Blaby District Council

the heart of Leicestershire

Blaby District Council

Air Quality Action Plan

May 2004

Local Authority Information

Local Authority	Blaby District Council
Service Manager	Mr S. A. Beard - Head of Environmental Health Services
Officer to contact	David Gould - Senior Environmental Health Officer
Address	Environmental Health Services Division Blaby District Council, Council Offices, Desford Road, Narborough, Leicester, LE19 2EP
Phone number	0116 272 7546
Fax number	0116 272 7594
Email address	environmental.health@blaby.gov.uk
Minicom	0116 284 9786
Council website	www.blaby.gov.uk
Air quality website	http://www.blaby.gov.uk/airquality

This information can be made available on request, in other languages and formats (large print, Braille or on audio tape) by contacting us using the details above.

Executive Summary

Local Air Quality Management (LAQM) legislation in Part IV of the Environment Act 1995 specifies that local authorities such as Blaby must carry out periodic review and assessment of air quality against objectives set by government. Objectives are set at levels of air pollution considered to be reasonably achievable and to represent an acceptably low level of risk to human health. There is broad agreement on the level at which objectives should be set amongst experts working for the UK government, World Health Organization and the European Commission. Local authorities are required to declare Air Quality Management Areas (AQMAs) and develop action plans to show how best to improve air quality where one or more of the objectives is not likely to be met by the date specified in the National Air Quality Strategy. These action plans should complement other measures being introduced nationally and across Europe such as regulations on vehicle and industrial emissions.

Blaby District is located to the South and West of the City of Leicester. Analysis published by the Council in September 2000 forecast that annual average concentrations of nitrogen dioxide (NO_2) in several parts of the District will exceed the national target for 2005. As a result of this analysis three Air Quality Management Areas (AQMA) were declared:

AQMA 1: A5460 Narborough Road South
AQMA 2: M1 corridor in Enderby and Narborough
AQMA 3: M1 corridor between Thorpe Astley and Kirby Muxloe

There may also be problems with short term (hourly) NO_2 levels in AQMA 1 in the Fosse Park retail park, though not along Narborough Road South. More detailed analysis on this issue should be completed soon.

In all three cases the major source of emissions of NOx is road traffic. The measures identified in this report are thus mainly, though not exclusively, related to reducing traffic emissions.

Short term standards for fine particle (PM_{10})[1] concentrations may be exceeded around Croft Quarry. Further problems in this location seem likely to arise through a reduction in the annual average PM_{10} target from 40 $\mu g.m^{-3}$ to 20 $\mu g.m^{-3}$ in 2010. These issues are currently under consideration and further investigation. At the present time an AQMA has not been declared for Croft. Information on control measures given in reports published on the DEFRA website are, however, included in this draft plan to encourage debate so that an action plan for the quarry can be developed quickly should the need arise. More information is also needed with respect to PM_{10} concentrations around landfill sites within the District.

In developing this draft plan a number of other plans and reports have been considered the most relevant of which are the Central Leicestershire Local Transport Plan 2001-2006 (with the first three annual progress reports to July

[1] PM_{10} = Particulate Matter less than 10 micrometres in diameter.

2003), the Blaby Community Strategy and the Leicestershire Community Strategy (which now includes actions from 'Ways Forward for a Better Leicestershire' the County's Local Agenda 21 Action Plan). These plans have been collated and additional measures identified to provide an initial outline of a possible strategy for Blaby to move towards the air quality targets.

Emission control measures are grouped as follows:

1. Control of NOx emissions and exposures from traffic on the M1.
2. Control of NOx emissions and exposures from traffic in the vicinity of the Narborough Road South AQMA:
    a. Cleaner vehicles;
    b. Reducing congestion;
    c. Reducing traffic volumes.
3. General measures to control emissions:
    a. Planning conditions;
    b. Public information campaigns;
    c. Environmental management.
4. Control of PM_{10} emissions from Croft Quarry.

A number of specific measures are described in the plan. For each measure a preliminary appraisal has been made of the following:

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

Details are contained in an Access database, the Blaby Action Plan Tracker, prepared for the District Council.

The assessment of costs and effects of the measures is, at the present time, approximate, but does at least provide a first view on which of the many measures that could be adopted should be prioritised. Data are based on experience elsewhere, knowledge of Blaby and expert judgement. It is stressed that that the data given at the present time are preliminary. Comments from stakeholders based on their knowledge of the local area, processes, operations, etc. with respect to the prioritisation of measures will be welcomed. A promising feature of the plan is that the measures that have received the greatest priority in the listings given in Chapter 3 tend to be included in one form or another in other plans developed for the region. This means that the objectives of the air quality action plan as defined here (albeit in draft form for consultation) are broadly in line with existing policies. It also

means that in many cases there will already be a structure in place for delivering the options. Consideration may also have been given to measures that appear promising, but for one reason or another are not practicable in the local environment.

An implementation programme is presented to launch the action plan. This combines actions to take forward specific air quality improvement options and actions to gather further information on the costs, benefits, practicality, etc. of measures

In reading the plan stakeholders need to consider how they can assist with its implementation: it is not appropriate for all actions to be undertaken by the Council as they necessarily include measures that will be outside the Council's control. A good example concerns measures to reduce emissions from traffic on the M1 which is controlled by the Highways Agency.

Particular consideration needs to be given at this time to *additional* resources within the Council that will be needed to implement the plan. This will determine the practicability of the options selected, and help to refine the implementation programme. The consultants' recommendations for additional resources were as follows:

- 1 member of staff
- Monitoring equipment for NOx, ozone and PM_{10}

A full time Scientific Officer post has been added to the Council's establishment, and recruitment will commence shortly.
The Council has applied to DEFRA for financial support in the purchasing of additional monitoring equipment. A decision is expected shortly, and the equipment will be purchased once the outcome of the more detailed analysis (cited on page 3) is known.

List of Abbreviations

AQMA	Air Quality Management Area
CAFE	Clean Air For Europe (EU Programme for development of future European air quality legislation)
CO	Carbon monoxide
COMEAP	Committee on the Medical Effects of Air Pollutants
DEFRA	Department for Environment, Food and Rural Affairs
EC	European Commission
EPAQS	Expert Panel on Air Quality Standards
EU	European Union
HDV	Heavy duty vehicles (lorries, buses, coaches, etc.)
IPPC	Integrated Pollution Prevention and Control
LA	Local Authority
LA21	Local Agenda 21
LAQM	Local Air Quality Management
LDV	Light duty vehicles (cars, small vans, etc.)
LEZ	Low Emission Zone
LPG	Liquefied petroleum gas
LTP	Local Transport Plan
NO	Nitric oxide
NO_2	Nitrogen dioxide
NOx	Oxides of nitrogen (the mixture of NO and NO_2 in the atmosphere)
NSCA	National Society for Clean Air and Environmental Protection
O_3	Ozone
PAH	Polycyclic aromatic hydrocarbons
Pb	Lead
PMx	Particulate matter with a diameter of *x* micrometres (typically 10, as in PM_{10}) or less
ppb	Parts (of pollutant) per billion (of air), a common unit for measuring the concentration of pollutants in air
SO_2	Sulphur dioxide
SoS	Secretary of State (for the Environment)
SPG	Supplementary Planning Guidance
UDP	Unitary Development Plan
UNECE	United Nations Economic Commission for Europe
VOCs	Volatile Organic Compounds
$\mu g/m^3$ or $\mu g.m^{-3}$	Micrograms (10^{-6} grams) per cubic metre of air, a common unit for measuring the concentration of pollutants in air

Contents

Chapter 1 Introduction

1.1 The Purpose of this Plan

This plan describes actions proposed to be undertaken to improve air quality in Blaby District. In considering what can be done to improve air quality in the District, it first provides an overview of measures that are already being implemented as a result of national legislation and more local plans. It then identifies a number of new initiatives that could be undertaken to improve air quality in the District, and what the Council will do to take these initiatives forward. It will be noted that the Council has no direct power to control emissions from many sources, most notably, vehicles using the M1 motorway, and so there is a strong need for close partnership working with the Highways Agency and neighbouring councils.

Further information is available in the appendices to the main report:

1. A review of compliance for this report against the action plan checklist developed by DEFRA (Appendix 1);
2. Details of national and European regulations on air quality targets (Appendix 2);
3. Additional information on other plans such as the Central Leicestershire Local Transport Plan, Community Strategies (Appendix 3);
4. Details of the consultation process, with summaries of feedback received;

A separate Access database (the Blaby Action Plan Tracker) contains further data on the options identified here, for example;

5. Preliminary estimates of costs, effect on air quality, other social, economic and environmental impacts, timescales for implementation, responsibility for implementation, etc.

1.2 Objectives for Blaby's Plan

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

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

To pursue the air quality objectives laid down in the National Air Quality Strategy, whilst

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

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

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

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

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

1.3 Air Quality Legislation

Research since the mid 1980s has linked existing levels of air pollution with poor health, particularly for the very young and old, and other sensitive groups such as asthmatics (references and other useful sources of information here and elsewhere are listed in Chapter 5). This research links air pollution with various health impacts, ranging from increased use of bronchodilators by asthmatics, to hospital admissions and death.

At a scientific and medical level, UK national government has investigated the problem largely through two committees, EPAQS (the Expert Panel on Air Quality Standards) and COMEAP (the Committee on the Medical Effects of Air Pollutants). In response to their conclusions, the government developed the National Air Quality Strategy, setting objectives for individual pollutants with timescales for compliance (see Appendix 2). These objectives are similar to those developed by the European Union through the Framework Directive on Ambient Air Quality and a series of 'daughter directives' that set limits for individual pollutants.

Much has already been done through national and European legislation to control emissions from vehicles, industry and other stationary sources. Despite this, local factors such as traffic volumes, road layouts and proximity of housing to industrial facilities remain very important in determining whether

or not air quality limits are exceeded. Recognising this, government requires local authorities to assess air quality using monitoring and computer based models. In the event that one or more of the national objectives are exceeded, Councils are required to designate air quality management areas and develop action plans for improving air quality. This is covered under Part IV of the Environment Act of 1995, the major elements of which (so far as this report is concerned) are as follows:

Section 80: Obliges the Secretary of State (SoS) to publish a National Air Quality Strategy.
Section 81: Obliges the Environment Agency to take account of the strategy.
Section 82: Requires local authorities, any unitary or district, to review air quality and to assess whether the air quality standards and objectives are being achieved. Areas where standards fall short must be identified.
Section 83: Requires a local authority, for any area where air quality standards are not being met, to issue an order designating it an air quality management area (AQMA).
Section 84: Imposes duties on a local authority with respect to AQMAs. ***The local authority must carry out further assessments and draw up an action plan specifying the measures to be carried out and the timescale to bring air quality in the area back within limits.***
Section 85: Gives reserve powers to cause assessments to be made in any area and to give instructions to a local authority to take specified actions. Authorities have a duty to comply with these instructions.
Section 86: Provides for the role of County Councils to make recommendations to a district on the carrying out of an air quality assessment and the preparation of an action plan.
Section 87: Provides the SoS with wide ranging powers to make regulations concerning air quality. These include standards and objectives, the conferring of powers and duties, the prohibition and restriction of certain activities or vehicles, the obtaining of information, the levying of fines and penalties, the hearing of appeals and other criteria. The regulations must be approved by affirmative resolution of both Houses of Parliament.
Section 88: Provides powers to provide guidance to local authorities.

1.4 The Situation in Blaby

1.4.1 Monitoring and assessment work completed so far

Following national guidance, assessment of pollutant levels in Blaby has been carried out in stages, each stage informing the next as to the pollutants of concern and areas where problems were anticipated. The third stage required detailed dispersion modelling of emissions from sources including road traffic, industry and the domestic and commercial sectors. Air quality data collected at sites within the District were used to validate the analysis. Predictions were then made as to the likelihood of the Government's air quality objectives being met. The modelling studies predicted that the annual average nitrogen dioxide objective for 2005 (40 µg/m^3) would not be met in several areas along, and close to, the M1 motorway, and along Narborough Road South. Also,

that the hourly mean NO_2 concentration would be exceeded at the Fosse Park retail park.

1.4.2 Declaration of the Blaby AQMAs

Blaby District Council has declared the following three AQMAs (see Figure 1).

- A5460 Narborough Road South,
- M1 corridor in Enderby and Narborough,
- M1 corridor between Thorpe Astley and Kirby Muxloe.

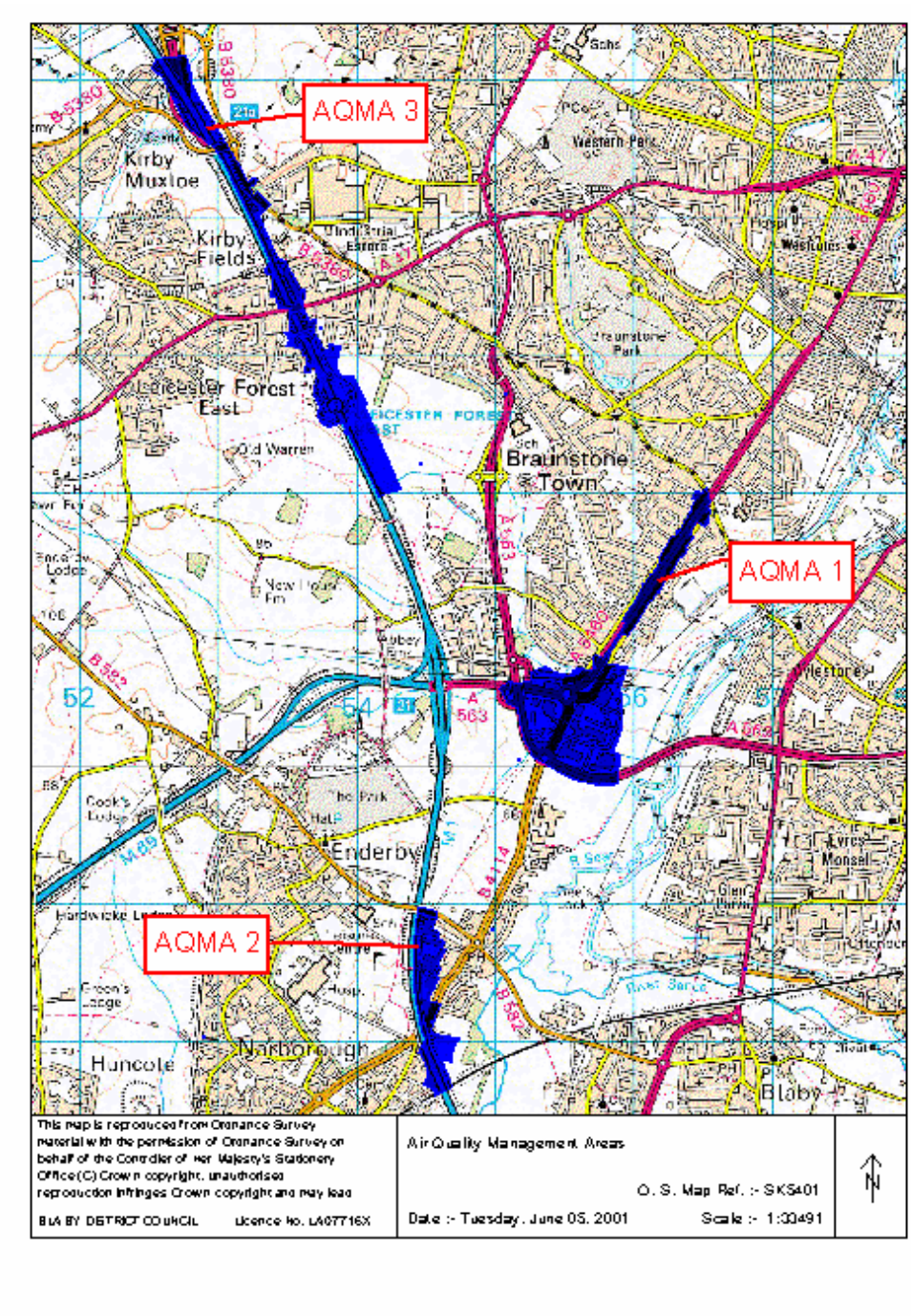

Figure 1 – The three AQMAs declared in Blaby. Croft Quarry is situated just south of Huncote (lower left hand side of the map)

1.4.3 Possible declaration of an AQMA around Croft Quarry

A number of operations are carried out at Croft quarry, each of which will emit particles to some degree:

1. Granite extraction
2. Three road-stone coating plants
3. Two ready-mix concrete plants
4. Two building products plants

Monitoring around the Quarry suggests that the short term air quality target for PM_{10}[2] may be exceeded in an area potentially including the village of Huncote as well as Croft.

Investigations are continuing, and a further AQMA may be declared in the near future. The planned reduction in the national *annual* average standard for PM_{10} from 40 $\mu g.m^{-3}$ to 20 $\mu g.m^{-3}$ from 2010 may also lead to non-compliance as a result of activities at the quarry. Although further assessment is required, details of possible options for controlling emissions from quarrying are given in Section 3.5 to encourage debate on solutions to problems should they exist, in the interests of rapid development of a further action plan for the site.

1.4.4 Projected air quality within the AQMAs, sources of emissions

Detailed analysis of air quality is currently being undertaken for the council by analysts at AEA Technology as follow-up to the earlier work. This will soon provide a more detailed account of the sources of NOx that provide the largest inputs to concentrations of NO_2 in the AQMAs. A preliminary view is available from inspection of the air quality consultation document produced by the Council in September 2000, and this has been used to provide the data listed in Table 1. The site selected for the M1 is in AQMA2, at the nearest house to the point where the M1 crosses the B4114, King Edward Avenue / Leicester Road, Narborough. In all cases traffic is the dominant local source of NOx emission. For Narborough Road South light duty vehicles (LDVs) contribute more than heavy duty vehicles (HDVs), whilst this situation is reversed on the motorway. In all cases there is a reduction in emissions in the period 1996 to 2005 as a result of national and European legislation on fuel and vehicle quality.

[2] PM_{10} = Particulate Matter less than 10 µm (10 micro-metres, or 10 one-millionths of a metre) in diameter.

Table 1 – Preliminary assessment of the contribution of different sources to NOx concentrations in the AQMAs

M1			
1996	**ppb**	**ug/m-3**	**%**
Background	21.0	39.9	28%
B4114 – LDVs	6.7	12.7	9%
B4114 – HDVs	8.3	15.8	11%
M1 – LDVs	12.0	22.9	16%
M1 – HDVs	26.0	49.3	35%
Totals	**74.0**	**140.6**	**100%**

2005	**ppb**	**ug/m-3**	**%**
Background	15.4	29.3	29%
B4114 – LDVs	2.8	5.4	5%
B4114 – HDVs	7.2	13.6	13%
M1 – LDVs	5.4	10.3	10%
M1 – HDVs	22.6	42.9	42%
Totals	**53.4**	**101.46**	**100%**

Narborough Road South			
1996	**ppb**	**ug/m-3**	**%**
Background	21	39.9	29%
LDVs	45.0	85.6	63%
HDVs	6.0	11.3	8%
Totals	**72.0**	**136.8**	**100%**

2005	**ppb**	**ug/m-3**	**%**
Background	15.4	29.26	48%
LDVs	13.2	25.1	41%
HDVs	3.5	6.7	11%
Totals	**32.2**	**61.1**	**100%**

Whilst detailed information on sources of PM_{10} in Croft and Huncote is not yet available, it is clearly logical to conclude that the quarry is dominant. Vehicles serving the quarry may also make a significant contribution to NOx emissions in all three of the designated AQMAs.

1.5 Limits on the Capacity of the Blaby District Council to Influence Local Air Quality

As already noted, although Blaby District Council is required to develop an air quality action plan it does not have direct control over some important sources of the pollutants that are associated with forecast or (in the case of the quarry) possible exceedence of the air quality targets.

To start with, the atmosphere in Blaby includes pollutants generated from other parts of Leicestershire, other parts of the UK, and indeed, the rest of Europe. These can contribute a significant amount of the NOx present in the

atmosphere in any area. The precise contribution within Blaby is currently being assessed as part of the work on the Stage 4 Review and Assessment for the District.

Turning to the sources principally associated with exceedences in the AQMAs, major roads are under the control of the Highways Agency (motorways and other major trunk roads) and Leicestershire County Council and Leicester City Council (other major roads).

Finally, although the quarry and associated activities are regulated as Part B processes by the District Council, planning responsibility for the quarry rests with the County Council because it is a mineral operation. However, Blaby could seek conditions to be imposed upon the quarry and any other industrial sites associated with air quality target exceedence that are more stringent than those that would typically be defined as Best Available Techniques (BAT) under the controlling Integrated Pollution Prevention and Control (IPPC) regime for operations in or close to "sensitive" areas such as AQMAs.

Blaby will thus need to work in partnership with other stakeholders in order to secure reductions in emissions from sources outside its direct control. One of the most important actions in the plan will be to ensure that there is effective dialogue between the Council and the other stakeholders mentioned, and that measures that are already agreed for implementation by other stakeholders will be introduced effectively and in a timely fashion. Blaby District Council will need to be kept informed of progress with any currently agreed plans that could have a major positive or negative impact on air quality, and future plans.

1.6 Existing Policies that Take Air Quality into Account

Policies at a number of levels already have significant effects, both positive and negative, on air quality in the District. This Section identifies the most important of these with respect to this plan. It would clearly be wrong to develop air quality policy in Blaby independently of these policies. To do so would ignore two things. Firstly, that joined-up policy making offers major benefits in terms of cost-effectiveness. For this reason the impacts of options for air quality improvement on transport, noise and climate change (amongst other issues) are considered in the discussion of options that follows in later chapters of this action plan. Secondly, that coherent actions on air quality taken across Leicestershire and along the M1 corridor should stand a far better chance of success than a series of isolated and disjointed measures.

1.6.1 National and European policy

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

- The 10 year transport plan;
- The introduction of IPPC (Integrated Pollution Prevention and Control, through which major industry and some farming operations are regulated);

- Various other EU Directives on specific types of industrial plant, such as large combustion processes (e.g. in coal fired power stations) and waste incinerators;
- EU legislation on emissions from vehicles (the Euro I, II, III, IV and V standards) and on fuel quality;
- The EU's Noise Directive;
- Energy and climate change policy, for example, implementation of the UK's obligations under the Kyoto Protocol;

In several cases there are opportunities for significant benefits between these policies and improved air quality. In the context of Blaby, the Noise Directive would seem to be particularly relevant to the area surrounding the M1, because of the high volume of road traffic using the area. Climate change policy should benefit air quality across the District, particularly if stronger action is to be taken on energy efficiency, for example in building regulations.

Given that road traffic is the largest source of NOx emissions relevant to this action plan, the European legislation on vehicle emissions and fuel quality is particularly relevant. Emissions from individual vehicles will continue to decline as a result of this legislation for many years to come, certainly beyond the 2005 time horizon for the UK air quality objectives, and the 2010 deadline for the European legislation. It is worth asking whether the improvements in vehicle performance in this respect will be sufficient over the next few years to see the annual NOx limit met in Blaby without additional local action. It must be added that reductions in emissions from individual vehicles do not necessarily lead to similar declines in emissions from the whole fleet, because the total number of vehicles on the roads and the total distance driven each year are both increasing over time.

1.6.2 Local policies

A number of local policies and plans already stress the need for action on air quality or are relevant to it:

- The Central Leicestershire's Local Transport Plan (the 'LTP');
- The Leicestershire Community Strategy, which now includes elements of 'Ways Forward for a Better Leicestershire', the County's Local Agenda 21 (LA21) action plan;
- The Blaby District Council: Capital Strategy 2003-2004;
- The Blaby Community Strategy;
- The emerging Leicestershire, Leicester and Rutland Structure Plan.

These are discussed further in Appendix 3. Given the dominance of traffic sources the LTP could play a prominent role in delivering better air quality in the Blaby AQMAs. LTPs are produced on a 5 year cycle, the current one running from 2001 to 2006. The plan for 2006 to 2010 will need to be submitted by July 2005. An obvious action for the Council is to ensure that Blaby's air quality problems are considered throughout the development of the new plan.

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

Chapter 2 Development of the Action Plan

2.1 Guidance on Achieving the Standards

2.1.1 Factors to consider

Guidance has been issued by both DEFRA and the National Society for Clean Air and Environmental Protection (NSCA); references are listed in Section 5.3. The DEFRA guidance lists four factors that have to be considered in the selection of options, as follows.

Air quality improvement: Analysis starts by considering the sources of air pollution (see Section 1.4.4) that lead to exceedence of the air quality standards. This permits quantification of the extent of the improvements required. In the case of NO_2 the link between emission and concentration needs to take account of chemical processes in the atmosphere – there is not a simple linear relationship between reduced emissions of NOx and reduced concentrations of NO_2.

Non air quality effects: An action plan should account also for the social, economic and broader environmental impacts of the measures considered.

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

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

2.1.2 The action planning process

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

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

DEFRA has also published a checklist on the internet that lists issues that need to be considered in an action plan. This is reproduced in Appendix 1,

annotated to show compliance of the present draft of the plan, and to show how it is to be refined in the future.

2.2 Development Process

The approach to development of this plan is illustrated in Figure 2.

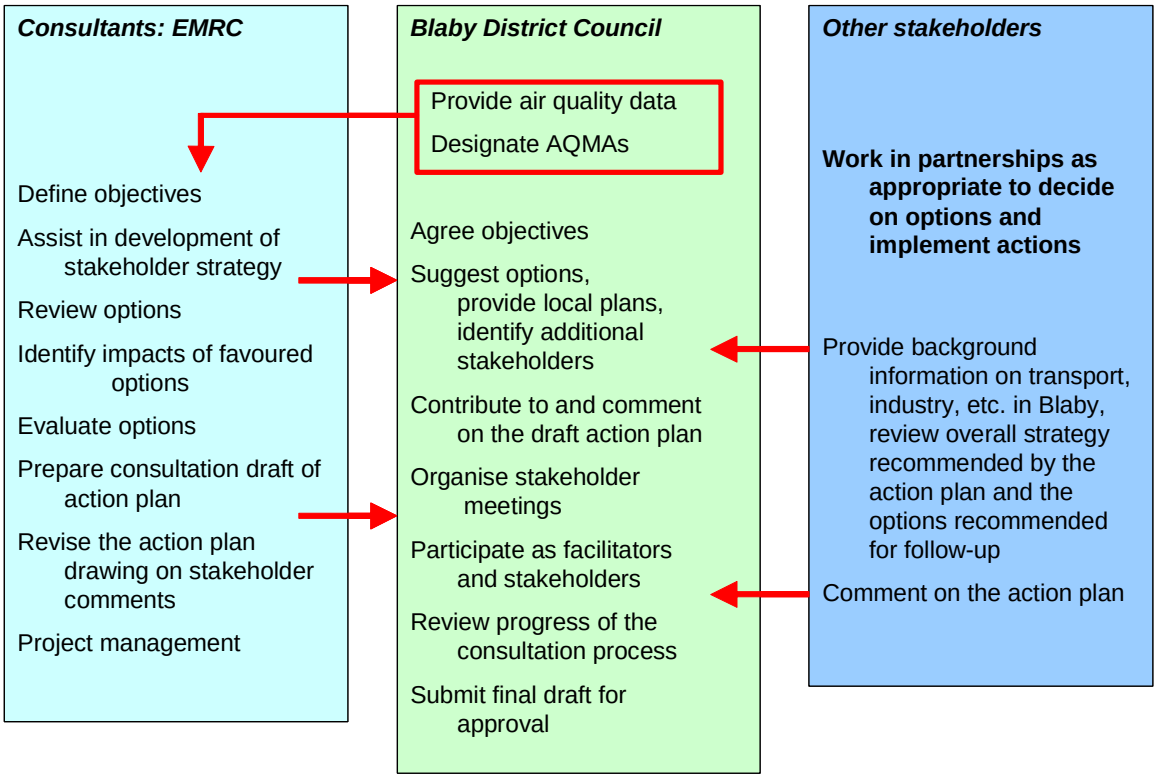

Figure 2 – Scheme adopted in the development of this plan following earlier analysis of air quality in Blaby

2.2.1 Consultation

The consultation process has proceeded in a series of stages, designed to ensure timely input from all those with an interest in the improvement of air quality in Blaby:

1. Discussions with traffic authorities (District Council, County Council and Highways Agency).
2. Consideration by Council Cabinet Executive prior to full consultation.
3. Dissemination of the draft plan and other relevant materials to other stakeholders (members of the public, Bardon Aggregates, Environment Agency, neighbouring Councils, etc.) with invitation to comment.
4. Consideration by elected members of the Council.
5. Submission to DEFRA.

Further details are given in Appendix 4, which includes summaries of written comment received during plan development.

2.2.2 Identification of options

Options are identified here from a number of sources. These include:

- Highways Agency website
- M1 Multi-Modal Study
- Cost-effectiveness assessments for DEFRA relating to NOx and PM_{10}
- Guidance issued by NSCA
- Literature reviews
- Action Plans prepared by other local authorities.

In accordance with the guidance it is necessary to consider a wide range of options in order to arrive at a cost-effective solution. For this reason this document identifies a larger number of options than will finally be adopted under the action plan. This will encourage debate on which options are likely to be most beneficial and which should be rejected. It is important to understand that the same problem in different locations may merit different solutions, reflecting local circumstances.

2.2.3 Option appraisal

The process of prioritisation applied in the development of this plan seeks to take an integrated approach in accounting for the different attributes of each option relative to:

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

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

- Other (non-NOx) air pollutants
- Noise
- Congestion
- Attractiveness of public transport (e.g. frequency of services, quality of vehicles)
- Social inclusion (impact on socially disadvantaged groups, for example through access to services, mobility)
- Economic vitality of local businesses.

This listing had been developed building on previous work with other local authorities, particularly Sheffield City and Hillingdon Borough Councils. Assessment of these impacts is not an exact science. Each impact was assessed for each measure on a scale of -3 (possible serious negative impact) to 0 (no effect thought likely) to +3 (possible significant benefit). Results are contained in an Access database, the Blaby Action Plan Tracker produced by the consultants to the Council.

Using the sources listed in Section 2.2.2 and others listed in Chapter 5, over 100 options have been considered and evaluated in terms of cost-effectiveness for air quality improvements and other effects during the development of the plan to the present stage.

Comment is needed at this stage about the quality of existing information on costs, effectiveness and other impacts. At the present time these data are very much 'ball park estimates', suitable for screening purposes but possibly not for final approval of options under the plan. The true costs and effectiveness of the options included here will be a function of factors such as the extent to which measures are introduced, the rate at which they are introduced and specific local circumstances. Further assessment will be necessary during implementation of the plan.

2.2.4 Prioritisation

Prioritisation is carried out in two stages. The first stage prioritises options in terms of costs and effectiveness in controlling NO_2 with no reference to other effects. This has been based on the following matrix:

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

Most cost-effective
Moderately cost-effective
Least cost-effective

Figure 3 – Cost-effectiveness matrix for prioritising measures for reducing concentrations of NO_2 in Blaby.

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

The second stage factors in consideration of additional benefits, disbenefits and complementarity with other plans. So, if an option might be highly recommended on grounds of cost-effectiveness with respect to controlling NO_2, but has secondary impacts of a serious and negative nature, it may be reasonable to exclude it from the plan. Similarly, if an option has significant secondary benefits, its prioritisation could be increased.

2.2.5 Implementation, monitoring and future development of the action plan

In addition to developing a list of options it is essential that the final plan includes description of the delivery mechanism, in other words, how it is to be implemented, and how progress will be monitored. Details for the initial stages of plan implementation are given in:

Section 3.2.3 – specific measures for AQMA2 and AQMA3 (page 30)
Section 3.3.4 – specific measures for AQMA1 (page 33)
Section 3.4.1 – General measures (page 34)

The agreed Action Plan should be regarded as flexible and open to adjustment as new information or new techniques for pollution control become available. Prior to undertaking some of the options that are listed in the plan it will be necessary to commission specific feasibility studies, particularly where costs will be high. If any option is found impracticable, for example on cost grounds, or has impacts that were not foreseen or are far more significant than originally thought, the plan should clearly be adapted. Equally, if experience elsewhere shows that an option not included in the plan is more attractive than originally thought, it may be appropriate to adopt that option.

2.3 Relationship between Air Quality Action Plans and Local Transport Plans

In circumstances where transport emissions are the major reason for exceedence of air quality objectives, DEFRA recommends that consideration be given to full integration of the Action Plan with the Local Transport Plan (LTP). There are several reasons for not following this recommendation in the case of Blaby, including:

1. Motorway control lies outside the remit of the LTP.
2. The LTP does not include measures for sectors outside of transport. Hence it could not provide a plan for dealing with PM_{10} levels around Croft Quarry if these are found to be a problem.
3. The timescale for preparation of the action plan does not fit with revision of the LTP.
4. Blaby District Council is responsible for the development of the air quality action plan, though not the Central Leicestershire LTP.

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

Chapter 3 Options for Improving Air Quality

For ease of understanding (both here and for subsequent implementation), options have been grouped into a series of packages specific to the different locations where problems are or may be experienced in Blaby:

1. Controlling exposure to NOx emissions from traffic on the M1
2. Controlling exposure to NOx emissions from traffic in the vicinity of the Narborough Road South AQMA
    a. Improving traffic flows
    b. Reducing traffic volumes through diversion to other modes or routes, reducing demand for transport, etc.
    c. Use of cleaner vehicles
    d. Driver training
    e. etc.
3. General measures to control emissions;
    a. Planning conditions
    b. Public information campaigns
    c. Environmental management
    d. etc.
4. Control of PM_{10} emissions from the various activities carried out at Croft Quarry.

Each group of measures is described in more detail below and in the database referred to elsewhere in this document. The level of detail available at the present time is limited, and information presented here and in the database should be regarded as only approximate. It is intended that the quality of information available will improve during the implementation of the plan.

3.1 Case Studies

A series of case studies are presented before listing the measures that are considered in the action plan. These case studies illustrate how the different measures considered here have been evaluated so far. The additional information presented for the case studies is contained within the Action Plan Tracker database. Estimates of costs, effectiveness, etc. contained within the database are approximate, and perhaps in some cases, very approximate. Operators of vehicles, plant, etc. may have alternative views drawing on their own knowledge of processes, the local area and so on, and are welcome to convey them as part of the consultation process. The view taken in the preparation of this report is that it is better to lay down a position on costs, effectiveness, etc., and with it preference for options, at this stage than later.

3.1.1 Case study 1: Driver training

Driver training has elsewhere been found to have a major effect on emissions from individual vehicles, with fuel savings of 20% being reported in some cases. Training has further benefits through reducing maintenance bills through reduced wear and tear, and insurance premiums, through lower accident rates amongst well trained drivers. There will of course be knock-on benefits to operators from reduced accident rates. These benefits are highlighted in a number of cases published on the internet, for example:

- Training at BOC saved £240,000 in fuel bills in one year, equivalent to 4.3% of the total fuel bill. The payback period was three to six months. Opportunities for further substantial savings were identified. http://www.transportenergy.org.uk/vpo/downloads/letter/GPCS398.pdf
- Potential savings of £90,000 were identified for Tom Granby (Liverpool) Limited as a result of a fuel use audit across a fleet of 30 vehicles. Further savings of £7,000 per annum were identified through on-site tyre pressure adjustment. A 3% reduction in insurance premiums was negotiated once drivers had been trained. http://www.knowsley.gov.uk/environmental/kiwi/case5.html

The overall effect on the vehicle fleet as a whole is of course dependent on how many drivers are given training. The training can cover behaviour on the road, daily maintenance of vehicles and other issues. It is unclear how long drivers continue to apply best practice, though methods have been identified for maintaining momentum, for example through the use of driver league tables and fleet management software.

This measure, applied only to drivers working for the Council, would clearly provide a very limited improvement given the fraction of vehicles operating in Blaby that are run by the Council. It does offer the opportunity for larger benefits if training programmes established by the Council, perhaps in partnership with the government's TransportEnergy Programme, can be used by other fleet operators in the area.

A complication with costing this option arises because whilst the training will cost money, savings arise in fuel, maintenance and insurance bills. From the experiences recorded above it seems likely that the measure would, overall, save a significant amount of money within the first year of implementation. Benefits would arise not only through reducing emissions of NOx, but also through reducing other traffic related air pollutants, accidents, and possibly noise and congestion, the latter through better preparation taken before journeys with respect to route planning. It seems to have no obvious benefits for either improving the attractiveness of public transport or social inclusion.

Taking these issues into account, the measure is highly recommended.

3.1.2 Case study 2: Targeted use of cleaner vehicles by large fleets operating within the AQMA

Large fleet operators will have flexibility with respect to the age (etc.) of vehicles that they operate on specific routes. On this basis it seems sensible to preferentially select the cleanest vehicles to operate in those areas where air quality is worst. Seen simply as switching vehicles from one route to another the measure should have negligible costs provided that there is some flexibility to avoid operational difficulties where these are unavoidable. With this in mind it would appear best to introduce such a measure on a voluntary basis, particularly for smaller operators. Within the AQMAs it would have additional benefits in terms of reducing emissions of other (non-NOx) pollutants and noise.

Taking all of these issues into account the option is rated highly and thus recommended in this draft of the plan for subsequent implementation. However, some caution is needed as the benefits that accrue within the AQMAs will be countered elsewhere by operation of the vehicles that have been shifted to other areas. Also, benefits of this type of measure will be experienced over a limited amount of time, as the older and most polluting vehicles are taken off the roads to be replaced by vehicles with high standards of emission control.

Those operating the fleets that would be affected should consider whether it would be easy to implement this option or whether it would cause operational difficulties. Also, whether the age structure of their fleets is such that the measure is likely to have significant benefit – it is possible that benefits could be very small for fleets where vehicles are sold on after only a few years service from new. In cases where stakeholders are concerned about possible inconvenience, they should consider that the adoption of such elementary techniques may avoid the need to adopt some less cost-effective measures.

3.1.3 Case study 3: Implementation of mandatory speed limits on the M1 set to minimise NOx emissions

NOx emissions change with the speed of vehicles. Data from the DEFRA website defining the role of the Highways Agency in Local Air Quality Management are shown in Figure 4. All else being equal, a reduction in the speed of vehicles on the motorway could have significant benefits in reducing emissions, particularly from light duty vehicles. From the graph, the benefits of applying the measure to heavy duty vehicles look less marked, though there is still an 8% difference in emission between speeds of 100 km/h and 80 km/h.

From the perspective of implementation of the action plan this one measure, if it could be applied successfully, could take the place of a number of other options, and by doing so increase the chances of the action plan succeeding in meeting the national objectives.

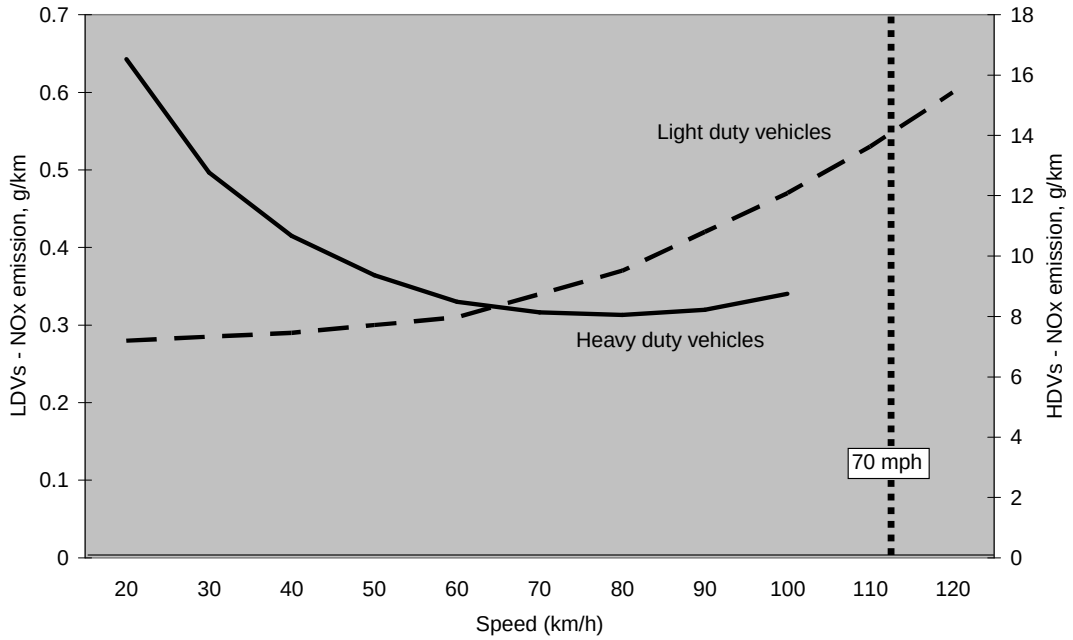

Figure 4 – Relationship between speed and NOx emissions for light duty vehicles (LDVs) and heavy duty vehicles (HDVs) in 2005 [Source: DEFRA website]

However, this option is not favoured by the Highways Agency on several grounds. First, it reduces the speed of vehicles irrespective of traffic conditions, thus increasing journey times. Secondly, and more importantly, such changes in speed limits may have consequences for connecting routes and upstream of the AQMAs in terms of increasing congestion, an effect that could lead to an overall increase in emission. Third, some fleets are already believed to operate with speed limiters in the interests of fuel economy. The extent of benefits that would arise through implementation of this measure is thus questionable.

Direct costs would be incurred through the erection of signs declaring the reduced speed limit, and presumably cameras to ensure that traffic keeps to the limits. These costs would be offset to some degree by revenue generated by speeding fines, though government is, of course, currently under significant pressure on this issue. Indirect costs would arise from increased journey times, though these may be insignificant at the level of individual motorists if the length of motorway subjected to the reduced speed limit were just a few miles in length.

A significant advantage for the appraisal of this measure is that the link between speed and emissions is well known. The link for many other motorway options is less direct, and will often depend on local conditions. However, having taken consideration of the limitations of the measure and the views of the Highways Agency this option has been rejected from the plan at this stage in favour of others. It may, however, need to be reconsidered at a later date.

3.1.4 Case study 4: Development of new park and ride facilities

It may appear strange that park and ride is not recommended in a document that otherwise recommends improvement of public transport. Whilst experience in many cities, such as Oxford, demonstrates that park and ride can work well, it does not appear suited to dealing with NOx problems in the Blaby AQMAs. Analysis published in 2003 for the various multi-modal investigations for the major road network suggested that improvements to public transport would not lead to significant modal shift on the motorways. Also, it is clear that buses would certainly not do anything for the 55% contribution to NOx levels generated by freight traffic at AQMA2 (compared to only 15% of NOx from light duty vehicles).

Park and ride would absorb some of the car traffic using Narborough Road South at present. However, emissions from some of the displaced traffic would be made up by the buses serving the park and ride. The location of the car parking facilities is also a possible matter of concern – it is quite possible that they could be sited such that air quality problems in AQMA1 were made worse by traffic being attracted towards the area.

3.1.5 Case study 5: Various measures at the quarry to reduce PM_{10} emissions

These measures include reducing drop heights, controlling moisture content of dusty materials, protecting stockpiles from the wind and various other techniques. The majority of these measures, perhaps all of them, will already be applied at the quarry. The question is thus whether some measures may be applied more extensively or better to further reduce emissions.

No attempt is made here to prioritise these measures – this should only be done when the ongoing analysis of conditions around Croft has been completed and more information is available on the precise causes of exceedences of the air quality objectives (if, indeed, there are exceedences). Given that PM_{10} levels are so clearly linked to the Croft site the plan should be developed in close partnership with the site operators.

3.1.6 Case study 6: Closure of the quarry

As for Case study 5, it must be remembered that analysis around the quarry is ongoing, and an AQMA on the grounds of exceedence of the PM_{10} standards has not been declared.

That said, the authors of this plan believe that, should problems be detected, it would be inappropriate to close the quarry on the grounds that other options are available. Closure of the quarry would have a damaging effect on local employment (the precise effect depending on numbers employed, the skills of those working at the quarry and the availability of other local opportunities for them). Also, benefits within Blaby would be countered by additional impacts around quarries in other locations.

3.1.7 A note on the case studies presented

The case studies are not intended to provide the last word on the measures discussed. They are presented to demonstrate the logic used to recommend or reject measures in the plan. Stakeholders are welcome to challenge the prioritisation suggested here for any option, though should ideally seek to base their comments around factors such as those listed in Section 2.2.3.

3.2 Controlling Exposure to NOx Emissions from the M1

3.2.1 Existing development plans for the motorway

A number of motorway widening schemes have been announced by the government with the objective of easing congestion. This should be beneficial for air quality. Although the section of motorway between junctions 20 and 21A (location of the Blaby AQMAs) is not proposed for widening, the sections north of J21A are. The motorway through Blaby is scheduled for improvement in the form of low-noise surfacing, given national objectives to introduce such surfaces more generally and the need to resurface the motorway between J20 and J21A under existing maintenance regimes. Plans are in place for the introduction of noise fencing along the M1 through Blaby, though these are subject to funding becoming available.

3.2.2 Factors to consider for the motorway AQMAs

In deciding on the measures that should be applied to the sections of the M1 included within the Blaby AQMAs a number of questions need to be considered to assess what characteristics of traffic flow on the motorway are most problematic. The most cost-effective solution may be specific to the sites concerned (noting that AQMA2 is just south of Junction 21, and AQMA3 runs south from Junction 21a for 1.5 miles). So, for example:

- What fraction of traffic on this section of motorway is through traffic, and what fraction is local?
- What is the composition of traffic on this part of the motorway in terms of cars, lorries, petrol engined vehicles, diesel vehicles, etc.?
- What is the speed profile of the different vehicles using the motorway in this area? [Noting that NOx emissions are a function of speed].
- Is this part of the M1 subject to frequent congestion and if so, are both AQMAs affected equally?
- Are there specific problems with traffic flows at Junctions 21 and 21a that would suggest action to control vehicles joining or leaving the motorway rather than those passing through?
- Are there any local geographic features that may influence the success of control options, noting that the motorway at AQMA2 is elevated whilst for AQMA3 it is sunk into a cutting?

The Highways Agency has issued some guidance on its role in local air quality management on the internet[3], providing a number of options. These and other ideas on controlling emissions or exposures specifically along this stretch of the motorway are listed in Table 2. Prioritisation has been based on information gathered during the development of the plan and discussions held with the Highways Agency.

Table 2 – Initial list of options for consideration in eliminating the problems caused by emissions from traffic on the M1

Measure	Recommendation
Redesign of Junction 21	Already planned. Will aid exit of vehicles from the motorway, reducing congestion on it.
Use of physical barriers to obstruct air flow and reduce noise to neighbouring houses	Worthy of further investigation, particularly given local noise levels, subject to funding being likely in the short-medium term. Assessment should consider whether barriers have a beneficial impact on air quality as well as on noise.
Active traffic management (ATM) with variable speed limits, use of hard shoulder during peak periods	Recommended. Given budgetary constraints may only be feasible post-2011.
Liaison with Traffic Control Centre in Birmingham and the new Regional Control Centre regarding control of variable message signing, action to keep congestion under control	Recommended, though not yet clear how the issue of air quality in Blaby will be factored into decision making given other objectives.
Reduction in speed limit to optimum for NOx emissions from vehicles.	Not recommended, though may need to be reconsidered at a later date
Control vehicles joining the motorway at J21, J21a ('ramp metering')	Not recommended in this location – problems at J21 are linked to vehicles leaving the motorway, not joining it.
Integrating motorway and urban traffic control systems	Not recommended as a separate action outside of redesign of J21
Introduce high occupancy vehicle lanes along the M1	Not recommended – uptake seems likely to be very limited and may increase congestion in other lanes
Compulsory purchase of relevant properties where the air quality targets are exceeded	Not recommended given the national shortage of good quality housing

[3] http://www.defra.gov.uk/environment/airquality/laqm/ha/

3.2.3 Initial implementation plan for AQMA2 and AQMA3

The following actions specific to the M1 AQMAs are proposed for Blaby District Council:

1. Clarify extent of improvements in air quality required when results are available from the Stage 4 Air Quality Assessment by December 2004.
2. Working with the Highways Agency, define the timescales for existing improvement plans by December 2004.
3. In collaboration with the Highways Agency, assess impact of widening of the M1 on traffic flows in and around AQMA1, by April 2005.
4. Assess the potential for improvement in air quality from existing plans when further information is available on their effectiveness (e.g. through the completion of trials of hard-shoulder running on the M42). Timing dependent on trials.
5. Reconsider need for additional measures beyond those recommended in this plan in the event that existing plans are insufficient to meet air quality standards.

These actions are designed to develop a better understanding of traffic related issues affecting air quality in AQMA2 and AQMA3. This will help to determine the likelihood that additional measures beyond those recommended here will be needed in order to meet the air quality standards. As noted elsewhere, the District Council has no direct powers to control traffic on the strategic road network and so will need to collaborate closely with those bodies that do have these powers.

3.3 Control of NOx Emissions in the Vicinity of the Narborough Road South AQMA

Measures that will lead to a reduction in NOx emissions in this AQMA fall under the following general headings:

- Minimising emissions from vehicle fleets with a high presence in the AQMA.
- Reducing congestion and diverting vehicles to other routes.
- Reducing vehicle use.

Some of the measures identified here are repeated in Section 3.4, but in this section consideration is given to ways in which they may be made specific to the Narborough Road South AQMA.

3.3.1 Minimising emissions from vehicle fleets with a high presence in the AQMA

There are a number of ways for minimising emissions from fleets, including those listed in Table 3. Emphasis is given here to improvements to be made by fleet operators rather than individual drivers, partly because available data suggest that a large proportion of emissions will come from heavy duty vehicles rather than (e.g.) private cars and vans used by small businesses. In

addition, there would appear to be a number of fleet operators whose vehicles regularly pass through the AQMA, including retailers at Fosse Park, Alliance and Leicester, Bardon Aggregates, operators of the sand and gravel extraction sites at Huncote, waste management operators using landfills in the area, Council and other public services, and public transport operators.

Table 3 – Initial list of options for consideration in minimising emissions from vehicle fleets with a high presence in the Narborough Road South AQMA. Shaded measures are similar to others already included in other local plans.

Measure	Preliminary recommendation
Purchase of less polluting vehicles by fleet operators	High priority, should be a key factor in vehicle selection by operators in the AQMA
Proper maintenance of vehicles by fleet operators	High priority – even simple measures such as checking tyre pressures can save a significant amount of fuel
Targeted use of cleaner vehicles from large (e.g. national) fleets within the AQMA	High priority as costs should be low, though may have limited effects if targeted operators use only recent models
Driver training	High priority – reduces emissions and generates significant cost savings
Use of alternative (less polluting) fuels by fleet operators	Medium priority – dependent on availability of refuelling stations, and benefits will fall as newer vehicles enter the fleet
Roadside vehicle emission testing	Medium priority – limited direct effect but generates good publicity for encouraging drivers to maintain their vehicles properly
Implement vehicle idling regulations and promote use of the Dirty Diesel hotline	Medium priority – effects may be limited, but may improve awareness
Retro-fitting of vehicles run by fleet operators with abatement controls	Medium priority – benefits will fall over time as newer vehicles enter the fleet
Provide low or zero emission buses for schools in the AQMA	Low priority – unlikely to have a significant effect in the AQMA
Declaration of a mandatory Low Emission Zone (LEZ)	Not recommended. Location of the AQMA does not appear well suited to an LEZ as there is likely to be too much through traffic.

3.3.2 Reducing congestion in the AQMA

Again, a number of measures are possible (see Table 4, though other measures may be applicable also). Measures aimed at reducing traffic

volumes in the AQMA, which will also have benefits in terms of congestion, and addressed in Section 3.3.3.

Table 4 – Initial list of options for reducing congestion in and around the Narborough Road South AQMA. Shaded measures are similar to others already included in other local plans.

Measure	Preliminary recommendation
Subsidise public transport fares to encourage greater uptake of services	Medium priority, effective, but potential may be limited by other legislation
Road system redesign	Medium priority – may be effective, though costs are likely to be very high
Improved signage	Medium priority – effective in some locations, but may not be appropriate to AQMA1
Diversion of vehicles to alternative routes	Medium priority – may solve problems locally if suitable routes are available, but may shift traffic to other trouble spots
Voluntary agreements on delivery and access times	Medium priority – may ease congestion during rush hour in particular
Mandatory agreements on delivery and access times	Medium priority – likely to have a greater effect than voluntary measures but may cause operational difficulties
Adoption of traffic management systems such as SCOOT	Low priority, LCC reports that this could conflict with existing traffic management systems around Fosse Park
Expansion of public transport using any available vehicles	Not recommended – could cause a worsening of air quality if older vehicles are introduced

3.3.3 Reducing vehicle use

An essential objective of measures to reduce vehicle use is not to deny people access to transport services, but to provide them with alternatives that cause less emission and congestion than their current vehicle usage. A variety of measures are available (see Table 5)

Table 5 – Initial list of options for reducing vehicle use in the Narborough Road South AQMA. Shaded measures are similar to others already included in other local plans.

Measure	Preliminary recommendation
Various improvements to public transport to reduce car use, improved services, taxi-buses in areas of low population density, better waiting facilities, etc.	High priority – required to persuade a significant number of motorists to switch transport modes
Provision of access to information on public transport services	High priority – information is vital to encouraging increased use of public transport
Development of green travel plans by all existing and new businesses	High priority – significant and cost-effective improvements can be identified through travel plans
Improved facilities for pedestrians	Medium priority – effect likely to be very limited, but may have longer term benefits
Improved facilities for cyclists	Medium priority – effect likely to be very limited, but may have longer term benefits
Development of individual travel plans for nearby residents and frequent visitors	Moderate priority – more experimental than travel planning for large organisations
Development of new park and ride facilities	Low priority – further assessment needed. There is potential for improvements along Narborough Road South, though problems may worsen around Fosse Park *

* Leicestershire County Council commented that a proposal for 3 Park and Ride sites for Leicester was submitted to the Department For Transport in March 2004 and a decision on funding is awaited. One of the sites lies to the south of Leicester and modelling work shows reduced car journeys on Narborough Road South.

3.3.4 Initial implementation plan for AQMA1-specific options

1. District Council to liaise with bodies that have responsibilities in this area to clarify roles and define how it will operate with existing fora in the future by September 2004.
2. District Council to identify the major fleet operators operating locally by September 2004.
3. District Council to liaise with those implementing government initiatives such as Powershift, Motorvate, Cleanup and Innovate, to see how they can be targeted on the Blaby AQMAs by December 2004.
4. District Council to identify or develop a concise guide to cleaning up vehicle emissions aimed initially at fleet operators, but with later application to other drivers, by December 2004.

5. District Council to develop plans with individual fleet operators with respect to government and other initiatives by April 2005, prioritising those that operate the largest fleets.
6. District Council to provide driver training to its own staff, and to consider how driver training programmes may be implemented more widely in the District, by April 2005.
7. Based on information gathered during the first year of plan implementation, the District Council to develop a plan for implementation in future years, by April 2005.

It is suggested that the measures that the plan should focus on at the start are those given a high priority in this report. It is noted that the improvements possible as a result of many of these measures may be small, given that much of the problem in Blaby is linked to through traffic.

3.4 General Measures to Control Emissions and Exposure

In addition to measures that are closely targeted on the AQMAs, there is a wide variety of options available for reducing emissions more generally, both within the AQMAs and outside them. These will benefit air quality in the AQMAs by reducing the 'background' contribution to total NO_2 concentrations. A number of such measures are listed in Table 6.

3.4.1 Initial implementation plan for these 'general measures'

1. District Council to liaise with bodies that have responsibilities in this area to clarify roles and define how it will operate with existing fora in the future by September 2004.
2. Collaborate with these bodies to define targets and timescales for implementation by December 2004.
3. Review local planning guidance to define how it can be made more robust with respect to air quality improvement by December 2004.
4. Based on information gathered during the first year of plan implementation, the District Council to develop a plan for implementation in future years, by April 2005.

Table 6 – Initial list of options for consideration in minimising emissions from vehicle fleets with a high presence in the Narborough Road South AQMA. Shaded measures are similar to others already included in other local plans.

Measure	Preliminary recommendation
Accounting for emissions in vehicle procurement and maintenance	High priority – potential for significant long term benefits
Diversion of freight from road to alternative modes	High priority – potential for significant long term benefits
Provision of a consolidated platform for dissemination of environmental action information	High priority – provides a basis for several other initiatives, e.g. promotion of EMAS, energy efficiency, sustainable procurement…
Provision of environmental advice to small firms	High priority – significant potential to improve profitability as well as reducing emissions
Encouragement to larger businesses to adopt environmental management systems	High priority – significant potential to improve profitability as well as reducing emissions
Promote domestic energy efficiency	High priority –potential for cost savings as well as emission control
Use of planning services to establish more sustainable communities	High priority – properly integrates environment into decision making
Ensure air quality assessments are made for all transport infrastructure and traffic management proposals	High priority – properly integrates environment into decision making
Support local, regional and national initiatives for air quality improvement	High priority – demonstrates commitment at high level
Introduce safe routes to school across the District	Medium priority – gives the right message, but may such a limited effect on air quality in the AQMAs that it is hard to justify under this action plan
Ban bonfires	Further action is not recommended unless bonfires are a significant problem in the area
Trial new low or zero emission technologies in the Borough	Not recommended. Although worthwhile in other locations this would divert resources from other actions in the plan with very limited benefit. Blaby should draw on experience gained elsewhere for procurement and other decisions
Introduce home zones	Not recommended as the roads that cause exceedence of objectives are not suitable for home zones
Introduce congestion charging	Not recommended for the Blaby AQMAs

The benefit in terms of air quality improvement of some of the measures listed here may be very limited, even for some measures given 'high' priority. The prioritisation is based in part on the long term improvements that are possible for some measures, and the need to demonstrate that there is a strong commitment to sustainable practices.

Frameworks for implementation of these and other measures already exist in Leicestershire through the LTP and the LA21 Action Plan developed by FABLE (Forum for A Better LEicestershire, which brought together representatives from all of the Leicestershire Councils and other stakeholders). Implementation of LA21 type actions is now part of the Leicestershire Community Strategy, with much of the responsibility for these actions resting with ENABLE (ENvironment for A Better LEicestershire). Further details are given in Appendix 3.

As we do not wish to 'reinvent the wheel' it is appropriate to undertake three initial actions under the Air Quality Action Plan and as part of its development:

6. Identify the measures included in the LTP and the Leicestershire Community Strategy that will have the greatest benefit to air quality in the Blaby AQMAs. Assess progress on these actions and seek to accelerate progress where appropriate.
7. Identify any measures in the LTP that may cause a worsening of air quality in the Blaby AQMAs. Assess ways of mitigating these problems.
8. Ensure that those implementing the Air Quality Action Plan are kept informed of progress on both the LTP and the Leicestershire and Blaby Community Strategies.

3.5 Control of PM_{10} Emissions from Croft Quarry

A recent report for DEFRA[4] lists a number of measures that can be used at quarries to reduce emissions (Table 7). The table includes information on the cost-effectiveness of the measures identified. Given that the analysis was carried out for the UK as a whole, however, the data may not be particularly reliable in the context of Croft Quarry, but they do provide a basis for discussion. Many, perhaps all, of the measures will already be in place at the site, though perhaps there is scope for further implementation of some of the measures.

[4] AEA Technology (2001) The costs of reducing PM_{10} and NO_2 emissions and concentrations in the UK. Part 1: PM_{10}. Report produced for DEFRA and DTI.

Table 7 – Measures for reducing PM_{10} emissions from quarries (based on Arup, 1995[5]; AEA Technology, 2001).

Source	Measure	Cost-effectiveness	Effectiveness
Mineral extraction	1. Water sprays in dry weather	1. Moderate to high	1. Moderate to high
	2. Reduce drop heights	2. Low	2. Moderate
	3. Minimise unnecessary handling	3. Low	3. Moderate
	4. Protect from wind	4. High to low	4. Moderate
Crushing and screening	1. Water sprays in dry weather	1. Moderate	1. High
	2. Enclosure + extraction and filtration systems	2. High	2. High
Haulage	1. Restrict vehicle speeds	1. Moderate	1. Moderate
	2. Improve road surfaces	2. High	2. High
	3. Improve road design	3. Moderate	3. Moderate
	4. Shield roads from wind	4. Moderate to high	4. High
	5. Water road surfaces in dry weather	5. High to moderate	5. High
	6. Use dust suppressant chemicals on roads	6. High	6. Moderate
Conveyors	1. Water sprays	1. Moderate	1. High
	2. Enclosure	2. Moderate	2. High
	3. Minimise drop heights	3. Low	3. Moderate
	4. Clean with belt scrapers	4. Moderate	4. Moderate
Mounds and stockpiles	1. Water spray	1. Moderate	1. High
	2. Chemical dust suppressants	2. High	2. Moderate
	3. Shield from wind	3. High	3. Moderate

[5] Arup Environmental (1995) The environmental effects of dusts from surface mineral workings. HMSO, ISBN 0 11 753186 3.

Table 8 – Guide to the terms used to describe cost-effectiveness and effectiveness in Table 7. Note that data are approximate and prone to potentially significant error.

	Cost-effectiveness	Effectiveness
Low	£200/tonne PM_{10}	50%
Moderate	£10,000/tonne PM_{10}	75%
High	£100,000/tonne PM_{10}	99%

There are 2 further measures that could be considered in the context of an air quality action plan:

1. Closure of the quarry and activities carried out at it. Given the likely extent of the problem this measure seems disproportionate and is not recommended here.
2. Restriction of activities at the quarry to take account of the influence of weather conditions on pollutant concentrations.

Additional measures may apply to the various plant on the site preparing building products, coated road-stone and ready-mix concrete. These are as follows:

3. Enclosure of activities to shield materials from the wind and to contain suspended dusts.
4. Control of moisture content of dusty materials.
5. Use of filtration systems to extract dusts from the air.

No attempt has yet been made to prioritise these measures for Croft Quarry. This should be done in liaison with the site operators if it is established that there are exceedences of the national objectives at the site.

An increased level of air quality monitoring around the quarry may help to identify the activities and climatic conditions that are associated with the highest concentrations of pollutants in the surrounding ambient air.

Further questions will need to wait until a definitive view on particle concentrations around the quarry is available.

A further factor that needs to be considered relative to operations at Croft concerns the large number of heavy duty vehicles that access the site. Many of these vehicles will pass through one or more of the three AQMAs declared for annual average NOx concentrations. Consideration should thus be given to measures for reducing emissions from this fleet.

Chapter 4 Other issues

4.1 Probability of Meeting the Objectives

The air quality targets have proven to be more challenging in many areas around the UK and the European Union than originally envisaged. Information from the Stage 4 Review and Assessment, currently being carried out for Blaby by AEA Technology is essential for assessment of the likelihood of identified measures being sufficient to deliver compliance.

A promising feature of the plan is that the measures that have received the greatest priority in the listings given in Chapter 3 tend to be included in one form or another in other plans developed for the region, although the appraisal process did not include consideration of whether or not measures were already under consideration. This means that the objectives of the air quality action plan as defined here (albeit in draft form for consultation) are broadly in line with existing policies. It also means that in many cases there will already be a structure in place for delivering the options. Consideration may also have been given to measures that appear promising, but for one reason or another are not practicable in the local environment.

4.2 Resourcing the Plan

For the plan to generate improved air quality it is essential that sufficient resources are given both to its management and to the options adopted under it. To ensure that resources are used cost-effectively, all stakeholders should consider what may reasonably be achieved under the action plan. This will assist in clarifying which options should be treated with the highest priority.

Resource implications from Blaby's action plan fall into three areas, monitoring equipment, staff and funding.

4.2.1 Monitoring equipment

Monitoring needs to focus on three pollutants:

- NO_2
- PM_{10}
- Ozone (because of its chemical links to NO_2 in the atmosphere)

The current level of monitoring is adequate for describing in general terms the air quality in Blaby, when combined with pollutant dispersion models. However, purchase of additional monitors would have a number of benefits, as follows:

1. Verification of modelling data.
2. Improvement of the basis for modelling (e.g. through the purchase of one or more ozone monitors).
3. Observing the extent to which new measures improve air quality.

Together, these benefits could lead to a significant improvement in the cost-effectiveness of the measures adopted and pursued through the action plan. They could provide data for switching effort from (e.g.) one measure that is not performing as well as hoped, to another that is performing better than forecast.

4.2.2 Staffing

The *additional* load imposed on the council as a result of developing and implementing an air quality plan will clearly require dedicated staff input. This is needed to carry out the following tasks that are additional to existing staff workloads:

1. Additional monitoring of air quality
2. Managing the action plan – particularly in ensuring the monitoring of actions where responsibility lies outside Blaby District Council.
3. Undertaking certain of the measures identified in the action plan.
4. Monitoring for other developments that may have an adverse or beneficial impact on progress towards the air quality standards.
5. Reporting progress to DEFRA.

Each of these tasks is essential in its own right. The second, perhaps, particularly so, otherwise it will be extremely difficult for the Council to be able to demonstrate to stakeholders (including DEFRA) that progress is being made. Without this, those stakeholders who start off more committed to action may lose interest in the plan.

From experience of working with other Councils, and given the likely scope of the action plan, it is suggested by the consultants appointed by the Council that the Council recruit one additional member of staff.

4.2.3 Funding

Government has not made provision so far for additional funding for Councils in respect of measures recommended in air quality action plans. It does, however, provide funding for LTPs, and will provide funding to the Highways Agency for improvements to the motorways. Councils may raise additional funding for options in some cases, for example through the use of Section 106 agreements in association with new developments. The common ground between this plan and others developed locally may open further avenues for funding that are as yet unidentified.

4.3 Initial implementation plan on Resourcing

1. A full time Scientific Officer post was added to the establishment of the Council during a restructure of the Environmental Health Services Division. Recruitment to this post will commence shortly.

2. The Council has applied to DEFRA for financial assistance in purchasing additional monitoring equipment. The actual specification will be determined by the outcome of the current detailed assessment work.

3. District Council to investigate all possible sources of funding for the measures listed in the plan, including (e.g.) government grants for cleaner vehicles.

Chapter 5 Sources of Information

5.1 Websites Specific to Blaby

District Council's website:
http://www.blaby.gov.uk/
Air quality website:
http://www.blaby.gov.uk/new/envhealth/environment/air_quality_intro.htm

A number of documents describing the assessment of air quality in Blaby have been produced. Further information is available from the Council's air quality website.

5.2 Websites for Neighbouring Councils

5.2.1 Leicester City Council:

City Council's website:
www.leicester.gov.uk
Air Quality site:
http://www.leicester.gov.uk/departments/page.asp?pgid=1402

5.2.2 Leicestershire County Council:

County Council's website:
www.leics.gov.uk
Air Quality site:
http://www.leics.gov.uk/

5.2.3 Charnwood Borough Council:

Borough Council's website:
www.charnwoodbc.gov.uk

5.2.4 Harborough District Council:

District Council's website:
http://www.harborough.gov.uk/main.htm
Air quality site:
http://www.harboroughonline.co.uk/pp/gold/viewGold.asp?IDType=Page&ID=3886

5.2.5 Hinckley & Bosworth Borough Council:

Borough Council's website:
http://www.hinckleyandbosworthonline.org.uk/

5.2.6 Oadby and Wigston Borough Council:

Borough Council's website:
www.oadby-wigston.gov.uk

5.3 National Air Quality Strategy

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

- Part IV of the Environment Act 1995: Local Air Quality Management Draft Policy Guidance. DEFRA/Welsh Assembly, 2002.
- Air Quality Action Plans: Interim Guidance for Local Authorities, NSCA, 2000.
- Air Quality: Planning for Action. Part 2 of the NSCA's Guidance on the Development of Air Quality Action Plans and Local Air Quality Strategies. NSCA, 2001.
- Air Quality Action Planning Helpdesk, funded by DEFRA and run by Casella Stanger and TTR (Transport Travel Research) Ltd.: http://www.stanger.co.uk/jointprojects/DEFRA-Home.asp?jointprojectid=10
- Further information on the national air quality strategy can be found at http://www.defra.gov.uk/environment/airquality/index.htm
- Further guidance for local authorities can be found at: http://www.airquality.co.uk/archive/reports/reports.php?action=category&section_id=6
- In developing the strategy DEFRA has commissioned a substantial amount of research, which is accessible at: http://www.airquality.co.uk/archive/reports/reports.php?action=category&section_id=2
- The Environment Agency has also provided guidance on improving urban environments in the documents 'Our Urban Future: Putting the environment at the heart of urban renewal' and the more detailed assessment 'The Urban Environment in England and Wales'.

5.4 Information on EU Legislation

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

5.5 Local Plans and other Documents

Blaby District Council: Capital Strategy 2003-2004.

http://idocs.blaby.gov.uk/external/corporate/documents/capital_strategy_03.pdf

Blaby District Council: Asset Management Plan 2003-2004.

http://idocs.blaby.gov.uk/external/corporate/documents/asset_management_plan_0304.pdf

The District of Blaby Local Strategic Partnership: Community Strategy.

Leicestershire Local Strategic Partnership: Leicestershire Community Strategy, July 2003.

Leicestershire's Local Agenda 21 (1998) Ways Forward For A Better Leicestershire – Our Actions ~ Our Future.

The following documentation on the Local Transport Plan is available on the web at http://www.leics.gov.uk/p_t/ltp/cent_leics_ltp.htm

Central Leicestershire Local Transport Plan 2001 – 2006 (2000)

Central Leicestershire Local Transport Plan 2001 – 2006 First Annual Progress Report (2001)

Central Leicestershire Local Transport Plan 2001 – 2006 Second Annual Progress Report (2002)

Local Transport Day for Central Leicestershire 2001 Report of Proceedings (2001)

Local Transport Day for Central Leicestershire 2002 Report of Proceedings (2002)

Central Leicestershire Local Transport Plan 2001 – 2006 Third Annual Progress Report (2003)

Appendix 1: Action Plan Appraisal Checklist

The following checklist is published by DEFRA on the air quality management website. It is provided here to demonstrate the extent to which the current draft plan is compliant with the guidance, and to comment on actions that are outstanding with respect to completion of the plan.

	Reference Location	**Comments**
1. Local Authority Information	Inside front cover	
2. Process Adherence to Guidelines and Consideration of Policies		
Have Statutory Consultees been consulted:		
Secretary of State	Appendix 4	
Environment Agency		None received
Highways Agency	Appendix 4	
Contiguous Authorities	Appendix 4	
Have other local authority departments been consulted		
Transport	Appendix 4	
Planning	Appendix 4	
Education		None received
Have other relevant consultees been consulted		
Public Authorities	Appendix 4	
Business Interests	Appendix 4	
Members of the public	Appendix 4	
Has a statement of the problem causing the AQMA, as identified in the Stage 4, been clearly stated?	Section 1.4	
Have the principal sources of the pollutants causing the exceedence been identified?	Section 1.4.4	
Have other local authority plans/policies been considered?	Appendix 3	
Has an options timescale been included	Not yet	Requires agreement on actions for the plan
Have costs of options/plan been set out	Yes	In Blaby APT (Action Plan Tracker) database
Have impacts been assessed	Yes	In Blaby APT database

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

	Reference Location	**Comments**
3. Process – Checklist of Measures		
Have options been considered?	Chapter 3	
How many options have been considered?	>100	
Have transport impacts been assessed?	Section 2.2.3	See also the Action Plan Tracker Database
Have air quality impacts been assessed – Were these modelled or measured?	Section 2.2.3	See also the Action Plan Tracker Database. Air

		quality impacts are quantified but only approximately
Have socio-economic impacts been assessed?	Section 2.2.3	See also the Action Plan Tracker Database
Have other environmental impacts been assessed (noise, odour etc..)?	Section 2.2.3	See also the Action Plan Tracker Database
Have costs been assessed?	Section 2.2.3	See also the Action Plan Tracker Database
Road Transport Measures		
Physical traffic management: speed & flow	Sections 3.2 and 3.3.2	
Re-routing and road hierarchy	Sections 3.2, 3.3.2 and 3.4	
Access control & clear zones	Section 3.3	
Low emission zones	Section 3.3.1	
Road user charging	Section 3.4	
Parking management & charging		Limited application in the Blaby AQMAs
UTMC Systems	Sections 3.2 and 3.3.2	
Infrastructure development	Sections 3.2, 3.3.2 and 3.4	
Reallocated road space	Section 3.2	
Public transport initiatives – Bus	Section 3.3.3	
Public transport initiatives – Rail	Section 3.3.3	
Public transport initiatives – other	Section 3.3.2	
Development of cycling and walking	Section 3.3.3	
Partnerships & travel plans (workplace & school)	Section 3.3.3	
Promotion, education & awareness raising	Section 3.4	
Fleet management & clean fuels	Section 3.3.1	
Land use planning	Section 3.4	
Freight measures	Sections 3.2, 3.3 and 3.4	
Roadside emissions testing	Section 3.3.1	
Compulsory purchase	Section 3.2	
Other Transport Measures		
Passenger rail	Section 3.3.3	
Freight rail	Section 3.4	
Maritime and ports		Not relevant
Inland waterways		Not relevant
Industrial Measures		
Emission reduction	Sections 3.1.5 and 3.5	
Closure	Section 3.1.6	
Relocation		Not relevant
Domestic Measures		
Energy conservation	Section 3.4	
Fuel improvement		Negligible benefit in Blaby
Fuel switch		Negligible benefit in Blaby
Appliance improvement	Section 3.4	
Smoke control		Negligible benefit in Blaby
Nuisance policy (bonfires etc.)	Section 3.4	
4. Appropriateness and Proportionality		

Do measures seem appropriate to the problem. Has the right balance been struck?		For discussion with stakeholders
How have measures been assessed?		
Are the measures likely to achieve the stated goal? This may be the adoption of a new AQ measure or a tightening of an existing measure.		To be considered when measures are agreed
Have the wider impacts been appraised appropriately?	Sections 2.2.3 and 2.2.4	
Was the method of assessing costs appropriate?	Section 2.2.3	
Is it likely for LAQM objectives to be met? How will success be measured? What impact will wider initiatives/policies have on the measures?		To be considered when measures are agreed
Is it likely for Directive values to be met? How will success be measured? What impact will wider initiatives/policies have on the measures?		To be considered when measures are agreed
Do the chosen measures comply with wider Government Policies?		Yes
5. Implementation		
Are measures realistic in light of the objective deadline(s)?		To be considered when measures are agreed
Have responsibilities been assigned to the relevant party? Does the assigned party have the necessary powers?	In progress	To be considered when measures are agreed
Has financing been secured and who will pay. Is this realistic?		To be considered when measures are agreed

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

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

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

The UK air quality strategy is periodically reviewed to ensure that the standards it sets are achievable, and maintain a reasonable level of protection of human health taking into account the latest research.

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

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

The European Commission is currently debating further legislation to address PAHs, arsenic, cadmium, mercury and nickel with the governments of Member States and other stakeholders. Debate on air quality issues within the European Union is now led through the Commission's CAFE (Clean Air For Europe) programme.

Further information on the standards is available at the DEFRA and EC websites, addresses for which are given at the end of the main text of the plan.

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

Pollutant	Objective	Measured as	To be achieved by
Benzene	16.25 µg/m^3 (5 ppb)	Running Annual Mean	31-Dec-2003
	5 µg/m^3 (1.5 ppb)	Running Annual Mean	31-Dec-2010
1,3-Butadiene	2.25 µg/m^3 (1 ppb)	Running Annual Mean	31-Dec-2003
Carbon monoxide (CO)	10 mg/m^3 (8.5 ppm)	Running 8 Hour Mean	31-Dec-2003
Lead (Pb)	0.5 µg/m^3	Annual Mean	31-Dec-2004
	0.25 µg/m^3	Annual Mean	31-Dec-2008
Nitrogen dioxide (NO_2)	200 µg/m^3 (105 ppb) Up to 18 exceedences / year	1 Hour Mean	31-Dec-2005
	40 µg/m^3 (21 ppb)	Annual Mean	31-Dec-2005
Ozone (O_3)	100 µg/m^3 Up to 10 exceedences of running 8 hour mean / year	Running 8 hour Mean	31-Dec-2005
PAHs	0.25 ng/m^3	Annual mean	31-Dec-2010
Particles (PM_{10})	50 µg/m^3 Up to 35 exceedences / year	24 Hour Mean	31-Dec-2004
	40 µg/m^3	Annual Mean	31-Dec-2004
Particles (PM_{10})	50 µg/m^3 Up to 7 exceedences / year	24 Hour Mean	31-Dec-2010
	20 µg/m^3	Annual Mean	31-Dec-2010
Sulphur dioxide (SO_2)	266 µg/m^3 (100 ppb) Up to 35 exceedences / year	15 Minute Mean	31-Dec-2005
	350 µg/m^3 (132 ppb) Up to 24 exceedences / year	1 Hour Mean	31-Dec-2004
	125 µg/m^3 (47 ppb) Up to 3 exceedences / year	24 Hour Mean	31-Dec-2004

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

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

Appendix 3: Local Plans Considered in Development of the Air Quality Action Plan

A3.1 Local Transport Plan (LTP) 2001-2006 for Central Leicestershire

Recognising national problems with transport, local authorities throughout the country have been required in recent years to develop Local Transport Plans. These important plans deal with all modes of transport and provide details of major investment programmes.

The LTP for Central Leicestershire includes a variety of measures that could be significant in terms of moving towards achievement of the air quality targets in the Blaby AQMAs. The total investment required to fulfil the plan at the time of publication was estimated to be £140 million. Specific objectives were listed as:

- Providing better information for all travellers so that everyone can make an informed choice on meeting their transport requirements.
- Improving the quality of pedestrian areas and routes used by cyclists.
- Reducing accidents.
- Providing greatly improved local bus and train services.
- Providing for the needs of taxis, motorcyclists and freight distribution.
- Improving the journey time reliability of all types of transport.
- Providing for more energy efficient, healthier and less polluting movement.
- Keeping congestion to a minimum, allowing traffic to flow as freely as possible.

More specific actions of relevance to this air quality action plan were:

1. To develop a high quality public transport network offering:
    a. High quality bus stops with real time information;
    b. Park and ride at all the main entries to the Leicester urban area;
    c. Priority measures to ensure bus service efficiency and reliability;
    d. Improved local rail service frequencies and at least one new station (at Blaby);
    e. Integrated ticketing involving all bus companies so that local journeys can be made on all buses, off-bus ticket dales to reduce stopping times;
    f. Convenient interchanges so that travellers can easily move from one part of the their journey to the next;
    g. Well maintained shelters at most stops.
2. The completion of a safe network of cycle and pedestrian routes, including the provision of improved access to the public transport network.
3. The introduction of a Low Emission Zone in the City Centre where older, more polluting vehicles would be prohibited.
4. Development of safe routes to school and school travel plans.
5. Introduction of better and quieter road surfaces, better surfaces for cyclists and pedestrians.

6. Use of speed reduction measures, to include traffic calming.
7. Application of modern technology to make more efficient use of road space, including the use of priority schemes (e.g. for buses).
8. Development of travel plans with major employers.
9. Improved dissemination of transport information, using roadside messaging, the media, a Travel Centre in Leicester City.
10. Parking management to protect residents and restrict commuter parking to encourage the use of more sustainable transport options.
11. Development of a more sustainable freight distribution system.

It will become apparent that many of the themes raised in the LTP are echoed in the Community Strategies.

Progress against the plan is monitored annually, in July. Three progress reports have so far been produced. These show that some elements are on track, a few are ahead of schedule, and a number are progressing slower than originally anticipated. A significant problem for the LTP relates to the low patronage of public transport, with usage figures far below the baseline in many other cities such as Sheffield or Central London. Progress in making drivers leave their cars at home and use public transport instead is not encouraging.

It should be noted that even apparently small actions can have a significant effect if well targeted: Better signage, for example, would be anticipated to cause a significant reduction in the number of drivers who are lost (the LTP cites a figure of "up to 16% of traffic" being lost at any one time).

The latest progress report demonstrates good use of Section 106 agreements by the councils in Leicestershire, with a new public bus service between Leicester City and Hamilton (to the north east of the city centre) being partly financed by developers of a new residential estate.

The need for travel planning was highlighted by the fact that of the 1900 employees at County Hall, roughly 90% drive, or are driven, to work.

On cleaner vehicles, Leicester City Council and Oadby and Wigston Borough Council were the first authorities in the country to take up financial grants to carry out statutory vehicle emission monitoring, though this did not extend to Blaby.

A3.2 Leicestershire Community Strategy, Ways Forward for a Better Leicestershire, and Local Agenda 21 (LA21)

A3.2.1 Background

Over one hundred countries including the United Kingdom adopted Agenda 21 at the Earth Summit in Rio in 1992, with the aim of stimulating a new approach to development. At the heart of Agenda 21 is the link between people, prosperity and the natural environment, in order to prepare for the challenges of the 21st Century. Leicestershire has developed County Council Policy on LA21 through FABLE (Forum for A Better LEicestershire), which

brought together numerous stakeholders including representatives of the District Councils. A plan entitled "Ways Forward for A Better Leicestershire - Our Actions Our Future" was produced (copies of which may be obtained from County Hall in Leicester). In July 2003 the Leicestershire Local Strategic Partnership produced the Leicestershire Community Strategy, which now provides the framework for delivery of LA21-type objectives in the County. Responsibility for delivery of options of interest to this action plan lies with a new group, ENABLE (ENvironment for A Better LEicestershire) and others, including the County Council and local bus operators.

A3.2.1 Ways Forward for a Better Leicestershire

"Ways Forward" portrays a vision of what life for people in Leicestershire could be like 20 or 30 years from now. The vision is supported by Action Plans detailing the measures that can and will be taken to deal with the obstacles and challenges that stand between us, at the dawn of a new millennium, and securing a better and more sustainable quality of life in the future. The vision and Action Plan were developed through widespread consultation over four years with individuals, community groups, businesses, public bodies and local authorities.

"Ways Forward" identifies a number of areas where action is relevant to this plan as shown below (the referencing follows that used in "Ways Forward"). Additional detail is provided for those areas where the greatest air quality benefits relevant to this plan may be expected to accrue:

2. Health

(7) Reduce pollution and other environmental factors that may harm health.

- Enforce limits on vehicle emissions through traffic calming, access restrictions on traffic, and traffic reduction.
- Reduce noise and air and light pollution.

6. Education and training for life and the environment

(3) Increase each person's understanding of the environmental and social impacts of their actions locally and globally.

(4) Increase the active participation of young people in environmental activity.

(5) Introduce education for the environment and on development issues as part of the curriculum in schools and on all taught courses in higher and further education.

(6) All schools and establishments of further study will have meaningful environmental policies.

(7) All teachers, trainers, lecturers and students will have sufficient access to resources and training for environmental learning.

7. Economy and work

(4) Coordinated planning across the County.

(5) A quality environment to live and work in.

- Cut car travel by 20% by 2020 and road haulage to a measurable degree and dramatically improve public transport.

- Set standards for the quality of workplaces in terms of energy efficiency (etc.).

(6) Businesses operating to high standards.

- Companies to implement policies for waste/pollution minimisation and set up systems for environmental management.
- Set up a county-wide system for delivering environmental advice to smaller firms.
- All companies larger than £2M turnover to make an annual public environmental statement.
- All the above companies to cut their waste and pollution by 75%.
- Provide financial help for firms to improve their environmental performance.
- Set up an action plan to support companies in setting and achieving quality/performance targets based on best practice for their sector.

10. Transport

(1) Reduce the need to travel through strongly enforced land use planning and other measures.

- Direct development to those parts of urban area with good quality public transport services.
- Provide services and facilities near to where people live and/or town centres.
- Promote self-contained and balanced communities with good public transport links to larger centres.
- Promote a reduction in journeys through working from home, delivery services, etc.
- Promote green transport plans and awareness raising campaigns.

(2) Promote walking by giving the pedestrian priority over road traffic in urban areas.

(3) Increase levels of cycling by four times 1991 levels by 2020.

(4) Promote public transport.

- Provide more extensive bus and train routes and services.
- Use bus priority measures to make journey times fast and predictable.
- Provide clean, comfortable vehicles with high operating standards, low emissions and access for all.
- Provide better information about services.
- Market public transport more strongly.
- Provide bus and rail based park and ride.
- Make fares more affordable compared to car travel.
- Introduce the use of multi-operator travel-cards.
- Promote specific transport services for rural areas.

(5) Encouraging reduced and more responsible car use.

- Control the cost and availability of car parking and review car subsidies paid by employers.
- Encourage car sharing, use of less polluting vehicles, good car maintenance and fuel efficient driving styles.
- Restrict road building to bypasses which can be justified on environmental grounds and reduce capacities where alternatives are developed.

- Introduce comprehensive traffic calming with 20 mph zones and effective speed enforcement across the network.

(6) Reduce the impact of freight.

- Promote rail for long distance freight movement.
- Strictly enforce noise and emission standards.

(8) Ease changing between different modes of transport.

- Increase the provision of park and ride facilities and secure covered cycle parking facilities at stations.
- Locate new bus and train stations near to each other and provide better links between existing stations.
- Site bus and train stops and stations so that pedestrians can reach them easily and conveniently.

11. Buildings

(3) Reduce the environmental impact of all new buildings.

- Take steps to increase the energy efficiency of new and existing buildings and extend the use of the Standard Assessment Procedure to all buildings.
- Increase the use of active and passive solar heating systems.
- Establish a forum to promote the development of environmentally friendly buildings.

12. Energy

(1) Reduce overall energy consumption in Leicestershire by 30% with a consequent reduction in CO_2 emissions of 28%.

- Increase the energy efficiency of council housing with reference to a Standard Assessment Procedure.
- Use grants, loans, planning policy, etc. to increase the energy efficiency of the private housing stock.
- Improve energy efficiency in business through a corporate commitment campaign with business to reduce CO_2 emissions by 20%.
- Ensure that all Fuel Poor are housed in dwellings with a Standard Assessment Rating in excess of 70.
- Operate demand side management including the promotion of energy efficient appliances and financial incentives for energy conservation.

(2) Renewable energy to account for 15% of total energy production.

(3) All new power stations to have a thermal efficiency of 70% or more.

(4) Reduce and minimise the impacts of transmission systems by generating 5% of electricity by embedded generation.

(5) Energy efficiency measures should account for 10% of annual energy expenditure by local authorities, health authorities, government departments and agencies.

- Introduce enhanced energy efficiency measures in public sector buildings and street lighting as an example to others.

(6) Increase public awareness of the impacts of energy consumption and the benefits of energy conservation and low energy domestic appliances.

- Target energy advice to the whole community through education programmes.

14. Pollution

(1) Cut air pollution by half from 1997 levels.

- Implement area based pollution reduction plans for businesses to cut emissions of all major air pollutants by at least 50%.
- Introduce transport planning measures to reduce car and lorry use and clean up vehicle emissions which will between them cut air pollution from traffic by 50%.

(2) Cut the production of greenhouse gases by half from 1997 levels.

- Ensure greater use of renewable energy and energy efficiency.
- Achieve major cuts in greenhouse gas emissions from industry.
- Reduce traffic.

(9) Encourage local people and organisations to participate in setting and implementing targets and safe levels for pollutants.

- All businesses to have begun regular environmental audits by 2000 and to be progressively reducing all harmful emissions by 2005.
- Raise awareness of the role of groups and individuals in reducing pollution.

A3.2.3 Leicestershire Community Strategy, July 2003

This strategy provides information on what the people of Leicestershire want, the situation in Leicestershire at the current time, and actions, including lead actors and timescales. Some actions have clearly more precise targets to aim at than others. Those relevant to this action plan are as follows (with page references to the Strategy included):

- Lead the community by demonstrating and promoting environmental good practice in the areas of: energy efficiency, waste minimisation, recycling and travel plans by ensuring environmental and biodiversity considerations are considered in actions and strategies (ENABLE, 2005, page 23).
- Promote sustainable energy sources, such as wind power, and encourage local companies and organisations to minimise waste (ENABLE, 2006, page 23).
- Increase patronage on commercially run and County Council contract bus services (Leicestershire County Council and bus operators, 2006, page 43).
- Increase % of households within a 13 minute walk of an hourly or better daytime bus service to 95% by 2004 (Leicestershire County Council, 2004, page 43).
- Work with the Rural Transport Partnerships to ensure that the 5% of people who do not have access to an hourly daytime bus service have appropriate access to facilities by 2004 and thereafter work to improve this access further (Leicestershire County Council, ongoing, page 43).
- Prepare a pilot strategy and action plan for providing better access to health services by public transport by 2004 and review in 2005 (Leicestershire County Council, Rural Transport Partnerships, Primary Care and NHS Trusts, 2004, page 43).
- Implement road safety measures including road improvements with the objectives of making roads safer and reducing congestion.

(Leicestershire County Council and Leicestershire Constabulary, 2005, page 45)
- Improve information about planned roadworks… (Leicestershire County Council, 2003, page 45).

A3.3 Blaby District Council: Capital Strategy 2003 – 2004

This document sets out the principles that underpin the production of the Council's five year capital programme. Whilst the strategy document says little specific to air quality issues it shows how investment contributes to the delivery of the Council's objectives, and how it is dependent to a significant degree on working in partnership with other bodies. The document cites the Council's six corporate aims, which include:

"*To provide a clean, attractive and sustainable natural and built environment*"

Given the size of the District and the limited budget available to the Council, most capital projects are small, less than £50,000. Some of the actions mentioned in the Strategy will make a positive (albeit small) contribution to air quality improvement, for example:
- Improved pedestrian access to local primary schools.
- Using of planning agreements and powers to support the delivery of new affordable homes and sustainable communities.

Relevant partnerships identified in the strategy include:
- Blaby Local Strategic Partnership
- Blaby Planning Agents Forum
- Blaby Health Forum
- County Waste Management Partnership
- Leicestershire and Northamptonshire Energy Sense.

A3.4 Blaby Community Strategy

This strategy was produced by the Blaby Local Strategic Partnership, and feeds into the Leicestershire Community Strategy discussed above. It includes a number of actions, with lead partners identified, under a series of general aims. Those most relevant to this plan are as follows:

Environment Aim 3: Improve air quality…(page 13)
- Develop an air quality action plan (Blaby District Council, Leicestershire County Council, residents and businesses);
- Promote and use vehicles and fuels which produce less emission (Blaby District Council, Leicestershire County Council, Leicestershire Constabulary, Chambers of Commerce, National Farmers Union, Council for Voluntary Services, South Leicestershire PCT, Parish Councils).

Environment Aim 6: Reduce waste of energy and water (page 14)
- Continue to promote action to achieve the improvement of energy efficiency in households to 30% by 2010 (Blaby District Council, residents and businesses);

- Develop a more coordinated approach to promoting energy saving and increase the take-up of energy saving initiatives by 2008 (Blaby District Council, Leicestershire County Council, Chambers of Commerce, National Farmers Union, Council for Voluntary Services, South Leicestershire PCT, residents and businesses);
- Promote enhanced energy and water design criteria in new buildings (Blaby District Council, Leicestershire County Council, residents and businesses);
- Promote and support the generation of non-intrusive renewable energy sources and usage of renewable energy tariffs (National Farmers Union, Leicestershire County Council, Blaby District Council, Chambers of Commerce, residents and businesses).

Transport Aim 1: Reduce the need to travel (page 20)

- Continue to implement and review appropriate planning policies for location of new developments (Leicestershire County Council, Blaby District Council, residents and businesses);
- Implement a coordinated approach to protect local services viability (Blaby District Council, Leicestershire County Council, Chambers of Commerce, South Leicestershire PCT, Leicestershire constabulary, residents);
- Implement a coordinated approach to the provision of information to households by electronic and other means (Blaby District Council, Leicestershire County Council, South Leicestershire PCT, Leicestershire constabulary, residents).

Transport Aim 2: Increase availability and usage of alternatives to cars (page 20)

- Improve the bus services and increase the number of bus passenger journeys (Leicestershire County Council, residents and businesses);
- Improve the bus service provision in rural areas (Leicestershire County Council, residents and businesses);
- Continue to support the Concessionary Travel Scheme (Leicestershire County Council, Blaby District Council, residents and businesses);
- Seek to implement improvements to rail facilities and services (Leicestershire County Council, Blaby District Council, residents and businesses);
- Continue to investigate benefits arising from increasing the opportunities to integrate different types of transport (Leicestershire County Council, Blaby District Council, residents and businesses);
- Increase or improve the quality and provision of cycle routes (Leicestershire County Council, Blaby District Council, residents and businesses);
- Improve the condition of footpaths (Blaby District Council, residents and businesses);
- Continue to take action to reduce accidents to vehicle occupants cyclists and pedestrians (Leicestershire Constabulary, Blaby District Council, residents and businesses);

- Support the development and introduction of School Travel Plans (Leicestershire Constabulary, Blaby District Council, residents and businesses);
- Support Workforce Travel Plans and other initiatives in our own organisations (Blaby District Council, Leicestershire County Council, Leicestershire Constabulary, residents);
- Support Workforce Travel Plans and other initiatives by businesses (Blaby District Council, Leicestershire County Council, Chambers of Commerce, businesses);

Transport Aim 3: Reduce impact of road freight (page 21)

- Encourage the transfer of freight from road to rail (Blaby District Council, Leicestershire County Council, Chambers of Commerce, businesses);
- Complete the area-wide Lorry Control Plan by 2004 (Leicestershire County Council, businesses).

Transport Aim 4: Make effective use of road space (page 21)

- Concentrate traffic movements and growth on the safest and most suitable roads (Leicestershire County Council, businesses and residents);
- Investigate designation of 'non-car' lanes (Leicestershire County Council, businesses and residents).

Appendix 4: Consultation on the Air Quality Action Plan

The following activities have been undertaken by Blaby's Environmental Health Services department during the consultation process:

1. Meeting with County highways and environment co-ordinator (5/11/03).
2. Provision of draft plan to councillors (6/2/04).
3. Direct mail-shot to local stakeholders (6/2/2004), inviting them to comment on a consultation draft of the plan.
4. Press release (12/2/2004).
5. Advertising of the plan in the Leicester Mercury and in Blaby District Council's journal (March 2004), providing a brief overview of the plan and inviting stakeholders to contact the Council for further details.
6. Meeting with representative of the Highways Agency (7/4/2004).
7. Presentation to the Council's Scrutiny Committee (7/4/2004).

The consultation draft referred to at [3] contained the following questionnaire:

Questions for Consultees

Controlling Emissions and Exposure around the M1 AQMAs

1. Are there other measures specific to the M1 that should be included here?
2. Which of these measures are preferred by local people and businesses, and why?

Controlling Emissions and Exposure around the Narborough Road South AQMA

3. Are there other significant fleet operators in AQMA1 that should be included in the list given in the plan?
4. Are there other measures relating to reducing emissions from vehicles passing through AQMA1 that should be considered?
5. Which of the measures described in the plan for AQMA1 are preferred by local people and businesses, and why?
6. Are there other measures relating to reducing congestion in AQMA1 that should be considered?
7. Which of the measures described in the plan are preferred by local people and businesses, and why?
8. Are there other measures relating to reducing vehicle use in AQMA1 that should be considered?
9. Which of the measures described in the plan for AQMA1 are preferred by local people and businesses, and why?
10. Are there other measures of the general kind described in the plan for AQMA1 that should be considered?
11. Which of the measures listed in the plan for AQMA1 are preferred by local people and businesses, and why?

Links between the Air Quality Action Plan, the LTP and the Community Strategies

12. Which measures in the LTP and community plans will bring the most widespread air quality benefits?
13. Will any measures in the LTP and community plans cause a worsening of air quality?
14. How should the Air Quality Action Plan interface with the LTP and the Community Strategies?

15. How can Blaby increase links to initiatives from Leicester City and the County?

Controlling Emissions from the Quarry and Related Activities

16. What are the views of plant operators and local people about problems of particle pollution from Croft Quarry?

Implementation of the Plan

17. Are there other sources of funding that could be used to finance the action plan than those listed in the plan?

The following lists those bodies that have participated through this consultation process. Comment is given on overall opinion of the plan where a written response has been provided. This is followed by a more detailed review of comments made by each respondent. Additional comment is provided by the District Council where appropriate.

Body	Attended meeting?	Written response?	Comments regarding written responses
Braunstone Town Council		✓	Supportive, with suggestions for additional options.
Mr J. Brooks (resident in AQMA1)		✓	Critical of the proposals made, suggests alternatives.
Croft Parish Council		✓	Provides a number of additional measures, and states a desire to explore the possibility of declaring an AQMA for the village of Croft.
DEFRA		✓	Largely supportive, stating that the draft plan is well balanced. Requests more detail in some areas.
Enderby Parish Council		✓	Supportive.
Glen Parva Parish Council		✓	Supportive, query about possible breaches of standards in Glen Parva.
Highways Agency	✓		
Councillor J. Kenney		✓	Generally supportive, identifies preferred options.
Kirby Muxloe Parish Council		✓	Generally supportive, provides additional comment about applicability of options in AQMA3.
Leicestershire County Council	✓	✓	Supportive. Textual queries raised. Information on Park and Ride inserted on page 33.
Narborough Parish Council		✓	Supportive.
Mr B. Wilkinson (resident in AQMA2)		✓	Critical of the proposals made, suggests alternatives.
Blaby D.C. Planning Policy officers		✓	Supportive. Textual queries raised.

Braunstone Town Council

Supportive of road system redesign, particularly the ASDA roundabout in AQMA1, and for opposition to development of park and ride facilities in this area. Additionally proposes the adoption of supplementary planning guidance for developers with respect to landscaping and tree planting.

Mr J. Brooks (resident in AQMA1)
Very critical of the draft plan. He states that local planning systems have not worked in the interests of the residents of Narborough Road South. Particular concerns relate to noise levels, exposure to air pollution (more specifically, diesel particles), vibration, smell, misuse of service roads by HDVs and accidents. The respondent questions the logic of the planning consent given for the construction of 150 new houses on the Narborough Road South West Service Road. The following recommendations are given:

1. Carry out surveys of noise and pollution along Narborough Road South.
2. Noise fencing to be erected along Narborough Road South.
3. Discretionary fund to be made available for householders to take mitigating action against noise.
4. Reduction in speed limit along Narborough Road South and enforcement.
5. Enforcement of 7.5 t weight limit on service roads along Narborough Road South.
6. Re-routing of traffic for Walkers Stadium.
7. Ban on further planning consents for Fosse Park and Meridiam until an alternative road plan funded by site owners and developers is approved.
8. Funding to enable existing bus services to be continued.
9. Officer at Blaby DC to be appointed to chase grants for improvement projects for Council Tax payers.

The following are identified as not wanted by Mr Brooks:

1. Excessive parking charges.
2. Emission testing.
3. Over-policing.

Response of Blaby District Council:
Whilst it is acknowledged that per unit emission, diesel particles are more harmful than NOx, it is only concentrations of the latter that are in breach of ambient air quality standards in AQMA1. Therefore, whilst it is desirable to further reduce emissions of particles (and noise levels as well), the focus of this air quality action plan has to be on NO_2. However, recognising the synergies that exist between different environmental burdens and the options identified, the Council is seeking to maximise benefits across a range of issues (including particle exposure and noise) whilst reducing exposure to NO_2.

Croft Parish Council
Proposes a series of additional measures not included in the draft action plan:

1. Re-open Croft Railway Station, to be used as a park and ride for South-West Leicestershire.
2. Transfer freight for Croft Quarry from road to rail.
3. Ban diesel-engined lorries not meeting the Euro 3 standard for emission control from local roads.

4. Introduce a more integrated transport system, particular emphasis on park and ride bus schemes for the City of Leicester.
5. Develop a Rapid Transport System along the former Great Central Railway route into Leicester and consider Narborough Road for a light rail system linking Fosse Park and Leicester City Centre.

The Parish Council also seems supportive of declaring and AQMA for the village of Croft.

Response of Blaby District Council: These comments will be considered further if an AQMA is declared around the quarry

DEFRA (Department for Environment, Food and Rural Affairs)
DEFRA's review of the draft plan is very positive, for example, in finding that a good balance has been reached between different types of measure. The following specific issues are raised for improvement:

1. Inclusion of a commentary on progress with the LTP.
2. Inclusion of more detail in the action plan on the cost, effectiveness, non-air quality impacts and perception and practicability.
3. Inclusion of policies on future development controls as a way of promoting sustainable forms of transport.

Enderby Parish Council
Supportive of the draft plan and the proposal for additional resources to support implementation.

Glen Parva Parish Council
Supportive of the general principles of the draft action plan. Queries whether there is an anomaly in local air quality management with the Leicester City AQMA ending at the city boundary, which borders Glen Parva, whilst Blaby has not declared an AQMA in this area.

Response of Blaby District Council:
Assessment by Blaby District Council in the past has suggested that the problems in Leicester City do not extend into Glen Parva. This will be re-assessed in the next round of air quality review and assessment.

Councillor J. Kenney
Notes the need for strategic partnerships with city, county and highways authorities with support from central government. Councillor Kenney was particularly supportive of the following:

1. Use of variable speed limits on the M1.
2. Use of hard shoulder on the M1 during peak times to smooth congestion.

3. Restrict urban access by large commercial vehicles, encourage local delivery by smaller vehicles.
4. Driver training.
5. Improve public transport services to Fosse Park, with improved information systems on services.
6. Move to subsidised, reliable and fully integrated public transport systems, based on low emission vehicles.
7. Develop new railway stations at Croft and Blaby, reopen the Ivanhoe Line.

Kirby Muxloe Parish Council
Acknowledges the limitations on Blaby with respect to the dominant sources, particularly for the M1. Corrects an erroneous statement given in the consultation draft of the plan concerning the presence of an elevated section of the motorway in AQMA3. Proposes the use of physical barriers along this stretch of motorway to reduce concentrations of pollutants (through disruptions to airflow) and noise.

Response of Blaby District Council:
The latest draft of the action plan has been corrected in line with the comments received.

Leicestershire Country Council:

'Blaby District Council be informed that :-

a) the County Council welcomes the publication of the draft AQAP as a way of raising public awareness about air quality and traffic but considers that the AQAP should explain more clearly why further action is required to achieve air quality standards ;

b) the County Council acknowledges that many of the air quality problems are caused by traffic but considers that many of the suggested measures, while related to transport, are not within the control of the County Council. It would not be practical for the County Council to take the lead on these measures which would therefore need to be taken forward by the District Council;

c) the County Council encourages the District Council to take a more pro-active stance with regard to ensuring that new developments do not worsen air quality, in particular by using the powers that are available to it as Planning Authority. Particular attention needs to be given to the achievement and enforcement of effective travel plans and the location of future development in the LDF;

d) the County Council will consider the ways in which it can assist in the implementation of the AQAP through the development and implementation of

the next round of LTPs and through other measures where these are both cost-effective and practical.

e) the more detailed comments in Appendix 1 be taken account of when coming to a view on the final AQAP;

f) the County Council would welcome discussion with Blaby officers on any of the issues raised in this response.'

Response of Blaby District Council: Close cooperation with the County Council will be important to the success of this Action Plan

Narborough Parish Council
Comments were supportive of the draft plan, recognising the limitations on Blaby District Council with respect to control of sources.

Mr B. Wilkinson (resident in AQMA2)
Critical of the proposals made in the plan. Comments that problems are only manifest on a few days each year depending on weather conditions, and that a more cost-effective solution may be to restrict traffic on the M1 to two lanes or one in each direction, or close it altogether on days when air quality is worst. Has clear concerns about the costs and benefits of other forms of action.

Response of Blaby District Council:
Weather conditions play a major role in determining day to day variation in air pollution levels. However, the air quality standard breached in AQMAs 2 and 3 is the *annual* average concentration of NO_2. Management of a small number of short term peaks will make little difference to annual levels. Partial or total closure of the M1 is outside the control of Blaby District Council. It will not be agreed by the Highways Agency (who do have the authority) because of conflicts with other of their objectives. Like Mr Wilkinson, the Council is concerned about the costs and wider benefits and disbenefits of actions to be taken to improve air quality. As a result it is seeking to account for these in its action planning process.