



Charnwood Borough Council

**Local Air Quality Management –
Final Action Plan**

September 2006

Executive Summary

Clean air is one of the most fundamental requirements for a healthy society. Since 2001 local authorities have been tasked with carrying out quantitative assessments of air quality to determine whether people living in and visiting their areas are likely to be exposed to air which meets UK and European air quality standards. Where there is evidence that any of these standards are not met then local authorities are required to produce Air Quality Action Plans which show how they and all other parties are working towards achieving the relevant standards.

Air quality in Charnwood is generally very good. We estimate that 99.3% of residents live in areas which meet all the standards. However a small proportion of homes are located close to sources of pollution – primarily road traffic, and are therefore at risk of being exposed to air which does not meet the standards.

This Plan outlines what the air quality standards are, provides a brief review of the scientific and environmental information gathered during the air quality assessment process and then summarises the findings of the technical reports which have been written. The Plan identifies the estimated extent of any exceedences of air quality standards and where they are likely to occur, it also goes on to identify the relative contribution of different sources of pollution.

Much work is already being undertaken which will benefit air quality in the borough. The Plan summarises all of the existing policies and commitments which will result in improvements in air quality.

The core of the Plan consists of an extensive ‘menu’ of over 40 potential actions that have been considered as possible ways of improving air quality. All of the potential actions relating to road traffic contained in a first draft of the Plan were the subject of an evaluation by Leicestershire County Council as part of their Local Transport Plan (2006-2011) development which was published in March 2006. The Plan summarises the outcomes of this evaluation and the commitments made and targets set by the County Council within the Local Transport Plan. The Plan also evaluates the remaining potential actions to establish if they will make a meaningful difference, in a cost effective manner and in a way that does not create other environmental, economic or social problems that outweigh their benefits.

The Plan then summarises the outcomes of these evaluations and proposes a process by which the delivery of the actions selected from the ‘menu’ can be monitored.

The work which has gone into informing the need for an Air Quality Action Plan has been influencing policy and decision making for some time and many of the existing policies and commitments summarised in chapter 3 have been developed with the benefit of good local air quality information to inform them. The actions which emerged from these are likely to address air quality problems in Charnwood without the need for any dramatic new interventions. The Plan is partly therefore a way of enabling all of the existing commitments to be brought under one umbrella. Of the new actions which do emerge from the Plan, most are around continuing to improve air quality information to help measure the success of actions, effective communication to ensure that air quality remains at the heart of policy making and seeking to influence public and business behaviour in a way which benefits the environment.

CONTENTS

- 1. INTRODUCTION AND AIMS OF THE AIR QUALITY ACTION PLAN**
 - 1.1 Project Background
 - 1.2 Legislative Background
 - 1.3 Purpose of the action plan
- 2. OVERVIEW OF AIR QUALITY IN CHARNWOOD**
 - 2.1 History of Air Quality Management in Charnwood
 - 2.2 Conclusions of the air quality review and assessments
 - 2.3 Quantification of source contributions to the air quality exceedences
- 3. EXISTING POLICIES AND STRATEGIES TO IMPROVE AIR QUALITY**
 - 3.1 Charnwood Borough Council's Corporate Plan
 - 3.2 Charnwood Community Strategy
 - 3.3 Climate Change Strategy
 - 3.4 Leicestershire's Local Agenda 21
 - 3.5 Leicestershire Local Transport Plan
 - 3.6 Charnwood Borough Council – Local Plan
 - 3.7 Great Central Railway – Good Neighbour Operating Policy
 - 3.8 Charnwood Borough Council Environmental Management System
 - 3.9 East Midlands Multi Modal Study (EMMMS)
- 4. ASSESSMENT OF MEASURES TO IMPROVE AIR QUALITY**
 - 4.1 Funding
 - 4.2 Responsibilities
 - 4.3 Costs, benefits and feasibility
- 5. OPTIONS AND MEASURES TO IMPROVE AIR QUALITY**
- 6. CONSULTATION RESPONSES TO THE AIR QUALITY ACTION PLAN**
- 7. SUMMARY AND APPRAISAL OF THE OPTIONS AND MEASURES IN THE ACTION PLAN**

8. IMPLEMENTATION & MONITORING

GLOSSARY OF TERMS

REFERENCES

I. INTRODUCTION AND AIMS OF THE AIR QUALITY ACTION PLAN

I.1 Project background

Charnwood Borough Council (CBC) have prepared an Air Quality Action Plan which is required as part of the local authority's statutory duties as defined within Part IV of the Environment Act 1995.

The Council approved an original draft in August 2004. A final consultation draft was then produced following revisions in the technical findings of air quality reports produced in autumn 2004. The consultation draft was subject to a public and stakeholder consultation during February to May 2005. This version is the final draft following the outcomes of the public consultation and most critically takes account of the outcomes of the Leicestershire Local Transport Plan 2006-2011, which was published in May 2006.

I.2 Legislative background

Part IV of the Environment Act, 1995, places a statutory duty on local authorities to periodically review and assess the air quality within their area. The key elements of the Act are described in Table 2.1. The concept of Local Air Quality Management (LAQM) and the process of 'review and assessment' was set out in the 1997 National Air Quality Strategy (NAQS)¹. In 2000, Government reviewed the NAQS and set down the revised Air Quality Strategy for England, Scotland, Wales and Northern Ireland² (AQS). This sets a revised framework for air quality objectives for seven pollutants, which were subsequently prescribed into Regulation in 2000 via the Air Quality Regulations 2000³. These were subsequently amended in 2002⁴.

For each objective, local authorities have to consider whether the objectives are likely to be achieved by the due date. Where it appears likely that the air quality objectives will not be met by the designated target dates, local authorities must declare an Air Quality Management Area (AQMA). Following the declaration of an AQMA, the authority must then carry out a further assessment of existing and likely future air quality (often referred to as the "Stage 4" report) and develop an AQAP which sets out the local measures to be carried out in pursuit of the air quality objectives.

Policy Guidance LAQM.PG(03) published by the Government in 2003 provides guidance on the development of action plans. Action planning is viewed as the most important and significant aspect of the LAQM process, playing a key role in helping the UK Government deliver the air quality objectives and the EU limit values. The AQAP is expected to include the following:

- Quantification of the source contributions to the predicted exceedences of the objectives, to allow the action plan measures to be effectively targeted;

¹ DoE (1997) The United Kingdom National Air Quality Strategy The Stationery Office

² DETR (2000) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working together for Clean Air, The Stationery Office

³ DETR (2000) The Air Quality Regulations 2000, The Stationery Office

⁴ Defra (2002) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum, The Stationery Office

- Evidence that all available options have been considered on the grounds of cost-effectiveness and feasibility;
- How the local authority will use its powers and also work in conjunction with other organisations in pursuit of the air quality objectives;
- Clear timescales in which the authority and other organisations and agencies propose to implement measures within the plan;
- Quantification of the expected impacts of the proposed measures and, where appropriate, an indication as to whether the measures will be sufficient to meet the air quality objectives; and
- How the local authority intends to monitor and evaluate the effectiveness of the plan.

The National Society for Clean Air (NSCA) has also published two guidance documents entitled 'Air Quality Action Plans (2000)' and 'Air Quality: Planning for Action (2001)'. These guidance documents have also been taken into account in development of the AQAP.

Table 1: Major elements of the Environment Act 1995

Part IV Air Quality	Commentary
Section 80	Places a statutory duty on the Secretary of State (SoS) to produce a national air quality strategy.
Section 81	Obliges the Environment Agency to take account of the strategy.
Section 82	Requires local authorities to review air quality and to assess whether the air quality standards and objectives within their areas are likely to be exceeded.
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 implemented within the AQMA, and the time-scale for doing so, to move towards attainment of the air quality standards and objectives.
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 make guidance which local authorities must have regard to.

I.3 Purpose of the action plan

The purpose of the action plan is to provide the means by which a local authority through joint working with the County Council, national agencies and other relevant bodies, delivers viable measures that will work towards achieving the air quality objectives within an AQMA. The aim is also to encourage active participation in the achievement of action plan measures by consulting the local community and raising awareness of air pollution issues.

Local authorities are required to prepare a written action plan for an AQMA, setting out the action plan measures they intend to take forward and the potential costs and benefits of these measures. The “Stage 4” Air Quality Review and Assessment provides the technical backup for the measures to be included in the action plan. The action plan should refer to the findings of the “Stage 4” and other subsequent reports in terms of source apportionment (where emissions are coming from) so that action plan measures are targeted appropriately.

The action plan should contain simple estimates of the costs and benefits and timescales for implementing the proposed action plan measures, so that measures can be prioritised for implementation and subsequently monitored.

2. OVERVIEW OF AIR QUALITY IN CHARNWOOD

2.1 History of Air Quality Management in Charnwood.

Charnwood has published a number of review and assessment reports since the inception of air quality management duties. The following table provides a potted history of air quality activities to date.

Year	Action
2000	A 'Stage 1' Screening Review and Assessment is completed identifying the need to progress to a more detailed 'Stage 3' review.
2001	A 'Stage 3' Review and Assessment is completed identifying potential breaches of UK national air quality standards and identifying the need to progress to a 'Stage 4' Assessment for a detailed assessment of traffic emissions.
2001	Three Air Quality Management Areas are declared in the Borough due to the predicted breaches of national air quality standards established in the Stage 3 Review and Assessment.
2003	A first Updating and Screening Assessment (USA) confirms the original findings of the 2001 report with respect to traffic pollution and identifies some sources of industrial emissions that require more detailed investigation.
2004	The 'Stage 4' Review and Assessment of traffic pollution is published which recommends some amendments to the AQMAs declared in 2001.
2004	A first Detailed Assessment of the industrial sources identified in the USA is published identifying the likelihood of breaches of an air quality standard due to a local industrial source.
2004	A revised Air Quality Management Order is issued amending the AQMAs in the Borough. The AQMA in Birstall, declared in 2001 due to road traffic emissions, is revoked The AQMA in Loughborough, declared in 2001 due to road traffic emissions, is retained, but with slight changes to its geographical coverage. The AQMA in Syston, declared in 2001 due to road traffic emissions, is retained, but with slight changes to its geographical coverage. A new AQMA is declared around the Great Central Railway engine sheds in Loughborough.
2005	A draft Air Quality Action Plan identifying approximately 40 potential actions to improve air quality is published and consulted upon.
2005	Leicestershire County Council publishes a draft Local Transport Plan for consultation, which includes commitments relating to any of the actions intended to address traffic pollution identified in the draft Air Quality Action Plan.
2005	An Air Quality Progress Report is published
2006	A second Updating & Screening Assessment is published

Copies of all of the reports are available on line at
<http://www.charnwood.gov.uk/environment/2309.html>

An original Air Quality Action Plan was originally drafted in 2004 by consultants Casella Stanger Ltd. Some improvements in the information on source contributions were then added for early 2005 at which point the draft AQAP was subject to a public and stakeholder consultation exercise. The consultation exercise was completed in June 2005.

At the same time Leicestershire County Council issued a first draft of the Local Transport Plan for consultation. All of the transport related options and measures contained in the draft AQAP were included for consideration by the County Council in the draft LTP – this was vital, given that the LTP is the principal means of ensuring that many of the transport related actions are programmed and delivered. Because of this the completion of the AQAP was put on ice until the outcomes of the final LTP were known. The final LTP was published in May 2006.

2.2 Conclusions of the air quality review and assessments.

Charnwood Borough Council published its **Stage 3** report for the First Round of review and assessment in 2001. The report concluded that there was evidence to suggest that levels of nitrogen dioxide were likely to exceed the annual mean air quality objective in 2005 at properties in close vicinity (within 10 to 20 metres) of the following road links:

- The A6 through Loughborough and Birstall;
- Ashby Road, Alan Moss Road, Ratcliffe Road, Nottingham Road and Epinal Way in Loughborough;
- Melton Road in Syston.

As a result, Charnwood declared three Air Quality Management Areas in Loughborough, Birstall and Syston in June 2001.

A **Stage 4** report was published in October 2004. The contents of the Stage 4 consisted of:

- Confirmation of the conclusions of the Stage 3 review and assessment by means of further modelling or monitoring studies;
- Quantification of the level of improvement in air quality required in order to meet the air quality objectives;
- Account of any new developments or proposals in the area; and
- Refinement of evidence of the sources of pollutant emissions so that the measures in the AQAP may be properly targeted.

The Stage 4 report presented a more optimistic view of future annual average nitrogen dioxide levels than the Stage 3 report, although the findings gave a mixed picture about how air quality is likely to develop in future years. This was particularly true for the air quality in Syston where modelling and monitoring data contradicted each other.

Measured levels of nitrogen dioxide around Charnwood up until 2003 had generally been low. However levels in 2003 were very much higher than in preceding years, and so future

concentrations forecast from a 2003 baseline were higher⁵. Levels since 2003 have fallen again.

Refinement of the model verification produced lower predicted concentrations in future years than had been obtained from earlier modelling studies.

The conclusions of the report were to retain the existing AQMAs in Loughborough and Syston and to redefine the specific properties based on changes in local housing stock and other local developments. The report recommended revoking the AQMA in Birstall.

The second round of review and assessment commenced in 2003 and culminated in a **Detailed Assessment** Report in July 2004. The report identified two new potential problems that were not identified in the first round. These include:

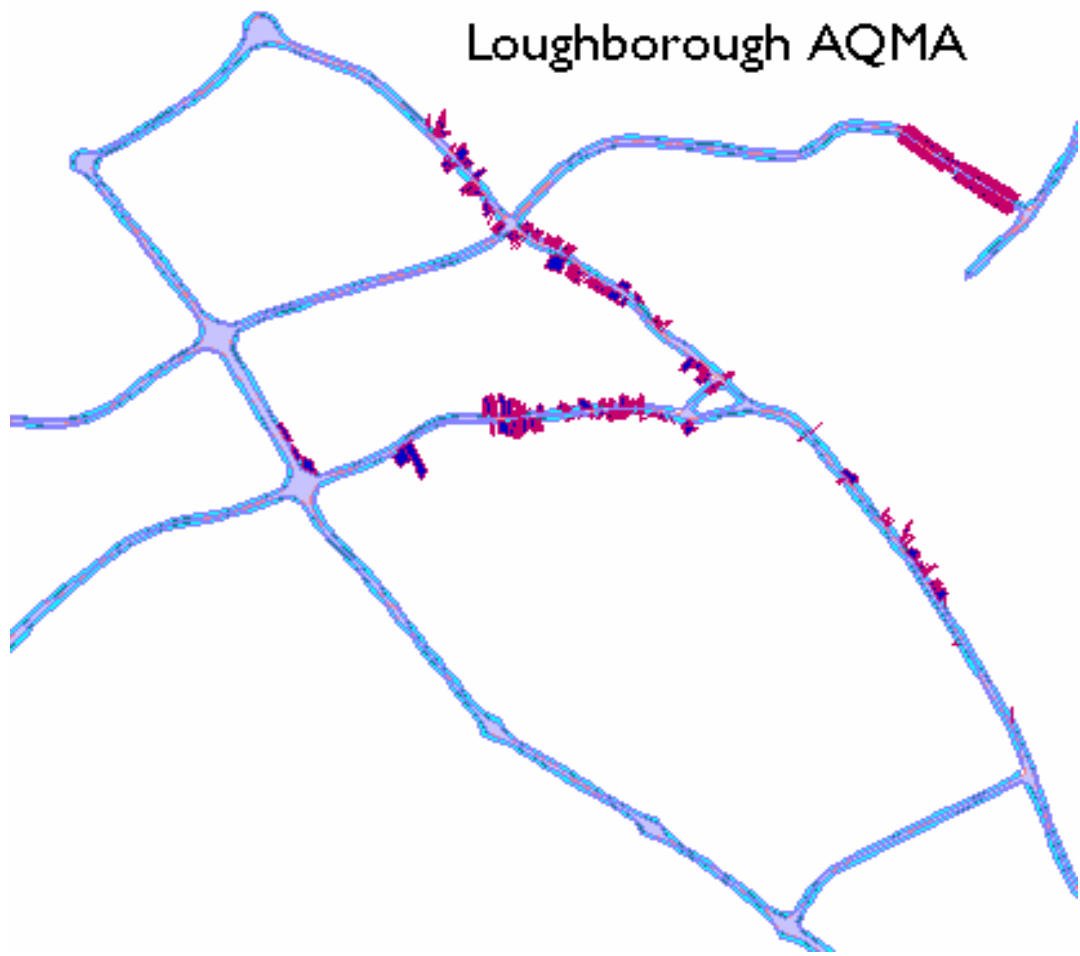
- Exceedences of the 15-minute mean objective for sulphur dioxide in vicinity of the engine sheds of the Great Central Railway in Loughborough;
- Exceedences of the 24-hour mean objective for PM₁₀ in the vicinity of the Lafarge Aggregates quarry in Mountsorrel.

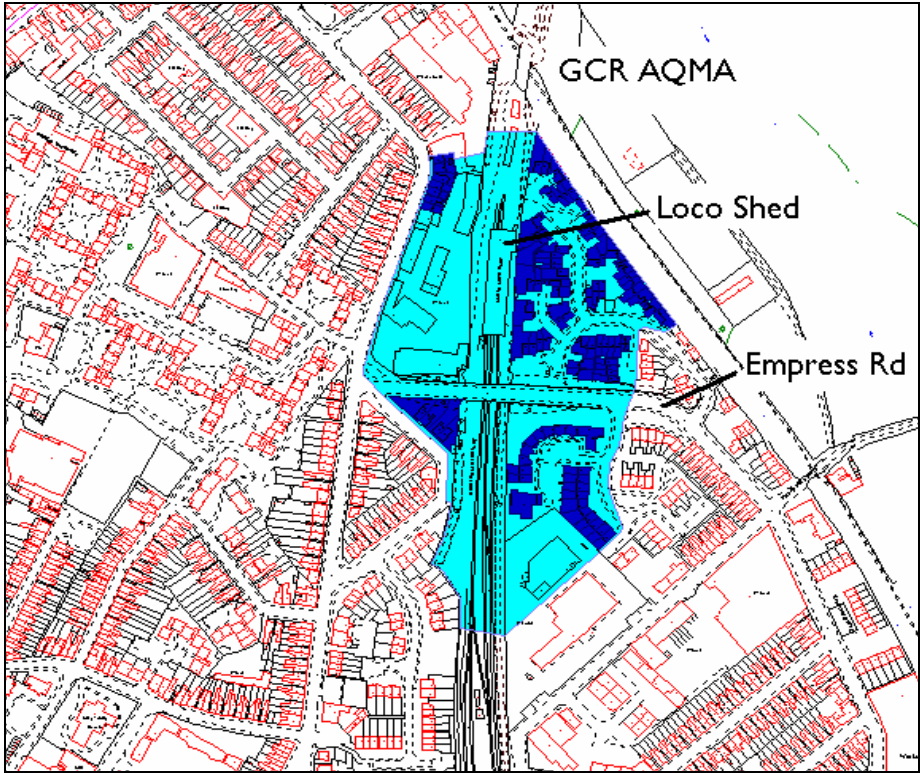
The report was submitted to DEFRA who agreed with the conclusions about exceedences near to the GCR, but recommended that further monitoring be carried out near to the quarry to gather more data.

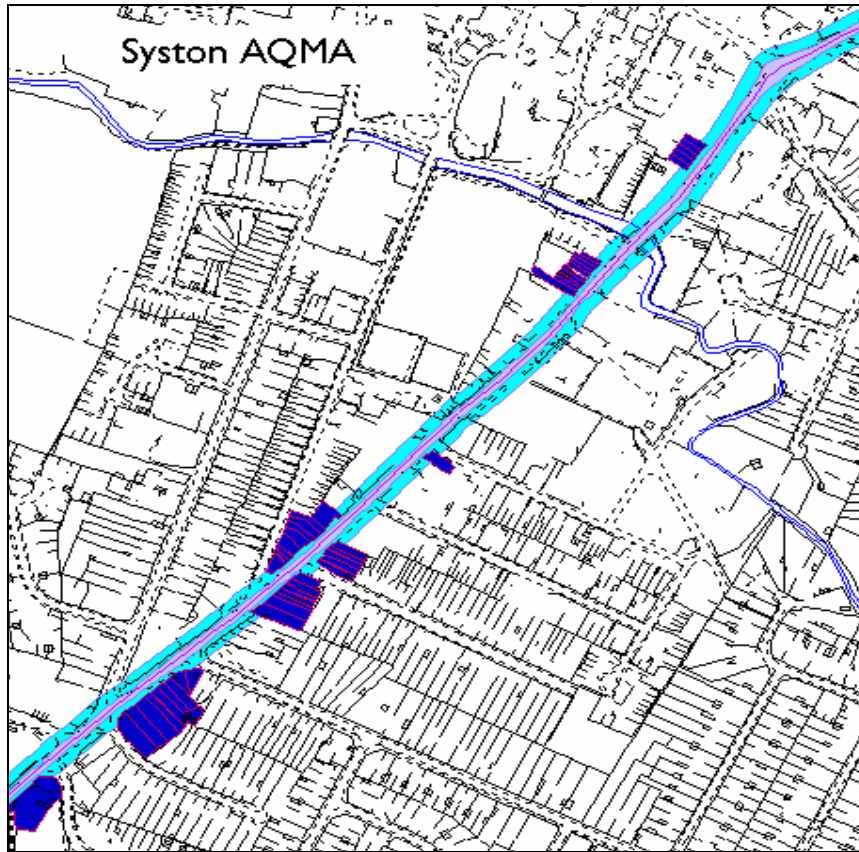
In November 2004 the Air Quality Management Areas in Charnwood were changed based on the findings of the previous assessments. The Loughborough AQMA was amended slightly with reduced numbers of properties falling within it, the Syston AQMA was retained, the Birstall AQMA was revoked and a new AQMA was declared around the GCR engine sheds. The current AQMAs look like this:

⁵ Pollution levels were generally higher in 2003, but not outside the normal year-to-year variation. Concentrations measured in 2003 were not considered exceptional, and Defra has advised that these data should be included in the review and assessment decision-making process.

Loughborough AQMA







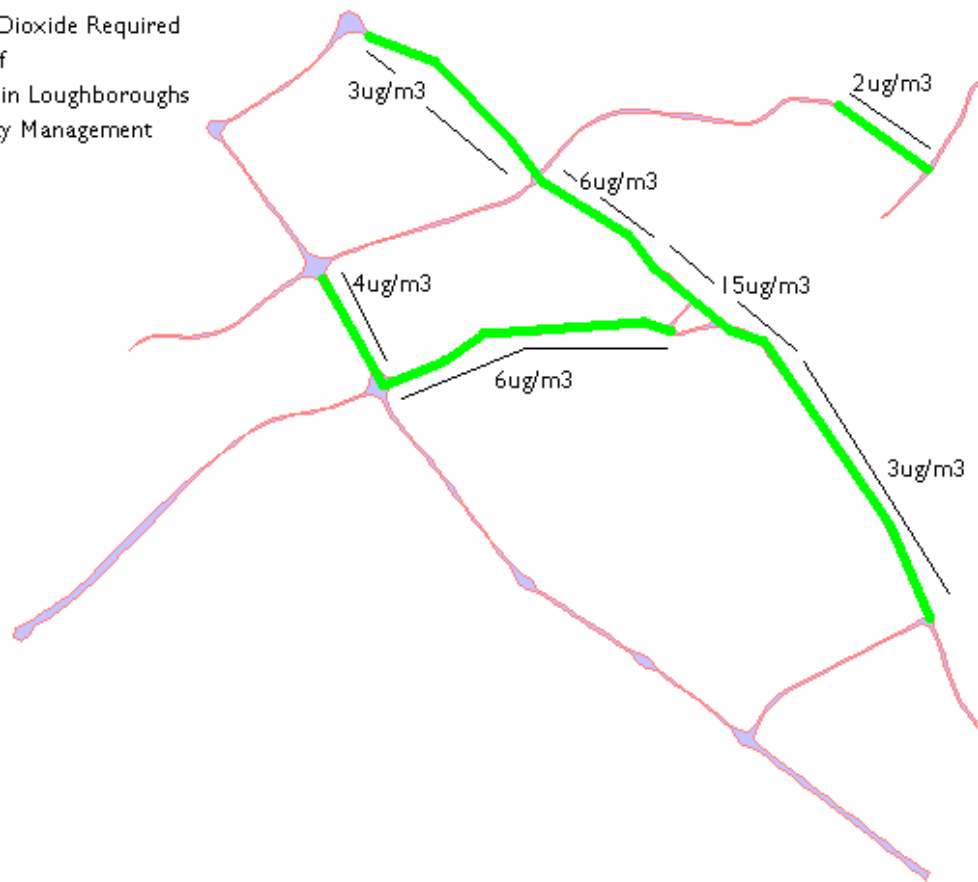
2.3 Quantification of source contributions to the air quality exceedences

Loughborough AQMA

The Stage 4 report identifies that exceedences of the annual mean NO₂ objective are attributable solely to emissions from road transport, allied with background emissions imported into the Borough and other diffuse sources such as domestic and commercial heating plant. Measures within the action plan are therefore focussed on traffic management.

The Stage 4 report estimates the reductions in nitrogen dioxide emissions from each road link that is necessary to achieve the objective.

Reductions in Nitrogen Dioxide Required on each of the roads in Loughboroughs Air Quality Management Area



It is useful to quantify the contribution of different vehicle types to NO_x emissions within Loughborough town centre. This has been carried out as part of the stage 4 review and assessment and the relative contributions of the different classes of road traffic to key receptors in the town are illustrated below.

Location	Relative contribution of each class of traffic to NO _x and AADT at each receptor location					
	Cars		LGV		HGV & Buses	
	% of AADT	% of NO _x	% of AADT	% of NO _x	% of AADT	% of NO _x
74 Ratcliffe Rd	88	14.7	7.5	3.5	4.5	27
1 Shearers Ct	84.5	17.7	10	5.1	5.5	28.1
114 Derby Rd	84	22.9	9	6.2	7	36.6
3 Brisco Av	84	16.8	9	4.8	7	35.5

1 Haydon Rd	88	16.5	7.5	5.3	4.5	30.6
70 Ashby Rd	91	18.3	5	2.9	4	19.3
5 Leicester Rd	84	16	9	5.2	7	43.8
166 Leicester Rd	84	15.5	9	5.5	7	46.1

Whilst cars make greatest contribution to total traffic counts in the town centre, HGV's make a disproportionate contribution to total NO_x emissions, principally due to congestion and the low speed. Reduction or control of HGV's within the town centre, or relief of congestion would be expected to offer the greatest potential for improved air quality.

System AQMA

The designated AQMA in Syston includes approximately 50 properties with facades very close to the Melton Road. Traffic flows along this section of road are currently low (about 11 to 17,000 vehicles per day) but subject to congestion, in part associated with on-street parking and peak time vehicle movements.

The Stage 4 report identifies that exceedences of the annual mean NO₂ objective are attributable solely to emissions from road transport, allied with background emissions imported into the Borough and other diffuse sources such as domestic and commercial heating plant. The Stage 4 report also estimated based on modelling that a 4µg/m³ reduction in nitrogen dioxide emissions from the Melton Road is necessary to achieve the objective.

There is significant disparity between dispersion model and historical monitoring results along the Melton Road. The traffic flow data for this road length varied substantially between the different count dates. The model used the highest of these values on a precautionary basis. Monitoring other than in 2003 generally indicates that the objectives are being met. Further monitoring and traffic count data is likely to be most valuable in identifying solutions for air quality in Syston.

It is useful to quantify the estimated contribution of different vehicle types to NO_x emissions within Syston. This has been carried out as part of the stage 4 review and assessment and the relative contributions of the different classes of road traffic to key receptors in the town are illustrated below.

Location	Relative contribution of each class of traffic to NO _x and AADT at each receptor location					
	Cars		LGV		HGV & Buses	
	% of AADT	% of NO _x	% of AADT	% of NO _x	% of AADT	% of NO _x
1257 Melton Rd	88	20.4	7.5	4.7	4.5	28.1
1110 Melton Rd	88	19.6	7.5	4.7	4.5	28.5
1121 Melton Rd	88	19.6	7.5	4.7	4.5	28.5

The majority of the NO_x is imported from outside the AQMA, with a relatively equal contribution from cars and HGVs/buses. The focus of measures is towards reducing traffic flow and reducing stop – start motoring along this road to ease congestion. Given the disparity in the monitoring and modelling data further and more detailed information about air quality trends will help form clearer action plan proposals over time.

Great Central Railway AQMA

Air quality problems in the vicinity of the GCR are associated with emissions from the engineering shed when the steam locomotives are 'fired up' each day in order to bring them into operational service. The process takes around 3 hours during which time the dispersion characteristic of the plume is poor due to low temperatures and below-optimum combustion. The nearest properties are within 20 metres.

Monitoring of air quality near to the sheds allied with modelling of the emissions has concluded that approximately 70 residential properties may be subject to more than 35 incidents per year when they are exposed to more than 266 mg/m³ of sulphur dioxide for 15 minutes. The nature of the activities at the GCR mean that receptors are not subject to chronic, long-term exposure. The problem is exclusively due to occasional, short-term exposure to high levels of SO₂ when the operations at the engine sheds and weather combine to prevent adequate dispersion of the emissions.

3. EXISTING POLICIES AND STRATEGIES TO IMPROVE AIR QUALITY

There are a number of related plans and strategies at the local and regional level that can be tied in directly with the aims of the Air Quality Action Plan, and will help contribute to overall improvements in air quality across the authority's area.

3.1 Charnwood Borough Council's Corporate Plan

The Corporate Plan sets out a range of priorities to meet the needs of the communities and to encourage working together to improve the quality of life. Specific references to air quality within the desired outcomes in the Plan include

A Clean Safe and Healthy Environment

- (2) ***Reduce Our Environmental Impact***
Deliver the Charnwood Air Quality Action Plan.
Introduce a Climate Change Strategy and Action Plan.
- (11) ***Reliable, Integrated, sustainable and convenient public transport serving the borough***
Contribute to the delivery of Local Transport Plans and work with partners to lower levels of traffic congestion.

An Economically Prosperous Environment

- (1) ***Charnwood economy develops to the benefit of local people***
Deliver a Loughborough Town Centre Strategy
Deliver the new Economic Development Strategy for the Borough including:
Promote the development of the area close to Loughborough station through the Loughborough Eastern Gateway Project.
Work with Parish & Town Councils to support local communities and ensure sustainability of town and village centres.

3.2 Charnwood Community Strategy

Prepared by the Charnwood Strategic Partnership the strategy is the key document setting out agreed aims, priorities and actions for Charnwood to which all public, private and voluntary sector partners are committed.

- Aim Eight ***To meet local transport needs more effectively***
Encourage partners to develop and effectively implement Work Place Travel Plans that promote more sustainable choices for work related travel.

Promote/co-ordinate funding opportunities for integrated transport in Charnwood.

Encourage safe alternative routes for pedestrians and cyclist around schools/villages/town centres and community buildings in all parts of Charnwood.

3.3 Climate Change Strategy

This Strategy is one of the first of its kind in the East Midlands and sets out how Charnwood Borough Council will respond to the challenges of climate change; the commitments that it has made in signing the Nottingham Declaration and how it will encourage others in the borough to take similar steps.

The strategy covers the topics of energy, procurement, transport and air quality, waste, development and planning, biodiversity and open space, adaptations and raising awareness.

The action points within the Strategy were developed at a workshop session with the Council's wider environmental partners and Local Strategic Partnership members including; Action for a Better Charnwood, Friends of the Earth, the Campaign to Protect Rural England (CPRE) and Loughborough University. It has also had significant input from across the political parties and officers from all of the Council's services.

The Strategy will be reviewed every three years, to up date it in line with new government initiatives and ensure progress towards the vision of a carbon neutral council.

3.4 Leicestershire's Local Agenda 21

LA21 originated from the Earth Summit in Rio de Janeiro in 1992. It incorporates the concept of sustainable development – meeting current needs without compromising the needs of future generations. The LA21 process enables communities to take an active role in conserving their local environment and improving their quality of life. Prepared by the Forum for A Better Leicestershire (FABLE) in 1998, the document sets out a proposed action plan to deliver a more sustainable quality of life in the future. In addition to the FABLE LA21 proposals, the Action for a Better Charnwood (ABC) sets out the LA21 process for Charnwood.

Section 10: Transport

Cut pollution in Leicestershire by 50% in 2025 compared with 1995 levels whilst maintaining access to services and facilities for businesses and individuals.

Reduce the need to travel through strongly enforced land use planning and other measures

Promote walking by giving the pedestrian priority over traffic in urban areas

Increase levels of cycling to 4 times 1991 levels by 2020

- Promote public transport
- Encourage more responsible car use
- Reduce the impact of freight
- Ease changing between different modes of transport
- Reduce journey length and decrease the use of the private car

3.5 Leicestershire Local Transport Plan (2006-2011)

The second Leicestershire Local Transport Plan sets out the transport strategy for the County and details a five-year implementation programme.

The Plan identifies six objectives and initial targets associated with these for the proposals within the Plan lifetime. The six objectives are;

Tackling congestion

Improving access to facilities

Reducing road casualties

Improving air quality

Reducing the impact of traffic and

Transport asset management

Many of the decisions and actions contained within the Plan are of either direct or indirect relevance to air quality. Indeed the first consultation draft of the Charnwood AQAP was a key document in informing and shaping the content of the “Improving Air Quality” chapter (chapter 6).

The Plan acknowledges that delivery of the air quality objectives in the Loughborough AQMA is not likely within the Plan lifetime, although it predicts improvements here and compliance with air quality objectives in Syston. The Plan contains an air quality action plan for Loughborough, which sets out 22 options for both Loughborough and the County as a whole and then using a cost / benefit analysis appraises each of these options. The commitments made within the Plan are incorporated into the final Action Plan commitments within this document.

To provide some tangible evidence of the success of these actions, the LTP also contains a broad set of performance indicators. The ones with a direct relevance to air quality are:

Description	Baseline	2010/11 target
Time lost per vehicle km 07.00-10.00 in Loughborough	34 secs/v.km	43 secs/v.km

	(2003)	
Bus passenger journeys (boardings) per year	14.918m (2003/4)	15.759m
Levels of cycling at representative counting points	Index 100 (2000-03)	108
% of schools with travel plans	12% (2003/4)	90%
% of major employees (>250) with workplace travel plans	17% (2003/04)	50%
Annual average NO₂ concentration, High Street, Loughborough	67.7µg/m³ (2004)	52.2 µg/m³
Traffic growth index, A6 Loughborough town centre	100 (2004)	111.4
Annual average NO₂ concentration, Derby Road, Loughborough	43.7 µg/m³ (2004)	<40 µg/m³
Annual average NO₂ concentration, Melton Road / Barkby Road junction, Syston	30.7 µg/m³ (2004)	<40 µg/m³

3.6 Charnwood Borough Council – Local Plan

The Local Plan covers the period 1991 to 2006, and is intended to provide a detailed framework for the control of development and use of land. In providing for the development needs of the Borough, measures will be taken to:

- Promote an integrated land use and transportation strategy with the aim of enabling the provision of appropriate infrastructure so as to reduce the need for dependence on the private car and support the viability of existing and proposed public transport services in the interests of encouraging sustainable development and in support of the transport choice strategy;
- Support the Government's proposed motorway and trunk road improvements and the County and City Council's LTPs with a view to securing the implementation within the plan period of particularly those programmed schemes which offer wider benefits through the relief of heavy traffic flows in environmentally sensitive locations;
- Provide for the management of traffic and the extension of traffic calming measures in the interests in particular of pedestrians and cyclists.

The next revision of the local plan, known as the Local Development Framework, is in the process of being produced.

3.7 Great Central Railway – Good Neighbour Operating Policy

Charnwood Borough Council has developed this policy in consultation with local residents and the Great Central Railway (GCR). The aim is to allow the railway to operate effectively whilst minimising disturbance to local residents. The policy includes the following measures in respect of air quality:

- The GCR should use all reasonable care to operate steam locomotives to ensure that dark smoke emissions do not exceed limits in the Dark Smoke (Permitted Periods) Regulations 1958;
- Only coal supplies of an appropriate fuel specification should be used;
- Locomotives should at all times be fired in accordance with the Handbook for Steam Locomotive Engine Men (BTC 1957);
- The GCR should explore ways of reducing the emissions of smoke and improving dispersal of smoke emissions during lighting up periods;
- Diesel locomotives should not be permitted to idle for a period exceeding 20 minutes when in close proximity to residential properties.

3.8 Charnwood Borough Council Environmental Management System

At the time of writing Charnwood is seeking accreditation to the Environmental Management Standard ISO 14001. The Environmental Policy which has been produced in pursuance of this contains commitments relating to energy, purchasing, transport, waste, planning, habitats, adaptations, awareness, conservation & design, contaminated land, pollution and legal compliance. In keeping with the continuous improvement ethos of the standard there is also an action plan associated with the EMS.

Some of the key actions proposed in the action plan with relevance to local air quality are;

T1.1 Join Arriva Green card scheme to give staff reduced bus fares by 2006

T1.2 Pilot home-working study in Environmental Health. Roll out to other services which may be able to operate in this way.

T2.1 Carry out study to assess demand and cost/benefit of implementing a pool car system initiative including use of alternative fuels by 2007

T3.1 Procure low emission council vehicles to run on either LPG or Biodiesel

T5.2 Secure Section 106 funding for public transport for all major developments through LDF policies

T8.1 Work with County Council to secure funding for 5 Charnwood School Travel Plans (5 plans per year)

T8.2 All major commercial planning applications (over 1000ft²) to include a travel plan

T8.3 Local Strategic Partnership (LSP) members to commit to developing Staff Travel Plans.

3.9 East Midlands multi modal study (EMMMS): North-South movements on MI Corridor

The recommended strategy includes a substantial package of motorway widening, but also includes significant public transport and policy interventions. In overall terms, the strategy improves options for use of public transport, with a predicted increase in overall use by 2021 of 100% during peak periods, and a corresponding reduction of 1% (4% HGV) traffic. In terms of Charnwood Borough Council, the main impact will be the proposed widening to four lanes in each direction, between Junctions 21A to 23A.

4. ASSESSMENT OF MEASURES TO IMPROVE AIR QUALITY

This section sets out the general approach to the assessment of measures that may be implemented to improve air quality.

For each measure, or package of measures, included in the AQAP, some consideration to the impacts of the proposed measure(s) on air quality is included. Wherever possible, an attempt to quantitatively determine the reduction in pollutant emissions or concentrations derived from the measure has been carried out based on dispersion modelling. In some cases however, quantification has been limited and educated guesswork has been required due to the lack of supporting information.

Most difficult to assess are those 'soft' measures that entail the provision of cycle lanes, or promoting 'walk-to-school' initiatives. In such cases, an indication of the impacts is based upon best judgement.

4.1 Funding

The ability to implement the options and measures set out in this action plan are dependant on securing a sufficient and consistent level of funding to both support any additional staff that may be required, and to deliver the programme. Where the options and measures included within this action plan have already had funding allocated (via the current LTPs or other Borough plans) this is indicated. New measures for which funding has yet to be sought is also indicated in order to establish any additional funding burden of the action plan.

4.2 Responsibilities

The Borough is under a statutory duty through Part IV of the Environment Act 1995 to identify all potential measures to improve air quality within an AQMA, in pursuit of the air quality objectives. This action plan sets out to identify those measures over which the Council has direct control, whilst additionally identifying those measures which are the responsibility of other parties.

4.3 Costs, benefits and feasibility

It is difficult to precisely quantify some of the effects of the proposals and broad descriptors for the Timescale, Cost, Air Quality Benefit and Net Receptor Benefit are applied. It has been concluded that a simple matrix approach is best suited to the current needs based on the following descriptors:

Time-scale definitions (from January 2005)

Long = Long Term (5 - 10 years plus)
Medium = Medium Term (2-5 years)
Short = Short Term (within 2 years)

Cost definitions

Very High (>£1 million)	££££
High (£500K - £1 million)	£££
Medium (£100K - £500K)	££
Low (<£100K)	£

Air Quality Benefits (expressed as reduction in $\mu\text{g}/\text{m}^3$ NO_2)

High ($>2 \mu\text{g}/\text{m}^3$)	√√√√
Moderate ($1-2\mu\text{g}/\text{m}^3$)	√√√
Low ($0.2-1\mu\text{g}/\text{m}^3$)	√√
Negligible ($<0.2\mu\text{g}/\text{m}^3$)	√

Net Receptor Impact (expressed as relative numbers of human receptors likely to benefit from the proposal)

Very Good – only positive air quality benefits to receptors, no negative impacts on any receptors	++
Good – Significantly more receptors experience air quality benefits than experience negative impacts	+
Negligible – Approximately equal numbers of receptors experience air quality benefits as experience negative impacts	○
Poor - Significantly more receptors experience negative air quality impacts than experience benefits	-

There are several important issues to recognise from the options and measures that have been proposed in this action plan:

- Many of the options and measures identified within this action plan will have an implementation timescale beyond that required to deliver the air quality objectives (in 2005). Nonetheless, the Council is still required to identify all possible measures that it can take to improve air quality, and to work towards achievement of the objectives in future years. The options and measures will also deliver improved health and environmental conditions.
- Whilst it is recognised that many of the individual options and measures will only deliver a very small improvement to air quality, the impact of the combined package is expected to be greater. In addition, all of the proposed options and measures reflect policies that already in place, and support the overall sustainable environment objectives of the Council.

5. OPTIONS AND MEASURES TO IMPROVE AIR QUALITY

This section sets out the various options to improve air quality within each AQMA.

The geographical and quantitative extents of each of the proposed AQMAs are outlined in part 2.3 of this Plan. The Stage 4 and Detailed Assessment provide much greater background information about these. The 2005 Progress report and 2006 Updating and Screening report provide additional evidence.

Specific options within each AQMA are considered separately, together with more general measures that are presented as an overall package. The Council is obliged to consider **all** possible measures and options available to it to improve local air quality. In the case of some of the proposals, model scenario tests have been used to calculate the air quality impact that the proposal is predicted to have.

These options are then evaluated to ensure that the measures and options taken forward are both cost-effective and proportionate, taking into account the contribution of pollution from the different sources. For each specific option proposed within this section, consideration is given to the cost-effectiveness and feasibility.

Loughborough AQMA

Loughborough has been designated as a Sub-Regional Centre in the East Midlands Draft Regional Planning Guidance (RPG 8). The Leicestershire LTP Annual Progress Report issued in July 2003 highlighted that major new investment would be needed in Loughborough to tackle existing transport problems and to cater for future growth. The Loughborough Transport Study is considering a 10-15 year action plan for transport development and will feed into the LTP review. Progress on options and measures within the air quality action plan will need to consider developments within this study and be updated as necessary.

The Stage 4 report identifies that exceedences of the annual mean NO₂ objective are attributable solely to emissions from road transport, allied with background emissions imported into the Borough and other diffuse sources such as domestic and commercial heating plant. Measures within the action plan are therefore focussed on traffic management.

Option 1: Development of Loughborough Inner Relief Road (Policy TR2 Local Plan)

The Local Plan identifies reservations to safeguard land to provide an Inner Relief Road (IRR) between Bridge Street and Barrow Street in the town centre of Loughborough. With the IRR in place, traffic flow along the existing A6 through the town centre could be substantially reduced. This proposal is a major theme in the LTP2 and the project is currently the subject of a draft bid to DfT. Work is currently being undertaken by CBC on behalf of Leicestershire County Council to evaluate in detail the air quality impact of the proposal to inform the bid.

Objective	To reduce traffic flow through town centre by diversion onto IRR
Responsibility	Leicestershire County Council

	Charnwood Borough Council
Air Quality Impacts	Initial dispersion modelling scenario tests made in 2004 to estimate the impact of this proposal suggests that it will lead to reductions of 1.7 to 6.2 $\mu\text{g}/\text{m}^3$ at receptors on Leicester Road with no significant change to other receptors. Now that details about the proposal are emerging further modelling is being undertaken which will provide a wider appraisal of the proposal.
Non Air Quality Impacts	Positive: Improved environment in town centre in terms of pollution, noise etc Negative: Potential impacts along IRR route
Perception	Positive – improved town centre environment
Cost-effectiveness & Feasibility	Local Plan indicates that the scheme shows a very favourable rate of economic return suggesting a high priority should be allocated.

Option 2: Improvement to traffic flows along Epinal Way

Linked to the development of the IRR, there is a limited potential to divert further traffic from the town centre section of the A6 onto the new Epinal Way, which functions as a parallel ring road. This would involve improved signing and traffic management measures.

Objective	To divert traffic from town centre onto Epinal Way by means of signage or restricted access.
Responsibility	Leicestershire CC
Air Quality Impacts	<p>Dispersion modelling to test the impact of this proposal, assuming that it is successful in diverting 50% of the existing HGV fleet from the A6 corridor onto the outer ring road, suggests that it will lead to the following changes in air quality at the key receptors in Loughborough:</p> <ul style="list-style-type: none"> 1 Shearers Court (outside the AQMA) – <i>increase levels by 0.5 $\mu\text{g}/\text{m}^3$</i> 114 Derby Road – decrease levels by 0.9 $\mu\text{g}/\text{m}^3$ 3 Brisco Avenue – decrease levels by 2.2 $\mu\text{g}/\text{m}^3$ 1 Haydon Road – <i>increase levels by 1.3 $\mu\text{g}/\text{m}^3$</i> 70 Ashby Road – decrease levels by 0.4 $\mu\text{g}/\text{m}^3$ 5 Leicester Road – decrease levels by 2 $\mu\text{g}/\text{m}^3$ 166 Leicester Road – decrease levels by 3.5 $\mu\text{g}/\text{m}^3$ <p>Based on this the net impact on all of the properties contained within the Loughborough AQMA is:</p> <ul style="list-style-type: none"> Approximately 50 will experience HIGH air quality benefits Approximately 20 will experience MODERATE air quality benefits

	<p>Approximately 180 will experience LOW air quality benefits</p> <p>Approximately 100 will experience NEGLIGABLE air quality benefits</p> <p>Approximately 4 will experience a MODERATE deterioration in air quality</p> <p>The predictions do not suggest that this action will result in any of the existing areas in the AQMA achieving compliance with the objective.</p> <p>Now that details about the IRR proposal are emerging, further modelling is being undertaken which will provide a wider appraisal of the proposal.</p>
Non Air Quality Impacts	<p>Positive: Improved environment in city centre in terms of pollution, noise etc</p> <p>Negative: Potential impacts along Epinal Way</p>
Perception	<p>Positive – improved town centre environment</p>
Cost-effectiveness & Feasibility	<p>Low cost option of measures to divert traffic from the town centre route. This could be extended to provide restricted access to the town centre during the daytime.</p>

Option 3: Pedestrian Preference in Loughborough Town Centre (Policy CA/7 Local Plan)

This includes measures to limit vehicular access to the town centre, in particular at Baxter Gate, Devonshire Square, Biggin Street and A6 (between Derby Square and Woodgate) in addition to the existing pedestrianised areas in Market Place, Market Street and Churchgate.

Objective	<p>To provide new pedestrianised areas in the town centre.</p>
Responsibility	<p>LCC</p>
Air Quality Impacts	<p>Not quantified, but potentially HIGH for a small (5 to 20) number of receptors in the town centre depending upon whether partial or full pedestrianisation is implemented. There may be a MODERATE to LOW negative air quality impact for the 50 or so receptors on the A6 corridor to the north and south of the proposal and to the 100 or so receptors on the Ashby Road.</p> <p>Now that details about the IRR proposal are emerging, further modelling is being undertaken which will provide a wider appraisal of the proposal.</p>
Non Air Quality Impacts	<p>Positive: Improved environment in town centre in terms of pollution, noise etc</p> <p>Negative: None</p>
Perception	<p>Positive – improved town centre environment</p>
Cost-effectiveness	<p>Low cost package of measures which may be linked to other</p>

& Feasibility | proposals (and specifically the IRR).

Option 4: Development of Parking Control Policies (Policy TR/18, TR/19 Local Plan)

This option seeks to reduce private car access to the town centre by the restriction of parking facilities and/or increased charges. Existing policy requires that new developments must achieve tight standards for parking provision in order to support the drive for increased use of better quality public transport.

Objective	To restrict parking of private cars in the town centre for both access to work and shops. This could be driven by restriction on parking spaces, restriction on maximum times for parking, or increased charges.
Responsibility	CBC/LCC
Air Quality Impacts	Not quantifiable but likely to be LOW.
Non Air Quality Impacts	Positive: Improved environment in town centre in terms of pollution, noise etc Negative: Potential impacts on the economic vitality of the town centre.
Perception	Mixed – likely to be unfavourable with commuters and shoppers who currently use parking facilities, but favourable with pedestrians and cyclists.
Cost-effectiveness & Feasibility	Would need to be applied with care to avoid a detrimental effect on the vitality of the town centre

Option 5: Improved access for cyclists and pedestrians

The development of a network of pedestrian and cycle routes by direct funding and development proposals. This may include segregated routes for cyclists, and filling of gaps in the existing network. Details are contained in Chapter 6 of the LTP2

Objective	To reduce traffic flows in town centre by encouraging cycling and pedestrian access.
Responsibility	LCC
Air Quality Impacts	Not quantified, but likely to be LOW.
Non Air Quality Impacts	Positive: Improved environment in town centre in terms of pollution, noise etc, and improved health and fitness Negative: None
Perception	Positive – improved town centre environment
Cost-effectiveness & Feasibility	Low cost option of measures to divert traffic from the town centre route.

Option 6: Improved Bus Services and Facilities (Policy TR/7 Local Plan)

The Loughborough 'Quality Bus Partnership' aims to provide better on-route facilities and bus priority measures. LTP2 contains targets & timescale for improvement.

Objective	To improve use of buses for transport to the town centre by the provision of high quality services and facilities via the QBP.
Responsibility	Charnwood BC/local bus operators
Air Quality Impacts	Not quantified, but likely to be MEDIUM
Non Air Quality Impacts	Positive: Improved environment in town centre in terms of pollution, noise etc Negative: None
Perception	Positive – improved town centre environment
Cost-effectiveness & Feasibility	Initiative in association with local bus operators to provide improved bus services and facilities.

Option 7: Bus/rail interchange at Loughborough station (Policy TR/9 Local Plan)

The railway station is located to the north-eastern edge of the town. The provision of a bus interchange would improve the attractiveness of rail travel into Loughborough.

Objective	To increase use of rail as a transport option into Loughborough.
Responsibility	CBC
Air Quality Impacts	Not quantified, but likely to be NEGLIGIBLE.
Non Air Quality Impacts	None significant
Perception	Positive – improved use of rail
Cost-effectiveness & Feasibility	To be investigated as part of the Loughborough Transport Study.

Option 8: Development of travel plans for new development sites

Continue to ensure that major new development proposals include detailed travel plans to reduce use of the private car, and encourage use of public and/or shared transport. LCC has been successful in the development of travel plans, and approximately 15 plans are currently under consideration, with plans in place for organisations such as AstraZeneca, Loughborough University, and the Borough Council itself.

Objective	To reduce private car commuting
Responsibility	CBC/LCC
Air Quality	Not quantified, but likely to be LOW as a stand-alone measure.

Impacts	
Non Air Quality Impacts	Positive: Promotion of sustainable transport, and health benefits from increased cycling and walking Negative: Potential safety issues unless adequate facilities provided
Perception	Positive
Cost-effectiveness & Feasibility	If considered in detail at the development proposal stage, costs are expected to be negligible.

Option 9: Development of park and ride scheme for Loughborough

The development of a park and ride scheme for Loughborough town centre would encourage public transport and reduce congestion and private car use.

Objective	To reduce private car commuting.
Responsibility	CBC/LCC
Air Quality Impacts	Not quantified, but expected to be LOW.
Non Air Quality Impacts	Positive: Potential benefits to reduction of other pollutants including CO ₂ emissions Negative: None
Perception	Positive – improved communication link into Loughborough
Cost-effectiveness & Feasibility	Not considered cost effective within the LTP2 appraisal of options

Option 10: Introduction of congestion charging

This potential option would seek to reduce vehicle access into the central part of Loughborough. The London Congestion Charging Scheme (CCS) commenced in February 2003. An assessment of the first 6 months of operation indicated a substantial reduction in traffic, particularly cars, entering the zone during the charge period (see Figure 2), although it is too early to draw any conclusions regarding the impact upon air quality⁶. Clearly, the situation within London is a unique one, both in terms of traffic flow and background air pollution levels, although it is understood that congestion-charging schemes are currently being considered in other UK cities.

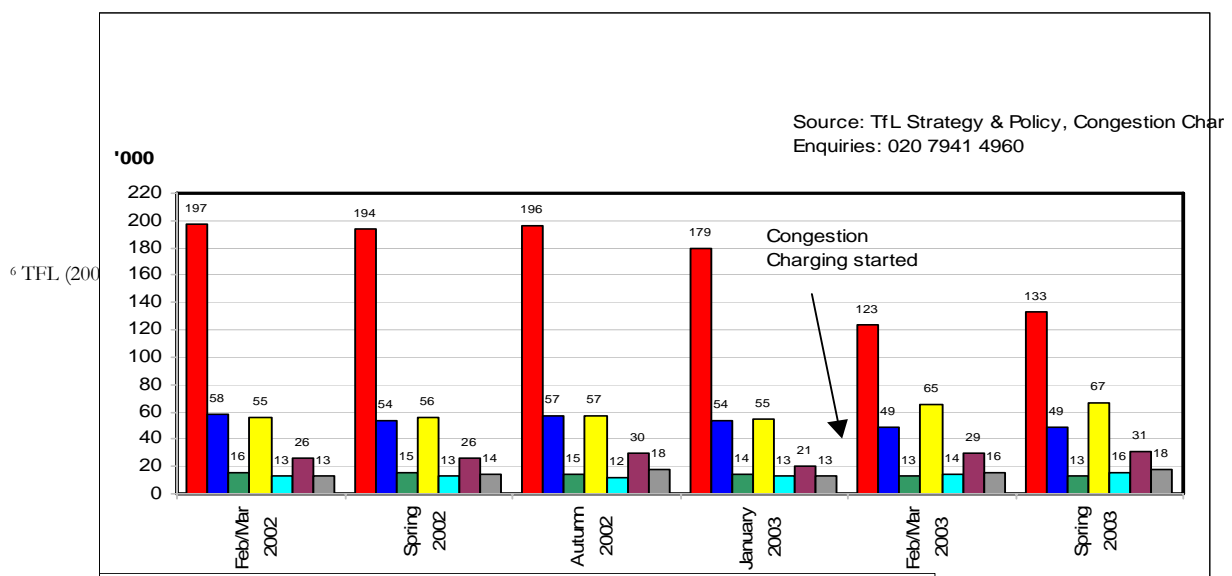


Fig 2: Summary of traffic flows within the London Congestion Charging Zone.

Objective	To reduce private car commuting into the town centre
Responsibility	LCC
Air Quality Impacts	Not quantified as it depends on the detail, but likely to be MODERATE for a few (5 to 20) receptors in the centre of Loughborough. The potential to create new problems at the edge of the charging zone may result in LOW to MODERATE increases in nitrogen dioxide for approximately 2-300 receptors on the A6 corridor and Ashby Road.
Non Air Quality Impacts	Positive: Potential benefits to reduction of other pollutants including CO ₂ emissions Negative: None
Perception	Mixed – schemes would restrict access to certain vehicles, or would impose additional costs. Reduced congestion/travel time.
Cost-effectiveness & Feasibility	Given the scale of Loughborough town centre, the introduction of a charging scheme is unlikely to be a cost-effective solution.

Option 11: Introduction of a Low Emission Zone

Low Emissions Zones (LEZ) work on a different principle from congestion charging, with the primary aim being to 'clean up' the fleet rather than reduce traffic volume. LEZs are currently being considered for London and some other UK cities. There are many different ways in which an LEZ could operate, depending upon what level of emissions standard is imposed. They could, for example, restrict all vehicle access to a defined Euro standard, or more specifically target higher emissions standards for HGVs and/or buses. The Government is currently considering setting standards for LEZs based on different Euro standards.

Objective	To reduce emissions from transport within Loughborough town
------------------	---

Responsibility	centre. LCC
Air Quality Impacts	Not quantified as it depends on the detail, but could be HIGH for a few (5 to 20) receptors in the centre of Loughborough with MODERATE to LOW improvements for other parts of the A6 corridor and Ashby Road. They may be increases in nitrogen dioxide along the Epinal Way and Ratcliffe Road parts of the AQMA due to older vehicles being forced out of the town centre.
Non Air Quality Impacts	Positive: None Negative: None
Perception	Mixed – schemes would restrict access to certain vehicles. Reduced congestion and travel time.
Cost-effectiveness & Feasibility	Not considered feasible as part of the LTP2 cost benefit appraisal process

Option 12: Nottingham Road / Meadow Lane Link Road

The link road is a fundamental component of the Loughborough Eastern Gateway project, which is one of the key priorities in the Corporate Plan.

Charnwood Borough Council and Network Rail are currently seeking a private sector partner to deliver this funded by development of land, which both partners own. Developers are currently in the process of being engaged.

Objective	To bypass traffic around the congested Ratcliffe Road
Responsibility	LCC & CBC
Air Quality Impacts	HIGH for the 100 receptors on Ratcliffe Road. Possible MODERATE negative impact for properties near the Meadow Lane Ratcliffe Road junction
Non Air Quality Impacts	Positive: Improved street environment for Ratcliffe Road Negative: None
Perception	Positive. Traffic would not impact substantially on other parts of the community, congestion would be eased
Cost-effectiveness & Feasibility	Money is committed.

Option 13: Implementation of statutory vehicle emissions testing on or around the roads declared as an AQMA

Regulations came into force in July 2002 that allow English local authorities with air quality management areas to apply to the Secretary of State for Transport for the power to conduct roadside vehicle emissions tests. Participating local authorities can issue fixed penalties (£60) to drivers whose vehicles are found exceeding current emissions limits. The wish to avoid the penalty is intended to encourage all motorists to have their vehicles properly and regularly serviced and maintained.

Voluntary emissions testing days undertaken by Charnwood Borough Council in September 2006 indicated that of 97 vehicles tested, 6 (namely 6.2%) failed the test and would have been liable for such a penalty had compulsory testing been in force. Of 107 motorists who were canvassed during the voluntary testing exercise, 93 (86.9%) were supportive of compulsory emissions tests, 6 (5.6%) opposed compulsory testing and 8 (7.5%) were unsure.

Compulsory emissions' testing has been used elsewhere in the Country, although more as an awareness raising exercise than a concerted regulatory tool. The failure rates in Charnwood's emission testing days is representative of the failure rates experienced in compulsory test exercises elsewhere.

Objective	To target and improve individual vehicles producing excessive emissions
Responsibility	CBC
Air Quality Impacts	LOW to MEDIUM. Only a concerted campaign is likely to result in noticeable air quality improvements. Individual, profile raising roadside testing days may ensure improvements in a handful of vehicles but are unlikely to be a sufficient incentive for all vehicle owners to carry out regular engine maintenance in order to avoid a fine.
Non Air Quality Impacts	Positive: Improved profile of air quality issues, marginal improvements to vehicle fleet resulting in reduced carbon emissions and fuel costs. Potential tie in with Police over road tax & insurance evasion. Negative: Potential impacts on low income groups owning older vehicles
Perception	Positive. Testing to statutory standards ensures that the 'polluter pays'
Cost-effectiveness & Feasibility	Occasional enforcement exercises are relatively expensive (circa £5 to 10K per day), do not identify significant numbers of non-compliant vehicles and are likely to be of limited impact. Concerted exercises will be less expensive per exercise but of greater total cost and likely to have a more tangible impact. Overall it is not considered a cost effective option.

Option 14: Implementation of a fixed penalty notice for stationary vehicles leaving engines running

The Road Traffic (Vehicle Emissions)(Fixed Penalty) (England) Regulations 2002 permit all English local authorities to take action against drivers who leave their vehicle engines running 'unnecessarily' when parked. The local authority can issue a fixed penalty (£20) to any driver blatantly running their engine unnecessarily and who refuses all reasonable requests to switch off. DEFRA have stated the opinion that the wish to avoid the fixed penalty should encourage everyone to co-operate and it is likely that very few fixed penalties will need to be issued.

This power could most sensibly be used in small areas such as Loughborough High Street where monitoring results far exceed the modelling predictions. This may in part be due to the canyon-like structure of the street environment here, but is more likely due to congested traffic and parked vehicles.

In a consultation exercise with motorists attending voluntary vehicle emissions testing days in Charnwood, 87 (82%) supported the use of such powers, although many voiced concern that the power should be used sensibly. 12 (11.3%) opposed the power and 7 (6.7%) were undecided. Some other commonly held views that were expressed by motorists when asked to expand on their thoughts. One was that it was common sense to turn off engines, from a financial perspective if for no other reason. Another was that a fine was an excessive response but that it is entirely sensible for drivers to be encouraged to turn off their engines. Finally, about 10% of those canvassed also expressed concern about emissions from parked buses and sought some action to reduce emissions from these.

The use of the power has been discussed with the Director of Culture and Leisure with specific reference to the empowerment of members of the newly formed Street Management Team to enforce the Regulation. Given the already huge new burden of statutory roles for this Team arising from the Cleaner Neighbourhoods Act it is not currently considered practical to include this as a further responsibility at the current time.

Objective	To prevent unnecessary emissions from all forms of parked vehicles
Responsibility	CBC
Air Quality Impacts	MEDIUM to HIGH. Only a concerted campaign is likely to result in changes of behaviour and therefore noticeable air quality improvements.
Non Air Quality Impacts	Positive: Potential reduction in illegal parking Negative: If used insensitively and unnecessarily it is likely to alienate local residents and businesses. Drivers who were consulted preferred a softer, more persuasive approach.
Perception	Positive
Cost-effectiveness & Feasibility	Low cost if linked to other street management enforcement functions, although due to insufficient capacity at the moment this is not considered a cost effective option

Option 15: Introduction of a car scrapping scheme

Car scrapping schemes are intended to provide financial incentives for owners of older, more polluting vehicles within the transport fleet to remove their vehicle from the road with either subsidies for new vehicles or reduced public transport costs. In theory they can be used to focus on particular areas where air quality is poor or information suggests that the vehicle fleet is in a poorer condition.

Objective	To reduce emissions from older vehicles
Responsibility	CBC / LCC
Air Quality Impacts	LOW. The modelling data used for the source apportionment assessment in part 2.3 of this report suggest that car emissions are a relatively small contributor to the air quality objective breaches in the AQMAs.
Non Air Quality Impacts	Positive: None Negative: None
Perception	Mixed
Cost-effectiveness & Feasibility	Poor. The scheme would require significant research to establish the likely market and is unlikely to have a significant impact in a population as small as that in Charnwood. Viable schemes are only likely in large metropolitan areas.

Syston AQMA

The designated AQMA in Syston includes approximately 50 properties with facades very close to the Melton Road. Traffic flows along this section of road are currently low (about 11 to 17,000 vehicles per day) but subject to congestion, in part associated with on-street parking and peak time vehicle movements.

A number of the proposals contained in the potential options for Loughborough also apply to the Syston AQMA. However in addition to this are the following options specific to Syston.

Option 16: Improvements to improve traffic flow on the Melton Road

Objective	To reduce congestion along Melton Road via improved traffic measures and control of on street parking
Responsibility	LCC

Air Quality Impacts	Not quantified but expected LOW to MEDIUM.
Non Air Quality Impacts	Positive: Reduced levels of noise to residents along Melton Road.
Perception	Positive improvement to environment for residents in Syston.
Cost-effectiveness & Feasibility	Not appraised within LTP2

Option 17: Signalisation of A46 junction (Hobby Horse roundabout)

The signalisation of the A46/A607 junction at the Hobby Horse roundabout formed a part of a Government targeted programme of road improvement involving enlarging the existing roundabout, adding entry lanes and improved alignments, and full time signal control at three locations. The scheme was included in the draft AQAP and was completed by the Highways Agency in mid 2006.

Great Central Railway AQMA

Air quality problems in the vicinity of the GCR are associated with emissions from the engineering shed when the steam locomotives are 'fired up' each day in order to bring them into operational service. The process takes around 3 hours during which time the dispersion characteristic of the plume is limited due to low temperatures and below-optimum combustion. The nearest properties are within 20 metres. The Council will pursue options to improve emissions at the engineering shed, in consultation with GCR.

Option 18: Improve quality of coal used during 'firing up' process

The emissions of sulphur dioxide are directly proportional to the sulphur content of the coal that is used. Improving the quality of the coal used during 'firing up' would reduce the sulphur content and emissions of sulphur dioxide. An initial assessment of reducing the sulphur content from 1.6% (currently used) to 0.27% has been carried as part of the Round 2 Detailed Assessment. This indicates that the area predicted to exceed the objective for the 99.9th percentile of 15-minute means would be reduced from 0.63km³ to 0.04km³, and the number of dwellings exposed reduced from approximately 400 to 70.

Objective	To reduce the sulphur content of coal used during firing up.
Responsibility	CBC/GCR
Air Quality Impacts	Reduced sulphur content of 0.27% would significantly reduce the impact of the emissions.
Non Air Quality Impacts	Positive: Improved coal quality may also reduce smoke emissions. Negative: None
Perception	N/A
Cost-effectiveness & Feasibility	Cost benefit analysis to be carried out to determine the feasibility of this option, and the potential to reduce the sulphur content further. Feasibility is entirely dependant on the availability of reasonable quality coal. The market for solid fuels is very volatile and is closely linked with international energy prices and demand

from other major users such as power stations.

Option 19: Abate or improve dispersion of emissions

The current system of operation allows the release of unabated emissions that are poorly dispersed. It may be practicable to either abate the emissions or to extract and disperse them more effectively away from the properties.

Objective	To implement abatement or extraction facilities over the engines during firing up
Responsibility	CBC/GCR
Air Quality Impacts	Not quantified, but potentially HIGH depending on the viability of the installation of appropriate abatement equipment. The technical and economic feasibility of installing abatement equipment will need further assessment
Non Air Quality Impacts	Positive: None Negative: None
Perception	Positive. Any form of abatement is likely to be welcomed and will also lead in all likelihood to a reduction in visible smoke emissions
Cost-effectiveness & Feasibility	Options to extract and disperse the emissions away from local properties and/or abate emissions via commercial scrubbing devices to be carried out.

Option 20: Relocate engine sheds

The exposure of residents to short term , high concentrations of SO₂ in the smoke is due to the close proximity of both domestic and commercial premises to the engine sheds. The removal of the source to a less sensitive location will significantly reduce exposure to smoke by the receptors.

Objective	To relocate the engine sheds to a suitable distance from local properties to prevent impact of emissions during firing up
Responsibility	GCR/CBC
Air Quality Impacts	HIGH. This would effectively remove the impact of emissions to an area where public exposure is not relevant.
Non Air Quality Impacts	Positive: Additional benefits due to reduced exposure to noise and other nuisances from engineering operations Negative: Depends on the proposed location for the sheds
Perception	Positive. GCR are very keen on this option
Cost-effectiveness & Feasibility	Relocation of the engine sheds by 2007 is an option highlighted in the GCR Draft Development Strategy 2003-2012. Potential funding via CBC, HLF or EMDA.

Borough-wide Measures to Improve Air Quality

There are a variety of general measures that can be implemented by Charnwood Borough Council, or which the Council can feed into, aimed at improving the air quality.

I. Transport measures

CBC works together with LCC on local transport issues including the implementation of LTP measures in the Borough. This is consistent with objectives set out in the Corporate Plan.

Measure 1: CBC will ensure that the Action Plan measures are co-ordinated with current and future LTP measures and provide LCC with annual progress reports on air quality.

Road Network

The existing road network around Loughborough leads to congestion at a number of existing road junctions off Epinal Way, Derby Road, Nottingham Road, Meadow Lane and Leicester Road. The lack of suitable east-west links increases traffic flows, in particular HGVs, along unsuitable routes.

Measure 2: CBC in association with LCC will evaluate bypass schemes for Loughborough and Syston

Measure 3: CBC in association with LCC will ensure that the Local Development Framework provides policies for suitable access via road network to Dishley Industrial Area and the Meadow Lane-Station area.

Travel Plans

Travel Plans are a general term describing a package of measures tailored to the needs of an organisation to introduce sustainable travel choices and to reduce the reliance on the private car. It involves the development of a set of mechanisms, initiatives and targets that together can enable an organisation to reduce the impact of travel and transport on the environment. This will include the consideration of alternative fuels.

The promotion of travel plan initiatives is a commitment within the Sustainability Strategy (Section 10), which includes the promotion of initiatives within large organisations and SMEs, the implementation of a CBC travel plan initiative, and provision of active support to LCC on school travel plans. Both the Leicestershire and Central Leicestershire LTPs support these initiatives.

Many employers and schools do not fully appreciate the benefits that travel plans may offer, such as the costs of congestion, and improved health.

Measure 4: CBC will work with LCC to develop and implement The Council's Staff Travel Plan in accordance with the LTP Objectives

Measure 5: CBC will continue to work together with LCC to encourage the uptake of Employer and School Travel Plans within Charnwood, via

promotional campaigns, development control, planning decisions and enforcement, and LTP investment.

Cycle and Walking Strategies

Various strategies are in place to improve cycling and walking facilities throughout Leicestershire and increase uptake. The LTPs include objectives for the promotion of safe networks for cycle and pedestrian routes. The Leicestershire LA21 sets an objective to increase levels of cycling to 4 times the 1991 levels by 2020.

Loughborough town centre is well suited to cycling as a principal means of transport, but requires active promotion and the provision of improved facilities. These include well-signed and accessible cycle routes without 'gaps', junction improvements to allow cycle priority.

Walking within the town centre is obstructed in some areas by major roads and junctions that create barriers to pedestrians, perceptions of safety particularly at night in poorly lit areas, and poor pavement surfaces.

Measure 6: CBC will work together with LCC and Charnwood Cycling Consultative Group to review and improve the facilities for cycling within Charnwood and encourage greater uptake by a promotional campaign.

Measure 7: CBC and LCC will work together to ensure that all new developments and schemes are encouraged to provide facilities for cyclists and pedestrians including secure cycle parking facilities and cycle paths where appropriate.

Measure 8: CBC will work together with LCC and Charnwood Pedestrian Consultative Group to review and improve facilities for walking, and encourage uptake by a promotional campaign

Emission Reduction Strategies

Targeted educational and smarter choice campaigns focused on those vehicle categories identified as making the most significant contributions to emissions are likely to provide best value for money. The outcomes from consultations with motorists in September 2006 clearly pointed to education and persuasion as favourable to regulation and compulsion. A common message from motorists was the perception that buses and HGVs emit a disproportionate amount of pollution and that any activity to improve individual vehicle emissions should be focused on these. There is evidence that this is a reasonable assumption. The source apportionment work summarised in part 2.3 of this report suggests that the proportion of emissions from buses and HGVs in all of the Loughborough AQMA are greater than the contribution from cars. There are likely to be positive outcomes in improving air quality by working with specific fleet and vehicle operators in a spirit of partnership and engagement rather than through enforcement means.

Measure 9: CBC will undertake targeted campaigns to promote environmental driving practices with public transport drivers, taxi drivers and HGV fleet drivers.

Measure 10: CBC will use awareness raising techniques to promote positive environmental driving practices and switching off idling engines in areas of relatively poor air quality.

Measure 11: CBC will promote the local use of VOSAs ‘dirty diesel hotline’ to enable public intervention to address poorly maintained HGV fleet operators.

2. Land Use Planning

Section 3 summarises the Borough Local Plan and Corporate Plan strategies that will contribute to improvements in air quality. Whilst the declaration of an AQMA is not intended to restrict all development within that area, it is important that the air quality impacts are adequately determined on an individual and cumulative basis, and where necessary, restrictions or mitigation measures enforced with the developer.

Measure 12: CBC Environmental Services and Development Control will continue to work closely to ensure that air quality is taken into account in the planning process when located in or close to the AQMA or in areas marginally below air quality objectives.

Land use planning has a key role in delivering sustainable transport systems within the area by influencing the location, scale, density, design and mix of development and encouraging alternative modes of travel.

Measure 13: CBC will continue to work together with developers to improve sustainable transport links serving new developments.

The relationships between residential and employment areas can significantly affect the need and mode of travel.

Measure 14: CBC will continue to work together with LCC and developers to identify the potential to reduce the amount of travel and distances travelled between home and work, and provide real travel choice by bus, train, cycle, or on foot. Specific policies will be included within the Local Development Framework.

To provide support to local plan policies, the development of supplementary planning guidance for air quality assessments of developments and, in particular, for development which may impact on an AQMA is recommended in the DEFRA Policy Guidance LAQM.PG(03).

Measure 15: CBC will develop supplementary planning guidance to assist with air quality assessments of development proposals

3. Local Air Quality Management

Climate Change Strategy

The development of a local air quality strategy provides a framework for ensuring the longer-term commitment and support for air quality issues, and is recommended in DEFRA Policy Guidance LAQM.PG(03).

Maintaining links between local air quality actions and actions on climate change will enable related policy areas to be dovetailed, in addition to ensuring consideration of non-transport and transboundary sources on local air quality.

Measure 16: Ensure that future reviews of the climate change strategy are effectively linked with the contents of the AQAP

Air quality monitoring

Air quality monitoring in Charnwood has recently been expanded to provide more accurate information and understanding of air quality within the AQMA areas and further provision of two real time air quality monitors within the Loughborough and Syston AQMAs is committed. The needs for improvements or additions to the monitoring to support the declarations and to monitor any improvement in air quality should be considered as an ongoing task.

Measure 17: CBC will annually review their commitment to local air quality monitoring within the Borough through the Service Delivery Plan to ensure the best quality data is recorded in order to fully assess progress.

Promotion and education

It is important that information on air quality is provided in a clear and accessible way. CBC promote air quality through the Council website and LAQM Review and Assessment Reports are available for viewing.

Measure 18: CBC will make the Action Plan and annual progress reports available on the Website to ensure broad access to the consultation and implementation process.

CBC works in partnership with LCC on local sustainable transport measures and promotional and educational campaigns with communities within the Borough. Proper vehicle maintenance and the adoption of non-aggressive driving styles help reduce fuel consumption, minimise vehicle wear and tear, and ease congestion.

Measure 19: CBC will undertake at least one promotional activity a year to raise the profile of air quality in Charnwood.

Measure 20: CBC will work with LCC to develop promotional activities to encourage fleet operators and members of the public to properly maintain their vehicles and to adopt non-aggressive driving styles.

Measure 21: CBC will investigate the use of vehicle emissions testing as an educational and enforcement tool for cleaning up the vehicle fleet.

4. Energy and domestic emissions

The Energy Policy sets out a range of measures to reduce energy use and emissions within the Borough. Whilst the measures are principally aimed at reducing emissions of CO₂, there is expected to be some small beneficial impact upon NO_x emissions as well.

Measure 22: CBC will continue to promote energy awareness throughout the Borough.

A summary of the proposed Borough-wide measures to improve air quality is provided in Chapter 6.

6. CONSULTATION RESPONSES TO THE AIR QUALITY ACTION PLAN

The consultation exercise consisted of a leaflet drop to all residential properties within the proposed AQMAs (approximately 700) and a letter to 67 stakeholder groups with a summary of the outcomes of the review and assessment. All consultees were invited to comment on the contents of the draft AQAP and specifically:

Did they agree with the way in which the costs benefit analysis had been carried out?

Did they think that the priorities for action were in conflict with other local policies or commitments?

Did they agree with the priorities?

Did they have other ideas for actions not considered as part of the AQAP? and if so how much did they think these ideas would impact on air quality, cost, impact on local sustainability or impact on other policies or commitments.

36 responses were received.

In terms of the comments on the proposals in the draft AQAP, where respondents made reference to the selection and prioritisation of actions, there was support for draft.

A number of suggestions of other actions that should be considered were received. Some of these have been picked up through the climate change strategy, some were included in the Councils consultation response to the original draft of the LTP2 and some have been included for consideration as new options in Chapter 4 of this Action Plan. Specifically these suggestions included:

That all public sector vehicles and contracts for public sector transport contracts require Euro 3 engines & promotion of low emission engines in the local bus fleet.

The use of sin bins for roundabouts on the Epinal Way.

Implementation of a buy back scheme for older, more polluting vehicles.

Increased bus lanes.

More emphasis on green travel plans.

A general speed reduction to 20mph

Limit the traffic access to Leicester Road, Loughborough.

Evaluation of HGV movements in Syston and the use of penalties where the village is used as a rat run. Use of improved road signage to discourage HGVs in Syston

Evaluation of size and type of buses going through Syston.

Implement vehicle emissions testing.

Further consultation took place in September 2006 in relation to the additional options and measures added after the first round of consultations. This consultation involved face-to-face questioning of members of the public attending voluntary vehicle emissions testing days.

The outcome of the consultations is outlined in options 13 & 14.

7. SUMMARY AND APPRAISAL OF THE OPTIONS AND MEASURES IN THE ACTION PLAN

Table 2 Summary of Direct Options for the Action Plan

Option	Description	Organisation responsible	Time	Cost	Funding Commitment	Air quality improvement in AQMA	Receptor Impact	Rank
Loughborough Air Quality Management Area								
1	Loughborough Inner Relief Road	LCC/CBC	MEDIUM	££££	Committed under LTP2 as a major scheme & subject of a separate bid to DfT	HIGH	+	HIGH
2	Improved traffic flow on Epinal Way	LCC	MEDIUM	££ to £££	No direct commitment, but improvements are included within the LTP2 major scheme	MEDIUM to HIGH	+	HIGH
3	Pedestrian preference to Loughborough town centre	LCC	MEDIUM to LONG	££	Committed under LTP2 as a major scheme & subject of a separate bid to DfT	HIGH in parts NEGATIVE elsewhere	-	MEDIUM
4	Parking Control Policies	LCC/CBC	SHORT to LONG	££	Ongoing. See para 7.36 of the LTP2	LOW	+	LOW
5	Improved access for cyclists and pedestrians	CBC/LCC	SHORT	££	Ongoing. See paras 4.70 to 4.82 of the LTP2	LOW	++	LOW
6	Improved bus services and facilities	CBC / LCC and local bus operators	SHORT	££	Ongoing. See paras 4.118 to 4.134 of the LTP2	MEDIUM	++	MEDIUM
7	Bus/rail interchange at Loughborough Station	CBC	SHORT	£	Included as part of the Eastern Gateway project	LOW	++	LOW
8	Development of travel plans for new sites	CBC/LCC	SHORT to MEDIUM	£	Ad hoc through individual organisations and developer contributions	LOW	++	LOW
9	Park and ride scheme for Loughborough	CBC/LCC	MEDIUM to LONG	££££	None. Determined as not feasible in LTP2	LOW	+	LOW
10	Congestion charging	CBC/LCC	LONG	££££	None. Determined as not	MODERATE	-	LOW

					feasible in LTP2	in parts, NEGATIVE elsewhere		
11	Low Emission Zone	CBC/LCC	LONG	£££	None. Determined as low ranking in the LTP2 cost / benefit appraisal	HIGH and LOW	+	MEDIUM
12	Notts Road Link	CBC	MEDIUM	££££	Included as part of the Eastern Gateway project	HIGH	++	HIGH
13	Statutory vehicle emissions testing	CBC	MEDIUM	£ to ££	None	LOW to MEDIUM	++	LOW
14	Fines for stationary idling vehicles	CBC	SHORT	£	None	MEDIUM	++	MEDIUM
15	Car scrapping scheme	CBC	MEDIUM	£££	None	MEDIUM	+	LOW
Syston Air Quality Management Area								
16	Traffic flow improvements on the Melton Road	CBC/LCC	MEDIUM to LONG	£££	None. Not included in LTP2	MEDIUM	++	MEDIUM
17	Signalisation of A46 junction	Highways Agency	MEDIUM	££££	Complete	LOW	++	N/A
Great Central Railway Air Quality Management Area								
18	Improve fuel quality	GCR/CBC	SHORT	£	None	MEDIUM	++	MEDIUM
19	Abate or improve dispersion of smoke	GCR/CBC	SHORT	£	None	HIGH	++	HIGH
20	Relocation of engine sheds	GCR/CBC	LONG	££££	GCR has obtained some funding and materials. CBC are considering leasing a site to GCR	HIGH	++	HIGH

Table 3 Summary of Proposed General Borough-wide Measures to Improve Air Quality

Proposed measure	Description	Organisation responsible	Timescale	Rank
Measure 1	CBC will ensure that the Action Plan measures are co-ordinated with current and future LTP measures and provide LCC with annual progress reports on air quality.	CBC/LCC	SHORT	HIGH
Measure 2	CBC in association with LCC will evaluate a bypass scheme for Loughborough and Syston	CBC/LCC	LONG	LOW
Measure 3	CBC in association with LCC will ensure that the Local Development Framework provides policies for access to Dishley Industrial Area and the Meadow Lane-Station area.	CBC/LCC	SHORT to MEDIUM	HIGH
Measure 4	CBC will work with LCC to develop and implement The Council's Staff Travel Plan in accordance with the LTP Objectives	CBC/LCC	SHORT	MEDIUM
Measure 5	CBC will continue to work together with LCC to encourage the uptake of Employer and School Travel Plans within Charnwood, via promotional campaigns, development control, planning decisions and enforcement, and LTP investment.	CBC/LCC	SHORT	LOW
Measure 6	CBC will work together with LCC and Charnwood Cycling Consultative Group to review and improve the facilities for cycling within Charnwood and encourage greater uptake by a promotional campaign.	CBC/LCC	SHORT	LOW
Measure 7	CBC and LCC will work together to ensure that all new developments and schemes are encouraged to provide facilities for cyclists and pedestrians including secure cycle parking facilities and cycle paths where appropriate.	CBC/LCC	SHORT	HIGH
Measure 8	CBC will work together with LCC and Charnwood Pedestrian Consultative Group to review and improve facilities for walking, and encourage uptake by a promotional campaign	CBC/LCC	SHORT	LOW
Measure 9	CBC will undertake targeted campaigns to promote environmental driving practices with public transport drivers, taxi drivers and HGV fleet drivers.	CBC	MEDIUM	HIGH
Measure 10	CBC will use awareness raising techniques to promote environmental driving	CBC	MEDIUM	HIGH

	practices and switching off idling engines in areas of relatively poor air quality.			
Measure 11	CBC will promote the local use of VOSAs 'dirty diesel hotline' to enable public intervention to address poorly maintained HGV fleet operators.	CBC	SHORT	HIGH
Measure 12	CBC Environmental Services and Development Control will continue to work closely to ensure that air quality is taken into account in the planning process when located in or close to the AQMA or in areas marginally below air quality objectives.	CBC	SHORT	HIGH
Measure 13	CBC will continue to work together with developers to improve sustainable transport links serving new developments	CBC	SHORT	HIGH
Measure 14	CBC will continue to work together with LCC and developers to identify the potential to reduce the amount of travel and distances travelled between home and work, and provide real travel choice by bus, train, cycle, or on foot. Specific policies will be included within the Local Development Framework.	CBC/LCC	SHORT	MEDIUM
Measure 15	CBC will develop supplementary planning guidance to assist with air quality assessments of development proposals	CBC	SHORT	MEDIUM
Measure 16	Ensure that future reviews of the Climate Change Strategy are effectively linked with the content of the AQAP	CBC	MEDIUM	LOW
Measure 17	CBC will continue their commitment to local air quality monitoring within the Borough to ensure a high quality data is recorded in order to fully assess progress	CBC	SHORT	HIGH
Measure 18	CBC will make the Action Plan and annual progress reports available on the Website to ensure broad access to the consultation and implementation process	CBC	SHORT	MEDIUM
Measure 19	CBC will run one promotional event a year to raise the profile of air quality in Charnwood	CBC	SHORT	LOW
Measure 20	CBC will work with LCC to develop promotional activities to encourage fleet operators and members of the public to properly maintain their vehicles and to adopt non-aggressive driving styles	CBC/LCC	MEDIUM	MEDIUM
Measure 21	CBC to investigate initiating vehicle emissions testing	CBC	MEDIUM	MEDIUM
Measure 22	CBC will continue to promote energy awareness throughout the Borough	CBC	SHORT	MEDIUM

8. IMPLEMENTATION AND MONITORING

Following the completion of the consultation on the Action Plan and the emergence of the final version of the LTP2 the proposed actions are as follows.

Leicestershire County Council has committed to options 1,2,3 & 5.

Charnwood Borough Council has committed to options 7 and 12

Leicestershire County Council and Charnwood Borough Council have committed to options 4, 6 and 8

Option 17 has been delivered by the Highways Agency.

The Great Central Railway and Charnwood Borough Council have committed to options 18 and 20

Options 9, 10, 11, 13, 14, 15, 16 and 19 have not been committed to by the relevant agency

Leicestershire County Council have made additional commitments beyond those considered in the draft AQAP which are included in the appendix.

Measures 1, 3, 4, 11, 12, 13, 18, 19, & 22 have been committed to by Charnwood Borough Council

Charnwood Borough Council has committed to measures 9 and 10 subject to bids for funding

Leicestershire County Council has committed to measures 5, 6 and 8

Leicestershire County Council and Charnwood Borough Council have committed to measures 7, 14 and 20

Charnwood Borough Council has completed measures 16, 17 and 21

Measures 2 and 15 have not been committed to.

Charnwood Borough Council will work jointly on the action plan measures with the relevant partners including Leicestershire County Council and the Highways Agency. To secure the necessary air quality improvements there must be involvement by all local stakeholders and the Borough Council will actively work to encourage public participation in the process.

The implementation and effectiveness of the action plan will be monitored through a continued programme of air quality monitoring, together with annual progress reports on the uptake and implementation of all local options measures. The Action Plan will be reviewed and amended in the light of significant new findings in future review and assessments.

GLOSSARY OF TERMS

Abbreviation	Full name
AQMA	Air Quality Management Area
CBC	Charnwood Borough Council
DEFRA	Department for Environment, food and Rural Affairs
DETR	Department for Environment, Transport and the Regions (predecessor to DEFRA and DfT)
DMRB	Design Manual for Roads and Bridges
DoE	Department of the Environment (predecessor to DETR)
HDV	Heavy duty vehicles
LA21	Local Agenda 21
LAQM	Local air quality management
LDV	Light duty vehicles
LTP	Local Transport Plan
NAQS	National Air Quality Strategy
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NSCA	National Society for Clean Air
PM ₁₀	Fine particle matter less than 10µm diameter
µg/m ³	Micrograms per cubic metre
LCC	Leicestershire County Council

REFERENCES

- Charnwood Borough Council (2004) Stage 4 Review and Assessment Report.
- Charnwood Borough Council Round 2 Updating and Screening Assessment (2003).
- Charnwood Borough Council Round 2 Detailed Assessment (2004).
- Charnwood Borough Council Air Quality Progress Report (2005)
- Charnwood Borough Council Round 3 Updating & Screening Report (2006)
- DOE (1997) The United Kingdom Nation Air Quality Strategy, The Stationery Office
- DETR (2000) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland – Working together for Clean Air, The Stationery Office
- DETR (2000) The Air Quality Regulations 2000, The Stationery Office
- DEFRA (2002) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland: Addendum, The Stationery Office
- DEFRA (2003) Policy Guidance LAQM.PG(03)
- NSCA (2000) Air Quality Action Plans
- NSCA (2001) Air Quality: Planning for Action
- Highways Agency (2003) The Role of The Highways Agency in Local Air Quality Management (draft)
- Leicestershire County Council (2000) Central Leicestershire Local Transport Plan 2001 – 2006
- Leicestershire County Council (2000) Leicestershire Local Transport Plan 2001 – 2006
- Forum for a Better Leicestershire (1998) *Ways Forward for a Better Leicestershire – Leicestershire’s Local Agenda 21*.
- Charnwood Borough Council Local Agenda 21 Strategy

APPENDIX

Summary of the air quality options cost benefit analysis within Chapter 8 of the LTP2.

Table 7.4 Potential options evaluated for the Loughborough Air Quality Action Plan

Level 4: >2µg/m³ Level 3: 1-2µg/m³ Level 2 is 0.2-1µg/m³ Level 1: <0.2 µg/m³
 Cost 1: >£1m Cost 2: £500K - £1m Cost 3: £100K - £500K Cost 4: <100K

Option description	Lead authority	AQ impact	Non-air quality impact	AQ Rank
		Timescale Cost		
1. Loughborough Inner Relief Road to divert traffic away from A6 in town centre	County Council	Level 4 2 to 5 yrs Cost 1	Regeneration of town centre with fewer road casualties	4x1=4
2. Signing or town centre restrictions to divert traffic from A6 onto Epinal Way	County Council	Level 3 - -	Not feasible on its own. (effectively now part of LTP major scheme)	-
3. Town centre vehicle restrictions to pedestrianise A6 and other streets	County Council	Level 1 - -	Not feasible on its own. (effectively now part of LTP major scheme)	-
4. Fewer parking spaces or higher charges to restrain car access to work or shops	Charnwood Borough	Level 2 2 to 5 yrs Cost 3	Possible negative effect on town centre regeneration	2x3=6
5. Network of pedestrian and cycle routes to reduce car use	County Council	Level 2 2 to 5 yrs Cost 2	Less traffic growth and congestion. (main LTP proposal for cycling)	2x2=4
6. Stronger Quality Bus Partnership to improve bus services and facilities	County Council	Level 2 0 to 2 yrs Cost 3	Less traffic growth and congestion. (main LTP proposal)	2x3=6
7. Improved interchange at railway station as part of station yard redevelopment	Charnwood Borough	level 2 2 to 5 yrs cost 4	Regeneration of area around railway station	2x4=8
8. Continuing requirement for workplace travel plans with new developments	Charnwood Borough	Level 2 0 to 2 yrs Cost 4	Less traffic growth and congestion. (main LTP proposal)	2x4=8
9. Development of a park and ride scheme for Loughborough	County Council	Level 2 - -	Not feasible – included for comparison purposes only	-
10. Reduce vehicle access to town centre by congestion charging (hypothetical)	County Council	Level 1 - -	Not feasible – included for comparison purposes only	-
11. Cleaner vehicles in central area with a Low Emission Zone	County Council	Level 1 5 to 10 yrs cost 2	None subject to completion of Option 1	1x2=2
12. New link road through railway station yard to divert traffic from Ratcliffe Road	Charnwood Borough	Level 4 2 to 5 yrs Cost 1	Regeneration of area around railway station and better environment	4x1=4
13. Work through Quality Bus Partnership to reduce bus emissions	County Council	Level 4 0 to 2 yrs Cost 4	Newer buses attracting more patronage, less noise from engine idling	4x4=16
14. 7.5 tonne weight limit to divert lorries away from A6 through town centre	County Council	Level 3 0 to 2 yrs Cost 4	Negative impact on diversionary routes and increased distances	3x4=12
15. Land-use planning for no unnecessary additional traffic through town centre	Charnwood Borough	Level 2 2 to 5 yrs Cost 4	Less traffic/congestion and health benefits of walking and cycling	2x4=8

Option description (continued)	Lead authority	AQ impact	Non-air quality impact	AQ Rank
		Timescale Cost		
16. Network management for road works, incidents and planned events	County Council	Level 1 0 to 5 yrs Cost 4	Less congestion and improved environment and economy	1x3=3
17. Increasing travel by train with bus connections to town centre and key destinations	County Council	Level 1 0 to 5 yrs Cost 4	Less traffic/congestion and improved viability of public transport network	1x4=4
18. Increasing bus travel through work of Quality Bus Partnership	County Council	Level 1 0 to 5 yrs Cost 4	Less traffic/congestion and improved viability of public transport network	1x4=4
19. School travel planning with investment in walking and cycle routes	County Council	Level 1 0 to 5 yrs Cost 4	Less traffic/congestion and health benefits of walking and cycling	1x4=4
20. Investment in cycle route network to reach all parts of Loughborough	County Council	Level 2 0 to 5 yrs Cost 2	Less traffic/congestion and health benefits of increased cycling	2x2=4
21. Smarter Choices and promotion building on workplace travel plans	County Council	Level 1 0 to 5 yrs Cost 4	Less traffic/congestion and health benefits of walking and cycling	1x4=4
22. Better vehicle use of roadspace for less disruption to free-flowing traffic	County Council	Level 1 0 to 5 yrs Cost 4	Less congestion and improved environment and economy	1x4=4

