

London Borough of Enfield Air Quality Action Plan



Executive Summary

The London Borough of Enfield declared the whole of the borough as an AQMA in February 2001 and is therefore obliged to produce an air quality action plan.

This document fulfills the London Borough of Enfield's obligation under section 84 of the Environment Act 1995, which requires local authorities declaring an Air Quality Management Area (AQMA) to produce an Action Plan, setting out the measures through which the authorities will work towards to improve air quality within their areas.

This action plan covers all areas where the Council has influence over air quality, and details what action, if any, the Council can take and how those actions will improve air quality within the borough of Enfield.

In many areas the Council already has a range of policies, statutory enforcement work and initiatives in progress, which directly or indirectly influence air quality within the borough. These include an annual programme of roadside vehicle emissions testing, the regulation and inspection of polluting industry, safer routes to schools initiatives, and the corporate fleet purchasing policy. In addition the Council is in the process of implementing other initiatives, such as the green transport plan.

The main spheres of influence available to the Council which may impact on air quality in the Borough include environmental protection, transportation planning, planning policy and development control, and corporate policy.

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Air Quality Action Plan

1 Introduction

- 1.1 The Environment Act 1995 introduced the principal of Local Air Quality Management (LAQM), giving local authorities the responsibility to identify areas of poor air quality within their area. In 1997 the Government published the National Air Quality Strategy for England and Wales, which set out air quality standards for 7 key pollutants, and the dates by which the standards should be achieved.

In accordance with Government guidelines Enfield Council undertook a detailed assessment of the air quality within its area. The assessment was set out in three key stages, each stage was a screening process to decide if any of the 7 specified pollutants were unlikely to meet the standard by the set date. At the end of this screening process the Council decided that it was unlikely to meet the standards for 2 pollutants by the specified dates, which are set out in Table 1 below.

Table 1.

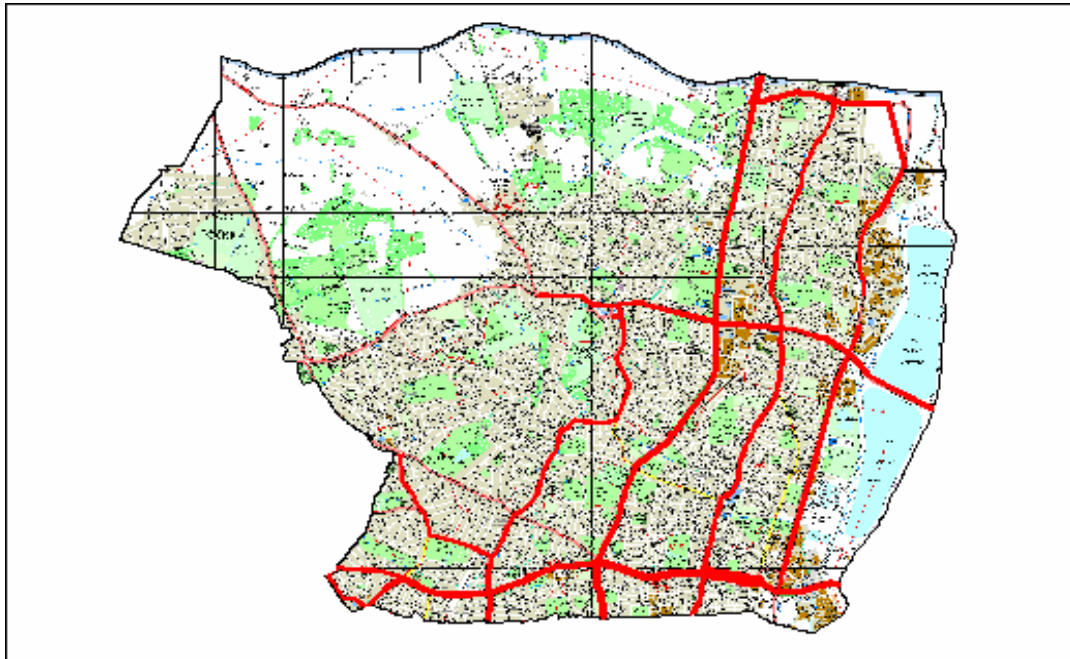
Pollutant	Standard	Date by which standard should be achieved
Nitrogen dioxide	Annual Mean should not exceed $40\mu\text{g}/\text{m}^3$ (21ppb)	31 December 2005
Particles	Running 24 hour mean should not exceed $50\mu\text{g}/\text{m}^3$ more than 35 times a year	31 December 2004

The Council then had to decide if there were areas within the borough where the public were likely to be exposed over the averaging period set out in the Air Quality Regulations 2000. It was established that there were areas in the Borough where people are likely to be exposed to poor air quality. These areas are mainly along the major roads through the Borough (see Appendix 2). Due to the establishment of public exposure the Council were obliged, by law, to declare an air quality management area (AQMA).

Enfield Council declared the whole of its area an AQMA on 27th February 2001, the AQMA is set out in figure 1 below:

Figure 1 Enfield's Air Quality Management Area

Roads predicted to exceed the air quality objectives for NO_x and PM₁₀ by 2005



Key: Red lines indicate roads predicted to exceed the air quality objectives and the Borough boundary represents the AQMA boundary.

- 1.2 As the Council has declared an AQMA it must also produce a Stage 4 air quality report to indicate how much of an improvement in air quality is required to meet the standards set out in the Air Quality Regulations 2000. This work has concluded that nitrogen dioxide has a larger exceedence of its standard than PM₁₀, which is the opposite to the conclusion of the Stage 3 report, which concluded that PM₁₀ was the biggest problem for the Borough. The change will be due to recent developments in modeling techniques. The Council will be going to consultation on this report shortly.
- 1.3 The Stage 4 report and the Council's own monitoring programme have highlighted that there are exceedences of the air quality standards within the borough. Therefore using the information available we have calculated that at background sites in the borough (areas away from major roads) we already meet the air quality standards for all pollutants set out in the Air Quality Regulations 2000. However at roadside of major roads such as the A406, A10 and Bullsmoor Lane the standards are not met for nitrogen dioxide and particles. The annual average standard for nitrogen dioxide along major roads is 22-25 parts per billion (ppb), this is an exceedence of 1-4 ppb. For particulates along the same routes the number of days above the 24 hourly average limit is 10-39 days. The Stage 4 report included work which gave a breakdown of the sources for both nitrogen dioxide and particles. For nitrogen dioxide it was clear that road traffic was the dominant source, and that the industrial contribution was not significant. Road traffic was also a major contributor to particle levels, with only a minor contribution from industry. These figures highlight where the Council needs to target its actions to work towards improving air quality in the borough.

- 1.4 Having declared AQMA the Council has 18 months to develop and publish an Action Plan setting out the measures it intends to take towards improving air quality within the Borough.
- 1.5 Enfield cannot achieve improvements in local air quality in isolation. Air pollution does not stop at local authority boundaries. There are no 'easy fix' technological solutions to reduce pollution from traffic. Technology already is playing its part and it is anticipated that improvements in fuel quality and the availability of clean fuels and alternative fuel engines will lead to improvements in air quality and better public choice over the next few years. Transportation is an essential component of the local, regional and national economy and it is important that there must be a balance to ensure that improvements in air quality are not achieved at the expense of jobs and business growth.
- 1.6 The actions proposed in this plan must complement those actions considered by the Mayor for London's Air Quality Strategy, and by our neighbouring local authorities, Barnet, Haringey and Waltham Forest, who have similar responsibilities. Officers currently represent the Council on North London and London - wide air quality steering groups.
- 1.7 In developing this action plan, the Council used Government Guidance and other publications developed by the National Society for Clean Air and Environmental Protection (NSCA) such as "Air Quality Action Plans: interim guidance for local authorities".
- 1.8 There are a number of key points the Council considered to be important when drafting the plan, set out in Figure 2 below

Figure 2

The assessment of social and economic costs and benefits of any action proposed to improve air quality.

Acting within the powers available to reduce air pollution and actively lobbying for change, or for the introduction of new legislation, where it believes such a change is necessary.

The Council will not introduce measures which have a disproportionately adverse impact on the mobility of its residents, in particular those who may be disadvantaged.

Co-operation with neighbouring authorities in developing and implementing Action Plans to ensure that any actions taken in the Borough are not to the detriment of its neighbours.

Consulting widely among those who live and work in the Borough on the design and implementation of this Action Plan.

Periodically review the actions in the Plan to assess their effectiveness in tackling poor air quality, in regard to the national air quality strategy.

2 Why do we need an Air Quality Action Plan?

- 2.1 Section 84(2) of the Environment Act 1995 requires local authorities which have declared one or more Air Quality Management Areas (AQMA) to draw up an air quality action plan. Enfield declared the whole of the borough an AQMA, following the Review and Assessment of Air Quality in the Borough between 1997 – 2000. Government guidance recommends that local authorities should aim to consult on a draft action plan within nine to twelve months of an AQMA being declared and have an action plan in place within twelve to eighteen months of declaring the AQMA.
- 2.2 Although the whole of Enfield was declared an AQMA, it is the traffic exhaust emissions along main roads and the Transport for London Road Network (TLRN) which create areas of poor air quality in pollution ‘corridors’ alongside these roads. The impact that the Council will be able to have on traffic emissions is relatively limited; the overall air quality in the borough will depend very significantly on the measures adopted by Transport for London (TfL) on the TLRN roads over which TfL has authority. The extent of the area of pollution, which can extend several meters beyond the kerb, is closely related to the amount of traffic, the vehicle composition, and the average speed at which the traffic flows. The main focus of the action plan is to target these roads. However the action plan contains proposals which will need to be implemented over a much wider area in order to successfully address traffic on the main roads.
- 2.3 The following Table illustrates the contribution made by traffic to the pollution problem across London: -

Table 2 Percentage Contribution to Total NOx & PM10 Emissions from All Road Traffic Sources.

	NOX	PM10
Motorcycle	< 1	< 1
Petrol Car	42	11
Diesel Car	2	5
Light Goods Vehicles	5	6

Bus / Coach	4	6
Medium / Heavy Goods Vehicles	23	50
All Road Vehicles	77	79

Source: National Air Quality Strategy 1999

- 2.4 The emissions of the pollutants from road traffic relate not only to volume and composition but also to other characteristics of traffic congestion. For instance, nitrogen dioxide is closely associated with the overall volumes of traffic whereas emissions of other pollutants, such as carbon dioxide, are much more closely associated with volumes of slow - moving traffic rather than with overall volumes of traffic.
- 2.5 Table 2 below summarises the DETR forecast growth in vehicle kilometers for the period 1996-2005. Whilst speculative, they confirm a significant likely increase in Outer London boroughs. The figures in the table below for outer London may be further increased by possible diverted traffic due to the introduction of Congestion Charging in Central London.

Table 3

London Area	1996 million vehicle km driven	2005 million vehicle km driven	% change
Central	1.55 (3.8%)	1.75 (3.5%)	12
Inner	5.65 (14%)	6.50 (13.0%)	15
Outer	33.10 (82.2%)	41.5 (83.5%)	25
Total	40.30 (100%)	49.75 (100%)	23

Source: DETR Transport Statistics Report, London Traffic Monitoring Report

3 Aims and Objectives of the Air Quality Action Plan

- 3.1 The aim of this Action Plan is to identify specific *practical* measures through which the Council can begin to achieve improvements in its air quality management area. It is however important to recognise that many vehicle journeys through Enfield start and end outside the borough. It is only through regional and national co-ordination of action plans that the necessary improvements be achieved.

- 3.2 Ultimately the aim of this plan is to work towards a reduction in vehicles and vehicle emissions for nitrogen dioxide and particulates in order to meet the Government objectives.
- 3.3 The Council will make sure the action plan is in keeping with our neighbouring authority action plans, and that it is appropriate to the needs of London, through regional co-ordination of the North London Air Quality Cluster Group and the North London Transport Forum.

4 The Action Plan

Enfield's Action Plan contains a range of options that can work towards improving poor air quality across the borough. Some of the actions will have benefits that can be measured, others, more difficult to assess, may have an impact over a much longer period. The principle measures are shown in Figure 3:

Figure 3 Main components of the Action Plan

- **Air Quality Management:**
Introduction of a London wide Low Emission Zone (LEZ), Roadside Vehicle Emissions Testing, Promoting Good Practice in the Motor Trade
- **Transportation Planning and Air Quality:**
The Council's Green Transport Plan, Safer Routes to Schools, North London Transport Forum Initiatives, Freight Travel, Edmonton Green Redevelopment, A Green Transport Advisory Service on Air Quality, A406 Road Improvements, M25 Junction 25 Improvements, Controlled Parking.
- **The Land Use Planning and Development Control:**
Using planning policy and the Unitary Development Plan to influence traffic patterns and growth
- **Clean Vehicle/Clean Fuel Technology:**
Supporting the introduction and use of Improved technology
- **Influencing Agriculture and Regulating Industry:**
Encouraging farming best practice, Local Air Pollution Control

5 Air Quality Management

5.1 Low Emission Zone (LEZ)

- 5.1.1 Currently the Council is actively supporting the introduction of a London-wide LEZ. Phase 1 of a study of the feasibility of an LEZ by the Association of London Government (ALG) was published in 2001, the next stage, phase 2, was published in autumn 2002, and took an in depth look at the costs and financial

implications of such a scheme. To date there has been no guidance on how the LEZ would be implemented or enforced.

5.1.2 A London-wide LEZ has significant advantages to assist the Council in reducing the impact of NO₂ and PM₁₀. It would be targeted against the most specifically polluting vehicles. The prime reason of the LEZ being London wide is that all the boroughs would gain the benefit of any reduced emissions, this is important in relation to the transboundary nature of air pollution. Unless all the London boroughs are included, the overall effectiveness of an LEZ may be reduced as some boroughs would still be receiving higher polluting vehicles. The raised levels of pollution would then transgress into neighbouring boroughs, reducing the impact of the LEZ. For this reason Enfield Council will lobby the Mayor to introduce an LEZ whose boundary incorporates all London boroughs.

5.1.3 A London LEZ will be defined by five main elements:

- its geographical extent
- the vehicle types to be targeted
- the emission criteria upon which compliance would be based
- the method of operation and enforcement
- the air quality, wider environmental, economic and social impacts of the zone.

The emission criteria examined as part of the pilot study were the restriction of medium and heavy goods vehicles and buses to those that are manufactured to Euro 3 standards (vehicles produced from 2000-2005) or are Euro 2 standards (vehicles produced from 1996-1999) and fitted with appropriate exhaust treatment bringing emissions of fine particles to within Euro 3 standard.

5.1.4 Enfield supports the introduction of such a scheme. Research to date suggests that a London-wide LEZ would if implemented result in background nitrogen dioxide levels below those set in the National Air Quality Strategy (NAQS) and would improve background levels of fine particles. However kerbside nitrogen dioxide would remain above NAQS levels at busy roadside sites.

5.1.5 Implementation of any LEZ is likely to be through a Traffic Regulation Order (TRO) made under the Road Traffic Regulation Act which would apply to heavy goods vehicles and coaches and buses not operated by TfL London Buses. The Council will work with TfL London Buses to ensure that those buses operated by TfL London Buses meet the Euro 3 standard and use clean technology. TfL London Buses already has a strategy in place to reduce emissions under proposals 12-14 of the Mayor's Air Quality Strategy. However the Council will support a consideration to extend the ban to include private vehicles which do not meet the criteria specified above. Implementation of the LEZ would need to be conducted by all London boroughs with the approval of the Mayor.

5.1.6 Enforcement of the LEZ is likely to be through manual checking and the use of cameras checking vehicles entering the zone. The vehicles could be checked by

camera operatives against the DVLA database, or a new database requiring pre-registration of eligible vehicles by their owners. The system would check either the vehicle's age, which would mean it is eligible to enter the zone due to the emission standard in force when it was built, or checks against details of any retrofit technology applied to older vehicles, which the owner would have to register on the database. Any of the specified types of vehicles not meeting the criteria would not be able to legally enter the LEZ.

5.1.7 It has been estimated that the costs of administration and enforcement may be in the region of £2-4 million for the whole of the scheme. The costs may be recoverable through the operation of a permit scheme. The cost of meeting the Euro3 standard through retrofitting of a particulate trap is approximately £3500 for a diesel vehicle.

5.1.8 In preparation for the LEZ, the Council made bids to TfL for four items of activity within the transport area of Air Quality within the Borough spending plan 2003/04 - 2007/08 submitted to TfL in July 2003. Subsequently, grant allocations were obtained from TfL, for the year 2003/04 as follows:

- | | |
|---|---------|
| 1. low emission zone pollution monitoring | £ 5,000 |
| 2. low emission zone signage | £ 4,000 |
| 3. green travel advisory service on Air quality | £58,000 |
| 4. schools education programme on air quality | £13,000 |

With regard to the first two items- pollution monitoring and signage of LEZ, the application of the funds is dependent on the decision to implement the LEZ. In particular, the prospects for implementation of the LEZ will be significantly influenced by the conclusions of the LEZ study commissioned by the GLA, the report on which is expected to be released in June 2003.

Proposed Action
1. The Council will actively support the introduction of a Low Emission Zone across London
2. The Council will work as part of the North London Air Quality Cluster Group to ensure consistency of approach to air quality issues within neighbouring authorities and that the borough's are properly represented with respect to Greater London

5.2 Roadside Vehicle Emission Testing

- 5.2.1 Emissions from road vehicles make up around 75% of all emissions to air, making them by far the most significant source of air pollution. For this reason it is important to ensure that road vehicles continue to meet MOT vehicle emissions standards. Problems often arise as a large number of motorists do not maintain their vehicles and only pay attention to emissions from their vehicle at the annual MOT inspection, if a failure occurs. The situation is worsened by the fact that some motorists avoid any form of servicing as well as the annual MOT test, allowing problems to go unchecked. This means that many vehicles on our roads are more polluting than they should be, leading to elevated levels of pollution. The motor trade also has responsibility for roadworthiness of vehicles in terms of emissions and safety. To this end, the Responsible Motor Traders Scheme has been initiated by the Council, the first of its kind in the UK. The scheme promotes a responsible approach to selling new and used cars and servicing vehicles by motor traders who subscribe to the scheme. Through the scheme the Council aims to ensure that the vehicles meet safety and emission standards when sold and that the public can have confidence that the vehicles are serviced in accordance with the manufacturers standards. Members are subject to audit by the Council's Trading Standards Service and currently 17 Motor Traders in Enfield subscribe to the scheme. The Council wishes to increase membership of the scheme.
- 5.2.2 The Vehicle Inspectorate (VI) carry out thousands of roadside vehicle inspections every year, throughout the UK. Vehicles are checked for roadworthiness and emissions, should a vehicle fail a roadside check for emissions the vehicle owner is issued with a notice which requires the fault to be corrected, and backed up by an MOT emissions test.
- 5.2.3 During the period of May – September 2001 Enfield Council conducted roadside emissions testing in conjunction with the VI to highlight the problem of vehicles with excess emissions. Following the success of the testing in 2001, the Council and the VI ran another course of testing days in May – September 2002.
- 5.2.4 Government legislation to allow local authorities which have declared an AQMA to conduct their own program of roadside emissions testing came into effect in 2002. This allows local authorities, with the assistance of the Police, to stop vehicles and conduct an emissions test to establish whether the vehicle complies with legal emission standards. If a vehicle fails the test, the Council will be able to issue a fixed penalty notice to the registered keeper of the vehicle. However the penalty would be reduced if the keeper were to have the defect corrected within 14 days of the test, or if the vehicle had passed an MOT test in the 6 month period preceding the roadside test. The main principle of the scheme is to raise driver awareness of the need to properly maintain their vehicle in order to prevent excess exhaust emissions. The impact of such a scheme would be to reduce emissions from vehicles which do not receive regular maintenance, and thus contribute to improvements in air quality.

Local Authorities in London which have AQMA's have, along with the ALG, put together a London wide testing program, this will make the scheme more cost effective for all authorities concerned. Enfield Council has considered the

proposals for the London wide vehicle emissions testing scheme, and will be participating, the scheme will commence at the end of June 2003.

Proposed Action

3. The Council will continue with a programme of emissions testing with the Vehicle Inspectorate and the Metropolitan Police to carry out random roadside emissions and safety checks on vehicles
4. The Council has become a designated authority to carry out roadside vehicle emissions testing, and will participate in the London wide testing scheme
5. The Council will lobby Government for air quality funding to implement local air quality management measures
6. The Council will work towards increasing the number of motor traders taking part in the Responsible Motor Traders Scheme.

6 Transportation Planning and Air Quality

6.1 Implementing the Mayor's Transport Strategy

6.1.1 Transportation is the most significant factor influencing air quality, both in Enfield and across London. The Transport White Paper: *A new Deal for Transport: Better for Everyone* established a national policy framework for integrated transport. In London, under the Greater London Authority (GLA) Act 1999, the Mayor for London has a duty to produce and publish an Integrated Transport Strategy for London which is consistent with national policy objectives. The Mayors Strategy sets out a series of objectives which may be grouped broadly as follows in Figure 5:

Figure 5

- Support and promote London as a world city
- Support and promote economic development, housing and regeneration
- Support and provide for greater social inclusion
- Maximise accessibility - improving access to jobs, services, and facilities
- Support and enhance town centres
- Protect and enhance health and the environment

6.1.2 The Council produced its Interim Local Implementation Plan (ILIP) for 2002/2003 which sets out how Enfield intends to address the Mayors objectives and implement the Mayor's Transport Strategy within Enfield. The ILIP focuses on a balanced transport network, through implementing a comprehensive, integrated approach to the treatment of local areas. Among the proposed measures are:

- the achievement of a better street environment in town centres;

- achieving priority for people over traffic on local streets and for pedestrians, cyclists and public transport over general traffic on borough roads;
- implementing measures to improve safety and security;
- introducing better conditions for the movement of goods and services.

6.1.3 The ILIP considers the linkages with other relevant strategies and plans, such as Air Quality, in order to ensure that all the relevant potential impacts of transport schemes are identified.

In accordance with the strategies detailed in the ILIP, the council submitted the Borough Spending Plan 2003/04 – 2007/08 to Transport for London in July 2002.

As described in 5.1.8 above, Enfield was allocated through BSP grants from TfL for 2003/04, a total of £ 80,00 for work within the transport area of Air Quality ; out of this total, sums of £ 58,000 and £ 13,000 were for green Travel advisory work on air quality issues and for Educational work on air quality in schools respectively. These funds will be applied in 2003/04 to develop these two areas of work.

The BSP 2003/04 – 2007/08 also contained proposals in several transport areas which, although not directly identified as Air Quality, have a clear bearing on the overall air quality levels in the borough. The development of Green Travel Plans, the Safer Routes to Schools programme, and action on freight have clear potential to contribute to improvements in air quality. In addition to the proposals submitted through the BSP specifically for Enfield, further proposals were submitted to TfL through the BSP for North London Transport Forum. Two of the transport priorities of the forum, for the sub region of North London, are air quality improvements and the reduction of traffic congestion.

6.2 Green Travel Plans

6.2.1 A green travel plan forms a package of initiatives to reduce car dependency during staff journeys to and from work, business travel, and fleet management. Green Travel Plans have substantial potential to reduce traffic and to contribute to improvements in health, air quality and safety by providing greener alternatives to car dependency. Enfield Council is developing its' own Green Travel Plan and is working with other employers in terms of developing Workplace Travel Plans on a sub regional basis.

6.2.2 Enfield is very keen to initiate Personal Journey Planning schemes, similar to the TravelSmart project that has been highly successful in Perth, Western Australia. The Personal Journey Planning (PJP) schemes develop individually

tailored travel plans aimed at reducing travel need and car dependency, particularly single occupant car dependency. Transport for London are currently conducting, with the active support of Enfield, a pilot involving each individual within 1600 households in the Edmonton Green area in the Borough. The pilot is one of four such studies being conducted in four parts of London with very different transport and social characteristics. Enfield will study the results of the four pilots in developing proposals for possible wide adoption of PJP in the Borough. The potential for such developments in Enfield is likely to be quite high - It has a large number of employment centres of the type very conducive to the market success of PJP. The Borough suffers acutely from a lack of orbital public transport; has some of the worst congestion spots on the Transport for London Road Network; has a number of wards which are the most deprived in the whole of the European Union; includes very substantial areas of high priority regeneration areas; and has a number of major town centres and interchanges which by type and location would contribute to the success of PJP.

- 6.2.3 Through the Borough Spending Plan 2003/04 – 2007/08 the Council has bid for funding to set up a Green Transport Advisory Service. This advisory service will provide specialist advice and presentations to businesses in Enfield regarding green travel plans, cleaner fleets and green fuels.

Proposed Action

7. The Council will launch its Green Travel Plan
8. The Council will consider a range of incentives to encourage car sharing for staff journeys to and from work
9. The Council will work with TfL London Buses and other bus companies to further improve public transport links and services through the borough and into Enfield Town
10. Through the proposed Green Travel Advisory Service the Council will encourage local businesses to ensure their vehicles are at least Euro II standard and have a reduced pollution certificate by 2005, and to make maximum use of schemes to switch to alternative fuels

6.3 Safer Routes to Schools

- 6.3.1 The Enfield Safer Routes to Schools (SRS) project aims to encourage alternative and sustainable means of getting children to and from school and to facilitate these changes by providing information and guidance on issues including air quality, health, road safety and sustainability. A fundamental part of this programme is that SRS is pupil/school centred and a partnership approach is used involving the school, parents, pupils, local community and the Council and the project is incorporated into the curriculum. Through this partnership approach school ownership of the project is encouraged. As well as new schools entering the SRS programme, Enfield continues to work with all schools that have previously joined the programme.

6.3.2 A Safer Route to School package is promoted by the Council because it will:-

- reduce school-related car journeys, to aid the improvement of air quality;
- promote sustainable transport;
- enable schools to develop their own local solutions, including green transport plans;
- improve the local environment around schools;
- assist the Council in delivering the requirements of the Road Traffic Reduction Act;

6.3.3 The outcome of the Safer Route to School package is that children will safely travel to school by foot, bicycle, bus or rail. Six schools participated in pilot schemes in 1999/2000. By 2002/03, there were 26 schools, out of the 83 schools in Enfield, with SRTS programmes. The Council seeks to initiate SRTS in a further 34 schools by 2007/08.

Proposed Action

11. The Council will promote educational initiatives in school on air quality issues, building on the success of the Safe Route to Schools 'Toolkit' to work towards reducing the impact of school trip peak emissions and will seek to assist in the development of SRTS programmes in all schools which are willing to adopt SRTS

6.4 Freight Travel

6.4.1 The Council recognises the importance of freight traffic movement throughout the borough, but is concerned about the adverse environmental impact of such traffic, and recognizes that emissions from freight traffic will only be reduced with advances in vehicle technology. Due to the adverse impact of such traffic on air quality, the Council realizes that this traffic must be minimized. It will seek a level of access for freight to/from sites within the Borough which is both adequate for the needs of business and industry and non-detrimental to the environment of adjacent residential areas. The Council will therefore generally endeavour to encourage through-borough freight traffic to remain on the Transport for London Road Network (TLRN). Nationally, there is a trend towards fewer but larger, heavier HGVs on the roads. Studies of the movement of heavy goods vehicles in Enfield reflect this national trend, showing a reduction of about 0.8% per annum in vehicles over 7.5 tonnes, made up of a 3.5% reduction in vehicles between 7.5 tonnes and 16.5 tonnes, and an increase of 4.5% in vehicles over 16.5 tonnes.

6.4.2 For Boroughs like Enfield where industry is a very major part of the economy and where the proportion of heavy goods vehicles in general traffic is high, the attainment of air quality standards is crucially linked to freight movement and the quality of fuel used by freight operators. From the experience of working closely with industry, there is clear evidence that even relatively large employers lack awareness of funding opportunities, which are now available for greening their fleets. The low interest shown in Powershift and Cleanup (see Glossary) are

examples; the inadequate use of the Motorvate fuel efficiency scheme is also a case in point. The Council will work, through partnerships, to assist freight operators in the region to apply Greener Fleets initiatives to their operations. Such initiatives will also be linked to working with operators to implement a Low Emission Zone across the Borough as the most realistic likely means of Air quality management in the Borough.

Proposed Action

12. The Council will continue to encourage freight vehicles travelling through the borough to use the Transport for London Road Network,

6.5 A406 Improvement Scheme

- 6.5.1 The A406 North Circular Road runs through the borough of Enfield, carrying on average 41,500 vehicles every day. The number of lanes reduces from two to one at the westbound junction of Bowes Road and Telford Road, which is the cause of extensive queues, with large amounts of standing traffic, contributing to very poor air quality outside sensitive receptors such as Bowes School.
- 6.5.2 A scheme has been proposed by Transport for London (TfL) to widen this junction to two lanes, and install a third lane along Bowes Road to hold standing traffic and reduce queue lengths. In addition to this TfL are proposing to improve bus lanes and green areas along Bowes Road.
- 6.5.3 The proposal by TfL is a much smaller scale version of a scheme proposed by the Highways Agency when they were responsible for the main arterial roads in London. The Highways Agency scheme was more substantial and involved the present road junction (Telford Road, Wilmer Way, Bowes Road) being completely bypassed with an underpass. This scheme also proposed a bridge over the Bounds Green/Station Road junction with the A406, and a further underpass at the Bowes Road/Green Lanes junction.
- 6.5.4 The Council will continue to press for the major improvement scheme to secure major improvements to the section of the North Circular Road and secure real improvements in congestion levels and air quality.

Proposed Action

13. The Council will continue to support the implementation of the original A406 improvement scheme as proposed by the Highways Agency, until it is demonstrated, amongst other things, that an alternative scheme can secure adequate air quality improvements

6.6 M25 Junction 25 Improvements

- 6.6.1 The Highways Agency decided to undertake a project to increase the number of lanes through junction 25, and alter the lanes through the Holmesdale tunnel,

which is located to the east of junction 25, in order to reduce traffic congestion, which is especially prevalent at peak traveling times.

- 6.6.2 The Highways Agency began works on the Holmesdale tunnel in December 2001. The works are intended to widen the carriageway through the tunnel in each direction. Four lanes will be created on the eastbound carriageway through the Holmesdale Tunnel at Junction 25. Three lanes will be available for through traffic, the fourth will form a dedicated lane for vehicles joining the M25 from Junction 25. The completed westbound carriageway required less work and the inside lane dedicated to vehicles leaving the M25 has been converted to a lane available to all traffic, thus creating three lanes for through traffic. In addition to this the two lanes through the junction have been widened to three westbound, and the same will be done eastbound to complete the scheme and improve traffic flow.
- 6.6.3 The changes to the M25 will not lead to an increase in traffic, but will improve traffic flow, which may have the effect of a slight reduction in the level of pollution from this section of the M25.

Proposed Action

14. The Council will support the Improvements to Junction 25 of the M25 provided they do not lead to an increase in road traffic

6.7 North London Transport Forum

- 6.7.1 In addition to the work aimed at air quality improvements proposed in the Borough Spending plan 2003/4 to 2007/8 for Enfield, further contributions to air quality improvements in north London are anticipated certain initiatives of the North London Transport forum.
- 6.7.2 North London includes the London Boroughs of Barnet, Enfield, Haringey and Waltham Forest. The North London Transport Forum (NLTF) is the sub regional focus for transport development in North London.
- 6.7.3 Sub regional priorities in North London are difficult to address by individual Boroughs. Several aspects of the Mayor's Transport Strategy cannot be implemented effectively within the confines of an individual Borough; this is particularly true of issues such as air quality, NLTF will be the instrument through which the Borough priorities and regional interests are carried in harmony.
- 6.7.4 In February 2001 NLTF and NLSA agreed a set of sub regional transport priorities for North London, two of which were:
- Improving air quality.

- Reducing traffic congestion through the promotion of Green/Company Travel Plans and car sharing.

Progress: In 2001/02, the first year of the partnership, we achieved the following:

- Introducing the largest (in scope) car-sharing scheme in the country – there are now 2,000 sessions per month on the northlondontransport.org website. The largest employers in the sub region are committed to implementing the scheme, including, Middlesex University, London Boroughs of Barnet and Waltham Forest, Visteon, Barnet and Chase Farm Hospital Trust. This list is being joined on a weekly basis by the other large organisations of the region.
- Established a website for transport issues and information in North London, www.northlondontransport.org.
- Undertaken travel surveys on Brimsdown and Garman Road Estates – these surveys have provided the foundation for an action programme.
- Promoted Green Fleet Management by arranging consultants for business association meetings to deliver presentations on how they can improve operating cost efficiency and improve green credentials.
- Identified the barriers to moving from single occupancy car journeys to car sharing.
- Prepared guidance notes for Company/Green Travel Plans – these are available on the website.
- Established the first Freight Quality Partnership in London with a focal point on Brimsdown Industrial Estate.

6.7.5 For the purpose of continuing the work, proposals were detailed in the Borough Spending Plan for North London 2003/4 to 2007/8. The aim is to work across borough boundaries to reduce traffic congestion. It is important to co-ordinate Travel Plans on a sub-regional basis and the North London Transport Forum (NLTF) will further develop its Company Travel Plans and Car Sharing Scheme, piloted in the Lee Valley. Through some of the proposals submitted in North London's BSP 2003/04-2007/08, grant allocations totaling £ 170,000 were received by North London from TfL as follows:

1. Freight Quality Partnerships	£ 50,000
2. Car sharing projects	£ 20,000
3. Travel Plan Co-ordination	£ 70,000
4. Work place Travel Plans	£ 30,000

6.7.6 It is important to develop integrated transport hubs across the sub-region. The new role of town centres within the live/work agenda is an important asset in the programme to reduce the need to travel .

6.7.7 Parking is seen as one of the most important and contentious elements of transport planning within the sub region. The co-ordinated control of parking can be a powerful tool in meeting targets for traffic reduction and is also seen as a key element in the growth and vitality of commercial areas, including Town Centres. In order to ensure consistency of approach within the sub region there is a need to co-ordinate activities particularly in regard to the development of parking standards, the introduction of Controlled Parking Zones (CPZs) and commuter parking, particularly around stations. The issue of Park and Ride may also become increasingly important within the sub region.

6.7.8 It is vital to implement measures to assist freight access to the regeneration areas of North London. There is general concern about the ability of industry to move freight as efficiently as possible. The prospect of congestion getting worse is a real consideration which affects future private sector investment in the sub region. There is a need to identify practical actions and to develop best practice in North London, including consideration of the use of rail and waterways. This will be done through the development of Quality Freight Partnerships. There is a need to facilitate business access and servicing in regeneration areas through selective and focused road improvements accompanied by measures to ensure that this does not generate additional commuter car traffic.

6.7.9 Working in partnership is essential in order to improve air quality in the sub-region. Proposals for Low Emissions Zones in North London will be progressed in line with the studies being undertaken within London, and the Alliance will continue to co-ordinate air quality management on a sub-regional basis.

6.7.10 When the Mayor issues guidance on the application of the Road Traffic Reduction Act in London, NLTF will have a useful role in co-ordinating the implementation of the guidance in the sub region in an effective manner.

Proposed Action

15. The Council will act in partnership with North London boroughs in the implementation of the Mayor's guidance on Road traffic reduction in London
16. The Council will work as part of the North London Transport Forum to ensure consistency of approach to transport and air quality issues within neighbouring authorities and that the borough's are properly represented with respect to Greater London.
17. The Council will consider implementing recommendations from the London Sustainable Distribution Partnership

6.8 Edmonton Green Transport Package

6.8.1 As part of the regeneration scheme in Edmonton the Council has developed the Edmonton Green Transport Package. The package will look at the traveling in

Edmonton, and aim to improve bus routes, rail links, cycle routes, and pedestrian access to the main areas of Edmonton.

6.8.2 Within the Edmonton area as part of the Streetscene and Signing Strategy developed last year, a network of attractive and secure cycle routes has been identified in the area. As part of an on going programme to improve these routes and encourage cycling, initiatives will be introduced, including provision of high quality cycle parking at strategic locations in order to encourage cycling to the main traffic attractors in the area and upgrading existing cycle routes.

6.8.3 As part of the Streetscene and Signing Strategy developed last year, a network of attractive and secure footpaths and walking routes have been identified in the area. As part of an on going programme to improve these routes and encourage walking, a scheme will be introduced on one of the major walking and cycling routes through the area, between Plevna Road and Montagu Road via Cemetery Walk.

Proposed Action

18. The Council will implement the Edmonton Green Transport Package detailed in the Interim Local Implementation Plan 2002/03, and the Borough Spending Plan 2003/04.

7 Land Use Planning and Development Control

7.1.1 Enfield's Unitary Development plan (UDP), adopted in March 1994, provides a policy framework for development, development control and conservation within Enfield, and is being comprehensively rewritten to reflect changes in local circumstances and new national and regional planning guidance.

7.1.2 Many policies in the UDP will make a positive contribution to improving air quality; e.g. by seeking to reduce traffic volumes or safeguarding land segregated from residential areas for certain types of employment use. Government guidance on the role of land use planning specifically in relation to air pollution is provided by Planning Policy Guidance Note 23 (PPG23) *Planning and Pollution Control*, issued in July 1994 (see appendix 5). This recognizes that the responsibility for monitoring pollution levels and enforcing compliance with the regulations rests with the Councils own environmental protection services as well as other agencies. The policies to be included in UDP's which relate specifically to air quality need to ensure that:

- New development which may be sensitive to the effects of pollution (e.g. residential development) is not located in the vicinity of an established polluting development (e.g. industrial plant) or infrastructure (e.g. a heavily trafficked road).
- All appropriate measures are taken, as part of the development process, to prevent new developments becoming a source of pollution.

- Opportunities are taken through the development process to mitigate or remove established sources of pollution.

7.1.3 These policies need to be accompanied by detailed guidance so that the Council can assess the implications of development proposals for air quality in an objective manner. DEFRA published guidance on air Quality and land use planning in the Local Air Quality Management Policy Guidance 2003 (LAQM.PG(03)). The principal objectives of the guidance are to assist local authorities to determine the role which land use planning might play in a balanced consideration of local options for the delivery of improvements in air quality and achievement of the objectives included within the National Air Quality Strategy. More recently, in March 2001, planning guidance has been drawn up by the 33 London Boroughs and endorsed by the Association of London Government (ALG). (Circular TEC0101 Air Quality Assessments for Planning Applications – Guidance)

7.1.4 In its statutory role as a planning authority, the Council can impose conditions on granting planning permission for new development. The following are examples of typical issues which may be required as part of the planning application and completed to the satisfaction of the Council before the development, such as a new retail, leisure or office development can proceed.

- Require air quality assessments on new developments
- Consider the suitability of new retail, office or leisure development
- Impose parking standards for new developments
- Require Section 106 planning agreements for Green Travel Plans
- Include bicycle parking and cyclists facilities
- Impose car free Housing (no provision for residential parking)
- Encourage contractor compliance and future performance

- Impose measures to limit emissions of dust from construction sites

7.1.5 Through a structured approach toward new development proposals, it is considered that the Councils objectives in respect of air quality will be fully engaged within the planning process.

Proposed Action
19. As a general principal the Council will seek to ensure that any development proposals likely to have a significant effect on local air quality are assessed according to the criteria set out in guidance produced by the Association of London Government and relevant Government guidance. Where relevant and appropriate, the Council will seek to impose conditions, to ensure the development is not detrimental where existing air quality is poor.
20. The Council will introduce policies in its revised Unitary Development Plan to ensure air quality management issues are appropriately engaged in the Development Planning process

21. The Council will work to ensure planning agreements under section 106 of the Town and Country Planning Act 1990 are used to encourage Green Travel Plans and safe, secure cyclist facilities where appropriate
22. The Council will introduce policies in its revised Unitary Development Plan to encourage appropriate development to install electric vehicle charging points
23. The Council will seek a contribution under section 106 of the Town and Country Planning Act, from developers, where new developments are likely to have a negative effect on air quality, to promote and encourage public transport in the borough
24. The effect of the Unitary Development Plan policy would be to ensure sustainable design and construction are incorporated into new developments.
25. The Unitary Development Plan policies seek to minimise the impact of new developments on air pollution.

8 Cleaner Vehicles/ Cleaner Fuel Technology

8.1 The Council Fleet Management

- 8.1.1 There are a variety of options the Council can use to influence the uptake of vehicles which are less polluting and use alternative fuel sources such as liquid petroleum gas (LPG). This can be done through the Council examining the composition of its own fleet of vehicles, and through helping to publicise information on any grants available for the conversion of vehicles to cleaner fuels.
- 8.1.2 The Council will purchase the most green and economically viable vehicles whenever a section of the fleet requires replacement. The Council currently operates 23 vehicles with reduced pollution certificates and 2 cars with natural gas engines.

Proposed Action

26. The Council will ensure its own vehicle fleet is properly maintained and meets the Euro III emission standards by 2005, and that contract waste and recycling vehicles meet the Mayor's emissions criteria
27. The Council will review its car lease and car loan scheme to identify reforms to encourage the take-up of alternative fuel and clean technology vehicles and reduce business mileage
28. The Council will seek to encourage contractor compliance and future performance relating to vehicle emissions and journeys where appropriate

8.2 Cleaner Vehicles and Grants

8.2.1 The Energy Savings Trust is a body which was set by the Government and a number of energy companies up to promote sustainable development, as part of this work the trust set up the Powershift programme in 1996. Powershift was designed to kick start the use of alternative fueled vehicles, it offers information on alternative fuels, has a register of alternatively fueled vehicles, and has a variety of grants available to both businesses and the public for the conversion of vehicles from traditional fuels to cleaner fuels. Information on the Powershift programme can be found online at: www.powershift.org.uk

8.2.2 The Council will aim to improve the availability of alternative fuels at the refueling depots within the borough. This will give the public more confidence to purchase alternative fueled vehicles. The Council may also require the insertion of electric charging points as part of future section 106 agreements, thereby encouraging the use of electric vehicles.

Most vehicle manufacturers now have research programmes into fuel efficient engines, alternative fuel vehicles and the use of recyclable materials. Progress is currently being made in the production of hydrogen fuel cell vehicles, this technology has zero emissions, and could change pollution from road sources completely.

However, standards for environmental criteria, set by the Government, are needed to encourage progress. It is clear however that technical progress alone cannot be relied upon to meet the standards by 2005 and that active measures to curtail the growth of road traffic and ease congestion must be pursued. There is also a need to take account of the fact that in certain situations, there could be potential conflict between the needs of safety objectives and air quality objectives. The Council supports the use of cleaner vehicles, and the conversion of vehicles to cleaner fuels, but also supports any improvements to public transport system, to ease congestion and reduce pollution from our roads.

Proposed Action
29. The Council will seek to identify reforms to encourage the take-up of alternative fuel and cleaner vehicle technology
30. The Council will increase the availability of electric charging points through section 106 agreements
31. The Council will continue to provide information regarding the grants available for vehicle conversion to alternative fuels through the Green Transport Advisory Service
32. When replacing fleet vehicles the Council will purchase cleaner fuelled models
33. The Council will continue to use ultra low sulphur diesel in all diesel vehicles, and will investigate using biodiesel

9 Influencing Agriculture and Regulating Industry

9.1.1 Agriculture

9.1.2 Agriculture impacts on air quality through the use and storage of manure and pesticides. Further effects arise due to the burning of used materials such as wooden pallets or fertilizer bags, which gives rise to particulates and sulphur dioxide.

9.1.2 Through the use of nuisance legislation set out in the Environmental Protection Act 1990, and laws regarding dark smoke set out in the 1993 Clean Air Act the Council will work with local farmers to ensure that greener forms of waste disposal such as recycling are employed to reduce the need for bonfires. Storage and use of manure is also be tackled with the use of nuisance legislation, this reduces complaints received by the Council due to agricultural odours, therefore improving the local environment for residents.

9.1.3 Other sources of fugitive emissions within the borough arise from construction sites and domestic premises. Both types of premises give rise to smoke through the burning of various types of waste, and construction sites can also give rise to dust emissions from uncovered building materials. The Council will continue to work with home owners and construction sites to reduce emissions by encouraging recycling and where necessary, through the use of nuisance legislation, and the 1993 Clean Air Act.

Proposed Action

34. The Council will continue to enforce the Clean Air Act and Nuisance legislation in order to reduce pollution from agricultural, domestic, and construction premises.

9.2 Local Air Pollution Control

9.2.1 Under Part 1 of the Environmental Protection Act 1990 the Environment Agency (EA) or the Council regulate certain industrial processes, which emit pollution to the atmosphere. Stringent operating conditions are imposed on the operator of the processes, setting pollution emission limits which should not be exceeded and requiring emission monitoring to confirm they meet the emission limits imposed on them. It is the responsibility of the operator to ensure they comply with the conditions at all times. The processes concerned are subject to regular inspection and review, in accordance with standards imposed by Secretary of State Guidance.

- 9.2.2 Should any process, for which the Council has responsibility, breach its conditions of operation the Council will inspect the process concerned to establish why a problem had occurred and how it was rectified. The Council has the option to prosecute the processes for failure to comply with the operating conditions. Penalties, following a successful prosecution, can range from small fines in a Magistrates court up to the revocation of an authorization, which would prevent a company from legally operating.
- 9.2.3 Enfield Council currently regulates 65 processes, all of which are inspected either once or twice yearly, depending on guidance issued by the government. The Council will continue to meet these guidelines to ensure operating standards are maintained and emissions to air are kept to a minimum. The Environment Agency (EA) regulates 8 processes in Enfield, including the Edmonton Incinerator. Both the Council and EA have reviewed process operating conditions, where appropriate, to reduce the impact of industrial pollution on air quality as far as practicable. This review process is ongoing. The incinerator as an example has recently upgraded all its monitoring equipment and is working to meet the requirements of the new Waste Incineration Directive by 2005. Where the Council receives complaints regarding any of the EA regulated industrial processes it will contact the EA and provide all necessary details for the EA to investigate any problems. As part of regulatory process the EA provide the Council with all monitoring data related to the 8 processes. This information, together with similar information on the processes the Council regulates is kept on a Public Register at the Civic Centre Offices, which may be inspected by the public during normal office hours.

Proposed Action

35. The Council will continue to inspect all of the premises regulated under Local Air Pollution Control legislation in accordance with Government Guidelines. It will work with the Environment Agency to ensure all industrial processes in the borough meet the relevant emission standards imposed under the PPC Act 1999.

10 Cost Effectiveness of the Action Plan

- 10.1 Government guidance requires local authorities to have regard to the cost effectiveness of the measures in their air quality action plans. Accurately costing such measures is extremely difficult. Putting a financial figure on the health benefits is even more difficult, as such benefits are difficult to financially assess.
- 10.2 A number of the actions stated in the plan, are already in place as they are part of normal Council activities, for instance enforcement of nuisance legislation, and the regulation of local industry. For this reason assessing the cost effectiveness of such matters seems inappropriate, as they are actions the

Council would have taken without the requirements of local air quality management.

- 10.3 The transport options covered in the plan have been identified (with the exception of the M25 improvements funded by the Highways Agency) within the Borough Spending Plan, which is available on request, by contacting Environment Direct at the Civic Centre, Silver Street, Enfield.
- 10.4 In regard to the need to provide some form of cost benefit analysis a section of the table in appendix 1 compares the potential cost of each action against the potential benefit, where appropriate, in a general format.

Appendix 1: Action Plan Points and Timetable

Proposed Action	When and Who	Cost	Benefit
1. The Council will actively support the introduction of a Low Emission Zone across London	Commenced Spring 2002, ongoing Environmental Protection Team ALG GLA	Low	Potentially High
2. The Council will work as part of the North London Air Quality Cluster Group to ensure consistency of approach to air quality issues within neighbouring authorities and that the borough's are properly represented with respect to Greater London	Ongoing Environmental Protection Team	Low	N/A
3. The Council will continue with a programme of emissions testing with the Vehicle Inspectorate and the Metropolitan Police to carry out random roadside emissions and safety checks on vehicles	Ongoing Environmental Protection and Safety Team	Low	Low
4. The Council has become a designated authority to carry out roadside vehicle emissions testing, and will participate in the London wide testing scheme	Completed Environmental Protection and Safety Team	Low	Low
5. The Council will lobby Government for air quality funding to implement local air quality management measures	Ongoing Environmental Protection and Safety Team	Low	High
6. The Council will work towards increasing the the number of motor traders taking part in the Responsible Motor Traders Scheme.	Ongoing Trading Standards	Low	Medium
7. The Council will launch its' Green Travel Plan	2003 Transportation Planning	Low	Potentially High
8. The Council will consider a range of incentives to encourage car sharing for staff journeys to and from work	2003 Transportation	Low	Medium

	Planning		
9. The Council will work with London Transport Buses and other bus companies to further improve public transport links and services through the borough and into Enfield Town	Ongoing Transportation Planning TfL London Buses	Low	Medium
10. Through the proposed Green Travel Advisory Service the Council will encourage local businesses to ensure their vehicles are at least Euro II standard and have a reduced pollution certificate by 2005, and to make maximum use of schemes to switch to alternative fuels.	2005 Transportation Planning Environmental Protection and Safety Team	Medium	High
11. The Council will promote educational initiatives in school on air quality issues, building on the success of the Safe Route to Schools 'Toolkit' to work towards reducing the impact of school trip peak emissions and will seek to assist in the development of SRTS programmes in all schools which are willing to adopt SRTS	Ongoing Transportation Planning	Medium	Medium
12. The Council will continue to encourage freight vehicles travelling through the borough to use the Transport for London Road Network	Ongoing Transportation Planning	Low	Medium
13. The Council will continue to support the implementation of the original A406 improvement scheme as proposed by the Highways Agency, until it is demonstrated, amongst other things, that an alternative scheme can secure adequate air quality improvements	Ongoing Transportation Planning	High	Potentially High
14. The Council will support the Improvements to Junction 25 of the M25	Started 2002 Highways Agency	High	Medium
15. The Council will act in partnership with North London boroughs in the implementation of the Mayor's guidance on Road traffic reduction in London	Transportation Planning	N/A	N/A
16. The Council will work as part of the North London Transport Forum to ensure	Ongoing	Low	N/A

consistency of approach to transport and air quality issues within neighbouring authorities and that the borough's are properly represented with respect to Greater London	Transportation Planning		
17. The Council will consider implementing recommendations from the London Sustainable Distribution Partnership	Ongoing Transportation Planning	Medium	Potentially High
18. The Council will implement the Edmonton Green Transport Package detailed in the Interim Local Implementation Plan 2002/03	Ongoing Transportation Planning	High	High
19. As a general principle the Council will seek to ensure that any development proposals likely to have a significant effect on local air quality are assessed according to the criteria set out in best practice Government guidance. Where relevant and appropriate, the Council will seek to impose conditions, to ensure the development is not detrimental where existing air quality is poor.	Ongoing Transportation Planning Environmental Protection & Safety Team Development Control	Low	High
20. The Council will introduce policies in its revised Unitary Development Plan to ensure air quality management issues are appropriately engaged in the Development Planning process	In place Transportation Planning Environmental Protection & Safety Team Development Control	Low	Medium
21. Where appropriate, the Council will work to ensure planning agreements under section 106 of the Town and Country Planning Act 1990 are used to encourage Green Travel Plans and safe, secure cyclist facilities where appropriate	In place Transportation Planning Environmental Protection & Safety Team Development Control	Low	Medium
22. The Council will introduce policies in its revised Unitary Development Plan, and Section 106 agreements to encourage	In place Transportation	Medium	Medium

appropriate development to install electric vehicle charging points	Planning Environmental Protection & Safety Team Development Control		
23. The Council will seek a contribution under section 106 of the Town and Country Planning Act, from developers to promote and encourage public transport in the borough	In place Transportation Planning Environmental Protection & Safety Team Development Control	Low	Medium
24. The effect of the Unitary Development Plan policy would be to ensure sustainable design and construction are incorporated into new developments.	In Place Development Control	Low	Low
25. The Unitary Development Plan policies seek to minimise the impact of new developments on air pollution.	In Place Development Control	Low	Medium
26. The Council will ensure its own vehicle fleet is properly maintained and meets the Euro III emission standards by 2005, and that contract waste and recycling vehicles meet the Mayor's emissions criteria	Ongoing, due for completion by December 2005 Transport Managers	High	High
27. The Council will review its car lease and car loan scheme to identify reforms to encourage the take-up of alternative fuel and clean technology vehicles and reduce business mileage	31 March 2003 Corporate Finance Services	Low	Medium
28. The Council will seek to encourage contractor compliance and future performance relating to vehicle emissions and journeys where appropriate	In place Transportation Planning	Low	Medium
29. The Council will seek to identify reforms to encourage the take-up of alternative fuel and cleaner vehicle technology	Ongoing Environmental Protection & Safety Team	Low	Medium

30. The Council will increase the availability of electric charging points through section 106 agreements	In Place Development Control	Low	Low
31. The Council will continue to provide information regarding the grants available for vehicle conversion to alternative fuels through the Green Transport Advisory Service	Ongoing Environmental Protection & Safety Team	Low	N/A
32. When replacing fleet vehicles the Council will purchase cleaner fuelled models	Ongoing Waste Services	Low	Medium
33. The Council will continue to use ultra low sulphur diesel in all diesel vehicles, and will investigate using biodiesel	On Going Waste Services	Low	Medium
34. The Council will continue to enforce the Clean Air Act and Nuisance legislation in order to reduce pollution from agricultural premises	Ongoing Environmental Protection & Safety Team	Low	Low
35. The Council will continue to inspect all of the premises regulated under Local Air Pollution Control legislation in accordance with Government Guidelines. It will work with the Environment Agency to ensure all industrial processes in the borough meet the relevant emission standards imposed under the PPC Act 1999.	Ongoing Environmental Protection & Safety Team	Medium	Medium

Appendix 2: Roads Predicted to Exceed the Air Quality Standards

Table 4. Roads identified as areas of poor air quality (from Stage 3 Results)

NB The whole borough was declared an Air Quality Management Area.

Road Name	Road No.	Column A PM10	Column B NO2	Public Exposure
Great Cambridge Road	A10 (TLRN)	23.2	11.2	Y
Green Lanes	A105	4.2		Y
Southbury Road	A110	9.2	6.2	Y
Telford Road North Circular Road	A406 (TLRN)	8.2	7.2	Y
Lea Valley Road	A110	9.2	3.2	Y
Cecil Road	A110	4.2		Y
Great Cambridge Road	A10 (TLRN)	33.2	31.2	Y
Green Lanes	A105	9.2	3.2	Y
Church Street	A110	2.2		Y
The Ridgeway	A110	2.2		Y
Windmill Hill	A110	2.2		Y
North Circular Road	A406 (TLRN)	13.2	9.2	Y
Lea Valley Road	A110	3.2	1.2	Y
Nags Head Road	A110	3.2	1.2	Y
Church Street	A110	1.2		Y
Great Cambridge Road	A10 (TLRN)	13.2	8.2	Y
Angel Road (North Circular Road)	A406 (TLRN)	13.2	8.2	Y
Walthamstow Avenue (North Circular Road)	A406 (TLRN)		8.2	Y
Fore Street	A1010	4.2		Y
High Road	A1010	4.2		Y
London Road	A110	6.2	4.2	Y
Angel Road (North Circular Road)	A406(TLRN)	59.2	25.2	Y
Sterling Way (North Circular Road)	A406(TLRN)	23.2	14.2	Y
Fore Street	A1010	4.2	0.2	Y
Hertford Road	A1010	4.2	0.2	Y
Hertford Road High Street	A1010	4.2	0.2	Y
The Broadway	A1010	4.2	0.2	Y
The Green	A1010	4.2	0.2	Y
Great Cambridge Road	A10 (TLRN)	8.2	9.2	Y
Green Lanes	A105	6.2	0.2	Y
Southbury Road	A110	2.2		Y
The Town	A110	2.2		Y

Bowes Road (North Circular Road)	A406 (TLRN)	13.2	11.2	Y
Friern Barnet Road	A1003	4.2		Y
Church Street	A110	4.2		Y
The Town	A110	4.2		Y
Bullsmoor Lane	A1055	15	17	Y
Meridian Way	A1055	10	8	Y
Mollison Avenue	A1055	5	7	Y

NOTE: - TLRN: Transport for London Road Network

Column A - represents the distance in metres from the kerb at which NAQS objective is met for PM₁₀ (particles) concentrations

Column B - represents the distance in metres from the kerb at which NAQS objective is met for NO₂ concentrations

The exceedences at these locations arise from traffic emissions and from industrial process emissions. However, it is quite clear that any plan of action within the process of local air quality management must take account of the fact that emissions from road vehicles account for more than 75% of the total emissions from all sources in relation to the two pollutants of concern.

The review and assessment has highlighted the main 'through' roads, into and out of the borough as being the main contributors to the poor air quality in Enfield. These 'through' roads include the A10, Hertford Road, The Ridgeway, Cattlegate Road, Stag Hill and Waggon Road. All these roads intersect with the M25, with the exception of Waggon Road, which is used excessively as a 'cut through' from/to the neighbouring borough of Barnet.

Distances of exceedence can be seen to vary on the same road, this is because of the varying traffic flows along one stretch of road, certain sections of a road, such as the A406, will carry more traffic at some points than others. When this information is inputted into the dispersion model it produces the variable results seen in the above table.

Appendix 3: Local Air Quality Monitoring

As a vital part of the air quality assessment, a programme of regular monitoring is conducted at ten sites in the Borough.

Table 5. Monitoring Sites in Enfield

	MONITORING SITE									
POLLUTANT	1	2	3*	4	5	6	7*	8	9*	10*
Benzene	y	y	y	y	y	y				
Carbon Monoxide							y		y	
Nitrogen Dioxide	y	y	y	y	y	y	y	y	y	y
PM ₁₀							y		y	y
Sulphur Dioxide	Y	y	y	y	y	y			y	y
Ozone	y	y	y	y	y	y			y	
Meteorological data									y	

*Y=Yes

The monitoring sites are:

- 1: North Circular Road, Edmonton
- 2: Centenary Road, Brimsdown
- 3: Main Avenue, Bush Hill Park
- 4: Conway Road, Southgate
- 5: Glynn Road, Enfield
- 6: Claremont Avenue, Hadley Wood
- 7: Church Street, Enfield
- 8: Bullsmoor Lane, Enfield
- 9: Nightingale Road, Edmonton
- 10: Derby Road, Edmonton

Sites marked with * are continuous monitoring sites

Some of the above monitoring stations in the Borough are affiliated to the London Air Quality Network and it is anticipated that they will become affiliated to the United Kingdom automated urban Network.

An additional site in Turkey Street monitors meteorological data. This is carried out in partnership with the MET Office and is one of only 7 such local authority sites in the UK.

Appendix 4: Review and Assessment Summary

The review and assessment of air quality is the initial and fundamental part of the LAQM process required to be undertaken by each local authority. The process was designed to be carried out in three stages. The outcome of the findings of each stage would determine whether it was necessary to proceed to the next. The purpose of this staged approach was to ensure that local authorities only undertook such work as was essential to identify which pollutants were likely to be of concern. The review and assessment was carried out in accordance with published guidance, the outcome of stages two and three being reported to and scrutinised by DETR.

To summarise the process, at Stage 1, the L. B. Enfield created an inventory of emission sources in the Borough, identifying the relevant pollutant of concern as well as the specific localities of initial concern for each pollutant.

The Stage 1 review indicated the possibility of exceedences of the NAQS objectives for five of the seven pollutants. Accordingly it recommended that the L.B. Enfield undertake a Stage 2 review and assessment for the five pollutants;

- Carbon monoxide
- Lead
- Nitrogen dioxide
- PM10
- Sulphur dioxide

The aim of the second stage review and assessment was to provide a further screening of the pollutants identified in Stage 1. It was not intended to provide accurate predictions of current or future pollutant concentrations or exceedences of the NAQS objectives or to estimate their geographical extent.

The screening involved the selection of locations where pollutant concentrations were likely to be highest, to confirm if the NAQS objectives were likely to be exceeded. If the results identified that the NAQS objectives were not likely to be met by the objective date, then a detailed Stage 3 assessment would be required.

The Stage 2 review and assessment concluded;-

- i) The NAQS objective levels were unlikely to be exceeded by the objective date for lead, Carbon monoxide, Sulphur dioxide and the L.B. Enfield need not proceed to Stage 3
- ii) The Council should proceed to a Stage 3 review and assessment for the following pollutants
 - Nitrogen Dioxide
 - PM₁₀

The Stage 3 review looked at these two pollutants in detail. Using the data from the Councils monitoring program over several years, and complex dispersion modeling it was established that it was likely that the standard for these two pollutants would not

be met by the set dates, at a number of residential properties along key roads throughout the borough (see table 4 on page 30). For this reason the Council was obliged under law to declare an AQMA to encompass all of the exposed properties. After consideration it was decided that the most effective method of achieving this was to declare the whole of the borough of Enfield as an Air Quality Management Area (see figure 1).

The Stage 4 review looked at the AQMA in relation to nitrogen dioxide and particles. The idea behind this document is to allow the Council to develop an effective action plan which will tackle the main sources of the pollutants of concern. The report informed the Council what the major sources of the nitrogen dioxide and particles are, and how much of an improvement in air quality would be required in order for the air quality standards for these pollutants to be achieved.

Appendix 5: Government Guidance on Land Use Planning and Pollution Control

- 1) The town and Country Planning Act 1990 requires that Unitary Development Plans (UDP's) comprise:
 - Part I, which sets out the general policies for the development and other use of land within the authority's area, including measures for improving the physical environment and the management of traffic; and
 - Part II, which sets out detailed policies and specific proposals for the development and use of land.

- 2) Government guidance on the way in which the control of pollution should be dealt with in UDP's is contained in PPG23 *Planning and Pollution Control*, published in July 1994.

- 3) PPG23 states that Part I of a UDP should include:
 - Strategic land use policies on the location of;
 - Potentially polluting developments;
 - Sensitive developments in the vicinity of existing polluting development;
 - Appropriate criteria to enable broad areas of search to be identified in local plans;
 - Constraints on development in particular areas arising from the cumulative impact of existing and future polluting uses of land.

- 4) PPG23 states that Part II of a UDP should take account of:
 - The constraints on development as a result of the need to comply with any statutory environmental quality standards or objectives;
 - The need to identify land, or establish criteria, for the location of those types of development which may have the potential to pollute, in a particular industry within the special industrial use classes and power stations;
 - The need to separate potentially polluting and other land uses to reduce conflicts (e.g. by identifying areas around polluting land uses in which other developments should be subject to special consideration);
 - The possible impact of potentially polluting development on land use, including the effects on health, the natural environment, or general amenity, resulting from releases to water, land or air, or of noise, dust, vibration, light or heat;

- The environmental consequences, where known, of former land uses, manifested for example, by contaminated land;
- Completed landfill sites that would be suitable for development or other use, making clear the types of development that would be appropriate;
- The need to secure restoration and pollution controls to standards sufficient to ensure that land is capable of an acceptable after use;
- The need to protect natural resources and improve the physical environment;
- The economic and wider social need for potentially polluting development and the requirement to identify appropriate locations for such developments.

Appendix 6: The Mayor's Proposals to Achieve the Air Quality Standards in London

The Mayor's proposals for working in pursuit of achievement of the air quality standards and objectives in Enfield's air quality management area are set out in the Mayor's Air Quality Strategy. These aim to:

- Increase the number of cleaner vehicles;
- Support a feasibility study on one or more low emission zones for London;
- Reduce emissions from vehicles operated by or licensed through the functional bodies;
- Use traffic management infrastructure to reduce emissions;
- Reduce emissions for freight movements
- Encourage proper vehicle maintenance and more efficient driving
- Reduce emissions from industry and buildings
- Reduce emissions from construction sites
- Enable continued research into London's air quality
- Lobby government to improve national measures to further reduce air pollution

Bibliography

The National Air Quality Strategy 1997

The Air Quality Regulations 2000

The Environment Act 1995

The London Borough of Enfield Interim Local Implementation Plan

Mayor of London's Air Quality Strategy

NSCA: Planning for Action

NSCA: Air Quality Action Plans: interim guidance for local authorities

Safe Routes to School Tool Kit

Low Emission Zone Feasibility Study

The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002

Glossary of Terms

AQMA:	Air Quality Management Area
GLA:	Greater London Authority
ALG:	Association of London Government
PM ₁₀ :	Particulate matter with an aerodynamic size of 10 microns or less
NO ₂ :	Nitrogen Dioxide
NO _x :	Oxides of Nitrogen
NSCA:	National Society for Clean Air and Environmental Protection
TLRN:	Transport for London Road Network, these are the main arterial roads in London which are managed by Transport for London.
DETR:	Department of Environment, Transport, and the Regions (now DEFRA and DfT)
DEFRA:	Department of Environment, Food, and Rural Affairs
DfT:	Department Transport
NLTF:	North London Transport Forum, a group comprising of the London Boroughs of Barnet, Enfield, Haringey and Waltham Forest. This body jointly works on improving transport related issues
LEZ:	Low Emission Zone
NAQS:	National Air Quality Strategy
VI:	Vehicle Inspectorate, a government body which among other things carries out road-side vehicle safety and emissions checks
BSP:	Borough Spending Plan, a document which sets out the projects the borough of Enfield intends to undertake during a 12 month period.
ILIP:	Interim Local Implementation Plan
Powershift:	PowerShift is an Energy Saving Trust programme to help establish a sustainable market for alternative, clean fuel vehicles in the UK. It aims to create the conditions for clean fuel vehicles to be practically and economically viable.

Green Travel Plans: Green Travel Plans are a mechanism to encourage companys to create travel plans for employees in order to reduce reliance and number of private cars on the roads.

Cleanup: The Transport Action "Clean Up" Campaign aims to improve air quality in pollution "hotspots" by encouraging the fitting of emissions reduction equipment to the most polluting vehicles.

Public Consultation List

- 1) Adjacent Boroughs: L.B. Barnet, L.B. Haringey, L.B. Waltham Forest, Broxbourne, Hertsmere, Epping Forest, Welwyn and Hatfield.
- 2) Environment Agency- N.E. Thames, Hatfield.
- 3) Enfield Primary Health Care Trust.
- 4) Enfield Chamber of Commerce.
- 5) Enfield Racial Equality Council.
- 6) Enfield Disablement Association.
- 7) DEFRA.
- 8) Greater London Authority.
- 9) Association of London Government.
- 10) HSE.
- 11) English Nature.
- 12) Disabled in Enfield.
- 13) Enfield Friends of the Earth.
- 14) AA & RAC.
- 15) Road Haulage Association.
- 16) Transport for London.
- 17) London Taxi Drivers Association.
- 18) Highways Agency.
- 19) Middlesex University.
- 20) Local Agenda 21 Group.
- 21) L.B. Enfield Transportation Planners, Planners, LA21, Education, Leisure, Parking.
- 22) London Underground.
- 23) Pollution Forum.
- 24) Ward Councillors affected.
- 25) Processes authorised under the EPA Part 1.
- 26) Borough Traders Association.
- 27) Federation of Enfield Community Association
- 28) Broomfield House Owners Association
- 29) Western Enfield Residents Association
- 30) Southgate Residents Association
- 31) North Enfield Residents Association
- 32) Enfield Lock residents Association.
- 33) Fox Lane & District Residents Association
- 34) North London RSPB.
- 35) BOC Foundation.
- 36) Hertfordshire Amphibian and Reptile Group.
- 37) London Wildlife Trust Enfield.
- 38) Herts & Middlesex Nature Trust.
- 39) London First.