means that an agency outside of Hounslow's control must necessarily take the lead and responsibility for actions to reduce emissions on these roads. However the development of the M4 London to Membury Route Management Strategy would appear to be the ideal vehicle for developing air quality improvements.

The Hounslow AQAP will consider all options for improving the pollution climate.

Actions Hounslow would like to see investigated

Some far-reaching actions could be implemented locally to solve the problem. These include the enclosure of the polluting roads in tunnels with industrial scale pollution abatement of the ventilated air and also the removal of the exposed individuals to alternative locations. These actions while possible are

likely to be contrary to other high priority policies particularly planning. They are also a very expensive and take a long time to implement.

More realistic options will consider the value of changing current national policies regarding the rate at which the vehicle fleet is reducing its emissions through the introduction of engine combustion technology and end-of-pipe abatement. These again would be beyond Hounslow's control and potentially costly to the national economy.

Remaining options include the possibility of optimising current use of the road network or reducing the number of vehicles. Hounslow believes that these options would be the most sustainable in the long term and would also contribute to the achievement of several national policy objectives. Hounslow also believes that it is in implementing these options that the HA (and TfL) must have a key role.

The measures that are finally adopted in the Hounslow action plan (which would include a set of measures that Hounslow will entreat the Government and each of its relevant executive agencies to implement) will attempt to be balanced according to cost-effectiveness, alignment to current policies and other criteria. However, it is reiterated that the achievement of the air quality objectives is a legally binding obligation for the UK so that it is important that all reasonable steps are driven through now rather than have measures forced upon the road network as the compliance date approaches.

Recommendations

Hounslow's suggestions/recommendations regarding the actions it believes the HA should take in the RMS of the M4 are informed by the discussion above and a meeting with HA officers.

1) Key performance indicator (KPI)

The current KPI has the annual objective of improving air quality in a number of AQMAs. Success is judged by the number of HA schemes, thought to either reduce congestion or to reduce vehicle numbers, completed in that year in those areas.

Hounslow suggests that this appears to be an ad-hoc approach where AQ benefit is treated as a spin-off of the scheme rather than a priority driving it. A more specific indicator could address this. For example, the AQMAs could be grouped and prioritised according to the effort that will be required to achieve the AQ objectives. The KPI could focus on the highest priority locations and could be based on the number of schemes given the 'green light' or completed that year that would lead to emissions reductions.

A change to the KPI as suggested would put more onus on identifying all opportunities for reducing motorway emissions in the priority AQMAs. Regardless of this, the RMS for the M4 could include a similar approach and prioritise action to reduce emissions.

2) Route strategy leadership

Our understanding is that where road schemes go beyond the HA assets (for example a public transit scheme where the termini are on local authority regulated land) the HA's role is currently to facilitate the implementation (for example, creating a priority lane) rather than to identify and drive through such schemes.

Hounslow believes that the HA must become more proactive in leading the air quality management element of the RMS.

Much of the traffic leading to pollution in Hounslow is through traffic that has begun its journey on the M4 often many miles west of the borough. Schemes to encourage modal shift would potentially need to be implemented by many local authorities along the M4 many of whom currently have no impetus to create such schemes and certainly not to improve matters in a borough many miles away.

Therefore Hounslow believes that it would be sensible that the Agency owning the RMS and which has environmental protection along this route as a key policy should coordinate effort and apply appropriate pressure to reduce emissions.

There are several ways in which this could be done and one approach is suggested here:

A strategic workshop event

- Invite transport planners, along with TfL and the HA to discuss schemes that would reduce emissions in the context of the MMS findings.
- During the first half: the actual opportunities to implement such schemes (e.g. Is there the land for a park and ride at a given junction?) could be identified.
- During the second half: the realistic impacts of possible schemes could be evaluated.

The outcome could be a clear message to Defra/DfT/ODPM of the required effort and how far optimising the use of the network and reducing traffic can actually go towards solving the AQ problems.

It would also be helpful for the HA to proactively spread the message about those schemes which deliver emissions reductions most effectively as well as to draw local transport strategists towards these schemes.

3) Information on the most successful schemes

The HA appraises the predicted AQ impact of all major schemes and where such impacts are unacceptable effort is made at the design phase

to mitigate such impacts. However, it is not clear that sufficient resources are devoted to appraising the actual performance of these schemes once they are in operation. Most efforts to manage transport emissions suffer from lack of information about the cost-effectiveness of schemes in order to help transport and other planners to prioritise resources and make decisions.

Therefore, Hounslow believes that the HA should devote the appropriate resources to collating and presenting the type of scheme appraisal data that would provide a clear picture to local planners about benefits, impacts and cost-implications.

4) Continued effort to optimise current use of the network

It is noted that the M4 in Hounslow continues to experience congestion and high traffic flows often of very polluting vehicles.

Hounslow believes that effort should continue in reducing these problems through the implementation of whatever schemes are within the HA's remit. It is recognised that speed controls may have very little positive impact in the borough. However, other schemes such as priority lanes for HOVs or access charges should be investigated and led by the agency.

5) Noise

As stated above, noise is also of concern to the London Borough of Hounslow as it is to the Mayor of London. The Mayor's vision is as follows "to minimise the adverse impacts of noise on people living and working in, and visiting London using the best available practices and technology within a sustainable development framework". The Borough presumes that the route strategy will comply with this vision and make improvements in the M4 and its environs to reduce the ambient noise level in Hounslow.

The European Environmental Noise Directive (2002/49/EC published July 2002) will require noise mapping and the production of action plans to improve the noise climate. As the directive and the route strategy will be in place at the same time it is suggested that consideration is given towards how the route strategy will integrate the requirements of this directive.

A4.3 Emissions from Major Industrial Facilities

Industry is regulated partly by the Environment Agency and partly by local authorities, with the Agency responsible for larger and more complex plant. Legislation of the past 20 years, such as the recent EU Directives on IPPC (Integrated Pollution Prevention and Control) and waste incineration, combined with trends such as the move away from traditional fuels (coal and oil) to natural gas, has led to a major decline in the importance of industry as a pollution source.

However, these industries can have significant effects on air quality by generating local pollution in the immediate vicinity of a plant and through raising background levels of pollution. Hounslow can, via the planning process, ask for conditions more stringent than those that would typically be defined as Best Available Techniques (BAT) under IPPC if a plant is operating in or close to “sensitive” areas.

Hounslow, the Environment Agency and the businesses concerned should continue to work in partnership to ensure effective communication of information on development and performance on the major industrial sites. Councils in the area may wish to take the lead in facilitating stakeholder engagement where there is a significant level of concern about any operation or proposal.

A4.4 Background Concentrations

The atmosphere in Hounslow includes pollutants generated from other places in London and the UK, and indeed, the rest of Europe, in addition to locally generated pollutants. Overall, the source apportionment study carried out for Hounslow estimated that these background contributions comprise between 10% and 24% of the NOx concentrations across the Borough. As in the other cases listed in this Appendix, the Borough Council does not have control over these emissions.

Appendix 5: Local and Regional Plans Considered in Development of the Air Quality Action Plan

A number of plans already influence air quality in the London Borough of Hounslow. The most prominent of these are:

- The London Plan (described below)
- The Mayor's Air Quality and Energy Strategies (described below)
- The West London Air Quality Strategy (described below)
- The London Borough of Hillingdon's Air Quality Action Plan (described below)
- The Community Plan (described below)
- The draft M4 Route Management Strategy (see Section A4.2)
- The Aviation White Paper (see Section A4.1)
- Environmental Performance of the Council: Development of an Environmental Management System and a green travel plan (described below)
- Unitary Development Plan (UDP), which is being updated following guidelines laid down in the London Plan (described below).
- The Local Transport Strategy (described below)
- West London Economic Development Strategy (described below)

It would clearly be wrong to develop air quality policy in Hounslow independently of the policies listed above. To do so would ignore the fact that joined-up policy making offers substantial benefits in terms of cost-effectiveness. For this reason the recommendations made in these plans have been considered in development of the air quality action plan, and the impacts of options for air quality improvement on transport, noise and climate change (amongst other issues) are considered in the discussion of options that follows in later chapters of this action plan.

A5.1 The London Plan: Spatial Development Strategy for Greater London

The particularly severe air quality problems experienced in London compared to other UK cities are largely due to the unique concentration of population and activity in the city. The population of London is predicted to continue to rise rapidly over the next 10-20 years and hence strategic plans must be made to avoid this intensification causing further degradation in the environment.

The Mayor is responsible for strategic planning in London. His duties include producing a Spatial Development Strategy for London – called the London Plan – and keeping it under review. Among several other aims, the London Plan:

- Is the strategic plan setting out an integrated social, economic and environmental framework for the development of London to 2020 and beyond.
- Integrates the physical and geographic dimensions of the Mayor's other strategies, including broad locations for change and providing a

framework for land use management and development, which is strongly linked to improvements in infrastructure, especially transport.

The London Plan is the main vehicle for strategic decision-making on London's development and will directly influence:

- Development decisions, for example, private sector proposals to develop new housing.
- Investment decisions with a spatial impact, for example, major land acquisitions.
- Other spatial policies formulated at sub-regional level, such as Sub-Regional Development Frameworks, or at local level, such as UDPs, which will be of primary importance in taking forward the London Plan policy at local level and which must be in general conformity with the London Plan.
- Decisions that regulate proposals for development control.

The Mayor will work with strategic partners to ensure that the spatial, transport and design policies of this plan support his Air Quality Strategy. The policies of that strategy are discussed elsewhere in this document.

The Mayor will work with sub-regional partnerships to develop a coherent Sub-Regional Development Framework for West London in which priorities will be further developed. As part of this process planning frameworks for Opportunity Areas will be prepared to build on frameworks already developed. These are areas with good access such as Heathrow/ Feltham/ Bedfont Lakes and Hayes/ West Drayton/ Southall that are capable of accommodating substantial new jobs or homes through significant increases in density. These frameworks will set out a sustainable development programme for each Opportunity Area, to be reflected in UDPs, so as to contribute to the overall strategy of the London Plan.

The London Plan lists a set of transport policies that should all contribute to the improvement of the London environment and to the sustainable development of London:

- Integrate transport and development.
- Match development to transport capacity.
- Develop sustainable transport in London.
- Provide sufficient land for transport functions through UDP policies.
- Improve and expand London's international, national and regional transport links.
- Develop a sustainable and balanced London area airport system.
- Increase the capacity, quality and integration of public transport to meet London's needs.
- Implement phased public transport improvements in line with development priorities.
- Develop new cross-London links within an enhanced Rail network.
- Improve underground and DLR services.
- Enhance bus priority, tram and bus transit schemes.

- Identify road scheme proposals that contribute to goals for a sustainable city and do not increase net traffic capacity of the corridor unless essential to regeneration.
- Tackle congestion and reduce traffic.
- UDPs to include policies that allocate street space in a way that reflects the Mayor's Transport Strategy and the London road hierarchy.
- Local area transport treatments.
- Improve the quality of bus services.
- Improve conditions for walking and cycling.
- Develop a parking strategy to ensure minimum necessary on-site car parking to encourage use of more sustainable non-car modes.
- Identify appropriate parking standards for town centres in UDP policies and transport Local Implementation Plans.
- Implement a sustainable freight transport strategy, encouraging modal shift. This to include the provision of strategic rail-based inter-modal freight facilities.

Implementation would require action or support from the Mayor, Transport for London, the London Boroughs, Central Government, the Strategic Rail Authority and other partners. These policies implemented via the Hounslow UDP and other policies aim at:

- Planned development capturing the benefits of economic generators within the sub-region for an expanded number of residents.
- Limiting or reducing trips made via non-sustainable transport modes.
- Improving choices, access and quality of public transport provision.
- Environmental improvement.

A5.2The Mayor's Air Quality and Energy Strategies

Part of the London Mayor's statutory duties include publication of strategies on air quality and energy use in London. The London Borough's are obliged to take account of these strategies when developing their own air quality action plans to ensure conformity throughout the region. Hounslow has taken due notice of these strategies in drawing up the options listed under the individual packages. This has included consideration of the Mayor's proposals on:

- Cleaner road vehicles
- Low Emission Zones
- Specific proposals for vehicle types: buses and coaches, taxis, freight and motorcycles
- Traffic management
- Air travel and airports
- Rail, shipping and the Underground
- Industrial and background sources of pollution
- Construction, construction vehicles and fires
- Energy and heating (in the residential, commercial and institutional sectors in particular)
- The GLA group and its strategic partners including the Boroughs
- Planning
- Business

- Individuals

Hounslow believes that the plan is in conformity with the Mayor's strategies and will contribute to the achievement of the air quality standards in London.

A5.3 The West London Air Quality Strategy[1]

The West London Alliance (including London Borough of Hounslow) has adopted a set of joint actions concerning air quality and transport. The actions form a strategy for improving air quality in West London through a consistent set of actions. The joint actions are listed in the table below.

Table A5.1 – Joint actions to improve air quality in West London

Headline objective	Action
KA1 Transport and air quality assessment	Determination of the scale of air quality improvement needed across west London
	Maintain air quality monitoring in west London
	The magnitude and type of transport options appropriate to affecting substantial air quality improvements across west London
	The likely impact of the range of transport actions upon air quality and their contribution towards meeting statutory air quality improvement targets
KA2 Low emission zones (LEZs)	Estimate the potential, efficacy and impact of LEZ implementation for west London
	Support ongoing LEZ study being undertaken by the boroughs, GLA and ALG
KA3 Transit schemes	Continue to support development of the "west London transit" scheme
	Examine and actively develop further transit routes and services for west London. Agree and promote the west London transport network with west London partnerships
KA4 land use planning integration	Provide supporting statement in response to the draft London plan with the west London partnership
	Work to further integrate land use planning policies and mechanisms with transport and air quality objectives to reduce the need for travel
	Use of planning process to improve air quality
KA5 Bus corridor improvements	Concerted action to develop efficient and high quality bus corridors throughout west London considering substantial infrastructure changes as appropriate to achieve improvements.
KA6 sustainable and integrated transport action	Continue to develop and support all actions to promote integrated and sustainable transport across west London
	Promotion of high quality interchanges
	Improve access to travel information
	Increase the number of safe routes to school s schemes targeting AQMAs
	Rail improvements
KA7 Freight movements – quality partnerships	Develop comprehensive freight quality partnerships across London to improve environmental performance whilst supporting commercial imperatives of operators.
KA8 Heathrow Terminal 5	Consider application of all key actions 1-7 in accommodating terminal 5. Promote alternative methods of getting to Heathrow

[1] Air Quality and Transport Actions West London Baseline Study. Final report for the West London Alliance, February 2003.

The Hounslow AQAP will progress these actions within the Borough.

A5.4 London Borough of Hillingdon AQAP

Hillingdon is the neighbouring Borough to Hounslow and contains Heathrow Airport. It experiences severe exceedances of the annual mean NO_2 standard just as Hounslow does and the dominant sources of this pollution are the airport and traffic on major roads. Due to the proximity of Hillingdon and similarity of its pollution problems with those of Hounslow, the adopted AQAP of Hillingdon has been a key document in the development of the Hounslow AQAP.

The Hounslow AQAP seeks to avoid unnecessary duplication of actions that are being progressed in Hillingdon (e.g. Hounslow will monitor and support Hillingdon's specific actions for reducing the impact of the airport but will play a full role in joint work such as lobbying central government for additional actions dealing with the airport).

Furthermore the Hounslow AQAP has been developed to be consistent with the approach and actions of both the Hillingdon AQAP and the joint actions of the West London Air Quality Strategy.

A5.5 The Community Plan

The Hounslow Community Plan although not a Council plan reflects the concerns of residents, businesses and strategic partners and sets targets to deliver the services aiming to build a borough meeting the needs of the whole community.

To achieve "A Greener Community" the Plan includes the following relevant targets:

- "working with other boroughs on an action plan to improve air quality"
- "investigating the introduction of a low emission zone and congestion charging around Heathrow Airport to improve air quality and seeking a reduction in noise levels"

The development of the action plan will meet the first target and actions within the plan will achieve progress with the second.

Therefore Hounslow believes that the action plan strongly contributes to the aspirations of the Community Plan.

A5.6 Environmental Performance of the Council

Hounslow recognises that the Council should provide leadership in the implementation of the action plan and that this should include improvements in its environmental performance particularly with regard to pollutant emissions.

In the past Hounslow has conducted significant work that advances this aim:

- Local Agenda 21: Development and Review of the Environmental Action Plan 1996-2000.

- An internal study and report on a Green Travel Plan for council employees.

The action plan aims to build on this work and introduces measures focussed on continuing improvement in the council's environmental performance (e.g. management of fleet emissions and waste reduction) and specifically in travel choices of council employees.

A5.7 Unitary Development Plan

This plan is Hounslow's long-term strategic plan for land and building use, new developments and conservation. Clearly, this plan provides opportunities to manage air quality.

The plan includes the following policies that address air pollution specifically:

- Policy Env-P.1.6 AIR POLLUTION: "The council will give detailed consideration to air pollution matters when considering development proposals, will continue to monitor air quality and will seek reductions in the levels of specific airborne pollutants, particularly pollution caused by road and air transport where possible, in line with EC guidelines, directives and the air quality standards and objectives stated in the most current air quality regulations and the council's air quality review & assessment and air quality action plan."
- "All developments, which are potentially polluting will require a detailed air quality assessment….where the introduction of a new development, or change of use, will cause the air quality objective to be approached or exceeded, the council will consider the effect on air quality and, if significant, will seek mitigation measures to reduce the potential impact on air quality. The council will also consider the contents of any (associated) air quality area action plan. In the event that such measures will not result in a satisfactory level of air quality, planning permission will not normally be granted."
- Policy T.5.1 AIR QUALITY IMPLICATIONS OF TRAFFIC: "In determining a planning application, the local authority will consider the effect on air quality arising from the traffic generated by it. Where the impact is likely to be significant, an air quality assessment, together with any necessary mitigation measures should be submitted as part of the application for consideration."

These policies were drafted to integrate air quality management into the development planning structure.

The planning framework for the country and for London is currently undergoing reformation and an updated plan will emerge from this that is in conformation with the national guidance and the London Plan in particular. The action plan includes measures to further integrate air quality management into the planning framework and to promote further the need to mitigate the air quality impacts of new developments and to plan with the aim of achieving the air quality standards.

A5.8 The Local Transport Plan

Like all UK local authorities Hounslow is preparing to submit a Local Transport Plan (LTP) that is in conformation with national guidance on the preparation of such plans. In recognition of the air pollution issues faced by many UK Authorities the guidance for the first time puts the improvement of air quality as a key objective of an LTP.

LTPs must indicate how far they will contribute to air quality improvements and must monitor progress towards this aim. The action plan indicates the extent to which road transport is a key source of pollution in the borough and sets out the measures that will be implemented with the aim of reducing this impact. Hounslow will give full consideration into the integration of these measures into the LTP.

A5.9 West London Economic Development Strategy

The strategy and the vision for the sub-region contained in it has been produced to ensure that sustainable and inclusive development is achieved for all those that work and live in West London. To deliver the vision a strategy is set out for six main issues including - Environment and the Quality of Life.

In this context, the strategy recognises that there are several unsustainable trends within West London that need to be addressed. They include worsening traffic congestion and unacceptable levels of pollution.

To help remedy this situation the objectives of the strategy include:

- Investment in sustainable business communities and encourage businesses to play a greater role in the management, maintenance and improvement of their business neighbourhoods.
- Support businesses and other employers to improve their environmental management systems … and to encourage the adoption of corporate social responsibility policies by businesses.

Hounslow recognises that West London businesses are key stakeholders in managing air quality and the action plan includes measures aimed at improving the environmental performance of the council and other employers that are in conformity with these objectives.

Appendix 6: Evaluation of Air Quality Impacts of Abatement Measures

A6.1 Estimating Impacts of Measures on Emissions

Table A6.1 provides a breakdown of emission sources in Hounslow by sector. Values in the table are derived from source apportionment work reported in the main text and the latest version of the London Atmospheric Emissions Inventory. Note that although Heathrow airport is not within the Borough boundary its emissions have a very significant effect within the Borough and so these emissions have been included in this analysis.

Table A6.1. Sector breakdown of annual NOx emissions in 2005 within the London Borough of Hounslow and at Heathrow Airport

Sector	Sub-sector	Emission (tonnes/year)	Percentage of total emissions (%)
Stationary combustion sources	Part A processes	17	<1%
	Part B processes	24	<1%
	Boilers	3	<1%
	Industrial and commercial gas use	254	5%
	Domestic gas use	302	6%
	Agriculture	9	<1%
	Sub-total	***609***	***12%***
Road transport	Motorcycles	4	<1%
	Taxis	30	<1%
	Cars	495	10%
	Buses & Coaches	139	3%
	LGV	128	3%
	Rigid HGVs	271	5%
	Articulated HGVs	126	2%
	Sub-total	***1193***	***23%***
Other transport emissions	Rail	3	<1%
	Road transport cold start emissions	17	<1%
	Sub-total	***20***	***1%***
Heathrow Airport	Airside fleet	546	11%
	Auxiliary power units	478	9%
	Heating	219	4%
	Aircraft on ground	1543	30%
	Aircraft between 0-20m	374	7%
	Road transport (idling)	8	<1%
	Road transport (travelling)	150	3%
	Sub total	**3319**	**64%**
All	**Grand total**	**5140**	**100%**

For each abatement measure, the percentage share of the relevant sector from the data in Table A6.1 was identified. For example, a shift to zero-emission cars would change the estimated 495 tonnes/year emissions from cars, approximately 10% of the total NOx emission. This puts a ceiling on the total benefit attributable to any measure.

The impact of each measure in terms of change in emission was estimated. This value is necessarily subjective since data on the real impact at a representative geographical location is not available in many cases. However, based on expert judgement and the limited data in the literature it is possible to derive a rough estimate of the potential impact of a measure were it to be fully implemented. The reduction attributable to any measure is clearly a function of the degree to which it is implemented, which can be extremely variable. For the example given above, a 10% shift towards zero emission cars would be significant and would represent an overall emission reduction of 1%. A 1% shift to zero emission cars would obviously have a proportionally smaller impact.

A6.2 Converting Reductions in Emissions to Air Quality Improvements

Depending on source characteristics, location of receptors and meteorology, different emission sources contribute to ambient NOx concentrations to a varying extent. To illustrate this, Table A6.2 presents the contribution of different sources to predicted ambient NOx concentrations at two relevant locations, one close to Heathrow airport and one at the western boundary of the AQMA close to major roads.

Table A6.2. Sector breakdown of annual mean NOx concentration in 2005 at two illustrative receptor locations within LB Hounslow.

Location	Cranford School- Close to Heathrow boundary ($\mu g.m^{-3}$)	Glenhurst Road – Close to major road ($\mu g.m^{-3}$)
Background	20.9	12.4
Major roads	40.7	138.2
Industry	5.8	3.5
Airport	29.1	3.5
Other	19.8	17.7
Total	116	177

These values indicate that the airport emissions contribute significantly to predicted ambient NOx concentrations in the western part of the AQMA but much less so to the east. Emissions from traffic on major roads are significant at all locations close to this type of source. Contributions from background and 'other' (which includes traffic on minor roads) will also be significant though not dominant throughout the AQMA.

From the predicted ambient NOx concentrations listed in Table A6.2 it may be calculated that a reduction in road transport emissions of 10% (again taking the illustrative figures for zero emission vehicles discussed above) could achieve an ambient NOx reduction in the range 4-14 $\mu g.m^{-3}$ depending on location.

A6.3 Converting Reductions in NOx Improvements in NO_2

The relationship between NOx and NO_2 concentrations is complex, but one that has been simplified by approaches such as that developed by Derwent and Middleton who derived an equation describing the relationship by comparison of recorded hourly mean NOx and NO_2 concentrations at a given location. Such relationships are location specific but data from many UK sites representing a variety of situations (i.e. background, roadside, etc.) have been collated and a best-fit equation describing a generalised annual mean NOx:NO_2 relationship has been published (Defra 2003[2]). This relationship is appropriate for use in the context of evaluating the effects on NO_2 from NOx emissions reductions in the Hounslow AQMA.

To illustrate the consequence of the NOx/NO_2 relationship, in the example above where road source-derived NOx concentrations are reduced by between 4-14 $\mu g.m^{-3}$ and the overall NOx is between 116-177 $\mu g.m^{-3}$ then reductions of NO_2 in the range 0.6-2 $\mu g.m^{-3}$ could occur.

It is recognised that there is significant uncertainty in results obtained by this approach. The key uncertainty lies in placing a value on the effect on emissions of any given reduction option for which good data are elusive. However, overall the approach is one that derives, to a reasonable approximation, a range of NO_2 improvement due to an emissions reduction.

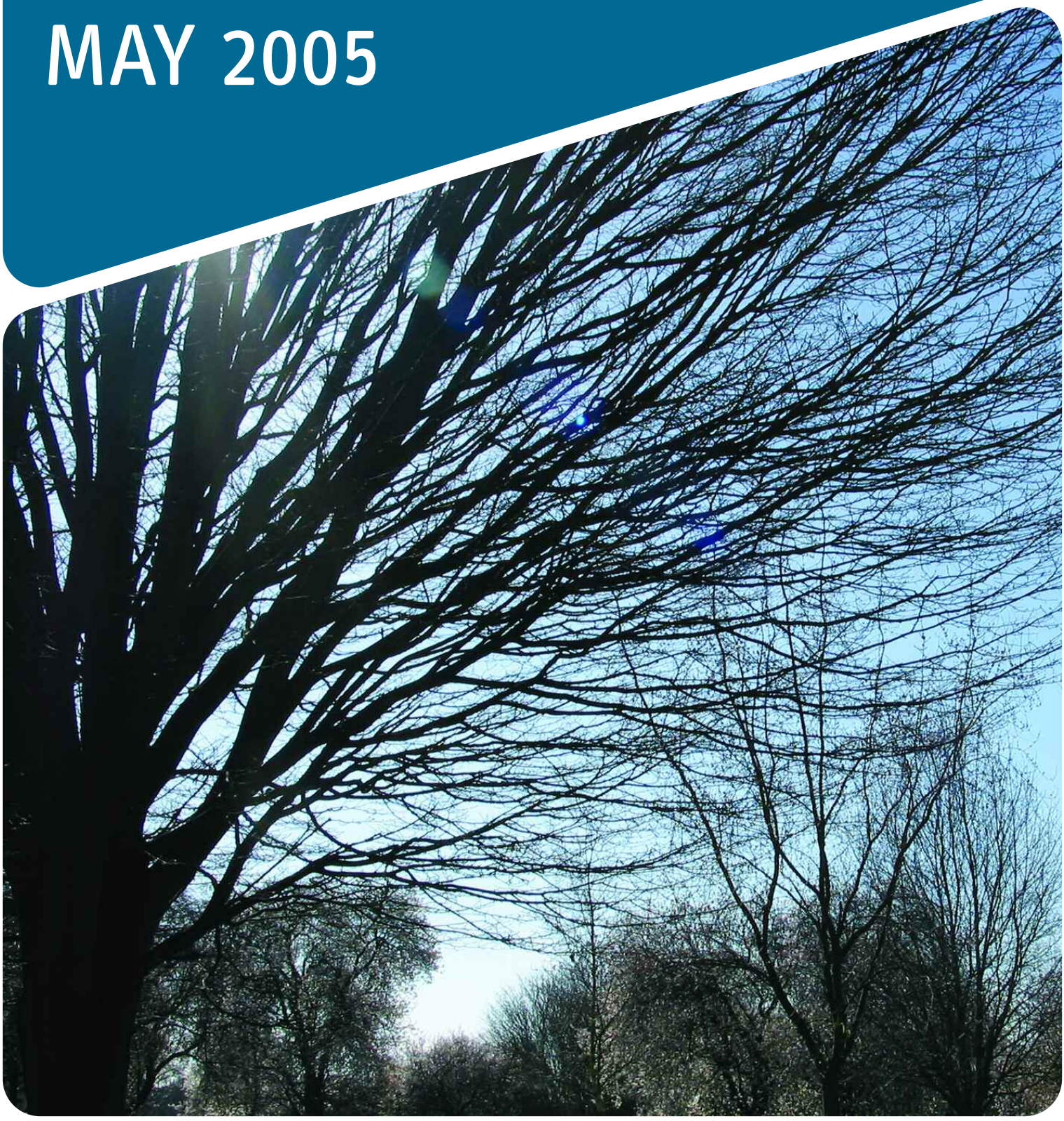
It is recognised that there is significant uncertainty in results obtained by this approach. A key uncertainty lies in placing a value on the effect on emissions of any given reduction option for which robust data are elusive. Furthermore, the method of converting NOx to NO_2 used here, although approved by Defra, is necessarily a generalised one for the UK at this time. Other methods would tend to produce different results for the estimated effectiveness of each option. London Borough of Hounslow will act on possible future revisions to the guidance on this method if appropriate. However, overall the approach is one that derives, to a reasonable approximation at this time, a range of NO_2 improvement due to an emissions reduction.

[2] Defra, LAQM.TG(03) Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, February 2003

Hounslow

THE LONDON BOROUGH OF HOUNSLOW

AIR QUALITY ACTION PLAN DATA ON MEASURES MAY 2005



Local Authority Information

Local Authority	The London Borough of Hounslow
Service Manager	Mr Rob Gibson
Officer to contact	Mr Anderson Ramdeen Environmental Policy and Projects Officer
Contact address	Environmental Strategy Civic Centre Lampton Road Hounslow Middlesex TW3 4DN
Contact phone number	020 8583 5206
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Council website	http://www.hounslow.gov.uk
Air quality website	http://www.hounslow.gov.uk/home/a-z_services/a/airpollution.htm

Notes on the data presented in this report

Data presented

This part of Hounslow's Air Quality Action Plan provides the following information for each measure:

- Package
- Option
- Local Authority role
- Estimated effect on total NOx emissions within the Borough
- Effect on NO_2 concentrations in the Borough
- Capital costs (as a range)
- Operating and maintenance costs (as a range)
- An indicative estimate of cost-effectiveness on a high/medium/low scale as defined in the action plan.
- Sources that could be targeted by the measure
- An indicative completion date for the measure
- Other impacts (scale of -3 to +3)
    - Attractiveness of public transport
    - Congestion
    - Economic vitality
    - Noise
    - Other (non-NOx) air pollutants
    - Social inclusion

The scale used for the 'Other impact' category is as follows:

-3	Probable significant negative impact
-2	Possible significant negative impact
-1	Negative impact, but not likely to be important
0	No likely effect
+1	Positive impact, but not likely to be important
+2	Possible significant positive impact
+3	Probable significant positive impact

The data presented here have been extracted from the Action Plan Tracker developed by EMRC for Hounslow. The full database will, in time, contain additional information on implementation of measures (responsible parties, deadlines, specific actions) and stakeholder views. It also permits searches and extraction of data according to the users' needs, and by doing so allows generation of progress reports.

The numbering of options corresponds to that used in the main text of the plan.

Quality of data

The attitude taken in derivation of the data presented here has been that it is better to provide some quantitative guidance on costs and effects than none. This provides a rationale for expressing preference for various options, and for

working out where the resources available for plan implementation are best spent. This enables stakeholders to better understand how priorities are developed, and, if they believe data are not correct, to put together a case for a revision of priorities.

The information presented here should thus be regarded as indicative rather than precise. Costs, for example, are presented as a range, reflecting the fact that there may be considerable leeway in the extent to which any given measure might be implemented and how it might be implemented. In some cases it would be necessary to carry out full feasibility studies prior to undertaking an action – these should clearly provide much better information on costs and effects. Similarly, effects on air quality are approximate, not least because the extent to which each measure would be applied has yet to be determined. For example, the effectiveness of Measure 3.09 (low emission buses for schools) is dependent on funding received and the number of buses affected.

It should be noted that data on effects of measures on air quality are not additive, but show the potential for each measure in isolation of others.

Missing data

There are several reasons for gaps in the data presented here. The first is that in many cases the measure, whilst necessary for the plan, has no direct effect on (e.g.) air quality. Take for example:

> **1.13 Investigate potential for more night buses** (a follow-up measure to introduce night buses if appropriate would have an effect on air quality, costs, etc., but this essential first step would not).

Another reason is uncertainty as to whether a measure contained in the plan would save money or incur additional cost. Note that this does not include measures where costs are potentially most significant, but typically covers options where the plan *may* be able to improve efficiency of local or regional decision making.

Note that zeroes in the dataset either represent zero or costs and effects that are very small, for example, that would have less than 0.00% effect on NO_2 concentrations. They are not simply ‘missing data’.

Option Finder

In the electronic version of this report, (Control and Click) on options in this list to move to them in the text.

Package 1. Switching to Cleaner Transport Modes

Measure 1.01. Establish a Green Travel Plan for Hounslow.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 30.00
- Indicative effect of measure on sectoral emissions (%) : 5.00
- Estimated reduction in total NOx emission (%) : 1.50

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 0.50

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Rail
Motorcycles
Bicycles
Pedestrians

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	3
Economic Vitality	2
Noise	0
Other Air Pollutants	2
Social Inclusion	1

Measure 1.02. Improve access to, and quality of, public transport travel information.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	High	Completion Date :	2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 19.00
- Indicative effect of measure on sectoral emissions (%) : 1.00
- Estimated reduction in total NOx emission (%) : 0.19

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.50
- Max NO2 concentration (µg/m³) : 1.00

Target Sources

Buses
Coaches
Rail

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	1
Economic Vitality	1
Noise	1
Other Air Pollutants	2
Social Inclusion	3

Measure 1.03. Develop more dedicated cycle (priority) lanes and signalling.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Transport Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Low	Completion Date :	2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	19.00
Indicative effect of measure on sectoral emissions (%) :	0.10
Estimated reduction in total NOx emission (%) :	0.02

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Bicycles

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	100,000 - 999,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	1
Economic Vitality	1
Noise	1
Other Air Pollutants	1
Social Inclusion	3

Measure 1.04. Extend provision of more parking for motorcycles, mopeds and bicycles at public sites and new developments.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Transport Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low

Air Quality Standards and Other Impacts : Low

Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 19.00

Indicative effect of measure on sectoral emissions (%) : 0.10

Estimated reduction in total NOx emission (%) : 0.02

Target Sources

Motorcycles

Bicycles

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 100,000 - 999,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	1
Economic Vitality	1
Noise	0
Other Air Pollutants	1
Social Inclusion	3

Measure 1.05. Improve provision for pedestrians.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Transport Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low

Cost Effectiveness : Low

Air Quality Standards and Other Impacts : Low

Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 19.00

Indicative effect of measure on sectoral emissions (%) : 0.10

Estimated reduction in total NOx emission (%) : 0.02

Target Sources

Pedestrians

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	2
Congestion	1
Economic Vitality	1
Noise	1
Other Air Pollutants	1
Social Inclusion	3

Measure 1.06. Introduce more Safe Routes to School throughout the Borough with special regard to the schools within the highest exceedance areas.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	Low	Completion Date :	2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	18.00
Indicative effect of measure on sectoral emissions (%) :	1.00
Estimated reduction in total NOx emission (%) :	0.18

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Private cars
Taxis
Buses
Coaches
Bicycles
Pedestrians

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	2
Congestion	2
Economic Vitality	0
Noise	0
Other Air Pollutants	1
Social Inclusion	3

Measure :1.07. Require Green Travel Plans for all new businesses within the Borough employing more than a specified number of people. (See also 1.08. and 1.14.)

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :		Cost Effectiveness :	
Air Quality Standards and Other Impacts :		Completion Date :	2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	0.00
Indicative effect of measure on sectoral emissions (%) :	0.00
Estimated reduction in total NOx emission (%) :	0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	0.50

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Rail
Motorcycles
Bicycles
Pedestrians

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 1.08. Require Green Travel Plans for all existing businesses within the Borough employing more than a specified number of people. (See also 1.07. and 1.14.)

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Cost Effectiveness :
Air Quality Standards and Other Impacts : Completion Date : 2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 0.00

Indicative effect of measure on sectoral emissions (%) : 0.00

Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 0.50

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Rail
Motorcycles
Bicycles
Pedestrians

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 1.09. Improve access to, and quality of, public transport travel information on a regional basis.

Description :
Local Authority Role : Partnership
Responsibility-Lead :
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium Cost Effectiveness : Medium
Air Quality Standards and Other Impacts : High Completion Date : 2015

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 19.00

Indicative effect of measure on sectoral emissions (%) : 1.00

Estimated reduction in total NOx emission (%) : 0.19

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 1.00

Target Sources

Buses
Coaches
Rail

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	1
Economic Vitality	1
Noise	1
Other Air Pollutants	2
Social Inclusion	3

Measure 1.10. Improve overall public transport service (facilities, cleanliness, safety, frequency, reliability) across the Borough and West London, and particularly in declared AQMAs.

Description :

Local Authority Role : Partnership

Responsibility-Lead : Transport Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium

Air Quality Standards and Other Impacts : High

Cost Effectiveness : Low

Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 19.00

Indicative effect of measure on sectoral emissions (%) : 3.00

Estimated reduction in total NOx emission (%) : 0.57

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 1.00

Target Sources

Buses
Coaches
Rail

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	3
Economic Vitality	2
Noise	1
Other Air Pollutants	2
Social Inclusion	3

Measure 1.11. Support multi modal travel by further development of public transport interchanges for rail/cycle/bus/walking both within Hounslow and the West London area.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	High	Completion Date :	TBD

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	19.00
Indicative effect of measure on sectoral emissions (%) :	1.00
Estimated reduction in total NOx emission (%) :	0.19

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Buses
Coaches
Rail
Bicycles
Pedestrians

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	0
Economic Vitality	2
Noise	0
Other Air Pollutants	1
Social Inclusion	2

Measure 1.12. Develop efficient and high quality bus corridors.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	High	Completion Date :	TBD

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	19.00
Indicative effect of measure on sectoral emissions (%) :	2.00
Estimated reduction in total NOx emission (%) :	0.38

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Buses
Coaches

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	0
Economic Vitality	2
Noise	1
Other Air Pollutants	1
Social Inclusion	3

Measure 1.13. Investigate potential for more night buses.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority
Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2010

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 0.00
Indicative effect of measure on sectoral emissions (%) : 0.00
Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 0.50

Target Sources
Buses
Coaches

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 100,000 - 999,999

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 1.14. Monitor progress with Green Travel Plans. (See also 1.07. and 1.08.)

Description :
Local Authority Role : Partnership
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority
Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 0.50

Target Sources
Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Rail
Motorcycles
Bicycles
Pedestrians

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 1.15. Reassess car parking provision for new developments.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Cost Effectiveness :
Air Quality Standards and Other Impacts : Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Target Sources

Private cars
Taxis
LGVs

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 0.50

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 1.16. Subsidise bus, train and underground fares in order to achieve significant modal shift.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium Cost Effectiveness : Medium
Air Quality Standards and Other Impacts : Medium Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 19.00
Indicative effect of measure on sectoral emissions (%) : 10.00
Estimated reduction in total NOx emission (%) : 1.90

Target Sources

Buses
Coaches
Rail

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	3
Economic Vitality	0
Noise	1
Other Air Pollutants	3
Social Inclusion	3

Measure 1.17. Research into novel mechanisms for reducing emissions, e.g. creation of markets for car parking spaces, emission trading systems.

Description :

Local Authority Role : Lobbying

Responsibility-Lead : Transport Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :

Air Quality Standards and Other Impacts :

Cost Effectiveness :

Completion Date : TBD

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :

Indicative effect of measure on sectoral emissions (%) :

Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :

Max NO2 concentration (µg/m³) :

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Rail
Motorcycles
Bicycles
Pedestrians

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Package 2. Tackling Through Traffic

Measure 2.01. Introduce Home Zones/20 mph in residential areas subject to significant amounts of through traffic that should use alternative routes.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	High	Completion Date :	2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	19.00
Indicative effect of measure on sectoral emissions (%) :	0.50
Estimated reduction in total NOx emission (%) :	0.09

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	100,000 - 999,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	-2
Economic Vitality	0
Noise	3
Other Air Pollutants	2
Social Inclusion	3

Measure 2.02. Support the West London Transit Scheme project if appropriate.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Low	Completion Date :	2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	30.00
Indicative effect of measure on sectoral emissions (%) :	1.00
Estimated reduction in total NOx emission (%) :	0.30

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Rail

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	1
Noise	0
Other Air Pollutants	1
Social Inclusion	0

Measure 2.03. Ensure the provision of sufficient signage and details of spaces for public car parks.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead :

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	30.00
Indicative effect of measure on sectoral emissions (%) :	0.50
Estimated reduction in total NOx emission (%) :	0.15

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.02
Max NO2 concentration (µg/m³) :	0.03

Target Sources

Private cars

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	2
Economic Vitality	2
Noise	1
Other Air Pollutants	2
Social Inclusion	0

Measure 2.04. Creation of Clear Zones.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Transport Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Medium	Completion Date :	TBD

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	30.00

Target Sources

Private cars
Taxis
LGVs

Indicative effect of measure on sectoral emissions (%) : 0.20

Estimated reduction in total NOx emission (%) : 0.06

HGVs

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 100,000 - 999,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	2
Economic Vitality	0
Noise	1
Other Air Pollutants	1
Social Inclusion	0

Measure 2.05. Develop best practice advice to ensure air quality assessments are made for proposals for new transport infrastructure and changes to traffic management.

Description :

Local Authority Role : Partnership

Responsibility-Lead : Development Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium

Air Quality Standards and Other Impacts : High

Cost Effectiveness : Medium

Completion Date : 2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 30.00

Indicative effect of measure on sectoral emissions (%) : 2.00

Estimated reduction in total NOx emission (%) : 0.60

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 0.50

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Measure 2.06. Implement schemes along the high exceedance corridors designed to smooth traffic flows.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	Medium	Completion Date :	TBD

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 30.00
- Indicative effect of measure on sectoral emissions (%) : 0.50
- Estimated reduction in total NOx emission (%) : 0.15

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 100,000 - 999,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	2
Congestion	3
Economic Vitality	1
Noise	2
Other Air Pollutants	2
Social Inclusion	0

Measure 2.07. Improve coordination of road works and provide more effective signing around them.

Description :
Local Authority Role : Partnership
Responsibility-Lead :
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 30.00
- Indicative effect of measure on sectoral emissions (%) : 0.50
- Estimated reduction in total NOx emission (%) : 0.15

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.50
- Max NO2 concentration (µg/m³) : 0.50

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles
Bicycles
Pedestrians

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	2
Congestion	3
Economic Vitality	1
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Measure 2.08. Implement high occupancy vehicle lanes and freight priority schemes along the major exceedance corridors such as the M4 and A4.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low
Air Quality Standards and Other Impacts : Low
Cost Effectiveness : Low
Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 19.00
Indicative effect of measure on sectoral emissions (%) : 1.00
Estimated reduction in total NOx emission (%) : 0.19

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	1
Social Inclusion	1

Measure 2.09. Implement tram system along the A4 in line with Council Policy.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low
Air Quality Standards and Other Impacts : Medium
Cost Effectiveness : Low
Completion Date : 2010

Effect on Air Quality

NOx Emissions

Target Sources

Rail

Sectoral share of total 2005 NOx emission (%) : 19.00
Indicative effect of measure on sectoral emissions (%) : 1.00
Estimated reduction in total NOx emission (%) : 0.19

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	0
Economic Vitality	1
Noise	0
Other Air Pollutants	1
Social Inclusion	2

Measure 2.10. Implement measures such as variable message signing and other measures to smooth traffic flows on the HA/TfL routes M4 and surrounding link roads.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : High
Air Quality Standards and Other Impacts : High
Cost Effectiveness : Low
Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 30.00
Indicative effect of measure on sectoral emissions (%) : 1.00
Estimated reduction in total NOx emission (%) : 0.30

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 100,000 - 999,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	1
Economic Vitality	1
Noise	1
Other Air Pollutants	2
Social Inclusion	0

Measure 2.11. Influence Route Management Strategy to take account of air quality.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :

Cost Effectiveness :
Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :
Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.00
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :
Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 2.12. Use of speed limits on major roads at the optimal level for NOx and PM10 emissions for the current traffic profile.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium
Air Quality Standards and Other Impacts : High

Cost Effectiveness : Medium
Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 30.00
Indicative effect of measure on sectoral emissions (%) : 1.00
Estimated reduction in total NOx emission (%) : 0.30
Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 100,000 - 999,999
Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0

Noise	2
Other Air Pollutants	2
Social Inclusion	0

Measure 2.13. Identify air quality congestion-related hotspots throughout West London and the appropriate measures for delivering improvement in both congestion and air quality.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 0.00
- Indicative effect of measure on sectoral emissions (%) : 0.00
- Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 2.14. Support rail projects that have the potential effect to cut through traffic e.g. Crossrail, implementation of stopping service on Piccadilly line at Turnham Green.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : TBD

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 0.00
- Indicative effect of measure on sectoral emissions (%) : 0.00
- Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.50
- Max NO2 concentration (µg/m³) : 1.00

Target Sources

Rail

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 2.15. Use of fiscal measures, such as road pricing, for reducing traffic on major road networks.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 0.00
Indicative effect of measure on sectoral emissions (%) : 0.00
Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 2.16. Establishment of cross-agency regional group to address air quality issues with regards to roads.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2007

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 0.00
Indicative effect of measure on sectoral emissions (%) : 0.00
Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 2.17. Build over the arterial routes and scrub tunnel emissions.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :
Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.00
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Rail
Motorcycles

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million
Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 2.18. Lobby for Air Track link to Staines and the West.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : TBD

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :
Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 1.00
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Rail

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million
Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Package 3. Promotion of Cleaner Vehicle Technology

Measure 3.01. Implement an Action Plan via the BAA Heathrow Clean Vehicle Programme to make improvements in the Council vehicle fleet with regard to reducing emissions.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	High	Completion Date :	2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	0.50
Indicative effect of measure on sectoral emissions (%) :	20.00
Estimated reduction in total NOx emission (%) :	0.10

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	0.50

Target Sources

Public sector; local authority

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	0

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	0

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	1
Social Inclusion	0

Measure 3.02. Get local businesses and freight operators in Hounslow to sign up to the Clean Vehicle Programme and develop and implement action plans for reducing emissions.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	30.00
Indicative effect of measure on sectoral emissions (%) :	2.00
Estimated reduction in total NOx emission (%) :	0.60

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Commercial, finance, etc.

Costs

Capital Costs

Unit Cost (£) :	Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	2
Noise	0
Other Air Pollutants	3
Social Inclusion	0

Measure 3.03. Train local authority drivers to minimise emissions, and consider opening training opportunities to other drivers working for businesses in Hounslow.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low

Air Quality Standards and Other Impacts : High

Cost Effectiveness : Low

Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 0.50

Indicative effect of measure on sectoral emissions (%) : 5.00

Estimated reduction in total NOx emission (%) : 0.03

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 1.00

Target Sources

Public sector; local authority

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : < 0

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : < 0

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	1
Economic Vitality	0
Noise	1
Other Air Pollutants	1
Social Inclusion	0

Measure 3.04. Implement the Idling Vehicles Regulations and actively promote the use of the Dirty Diesel Hotline for reporting smoky vehicles spotted in Hounslow.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low
Air Quality Standards and Other Impacts : Medium
Cost Effectiveness : Low
Completion Date : 2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 30.00

Indicative effect of measure on sectoral emissions (%) : 0.10

Estimated reduction in total NOx emission (%) : 0.03

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 0.50

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	1
Other Air Pollutants	1
Social Inclusion	0

Measure 3.05. Implement the recommendations of the London Low Emission Zone Feasibility Study jointly with the GLA, ALG and TfL.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium
Air Quality Standards and Other Impacts : High
Cost Effectiveness : Medium
Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 30.00

Indicative effect of measure on sectoral emissions (%) : 3.00

Estimated reduction in total NOx emission (%) : 0.90

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	2
Economic Vitality	0

Noise	2
Other Air Pollutants	3
Social Inclusion	0

Measure 3.06. Install signs in waiting areas of Council premises, bus garages, coach stations, railway crossings (with timings) and major leisure venues, etc. advising drivers to switch off engines when stationary.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 30.00
- Indicative effect of measure on sectoral emissions (%) : 0.10
- Estimated reduction in total NOx emission (%) : 0.03

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 0.50

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	0
Economic Vitality	0
Noise	1
Other Air Pollutants	1
Social Inclusion	0

Measure 3.07. Trial new technology, where appropriate, and act as a point of information for businesses, major fleet operators and other stakeholders in Hounslow for cleaner vehicle technologies, national schemes and grant systems for the use of alternative fuels.

Description : For example, greater use of electric vehicles in Council fleet.
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	Low	Completion Date :	2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 30.00
- Indicative effect of measure on sectoral emissions (%) : 3.00

Target Sources

Private cars
Taxis
LGVs
HGVs

Estimated reduction in total NOx emission (%) : 0.90 Buses
Change in NO2 Concentrations Coaches
Min NO2 concentration (µg/m³) : 0.10 Motorcycles

Max NO2 concentration (µg/m³) : 0.50

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	2
Noise	0
Other Air Pollutants	1
Social Inclusion	0

Measure 3.08. Participate in joint Vehicle Emissions Testing programme with other organisations.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low
Air Quality Standards and Other Impacts : Low
Cost Effectiveness : Low
Completion Date : 2005

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 30.00
Indicative effect of measure on sectoral emissions (%) : 3.00
Estimated reduction in total NOx emission (%) : 0.90
Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	1
Social Inclusion	0

Measure 3.09. Provision of low or zero emission buses for schools within the high exceedance areas.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	Low	Completion Date :	2010

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 8.00
- Indicative effect of measure on sectoral emissions (%) : 5.00
- Estimated reduction in total NOx emission (%) : 0.40

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 0.10

Target Sources

Buses
Coaches

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	0
Economic Vitality	1
Noise	2
Other Air Pollutants	2
Social Inclusion	0

Measure 3.10. Focusing on areas and corridors of high exceedance within residential areas, banning or restricting of traffic, or particular types of traffic, from identified roads.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	TBD

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 30.00
- Indicative effect of measure on sectoral emissions (%) : 1.00
- Estimated reduction in total NOx emission (%) : 0.30

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	-2
Economic Vitality	-2
Noise	3
Other Air Pollutants	2
Social Inclusion	2

Measure 3.11. Discounts for residents with low emission vehicles in Parking Management Areas.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority
Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2010

Effect on Air Quality
NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 0.00
Indicative effect of measure on sectoral emissions (%) : 0.00
Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 1.00

Target Sources
Domestic; owner occupied
Domestic; rented

Costs
Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :
Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 3.12. Develop sub-regional Bus Quality Partnerships focussed on addressing the contribution of buses and coaches to emissions.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Transport Planning
Is Measure approved for Action Plan ?

Priority
Air Quality Standards Only : Medium
Air Quality Standards and Other Impacts : Medium
Cost Effectiveness : Medium
Completion Date : 2010

Effect on Air Quality
NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 8.00
Indicative effect of measure on sectoral emissions (%) : 5.00
Estimated reduction in total NOx emission (%) : 0.40

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 0.50

Target Sources
Buses
Coaches

Costs
Capital Costs
Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	0
Economic Vitality	0
Noise	1
Other Air Pollutants	3
Social Inclusion	0

Measure 3.13. Provision of low emission buses in the West London/Heathrow region.

Description :

Local Authority Role : Partnership

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium

Air Quality Standards and Other Impacts : Medium

Cost Effectiveness : Medium

Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 8.00

Indicative effect of measure on sectoral emissions (%) : 25.00

Estimated reduction in total NOx emission (%) : 2.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 0.50

Target Sources

Buses

Coaches

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	2
Congestion	0
Economic Vitality	1
Noise	2
Other Air Pollutants	3
Social Inclusion	0

Measure 3.14. Ensure freight developments in the West London area are subjected to an air quality assessment before implementation.

Description :

Local Authority Role : Partnership

Responsibility-Lead : Development Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :

Air Quality Standards and Other Impacts :

Cost Effectiveness :

Completion Date : 2007

Effect on Air Quality **Target Sources**

NOx Emissions — LGVs

Sectoral share of total 2005 NOx emission (%) : 0.00 — HGVs

Indicative effect of measure on sectoral emissions (%) : 0.00

Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.00

Max NO2 concentration (µg/m³) : 0.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 3.15. Develop a Freight Strategy to include reducing the air quality impact of freight maximising opportunities to move freight from road to other modes e.g. canals.

Description :

Local Authority Role : Partnership

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low — Cost Effectiveness : Low

Air Quality Standards and Other Impacts : Low — Completion Date : 2010

Effect on Air Quality **Target Sources**

NOx Emissions — LGVs

Sectoral share of total 2005 NOx emission (%) : 12.00 — HGVs

Indicative effect of measure on sectoral emissions (%) : 2.00

Estimated reduction in total NOx emission (%) : 0.24

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	2
Economic Vitality	0
Noise	1
Other Air Pollutants	1
Social Inclusion	0

Measure 3.16. Facilitate the uptake and use of alternative fuels, including water-diesel emulsion. This should include development of appropriate alternative refuelling infrastructure where necessary e.g. charging points for electric vehicles.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	30.00
Indicative effect of measure on sectoral emissions (%) :	2.00
Estimated reduction in total NOx emission (%) :	0.60

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Private cars
Taxis
LGVs
HGVs
Buses
Coaches
Motorcycles

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	100,000 - 999,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	100,000 - 999,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Measure 3.17. Lobby national government to introduce policies to accelerate the uptake of cleaner fuels in the current and future fleet.

Description : Lobby national government to:
a) introduce policies with the aim of accelerating the uptake of existing cleaner vehicles and fuels and
b) introduce even cleaner vehicles and fuels into the future fleet.
Relevant measures may include:

- Provide incentives through the fuel duty system for water-diesel emulsion and other such fuels;
- Make vehicle excise duty reductions for retrofitting for smaller vehicles more significant;
- Extend the fuel duty differential guarantee;
- Increase and extend PowerShift and CleanUp retrofitting grants;
- Operate a national incentive-based vehicle scrappage scheme for older vehicles;
- Pressure to introduce Low Emissions Zones into all large urban areas.

Local Authority Role : Lobbying
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	2005

Effect on Air Quality

NOx Emissions

Target Sources

Private cars

Sectoral share of total 2005 NOx emission (%) : 30.00
Indicative effect of measure on sectoral emissions (%) : 2.00
Estimated reduction in total NOx emission (%) : 0.60

Target Sources: Taxis, LGVs, HGVs, Buses, Coaches, Motorcycles

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	1
Other Air Pollutants	2
Social Inclusion	0

Measure 3.18. Ensure fiscal encouragement of the adoption of low and zero emissions vehicles through the provision of discounts when entering any proposed LEZ or Congestion charging zone.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low
Air Quality Standards and Other Impacts : High
Cost Effectiveness : Low
Completion Date : 2005

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 30.00
Indicative effect of measure on sectoral emissions (%) : 0.50
Estimated reduction in total NOx emission (%) : 0.15

Target Sources

Private cars, Taxis, LGVs, HGVs, Buses, Coaches, Motorcycles

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	-1
Economic Vitality	0
Noise	1
Other Air Pollutants	2

Measure 3.19. Promote best practice in terms of emissions management with the train operators, the Strategic Rail Authority and Network Rail.

Description :
Local Authority Role : Lobbying
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	2010

Effect on Air Quality

Target Sources

Rail

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	8.00
Indicative effect of measure on sectoral emissions (%) :	3.00
Estimated reduction in total NOx emission (%) :	0.24

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.00
Max NO2 concentration (µg/m³) :	0.00

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	< 0

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	< 0

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	1
Social Inclusion	0

Package 4. Measures Specific to Heathrow Airport

Measure 4.01. Continue to insist that existing problems are resolved and oppose any further expansion at Heathrow that leads to negative air quality impacts.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	2005

Effect on Air Quality **Target Sources**

NOx Emissions — Airport

Sectoral share of total 2005 NOx emission (%) :	58.00
Indicative effect of measure on sectoral emissions (%) :	0.00
Estimated reduction in total NOx emission (%) :	0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.00
Max NO2 concentration (µg/m³) :	1.00

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	0

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	0

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	0
Social Inclusion	0

Measure 4.02. Assess the health impact of Heathrow Airport and associated activities.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :		Cost Effectiveness :	
Air Quality Standards and Other Impacts :		Completion Date :	2007

Effect on Air Quality **Target Sources**

NOx Emissions — Airport

Sectoral share of total 2005 NOx emission (%) :	0.00
Indicative effect of measure on sectoral emissions (%) :	0.00
Estimated reduction in total NOx emission (%) :	0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	
Max NO2 concentration (µg/m³) :	

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 4.03. Provide feedback on Airport Masterplan. Ensure air quality considerations are properly considered in Heathrow Airport's Master Plan

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	High	Completion Date :	2005

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 58.00
Indicative effect of measure on sectoral emissions (%) : 0.00
Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Target Sources

Airport; aircraft
Airport; airside
Airport; groundside

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	0
Social Inclusion	0

Measure 4.04. Support London Borough of Hillingdon in monitoring the impacts of the airport, developing best practice guidelines and pursuing further emission reductions.

Description : Support London Borough of Hillingdon in various actions, e.g.:
- Auditing ATM limits and BAA Heathrow Air Quality Action Plan;
- Pursuing emission reductions on the airport;
- Quantifying impacts of the BAA Air Quality Strategy and Surface Access Strategy;
- Develop best practice guidelines to ensure air quality impact assessments are integral part of development proposals, and that appropriate mitigation is taken.

Local Authority Role : Partnership
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :		Cost Effectiveness :	
Air Quality Standards and Other Impacts :		Completion Date :	2005

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 0.00

Target Sources

Airport; aircraft
Airport; airside

Airport; groundside

Indicative effect of measure on sectoral emissions (%) : 0.00

Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.00

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 4.05. Work with other Boroughs to evaluate best practice from European and International airports with regard to the minimisation of air quality impacts and assess feasibility of application at Heathrow.

Description :

Local Authority Role : Partnership

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : High

Air Quality Standards and Other Impacts : High

Cost Effectiveness : High

Completion Date : 2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 58.00

Indicative effect of measure on sectoral emissions (%) : 1.00

Estimated reduction in total NOx emission (%) : 0.58

Target Sources

Airport; aircraft
Airport; airside
Airport; groundside

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Measure 4.06. Work with other Boroughs and BAA to review air quality monitoring, strengthen the existing 5 year action plan and establish airline best practice.

Description : Work with other Boroughs and BAA to:
- Review air quality monitoring regime at Heathrow and identify potential gaps;
- Strengthen the existing BAA 5 year action plan;
- Establishment of code of practice for airlines best operating practice to maximise reduction of emission.

Local Authority Role : Partnership

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : High

Air Quality Standards and Other Impacts : High

Cost Effectiveness : High

Completion Date : 2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 58.00

Indicative effect of measure on sectoral emissions (%) : 5.00

Estimated reduction in total NOx emission (%) : 2.90

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.00

Max NO2 concentration (µg/m³) : 1.00

Target Sources

Airport

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	2
Other Air Pollutants	3
Social Inclusion	0

Measure 4.07. Work with the Mayor to develop an effective transport strategy around the airport.

Description : Work with the Mayor to:
- Introduce a Heathrow specific LEZ to reduce emissions;
- Accelerate take up of cleaner vehicle technology;
- Set target for modal shift;
- Specify emissions criteria for vehicles routinely using the airport;
- Minimise the air quality impact of freight deliveries to and from Heathrow;
- Promote use of bus priority, guided buses and high occupancy vehicle lanes in the Heathrow area.

Local Authority Role : Partnership

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :

Air Quality Standards and Other Impacts :

Cost Effectiveness :

Completion Date : 2010

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 0.00

Indicative effect of measure on sectoral emissions (%) : 0.00

Estimated reduction in total NOx emission (%) : 0.00

Target Sources

Airport

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 4.08. Lobby Central Government to pursue more stringent emission standards for plant, aircraft and airside vehicles.

Description :

Local Authority Role : Lobbying

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : High

Air Quality Standards and Other Impacts : High

Cost Effectiveness : High

Completion Date : 2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 58.00

Indicative effect of measure on sectoral emissions (%) : 5.00

Estimated reduction in total NOx emission (%) : 2.90

Target Sources

Airport; aircraft
Airport; airside
Airport; groundside

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.00

Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	2
Other Air Pollutants	3
Social Inclusion	0

Measure 4.09. Explore feasibility of reducing fares on the Heathrow Express.

Description :

Local Authority Role : Lobbying

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low

Air Quality Standards and Other Impacts : Low

Cost Effectiveness : Low

Completion Date : 2007

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	30.00	Rail Airport
Indicative effect of measure on sectoral emissions (%) :	0.10	
Estimated reduction in total NOx emission (%) :	0.03	

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	3
Congestion	1
Economic Vitality	0
Noise	1
Other Air Pollutants	1
Social Inclusion	1

Measure 4.10. Review airport passenger duty (APD) with a view to public transport improvement.

Description :

Local Authority Role : Lobbying

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	2010

Effect on Air Quality

Target Sources

NOx Emissions — Airport

Sectoral share of total 2005 NOx emission (%) :	58.00
Indicative effect of measure on sectoral emissions (%) :	25.00
Estimated reduction in total NOx emission (%) :	14.50

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	1.00

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	2
Other Air Pollutants	3
Social Inclusion	0

Measure 4.11. Work with National Government to ensure the use of all relevant fiscal measures to reduce emissions from and around Heathrow in order to achieve the 2010 EU limit.

Description : Work with National Government to ensure the use of all relevant fiscal measures to reduce emissions from and around Heathrow in order to achieve the 2010 EU limit, this could include a surface access charge and/or a landing charges scheme differentiated by emission levels.

Local Authority Role : Lobbying

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :

Air Quality Standards and Other Impacts :

Cost Effectiveness :

Completion Date : 2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 0.00

Indicative effect of measure on sectoral emissions (%) : 0.00

Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.00

Max NO2 concentration (µg/m³) : 1.00

Target Sources

Airport

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Package 5. Measures Concerning Local Industries and Other Businesses

Measure 5.01. Install Combined Heat and Power where appropriate within the Borough.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	3.00
Indicative effect of measure on sectoral emissions (%) :	5.00
Estimated reduction in total NOx emission (%) :	0.15

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	0.50

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Public sector; local authority
Other public sector

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	3
Noise	0
Other Air Pollutants	1
Social Inclusion	1

Measure 5.02. Improve public dissemination of industrial pollutant emissions data and other relevant information, for example on performance against permit conditions.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	3.00
Indicative effect of measure on sectoral emissions (%) :	0.00
Estimated reduction in total NOx emission (%) :	0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.00
Max NO2 concentration (µg/m³) :	0.00

Target Sources

Part A industry
Part B industry
Other industry

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	0
Social Inclusion	0

Measure 5.03. Ban bonfires on all industrial sites.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Low	Completion Date :	2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	3.00
Indicative effect of measure on sectoral emissions (%) :	0.01
Estimated reduction in total NOx emission (%) :	0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	0.10

Target Sources

Part A industry
Part B industry
Other industry
Bonfires

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	-1
Noise	0
Other Air Pollutants	1
Social Inclusion	0

Measure 5.04. Adopt best practice strategy for all proposed demolition and development projects. This will include the use of low emission vehicles and equipment and the use of dust minimisation techniques.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Development Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low
Air Quality Standards and Other Impacts : Low
Cost Effectiveness : Low
Completion Date : 2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 3.00

Indicative effect of measure on sectoral emissions (%) : 1.00

Estimated reduction in total NOx emission (%) : 0.03

Target Sources

LGVs
HGVs
Other industry

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 0.10

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	2
Other Air Pollutants	1
Social Inclusion	0

Measure 5.05. Continued regulation of part B processes and maintenance of part B register. Ensure register is available on-line.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Environmental Group

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 0.00

Indicative effect of measure on sectoral emissions (%) : 0.00

Estimated reduction in total NOx emission (%) : 0.00

Target Sources

Part B industry

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.00

Max NO2 concentration (µg/m³) : 0.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 5.06. Introduction of Environmental Award system for local industries and businesses.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 0.00
- Indicative effect of measure on sectoral emissions (%) : 0.00
- Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 0.10

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 5.07. Encourage businesses to participate in environmental management schemes and to continue to improve environmental performance.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Low
Air Quality Standards and Other Impacts : Low
Cost Effectiveness : Low
Completion Date : 2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 6.00
- Indicative effect of measure on sectoral emissions (%) : 10.00
- Estimated reduction in total NOx emission (%) : 0.60

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.10
- Max NO2 concentration (µg/m³) : 0.10

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0

Congestion	0
Economic Vitality	3
Noise	1
Other Air Pollutants	1
Social Inclusion	0

Package 6. Improving Eco-efficiency of current and future developments, inc. Council properties

Measure 6.01. Provide a consolidated platform for advising businesses and the public of the risks of air pollution, ways of reducing pollution, and campaigns such as Bike to Work Week, combining information from various Council departments and other bodies.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	High	Completion Date :	2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	19.00
Indicative effect of measure on sectoral emissions (%) :	1.00
Estimated reduction in total NOx emission (%) :	0.19

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Domestic; owner occupied
Domestic; rented

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	0
Economic Vitality	2
Noise	1
Other Air Pollutants	0
Social Inclusion	2

Measure 6.02. Work with existing buildings and housing stock to secure improvements in emissions.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead :
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :		Cost Effectiveness :	
Air Quality Standards and Other Impacts :		Completion Date :	2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	0.00
Indicative effect of measure on sectoral emissions (%) :	0.00
Estimated reduction in total NOx emission (%) :	0.00

Change in NO2 Concentrations

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Public sector; local authority
Other public sector

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 0.50

Domestic; owner occupied
Domestic; rented

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 6.03. Expand use of existing mechanisms such as section 106 agreements for improvements in air quality. Ensure account is taken of location of developments with regards to exceedance areas, scale of developments and projected emissions.

Description :

Local Authority Role : Local Authority Led

Responsibility-Lead : Development Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : High

Air Quality Standards and Other Impacts : High

Cost Effectiveness : High

Completion Date : 2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 11.00

Indicative effect of measure on sectoral emissions (%) : 2.00

Estimated reduction in total NOx emission (%) : 0.22

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10

Max NO2 concentration (µg/m³) : 1.00

Target Sources

Part A industry
Part B industry
Other industry

Commercial, finance, etc.
Public sector; local authority
Other public sector
Domestic; owner occupied
Domestic; rented

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	2
Economic Vitality	-1
Noise	0
Other Air Pollutants	2
Social Inclusion	2

Measure 6.04. Introduce, review and update Air Quality Supplementary Guidance when appropriate.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : High
Air Quality Standards and Other Impacts : High
Cost Effectiveness : High
Completion Date : 2007

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 8.00
Indicative effect of measure on sectoral emissions (%) : 1.00
Estimated reduction in total NOx emission (%) : 0.08

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 0.50

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Public sector; local authority
Other public sector
Domestic; owner occupied
Domestic; rented

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Measure 6.05. Quantify cumulative effects of new developments within AQMA.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2007

Effect on Air Quality

NOx Emissions
Sectoral share of total 2005 NOx emission (%) : 0.00
Indicative effect of measure on sectoral emissions (%) : 0.00
Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations
Min NO2 concentration (µg/m³) : 0.00
Max NO2 concentration (µg/m³) : 0.00

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Public sector; local authority
Other public sector
Domestic; owner occupied
Domestic; rented

Costs

Capital Costs
Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 6.06. Develop supplementary planning guidance for sustainable design and construction, ideally using a London wide model.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	2007

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 8.00
- Indicative effect of measure on sectoral emissions (%) : 1.00
- Estimated reduction in total NOx emission (%) : 0.08

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.50
- Max NO2 concentration (µg/m³) : 0.50

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Public sector; local authority
Other public sector
Domestic; owner occupied
Domestic; rented

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	0
Economic Vitality	1
Noise	2
Other Air Pollutants	2
Social Inclusion	2

Measure 6.07. Raise awareness of sustainable waste management practices.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Low	Completion Date :	2005

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 1.00
- Indicative effect of measure on sectoral emissions (%) : 1.00
- Estimated reduction in total NOx emission (%) : 0.01

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.00

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Public sector; local authority
Other public sector
Domestic; owner occupied
Domestic; rented

Max NO2 concentration (µg/m³) : 0.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	2
Noise	0
Other Air Pollutants	1
Social Inclusion	1

Measure 6.08. Development of West London Air Quality SPG to ensure consistency across borough boundaries, explore opportunities for joint section 106 agreements.

Description :

Local Authority Role : Partnership

Responsibility-Lead : Development Planning

Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Medium

Air Quality Standards and Other Impacts : High

Cost Effectiveness : Medium

Completion Date : 2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 100.0

Indicative effect of measure on sectoral emissions (%) : 2.00

Estimated reduction in total NOx emission (%) : 2.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50

Max NO2 concentration (µg/m³) : 0.50

Target Sources

Part A industry
Part B industry
Other industry

Commercial, finance, etc.
Public sector; local authority
Other public sector
Domestic; owner occupied
Domestic; rented

Costs

Capital Costs

Unit Cost (£) : Range (£) :

Total Cost (£) : Range (£) : 1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	2
Congestion	1
Economic Vitality	1
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Package 7. Actions to be Taken Corporately, Regionally and in Liaison with the Mayor

Measure 7.01. Ensure that the London Development Framework, Local Implementation Plan (for transport), the Community Plan and future corporate strategies incorporate the borough air quality action plan and local air quality strategy measures where appropriate.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	High	Completion Date :	2010

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 100.0
- Indicative effect of measure on sectoral emissions (%) : 1.00
- Estimated reduction in total NOx emission (%) : 1.00

Change in NO2 Concentrations
- Min NO2 concentration (µg/m³) : 0.50
- Max NO2 concentration (µg/m³) : 1.00

Target Sources

Part A industry
Part B industry
Other industry
Commercial, finance, etc.
Public sector; local authority
Other public sector
Domestic; owner occupied
Domestic; rented

Costs

Capital Costs
- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs
- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	1
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Measure 7.02. Develop an environmental management system for LB Hounslow.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Medium	Cost Effectiveness :	Medium
Air Quality Standards and Other Impacts :	High	Completion Date :	2010

Effect on Air Quality

NOx Emissions
- Sectoral share of total 2005 NOx emission (%) : 1.00
- Indicative effect of measure on sectoral emissions (%) : 20.00
- Estimated reduction in total NOx emission (%) : 0.20

Change in NO2 Concentrations

Target Sources

Public sector; local authority

Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 0.50

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	1
Economic Vitality	0
Noise	2
Other Air Pollutants	2
Social Inclusion	0

Measure 7.03. Explore links with Access Hounslow for better coordination of environmental protection and action within Hounslow.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : High
Air Quality Standards and Other Impacts : Medium
Cost Effectiveness : High
Completion Date : 2007

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) : 100.0
Indicative effect of measure on sectoral emissions (%) : 2.00
Estimated reduction in total NOx emission (%) : 2.00

Target Sources

Public sector; local authority

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.50
Max NO2 concentration (µg/m³) : 0.50

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	3
Noise	0
Other Air Pollutants	0
Social Inclusion	0

Measure 7.04. Implement an integrated procurement strategy so that purchase of goods and services is evaluated against London sustainability targets. This to include support to environmental industries in London, where appropriate.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2010

Effect on Air Quality

Target Sources

NOx Emissions

Public sector; local authority

Sectoral share of total 2005 NOx emission (%) :	10.00
Indicative effect of measure on sectoral emissions (%) :	1.00
Estimated reduction in total NOx emission (%) :	0.10

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	1
Noise	0
Other Air Pollutants	1
Social Inclusion	0

Measure 7.05. Provide air quality information to interested parties and link with other health initiatives.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :		Cost Effectiveness :	
Air Quality Standards and Other Impacts :		Completion Date :	2007

Effect on Air Quality

Target Sources

NOx Emissions

Public sector; local authority

Sectoral share of total 2005 NOx emission (%) :	0.00
Indicative effect of measure on sectoral emissions (%) :	0.00
Estimated reduction in total NOx emission (%) :	0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.00
Max NO2 concentration (µg/m³) :	0.00

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1,000 - 9,999

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :

Total Cost (£/yr) : Range (£/yr) : 1,000 - 9,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 7.06. Implement infrastructure for effective and integrated distribution of goods in London.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Development Planning
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	Low	Cost Effectiveness :	Low
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	12.00
Indicative effect of measure on sectoral emissions (%) :	10.00
Estimated reduction in total NOx emission (%) :	1.20

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.50
Max NO2 concentration (µg/m³) :	1.00

Target Sources

LGVs
HGVs
Rail

Costs

Capital Costs

Unit Cost (£) :	Range (£) :	
Total Cost (£) :	Range (£) :	1 million - 10 million

Operating and Maintenance Costs

Unit Cost (£/yr) :	Range (£/yr) :	
Total Cost (£/yr) :	Range (£/yr) :	1 million - 10 million

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	2
Economic Vitality	2
Noise	1
Other Air Pollutants	2
Social Inclusion	0

Measure 7.07. Ensure consistency of Action Plan measures and explore all opportunities for regional measures for reducing emissions.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :	High	Cost Effectiveness :	High
Air Quality Standards and Other Impacts :	Medium	Completion Date :	2005

Effect on Air Quality

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :	100.0
Indicative effect of measure on sectoral emissions (%) :	2.00
Estimated reduction in total NOx emission (%) :	2.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :	0.10
Max NO2 concentration (µg/m³) :	1.00

Target Sources

Public sector; local authority

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Description	Score
Attractiveness of Public Transport	0
Congestion	0
Economic Vitality	0
Noise	0
Other Air Pollutants	2
Social Inclusion	0

Measure 7.08. Development of regional Air Quality Strategy to tackle cross-boundary issues and include all National Air Quality Strategy pollutants, climate change etc.

Description :
Local Authority Role : Partnership
Responsibility-Lead : Environmental Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only : Cost Effectiveness :
Air Quality Standards and Other Impacts : Completion Date : 2005

Effect on Air Quality **Target Sources**

NOx Emissions Other public sector

Sectoral share of total 2005 NOx emission (%) : 0.00
Indicative effect of measure on sectoral emissions (%) : 0.00
Estimated reduction in total NOx emission (%) : 0.00

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) : 0.10
Max NO2 concentration (µg/m³) : 1.00

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) : 10,000 - 99,999

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) : 10,000 - 99,999

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Package 8. Action Plan Management

Measure 8.01. Develop and maintain management system for implementation of the plan.

Description : Target is to develop SMART targets for each measure.
Local Authority Role : Local Authority Led
Responsibility-Lead : Community Plan Review Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2007

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.02. Identify and secure all potential funding for Action Plan initiatives.

Description : Identify and secure all potential funding for Action Plan initiatives, e.g.:
- Environmental Protection via SCA;
- Transportation via BSP and West London Transport;
- Planning via section 106;
- Highways via Car parking surplus;
- EU funding opportunities.

Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Protection
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.03. Maintain, and where necessary expand, the existing air quality monitoring network.

Description : Target is to review monitoring network and identify any potential gaps.
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Protection
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2007

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.04. Review and assessment of air quality in line with DEFRA guidance.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Protection
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.05. Prioritise measures, providing a schedule for implementation.

Description : Target is to prioritised list of measures, implementation schedule.
Local Authority Role : Local Authority Led
Responsibility-Lead : Community Plan Review Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :

Cost Effectiveness :
Completion Date : 2007

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.06. Provide progress report to DEFRA on annual basis.

Description : Target is to ensure mechanism in place to quantify and review measures.
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Protection
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :

Cost Effectiveness :
Completion Date : 2007

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.07. Review and adapt the action plan according to opportunity and circumstance.

Description : Target is to maintain awareness of new initiatives.
Local Authority Role : Local Authority Led
Responsibility-Lead : Community Plan Review Group
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.08. Maintain consultation process to disseminate information on progress against defined targets to other stakeholders.

Description : Target is to define consultation process.
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Protection
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :
Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

Target Sources

NOx Emissions

Sectoral share of total 2005 NOx emission (%) :
Indicative effect of measure on sectoral emissions (%) :
Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

Min NO2 concentration (µg/m³) :
Max NO2 concentration (µg/m³) :

Costs

Capital Costs

Unit Cost (£) : Range (£) :
Total Cost (£) : Range (£) :

Operating and Maintenance Costs

Unit Cost (£/yr) : Range (£/yr) :
Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :

Measure 8.09. Examine potential for the development of regional action plan on cross boundary issues.

Description :
Local Authority Role : Local Authority Led
Responsibility-Lead : Environmental Protection
Is Measure approved for Action Plan ?

Priority

Air Quality Standards Only :
Air Quality Standards and Other Impacts :

Cost Effectiveness :
Completion Date : 2005

Effect on Air Quality

Target Sources

NOx Emissions

- Sectoral share of total 2005 NOx emission (%) :
- Indicative effect of measure on sectoral emissions (%) :
- Estimated reduction in total NOx emission (%) :

Change in NO2 Concentrations

- Min NO2 concentration (µg/m³) :
- Max NO2 concentration (µg/m³) :

Costs

Capital Costs

- Unit Cost (£) : Range (£) :
- Total Cost (£) : Range (£) :

Operating and Maintenance Costs

- Unit Cost (£/yr) : Range (£/yr) :
- Total Cost (£/yr) : Range (£/yr) :

Work towards achieving the measure's aims and objectives are included in the following documents :

Planning Applications relevant to the measure :

Additional impacts of the measure (scored between -3 and +3) :