AIR QUALITY ACTION PLAN

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1.0 INTRODUCTION

1.1 BACKGROUND

The Environment Act 1995 and subsequent regulations provided a statutory duty for Local Authorities to review air quality in relation to specified pollutants. The pollutants examined were sulphur dioxide, nitrogen dioxide, PM_{10} particles, carbon monoxide, benzene, 1,3-butadiene and lead. These pollutants were known to have an effect on health to some degree or other.

For each pollutant, estimates of the effect of reductions in concentrations of the pollutant have been published. These indicate the anticipated decreases in hospital admissions and reductions in premature deaths resulting from improved air quality. In each case, the air quality standards have been set so that at these levels the general population is unaffected.

The recommended process was to examine each pollutant in stages. Each stage acting as a sieve and being ever more rigorous. If the pollutant required further examination after passing through a stage it moved to the next examination process.

The full documents can be viewed in libraries and on the Leeds City Council web-site (www.leeds.gov.uk).

The first stage report identified the sources of the pollutants. The first stage contained a tentative assessment of the likelihood of each of the pollutants complying with the objectives set.

The second stage report considered four of the pollutants in detail (carbon monoxide, benzene, 1,3-butadiene and lead). An in-depth assessment of the sources identified at Stage1 and the results of monitoring for each of the pollutants was carried out. It was concluded that the air quality objectives for each of these four pollutants were not likely to be exceeded at any locations within the Leeds City Council area. No further action in respect of these four pollutants is required.

Sulphur dioxide, nitrogen dioxide and PM_{10} particles have been subjected to the more rigorous Stage 3 assessment, since the initial work had indicated that they could fail to achieve the objectives laid down in the National Air Quality Strategy in some areas of the city.

As a result of the Stage 3 assessment it was considered that objective levels contained in the Air Quality Regulations may not be achieved by the required date of 2005 in respect of nitrogen dioxide and PM_{10} particles in small areas of the city. Accordingly two Air Quality Management Areas (AQMAs) were designated with effect from July 2001.

Having declared Air Quality Management Areas within the district there was then a requirement to carry out a further Stage 4 review to confirm and update the work previously undertaken.

The conclusions of the Stage 4 review were as follows:

- In respect of sulphur dioxide the results of continuing monitoring within the Leeds City Council boundaries indicated that since 1997, no locations had been identified which failed to achieve the sulphur dioxide air quality objective.

- In respect of nitrogen dioxide, the conclusion was that while monitoring would not improve air quality, it did accurately assess the situation. Further work would be necessary and an Action Plan would be drawn up with the benefit of additional monitoring and modelling results to identify a strategy to reduce emissions.

- In respect of PM_{10} particles, the results indicated that despite monitoring at a number of different locations, covering a variety of areas, neither evidence of the likelihood of widespread exceedences of, nor identification of any other locations failing to achieve the Air Quality objectives had been found.

There was then a requirement to produce an action plan setting out how the authority will use its powers in pursuit of the air quality objectives. In developing the action plan the authority is expected to:

- Carefully assess the options available to improve air quality in AQMAs;
- Involve all relevant local authority professionals and departments to secure a properly balanced and integrated approach;
- Strike the right balance between the use of regulatory powers and other non-regulatory measures;
- Ensure that the relative contributions of industry, transport and individuals are cost-effective and proportionate, and;
- Appraise and where possible quantify the wider environmental, economic, and social consequences of each option.

Although the local authority has statutory responsibilities all sections of the community are responsible for achieving local air quality objectives. All stakeholders have been consulted and involved as far as possible in implementing the air quality strategy.

This action plan has been produced, with input from various Council departments, by the Council's Air Quality Management Team which has been considering the air quality strategy for some years. It is a multi-disciplinary team formed from Environmental Health Services in the Neighbourhoods and Housing Department, and from the Transport Policy Section of the Development Department.

1.2 LEEDS CITY

Leeds is the regional capital of Yorkshire and the Humber. Specifically the city:

- Covers 562 sq. km, and is the second largest Metropolitan District in England with a population of approximately 715,000
- Has a large urban area and a number of surrounding townships and villages
- Is located near the geographical centre of the UK at the end of the M1
- Has the region's major airport, Leeds Bradford International Airport, which handles 1.45m passengers a year
- Is the region's largest employment centre
- Has a labour force of around 442,000 people working in the city
- Has the greatest concentration of business and professional services in the region
- Is the location for major educational and health facilities
- Has cultural, entertainment and sporting facilities of national and international significance
- Is the region's largest retail centre
- Is the location of the region's integrated government office and the Regional Development Agency
- Is the location of major transport facilities and interchanges
- provides employment and business opportunities for communities and companies in the region
- Is expected to provide around 37% of the region's forecast additional 98,000 jobs between 2002 and 2012

The city is thriving and developing rapidly. The economic strategy for the city has as a main theme sustainable economic development: encouraging the generation of wealth, investment and jobs in ways that will enhance the quality of life of this and future generations. This means being aware of the impact of economic development on the environment and natural resources.

Economic growth inevitably leads to increased travelling around the city and one of the consequences of this is the extra pressure on the already difficult task of improving air quality. The measures proposed in the action plan aim to address these issues.

1.3 LEEDS CITY COUNCIL PLANS AND STRATEGIES

The Council recognises its responsibility to ensure a sustainable environmental future, and its mission statement is "to bring the benefits of a prosperous, vibrant and attractive city to all the people of Leeds"

To this end, the Council has developed a Corporate Plan which is explicitly structured to support the themes established in the Vision for Leeds. The Leeds Initiative, led by the Council, developed the Vision in 1999, following an extensive consultation exercise with the people of Leeds. The themes of the Vision under which the Corporate Plan is organised are:

- Creating Better Neighbourhoods and Confident Communities
- Making the Most of People
- Competing in a Global Economy
- Integrated Transport
- Looking After the Environment
- Planned Approach to Technology

The Corporate Plan has key links with other strategic plans including:

- Air Quality Strategy (including the air quality review and assessment process)
- Environmental Policy
- Local Agenda 21
- Integrated Waste Management Strategy
- Economic Development Strategy
- Leeds Neighbourhood Renewal Strategy
- Leeds Unitary Development Plan
- Eco-Management & Audit Scheme (EMAS) Plan
- Biodiversity Action Plan
- Local Transport Plan
- Passport to the Environment
- Best Value Performance Plan

Actions contained in these strategic plans impact on air quality in Leeds and have direct relevance to this Action Plan. Indeed, many of the measures identified and brought together in this plan have their origins in the above documents. Appendix 1 contains the parts of the above plans which are relevant and have a direct bearing on improving air quality.

2.0 DETAILED REASONS FOR THE ACTION PLAN

2.1 Nitrogen Dioxide

High temperature combustion processes produce nitric oxide (NO) and, to a lesser extent, nitrogen dioxide (NO_2) – together termed oxides of nitrogen (NO_X). The nitric oxide reacts with ozone to form more nitrogen dioxide. Nitrogen dioxide is considered to have both short-term and long-term effects on health. At relatively high concentrations, the gas causes inflammation of the airways. Evidence also indicates that long-term exposure may affect lung function and also that exposure enhances the response to allergens in sensitized individuals. It has been suggested that apparent effects of nitrogen dioxide on health may be due to particles or, at least, are highly dependent on background particle levels.

The air quality objective to be achieved by 2005 for this pollutant is:

$200\mu g.m^{-3}$ (105ppb) or less when expressed as a 1 hour mean (18*)
$40\mu g.m^{-3}$ (21ppb) or less when expressed as an annual mean

*Maximum number of exceedences permitted in one year

The results of extensive monitoring and modelling, after careful consideration of the uncertainties associated with the method, have lead to the conclusion that small areas of the city are considered likely to fail to meet the annual average air quality standard for this pollutant in 2005.

An Air Quality Management Order was declared on 1 July 2001 identifying seven relatively small residential areas where exceedences of the annual objective were thought likely to occur – i.e. areas where non-occupational exposure for long periods (e.g. 24-hours) could occur.

Although industrial sources do contribute to the nitrogen dioxide (NO_2) burden in the atmosphere, undoubtedly the major source so far as the AQMAs are concerned for this pollutant is road traffic.

A review of the emissions databases have suggested that in the inner city area, transportation sources are responsible for approximately 2400 tonnes/year of oxides of nitrogen (NOx) and all other sources combined total about 1100 tonnes/year. The AQMAs are all located immediately adjacent to the major road network – alongside the A64/A58(M) Inner Ring Road and at the northern end of the M621.

It has been estimated that close to roadsides in heavily trafficked areas, road traffic contributes in excess of 90% of the total NO_2

Monitoring in relation to the annual average NO_2 levels throughout the city has been carried out at a number of sites, more recently in locations which have been designated as AQMAs where levels have been assessed previously as likely to exceed the annual average objective.

A review of the results indicates that of those locations which were thought likely to fail to achieve the Air Quality Objectives for 2005, real-time monitoring would suggest that only the area around Haslewood Close is currently experiencing levels in excess of the objective.

The Action Plan has therefore been drawn up primarily to identify a strategy to reduce NO_2 emissions.

Further monitoring and modelling will be carried out to establish the effectiveness of the technological improvements in vehicle emissions and other emission reduction strategies.

2.2 PM_{10} Particles

Particulate matter includes a wide range of sizes and types of particles, resulting from natural sources and human activities – the exact composition will vary from place to place and from time to time. Particulate air pollution is associated with a range of effects on health including on the respiratory and cardiovascular systems (e.g. asthma) and mortality (deaths brought forward). Particles can also carry adhered carcinogenic compounds into the lungs. The current air quality standard is based on the PM_{10} size fraction (particles of 10 microns [10 millionth of a meter] or less diameter) though evidence is emerging that the smaller particle sizes are responsible for the harmful effects of particulate matter on health and that the number of particles may be a more appropriate measure rather than the mass. The main focus of research has been on the health effects of short-term exposures to ambient levels of air pollution, though long-term exposure is also considered likely to affect mortality.

The air quality objective to be achieved by 2004 for this pollutant is:

$50\mu g.m^{-3}$ or less when expressed as a 24 hour mean (35*)
and $40\mu g.m^{-3}$ or less when expressed as an annual mean
*Maximum number of exceedences permitted in one year

Although industrial and transportation sources of this pollutant can be significant, only one location was identified in the review and assessment process where emissions resulted in a failure to achieve the objective described above. This was in a semi-rural residential area at Garden Village, Micklefield not subject to a smoke control order where solid fuel was used extensively in domestic properties. Consequently an AQMA was declared.

A number of properties at Garden Village were subsequently improved by works including the replacement of coal-fired heating systems with gas-fired boilers. It is thought that this work is likely to have adequately addressed the issue and it is proposed to revisit the monitoring site during the next heating season to confirm the extent of any improvements.

The results indicate that despite monitoring at a number of different locations, covering a variety of areas, no evidence of the likelihood of widespread exceedences of the air quality objectives were found.

However, the action plan does consider strategies to reduce emissions of PM_{10} particles.

3.0 PROPOSALS TO REDUCE AIR POLLUTION AND ASSOCIATED BENEFITS

Appendix 1 identifies a number of actions which the Council has already put in place, or is currently considering, which will assist in reducing emissions of nitrogen dioxide and PM_{10} particles. The actions are classed under various objectives and each action lists who is responsible for its implementation, how it would be implemented, an intended completion date together with estimates for cost and the potential for air quality improvement.

Key objectives in the plan are:

- Traffic demand management methods
- Reducing the need to travel
- Improvements to the highways network
- Reducing vehicle emissions
- Reducing emissions from industrial and domestic sources
- Raising awareness

3.1 Traffic demand management methods

The strategy aims to reduce the demand for travel by private vehicles, through measures to reduce the overall need to travel and to encourage the use of more sustainable alternatives. This can be achieved by implementation of demand management measures that deter car use, particularly for commuting journeys, alongside other measures that provide quality alternatives to the car. These measures will help reduce traffic congestion and resultant vehicle emissions. The following Traffic Demand Management measures have all been driven via the Local Transport Plan process.

Public transport will be greatly enhanced by the construction of Leeds Supertram which will provide an attractive very high quality, public transport system for Leeds. When complete, Leeds Supertram will consist of 28 km of light rail network providing state-of-the-art public transport services. Supertram will run at frequent intervals along three major routes (to North, South and East Leeds) and into and around Leeds City Centre (the City Centre Route). The system will benefit from four large Park & Ride sites, located at the end of each route, accommodating an estimated total capacity of 4,500 cars.

Other Demand Management measures have been implemented or planned for most of the major road corridors within Leeds. This includes six Quality Bus Initiatives, which contain several Public Transport priority systems such as:-

- Guided Busways
- Bus Gates / Lanes
- Advanced Vehicle Location (AVL)
- High Occupancy Vehicle (HOV) Lanes

A cycling, pedestrian and access strategy has been set up in Leeds. This strategy is co-ordinated to encourage cycling and walking by provision of specific priority / demand management measures and will all contribute towards reducing the dependency on cars.

Fiscal demand management measures such as discouraging long stay car parking, and discounted metrocards have been adopted.

3.1.1 Benefits from traffic demand management measures

The likely air quality effects from the major corridor treatments / Supertram, were not quantified within the Stage 4 Report as the Leeds SATURN traffic model was in the process of being re-calibrated. This prevented the detailed air quality assessment of the major schemes from being carried out at that time. However, appropriate traffic flow assessments using the new traffic model are presently being conducted to provide appropriate inputs for the Airviro air quality modelling system.

A) Supertram

Supertram is a light transit system aiming to provide state-of-the-art public transport along three of the most heavily trafficked routes into Leeds. It will link major development sites, hospitals, universities and district centres with outlying park and ride sites and the city centre. Supertram will also be key to the regeneration of three main target areas identified as part of the Leeds Neighbourhood Renewal Strategy.

The objective is to integrate Supertram with other forms of public transport to increase travel options and improve the travelling experience. It will provide the people of Leeds with a clean, accessible, and modern alternative form of public transport. The resulting modal shift will reduce traffic congestion and bring many environmental benefits including reduced noise levels, local traffic emissions and pedestrian severance, all of which will enhance the image of Leeds as a modern European city.

B) Quality Bus Initiatives.

The main objective of the Quality Bus Initiatives (QBIs) is to address the problems of congestion and associated air pollution by promoting the use of public transport along radial corridors into Leeds. QBIs are agreements made between Leeds City Council, METRO (PTE) and the Bus Operators to co-ordinate their efforts to provide a better level of service on these routes for the public.

This objective is met through a comprehensive package of improvements along specific radial corridors. Bus priority measures provided by the Council ensure quicker and more regular peak hour journeys for commuters. Better passenger facilities and new low emission, accessible buses are provided by METRO and the Bus Operators respectively, to ensure that these journeys are more comfortable.

The first QBI scheme in Leeds has operated on the A61 to the north of the city since late 1995. Guided bus priority measures were introduced at major congested junctions, using sixteen new Euro II buses with accessible floors and other comfort features. These measures coupled with significant journey time savings, have resulted in over a 50% increase in bus patronage along this route. The resultant decrease in car dependency will lead to general environmental benefits adjacent to the QBI corridors.

C) High Occupancy Vehicle (HOV) Lanes

It has been shown that during peak commuting periods, one third of traffic carries two thirds of people. A HOV lane provides priority to vehicles with more than one occupant. As well as encouraging private motorists to share vehicles, the HOV lane helps buses to keep regular and predictable timetables by avoiding the worst of the congestion.

Leeds' first HOV lane on the A647 was made permanent in November 1999 and by September 2002 the average car occupancy rate of private vehicles had risen from 1.43 to 1.51. Other benefits of the scheme include increased cycling and pedestrian movements and a general increased bus patronage for routes along the A647 corridor.

A joint enforcement policy with the local police has restricted violations of the HOV lane. Success of the A647 HOV Lane has encouraged Leeds to incorporate a variation of a HOV Lane within the design of the planned East Leeds Link Road (ELLR). The ELLR will run through an industrial estate and other proposed areas for development. As a consequence HGVs will be allowed to operate along side high occupant vehicles within the priority lane.

E) Promote Cycling, Walking and Access For All

The needs of all pedestrians and cyclists have often been subordinate to those of the motorist resulting in their freedom of movement being curtailed. Pedestrians, Access for Disabled persons and Cycling strategies have been developed to address these problems through proactive and positive measures.

Encouraging people to walk and cycle rather than travel by car can make an important contribution to managing travel demand and have wider benefits to the community, environment and people's health.

3.1.2 Benefits from traffic reduction

During the Fuel Crisis in September 2000, there was considerable disruption to fuel deliveries and subsequent effects on traffic flows. The Council decided that this was an ideal opportunity to measure the effects of reduced traffic flow on air quality within central Leeds. The findings indicated that during one week there was an average 19% reduction in traffic flow. Journey commuter times into Leeds were greatly reduced, with no observed congestion. During this period average air quality improvements of 30-40% for NO_2 and 25-35% for PM_{10} were recorded. (Other variables including weather conditions were taken into account).

This study highlighted that disproportionate benefits in terms of air quality can be achieved from traffic reductions, provided there is a significant reduction in congestion. Traffic congestion and associated stop/ start manoeuvres, increase fuel consumption and greatly exacerbate emissions.

It is considered (based on the findings of the Fuel Crisis report) that the combined effect of the major LTP schemes should be that the air quality objectives will be achieved. It has been estimated that these schemes including Supertram, will reduce total commuting traffic by 10%. Similar reductions in traffic are experienced during the holiday period in August, when levels of traffic congestion are substantially reduced. It is therefore expected that major LTP schemes should reduce peak period emissions by 10-20%. Current Airviro modelling, using the improved traffic model for Leeds, should improve our confidence of achieving the relevant air quality standards.

3.2 Reducing the need to travel

Land use planning will be used to ensure appropriate development to support town centres, to develop brownfield sites and to ensure that developments have access to public transport.

Planning briefs highlight the need for sustainable design and transport and a reduced reliance on the car.

Land is allocated specifically for public transport initiatives such as Supertram and quality bus initiatives.

Travel plans are sought in association with new development that has significant trip generation. Schools and Council departments are encouraged to develop travel plans with the aim of reducing the need to travel, especially by car.

The Travelwise Campaign actively promotes the benefits of setting up Travel Plans, it has been responsible for introducing over one hundred Travel Plans. These Travel Plans are currently being audited, to establish their effectiveness / environmental benefits.

3.2.1 Benefits from reducing the need to travel

A) Travel Plans

Travel plans refer to a package of sustainable travel initiatives, often tailored to a specific site, which aim to reduce single occupancy car use. Companies are encouraged to develop travel plans for various reasons including planning permission requirements, a response to recruitment and retention problems, as part of their environmental policies, in response to on site parking problems, or as part of corporate social responsibility work.

Examples of successful travel plans include KPMG actively promoting cycling by providing secure cycle racks, lockers, showers, and cycle route maps. As a result the number of regular cycle commuters within the firm has significantly increased. HBOS (formerly The Halifax) operates a car sharing scheme under *carshareleeds.com* and now have 100 groups of sharers, totalling over 240 people, who have access to parking on site.

C) TravelWise Campaign

Leeds is just one of the many areas of the country that supports the TravelWise campaign. As well as encouraging local businesses to develop Travel Plans, Leeds TravelWise runs campaign events (e.g. 'BikeWeek' and 'In Town Without My Car') to promote sustainable travel more generally and is introducing similar ideas with local schools. These form part of a package of measures including Safer Routes to School initiatives to educate future generations of transport users. Walk to school week is also promoted widely in Leeds' schools with thousands of children taking part each year.

Within Leeds over thirty schools have set up permanent 'walking bus routes'. One school has set up four routes involving over one hundred pupils. This has resulted in a sustained 7% reduction in car travel to that school.

An extensive programme of road safety education and cycle training is conducted each year in Leeds schools. Other initiatives include educating children in how to use public transport easily, with the hope that they will continue to do so in later life.

3.3 Improvements to the highways network

Improvements to the highway network include the completion of the Leeds Inner Ring Road thereby helping to reduce through traffic in the city centre. Other schemes include a long term strategy to improve operation of congested junctions along the A6120 Ring Road Route and the construction of the East Leeds Link Road. The East Leeds Link Road will provide direct access to the A1/M1 Link, giving priority to HOVs/HGVs, by use of a dedicated lane.

An upgraded Urban Traffic Control (UTC) system will aid management of congested junctions, and enable efficient operation of the Quality Bus Initiatives and the proposed Supertram network. This UTC system is being extended within Leeds to further promote efficient operation of Public Transport, smooth traffic flows and help reduce vehicle emissions.

3.3.1 Benefits from improvements to the highways network

Quantifying the air quality effects of transportation schemes is not a simple procedure. One of the most important factors for modelling air quality is predicting changes in future traffic flow patterns. Traffic assignment models such as SATURN can provide mean link speeds, but cannot identify areas where traffic flows become congested.

Leeds is currently upgrading its Airviro system to utilise the new SMHI Congestion Module. This system will help identify a road capacity threshold, based on daily traffic flow profiles. The Congestion Module will highlight lengths of road/period of the day, where the congestion index is exceeded, i.e. where congestion is likely to occur. The Airviro emission factor will then default to an appropriate higher emission rate. The upgraded Airviro system will help improve our modelling capability, but will not be able to model the effects of congested flow in detail.

Leeds City Council has recently set up a working partnership with The University of Leeds to pool resources and expertise in the field of air quality management and related issues. The University of Leeds is currently investigating new methods of congestion flow modelling, emissions monitoring and developing new modelling software for the dispersion models such as the Airviro system. This research forms part of a major £4.2 million National Integrated Research project called LANTERN (Leeds health, Air pollution, Noise, Traffic, Emissions, Research, Network), funded by EPSRC. LCC is providing stakeholder advice, databases and case study sites to support this project.

A) East Leeds Link Road (ELLR)

The East Leeds Link Road is a fundamental element of the city's transport strategy. It will act both as a direct transport link to the A1/M1 and to allow the regeneration of the Lower Aire Valley.

The ELLR is key to the city's future plans for regeneration of the Aire Valley Employment Area, the council's main designated area for creating new employment opportunities. Without the new road, it would not be possible to fully develop this part of Leeds, since access is currently very poor.

As well as improving access to the Lower Aire Valley, the ELLR will incorporate dedicated HOV/ HGV lanes between the M1 and the Inner Ring Road. It is also anticipated that the ELLR will provide some relief of traffic currently using the more sensitive A64/A63 corridor. This will reduce congestion allowing the existing East Leeds Quality Bus Initiative to operate more effectively and improve general environmental conditions for a great number of residents in East Leeds.

B) Completion of Inner Ring Road (Stage 7)

The Inner Ring Road (IRR) is currently incomplete, and does not operate with full effectiveness. This means that any traffic problems have disproportionate knock-on effects. Stage 7 will complete the IRR and help route through traffic around the city centre.

The cost of completing the IRR will be about £36m and will reduce the amount of congestion currently experienced within the city centre area. In return, this should allow the other Highway Network Improvement schemes and the Traffic Demand Management schemes to work more effectively.

D) Urban Traffic Control (UTC) System

The City Centre Loop Road is a one-way closed circuit located substantially inside the Inner Ring Road. Leeds is aiming to improve conditions for both pedestrians and motorists in the vicinity of the loop by encouraging traffic approaching Leeds city centre to use the 'loop' route wherever possible. This will minimise the use of the roads inside the loop and enhance the city centre environment for residents, workers and visitors.

As part of a continuing process of upgrade and expansion of the UTC system, off-peak journey times on the 'loop' have been reduced by between 15% and 20%. Careful interphasing of the signals has promoted smoother traffic flows and reduced queuing traffic in the 'loop'. Such adjustments to the UTC system will reduce vehicle emissions, noise and journey times. Emission savings and resultant air quality benefits will be assessed using the Airviro system.

E) Highways Agency and de-trunking

Figure 10 identifies which primary routes and motorways are controlled by the Highway Agency. In recent times, there has been a systematic de-trunking of primary routes in the Leeds district. The last remaining section to be handed over to the Council is the A63, between the M1 and the A1.

Leeds City Council has had discussions with the Highway Agency concerning proposals for the future management of the motorway network within South and West Yorkshire. The South and West Yorkshire Making Best Use Study (SWYMBUS) is currently assessing a range of interventions including:-

- Carriageway widening
- Use of hard shoulder
- Use of narrow lanes
- Ramp metering
- Variable speed limits

These measures should improve peak period traffic movement and reduce existing levels of congestion, thereby helping to reduce vehicle emissions. The Council will be consulted on the SWYMBUS, with particular reference to the air quality implications for Leeds.

A further motorway proposal, the Route Management Study (RMS) for the M1/ M621 is in its early stages of development. The RMS will build on the findings of the SWYMBUS. This study will identify how the M1(Junctions 30-45)/ M621 can be managed in the short and medium term, whilst the SWYMBUS measures are being developed. The completion of the RMS will lead to the adoption of a 10 year plan for the effective management of the M1/ M621.

LCC will act as consultees for the RMS on issues relating to air quality. This is especially important as an Air Quality Management Area (No. 7), is located adjacent to the M621 and the Dewsbury Road flyover.

3.4 Reducing vehicle emissions

The Council will continue to run all its diesel fleet on Ultra Low Sulphur Diesel (ULSD) and will fit all new diesel vehicles with continuously regenerating traps (CRT) to reduce particulate emissions. All vehicles will comply with the Euro III standard which specifies emission limits for particulates and nitrogen dioxide amongst other pollutants.

Council contractors will also be encouraged to adopt these standards.

The use of alternative fuels/vehicles has been investigated over a period of several years. LCC has conducted trials using CNG/LPG/Biogas and Oxygenated Petrol. It currently operates some electric and LPG powered vehicles.

The Council is considering the use of Bio-diesel (5% blend) for use within the whole vehicle fleet. The fleet consists of 1100 light vans (7.5 tonnes vehicles) and 300 HGVs. This renewable energy source will reduce emissions of PM_{10}, CO and hydrocarbons, but is anticipated to increase NOx emissions within HGVs by 10-20%.

A De-Nox exhaust after- treatment is also being considered for use within the Council's HGV fleet. Such systems are proven to reduce NOx emissions by 40-50%. It is not likely that Bio-diesel would be used without the benefits of the De-Nox system.

The possibility of introducing a Low Emission Zone, where only HGVs/Buses that meet specific Euro emission standards can operate, has been investigated by a Leeds University Mres student. The area considered was located inside the Leeds Inner Ring Road

European funding and Travelwise campaigns have helped to pioneer the use of Remote Sensing as a tool to highlight "gross polluting" vehicles. Remote Sensing has been trialled as a screening tool to aid roadside emission testing by the Vehicle Inspectorate

Land use planning policy will encourage alternative forms of transport such as rail and water.

3.4.1 Benefits of reducing vehicle emissions

Reducing vehicle emissions, the use of alternative fuels and the use of best emission reduction technology can reduce or eliminate emissions and consequently will have a direct impact on improving air quality

Battery electric vehicles produce no pollution where they are used. Whilst emissions of local air pollutants will be transferred to the power station supplying the electricity used to recharge the vehicle, these tend to have less of an impact on local air quality than vehicles emitting pollution in busy urban areas. Greenhouse gas emissions from electricity generation have substantially fallen over the last decade, as natural gas has replaced coal as a primary energy source. Further reductions are expected by 2010, especially as more electricity is generated from renewable sources of energy. Electric vehicles recharged from renewable sources such as wind or hydroelectric power will, of course, produce few emissions of air pollutants on a lifecycle basis.

The best LPG vehicles can offer some reductions in emissions of oxides of nitrogen and particulates. LPG and electric vehicles are also noticeably quieter than other vehicles.

An additional benefit of reducing vehicle emissions will be a reduction in emission of carbon dioxide, a major contributor to climate change.

3.5 Reducing emissions from industrial and domestic sources

Enforcement action will be increased in respect of a number of industrial processes in the city which are regulated by the Council, and the enforcement activity of the Environment Agency will be monitored in respect of a number of other industrial activities.

The provisions of the Clean Air Act 1993, the Environmental Protection Act 1990 and the Pollution Prevention and Control (England and Wales) Regulations 2000 with respect to emissions of smoke and dust from all sources will continue to be rigorously implemented.

Energy efficiency measures will be encouraged as will the change to less polluting fuels and the use of combined heat and power plant.

Land use planning in the form of development control will encourage sustainable development and will treat air pollution issues as a material consideration in determining planning applications.

3.5.1 Benefits of reducing emissions from industrial and domestic sources

Reducing emissions from industrial and domestic sources will have a direct impact on air quality in respect most of the priority pollutants and there will be additional benefits in terms of reducing emissions of various other pollutants not specifically included in the air quality strategy.

There will be other benefits such as controlling nuisances from smoke, fumes, gases, grit and dust, and odour which will contribute to improving quality of life for the people of Leeds.

3.6 Raising Awareness

The council currently raises awareness and provides information on air pollution in a number of ways. In 1999 the "Wise up to the Environment" campaign was launched to provide a co-ordinated approach to environmental campaigning in Leeds. The campaign helps businesses and the community to promote environmental issues more effectively.

The campaign uses a mascot – Barney Owl – which is seen widely around the city including on the Council's air quality monitoring sites. Information systems and leaflets have been made available at over 140 sites including public libraries, one-stop centres and community centres.

Local air quality information from one site is published on the Government's air quality website, and the Council is working towards publishing all local monitoring information on its own website.

3.7 Other measures

The Council will consult on Travelwise Initiatives, the adoption of travel plans and measures to increase their effectiveness. Other measures to reduce air pollution such as car sharing initiatives, clearer road signage, the introduction of variable message signs, measures relating to taxis and private hire vehicles, measures to reduce unnecessary idling of vehicles, the provision of public charging points for electric vehicles, relaxation of the goods delivery curfew, vehicle emission monitoring, and other initiatives.

4.0 COST-EFFECTIVENESS ANALYSIS

The Council has considered the costs and benefits of measures in the plan and has given a broad indication in terms of low, medium or high. It is not possible to provide a detailed cost –effectiveness analysis of every action in the plan although some attempt has been made to provide a qualitative estimate.

In terms of both cost and potential air quality improvement the Action Plan measures have been banded in to Low, Moderate and High categories. (See Appendix 1 – Detailed Measures).

The cost bandings are categorised by the expected cost of constructing or operating the proposed measure. Less than £1M is categorised as Low, measures expected to cost between £1M and £10M categorised as Moderate and measures costing in excess of £10M categorised as High.

The potential air quality benefits are difficult to quantify. Even with quite detailed modelling systems, it is awkward to model the quantifiable affects of the proposed Action Plan measures. The corresponding impact upon the level of congestion and vehicle driving patterns of individual measures is difficult to simulate. Section 3.1.1 explains how monitoring during the fuel crisis highlighted the disproportionate effect of congestion on local emissions and the resulting ambient pollution levels.

The banding of Potential Air Quality Improvement has therefore been done in a subjective manner based on best estimates from experience and previously monitored schemes. The completion of a new calibrated SATURN model will give greater confidence of predicting the effects of the major schemes throughout the detailed assessment stage. This modelling capability will be backed up by the use of monitoring equipment to audit individual measures as they are implemented.

Many of the actions in the plan are already being implemented, or are already planned, for reasons other than air quality yet will have benefits in terms of improving air quality. Some of the actions are carried out because of a statutory duty. Such actions are drawn from existing Council strategies and plans and are therefore considered to be cost-effective in reducing air pollution.

Overall it is considered that the measures proposed constitute a balanced and realistic approach and will contribute to meeting air quality objectives.

5.0 CONSULTATION

There was a statutory duty to consult a defined list of consultees on the action plan. The Council consulted statutory consultees, key stakeholders and the community with the aim that the public consultation process on the action plan was as participative and inclusive as possible, and that contributions could be made from industry, transport organisations and the community.

Consultation responses were received from one of the Council's Community Involvement Teams, Defra (via their consultants), one of the Leeds Primary Care Trusts, and from the Freight Transport Association.

6.0 MONITORING THE ACTION PLAN

The Council will use air quality modeling projections to monitor the progress of the plan, and other national and international measures, towards achieving the national objectives.

Air quality monitoring in Leeds will also be used to monitor implementation of the plan. However, since year-by-year changes in weather conditions can affect air pollution levels significantly compared to any emissions reductions from policy initiatives, caution needs to be exercised in any conclusions.

The Council will also assess the progress of the plan through monitoring changes in factors and activities within the city that relate to air pollutant emissions. Where possible and appropriate, activity changes will be incorporated into the air quality model to enable a combined assessment of progress towards achieving the national objectives and to provide a better assessment of present and future air quality in Leeds. Where possible, local data will be used, otherwise national data will be used. Such data will include:

- Air quality monitoring results
- Computer modelling in conjunction with results of air quality monitoring
- Local traffic counts, including modal splits and car / bus journey times
- Bus service vehicle kilometres and passenger journeys / year (currently available for West Yorkshire)
- Ages of road vehicles from local and national monitoring
- Proportion of road vehicles using cleaner technologies (i.e. retrofitted or using alternative fuels) from TransportEnergy data and local monitoring
- Levels of infrastructure for the refueling of alternative technologies
- Progress and implementation on the building design recommendations
- Numbers of combined heat and power (CHP) schemes
- Emissions from regulated industrial processes

An air quality updating and screening assessment has been undertaken (during 2003). This indicated that further work is necessary on nitrogen dioxide and PM_{10} particles which will be carried out as part of a detailed assessment that is to be produced during 2004.

This future assessment will inform the process and will indicate if the action plan is achieving its aims of delivering compliance with air quality objectives by 2005.

A progress report will be produced by April 2005 which will specify whether the air quality objectives have been achieved.

This will not be the end of the process however. Once the objectives have been met they must continue to be met in every subsequent year. Further assessments and reports will be produced in accordance with a timetable that currently runs to 2010.

GLOSSARY

This glossary was prepared for the Stage 3 Review and Assessment document and is repeated here with additions to aid understanding of the abbreviations used.

AADT	Annual Average Daily Traffic flow
APEG	Airborne Particles Expert Group
AQMA	Air Quality Management Area
AQMT	Air Quality Management Team
ATC	Automatic Traffic Counter
AUN	The DETR's Automatic Urban (and Rural) Network of air monitoring stations
CO	Carbon monoxide
DEFRA	Department for Environment, Food and Rural Affairs (successor to DETR)
DETR	Department of the Environment, Transport and the Regions (see DEFRA)
DfT	Department for Transport
DMRB	Design Manual for Roads and Bridges – a DETR document containing air quality information and calculation procedures (in Volume 11)
EDB	Emissions DataBase
EPAQS	Expert Panel on Air Quality Standards
FGD	Flue Gas Desulphurisation
ITS	Institute of Transport Studies (at the University of Leeds)
kph	kilometres per hour
LRC	London Research Centre
LTP	Local Transport Plan
mean	arithmetic average
mg/km	milligrams per kilometre
NAMAS	National Accreditation of Measurement and Sampling – a quality assurance/quality control scheme for analytical laboratories
NAQS	National Air Quality Strategy
NO	Nitric oxide
NO_2	Nitrogen dioxide
NOx	Oxides of nitrogen (the sum of NO and NO_2)
NSCA	National Society for Clean Air and Environmental Protection

OSCAR	Ordnance Survey Centre Alignment of Roads
pa	per annum
Pb	Lead
PCU	Passenger Car Unit
PM_{10}	Particles with a mean diameter of less than 10 microns (millionths of a metre)
ppb	parts per billion (parts per 1,000 million)
ppm	parts per million
PRN	Primary Road Network - a highway network which includes all trunk roads and some major local authority roads. Primary roads can be identified as the road signs have green backgrounds.
RPG	Regional Planning Guidance
running mean	As an example, the air quality standard for carbon monoxide is 10ppm as a running 8-hour mean. To assess measured levels against this standard, it is necessary to calculate the average of eight consecutive hourly values, say from midnight to 8.00 am, then drop the first hour (from midnight to 1.00 am), add the hour from 8.00 am to 9.00 am and repeat the calculation, continuing throughout the period of interest. As each calculation of the "running 8-hour mean" gives a result, there will be 24 opportunities for the standard to be assessed each day. This is equally true whether an 8-hour, 24-hour or an annual running average is the time period under consideration.
SATURN	Simulated Assessment of Traffic on Urban Road Networks – a computer programme used to model road traffic.
SDM	Standard Deviation of the Model – a statistical assessment of accuracy
SO_2	Sulphur dioxide
TEMMS	Traffic Emission Modelling and Mapping Suite – a suite of computer programmes developed by ITS and used by the City Council to construct the traffic related part of the EDB
TEOM	Tapered Element Oscillating Microbalance – the PM_{10} monitoring method adopted as the UK standard
TSP	Total Suspended Particulate
UDP	Unitary Development Plan
US EPA	United States' Environmental Protection Agency
$\mu g.m^{-3}$	micrograms per cubic metre (also occasionally appearing as $\mu g/m^3$)
VOC	Volatile Organic Compound
WYEI	West Yorkshire Emissions Inventory – part of the "Glasgow, Middlesbrough and West Yorkshire Atmospheric Emissions Inventories" produced by LRC for DETR

APPENDIX 1 - AIR QUALITY ACTION PLAN

	Action	Who	Implementation	Completion date	Cost	Potential Air Quality Improvement
	Objective 1:- **TRAFFIC DEMAND MANAGEMENT METHODS**					
A	**SUPERTRAM**:- To construct and operate three major routes from Leeds City Centre to Park and Ride sites outside the Outer ring Road. (Total Length 28km)	DTLR approved scheme March 2001 Supertram Consortium	Bid Evaluation starts October 2002 Construction starts early 2004	Early 2008	High	Moderate / High Potential to reduce total commuting traffic by 5%
	SPG No. 5 on Supertram contributions, which seeks planning obligations from all new appropriate development to fund the Supertram initiative, is intended to be widened to support a fund for public transport in general.	Development Department				
B	**QUALITY BUS INITIATIVES (QBI):-** i) A65 Kirkstall Road QBI	DfT provisional approval for scheme designed by Development Department (Transport Planning)	Initiate preliminary design, Preparation of orders and relevant planning processes.	2008	High	Low Benefits of the QBI schemes should increase with time.
	ii) A653 Dewsbury Road QBI	Development Department	LTP	Early 2006	Low	Low
	iii) Burley Road Bus Priority	Development Department	LTP	2005	Moderate	Low
	iv) A61 Hunslet Road QBI	Development Department	LTP	2006	Moderate	Low

	v) East Leeds QBI	Development Department	LTP	2001	High	Low
	vi) A61 Scott Hall Road Guided Bus Route	Development Department	LTP	1998	Moderate	Low
	vii) Leeds Bradford Road Bus Priority	Development Department	LTP	2007	Moderate	Low
	viii) Bus priority junction improvements and bus stop accessibility improvements	Development Department	LTP	2003-2006	Moderate	Low
C	**HIGH OCCUPANCY VEHICLE (HOV) LANE** A647 Stanningley Road	Development Department	ICARO European project Demonstration project 1997	Project made permanent Year 1999	Low	Low
	The combined effects of the corridor treatments listed in B) and C) above could reduce commuting traffic by up to 5%					Moderate / High
D	**FISCAL RESTRAINTS** i) Implement parking zones / discourage long stay parking	Development Department	LTP	On going	Low	Low
	ii) Trial 10% discount on company metrocards	Development Department	Travelwise	2002	Low	Low

E	**PROMOTE CYCLING AND WALKING** i) Cycling Strategy	Development Department	LTP Cycle Action Plan	Approved 2002	Moderate	Low
	ii) Pedestrian Strategy	Development Department	LTP Pedestrian Action Plan	2001	Moderate	Low
	iii) Access Strategy	Development Department	LTP Action Plans in place to implement DDA (part 3)	2004	Moderate	Low
	iv) The Council will form a new City Services Department which will bring all streetscene issues together in one department. This will ensure the highest possible streetscene standards which will encourage walking and cycling.	City Services Department	April 2003	April 2003		Low
	The UDP contains car parking maximum guidelines, including the discouragement of long stay parking in the City Centre and the encouragement of cycle parking provision. Maximum guidelines offer the opportunity for no parking to be provided where appropriate.	Development Department	Ongoing		Low	Low

	Objective 2:- **REDUCE NEED TO TRAVEL**					
A	**TRAVEL PLANS** i) Workplace / Travel Plans Through ongoing work with private sector business and public sector organisations	Development Department	LTP / Travelwise 37 Plans introduced by 2001/02	Proposed 6 further Plans during 2002/03	Low	Low individually Low / Moderate collectively
	ii) Development / Travel Plans Travel Plans are sought in association with new development that has significant trip generation	Development Department	LTP / Travelwise 33 Travel Plans attached to Planning Applications by 2001/02	Proposed 20 further Plans attached to Planning Applications 2002/03	Low	Low individually Low / Moderate collectively
	iii) School Travel Plans	Development Department	LTP / Travelwise, 38 School Travel Plans introduced 2001/02	Proposed 20 further Plans during 2002/03	Low	Low individually Low / Moderate collectively
	iv) Departmental Travel Plan	Development Department	Departmental Rideshare scheme introduced & Travel audit 2002	Full Travel Plan to be introduced 2002/03	Low	Low
	v) European “Toolbox” Travel Plan Resource Kit	Development Department + several European Partners	European funding through the SAVE 2 programme	Toolbox used as a Travel Plan aid 2001/02	Low	Low Used to aid design the individual travel plans listed above

B	**LAND USE PLANNING** The Council will support the development of a safe transport system which achieves the most efficient movement between homes, jobs and facilities, promotes economic development and protects the environment. This aim, which includes (especially in the light of Revised PPG13) reducing reliance on the private car, is implemented throughout the Unitary Development Plan (UDP), specifically in the transport, shopping, employment, housing, leisure and access for all chapters.	Development Department	Ongoing	Ongoing	Low	Low
	The Council is trialing "Work/Life Balance" in various departments. This scheme includes measures such as homeworking and teleworking etc which will reduce the need for some Council employees to travel.	All departments	Current trials in various departments		Low	Low
C	**TRAVELWISE CAMPAIGN** i) Environmental Awareness Campaigns	Development Department	Green Transport Month Events organised by Travelwise	Annual Events	Low	Low
	ii) Green Vehicle Trials	Development Department			Low	Low
	iii) Alternative Fuel Trials	Development Department			Low	Low

D	**LAND-USE PLANNING / UDP** i) Environmental Impact Assessments (EIA) Air Quality Assessments	Development Department The Air Quality Management Team (AQMT)	LTP / UDP aid to scheme design EIA Regs NAQS	Scheme dependant	Low	Low
	ii) EIA Screening Model	Development Department	Incorporated within a sustainability model, considers EIA for all transportation schemes	Scheme dependant	Low	Low / Moderate Combined effect of all small schemes.
	The current Urban Capacity Study is identifying brownfield housing opportunities within a Priority Area only (defined by its accessibility to public transport).	Development Department	Ongoing		Low	Low
	The UDP allocates land specifically for public transport initiatives e.g. park and ride schemes, Supertram, A65 quality bus initiative.	Development Department	Ongoing		Low	Low
	Planning Briefs highlight the need for sustainable design and transport and a reduced reliance on the car.	Development Department	Ongoing		Low	Low
	Retail development is required to locate in town centres in accordance with PPG6. This is also supported by SPG No. 2 on leisure development which takes PPG6 into consideration.	Development Department	Ongoing		Low	Low
	Town Centre Action Plans and Market Town Initiative aim to support town centres and amongst other issues support public transport improvement.	Development Department	Ongoing		Low	Low

	Supporting the City Centre as *inter alia* a focus for District-wide trip generators: The City Centre is promoted and protected as hub for retail, leisure and employment opportunities	Development Department	Ongoing		Low	Low
	The Plan is also supporting the development of major residential development in the City Centre and Town Centres. Holbeck Urban Village seeks to promote live/work and high technology industries in a site which has high public transport accessibility. Environmental initiatives around City Station and the Bus Station.	Development Department	Ongoing		Low	Low
	It is intended to introduce a more solid base for sustainable development in the Reviewed UDP, to include: a sustainability appraisal of the Review which may include air quality or reducing the need to travel indicators more sustainable design policies A focus on sustainable urban regeneration and brownfield re-use in areas accessible to public transport	Development Department	Ongoing		Low	Low

	The layout of a site is particularly important for movement and transport; individual developments should ensure ease of movement for pedestrians and cyclists as a priority.	Development Department	Ongoing		Low	Low
	Rat running in residential areas should actively be avoided. Safe Routes to School schemes should be considered to discourage exacerbating "the school run". Travel Plans are sought in association with major development to facilitate assessment of transport impacts and encourage the reduction in the use of the private car. Car-free development is also encouraged.	Development Department	Ongoing		Low	Low

	Objective 3:- **IMPROVEMENTS TO HIGHWAY NETWORK**					
A	**EAST LEEDS LINK ROAD (ELLR)** (Scheme includes HOV/HGV lane)	Development Department	Enabled "indirect" air quality improvements and implementation of East Leeds QBI along A63 / A64	2005	High	Low / Moderate
B	**COMPLETION OF INNER RING ROAD (stage 7)**	Development Department Scheme accepted by DfT	LTP major scheme should reduce congestion in areas close to AQMAs	2007	High	Low / Moderate
C	**A6120 RING ROAD ROUTE STRATEGY**	Development Department	Development of a long term strategy and investment plan for the A6120, to be implemented through the Local Transport Plan 2	2006 – 2011	High	Moderate
D	**URBAN TRAFFIC CONTROL SYSTEM** (PHASE 2 UPGRADE) Improved traffic management at congested junctions and QBI schemes	Development Department	Upgraded UTC will promote smooth flow, and aid traffic demand management. UTC area extended, with development of new interphase to promote operation of Public Transport & Supertram system	Scheme dependant 2001 onwards	Moderate	Moderate

	Objective 4:- **ACTIONS TO REDUCE VEHICLE EMISSIONS**					
A	**REMOTE SENSING / EMISSION TESTING** Trialing of remote sensing to target gross polluters	Development Department TRL Huddersfield University	Travelwise, working with Vehicle Inspectorate using remote sensing as a screen for gross polluters	1998 - 2001	Low	Low
B	**LOW EMISSION ZONE (LEZ)** Feasibility air quality assessment of LEZ inside IRR	Leeds University in collaboration with Development Department	MRes Student project to be fully evaluated in terms of air quality & AQMAs	2002	Moderate Difficult to enforce	Moderate locally Low overall. Similar benefits are likely to occur with time due to fleet clean-up
C	**BIOGAS PROJECT**	Various Depts AQMT Consultants	EU Target Project / LTP / Travelwise pilot study set up, Biogas refined into Methane	Project failed 2002	Low	
D	**COUNCIL'S OWN FLEET** The Council will reduce vehicle emissions from its diesel fleet by continuing to run LCC vehicles on ULSD fuel and by fitting all new vehicles with CRT equipment	Transport Agency, City Services Department	Ongoing	Ongoing		Low/Moderate
	The Council will ensure all new HGV units will comply with Euro III standard	Transport Agency, City Services Department	October 2002	Ongoing		Low/Moderate
	The Council will introduce vehicle safety/driving training initiatives which will contribute to more efficient driving and reduced fuel usage	Transport Agency, City Services Department	Ongoing	Ongoing		Low/Moderate

	The Council will use electric powered vehicles where possible for uses of less than 30 miles/day and will investigate the use of electric pool cars for out of town offices	Transport Agency, City Services Department	2002/03			Low/Moderate
	The Council will use route planning to reduce HGV vehicle mileage.	All Departments	Ongoing	Ongoing		Low/Moderate
	The Council will utilise fuelling points located at strategically located Depot sites across the City to minimise journey time and mileage required for refuelling purposes	Transport Agency, City Services Department	Ongoing	Ongoing		Low/Moderate
E	**COUNCIL CONTRACTORS** The Council will issue all Approved Contractors with the "Passport to the Environment" document and will hold workshops to help raise contractors' awareness of environmental issues	Procurement Unit, Legal and Democratic Services	Ongoing	Ongoing		Low/Moderate
F	**LAND USE PLANNING** UDP Policy encourages freight transfer from road to rail and water.	Development Department	Ongoing	Ongoing		Low
	Support for using brownfield sites to aid urban regeneration rather than greenfield sites which tend to be on the edge of the urban area.	Development Department	Ongoing	Ongoing		Low
	The UDP supports town centres as hubs of public transport and the most accessible locations for major trip generators.	Development Department	Ongoing	Ongoing		Low
	The UDP aims to ensure that a wide range of shops is available in locations to which all sections of the community, including those without access to private cars, have access by a choice of means of transport	Development Department	Ongoing	Ongoing		Low

	Objective 5:- **ACTIONS TO REDUCE INDUSTRIAL AND DOMESTIC EMISSIONS**					
A	**AUTHORISED PROCESSES – PART B AND IPPC PROCESSES A2** The Council will improve enforcement activities in respect of approximately 250 industrial processes it regulates under the provisions of Part I of the Environmental Protection Act 1990 and of the processes which fall under the provisions of the Pollution Prevention and Control Act 1999. The Council will continue its search for industrial premises which may be operating a prescribed process without an authorisation or permit.	Authorisations team in Environmental Health Services, Neighbourhoods and Housing Department	Ongoing	Ongoing		Low/medium
	AUTHORISED PROCESSES – PART A AND IPPC PROCESSES A1 The Council will scrutinise the public register with regard to the enforcement activities of the Environment Agency in respect of the industrial processes it regulates under the provisions of Part I of the Environmental Protection Act 1990 and the Pollution Prevention and Control Act 1999	Authorisations team in Environmental Health Services, Neighbourhoods and Housing Department	Ongoing	Ongoing		Low/medium

B	**EMISSIONS FROM CHIMNEYS** The Council will enforce the provisions of the Clean Air Act 1993 with respect to emissions of smoke from chimneys.	Area teams in Environmental Health Services, Neighbourhoods and Housing Department	Ongoing	Ongoing		Low/medium
	BOILER PLANT AND CHIMNEY HEIGHTS The Council will enforce the provisions of the Clean Air Act 1993 with respect to ensuring new boiler plant can operate smokelessly and approving the heights of chimneys.	Area teams in Environmental Health Services, Neighbourhoods and Housing Department	Ongoing	Ongoing		Low/medium
C	**BONFIRES ETC** The Council will enforce the provisions of the Clean Air Act 1993 with respect to emissions of smoke from bonfires anywhere in the city. The Council will encourage residents to compost waste rather than burning it in bonfires.	Area teams in Environmental Health Services, Neighbourhoods and Housing Department	Ongoing	Ongoing		Low/medium
D	**DUST AND SMOKE NUISANCE** The Council will enforce the provisions of the Environmental Protection Act 1990 with respect to the emissions of dust from construction sites and other sources, and smoke nuisances throughout the city	Area teams in Environmental Health Services, Neighbourhoods and Housing Department	Ongoing	Ongoing		Low/medium
E	**ENERGY EFFICIENCY** The Council will continue to implement its energy efficiency plans for both public and private sector housing to achieve improvements in energy efficiency which will result in improving air quality.	Energy Unit Environmental Health Services, Neighbourhoods and Housing Department	Ongoing	Ongoing		Low/medium

	The Council will continue to produce monthly reports on energy usage for LCC buildings. Solid fuel and oil-fired plant will be replaced, where feasible, with low NOx natural gas fired plant to reduce emissions. Condensing boilers will be used unless contra-indicated	Design Services Agency City Services Department	Ongoing	Ongoing		Low/medium
	The Council will encourage Combined Heat and Power supporting layouts and designs.	Development Department				
	The Council will consider CHP schemes for its housing stock	Neighbourhoods and Housing Department				Low
	The Council will provide advice to Small and Medium Sized Enterprises on energy usage to achieve improvements in energy efficiency which will result in improving air quality	Energy Unit Environmental Health Services, Neighbourhoods and Housing Department	Ongoing			Low
F	**DEVELOPMENT CONTROL** SPG No. 10 Sustainable Development Design Guide encourages developers to examine the wider context of a site and appraise it with regard to sustainable development. [This encouragement is hopefully soon to be given a stronger Policy basis in the UDP Review where developers will be required to demonstrate by an appraisal of their development how they accord with *inter alia* SDDG principles.] This wider context includes levels of atmospheric pollution.	Development Department	Ongoing	Ongoing		Low

	The Development Department will consult with other Departments represented on the Air Quality Management Team, where it is anticipated that air quality could be an issue (either the effect of development on air quality or the impact of air quality on development). For schemes which could have a significant impact on air quality, applicants will be encouraged to discuss with relevant officers at an early stage, preferably before an application is submitted, the form and content of an Air Quality Assessment report.	Development Department	Ongoing		Low	Low
	The Council will have regard to air quality objectives, the results of air quality reviews and assessments and the air quality action plan when considering planning applications Where the impact of any development is likely to be significant in air quality terms, the planning application may be refused, providing the impact relates to the use and amenity of land, and harm can be clearly demonstrated.	Development Department	Ongoing		Low	Low

	Objective 6:- **RAISING AWARENESS**					
A	The Council will continue to run the "Wise up to the Environment" campaign to raise awareness of environmental issues generally including the need to reduce air pollution.	Environment City Office, Development Department	Ongoing		Low	Low
B	The Council will publish air quality information on its own website	Neighbourhoods and Housing Department	Ongoing		Low	Low
C	The Council will run a campaign to educate the public on driving techniques that will reduce emissions	Development Department	Ongoing		Low	Low
D	The Council will promote the use of cleaner fuels for road vehicles	Development Department	Ongoing		Low	Low