Air Quality Action Plan
2005 - 2010

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EXECUTIVE SUMMARY

This Air Quality Action Plan sets out an ambitious programme which seeks to ensure that Brent's residents and visitors are able to enjoy standards of air quality set down in the UK's National Air Quality Objectives.

On occasions, air quality in Brent exceeds National air quality objectives, which can affect health of some local people. The pollutants involved are nitrogen dioxide (NO_2) and particles that are referred to as PM10 (particulate matter up to 10 micrometers in size). In Brent, the primary source for these and other key air pollutants is road traffic.

In 2001, the review and assessment of air quality[1] (known as Stage 3) predicted exceedances of the two pollutants and as a result, Brent declared parts of the borough to be Air Quality Management Areas. These findings have been confirmed by a further review and assessment of air quality (known as Stage 4).

The highest air pollution levels are found within the Air Quality Management Area around the borough's major roads, including the A406 North Circular Road and around key industrial sites. This bears out the Council's earlier decision to declare parts of the Borough Air Quality Management Areas.

However, some activities are outside the direct control of Brent Council, for example, the North Circular Road is the responsibility of Transport for London and the some industrial sites are licensed by the Environment Agency. Nevertheless, this action plan commits the Council to working with these, and other, partners for the benefit of all.

This plan takes account of the following plans and documents:

- The Mayor of London's Air Quality Strategy[2]
- The Mayor of London's London Plan[3]
- The Mayor of London's Transport Strategy[4]
- Mayor of London's Local Implementation Plan Guidance[5]
- The West London Air Quality and Transport Plan
- Brent Council's Unitary Development Plan[6]
- Brent Council's Community Plan[7]
- Brent Council's Local Implementation Plan[8]

Further, copies of this plan, and other information and guidance about air quality in Brent, including real-time information about levels of air pollution in your area, may be freely downloaded from our website at www.brent.gov.uk/eh.

[1] www.brent.gov.uk/ehealth.nsf/97adad6ff206607c8025663c0065c536/e8b77641552a8ffc8025682700581c80?OpenDocument
[2] www.london.gov.uk/mayor/strategies/air_quality/index.jsp
[3] www.london.gov.uk/mayor/strategies/sds/index.jsp
[4] www.london.gov.uk/approot/mayor/strategies/transport/trans_strat.jsp
[5] www.tfl.gov.uk/tfl/downloads/pdf/about-tfl/lips/lips-guidance.pdf
[6] www.brent.gov.uk/udp
[7] www.brent.gov.uk/pru.nsf/61b63a407eca7a438025663c0065cadd/466284dd4381958b80256dbe0044253c!OpenDocument
[8] www.brent.gov.uk/transpor.nsf/0/60346ce3f6fce04380256fc1005bbc46?OpenDocument

Chapter 1 INTRODUCTION

1.1. This report

The right to good air quality is not only a necessity for a decent quality of life for all those who live and work in Brent but is a requirement under European legislation.

This Plan describes what can be done to improve air quality in and around London Borough of Brent. It includes both new measures identified, especially during the development of the action plan and existing actions that are being implemented as a result of national legislation and local plans such as those agreed with the Mayor of London.

1.2 Air quality legislation

In the 1950's severe episodes of visible air pollution were responsible for very large numbers of people dying or suffering severe ill health. Today levels of visible air pollution are much lower but levels of pollution are high enough to trigger serious health problems. There is growing concern amongst health professionals that even at lower levels, long-term exposure to some pollutants may pose significant health risks. Research carried out by the Department of Health suggests that each year between 14,000 and 24,000 people may be hospitalised from the effects of air pollution. It also indicates that as many as 24,000 vulnerable people may die prematurely each year because their conditions are aggravated by pollution. More commonly, high levels of pollution can trigger asthma attacks among those who suffer from this condition.

At a scientific and medical level, the government has investigated the problem largely through two committees, EPAQS (the Expert Panel on Air Quality Standards) and COMEAP (the Committee on the Medical Effects of Air Pollutants). In response to their conclusions, the government developed the National Air Quality Strategy (1997) setting objectives for individual pollutants with timescales for compliance. These objectives are similar to those developed by the European Union through the Framework Directive on Ambient Air Quality and a series of 'daughter directives' that set limits for individual pollutants.

A lot of work has already been done through national and European legislation to control emissions from vehicles, industry and other stationary sources. However, local factors such as traffic volumes and proximity of housing to industrial facilities are very important in determining whether these limits are exceeded. Therefore, the government requires local authorities to assess air quality using monitoring and computer-based models. In the event that one or more of the national objectives are exceeded Council's are required to designate air quality management areas and develop action plans for improving air quality.

1.3 Position in Brent

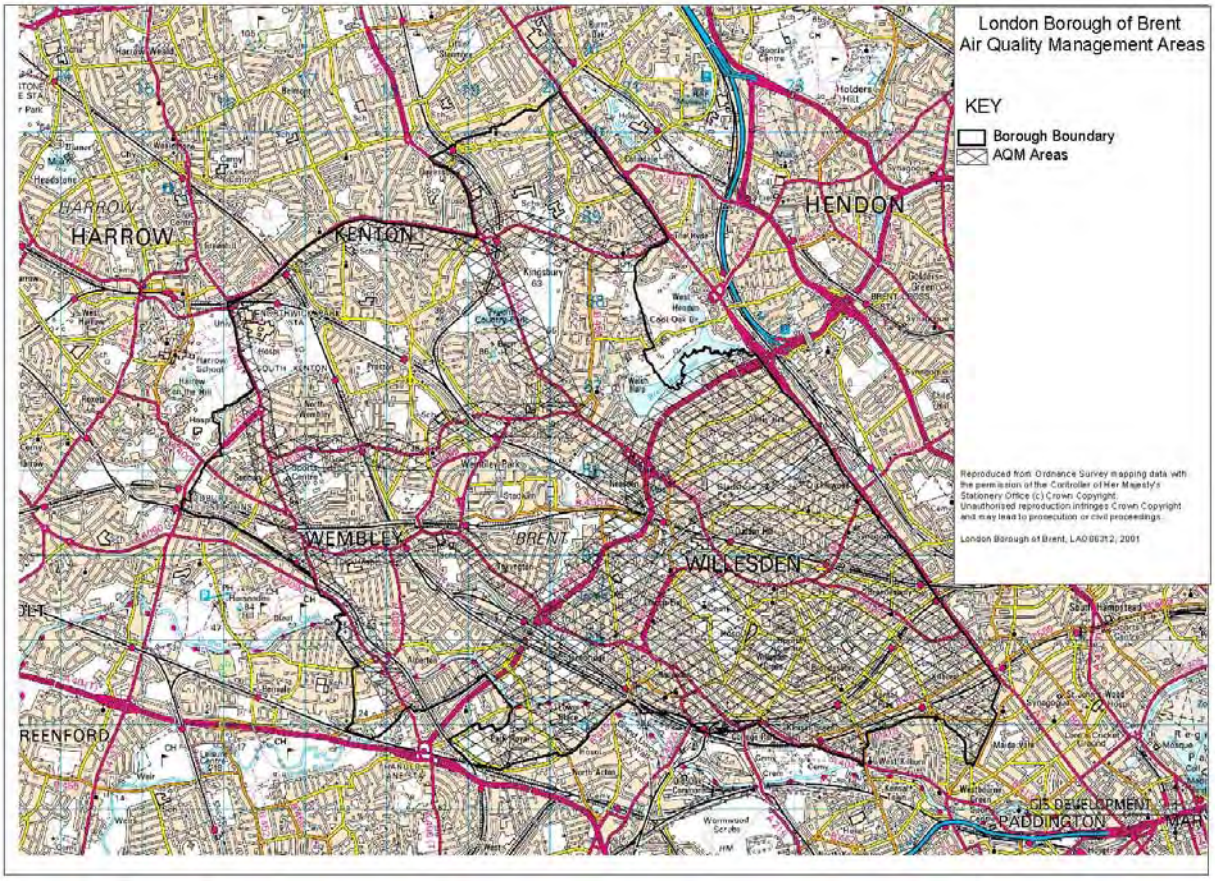
Assessment of pollutant levels were carried out using the national guidance against the national and European standards in three distinct stages. Each stage informed the next regarding the pollutants of concern and areas where problems were anticipated. The third stage required detailed dispersion modelling of emissions from sources including road traffic, industry and the domestic and commercial sectors. The data collected from air quality monitored around the borough was 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.

In Brent, the modelling studies predicted that the annual average nitrogen dioxide for 2005 and fine particulates for December 2004 would exceed the Government target levels. The standard for PM_{10} is being tightened for the year 2010; Brent will seek to ensure measures adopted for reducing NO_x emissions will also have a positive effect on PM_{10} concentrations.

1.4 Declaration of the Air Quality Management Area (AQMA)

In April 2002, Brent declared large parts of the Borough Air Quality Management Areas based on forecasts of public exposure to nitrogen dioxide and PM_{10}. The AQMA includes the entire area south of the North Circular Road and all housing, schools and hospitals along the North Circular Road, Harrow Road, Bridgewater Road, Ealing Road, Watford Road, Kenton Road, Kingsbury Road, Edgware Road, Blackbird Hill, Forty Lane, Forty Avenue and East Lane.

Figure 1 illustrates the AQMA within Brent



The areas that are shown hatched black on the attached map are the Air Quality Management Areas for the pollutants nitrogen dioxide and fine particles (PM_{10})

Subsequent analysis (the Stage 4 Review and Assessment) found that whilst declaration remained necessary for NO_2, the exceedance predicted for PM_{10} applied mainly to the North Circular Road. However, the Council have investigated dust nuisance complaints around waste transfer facility at Neasden Goods Depot in Neasden Lane, London NW10 and have measured very high levels of PM_{10} (typically 200-400ug/m^3 as a daily mean). The Stage 4 review did not take account of this fugitive source of emissions. Therefore, the AQMA remains unchanged and includes all areas where there are forecast exceedances of the objectives for both NO_2 and PM_{10}.

1.5 Sources of Air Pollution in Brent

To understand the improvements needed at a location and to achieve the AQS objectives it is necessary to determine the individual source emissions that contribute to the overall predicted pollution concentration. Both pollutant emissions and atmospheric processes including meteorology, determine the pollution concentration at any given location.

Traditionally pollution is determined only from an understanding of emissions derived from local sources and background influences. This only provides a simplistic understanding within London, as the pollution climate in London is further complicated by the actual size of London and the huge numbers of varying activities contributing to the source of emissions.

In order to develop an action plan that is cost-effective and deals with different sources of pollution in a cost-efficient and proportionate manner, it is essential to understand how these sources contribute to concentrations in the AQMA.

A series of specific point locations were selected for investigations to provide a representative understanding. The specific locations were considered representative of areas with predicted high concentrations of pollution. The specific locations are listed in Table 1.

Table 1 Location of sites used for source apportionment

Location	Road Name	Easting	Northing
1	North Circular Road/Harrow Road	519853	184320
2	Brentfield Road/Harrow Road	520869	183930
3	Hanger Lane/Ealing Road	518228	183187
4	Ealing Road/Bridgewater Road	517937	183679
5	Harlesden High Street	521816	183379
6	Wembley High Road/ Ealing Road	518030	185060
7	Kilburn High Road/Victoria Road	525243	183849
8	Neasden Roundabout/ North Circular Road	521149	186015
9	Dudden Hill Lane/ High Road Willesden	522206	184813
10	Chichele Road/ Cricklewood Broadway	523809	185713
11	Forty Lane/ Bridge Road	519495	186591

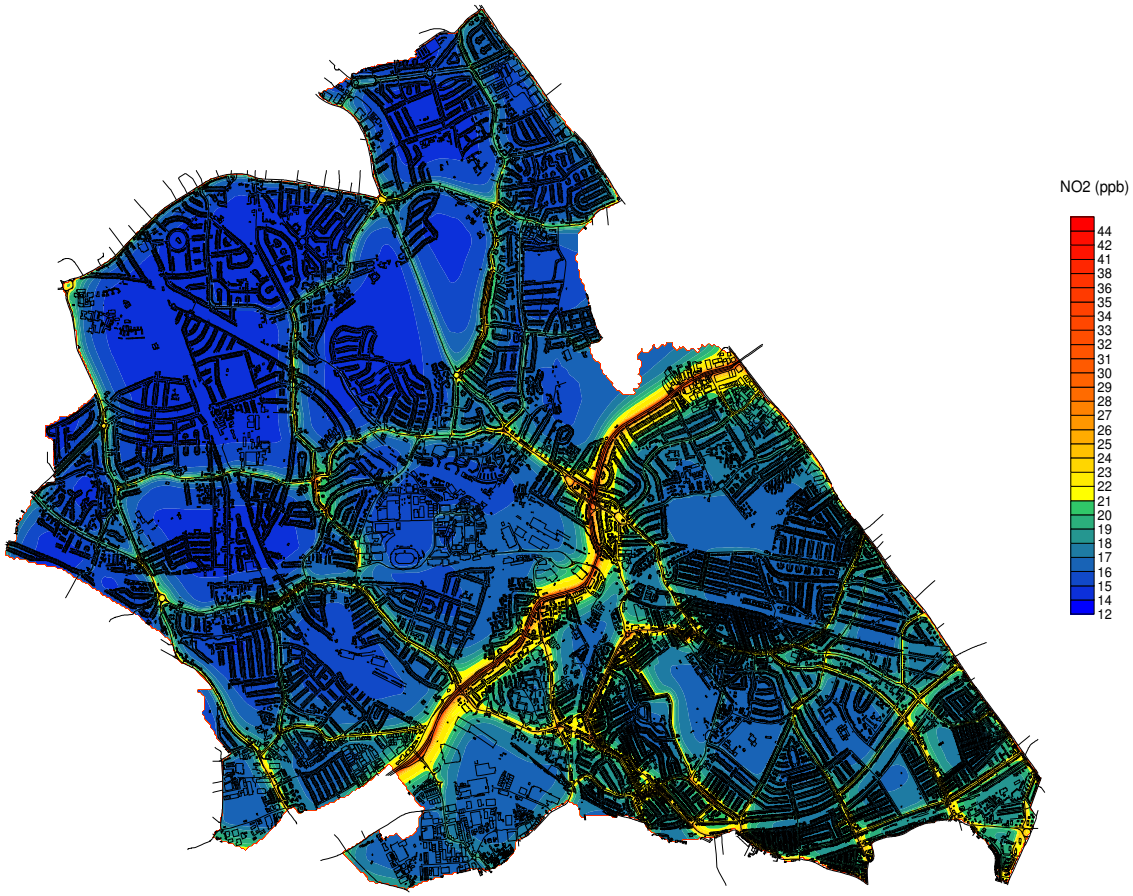
1.5.1 Source apportionment of NO_x at identified locations

To calculate more accurately how much improvement in air quality would be required to deliver the air quality objective within an AQMA, it is necessary first to confirm the concentration of NO_2 at specific sites. This was established from the modelling undertaken in the Stage 4 review and assessment and the concentrations are given in the Table 2 below.

Table 2 Predicted NO_2 concentrations (ug/m^3) at identified locations within the AQMA

Location	Base case
1	46.0
2	50.0
3	43.4
4	40.3
5	48.5
6	44.1
7	50.2
8	59.2
9	45.7
10	47.2
11	41.8

Figure 1 - Predicted annual mean NO2 objective for 2005 in the London Borough of Brent
(based on 1999 met. year)



The predicted results for the 2005 base year (from Table 2 above) show that those locations exceeding the objective, the amount is between 0.2 to 19 ug/m^3 of NO_2.

The method of calculating the emissions incorporates many different categories in the vehicle fleet using the road, however for the purposes of understanding source contributions more straightforwardly the following groupings were applied to the sources:

- HGV (i.e. all HGVs and LGVs other than cars, taxis and motorcycles)
- Cars (including all cars, taxis and motorcycles) and
- Buses and coaches

Table 3 illustrates the different source contributions at each location.

Table 3 Proportions of source contributions (%)

Location	Buses	Cars	HGVs	Background
1	10.0	30.1	20.8	34.8
2	6.5	32.3	26.2	30.0
3	6.8	29.7	14.3	43.1
4	6.1	28.4	7.8	53.9
5	12.1	22.6	25.7	34.9
6	23.8	25.0	10.7	36.7
7	17.9	17.8	22.4	37.3
8	5.6	43.9	25.2	17.4
9	9.4	26.5	21.3	38.1
10	9.3	27.4	16.3	40.5
11	9.9	33.9	9.6	41.8

The background source component comprises emissions from the following sectors:

- Domestic (including heating and cooking)
- Commercial/industrial (termed industrial for both gas and oil)
- Other transport sources (railways, airports and shipping)
- Part B industrial processes (these are authorised by the Council)
- Background roads

Background road include the contribution to the total pollutant concentration, which is derived from those roads beyond those modelled as directly influencing the location. This includes roads that are outside the borough which contribute to the overall background concentration for London.

The Stage 4 review and assessment reports confirm that for all locations half of the background component is from road transport related sources. This is in addition to the road transport related sources modelled locally to the identified locations and absolutely confirms the major influence of road transport within Brent.

1.5.2 Source apportionment of PM_{10} at identified locations

The source apportionment for PM10 has been derived using the same methodology as that described earlier. The locations given in the following tables are therefore those identified in Table 1.

Table 4 provides the results for the 1999 base case with the relative contributions for the road transport source categories, plus background. In this instance the road transport sources provide the major proportion of the primary component, the background contribution includes the remainder of the primary, plus secondary and coarse components. The background contribution remains almost constant for all the locations investigated (between 24.2 and 24.8 $\mu g/m^3$).

The most polluted locations are 2, 5, 7 and 8 (all approximately 33 - 39 $\mu g/m^3$), on the A404, A5 and A406 North Circular Road. These same locations also exhibit the highest contributions from the HGV category (which also includes all LGVs other than cars, taxis and motorcycles), thus reflecting the relatively higher proportion of HGVs on these roads. Locations 6 and 7 have the highest contribution from Buses.

For all locations (other than 7) the HGV category contribution exceeds that of cars. In all locations, the contribution from cars exceeds that of buses.

Table 4 Predicted annual mean PM10 concentration (µg/m^3) for different sources

Location	Base case	Buses	Cars	HGVs	Background
1	30.3	1.0	2.0	2.1	24.3
2	33.3	0.8	3.3	3.5	24.3
3	30.2	0.6	2.2	1.6	24.4
4	27.3	0.4	1.3	0.6	24.4
5	32.8	1.4	2.5	3.2	24.4
6	31.4	2.7	2.3	1.3	24.2
7	33.9	2.4	2.4	3.2	24.5
8	38.7	1.0	5.0	4.9	24.3
9	30.6	0.8	2.1	2.3	24.3
10	31.7	0.9	2.3	2.0	24.8
11	28.8	0.7	2.0	0.9	24.2

Table 5 provides the same information in relative terms for the sites however as previously explained the variation between proportions could be partly explained by both the contributions themselves, i.e. proximity of the individual locations as well as by the actual magnitude of the local sources investigated.

Table 5 Proportions of source contributions (%)

Location	All road transport	Background	Buses	Cars	HGVs
1	16.7	80.1	3.2	6.6	6.9
2	22.6	73.0	2.3	9.9	10.5
3	14.5	81.0	2.0	7.3	5.2
4	8.5	89.3	1.4	4.8	2.3
5	21.7	74.4	4.2	7.6	9.9
6	20.2	77.0	8.5	7.5	4.2
7	23.7	72.4	7.2	7.1	9.4
8	28.1	62.9	2.6	12.9	12.6
9	17.2	79.4	2.7	6.9	7.5
10	16.5	78.3	2.9	7.4	6.2
11	12.8	84.0	2.5	7.0	3.2

In all instances, it can be clearly seen that the Background contribution greatly dominates even when compared with the *All road transport* total. The most polluted locations are also those most influenced by the contribution from road transport (i.e. locations 2, 5, 7 and 8).

The proportion of vehicle category contributions to the total for all road transport can be seen above in Table 5. This highlights the expected dominance of the HGV category (including buses) for many locations, although the Car is most significant at locations 3, 4 and 11. These locations are the least polluted of the identified locations and the contribution reflects the lower number of HGVs.

1.6 Limits on the Capacity of the London Borough of Brent to influence Local Air Quality

The above tables demonstrates that contributions of major roads, pollution from central London and fugitive sources such as waste transfer facilities are sufficient to cause exceedances in air quality standards. The vast majority of these sources are not under direct control of the Borough. The major roads are the responsibility of the Highways Agency and Transport for London. In addition, major industrial facilities such as Taylor's Lane Power Station and waste transfer facilities like those at Neasden Goods Yard are regulated by the Environment Agency.

1.6.1 Major roads

The A406 North Circular Road bisects the borough and the management responsibility for this road lies with Transport for London. At the Borough boundaries, the M1 and A40 are the responsibility of the Highway's Agency. Both these bodies have specific objectives, some of which will conflict with those set nationally for air quality. Through this plan, it is essential to establish an appropriate basis for incorporating air quality into wider decision-making.

1.6.2 Major industrial sources

Air polluting industry is partly regulated by the Environment Agency and partly by local authorities, with the Agency responsible for the larger more complex plants. Legislation such as the recent EU Directives on IPPC (Integrated Pollution Prevention and Control) and waste incineration, combined with a move away from traditional fuels (such as coal and oil) to natural gas has led to a major decline in pollution from industrial sources.

However, these industries can have significant effects on air quality by generating local pollution their vicinity by raising background levels of pollution. For new applications, Brent can via the planning process apply conditions more stringent than those that would typically be defined as Best Available Techniques (BAT) under IPPC if the plant is operating in or close to "sensitive" areas.

1.6.3 Pollution from fugitive sources

There are a number of commercial activities that take place around the Borough that are responsible for emissions of dust etc. This includes waste facilities whose activities can cause a nuisance to local residents. The Environment Agency is responsible for licensing waste activities and is responsible for enforcing the license conditions. Brent has such a facility located at Neasden Goods Yard, along Neasden Lane. Air pollution monitoring in the area conducted by the Council have found large-scale exceedances of the PM_{10} standard. The problems at the above site have highlighted the need for careful location of such facilities (i.e. away from residential areas) the need to monitor levels of dust, implementing an effective enforcement policy as well as the need to work in partnership to address the problems promptly.

Large developments (such as the Quintain development around Wembley Stadium) are also responsible for dust generation. The Council has powers to attach conditions on the development such as the Construction Management Strategy that would prescribe good work practices to minimise dust generation and the potential to cause nuisance.

1.6.4 Background Pollutants

We must recognise the fact that air pollution is transboundary in nature and therefore pollutants measured in Brent includes pollutants generated from other Boroughs in London, other parts of the UK and the rest of Europe in addition to emissions from local sources. Overall, the source apportionment study carried out in Brent estimated that that these background contributions comprise between 20-40% of the NO_x concentrations across the Borough. As in the other cases listed above, Brent Council does not have control over these emissions.

This clearly demonstrates the need for Brent to work in partnership with a wide range of stakeholders in order to secure reductions in emissions from these sources. One of the most important actions in the plan is to ensure there is effective dialogue between the Council and other stakeholders mentioned and that measures that are already agreed will be implemented effectively and in a timely fashion.

CHAPTER 2: EXISTING POLICIES THAT TAKE AIR QUALITY INTO ACCOUNT

Policies that are already in place can have significant impact on air quality, both positive and negative. This Chapter identifies the most important of these, particularly where they dictate actions required for inclusion in this plan.

2.1 National and European Policy

The main areas of national policy that affect air quality in addition to the National Air Quality Strategy and associated European legislation are:

- The 10 year Transport Plan
- The introduction of IPPC
- The EU's Waste Incineration Directive (WID)
- THE EU's Noise Directive
- Energy and Climate Change Policy for example, implementation of the UK's obligations under the Kyoto Protocol

In most of the above cases, there are opportunities for significant benefits between these policies and improved air quality.

2.2 The Mayor's Air Quality Strategy (MAQS)

The main issues addressed through the MAQS are:

- Reducing traffic, for example through the use of congestion charging
- Improving public transport
- Low emission zones
- Promoting cleaner transport fleet including buses and possibly taxis
- 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 measures being addressed through the air quality action plan.

2.3 The London Plan

This is the spatial development strategy for the whole of London, providing a strategic framework for planning over the medium to long term across the capital. Integration of development and transport are key areas of the strategy. Therefore, it has the potential to make a major impact on air quality policy across the capital. In Brent, the main policy tools for the implementation of the London Plan are the current Unitary Development Plan and the new Local development Framework (to replace the Unitary Development Plan) and Brent's Transport Strategy.

2.4 West London Air Quality and Transport Action Plan

The West London Alliance (WLA) provides a forum for six councils, Brent, Ealing, Hammersmith & 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.

The WLA produced a general environmental strategy, which led to the development of draft Air Quality Strategic Plan 2002-2005. This West London plan outlined 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 has the potential to play a prominent role with respect to this plan, and the most logical strategic approach to West London's air pollution problems is to continue to work through the WLA.

In February 2003, a baseline study was produced (Air Quality and Transport Actions, West London Baseline Study) outlining the air quality and transport actions that are currently being undertaken across West London. The study surveyed each borough in the WLA and reports on their status concerning eight key actions 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 the baseline will be monitored and that the Strategic Plan will result in a more detailed action plan containing relevant actions from this air quality action plan and those of other local authorities through the WLA.

2.5 Brent's Transport Strategy

The Transport Strategy is aimed at reducing accidents, improving access, reducing congestion and other negative impacts (social and environmental) of current transport systems in the borough.

2.6 Local Policies

A number of local policies already stress the need for action on air quality. These are:

- The Unitary Development Plan
- The Interim Local Implementation Plan and the Local Implementation Plan which is currently being drafted
- The Brent Transport Strategy
- The Community Plan
- The Corporate Strategy
- The Brent Community Plan
- The Environment Services Development Plan
- Environmental Health Service Operational Plan

2.7 Conclusions

It would be inappropriate to develop air quality policy in Brent independently of the policies listed above. Therefore, the above policies have been taken into account to ensure that coherent actions undertaken across the Council as well as across London stand a better chance of success than a series of isolated and disjointed measures.

The need to take account of diverse a range of actions across the Council and other organisations means that implementation of this plan will need to include monitoring activities carried out by a variety of stakeholders. This will impose a significant networking responsibility on those responsible for implementation of the Air Quality Action Plan.

CHAPTER 3: DEVELOPMENT OF THE ACTION PLAN

3.1 Guidance on Achieving the Standards

Guidance has been issued by both DEFRA and the National Society of Clean Air and Environmental Protection (NSCA). 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 practicality

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 1.5). In the case of NO_2 the link between emission and concentration needs to take account of chemical processes in the atmosphere – there is no simple linear relationship between reduced emissions of NO_x 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 also account for the social, economic and broader environmental impacts of the measures considered.

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

Perception and practicality: 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 have differing views and concerns when a specific measure is recommended to improve air quality and so need to be involved in the consultation process.

The NSCA guidance describes the following stages for action planning (those that are highlighted are 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 of the plan during its implementation

3.2 Objectives for Brent's Air Quality Action Plan

The objectives were developed following discussions with a number of stakeholders from local communities, businesses and the regulators at the start of the action planning process.

The objectives are to pursue the air quality objectives laid down in the National Air Quality Strategy whilst:

- improving the quality of life and health of the residents and workers in Brent;

- acting in a cost-effective manner, through careful selection options;
- integrating this work with other Council strategies and the activities of the Council, 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.

3.3 Consultation

Consultations were undertaken early and involved Local Area Consultative Forums, Stakeholders within the Council, external agencies and regulators, and the Primary Care Trust. Feedback gathered has been used to make changes to the original plan reflecting information provided. Further changes will be made to this revised document during consultation of this revised air quality action plan.

A list of stakeholders consulted so far is attached in Appendix 1.

3.4 Requirements of air quality action plans

Government guidance requires local authorities to include within their Action Plans "an estimate of the costs and feasibility of different abatement options to allow for the development of proportionate and effective action plans". Local authorities are not expected to undertake a full cost and benefit analysis, nor are they expected to undertake a detailed analysis of the cost-effectiveness of every conceivable policy option. For some options, such an approach would be practically impossible, such as providing better air quality information or encouraging the adoption of green transport plans. However, what is required is an indication that the local authority has considered a range of options and attempted to quantify the relative cost effectiveness of each.

Many of the measures outlined within this action plan are those that the Council is pursuing as part of its Local Implementation Plan or Unitary Development Plan. Others are statutory requirements such as industrial air pollution control.

The major new policy that this action plan introduces is the introduction of a Low Emission Zone. The Low Emission Zone (LEZ) Steering Group, set up by the GLA and London boroughs, is undertaking a feasibility study of LEZs in London, including the implementation, operation, air quality impact, viability, costs, benefits and public acceptability of schemes proposed. The results of this study will be included within future revised editions of this document when available.

3.5 Cost-effectiveness

We have undertaken a brief appraisal to determine the feasibility, cost effectiveness and the likely air quality improvements for the ninety-eight proposed actions within Brent. Cost-effectiveness is indicated in high, medium and low terms, following from the scheme laid out in Figure 3.

Figure 3

% improvement in air quality	<0.01%	0.01-0.1%	0.1-1.0%	1-5%	5-10%	>10%
<£0						
£0						
£0-1,000						
£1000-10,000						
£10,000-100,000						
£100,000-1 million						
£1 million – 10 million						
>10 million						

High Cost effectiveness

Moderate cost effectiveness

Low cost-effectiveness

3.6 Impact on air quality (NO_2)

Low: < 0.1% potential change in emissions within the Borough

Medium: 0.1% to 1% potential change in emissions within the Borough

High: >1% potential change in emissions within the Borough

3.7 Timescale

Short term: Within 2 years
Medium Term: Within 2-5 years
Long term: Longer than 5 years

For agreed actions, there will be hard target completion dates.

3.8 Feasibility of proposed measures

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

- Cost
- Effectiveness in reducing NO_x emissions
- Effectiveness relative to NO_2 levels in Brent AQMAs
- Effectiveness in reducing PM_{10}
- Potential to implement the option before 2005 and then 2010
- Additional (non-NO_2) benefits of the measure
- Shortfalls linked to the measure
- Measure of local and regional development objectives.

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

- Other (non-NO_x) 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).

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 Appendix 2.

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

The Action Plan should be regarded as a flexible and live document that is subject to change as new information and 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 to be impracticable on cost grounds or have impacts that are unforeseen or more significant than originally thought, the plan should be clearly adapted. Equally if experience elsewhere (e.g. 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 measure.

3.10 Relationship between Air Quality Action Plan and the Local Implementation Plan

In Brent, transport emissions are the major reason for exceedance of air quality objectives (except for PM10 exceedances around Neasden Goods Yard). DEFRA recommends that consideration be given to full integration of the Action Plan with the Local Implementation Plan. At this stage, the priorities for the Local Implementation Plan are listed in the Mayor's Transport Strategy Local Implementation Plan Guidance (July 2004). When the full Local Implementation Plan for Brent is produced, this action plan will be amended or additional actions added accordingly.

CHAPTER 4: MEASURES FOR IMPROVING AIR QUALITY

This chapter identifies the options considered of most relevance for improving air quality across Brent. The measures proposed in this plan have been grouped into a series of categories:

Theme 1 **Promoting cleaner modes of transport**

Theme 2 **Traffic reduction and tackling through traffic**

Theme 3 **Promotion of cleaner fuel technology**

Theme 4 **Measures concerning local industries**

Theme 5 **Improving Eco-efficiency of current and future developments, including properties owned or run by the Council**

Theme 6 **Actions to be taken corporately, regionally and in liaison with the Mayor**

If the exceedances of the air quality standards were small (in terms of either concentration or geographic area), it would be possible to produce an action plan targeted on specific sources such as a given length of road or a factory. Theme 5 will do this by addressing problems regarding Neasden Goods Yard, by considering a small number of options and feasibility studies that may already exist that are specific to the problem. In these cases, the plan can be brief and contain a lot of high quality information on costs, effectiveness and other impacts of the proposed measures.

However, there are wider exceedances throughout the Borough, because the AQMA covers a wide area and therefore a large reduction in NO_x emissions is needed. It is therefore necessary to consider a series of options, covering different sectors and geographic areas. It is worth noting that the more options that are included the more difficult the plan will be to implement.

Description of each proposed Theme

Each Theme is listed below with a description of:

- Responsibility and implementation
- Effect on air quality
- Cost-effectiveness
- Funding identified
- Timescale
- Target

Some of the actions listed are 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. In Brent the problems are widespread and where only limited control can be exercised by the Council, it seems more appropriate that these issues continue to be considered by all those stakeholders with responsibility for implementation of the measures.

Many of the measures listed are being implemented in one way or another. Sometimes the reasons are not directly related to air quality problems.

The tables are structured in such a way as to highlight the role of Brent in implementation of the plan. The groups of actions are listed as follows:

- actions Brent can undertake
- actions implemented by other bodies which may be in partnership with Brent

- lobbying activities, measures that Brent has no direct control over but may influence, particularly when liaising with other partners such as the Association of Local Government (ALG), Greater London Authority (GLA) etc.

4.1 THEME 1: PROMOTING CLEANER MODES OF TRANSPORT

London Borough of Brent working through the Local Implementation Plan and the West London Alliance will pursue all opportunities to promote alternative modes of transport.

4.1.1 Travel Plans

A Green Travel Plan is a package of initiatives to reduce car use within an organisation. They can incorporate a range of measures to address different transport needs, including commuter journeys, customer access, business travel and fleet management.

The Council is trying to reduce the number and the environmental impact of vehicle trips that it generates to and from schools in the Borough and its own buildings. To encourage its staff to use public transport, the Council offers an interest free season ticket loan. It also provides facilities for cyclists at many of its buildings and is considering how to enable more staff to work from home, thereby reducing the number of journeys to work. The Council is also working with schools to develop individual school travel plans to reduce the number of vehicles used in the 'school run' and increase environmentally friendly travel choices for parents and children. This will build on a series of successful 'Safer Routes to School' campaigns that the Council has run with local schools.

- The Council has developed its own Green Travel Plan. The primary objective of the Council's green travel plans is to reduce traffic associated with journeys to work and to school; they are included in the air quality action plan because any reductions in motor traffic should lead to a reduction in vehicle emissions. The implementation of the plan has begun and will be on going.

Transport for London is also developing guidance for developing and implementing Travel Plans for use by developers and businesses. Travel Plans will be encouraged and promoted widely using Supplementary Planning Guidance 19 as a planning condition in relevant circumstances. As part of Brent Council's 'Safer Routes to Schools' initiative, schools will be encouraged to prepare and adopt their own travel plans.

Action 1. **The Council will continue to implement its own Travel Plan.**

Action 2. **The Council will encourage developers and businesses to adopt sustainable Travel Plans as part of the planning process.**

Action 3. **Request submission of high quality, feasible travel plans to form compulsory component of successful planning consent for major developments and new and expanding schools.**

One of the aims of the MTS is to reduce congestion. The Boroughs must work with schools and groups to review all travel by March 2008 with significant progress having been made by March 2006. Furthermore, Boroughs are to review road safety around schools in London by 2008. Where reviews show these to be necessary, 20mph zones and other safety measures must be implemented by 2011 to achieve target reductions in London's Road Safety Plan. The Council has identified a number of other areas that would benefit from a 20mph zones, because in addition to road safety improvements it brings about other local environmental improvements including improved air quality.

For public transport to play a pivotal role in our sustainable transport vision for Brent, it is vital that our residents and those who travel to and from the borough are fully aware of its potential to suit their travel needs. Perceptions of unreliability, lack of information, the stress of interchange during a journey and even concerns about completing a journey are major barriers to using public transport. Journey Planner is already available on TfL website. The Council will promote the use of the Journey Planner.

Action 4: Council will promote the use of the TfL Journey Planner

Action 5: Identify schools in AQMA where School Travel Plans are required and encourage schools to produce their Travel Plan

Action 6: Identify schools where 20mph zones would reduce accidents and implement these zones where feasible.

Action 7: Encourage the voluntary development of travel plans in Brent by providing individually tailored Workplace and School Travel Plan Guidance Packs to all major organisations and large schools in Brent.

The West London Carshare scheme has already been developed and involves all six West London Transport Strategy (WLTS) member boroughs. Guidance from the Mayor recommended that Carshare schemes although open for the public to sign up to, only be promoted to private groups due to safety fears. Therefore, car clubs will be actively encouraged and promoted via the planning process for private developments.

Action 8: Encourage and set up Car Clubs to promote sensible sustainable use of the car in Brent via the planning process for private developments.

The LIP identifies the need to measure school and work trips made by modes other than car. The MTS suggests that this work be undertaken by Group Transport Planning & Policy and TfL. If the data gathered by TfL is broken down into individual borough's it would give a good indication of success in the modal shift.

4.1.2 Walking

The importance of walking has been highlighted by the publication of LAPC's (Local Planning Advisory Committee) 'Advice on a Walking Strategy for Walking in London', the Government's draft @Developing a Strategy for Walking' and the Integrated Transport White Paper. The Walking plan for London was published in February 2004. The Councils UDP Policy TRN 10 states "The 'walkablility' of the public environment should be maintained and enhanced – especially to key destinations such as schools, shopping centres and public transport, and for those with mobility difficulties. This applies both to the impact of development proposals and traffic management and highway & pedestrian improvement measures".

Action 9: Brent's LIP will include plans for infrastructure improvements and promotional activities to deliver better 'walkable' conditions for pedestrians

Action 10: Brent's LIP will include proposals for improving personal safety and security especially for women and vulnerable groups particularly at night

Action 11: Brent's LIP will include information on how Brent will contribute towards the effective implementation of the London Walking Plan.

The MTS seeks programmes of improvement to be developed by TfL and the boroughs to make the street environment more accessible, removing barriers and obstructions that make it difficult and unsafe for pedestrians to use the street.

Action 12: Brent's LIP will set out programmes of footway improvements including access improvements and accessibility improvements to bus stops.

The environmental quality of our streets and alleyways can have a significant impact on people walking through these areas. Graffiti, fly-posters and abandoned vehicles are unsightly and dog fouled streets and fly-tips are extremely unpleasant for pedestrians. Moreover, these EnviroCrimes cause an increase in people's fear of crime and may be linked to an increase in more serious crime. The result is that potential pedestrians may prefer to use other modes of transport such as the car or they may venture out less often.

Our new EnviroCrime initiative will identify and tackle hotspots in the Borough that are suffering from significant environmental degradation. We will co-ordinate action between a host of units within the Council and other external agencies, such as the Metropolitan Police and the Environment Agency, and work closely with the local community to achieve sustainable improvements. The approach will be holistic in nature and action will include regular enforcement blitzes, use of CCTV, promoting gating of alleyways and identifying ways to empower the local community.

To improve pedestrian facilities, the Council is seeking to provide appropriate pedestrian crossings at regular intervals along all busy roads in the borough as well as provide crossings to serve every pair of bus stops on busy roads and outside local railway stations.

Brent's UDP policy on walking is that with new development, good footpath access is required so that local connections can be made. This will allow people to have a real choice to stay local rather than travel further because walking in the neighbourhood will be an efficient, attractive and safe option.

Action 13: Community safety initiatives will be linked to the LIP plans for pedestrian improvements wherever possible.

4.1.3 Cycling

Like walking, cycling is very clean and healthy mode of transport and can contribute to improving air quality. The Council is therefore keen to see more people cycling safely and responsibly on the carriageway.

The Council UDP Policy TRN 11 sets out proposals to implement the London Cycle Network. It states that:

- The London Cycle Network and associated links will be implemented. Development should facilitate or incorporate the network (including where a safer or more convenient route can be provided).

- Major developments will be expected to contribute towards improvements in links to and on the London Cycle Network, where the need for such facilities arises directly from the need to service the development by sustainable modes'.
- Developments should comply with the UDP's minimum Cycle Parking Standard, with cycle parking situated in a convenient, secure and where appropriate sheltered location. Priority will be given to improve cycle parking at stations and in town centres

Action 14: Implementation of Brent's UDP policy TRN11.

- **This can be carried out by measuring the number of developments that have facilitated or incorporated the London Cycle Network.**

- **Number of stations and town centres that have improved cycle parking facilities**

The MTS states that TfL and the boroughs working in partnership with rail operators, businesses and educational establishments will provide additional secure cycle parking facilities, including at shopping centres and transport interchanges.

Action 15: Brent's LIP to include proposals for additional cycle access and secure cycle parking facilities.

The London Cycling Action Plan was published in February 2004. It sets programmes for improving the cycling environment by introducing a network of routes (LCN+), remedial safety and increased access and priority, cycle parking facilities on street, at schools and stations and routes through parks and green corridors.

Action 16: **Brent's LIP to include details of actions that will support London Cycle Plan Objectives.**

Action 17: Brent's LIP will set out a programme for implementation programmes for LCN+.

The MTS proposes that TfL and the London boroughs will look at problems that cyclists encounter, particularly key accident locations, to see if they can be solved by specific junction treatment or other traffic management solutions. It also proposes that TfL will work with London Boroughs and the police to support effective training for children and adults for safer cycling.

Action 18: Brent's LIP will include proposals for review of key cyclist accident locations and a programme for implementation of traffic management solutions.

Action 19: Achieve a year on year increase in the number of children undertaking safe cycling training. Introduce cycle training for adults if funding is available from TfL.

4.1.4 Buses

Road based public transport will play an increasing role in meeting access needs in London, as car use becomes increasingly problematic and for trips which are increasingly well suited for tube/rail especially for journeys in the northern part of the borough where travel patterns are more dispersed. The majority of the bus trips are currently in the South of the Borough. Bus and rail are also complementary, for example, bus services can be used to access rail stations and widen their catchments.

TfL's standard for access to bus services is that no property should be more than 10 minutes walking distance (at most 400m and preferably less than 300m) from a bus stop. There are few parts of the borough where this is not achieved, and the Council is working to ensure that these areas will be covered where possible. This will either be by London Buses or where appropriate, by demand-responsive small bus services (e.g. the DfT-funded 'Brentlink' introduced in 2005). It is nevertheless considered essential to provide connections between the main residential areas of the Borough and the main employment, shopping and recreational areas and schools and hospitals, including improved connections as part of new and improved public transport infrastructure. The Council will continue to monitor accessibility provided by bus services and will seek improvements of frequencies of existing services and the introduction of new services as necessary.

It is important for general convenience of passengers and in particular elderly persons, disabled people and parents with young children that suitable shelter and waiting facilities with seats are provided at bus stops. The Council will press for these at all appropriate locations on the bus network and will press for relocation of unsuitably located bus stops, stands and turning facilities.

The Council is concerned that at several bus termini in the borough, buses are often left running for prolonged periods. This is contrary to London Bus Regulations. The Council will therefore undertake enforcement where bus drivers continue to run engines in contravention of both London Buses regulations and the Regulation 98 of the Road Vehicles (Construction and Use Regulations).

The London Bus Priority Network is a London wide strategic priority for transport investment. It will increase the speed and reliability of bus services. One of the priorities will be improving access by buses to and between town centres and across whole routes not just within Boroughs. Improvements will often involve a re-allocation of road space away from cars. The measures introduced will be compatible with UDP policies and meet the needs of businesses, pedestrians, pedal cyclists and the related environment. The bus network in Brent has large-scale coverage and many services run outside the London Bus Priority Network. The Route 16 along the Edgware Road is being used as a pilot for enhanced priority measures.

Brent fully supports the TfL London Bus Priority Action Plan. This embodies the schemes already developed in the London Bus Priority Network, the London Bus Initiative, Bus Plus and a number of other initiatives covering orbital bus routes developed in conjunction with West London Transport Strategy. The Bus Priority Action Plan will intensify bus priority measures over the whole bus network in 2005-8 and will rely on strong partnership between the Borough and TfL improving bus journey times and reliability will be monitored as well as follow-up action to bus priority measures taken where necessary, in partnership with London Buses and the bus operators, with whom regular review meetings are held.

Action 20: The Bus Priority Action Plan will be implemented in partnership with the bus operators, TfL and other strategic bodies (as stated in the UDP policy TRN9).

Community Transport represents an opportunity for 'bridging the gap' between the more traditional forms of public transport (i.e. timetable operation on fixed routes) and wholly demand-responsive means of transport, such as the car. It can represent the best opportunity for the development of more accessible 'door to door' public transport alternative. (This type of transport usually benefits those with disabilities and the vulnerable in the community. The Brentlink service referred to above is operated by Brent Community Transport and has been developed in partnership with the Council, who secured DfT grant funding to enable the service to commence. The service is operated by fully accessible biodiesel-fulled vehicles and is designed to complement the conventional bus and train networks).

Action 21: The Council will continue to liaise with Brent Community Transport and similar voluntary groups over the provision of community transport facilities.

The MTS requires TfL and the boroughs to promote and implement a package of whole route enhanced, intensified and enforced bus priority measures on major bus corridors. Together with other complimentary measures that will provide a high quality, fully accessible bus network on the London Bus Initiative Bus Plus routes. The Council will encourage provision of highest quality information at bus stops, including countdown displays.

Action 22: Brent's LIP includes agreed programmes and plans to demonstrate delivery of high levels of bus priority on 'A' and busy bus routes.

The MTS also proposes that TfL and the boroughs will develop and implement a long-term programme so that all bus stops have appropriate passenger facilities and can be served by low floor buses.

Action 23: Brent's LIP includes agreed programmes and plans to demonstrate delivery of high levels of bus priority wherever required on all bus routes in the borough.

4.1.5 Rail and Underground

The Borough is served by 25 underground and rail stations. Lines to the Midlands, the Chilterns, the North West of England and Scotland pass through the Borough. The main problems associated with parts of the existing network are infrequent and unreliable services, difficulties of access for those with mobility difficulties, poor quality of stations and inadequate interchange facilities. The following are the key proposed rail/underground improvements affecting the Borough that have a reasonable prospect of going ahead.

Action 24: The following new Rail and Underground infrastructure projects are supported and will where necessary be safeguarded:

- Wembley rail stations redevelopment; all three stations to have capacity and quality improvements including step-free access to platforms

- Queens Park Interchange; improvement of bus/train connections

-Silverlink Metro upgrade to stations; in partnership with TfL London Rail

- Park Royal Interchange; As a necessary requirement of large scale trip- attracting development

- Planning decisions will ensure that development proposals are fully integrated with proposals for an effective bus/rail interchange.

The above action is in line with the UDP policy TRN7.

Lobbying partnership can bring about changes in modal shifts from cars to greener forms of transport. Work is in progress with major stakeholders such as Park Royal Partnership and North West London NHS Hospitals Trust to improve the attractiveness of public transport to reduce car dependency for staff, customers/patients and visitors to their facilities.

Action 25: Work with stakeholders to improve the attractiveness of public transport

4.1.6 Partnership working

The WLA produced the Air Quality Strategic Plan 2002-2005 that outlined the strategic actions the group proposes to take in order to achieve improvements in air quality in the West London area. The Plan places great emphasis on the need for co-operation between the seven members of the alliance, namely the London Boroughs of Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon, Hounslow and Richmond-upon-Thames. Many of the actions to improve air quality relate to transport functions and meetings have already been held between Air Quality and Transport Groups to discuss this relationship, in liaison with the West London Transport Strategy (WLTS).

MVA who provide support for the WLTS developments, has been commissioned by the WLA to undertake a baseline study examining how boroughs presently address the objectives outlined in the Draft Strategic Plan. Brent does not have suitable public transport interchanges for rail/cycle/bus/walking.

Action 26: Continue to work with West London Alliance and WLTS

Action	Responsibility and Implementation mechanism	Impact on AQ (NO2)	Cost-effectiveness	Timescale	Performance Indicator
PROMOTING CLEANER MODES OF TRANSPORT					
TRAVEL PLANS					
1. The Council will continue to implement its own travel plan.	Transportation Senior Sustainable Transport Planner	Medium	Medium Funding in place	On-going	No of staff not using car to work No of Council vehicles using alternative fuels
2. Encourage developers and business to adopt Travel plans	Planning Area Team Managers	Medium	Low-Medium	On-going,	No of Travel Plans adopted
3. Request travel plans under s106	Planning Section 106 Officer	Medium	High	On-going	No of travel plans adopted
4. Promote the use of TfL Journey Planner	Transportation Senior Sustainable Transport Planner	Medium	High	On-going	Develop journey planner No of hits on the web
5. Identify no of schools in AQMA and encourage uptake of Travel Plan	Transportation Senior School Travel Plans Officer	High	High	April 2006	No of schools in AQMA with travel plan
6. Schools where 20mph zones would reduce accidents	Transportation BSP – Principal Transport Planner	Medium – It will have a negative effect on air quality as lower speeds create more pollution emissions.	medium	April 2006	No of schools with 20mph limits
7. Voluntary development of travel plans for schools outside AQMA through Guidance Packs	Transportation Senior School Travel Plans Officer	Medium	Medium	On-going	No of schools voluntarily adopting travel plan

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-effectiveness	Timescale	Initial target/Indicator
8. Set up Car Share Clubs in Brent	Transportation Principal Transport Planner (Development Control)	Medium	Medium	December 2005	Set up Car Share Club
WALKING					
9. Infrastructure improvements to deliver a better 'walkable' conditions	Transportation Principal Transport Planner	High	Low-medium	December 2005	Ensure LIP includes strategies for 'walkable' conditions
10. Improve personal safety and security for women and vulnerable groups	Transportation Principal Transport Planner	Medium	Low-medium	December 2005	Ensure LIP includes proposals for personal safety and security
11. Contribute towards the London Walking Plan	Transportation Principal Transport Planner	Medium	Low-medium	December 2005	Ensure LIP contains information regarding Brent's contribution
12. Footway improvements, including access and accessibility to bus stops	Transportation Principal Transport Planner	Medium	Medium	December 2005	Ensure LIP includes programme of improvements
13. Envirocrime initiatives to be linked to pedestrian improvements	Transportation Principal Transport Planner	Medium	High	December 2005	Ensure LIP includes such plans
CYCLING					
14. Implement UDP policy TRN 11	Planning Assistant Director Policy/Projects	Medium	Low	On-going	No of developments that have facilitated the LCN No of stations that have improved cycle parking
15. LIP to include proposals for cycle access and parking	Transportation Principal Transport Planner	Medium/High	Medium	December 2005	Ensure LIP includes such proposals

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-effectiveness	Timescale	Initial target/Indicator
16. Actions that will support London Cycle Plan Objectives	Transportation Principal Transport planner	Medium/High	Medium	December 2005	Ensure LIP includes proposals
17. Implement programmes for LCN+	Transportation Principal Transport planner	Medium	Medium	December 2005	Ensure LIP includes programme for LCN+
18. Review key cyclist accident locations and implement traffic management solutions	Transportation Principal Transport planner	Medium	Medium	December 2005	Ensure LIP includes proposals for reviewing accident locations
19. Undertake safe cycle training for adults and children	Transportation Principal Transport planner	Medium	Medium	On-going	No of adults and children undertaking safe cycle training
BUSES					
20. Implement Bus Priority Action Plan (UDP TRN9)	Planning Assistant Director Policy/Projects	Medium	Medium	On-going	Contributions to and the no of actions taken to implement the Bus Priority Action Plan
21. Provide sustainable community transport facilities	Transportation Principal Transport planner	Medium	Medium	December 2005	Part of the Council Fleet improvement programme
22. Delivery of high levels of bus priority on 'A' and busy bus routes	Transportation Principal Transport planner	Medium	Medium	December 2005	Ensure the LIP has a programme to deliver high levels of bus priority

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-effectiveness	Timescale	Initial target/Indicator
23. Delivery of high levels of bus priority wherever required on all bus routes	Transportation Principal Transport planner	Medium	Medium	December 2005	Ensure LIP contains programme for bus stop accessibility
Rail and Underground					
24. New Rail and Underground infrastructure supported and safeguarded (UDP TRN 7)	Planning Assistant Director Policy & Projects	Medium-High	Medium	December 2006	Map progress of Park Royal Interchange and developments for East-West Cross rail
25. Work with stakeholders to improve attractiveness of public transport	Transportation Head of Transport Strategy	High	Medium-High	December 2007	Increase in No of Journeys by bus/rail/walking
26. Continue to work with West London Alliance and WLTS group.	Transportation Head of Transport Strategy Environmental Health Service Manager	Medium	Medium-High	On-going	No of projects successfully delivered

4.2 THEME 2: TRAFFIC REDUCTION AND TACKLING THROUGH TRAFFIC

A substantial amount of NOx emissions from road transport in Brent arise from traffic passing through on the strategic road network. Brent will work in partnership with TfL, neighbouring boroughs, the West London alliance and road regulators to smooth traffic flow and ease congestion. Actions that will be pursued are listed below although the package will be subject to review and amendment as part of the reviewing process of the Air Quality Action Plan.

4.2.1 The North Circular Road (A406) and other strategic routes

The roads within the borough associated with high air pollution levels are the A5 and the A406.The A406 North Circular Road (NCR) is designated as both a Trunk Road, GLA road and a priority (Red) Route. It forms a key element in the London Road Network in channelling essential traffic, especially freight, away from inner London. PPG 23 advises against new accesses onto primary routes such as this, as this would conflict with the strategic role of carrying through traffic but acknowledges that this is sometimes necessary to secure regeneration.

As a red route and GLA road, traffic management measures are under the control of the GLA who has recently published a revised network plan with more emphasis on traffic restraint and providing for non-car modes. Currently the NCR is predominantly focussed around the needs of car users. Brent will seek a more balanced approach with emphasis on other transport modes.

The NCR presents special air quality problems. The road plays a key role in the Strategic Road Network for London, helping to solve air quality and traffic problems in Central London by diverting traffic away. Notwithstanding improved fuel emissions standards the sheer volume of traffic on this road, even if significantly reduced would present severe air quality problems for the foreseeable future.

Reducing the amount of stop/start driving will help to reduce emissions. TfL's Director of Traffic Management (DTM) is actively involved in initiatives to achieve this on the London network.

- DTM initiatives include better real time traffic management using the London Traffic Control Centre to reduce the effects of unexpected events that take place on the network and to plan and mitigate the effects of events if they are known.
- DTM is also working with boroughs and other partners to better co-ordinate and manage street and road works to reduce network disruption.

The Council commissioned a study in 2004 to investigate improvement of bus services between Wembley and Park Royal to reduce community severance. This also made recommendations on possible future orbital public transport corridors to provide an alternative to car transport on this section of the North Circular Road.

Action 27: **Brent through the planning process will seek to improve bus and cycle provision alongside the road and measures to reduce community severance.**

Action 28: **Air quality sensitive development (e.g. housing, hospitals, and schools) will be restricted in areas close to the North Circular Road, where air quality exceeds set standards and objectives.**

In August 2003 a feasibility study was conducted to investigate potential options to mitigate air quality impacts and other environmental impacts of the A406 North Circular Road and improve the quality of life for residents living in the St Raphael's and Brentfield estates. Residential properties are located within 5m of the kerbside of this six lane highway which accommodates 105,000 vehicles per day. The options for improving air quality are restricted to reactive physical mitigation measures (in the short term). These seek to ameliorate the existing ambient air pollution or reduce the exposure of residents to high pollution levels.

The report examined several options for improving air quality including vegetative barriers. Vegetative barriers consisting of woven willow and wide leafed nitrogen fixing plants such as clover would absorb, filter and disperse nitrogen dioxide and fine particles. The study concluded that the combined noise/air quality 'green' and woven barriers would deliver a significant improvement in the quality of life for local residents.

TfL were consulted and welcomed the innovation but had significant concerns about the practical application of green barriers in this location. Areas of concern included the following:

- Establishment of living barriers is likely to be difficult
- A living barrier would require regular pruning, resulting in regular lane closures
- Irrigation problems
- The woven barrier presents advantages over the living barrier in terms of space and maintenance requirements, but may not be adequately durable.

Action 29: **Brent together with TfL and the Highways Agency will continue to explore innovative ways of dealing with air quality problems along the NCR.**

Action 30: **Brent will explore other avenues with Policy and Regeneration Unit and elected members to bring about improvement in the quality of life for those who live along the North Circular Road.**

Brent's UDP policy TRN18 will be used to secure some of the above actions. The Transportation Unit has published a Local Traffic Management strategy for the area as published in the Interim Transport Plan. The plan addresses further actions required for the North Circular road and is covered in Action 31 and 32 below.

Action 31: **(The North Circular Road) In conjunction with the Traffic Director for London will look to block unsafe and unauthorised residential accesses, to facilitate improved bus services, especially improved access by bus to Neasden Town Centre.**

Action 32: **Brent will lobby TfL to investigate use of high occupancy vehicle lane and freight priority schemes along the A406.**

Other strategic roads also carry heavy traffic causing air quality exceedances. The ILIP addresses problems related to a few of these corridors.

Action 33: **The Edgware Road (A5), in conjunction with the London Borough of Camden to implement bus priority measures, to introduce Controlled Parking Zones on side roads near rail stations. In Kilburn introduction of controlled parking, pedestrian improvements and Home zone in Brondesbury.**

Action 34: **A 404 Corridor (Harrow Road)- completion of bus priority measures, increased space for pedestrians and cyclists, entry treatment on critical side roads and queue management to reduce air pollution.**

4.2.2 Good Signage

Good signage improves road safety and helps to reduce congestion by encouraging drivers to select appropriate routes. This minimises delays and unnecessary road traffic resulting in reduced air pollution emissions.

Action 35: Brent will set out in the LIP a programme for addressing current deficiencies in primary, secondary and local signage.

4.2.3 Clear Zones

TfL through the Borough Spending Plan process encourages London boroughs to take an area wide approach to designing and managing appropriate local streets as Streets-for-People.

Action 36: Brent will identify Clear Zone areas where severe problems affect the use of streets, particularly by pedestrians and cyclists and where implementation is practicable.

4.2.4 20mph Zones

The Council is in the process of introducing 20mph schemes and proposes schemes for Chapter Road, Ruckledge Avenue, Rugby Avenue and Springfield/ Conniston Gardens. A further four areas will be identified and phased over the next 6 yrs. Experience has shown that such schemes lead to real road safety improvements as well improvements in the local environment.

Action 37: The Council, subject to gaining the necessary funding, will develop new 20mph zones where a need is identified every two years for the next six years

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4.2.5 Parking and Traffic Restraint

The Council can attempt to limit the number of car trips into the Borough by limiting the number of on- and off-street parking spaces available to non-residents. Pressure for visitor parking spaces is high in many parts of the borough and the Council must set the charges for on-street parking (and spaces in its own car parks) so as to manage the demand. Guidance from the Government states that parking charges should be set for traffic management reasons, such as to ration spaces; this can have the indirect impact of discouraging some vehicle trips and thereby reducing vehicle emissions. There is no doubt that such tight parking controls are necessary in town centres.

Action 38: The Council will ensure that its charges for on-street visitor parking spaces are effective in managing demand.

Action 39: Where appropriate encourage developers to build car-free developments in AQMAs.

Action 40: Lower parking standards will be applied for developments of affordable housing and for units in town centres with good and very good public transport accessibility (UDP Policy PS14).

Action 41: **'Car-free' housing developments will be permitted in areas with good and very good public transport accessibility where occupation is restricted by condition to those who have signed binding agreements rescind car ownership space(other than for car clubs).**

Action 42: **Brent's LIP in the Parking and Enforcement Plans will include a programme for identification, review and implementation of potential new CPZs**

A number of tube and rail stations in the borough have associated car parks. This can produce 'rail-heading' with traffic attracted to an area to achieve lower rail fares. Drivers seeking to avoid the charges for these facilities also cause severe parking problems in nearby residential streets. All station car parks will need reviewing in combination with the review of on-street parking controls required by Policy TRN24 of the UDP. A Transport Impact Assessment will be necessary which looks at driving patterns of existing users and considers whether alternatives, including 'feeder' bus services, as an integral part of the ordinary bus network would have net benefits in terms of reducing the number or length of car journeys.

Action 43: **The future of car parks serving stations will be reviewed in the plan period. Their loss will only be acceptable where on-street parking controls and necessary replacement 'feeder' bus services are in place or secured. (Policy TRN 29 UDP)**

4.2.6 Freight

Efficient handling and transport of freight is crucial for the regeneration of the industrial areas of the Borough. UDP policies encourage the transfer of freight from road to rail and water. The Council would like to reduce the adverse impact of freight transportation the borough. A considerable amount of freight passes through the borough on its way to and from central London, in addition to the freight generated by industry and the servicing needs of businesses within the borough. Brent is involved with the Freight Quality Partnership in West London and will consider a similar partnership for the borough if appropriate, which will link with the West London Scheme. In developing such partnership, we will take into consideration the recommendations of the London Sustainable Distribution Partnership.

Action 44: **Investigate the scope of linking with neighbouring boroughs and local businesses in "Freight Quality Partnership"**

Action 45: **Encourage businesses to use local suppliers to minimise 'Freight miles'.**

Action 46: **Existing sidings will be protected where these are adaptable to serve anticipated needs.**

4.2.7 Traffic reduction target

The MTS adopts a target for 2011 of absolute reductions in weekday traffic of 15% in Central London, zero growth across the rest of inner London, and reducing growth in outer London by a third, with the aim of achieving zero growth or absolute reductions in outer London town centres. The London Boroughs will be expected to play a key role in achieving these targets through road traffic reduction initiatives introduced at local level.

Action: 47 **Brent will include in the LIP traffic growth forecasts and how the policies demonstrate in the LIP will contribute to meeting the traffic (growth) reduction targets in the MTS for outer London.**

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-effectiveness	Timescale	Initial Target/ Indicator
THEME 2: TRAFFIC REDUCTION AND TACKLING THROUGH TRAFFIC					
The North Circular Road (A406) And Other Strategic Routes					
27. Improve cycle and bus provision & community severance	Transportation Director	Low	Medium	December 2007	Improvement in bus and cycle provision
28. Restrict air quality sensitive developments such as housing	Planning Assistant Director Policy & Projects	Low	High	On-going	Monitor planning applications
29. Explore new ways of dealing with high levels of pollution	Transportation Director	Low	Medium	Long term	Monitor progress or work towards new ideas
30. Explore other avenues to improve the quality of life for residents near NCR	Policy and Regeneration Director	Low	Medium	Medium term	Monitor progress of new ideas
31. Block unsafe, unauthorised residential accesses to facilitate improved bus services	Transportation Principal Transport Planner	Medium	Medium	December 2007	No of unauthorised accesses blocked
32. Investigate use of high occupancy lanes and freight priority schemes	Transportation Principal Transport Planner	Medium	Medium	December 2007	Feasibility of including proposals in the LIP
33. Implement Bus Priority measures and CPZ near rail stations along the A5.	Transportation Principal Transport Planner	Medium	Medium	On-going	No of bus priority measures and CPZ's near stations
34. Complete Bus priority measures along Harrow Road and increase space or pedestrians and cyclists	Transportation Principal Transport Planner	Medium	Medium	On-going	% of scheme implemented
Good Signage					
35. Programme for deficiencies in primary, secondary and local signage	Transportation Acting Head of Highways Maintenance	Medium	High	December 2006	Identify priority sites

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-Effectiveness	Timescale	Initial Target/Indicator
Clear Zones					
36. Identify 'Clear Zones' where severe problems affect street use	Transportation Principal Transport Planner	Medium	High	December 2006	Number of areas identified
20mph Zones					
37. Develop new 20mph Zones	Transportation Principal Transport Planner	Medium	Medium- High	December 2006	Ensure schemes identified in the LIP and No of schemes identified
Parking and Traffic Restraint					
38. Ensure parking charges are effective in managing demand	Transportation Principal Transport Planner	Medium	High	On-going	Review Parking Strategy
39. Encourage 'car free' developments in AQMA's	Planning Area Team Managers	Medium-High	High	On-going	Number of car free developments in AQMA's
40. Lower parking standards for affordable housing with good transport accessibility	Planning Assistant Director Policy	Medium	High	On-going	Number of developments with lower parking standards
41. 'Car-free' developments in areas with good public transport	Transportation Principal Transport Planner (Development Control)	Medium	High	On-going	Number of car free developments with good transport facilities
42. Identify potential new CPZs	Transportation Principal Transport Planner	Medium	Medium	On-going	LIP to include programme for identification and review of new CPZ's.
43. Future of car parks serving stations to be reviewed	Planning (Policy TRN 29 UDP) Assistant Director Policy & Projects	Medium	Medium-High	December 2006	Identify programme for review
Freight					
44. Scope of linking with neighbouring Boroughs in 'Freight Quality Partnership'	Transportation Head of Transport Strategy	Low	Low	December 2006	Look at schemes that can directly link to West London Freight Quality Partnership

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-Effectiveness	Timescale	Initial Target/Indicator
45. Use local suppliers to minimise 'freight' miles	Planning (SPG 19) Team Manager (Policy)	Medium	High	On-going	Effectiveness of implementation of SPG 19
46. Protect existing sidings for anticipated freight needs	Planning Team Manager (Policy)	Medium-High	Medium	December 2006	Number of areas protected and numbers identified for protection
Traffic growth reduction target					
47. Implement policies to meet the traffic growth (reduction) targets set out in the MTS	Transportation Principal Transport Planner	Medium	High	December 2005	Ensure Lip contains realistic figures on traffic reduction

4.3 THEME 3: PROMOTION OF CLEANER TECHNOLOGIES AND ALTERNATIVE FUELS

4.3.1 Low Emission Zone

The scale of the air pollution problem in London requires new and innovative ways of reducing road traffic emissions. The largest potential impact on air quality and vehicle emissions would be the introduction of cleaner vehicles into the vehicle fleet. It may be that accelerating the take up of low emission technologies is the only way of achieving the required reduction in air pollution and meeting the national air quality objectives for 2004/2005. Ambitious and innovative policies will be required to achieve this aim (with the use of penalties and incentives where appropriate) and a Low Emission Zone (LEZ) is one such policy. The key legislative tools in this respect are the Road Traffic Regulation Act, which permits the exclusion of vehicles that fail specific emissions standards and the Environment Act 1995, which extends the ability to make Orders to include air quality objectives.

Vehicle technology is constantly improving. European legislation has established different emissions standards for new vehicles, commonly referred to as Euro standards, which have had a significant impact on vehicle emissions. The table below outlines the Euro standards that have been introduced since 1993, together with future standards now agreed as a result of the European Commission's Auto-Oil programme. Cleaner vehicle technology includes the latest conventional technologies used in newer petrol and diesel engines, the retro-fitting of older vehicles with emission reduction technology, and the use of alternatively fuelled vehicles such as gas, electric or fuel cells. The limiting factor in the emission reductions these technologies can achieve is not the technologies themselves but the rate of their adoption into the vehicle fleet.

Standard	Directive	Type of Vehicle	Date of Introduction
Euro I	91/444/EEC 93/59/EEC 91/542/EEC	Passenger cars Light commercial Heavy diesels	31 Dec 1992 1 Oct 1994 1 Oct 1993
Euro II	91/5442/EEC 94/12/EC 96/69/EC	Heavy diesels Passenger cars Light commercial	1 Oct 1996 1 Jan 1997 1 Oct 1997
Euro III	98/69/EC	Passenger, light commercial Heavy diesel	1 Jan 2001 1 Oct 2001
Euro IV	98/69/EC	Passenger, light commercial Heavy diesel	1 Jan 2006 1 Oct 2006

An LEZ is a defined area that bars entry to polluting vehicles that do not comply with set emission standards. The purpose of LEZ is to encourage targeted vehicle owners and businesses to adopt cleaner engine technologies or to purchase newer, cleaner vehicles. New legislation is not required for such a scheme so local authorities will be able to use Traffic Regulation Orders (TROs) to ban certain classes of vehicle. The Environment Act 1995 also confirmed that TROs could be introduced for air quality purposes.

Many London boroughs are in favour of such a scheme being implemented to some extent in London. The London Borough of Brent is currently working with neighbouring local authorities, the Association of London Government (ALG), the Greater London Authority

(GLA) TfL, DEFRA in a London Low Emmission Zone (LEZ) Steering Group. The purpose of this group is to undertake a feasibility study of LEZs in London, including the implementation, operation, air quality impact, viability, costs, benefits and public acceptability of various schemes. Phase 1 of the study concluded an LEZ has the potential to make significant progress towards meeting National Air Quality Objectives in London in a cost-effective manner. Phase 2 of the study was commissioned to assess in detail various areas, vehicles, emission criteria, start dates, implementation methods the costs and benefits. This phase was completed in July 2003 and concluded that the most realistic LEZ would:

- Cover the whole of Greater London
- Target Heavy Duty Vehicles (HDV), i.e. lorries, buses and coaches
- Start in late 2006 or early 2007
- The scheme could be extended in 2010 to include Light Duty Vehicles

One of the most effective ways of reducing the impact of emissions and encourage faster adoption of cleaner vehicles is likely to be the use of LEZ. The Mayor's 2004 election manifesto proposes an LEZ should be implemented by 2007.

Action 48: Brent LIP will set out Brent's response to the key proposals for an LEZ.

Action 49: Brent Council will join the LEZ when implemented.

4.3.2 Vehicle Emission Testing

Emission standards for vehicles have been set to ensure that they are well maintained. Light vehicles are tested to these standards by annual MOT test and heavy vehicles by annual roadworthiness test.

In 1997, the Road Traffic (Vehicle Emissions) Regulations gave powers to seven local authorities to carry out roadside emission tests and fine drivers whose vehicles failed to meet MOT emission standards. This pilot scheme proved to be successful and highlighted that 16% of vehicles tested failed to meet the prescribed emission standards. From April 2002 these powers were extended to allow local authorities that have formally designated AQMAs to enforce vehicle emission standards at the roadside. In July 2002, a bid was submitted to Department for Transport by the Association of London Government (ALG) for grant support towards the cost of a London wide programme of roadside vehicle emission testing in 2003/4. Brent was one of 29 London authorities participating in the scheme. The bid was successful and Brent has been designated by the Secretary of State to authorise persons to carry out roadside vehicle emissions tests. The integral part of the project and budget will be supporting the publicity campaign.

Action 50: Brent in partnership with other boroughs, Association of London Government, the Mayor and London's Police services will work on other similar initiatives should funding be available.

4.3.3 Emissions from Stationary Vehicles

The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 SI 2002. (No 1808) enable local authorities in England to issue Fixed Penalty Notices to drivers who allow their vehicles to run unnecessarily while the vehicle is stationary. The Regulations came into force on 18 July 2002. It is not the intention to target drivers who leave engines running when parked for no more than a few seconds; rather, action will be taken against

more serious offenders (e.g. coaches which park in busy town centres, buses standing idle and vehicles parked outside schools. The Council also intends to place signs at appropriate locations (e.g. outside schools, taxi ranks and bus stops where buses terminate) informing drivers to switch their engines off whilst stationary. Whilst these new powers would not lead to huge improvements in local air quality they would address a problem that is a great concern to residents and businesses.

The Council will take note of how these regulations were enforced previously piloted by several councils, including Westminster and seek a suitable way to enforce them.

Action 51: The Council will set up mechanisms to enable it to use its powers to require drivers of stationary vehicles to switch off 'idling' engines, from 2003 onwards.

Action 52: Ensure that TfL instructs bus drivers not to leave their vehicle engines running unnecessarily whilst parked.

Action 53: Promote information on emissions from stationary vehicles as part of travel awareness campaign.

4.3.4 Cleaner Vehicles and Fuels

Most of the vehicles on Brent's roads run on petrol and diesel. The incomplete combustion of these fuels causes most of the pollution in the borough. A move towards cleaner fuels would help reduce emissions at source. Clean vehicle technology includes conventional technologies used in newer vehicles constructed to meet more recent EU regulations, as well as alternatively fuelled vehicles. These include vehicles powered by compressed natural gas (CNG), liquefied natural gas (LNG) and liquid petroleum gas (LPG), as well as electric vehicles and, in the not too distant future, fuel cell vehicles. Older vehicles that are presently on the road can also be cleaned up with a variety of retrofit technologies, such as by fitting a particulate trap or an oxidation catalyst. These vehicle and retrofit technologies could go a long way to enabling London to meet National Air Quality Strategy Objectives.

Two DFT (Department for Transport) sponsored programmes – 'Transport Action' and 'CleanUp' - will help to reduce the air quality impact of transport. Both programmes are administered on behalf of the DFT by the Energy Saving Trust. Transport Action provides grants towards the additional cost of purchasing alternatively fuelled vehicles that offer emissions benefits compared to their petrol or diesel equivalents. To date, most of the programme's activities have been in support of gaseous fuels, such as liquefied petroleum gas or natural gas, and electric vehicles. However, Transport Action is now also supporting the early introduction of emerging technologies such as hybrid and fuel cell vehicles that produce very low emissions of both local and global pollutants.

The Clean-Up Programme aims to reduce emissions of nitrogen oxides and particulates from existing urban vehicles by providing grants towards the cost of fitting emissions reduction equipment or converting them to run on alternative fuels. Projects underway include fitting continuous regenerating particulate traps (CRT) to London buses and the conversion of a pilot fleet of London taxis to run on gas. The programme is focussing particularly on areas with poor air quality.

Vehicles can be significantly cleaner if well maintained, as well as using less fuel (so also reducing fuel costs) and producing less of the greenhouse gas carbon dioxide. Regular maintenance can improve the emissions of many vehicles relatively simply.

The Council has been steadily increasing the proportion of its vehicle fleet that runs on electricity, Liquid Petroleum Gas (LPG) and Compressed Natural Gas (CNG). A large proportion of the Council fleet is made up of diesel vehicles (most polluting vehicles) which are not 'greened' by fitting continuous regenerating particulate traps (CRT) and energy saving tyres. In order to require residents and other businesses to switch to alternatively fuelled vehicles, London Borough of Brent must set its own house in order and lead by example.

Action 54: Brent will undertake a Council fleet vehicle survey.

In summer 2004, the ALG on behalf of the Clean Fuel Vehicle Working Group commissioned a survey of borough fleet vehicles. The survey found that Brent has a fleet of 299 vehicles and highlights the following points:

- Brent fleet is relatively old compared to the London average. 33% of the fleet is pre-Euro 2. Majority of the fleet runs on diesel (account for over 90% of the borough's fleet, compared to 80%);
- Brent does not have a fleet manager responsible for all Council run vehicles or contractors;
- Onyx, the refuse contractor does not provide information on their fleet or fuel facilities;
- The draft AQAP has no specific policy in relation to borough vehicles and no implementation strategy.
- No emissions control equipment has been fitted or retro-fitted to any vehicle in the Brent fleet.

The report concludes that there are major opportunities to reduce emissions from the vehicle fleet in Brent and at the same time reduce overall cost (as well as the risk of legal infringements). The report states "…for fleets the size of the Borough, Best Practice is to centralise fleet management. Where this is done, appropriate investment can be justified in both management skills and information systems". It is important that the borough wide policies are established and implemented that in order to reduced vehicle emissions.

The two main recommendations of the report are:

- Brent should nominate a senior manager with overall responsibility for fleet and transport management as well as given direction and impetus to improving environmental performance and ensure procedures are in place to manage work related road safety. They would also ensure that Executive Officers and Councillors are aware of their responsibilities under the Health and Safety Act and the forthcoming Corporate Manslaughter Act.
- The focus for improving environmental impact of the Borough's transport use should be to reduce travel on council business. It is estimated that this could save the borough approximately £200,000 a year and increase staff productivity.

Furthermore, the LIP guidance requires boroughs to develop strategies for increasing the uptake of cleaner fuelled vehicles within the borough's own transport fleet and the freight fleet of contracted services.

Action 55: Brent will develop a strategy that will address issues raised in the Borough Fleet Survey and implement the Fleet and Management Best Practice Action Plan.

By 2005, the majority of the London vehicle fleet will be running on diesel or petrol and the move to gas or electric vehicles is likely to be a long-term measure that will have a gradual positive impact. In addition, the Council can encourage the use of 'cleaner' fuels by implementing a number of strategies as outlined below.

Action 56: Produce guidance on the provision of low emission fuels in the borough including electric vehicle recharging points

Action 57: Investigate and identify potential new sites for further alternative refuelling infrastructure as part of the Local Development Framework process.

4.3.5 Developing the infrastructure of low-polluting fuels in Brent

Currently there is inadequate provision for re-fuelling or recharging gas-powered and electric vehicles in the Borough. There are currently 3 LPG and 1 CNG re-fuelling sites in the borough.

Provision of Biofuels – Brent Energy Network is planning a new social enterprise based in Park Royal, which will collect used vegetable oil from food processing businesses on the estate and convert it to diesel engine fuel. Apart from being a renewable source of energy and carbon neutral, the fuel is bio-degradable, has very low emissions, improves miles per gallon and reduces engine wear. Brent Energy Network's new biofuel plant at North Wembley started operating in 2004 and is supplying to local transport, construction businesses as well as some of the Council's fleet in the Park Royal/Wembley area. Brent recognises that the GLA and TfL are looking further into the air quality implications of biofuels, to address current concerns regarding possible increases in NOx emissions. Brentlink demand responsive bus service will be a pilot project for use of bio-fuels in Brent.

Provision of LPG – Although the Council can encourage the take-up of LPG by a few organisations, current suppliers would not be able to meet the potential demand from fleets and private individuals in the area. The issue of provision of clean re-fuelling stations has been highlighted within Supplementary Planning Guidance 19 and measures to implement this will be sought through the planning process.

Provision of electric charging points – The Council's electric vehicles are charged at Brent House on Wembley High Road. There is no public provision of electric charging points in Brent at present. Modern electric vehicles can be fully charged in four hours and have their power 'topped up' in much shorter periods. In the first instance, this is probably best done in off-street car parks, but in longer term, it may be possible to provide facilities at on-street parking bays.

The impact of these proposals on fuel infrastructure will depend on the extent to which individuals and businesses respond to new opportunities created. Although the Council cannot guarantee more people will use cleaner vehicles, we recognise that we have a role to play in its facilitation.

Action 58: The Council will work with Transport-Energy, Energy Solutions, existing and potential suppliers of alternative fuels to identify and establish appropriate re-fuelling sites in Brent.

Action 59: Brent will investigate the feasibility of installing on-street charging points for electric vehicles from December 2005 by working with The London Clean Fuel Vehicle Working Group.

4.3.6 Hydrogen Fuel Cell Buses

All fuel cells combine hydrogen and oxygen in an electrochemical reaction to produce electricity. Fuel cell vehicles are being developed by all major vehicle manufacturers and are expected to be available at prices competitive with other technologies in the next five to 10 years. TfL are currently conducting trials on one London Bus route. Should they be successful, the Council would be keen to see these buses deployed on some London Bus routes serving Brent.

Action 60: The Council with work with TfL (and other partners) to deploy these buses on some London bus routes serving Brent.

4.3.7 Partnership working with local fleet operators

The Council is not the only local organisation with a large fleet of vehicles. We have already begun work with the Brent NHS Trust, the local fire service and the Metropolitan Police to help them reduce the vehicle emissions associated with their operations. Brent will work at local level with all organisations that are located in Brent and the local Strategic Partnership is ideally placed to assist us in our partnership working. Locally we will facilitate the use of low and zero emission fuels by identifying existing or potential re-fuelling sites and by bringing suppliers and potential customers together.

Many large fleets operate over the whole of London and are managed centrally. Where appropriate the Council will support the pan-London efforts to encourage improvements in the environmental specifications of such fleets.

Brent notes and supports the Mayor's proposals contained in the Mayor's Air Quality Strategy to 'encourage businesses to ensure that all vehicles are at least Euro II standard plus a Reduced Pollution Certificate or Euro III by 2005'.

Action 61:. The Council will encourage local organisations to 'green' their fleet by:

- **reducing emissions from commercial and public vehicles such as black cabs, lorries, buses, emergency vehicles and refuse trucks through technologies such as, particulate traps, oxidation catalysts, re-powering, conversion to LPG or natural gas and exhaust gas re-circulation;**
- **using and encouraging the use of water-diesel emulsion (for existing vehicles);**
- **identifying potential suppliers of low and zero emission fuel.**

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-effectiveness	Timescale	Initial Target/Indicator
THEME 3. PROMOTION OF CLEANER TECHNOLOGIES AND ALTERNATIVE FUELS					
Low Emission Zone					
48. Consider recommendations of LEZ feasibility study	Transportation Principal Transport Planner	Medium	High	December 2005	LIP to respond to the Mayor's proposal for LEZ
49. Join a London-wide LEZ if appropriate for Brent	Cabinet decision	Medium	High Funding via TfL (Borough's input not determined)	December 2007	Implementation
Vehicle Emission Testing					
50. Participate in London-wide Vehicle emissions testing programme should funding be available	Environmental Health Service Manager	Low-Medium	medium	Short term	Asses potential for Brent to continue in a regional programme
51. Ensure the implementation of the Idling Vehicles Regulations	Environmental Health Service Manager	Low (potential for targeting AQMA areas)	Low-Medium	February 2006	Identify internal mechanism for implementing Idling Vehicle Regulations
52. Ensure TfL instructs bus drivers not to leave their vehicle engines running	Transportation Principal Transport Planner	Low-medium	low	December 2005	Identify worst bus companies and set up a mechanism for reporting and monitoring. Number of penalty notices served
53. Promote information on emissions from stationary vehicles as part of travel awareness campaign	Transportation Senior Sustainable Transport Officer	Medium	low	Short term	Identify campaigns that raise awareness of high emissions from stationary idling vehicles
Cleaner Vehicles and Fuels					
54. Undertake Council fleet Vehicle survey	Policy & Projects Head of Policy & Projects	High	low	On-going	Action taken on the recommendations and the proposed action plan
55. Develop strategy for borough fleet management	Policy and Projects	High	Low-medium	December 2006	Progress on strategy development
56. Produce guidance on provision of low emission fuels and electrical charging points	Transportation Principal Transport Planner	Medium	Low	December 2006	Identify Unit to lead on project Monitor progress on guidance Marketing guidance
57. Investigate and identify new sites for alternative re-fuelling infrastructure	Planning (LDF) Assistant Director Policy & Projects	Medium	Low	December 2006	Identify potential sites in Brent

Action	Responsibility and Implementation mechanism	Impact on AQ (NO_2)	Cost-effectiveness	Timescale	Initial Target/Indicator
Developing the infrastructure of low-polluting fuels in Brent					
58. Establish appropriate new re-fuelling sites in Brent	Planning Team Manager Policy	Medium	Medium	December 2006	No of sites identified No of sites operating
59. Install public charging points for electric vehicles	Transportation Principal Transport Planner	Medium (High if electricity from renewable sources	Medium	December 2006	No of car parks with electric car charging points
Hydrogen fuel cell buses					
60. Deploy hydrogen fuel cell bus routes serving Brent if pilot project proves successful.	Transportation Principal Transport Planner	High	Medium	December 2007	Introduce Hydrogen Fuel Buses if feasible
Partnership working with fleet operators					
61. Brent to encourage local organisations to 'green' their fleet	Policy and Projects through the Energy Strategy	High	Medium	December 2006 Long term	Implementation of the Energy Strategy Monitor progress

4.4 THEME 4: MEASURES CONCERNING LOCAL INDUSTRIES

In addition to dealing with emissions from vehicles, emissions from other sources such as buildings, waste facilities and construction sites also need to be tackled. The problems with the Neasden Goods Yard were not identified in the Stage 4 review and assessment report as the emissions are from a fugitive source.

4.4.1: Neasden Goods Yard

Neasden Goods Yard is located along Neasden Lane in Brent and is safeguarded as Waste Management/Manufacturing area in policy W5 in the UDP. Neasden Goods Yard is leased by 5 operators leasing the yard carrying out waste transferring and re-cycling activities. The site has been in operation for a number of years but there has been a very large intensification of use over recent years.

Brent for the last few years has received a number of complaints regarding dust nuisance from residents and businesses near the yard. The complaints were investigated and referred to the Environment Agency for action, as they are the primary enforcement agency for the site.

However, the nuisance from dust continues and in September 2003, the Council applied for funding from DEFRA for continuous monitoring of PM10 and characterisation of dust in the area. Monitoring of PM10 commenced in February 2004 as well as traffic surveys which found that as many as 600 HGV's and LGV's accessed the yard daily. Residential/business premises are located within 12m of the site.

The monitoring confirmed that the waste transfer station on Neasden Lane had a significant environmental impact on the immediate vicinity in terms of both nuisance dust and PM10. Mean rates of dust deposition along Neasden Lane and at Neasden Station exceeded the value 200mg/m^2/d, recommended by the Environment Agency for assessing impact of waste transfer facility. In addition, there are exceedances (Monday to Friday) of the daily limit for PM10 as set within UK National Air Quality Strategy and EU Air Quality Daughter Directive (typically levels of 300ug/m3 are measured daily). The PM10 objective set within the UK Air Quality Strategy presently permits 35 exceedances of the daily limit per annum. The number of exceedances measured so far breeches the objective by a considerable margin and as such falls within the requirements necessary for designating an Air Quality Management Area. The characterisation of samples demonstrated that the mineral particles were responsible for both the high rates of dust deposition and exceedances of PM10. The minerals appear to be associated with the waste transfer station, either as re-suspended dust or fugitive emissions from the site. It is the responsibility of the Environment Agency to regulate pollution associated with waste transfer facilities and to supervise the execution of appropriate mitigation.

The Environment Agency and the Council have agreed a common aim in resolving the dust problems and work in partnership where possible to achieve that aim. However, recent meetings with the Environment Agency have highlighted some stark differences in enforcement practice, namely:

- The Agency had deferred any remediation at one of the operators pending the outcome of its prosecution case.
- The Agency is less prescriptive in its application of waste management licence conditions. In contrast, the Brent's practice is to apply prescriptive requirements e.g. in issuing permits for polluting processes coming under PPC regulations.

In order to resolve the problems both short term and long term measures need consideration.

Action 62: **The Council will work with the Environment Agency and the operators to mitigate dust from operations e.g. install wheel wash facilities and covering all dust generating activities on site.**

Action 63: **The Council will use external pressures to rigorously enforce measures that will lead to minimisation of dust (by the Environment Agency).**

Action 64: **The Council will try to identify alternative and appropriate waste management sites in the LDF process.**

Action 65: **The Council will try to identify other more appropriate uses of the site at Neasden Goods Yard.**

Action 66: **The Council will undertake enforcement action under nuisance provisions of the Environmental Protection Act 1990 where appropriate.**

4.4.2 Control and minimise emissions of small particles from construction sites

Other main 'static' sources of PM10 include industrial emissions, dusty demolition and construction work and bonfires, whilst NO2 emissions tend to be emitted from boilers.

Dust emissions from construction and demolition sites are a common problem and can represent a significant source of local pollution. Significant amount of construction is due to take place in the borough including Wembley Quintain development and South Kilburn regeneration.

Construction site operators will need to demonstrate that emissions of PM10 particles from their sites are adequately controlled. To help demolition and construction companies take a responsible approach to minimising dust and smoke emissions and emissions from construction plant during building works, the Council plans to draw up a "Considerate Contractors (Builders) Scheme" to outline the most appropriate methods for dust and other pollutants to be minimised during construction and demolition work.

The Council will enforce Environmental Protection Act 1990 in relation to dust nuisance from construction, waste management facilities and where appropriate place dust conditions on planning permissions granted for large development sites requiring dust control measures and NO_2 monitoring. These actions are expected to reduce statutory dust nuisance to nearby residents as well as reducing PM_{10} and other pollutants emitted from sites.

Where practicable the re-use of existing building stock rather than demolition will be encouraged as this can substantially reduce the amount of dust pollution caused by demolition and construction work. It can also reduce the number of vehicle movements that would be necessary to transport material from the site and bring in new building material. The Wembley Quintain project has agreed to use the Institute of Civil Engineers and London Remade Demolition Protocol for the Arena and other associated demolition works.

Action 67: Enforce the Environmental Protection Act 1990 in relation to dust and smoke nuisance

Action 68: Use the Planning Process to set conditions in relation to large scale demolition and construction sites to produce an acceptable site specific 'Construction Management Scheme'.

Action 69: Develop and publicise guidance in the form of a "Considerate Contractors Scheme" to ensure dust, emissions and smoke are minimised on construction sites.

Action 70: Encourage the re-use of existing building stock rather than demolition and re-development.

4.4.3 Seek a reduction in emissions from domestic and commercial properties

The whole borough is covered by a Smoke Control Order that makes it an offence to emit dark smoke from a chimney arising from the burning of an unauthorised fuel. The implications of the Order are that only authorised (smokeless) fuels, which burn with a minimum of smoke, can be used. Coal, oil and wood cannot be used as fuel, unless they are burnt on an exempted fireplace. These appliances are designed to promote more efficient burning and produce less smoke. These are all listed in the Smoke Control (Exempted Fireplaces) Orders.

Smoke from bonfires causes severe distress to sufferers from respiratory ailments and may give rise to serious nuisance. It tends to nullify the beneficial effects obtained by the reduction of domestic smoke resulting from the operation of Smoke Control Orders. Bonfires are not prohibited by the Environmental Protection Act 1990 even in Smoke Control areas. Although informal action is usually adequate in dealing with bonfires, enforcement action can be taken under the Environmental Protection Act 1990 to stop them and prevent a recurrence. The Council actively discourages the use of bonfires to dispose of waste, by promoting home composting and offers composting bins at subsidised prices to encourage this).

Factories and trade premises (including demolition sites) not regulated by the local authority have to comply with the Clean Air Act 1993. This Act prohibits the emission of dark smoke from chimneys or bonfires on these premises subject to certain limited exemptions. The Clean Air Act also controls the amount of grit and dust that can be emitted from non-domestic boilers and furnaces.

A very small number of premises in the borough may still be burning heavy fuel oil in their boilers. Where these can be identified (e.g. from chimney height authorisation records) operators will be encouraged to convert to light oil or gas.

Action 71: Continue to enforce the Environmental Protection Act 1990 in relation to smoke nuisance and discourage the use of bonfires to dispose of garden waste

Action 72: Produce a 'Bonfire' leaflet giving guidance to local residents.

Action 73: Encourage home composting to reduce number of bonfires and increase re-cycling targets.

Action 74: **Enforce the Clean Air Act 1993 in relation to smoke from domestic and commercial premises.**

Action 75: **Encourage the use of renewable energy sources and combined heat and power.**

The Environmental Protection Act 1990 introduced new controls over industries with significant air pollution potential. The Environment Agency was given the responsibility of regulating larger industries (known as Part A's) such as Taylor's Lane power station and local authorities were given responsibility for smaller industries (known as Part B's).

There are currently 60 Part 'B' processes in Brent and regular inspections of these processes are undertaken to ensure that emissions to air are kept to a minimum.

Action 76: **The Council will ensure that all Part 'B' process inspections are carried out in line with DEFRA guidance.**

Action 77: **Intensify search for premises and prosecute those operating illegally where processes fall within the scope of pollution control regulations that require authorisations/permits.**

Action 78: **Encourage the conversion of large boilers using heavy fuel oil to lighter fuel oils or gas.**

Action	Responsibility and Implementation mechanism	Impact on AQ NO_2 and PM_{10}	Cost-effectiveness	Timescale	Initial Target/Indicator
THEME 4: MEASURES CONCERNING LOCAL INDUSTRY					
Neasden Goods Yard					
62. Work with the Environment Agency and Operators to mitigate dust	Environmental Health Deputy Head of Service	High (PM_{10})	High	On-going	Measures undertaken
63. Apply external pressures to instigate rigorous enforcement of licensing conditions	Environmental Health Deputy Head of Service	Medium (PM_{10})	High	On-going	Monitor changes in enforcement practice
64. Identify alternative more appropriate waste management sites in Brent	Planning Assistant Director Policy & Projects	Low (PM_{10})	High	On-going	Number of sites identified under LDF process
65. Identify alternative more appropriate uses at Neasden Goods Yard	Planning Assistant Director Policy & Projects	High (PM_{10})	Medium	On-going	Planning to produce a briefing note
66. Undertake Enforcement action under nuisance provisions of the EPA (1990)	Environmental Health Service Manager	Low-medium (PM_{10})	Low	On-going	S80 already served on one of the operators Number of prosecutions undertaken
Control and Minimise Emissions from construction sites					
67. Enforcement under EPA (1990) in relation to dust and smoke nuisance	Environmental Health Team Leader	Medium (PM_{10})	Medium	On-going	Number of notices served for dust/smoke nuisance Number of prosecutions undertaken
68. Apply planning conditions requesting a specific 'Construction Management Strategy' (CMS) for large developments	Environmental Health Service Manager	Medium-High (PM_{10})	High	On-going (Quintain re-development)	Number of developments that required a CMS
69. Develop guidance in the form of 'Considerate Contractors Scheme'	Policy & Projects Head of Policy & Projects	Medium-High (PM_{10})	Medium	December 2006	Policy and Performance to agree the work and agree timescale for delivery
70. Re-use existing building stock Apply ICE and London Remade Protocol)	Planning Principal Planning Officer (Policy & Projects	Medium –High (PM_{10})	High	On-going (Wembley project)	Ensure the protocol is applied to development for all land parcels in Wembley and other major development projects such as South Kilburn

Action	Responsibility and Implementation mechanism	Impact on AQ NO_2 and PM_{10}	Cost-effectiveness	Timescale	Initial Target/Indicator
Seek a reduction in emissions from domestic and commercial premises					
71. Discourage use of bonfires to dispose garden waste	Environmental Health Team Leader	Low	high	On-going	Number of bonfire complaints related to burning garden waste
72. Produce a 'Bonfire' leaflet giving guidance to local residents	Environmental Health Team Leader	Low	High	On-going	Work already started
73. Encourage home composting	Streetcare Principal Re-cycling Officer	medium	High	On-going	Increase targets for 'green' waste
74. Enforce Clean Air Act 1993 in relation to smoke from domestic and commercial chimneys	Environmental Health Team Leader	Medium	High	On-going	Number of complaints related to chimneys
75. Encourage use of renewable energy sources and combined heat and power	Planning Assistant Director Policy & Projects	High	Medium-High	December 2007	No of Combined Heat & Power Plants
76. Part 'B' Inspections carried out in line with DEFRA guidance	Environmental Health Pollution Control Officer	Medium-High	High	On-going	DEFRA returns and BV indicators
77. Identify 'unauthorised' processes	Environmental Health Pollution Control Officer	Medium	High	On-going	Number of 'Unauthorised' processes identified and number of permits issued
78. Conversion of large boilers from heavy fuel to lighter fuel oils or gas	Environmental Health Service Manager	Medium	High	Short term	Initially, number of boilers identified Number of boilers switching to 'cleaner' fuels

4.5 THEME 5: IMPROVING ECO-EFFICIENCY OF CURRENT AND FUTURE DEVELOPMENTS INCLUDING PROPERTIES OWNED AND RUN BY THE COUNCIL.

4.5.1 Energy Efficiency and renewable sources

The use of energy is central to virtually all the goods and services that contribute to quality of life. The Government aims to move beyond its Kyoto Protocol target towards its goal of reducing emissions of carbon dioxide by 20% below 1990 levels by 2010 and to put itself on a path to reduce carbon dioxide emissions by 60% by 2050. It has set challenging targets on reducing CO2 emissions including a 30% reduction in domestic energy consumption. Energy production for buildings accounts for 40-50% of UK's emissions of CO2.

The Council has been involved in promoting energy efficiency for some time. The Home Energy Conservation Act (HECA) places a responsibility on the Council to promote energy efficiency of the housing stock by 30% by the year 2006. Improvements in energy efficiency will reduce CO2 and NOx emissions.

The Council has signed the 'Nottingham' declaration and the 'Making A Corporate Commitment MACC)2' scheme in 2003 which has committed the council to providing opportunities for the development of renewable energy generation in the borough as well as setting overall targets for reducing emissions to air over a given time period. The Council is in the process of producing an Energy Action Plan. The Council aims to reduce the Council's CO2 emissions by 15% from 2003/4 levels by 2008. Reduction in CO2 emissions will result in reduction in NO2 emissions. The main objectives of the Energy Strategy are to:

- Review energy use and prioritise areas for action
- Minimise energy consumption in relation to buildings, equipment, vehicles and plant
- Increase energy efficiency of buildings, equipment, vehicles & plant
- Promote the use of cleaner and renewable energy supplies
- Increase energy awareness within the public, community and business sectors.

Action 79: Monitor improvements in energy efficiency in the Council's buildings and housing stock required under HECA.

Action 80: Implement Brent's Energy Strategy and Action Plan.

The planning system has an important role to play in offering long-term air quality improvements. Brent will use both the planning system and additional guidance in order to secure improvements both locally and regionally.

The Council's Unitary Development Plan (UDP) provides the framework for land-use planning in the borough and aims to ensure an integrated and consistent approach to land-use and transport planning. UDP policies aim to protect town centres and local facilities such as shopping and employment land so that the opportunities for people to meet their needs locally are optimised. In this way the need to travel by any means can be minimised and protection of very local services enables trips to be made by walking or cycling.

4.5.2 Reducing the need to travel

Around 6% of our waking hours are spent travelling, accounting for much of the time out of the house, workplace or school. The average distances travelled between home and work in

Britain has increased. Ideally world the amount of time spent travelling to work, the shops and leisure facilities would be minimal with walking or cycling become the preferred option. The Council will encourage development that reduces the need to travel.

UDP Policy TRN6 – proposes that intensive development is supported on appropriate sites at/adjoining existing or proposed transport interchanges. It further proposes that any development should make full and effective use of the site, have a mix of land uses and should be orientated around pedestrians, buses and cyclists (with good links to transport interchange), rather than the private car.

Action 81: The Council will promote mixed-use development, particularly in town centres and other areas with good public transport accessibility.

4.5.3 Sustainability

Sustainability is about achieving environmental, social and economic objectives in a balanced way that can be enjoyed by everyone, now and in the long-term. The UDP contains policies that try and ensure that this happens, but it is only through the design of individual developments that sustainability can really occur. Brent Council is committed to promoting sustainable development throughout the Borough by working with all our partners – developers, businesses, design professionals, contractors & residents. The supplementary planning guidance on Sustainable Design, Construction & Pollution Control (SPG19) has been produced to provide more detailed proposals that have addressed the environmental objectives below:

- Energy Conservation (Efficiency & Renewables);
- Air Quality (Protection & Improvement);
- Land Decontamination (Reclamation & Regeneration);
- Materials Conservation (Site waste Reduction, Re-cycling & Reuse);
- Noise Minimisation (Protection of Health & Quality of Life);
- Landscape Quality (Amenity, Flood Protection & Biodiversity);
- Water Conservation (Reduction & Protection).

The council expects all proposals meeting the following thresholds to comply with the requirements of SPG 19:

- High Buildings (>25m), schemes of 1000m^2 gross floor space or more, or for 10 or more residential units.
- Schemes with 'sensitive' users e.g. housing, education & health proposals within AQMAs.

Householder schemes are exempt from this SPG but may wish to consider the separate Householders Guide.

Action 82: The Council will require assessments of environmental performance of new developments in accordance with guidance given in SPG19 (UDP)

Action 83: The Council will develop and adopt an SDP for air quality.

Action 84: The Council will use appropriate conditions and planning obligations to ensure the protection of local air quality (UDP).

Action 85: **Encourage businesses to seek to improve the indoor air quality of workplace and residential environments where feasible.**

Action 86: **Encourage businesses to adopt purchasing choices so that energy use and emissions are reduced (Energy Strategy).**

Action 87: **Encourage businesses to participate in environmental management schemes and to demonstrate continuing and meaningful improvements (Energy Strategy).**

Action 88: **Ensure new developments meet the highest standards of sustainable design and construction, including the use of existing building stock where appropriate (UDP).**

Action 89: **Ensure that cumulative effects of new developments are quantified (Energy Strategy & UDP).**

Action 90: **The Council will seek section 106 contributions and application of SPG 19 on all aspects of development, where it hinders the achievement of air quality objectives or results in significant increase in air pollution.**

Action	Responsibility and Implementation mechanism	Impact on AQ NO_2 and PM_{10}	Cost-effectiveness	Timescale	Initial Target/Indicator
THEME 5: IMPROVING ECO-EFFICIENCY OF CURRENT AND FUTURE DEVELOPMENTS					
Energy Efficiency And Renewable Sources					
79. Monitor energy efficiency in Council Buildings and housing stock required under HECA	Energy Solutions Director	Medium	High	December 2005	% improvement in energy efficiency
80. Implement Brent's Energy Strategy and Action Plan	Policy & Projects Head of Policy & Projects	Medium	Medium-High	2010	% reduction in CO2 emissions
Reducing The Need To Travel					
81. Promote mixed-use developments in town centres and areas with good public transport accessibility	Planning Assistant Director, Policy & Projects	Medium/High	High	On-going	Number of new mixed use developments in town centres
Sustainability					
82. Require assessments of environmental impact of new developments in accordance with guidance given in SPG 19	Planning Service Managers Area Teams	Medium	High	On-going	Number of developments where SPG 19 applied
83. Adopt an SPD for air quality	Environmental Health Service Manager	Medium	Medium-Hgh	June 2006	Implementation by December 2006
84. Use appropriate conditions and planning obligations to ensure protection of local air quality	Planning Section 106 Officer Environmental Health Service Manager	Medium	Low-Medium	On-going	Number of S106 agreements related to AQ or number of mitigation measures undertaken to reduce AQ impact
85. Improve indoor air quality of workplace and residential environments	Environmental Health Service Manager	Medium	High	December 2006	Identify mechanisms for a pilot scheme
86. Encourage businesses to adopt purchasing choices that are energy efficient	Policy & Projects Head of Policy & Projects	Medium	High	December 2007	Suitable indicator to be identified from the Energy Strategy
87. Encourage businesses to participate in environmental management schemes and to demonstrate continuing improvements	Policy & Projects Head of Policy & Projects	Medium	High	December 2007	Identify number of businesses with Environmental Management systems in place
88. New developments to meet highest standards of sustainable design and construction (UDP)	Planning Principal Planning Officer (Policy & Projects)	Medium	High	On-going	Number of new builds where sustainability appraisal undertaken

Action	Responsibility and Implementation mechanism	Impact on AQ NO_2 and PM_{10}	Cost-effectiveness	Timescale	Initial Target/Indicator
89. Ensure cumulative effects are quantified	Planning Assistant Director Planning Policy	Medium	High	Short term	Number of developments where cumulative impact assessments have been undertaken
90. Section 106 contributions and application of SPG 19 where it hinders achievement of AQ objectives	Environmental Health Service Manager	Medium	Medium	On-going	Number of section 106 agreements and number of mitigation measures undertaken

4.6 THEME 6: ACTIONS TO BE TAKEN CORPORATELY, REGIONALLY AND IN LIAISON WITH THE MAYOR

Air quality is both a cross-discipline and a cross-boundary problem; therefore Brent will ensure that the aims of the Air Quality Action Plan are incorporated in both the Borough and regional strategies.

4.6.1 Links to other strategies

The Air Quality Action Plan needs to be linked to other Council Strategies and initiatives in order for it to be an effective plan.

Action 91: Ensure that the London Development Framework, Local Implementation Plan, the Community Plan and future corporate strategies incorporate Brent's AQAP.

4.6.2 The North Circular Road

The North Circular Road will continue to exceed the air quality standards and objectives. A large number of residents dwell/live very close to the road. Many have parking access to their properties directly off the North Circular Road. The Council will need to formulate measures to deal with the environmental problems caused by the road. Elected members may need to consider setting up a task force to look at options that would be available and indicative costs in order to address the quality of life issues posed by the road.

Action 92: Members consider setting up a task group with adjoining authorities and TfL to look at possible solutions.

4.6.3 Green Procurement

The council as a whole is responsible for purchasing a lot of goods and services as well as transport vehicles. Currently, there is a distinct lack of guidance on 'Green' procurement. This needs to be addressed urgently.

Action 93: Implement a 'green' procurement strategy so that the purchase of goods and services is evaluated against London sustainability targets

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4.6.4 Promote wider use of air monitoring information

For many years the Council has monitored air quality conditions in the borough, both in roadside and background locations. A comprehensive network of automatic monitoring and other simple monitoring methods has been developed which provides information on pollution levels from year to year. This is necessary in order to establish whether air quality is improving. The figures produced by the monitoring instruments are of high quality and are included in the national and regional monitoring networks that indicate how close pollution levels are to the national targets set for 2004/2005. This complements the Council's air quality modelling capability that allows us to predict future local conditions. The air quality monitoring information can be made widely available in order to promote other initiatives.

Action 94: **The Council will review and improve the amount and standard of air quality information on its Environmental Health web site.**

Action 95: **The Council will review and improve the provision of air quality information to the public.**

Action 96: **Provide air quality information to interested parties and link with other health initiatives.**

4.6.5 West London Alliance

The West London alliance (WLA) represents a grouping of London Boroughs linked by a number of common aims. One of the aims identified by the group is the need to work together on a number of environmental matters. In 2001, the WLA issued its environment strategy within which there is a commitment to work together on the issue of local air quality. The WLA produced the Air Quality Strategic Plan 2002-2005 which outlined the strategic actions the group proposes to take in order to achieve improvements in air quality in the West London area. The Plan places great emphasis on the need for co-operation between the seven members of the alliance, namely the London Boroughs of Brent, Ealing, Hammersmith & Fulham, Harrow, Hillingdon, Hounslow and Richmond-upon-Thames. Many of the actions to improve air quality relate to transport functions and meetings have already been held between Air Quality and Transport Groups to discuss this relationship, in liaison with the West London Transport Strategy (WLTS).

MVA who provide support for the WLTS developments, has been commissioned by the WLA to undertake a baseline study examining how boroughs presently address the objectives outlined in the Draft Strategic Plan. The full 'Air Quality and Transport Actions- West London Baseline Study' report is attached in Appendix 1. The Group then set about promoting actions that can be addressed jointly i.e. bus corridors and West London Air quality Monitoring.

In order to take this work forward a successful bid for TfL funding was made on behalf of the partnership, which have agreed a joint action plan 'New Solutions to Shared Pollution'. Key actions and joint projects also form part of this action plan.

Action 97: **The Council will continue to work with the other West London Alliance councils to develop the West London Integrated Transport Strategy.**

Action 98: **The Council will continue to work with its West London Transport and Air Quality partners to complete key actions work streams and joint projects as outlined in 'New Solutions to Shared Pollution' action programme.**

Action	Responsibility and Implementation mechanism	Impact on AQ NO_2	Cost-effectiveness	Timescale	Initial Target/Indicator
THEME 6: ACTIONS TO BE TAKEN CORPORATELY, REGIONALLY AND IN LIAISON WITH THE MAYOR					
Links to Other Strategies					
91. Ensure LDF, LIP, the Community Plan and future corporate strategies complement/take account of Brent's AQAP	Environmental Health Service Manager	Medium	Medium	On-going	LIP and LDF processes are the most current policies that need to take account of the AQAP
The North Circular Road					
92. Members consider setting up a task Group with adjoining authorities and TfL to look at possible solutions	Elected members	Medium	Medium	December 2006	Agree to setting up such a group
Green Procurement					
93. Implement a 'green' procurement strategy so that the purchase of goods and services is evaluated against London sustainability targets	Procurement Team	Medium	Medium	December 2006	Identify development and implementation date
Promote Wider Use Of Air Monitoring Information					
94. Review and improve amount and quality of air quality information on the Environmental Health Web-site	Environmental Health Service Manager	Low	Medium	On-going	Some improvements already made
95. Review and Improve the provision of air quality information	Environmental Health Service Manager	Low	Medium	On-going	Continually improve information
96. Link AQ information to health initiatives	Environmental Health Service Manager	Low	High	On-going	Identify useful health initiatives and report on progress
97. Work with West London Alliance Councils to develop and implement a West London Integrated Transport Strategy	Transportation Head of Transport Strategy	Medium	Medium	On-going	Identify specific initiatives and report on progress
98. West London Transport and Air Quality Partners to complete key actions work streams and joint projects	Environmental Health Service Manager	Medium	Medium	On-going	Report progress on projects

CHAPTER 5 BARRIERS TO IMPLEMENTATION OF AIR QUALITY ACTION PLAN

In order to understand the improvements needed at a location or area, to achieve the AQS objectives, it is necessary to determine the individual source emissions that contribute to overall predicted pollution concentration. A series of specific point locations were selected for investigation to provide a representative understanding. The selection of these locations was undertaken with the points chosen considered to be those representative of areas with predicted high concentrations of pollution. Full details of source apportionment for NOx and PM10 in Brent are discussed on pages 16-28 of the Stage 4 Review and Assessment Report which accompanies this Action Plan.

The actions outlined in this plan will require funding from a variety of sources. In Brent, Environmental Health Officers, Transport Officers and Planning officers are co-ordinating actions to secure funding through Borough Spending Plans and Section 106 agreements to promote a number of actions in specific areas. Therefore, progress will be dependent on the available funding. Table 6 below illustrates some programmes with possible funding streams.

Table 6

Programme	Partners	Funding Stream
West London Transport Strategy	Harrow, Hammersmith, Hillingdon, Hounslow, Ealing, Richmond-on-Thames	TfL, EU Life Environment
Cleaner technologies, alternative fuels, traffic reduction, environmentally friendly forms of transport, awareness raising etc	GLA, TfL, DoT, Private Operators	Private partnerships, TfL, EU Life Environment, Local Strategic partnerships
Improving environmental conditions for residents along North Circular Road	Brent Housing partnership, Private Operators, Neighbourhood Renewal Team, Residents	EU-Life Environment Fund, TfL, Neighbourhood Renewal Fund, Housing Partnership Fund
Non-Traffic Measures	Brent, Environment Agency, DEFRA, GLA,	Existing Revenue Budget, SCA, Environment Agency
Air Pollution Monitoring	DEFRA	Existing Revenue Budget Supplementary Credit Approval

Capital funding for highways work can be sought from the Single Regeneration Budget programmes (e.g. Wembley, and Park Royal) and the London Development Agency Single Capitol Pot, subject to funding criteria. Brent will continue to secure funding from any available source in order to progress the air quality action plan.

The staffing costs of measures in the proposed plan are met from within existing budgets.

The Council's LIP (e.g. Parking Strategy), the Unitary Development Plan (Local Development Framework) and Supplementary Guidance for sustainability will be reviewed regularly in order to progress the action plan. The action plan itself will be reviewed in order to reflect changes that will affect air quality as and when they arise. Therefore, this action plan will be reviewed annually.