



Air Quality Action Plan

An addendum to the Warwickshire County Council Local
Transport Plan 2006 - 2011

Rugby Borough Council
March 2008

Version 1.0

Environmental Services,
Rugby Borough Council
The Retreat,
Newbold Road,
Rugby,
CV21 2LG

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Executive Summary

"Clean air is an essential ingredient for a good quality of life. People have the right to expect the air they breath will not harm them."

The Air Quality Strategy for England, Scotland Wales and Northern Ireland

The quote above underlines the Government's stance on air pollution and health. Poor air quality, caused by air pollution, impacts on people's health. Rugby Borough Council is legally responsible for introducing actions that will improve air quality in areas of the Borough where air pollutant concentrations are above UK objectives and thereby improve the health of the people of Rugby Borough. Positive action to improve air quality via Rugby's Air Quality Action Plan (AQAP) will work towards improving quality of life in Rugby Borough and contribute towards a healthier and more sustainable community.

The urban area of Rugby town and Dunchurch, which had been found to be likely to have poor air quality, have been designated as an Air Quality Management Area (AQMA).

Pollution in the AQMA is due to a gas called nitrogen dioxide, which is produced when fossil fuels are burned. Exposure to nitrogen dioxide enhances the response to allergens in sensitive individuals such as those with asthma or bronchitis and there is evidence that hospital admissions of people with respiratory diseases are related to concentrations of nitrogen dioxide. UK work has also shown that nitrogen dioxide may increase the prevalence of respiratory infections in children. Because the presence of nitrogen dioxide is closely linked to the formation or presence of other air pollutants, it is not yet entirely clear whether long-term exposure to relatively low concentrations has other health impacts.

The main source of nitrogen dioxide in the UK is road traffic and pollution often occurs where there is traffic congestion. Investigations in Rugby show that this source is the main cause of nitrogen dioxide within the AQMA. Therefore the actions outlined in the Action Plan, which were

developed by a steering group involving key local stakeholders and staff from various Rugby Borough Council services and Warwickshire County Council, are mainly transport related. Actions are listed under the following headings:

1. Specific proposals for the AQMA
2. Non-specific proposals for general improvement of air quality in the Borough
3. Reducing vehicle emissions
4. Alternative transport modes/ policies
5. Non-transport measures

Warwickshire County Council is the local highway authority, and as such is responsible for delivering the Government's Shared Priorities for Transport, these being:

- Delivering accessibility;
- Tackling congestion;
- Improving air quality; and
- Making roads safer.

Officers from the Borough Council have liaised closely with transport planners from Warwickshire County Council's Environment and Economy Directorate to incorporate the Air Quality Action Plan for the Rugby Borough AQMA into the Warwickshire County Council Local Transport Plan 2006-2011 (LTP).

The principal action proposed by the LTP is the construction of the Rugby Western Relief Road. Funding and the necessary planning approvals have now been obtained and work to build the scheme began in mid-2007. The Further Assessment carried out by Rugby Borough Council's air quality consultants, Faber Maunsell, has indicated that these works will be sufficient to reduce nitrogen dioxide levels within the AQMA to below the national air quality objective. However, it was clear that additional works were required to comply fully with Government guidance on action plans. The aim of this addendum is to complement the LTP and address the required air quality action plan guidance requirements not met specifically in the LTP.

The Government considers air quality to be a corporate issue for local authorities and it is recognised that to improve air quality Action Plans must have the support of the whole of the Borough Council, County Council, local public and businesses and other stakeholders. This consultation document seeks the views of these stakeholders.

Comments on the Air Quality Action Plan should be sent to:

Anthony Devonish,
Technical Officer-Air Quality and Contaminated Land,
Environmental Services,
Rugby Borough Council,
Town Hall,
Rugby,
CV21 2LG
01788 533856
poc@rugby.gov.uk

1 INTRODUCTION

1.1 Legislation for Air Quality Management

Part IV of the Environment Act 1995 laid the foundations for air quality management in the UK through the implementation of the National Air Quality Strategy (NAQS). The Strategy aims to protect human health and the environment by setting objectives and standards for eight pollutants, which are known to be harmful to human health.

Part IV of the Environment Act 1995 also introduced the concept of Local Air Quality Management (LAQM), whereby all local authorities are required to review the air quality within their area and assess it against the objectives specified for the pollutant of concern. Seven of the pollutants are managed through LAQM. The national air quality objectives for LAQM which apply to Rugby Borough are shown in Table 1.

If, on the basis of its assessment, the local authority finds that an air quality objective is unlikely to be met in any part of its area, then under Section 83(1) of the Environment Act, 1995 an Air Quality Management Area (AQMA) must be declared. The local authority is then required to submit, within a period of twelve to eighteen months of declaring an AQMA, an Action Plan in the pursuit of the achievement of the air quality standards and objectives. In addition, under Section 84(1) of the Environment Act, 1995 the Council must produce a Further Assessment within 12 months of the declaration of its AQMA, which contains information on the level of exceedence and the sources of the pollutant in question.

The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, published by Defra, in July 2007, has not introduced the new particle objectives included in Regulations described in Table 1. Instead, the indicative 2010 objectives for PM₁₀ (from the 2000 Strategy and 2003 Addendum) have been replaced by an exposure reduction approach for PM_{2.5} (except in Scotland).

Pollutant	Objective	Measured as	To achieved by
Benzene	16.25 µg/m ³	Running annual mean	31 December 2003
	5 µg/m ³	Annual mean	31 December 2010
1,3-Butadiene	2.25 µg/m ³	Running annual mean	31 December 2003
Carbon Monoxide	10 mg/m ³	Running 8 hour mean	31 December 2003
Lead	0.5 µg/m ³	Annual mean	31 December 2003
	0.25 µg/m ³	Annual mean	31 December 2008
Nitrogen Dioxide ^c	200 µg/m ³ not to be exceeded more than 18 times per year	1 hour mean	31 December 2005
	40 µg/m ³	Annual mean	31 December 2005
Nitrogen Oxides ^{**}	30 µg/m ³ (V)	Annual mean	31 December 2000
Particles (PM ₁₀) (gravimetric) ^d	50 µg/m ³ Not to be exceeded more than 35 times per year	24 hour mean	31 December 2004
	40 µg/m ³	Annual mean	31 December 2004
Sulphur Dioxide	266 µg/m ³ Not to be exceeded more than 35 times per year	15 Minute Mean	31 December 2005
	125 µg/m ³ Not to be exceeded more than 3 times per year	24 Hour Mean	31 December 2004
	20 µg/m ³ (V)	Annual Mean	31 December 2000
	20 µg/m ³ (V)	Winter Mean (01 October - 31 March)	31 December 2000
<p>c. The objectives for nitrogen dioxide are provisional. d. Measured using the European gravimetric transfer sampler or equivalent. µg/m³ - micrograms per cubic metre mg/m³ - milligrams per cubic metre *Ozone is not included in the Regulations ** Assuming NO_x is taken as NO₂ (V) These standards are adopted for the protection of vegetation and ecosystems. All of the remainder are for the protection of human health.</p>			
New particle objectives not included in Regulations			
Particles (PM ₁₀)	50 µg/m ³ not to be exceeded more than 7 times per year	24-hour Mean	31 December 2010
	20 µg/m ³	Annual Mean	31 December 2010

TABLE 1: UK AIR QUALITY OBJECTIVES APPROPRIATE TO RUGBY BOROUGH

1.2 Air Quality Review and Assessment in Rugby Borough

Rugby Borough Council has completed the required 3 rounds of Review and Assessment of air quality in its area between 1998 and 2006. This has consisted of the stages described below:

Round 1 comprised 2 stages between 1998 and 2001. **Stage 1 (Review and Assessment)** involved the identification of the main sources of air pollution within and around Rugby Borough, reviewing the levels of air pollutants for which prescribed standards and objectives have been set, and estimating the likely future levels.

Stage 2/3 required the local authority to provide further screening of pollutant concentrations within the area to assess whether the air quality objectives would be achieved by the target date and a more complex assessment of monitoring and modelling which in Rugby Borough identified no exceedances of national air quality objectives.

Round 2 was completed between 2003 and 2006 and the Government changed the format of reporting slightly. The first report of this round was an **Updating and Screening Assessment** (USA) that was completed in 2003.

Following on from the 2003 USA, the **Detailed Assessment** involved an accurate and detailed assessment of current and future air quality. The assessment identified that annual average levels of NO₂ were at risk of being exceeded on a number of major roads in the centre of Rugby town and in Dunchurch and that led to the declaration of Rugby's AQMA in 2004.

During the assessment, a risk of exceedance of the PM₁₀ national air quality objectives was identified because of emissions (stack, low level point source and fugitive) from the Cemex cement plant in Rugby. A **Detailed Assessment of Particulate Matter** was completed in 2005 which predicted that the national air quality objectives for PM₁₀ would be met.

The Further Assessment required the local authority to undertake further detailed monitoring of the air quality within the AQMA's in order to confirm that the decision to declare the areas as AQMA's was justified. The Further Assessment also involves calculation of how great an improvement is needed for each pollutant where there is an exceedance and consideration of

the extent to which different sources contribute to the problem. The Further Assessment was undertaken in respect of the AQMA and was completed in December 2005. It was subsequently amended following comments received by DEFRA, the amended version being published in February 2006. This identified that only one property in the Borough was likely to be exposed to levels above the national air quality objective and that decreasing NO₂ emissions and the then planned Rugby Western Relief Road would result in compliance within 2 years.

Round 3. Review and assessment is an ongoing process and the recent Updating and Screening Assessment (2006) concluded that there are a number of locations where there is a risk of exceeding the nitrogen dioxide annual mean objective, but as the Further Assessment had been completed in February 2006, a Detailed Assessment was not required.

The next round is due to start in 2009.

1.3 The Air Quality Action Planning Process

Action planning is an essential part of the local air quality management process, providing a practical opportunity for improving air quality in areas where review and assessment has shown that national measures will be insufficient to meet one or more of the air quality objectives. According to guidance published by DEFRA (LAQM PG (03)), an Air Quality Action Plan must contain the following:

- Quantification of the source contributions to the predicted exceedences of the objectives (to allow the measures to be targeted).
- 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 relevant air quality objectives.
- Clear timescales within which the authority and other organisations propose to implement the measures contained in the plan.
- Quantification of the expected impacts of the proposed measures and, where possible, an indication as to whether these will be sufficient to ensure compliance with the objectives.

- How the Local Authority intends to monitor and evaluate the effectiveness of the plan.

This Guidance has been observed during the production of this addendum to the LTP.

The National Society for Clean Air and Environmental Protection (NSCA) has also issued informal guidance on action planning. This recommends processes to follow for formulating options, evaluating then prioritising the measures proposed. This guidance has also been observed in the production of this document.

2 RUGBY BOROUGH AND AIR POLLUTION

2.1 Rugby

Air quality differs greatly both spatially and temporally because pollutants are influenced by a variety of factors including source location, topography and meteorology. Pollutants in urban areas arise from a wide variety of sources, predominantly as a result of combustion processes. The largest source of pollution is generally motor vehicles, and to a lesser extent industry.

The majority of the urban area of Rugby town is classed as a smoke control area making it an offence under the Clean Air Act 1993 to emit smoke from a chimney caused by the burning of unauthorised fuel or use of an unauthorised appliance.

Rugby Borough Council has a total of 26 significant industrial installations from an air pollution perspective operating within its boundaries. This includes one Part A2 process for the manufacturing of drinks cans which involves solvent based coating processes. In addition there are 13 minor installations (petrol filling stations and small waste oil burners). Each process / installation is regulated under the Pollution Prevention and Control (England and Wales) Regulations 2000. The processes / installations are regularly inspected by the Rugby Borough Council Regulatory Services unit (formerly Environmental Health) to ensure they are controlling their emissions to atmosphere. Rugby Borough also has 6 of the more significant Part A1 installations that are regulated and inspected by the Environment Agency under the Pollution Prevention and Control (England and Wales) Regulations 2000.

The main pollutants of concern in Rugby Borough, as in most urban areas of the UK, are associated with road traffic, in particular NO₂ and particulate matter at locations near to busy, congested roads where people may live, work or shop. Local knowledge and the Updating and Screening Assessments have identified areas where UK objectives may be exceeded. This has led to the declaration of the current AQMA that is considered in this addendum to the LTP.

2.2 Reasons for Air Quality Action Planning In Rugby Borough

The first, second and third rounds of the Review and Assessment process have demonstrated that Rugby should not have any problems in meeting the UK air quality objectives for the majority of pollutants by the required dates due to the implementation of national measures. Therefore there is no requirement to impose any local measures for these pollutants.

However, the annual mean objective for NO₂ is still exceeded in the town's AQMA after the target date of 2005. Therefore Rugby Borough Council is required to submit an Action Plan to try to reduce concentrations of NO₂ in these areas.

The annual mean objective for nitrogen dioxide applies to areas where members of the public might regularly be exposed; building facades of residential properties, schools, hospitals, libraries etc. It does not generally apply to places of work, gardens of residential properties or kerbsides.

2.3 Nitrogen Dioxide and Oxides of Nitrogen

2.3.1 What is Nitrogen Dioxide?

Nitrogen dioxide (NO₂) is a reddish-brown gas with a pungent and irritating odour. It transforms in the air to form gaseous nitric acid and toxic organic nitrates. NO₂ also plays a major role in atmospheric reactions that produce ground-level ozone, a major component of photochemical smog. Smog can sometimes be seen as a brown haze on sunny days. It is also a precursor to nitrates, which contribute to increased respirable particle levels in the atmosphere and hence contributes to PM₁₀ concentrations. Nitrates are also responsible for significant damage to ecosystems and vegetation.

2.3.2 Health Impacts of Nitrogen Dioxide

Exposure to NO₂ enhances the response to allergens in sensitive individuals such as those with asthma or bronchitis and there is evidence that hospital admissions of people with respiratory diseases are related to concentrations of nitrogen dioxide. Research in the UK has also shown that nitrogen dioxide may increase the prevalence of respiratory infections in children.

Because the presence of NO_2 is closely linked to the formation or presence of other air pollutants, it is not yet entirely clear whether long-term exposure to relatively low concentrations of NO_2 itself can affect mortality or disease progression. Because adverse effects have been observed within a range that includes the current annual WHO (World Health Organisation) guideline value for NO_2 , it is recommended to maintain or lower that value. The UK air quality objectives are in-line with current WHO guidelines.

2.3.3 Sources of Nitrogen Dioxide

Oxides of nitrogen (NO_x) are produced when fossil fuels are burned in air and are mainly composed of nitric oxide (NO) and nitrogen dioxide (NO_2). The greatest source of NO_x is road transport. Power stations, industry and domestic properties are also sources.

When NO_2 is released directly during combustion it is known as a primary emission. However the major component of NO_x emitted during combustion is NO. NO then reacts with ozone (O_3) to form NO_2 . This source of NO_2 is known as a secondary emission.

In urban areas concentrations of NO_x have been decreasing since the early 1990's largely due to reduced emissions from road traffic. However in recent years, in urban areas the levels of NO_2 have not been decreasing as expected and in some areas concentrations of NO_2 have been increasing. The Air Quality Expert Group (AQEG) have reported that this is due to an increase in the number of diesel vehicles, which have been found to emit a greater proportion of NO_2 as a primary emission than originally predicted. Retrofitting of diesel particulate filters has been found to substantially increase the emission of primary NO_2 from buses.

The rate at which NO_2 is formed from NO is proportional to the ambient temperature and the availability of other reactants, including ozone and hydrocarbons. Whenever high levels of NO_x are present, the conversion of NO to NO_2 is rate limited if other chemicals are not present. Thus, in the summer, the chemical reactions are faster so that at low pollution concentrations, more than 80% of the NO_x might consist of NO_2 . In the winter, the chemical reactions are much slower so that at high pollution concentrations in particular, perhaps only 20% of the NO_x consist of NO_2 . The overall effect of the atmospheric chemistry is to have a reserve of NO in the atmosphere so that a reduction in the levels of NO_x does not produce a proportionate reduction in the levels of NO_2 .

3 RUGBY'S AIR QUALITY MANAGEMENT AREA

3.1 Rugby Borough AQMA

The Detailed Assessment of June 2004 had identified that traffic pollution in the centre of the urban area of Rugby town was likely to result in an exceedance of the nitrogen dioxide annual mean air quality objective. The Council recommended in the report that an air quality management area should be declared for nitrogen dioxide and DEFRA, following consultation, agreed with this recommendation.

The Council made an order under the Environment Act 1995 on 16th December 2004. Councillors had considered a number of options regarding the extent of the AQMA from individual properties to the whole of the urban area of the town. Because of the limited number of north-south routes in Rugby town and the proposed Rugby Western Relief Road, they decided that strategically the AQMA should cover the whole of the urban area of Rugby town because any action to control traffic or pollution could have a significant effect on other parts of the town.

The extent of the AQMA is shown in Figure 1.



Boundary

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Figure1: map of the Rugby AQMA

This urban area of Rugby town and Dunchurch have been declared an AQMA for strategic purposes, but the main roads affected are Newbold Road (from the Avon Mill roundabout), Corporation Street and the Warwick Street gyratory system, and roads leading off these roads, mainly Oliver Street, Lawford Road, Bilton Road and Dunchurch Road. This is due to the high traffic flows that occur within the town centre, particularly in the north/south and east/west corridors. The Rugby Western Relief Road, which is currently in the process of being constructed, was originally planned to link major areas of development proposed in the Rugby Borough Local Plan at Cawston, Swift Valley and Coton Park. The road will also assist in reducing the impact of traffic within the town centre, and to providing an alternative route for through traffic.

The Further Assessment considered air quality both with and without the Rugby Western Relief Road. The overall conclusions were:

- *It is likely that the UK National Air Quality objectives for NO₂ and PM₁₀ will be met throughout the vast majority of the Borough.*
- *An exceedance of the NO₂ annual mean objective is predicted by the model at one sensitive receptor, the William Webb Ellis pub (2005: 41.2 µg/m³). Less than ten people would be regularly exposed (i.e. are resident at this location). It is expected that the air quality objectives will be met at this location within 2 years. No other sensitive locations were predicted to experience concentrations in 2005 above the annual mean objective.*
- *A reduction in the NO₂ 2005 annual mean of 1.2 µg/m³ is required to meet the annual mean objective at the at William Webb Ellis pub.*
- *It is advised that the Council consider retaining the existing AQMA for NO₂.*

For the impact on air quality of the Rugby Western Relief Road the assessment concluded that *'The RWRR was predicted to have a beneficial impact on local air quality; ambient concentrations are predicted to drop significantly on several main routes in Rugby. These tend to be areas where there is a high density of sensitive receptors. Whilst concentrations will rise along the route of the RWRR and a number of other links, fewer sensitive receptors will be affected.'*

NO₂ is monitored by diffusion tubes at 23 locations in the Borough, but three sites are in the centre of the Rugby town where concentrations are highest. These locations are outside the Council Offices (Newbold Road), the Webb Ellis public house (Corporation Street) and 15 Oliver Street. The annual mean bias corrected diffusion tube results for 2003 to 2006 were Council Offices 43.3 µg/m³ 2003, 46.5µg/m³ 2004, 36.7µg/m³ 2005 and 34.1µg/m³ 2006, Webb Ellis public house 40.3µg/m³ 2003, 48.8µg/m³ 2004, 41.6µg/m³ 2005 and 38.0µg/m³ 2006, 15 Oliver Street 39.3µg/m³ 2003, 42.5µg/m³ 2004, 35.6µg/m³ 2005 and 33.4µg/m³ 2006. In addition, air quality is monitored by an automatic monitoring station on Newbold Road (in front of the police station). The annual mean NO₂ data are 39.1µg/m³ 2003, 35.3µg/m³ 2004, 35.1µg/m³ 2005, 35.7µg/m³ 2006. The objective for NO₂ is 40µg/m³ as an annual mean, to be met by 31st December 2005.

In the Council's ***Air Quality Progress Report and Action Plan Progress Report***, April 2007, predicted levels of NO₂ were determined for 2007 and 2010 using the approach specified in the Guidance *LAQM TG (03) Review and assessment of nitrogen dioxide*, box 6.4. Locally determined bias adjustment factors were used, as triplicate diffusion tubes are co-located with an air quality monitoring station at Webb Ellis Road, Rugby, rather than the general bias correction factors from Harwell Scientific. The predicted levels are Council Offices 33.0µg/m³ 2007, 29.5µg/m³ 2010, Webb Ellis public house 36.8µg/m³ 2007, 32.9µg/m³ 2010 and 15 Oliver Street 32.3µg/m³ 2007, 28.9µg/m³ 2010.

4 SOURCE APPORTIONMENT FOR OXIDES OF NITROGEN

Source apportionment is used to show what proportion of NO_x is contributed by different sources. This is shown for within the AQMA and allows the major sources of oxides of nitrogen to be targeted in the action plan. This section is a review of the Further Assessments for the AQMA which have been accepted by DEFRA and details of modelling methodology can be found in these documents. Source apportionment modelling was undertaken by the Council's air quality consultants, Faber Maunsell.

It must be remembered that this modelling was based on the information available at the time of the original assessments and that data up to and including the 3rd quarter of 2005 were used. As noted in section 2.1.3 there is now evidence that diesel vehicles are emitting higher proportions of nitrogen dioxide to nitrogen oxides than was previously thought.

4.1 Overview of Rugby

A source apportionment study was carried out at certain representative sensitive receptors to determine the contributions made by cars, HGVs, the Cemex site (large cement plant in Rugby town), and background sources, to the predicted NO_x and PM₁₀ concentrations. Five receptors were chosen; one is near to the Cemex site on Lawford Road; one is on Newbold Road where high concentrations are predicted; one is on Bilton Road, a busy A road leading into Rugby; one is on Parkfield Road, a less busy road to the north of the Cemex site; and one is at the William Webb Ellis Pub where the highest concentrations were predicted. The results of the study are presented in Table 2.

Receptor No. / Area		NO _x % Contribution			
		Cars	HGVs	Cemex	Background
9	Bilton Road, Bilton	19	28	1	53
19	Newbold Road (Lancaster Road)	19	42	1	38
34	Parkfield Road, Newbold on Avon	8	8	2	82
41	Lawford Road, New Bilton	19	21	0	60
35	William Webb Ellis Pub, (Central gyratory)	26	39	1	35

Table 2: Source Apportionment Study Results (2004)

For NO_x, the contribution made by the Cemex site was predicted to be small (less than 2%) for all four sites. At receptor 19 and 35, HGVs were assessed to be the greatest contributor (42% & 39% respectively) to the total concentration. At the other receptors, background sources were assessed to be the greatest contributors. Parkfield Road is the least busy of the four areas chosen, and hence background sources contribute 82% to the total concentration.

The Cemex site is more significant with regard to PM₁₀ than NO_x due to the large number of low level and fugitive PM₁₀ sources at the site; NO_x is only emitted in significant quantities from the main stack. However, studies have shown no exceedances as a result of the Cemex plant or their operations of the PM₁₀ National Air Quality Objectives.

4.2 The Level Of Reduction in Nitrogen Dioxide Needed

This section presents an estimation of the reduction in nitrogen dioxide levels needed so that the UK air quality objectives are met in the AQMA. Prediction of nitrogen dioxide concentrations is difficult due to the fact that it is formed as both a secondary and primary pollution source as discussed in paragraph 2.3.3. Concentrations of nitrogen dioxide depend upon the proportion of NO₂ to NO found in the initial emission and on the availability of atmospheric oxidants. The implication of this for the Air Quality Action Plan is that a reduction in the levels of NO_x does not produce a proportionate reduction in the levels of NO₂. This effect can be seen in the levels of pollution that have been observed in the past decade.

The Further Assessment and the data obtained in 2005 and 2006 suggests that, at present, there are no areas in the Borough where the annual NO₂ national air quality objective is being exceeded.

Predicted annual average levels of NO₂ have been determined by the Further Assessment, including the centre of Rugby town where levels are highest. Figure 2 shows predicted levels in 2010 with the Rugby Western Relief Road constructed.

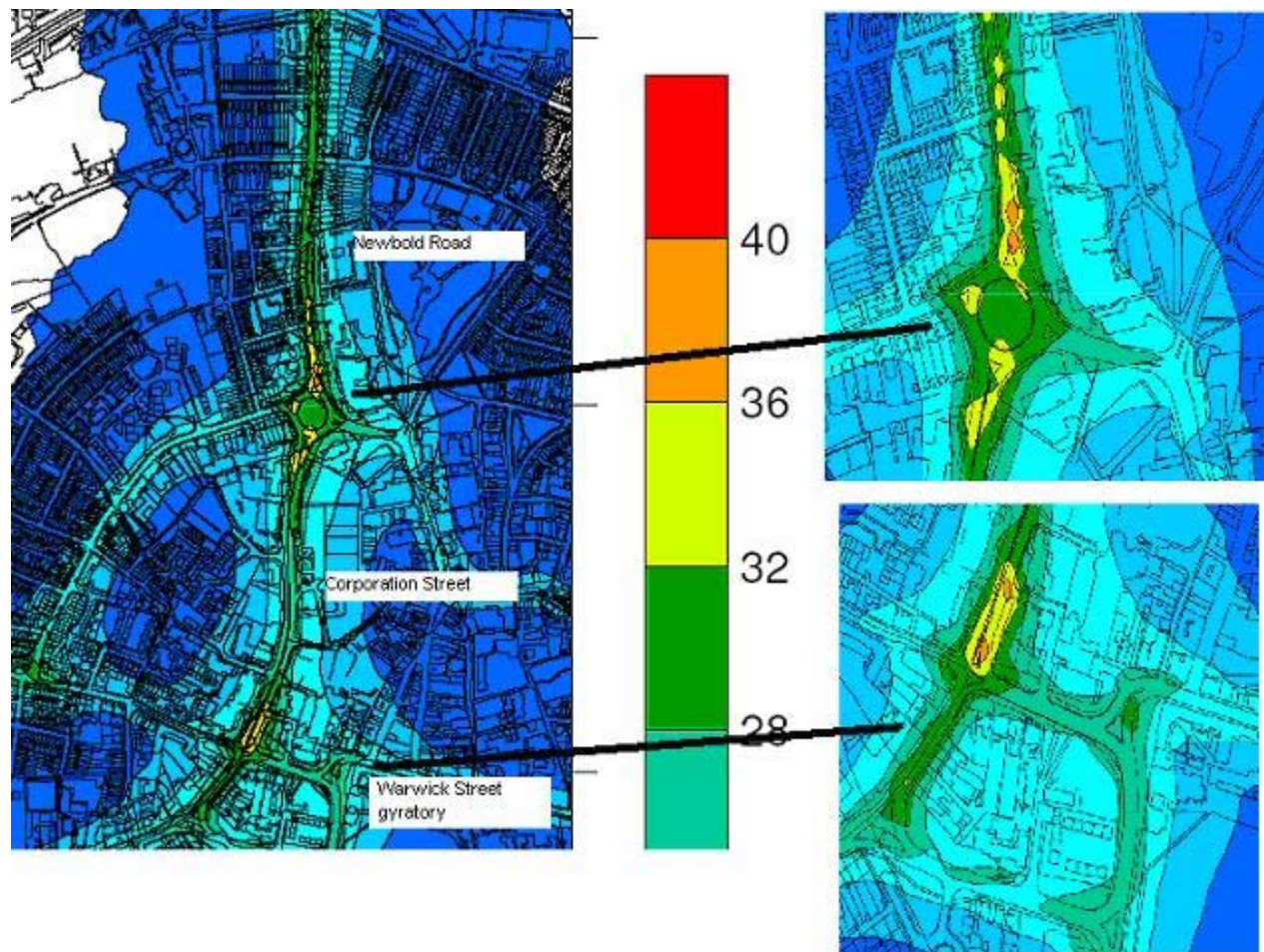


Figure 2: Predicted nitrogen dioxide concentrations in 2010 with the Rugby Western Relief Road constructed. Units µg/m³. Source: Further Assessment, February 2006.

5 WHEN ARE THE AIR QUALITY OBJECTIVES LIKELY TO BE ACHIEVED?

The Further Assessment, which was first published in December 2005, determined that there was only one sensitive receptor in the Borough where the annual average NO₂ national air quality objective would not be met, and that within 2 years, without additional works, there would be no exceedances. The data used in the report included data up to and including the 3rd quarter of 2005. The modelling was reliant on predicted traffic flow data obtained from the highway authority, Warwickshire County Council, and as indicated in 2.3.3 emission data for models has had to be altered. However, although diffusion tubes and an automatic monitoring station have been located at key points in the air quality management area, none have shown exceedances of the annual average NO₂ national air quality objective in 2006. While 2006 may be an atypical year, major projects such as the Rugby Western Relief Road (RWRR) (construction began in mid-2007 and is due to open late 2009/early 2010) and improvements of the Warwick Street gyratory system, which are both commitments in the LTP, are predicted to further reduce pollution in the town centre. The RWRR was predicted in the Further Assessment to reduce annual average NO₂ at the Webb Ellis public house, which is the only receptor to be identified where the national air quality objective may be exceeded, to 36 µg/m³ in 2010.

While the data and modelling suggests that air quality is being controlled, the modelling is now less robust, exceedances have only been shown for one year which may be atypical and the Council's ***Air Quality Progress Report and Action Plan Progress Report***, April 2007, identified a number of issues which could adversely affect air quality in the AQMA. Currently, issues include closure of important roads (e.g. Parkfield Road, Lawford Road) during construction of the Rugby Western Relief Road, development of the former GEC/Alstom sites, the ASDA development on Corporation Street, and taking account of the West Midlands Regional Spatial Strategy (RSS) Phase Two Review preferred housing option for Rugby Borough of 10,800 dwellings to be built over the period 2006 to 2026 and growth in employment land. Therefore, the Council considers it important to

- (a) retain the AQMA
- (b) continue to monitor air pollution
- (c) support Warwickshire County Council and other groups in a range of measures designed to reduce the impact on air quality which are detailed in this action plan addendum.

6 DEVELOPMENT OF THE ACTION PLAN

A Steering Group consisting of representatives from local groups, local businesses, Rugby Borough Council and Warwickshire County Council was established to oversee the preparation of the addendum to the LTP. A full list of organisations represented is shown in Appendix 2. The aim of this group was to identify existing and proposed policies and strategies, county based and local, including those within the Local Transport Plan (LTP), that would impact positively on the air quality within the AQMA.

The Steering Group meetings began with discussions on air quality and health, the legislative background, the national objectives, the current state of air quality in Rugby Borough and the action planning process. Forecasts of future air quality were then considered against the required limit values. A Scoping Checklist was also agreed.

The Steering Group then began the process of identifying actions under existing policy that were likely to result in an improvement in air quality. The broad background of the group enabled a large number of existing actions to be identified. In particular the LTP for Warwickshire was recognised as containing both the broad vision and a multitude of specific initiatives and proposals aimed at improving the transport system of the entire Borough. Measures that generate an improvement in traffic flow can often be beneficial to the improvement of air quality so the proposals in the LTP were essential to the development of this action plan specific addendum.

The Steering Group then reviewed the existing actions and sought to identify additional actions that were both feasible and had the potential to improve air quality within the AQMA.

It was recognised that the Action Plan specific addendum to the LTP would only be effective if the effect of the actions and the likely impact on air quality were balanced. Appendix 1 of this report consists of tables of actions that have been developed by the Steering Group. The tables include information about the measures, some qualitative evaluation (impacts on air quality, other environmental impacts, economic impacts, cost, feasibility, compatibility with other council policies etc). From this evaluation, a prioritisation has been undertaken based on high, medium and low priority actions. The list is not a full list of all possible actions. Further actions were

considered, for example low emission zones, road user charging, park and ride schemes, and roadside car testing, but when evaluated were not considered suitable for inclusion in the action plan for the Borough.

7 TRANSPORT AND THE AIR QUALITY ACTION PLAN

7.1 The Local Transport Plan for Warwickshire

During the preparation of the second LTP, the five Warwickshire borough and district councils liaised closely with transport planners from Warwickshire County Council, and their consultants Arup, to develop a countywide Air Quality Strategy. As a result, the LTP forms the basis of the Air Quality Action Plan, in accordance with the advice regarding integration of traffic related action plans into LTPs given in LAQM PGA (05).

The current LTP, Warwickshire County Council Local Transport Plan 2006 – 2011, known as LTP2, was submitted to the Department for Transport (DfT) in March 2006. The Air Quality Strategy contained within the LTP is attached as Appendix 4 to this report.

It is a mandatory requirement for LTP2 to contain a target on air quality. The targets chosen for Warwickshire are shown in Table 3.

Air Quality Strategy - Targets and Indicators			
Local Target/Indicator	Performance Indicator	Source of Data	Frequency of Monitoring
Target (LTP8): Reduce the number of exceedances of the national air quality standards and objectives between 2005 and 2010.	Monitored and modelled pollutant levels across the County. The revocation of AQMAs.	Countywide air quality monitoring stations.	Annual
Target: Retain traffic volumes at 2004 levels in the urban areas of Nuneaton, Rugby, Warwick and Leamington Spa.	Road traffic levels on local road networks.	Road traffic surveys. Traffic modelling.	Annual
Local Indicator: Ensure that air pollutant levels do not exceed national standards in the County where they previously have not.	Air quality assessment of major transport proposals within Warwickshire.	Countywide air quality monitoring stations. Regular and continued dialogue with the District/Borough Councils.	Annual

Table 3: LTP Air Quality targets for Warwickshire

While the action plan will ultimately be integrated into the LTP, it was clear when the LTP was submitted to DfT in March 2006 that the LTP did not fully meet the guidance in LAQM PGA(05) for action plans and was also limited in local air quality options. Therefore, a decision was made by Rugby Borough Council to set up an action plan steering group and produce an addendum to the LTP.

8 PLANNING AND AIR QUALITY

In November 2004 Planning Policy Statement 23: Planning and Pollution Control was released. This document recognises air quality is a material consideration in the planning process as development control decisions can have a direct or indirect bearing on existing air quality and creating exposure to poor air quality. It is also recognised that all developments within an AQMA which may cause air quality deterioration should not be refused, especially as some Local Authorities have declared whole borough AQMA's. Road transport is the major contributor to poor air quality and planning can play a key role in ensuring developments reduce the need to travel and encouraging travel choices. PPS 23 acknowledges the importance that the planning, transport and air quality control functions of Local Authorities work closely together on development issues.

Rugby Borough Council adopted its latest Local Plan in July 2006. The Rugby Borough Local Plan forms part of the 'development plan' for the Borough. Together with the Warwickshire Structure Plan (WASP) and the West Midlands Regional Spatial Strategy (RSS) it sets out the framework by which development should take place. The Local Plan covers the period 1996 – 2011 although in respect of housing, provision is made to 2016 and the policies contained within it are used in the assessment of planning applications within the Borough. Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that where an adopted or approved development plan contains relevant policies, an application for planning permission shall be determined in accordance with the development plan unless other material considerations indicate otherwise. General air quality controls can be found in *Chapter 4 – General Principles*. Policy GP12 is specific to the AQMA:

Policy GP12 – Air Quality Management Area

Development proposals within the Air Quality Management Area (AQMA) that fulfil the requirements specified for air quality assessments (Table 2), or are likely to hinder the achievement of the Council's air quality objectives, will be required to demonstrate their impact on air quality.

Development that is likely to have a net adverse impact on air quality in the AQMA will not be permitted, unless such effects are mitigated to the satisfaction of the Council.

Table 2 of Chapter 4 also includes thresholds for assessment of air quality. A detailed assessment is required where a proposed development would exceed thresholds set out in Table 2:

Table 2: AQMA thresholds

Use	Thresholds above which a an air quality assessment will generally be necessary
A1, A2 and A3 retail development	1,000 m ²
B1 including offices	2,500 m ²
B2 general industry	5,000 m ²
B8 storage and distribution	5,000 m ²
Educational establishments-	2,500 m ²
D2 Assembly and leisure facilities, including stadia	1,000 m ²
C3 residential development	100 dwellings
Health establishments	2,500 m ²

Chapter 6 – Transport is a comprehensive policy which has the following policies which influence air quality:

- Policy T1 – Integrated and sustainable transport
- Policy T2 – Travel Plans
- Policy T3 – Access and highway layout
- Policy T4 – Cycle and pedestrian facilities
- Policy T5 – Parking facilities
- Policy T6 – Vehicle servicing of commercial development
- Policy T7 – Bus/rail interchange
- Policy T8 – Key transport corridors
- Policy T9 – Safeguarding the route of the Rugby Western Relief Road
- Policy T10 – Safeguarding of County route improvement schemes
- Policy T11 – Safeguarding future railway opportunities
- Policy T12 – Motorway service areas
- Policy T13 – Airport flight paths

Warwickshire County Council is also a planning authority and have committed in their LTP (*Action AQA5 – Integration of air quality and transport planning goals*) to manage traffic to take account, where possible, of the need to minimise impacts on air quality. In new developments, air quality issues will be considered in all situations, including the consideration that all new developments are to have reasonable access to public transport and sufficient provision is made for pedestrians and cyclists.

9 PUBLIC CONSULTATION

The process of public consultation is critical to the success of any Air Quality Action Plan, however there is little flexibility in terms of different courses of action available to tackle NO₂ in Rugby Borough as the most significant source is from transportation, and the LTP published in 2006 already sets out a comprehensive strategy for transportation policy across Warwickshire and within Rugby Borough.

The method of consultation to be employed for this action plan specific addendum to the LTP is to focus upon groups of people at a local level where the specific detail of the broad policies can be discussed. Copies of the draft addendum will be sent to those people and organisations listed in Appendix 3, with a formal request for comments.

Copies of the report will also be made available in local libraries and on the Rugby Borough Council Internet site at www.rugby.gov.uk

10 PROPOSED ACTIONS

Appendix 1 of this report consists of a number of actions that have been identified by the Steering Group as having the potential to improve air quality in the AQMA. The actions are listed under the following headings:

1. Specific proposals for the AQMA
2. Non-specific proposals for general improvement of air quality in the Borough
3. Reducing vehicle emissions
4. Alternative transport modes/ policies
5. Non-transport measures

Each action lists the body (or bodies) responsible for its implementation, how it will be implemented, an intended completion date, an estimate of financial cost, a qualitative evaluation including issues such as impacts on air quality, climate change, public perception, social impact, feasibility and a prioritisation that was reached by not only using this evaluation, costs and benefits, but also taking into consideration issues such as whether funding is already available, and the timescales the measure could be feasibility implemented within. For the purposes of this cost - benefit analysis 'Low' equates to less than £100,000, 'Medium' equates to between £100, 000 and £1,000,000 and 'High' equates to greater than £1000,000. It is not possible to accurately quantify the expected improvement in air quality for each option and therefore an estimate of high, medium or low improvement has been used to allow a comparison between the proposed actions. The wider impacts of the work have been considered by estimating the percentage of people in Rugby Borough who would be positively affected.

While it is possible that air quality objectives are now being met, this is not guaranteed and there are significant projects, which will affect air quality. These actions are considered to strike an appropriate balance between the direct and indirect costs of taking action and the benefit in terms of improved air quality required to generally improve air quality in the Borough.

11 IMPLEMENTATION OF THE ACTION PLAN

Environmental Services of Rugby Borough Council, in partnership with Warwickshire County Council, will take the lead role in ensuring the implementation of the Action Plan and monitoring the improvements in air quality achieved as a result of the actions taken. Annual Action Planning Progress Reports will be published on the progress of implementation. Since road traffic is the most significant source of NO₂ it is especially important to ensure that the Air Quality Action Planning process is harmonised with the process of Local Transport Planning. The two processes will work alongside each other with each feeding information into the other. Rugby Borough Council will ensure that this Action Plan specific addendum is kept up to date, and the Secretary of State and other statutory consultees will be consulted if the need arises to revise it.

This Air Quality Management Area Action Plan was approved by Rugby Borough Council's Cabinet on 10th March 2008. It is proposed that Warwickshire County Council will formally adopt it as an addendum to the Warwickshire Local Transport Plan 2006. In due course, the Action Plan will be incorporated into the next LTP submission, which is due to be prepared in 2010/11.

12 SUPPORTING DOCUMENTS

Rugby Borough Council Documents (available on the Council web site

www.rugby.gov.uk)

Air Quality Progress Report and Action Plan Progress Report (2007)

Local Plan (2006)

Updating and Screening Assessment (2006)

Further Assessment (2006)

Air Quality Progress Report and Action Plan Progress Report (2005)

Detailed Assessment of Particulate Matter (2005)

Detailed Assessment (2004)

Updating and Screening Assessment (2003)

Warwickshire County Council Documents (available on their web site

www.warwickshire.gov.uk)

Local Transport Plan 2006 – 2011 (2006)

Structure Plan 1996-2011 (2002)

Other Documents

Air Quality Action Plans: Interim Guidance for Local Authorities. NSCA

Air Quality and Traffic Management. DETR (1997)

Air Quality Management Areas: Turning Reviews into Action. NSCA

Air Quality: Planning for Action PART 2 of the NSCA Guidance on the Development of Air Quality Action Plans and Local Air Quality Strategies. NSCA (2001)

Consultation for Local Air Quality Management. The How To Guide NSCA (1999)

Developing Local Air Quality Action Plans and Strategies: The Principal Considerations. DETR (1997)

Part IV of the Environment Act 1995 Local Air Quality Management Policy Guidance LAQM.PG(03). DEFRA (2003) (and addendum LAQM.PGA(05))

AQEG "Trends in Primary Nitrogen Dioxide in the UK -draft report for comment" August 2006

"The Air Quality Strategy for England, Scotland, Wales and Northern Ireland", Defra, July 2007

APPENDIX 1: ACTIONS PROPOSED

Notes on evaluation:

The following tables outline the actions proposed to improve air quality, the stakeholder responsible for those actions and what projects are currently ongoing or planned. An evaluation of the feasibility and impacts has been undertaken using a 'traffic light' system with **green** meaning some positive impact (even if only minimal), **amber** signifying either some positive and some negative impacts, or a generally neutral effect, and **red** signifying negative impacts. In terms of economic impact this relates to any impacts on local businesses or other stakeholders, rather than the cost of the measure itself, which is reflected under cost. A prioritisation has then been undertaken taking into account this evaluation, but inevitably also based on judgement, the magnitude of impacts (which is not explicit from the colour system) and whether funding is available. Costs are defined as low, medium and high as follows: Low = < £100K Medium = £100K to £1 Million High - > £1 Million. Costs are only relevant where funding is needed for implementation. In many cases, schemes are being implemented for a wide variety of reasons and hence it should be noted that funding is not required in terms of this document.

1. Specific proposals for the AQMA

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
1.1 Rugby Western Relief Road	Warwickshire County Council - Highways	The construction of the RWRR has been approved and has now started. The Further Assessment has indicated this will have a positive impact on air quality in the town centre, but increases pollution in other areas.	Local air quality	Green	High	No extra funding required – already fully funded	Due to start construction August 2007. Complete by late 2009/early 2010.
			Climate change	Amber			
			Compatibility with other council policies	Green			
			Public perception	Amber			
			Economic impact	Green			
			Social impact	Amber			
			Feasibility	Green			
			% of people positively affected	Amber			
Background information: The existing Rugby Borough Local Plan proposes substantial development at Coton Park, Swift Valley and Cawston in the South West – North corridor of the town. A new section of highway, known as the Rugby Western Relief Road, has been identified as critical to supporting these developments and reducing traffic congestion in Rugby town centre. The route of the Western Relief Road is from the A426 Avon Mill roundabout to Potford's Dam has been established, and will provide a strategic link between the M6/A426 in the north and the A45/M45 in the south.							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date
1.2 Improvements to Warwick Street gyratory system	Warwickshire County Council - Highways	The only residential property identified by the Further Assessment where an exceedance of a national air quality objective is likely is on Warwick Street. This improvement compliments the Rugby Western Relief Road.	Local air quality	High	No extra funding required – to be funded within existing funds	Due to coincide with completion of Rugby Western Relief Road in late 2009/early 2010.
			Climate change			
			Compatibility with other council policies			
			Public perception			
			Economic impact			
			Social impact			
			Feasibility			
			% of people positively affected			
Background information: The Warwick Street gyratory is located to the south west of the town centre, and provides a significant highway interchange between the A4071, A428 and A426 (i.e. the three key routes into or across the urban area of Rugby). The gyratory is currently one way in a clockwise direction, and is partially signalised. In conjunction with the implementation in full of the Rugby Western Relief Road, the County Council intend to review the operation of the gyratory, and consider the possibility of improvements for pedestrians, cyclists and buses. Options for the improvement of the gyratory will be identified in the Rugby Transport Study, of which Stage 1 has been completed. Should the Western Relief Road be complete by 2009/2010 as planned, a major improvement of the gyratory could begin on site towards the end of the LTP period. It is also anticipated that the completion of the Rugby Western Relief Road will have a positive impact on the air quality issues that have been highlighted as a problem at the gyratory, but the exact impact has not been assessed.						

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
1.3 Church Street/North Street	Warwickshire County Council - Highways	Options to 'lock in' the benefits of the Western Relief Road in the town centre (including Church Street/North Street) will be explored as part of the forthcoming Rugby Transport Study.	Local air quality	Yellow	Medium	No extra funding required – to be funded within existing funds	Due to coincide with completion of Rugby Western Relief Road in late 2009/early 2010.
			Climate change	Green			
			Compatibility with other council policies	Green			
			Public perception	Yellow			
			Economic impact	Yellow			
			Social impact	Yellow			
			Feasibility	Green			
% of people positively affected	Yellow						
Background information: Church Street/North Street runs in a north west to east direction through Rugby, and provides the main highway access into the core retail and business centre of the town. It also acts as the principal thoroughfare for bus services in Rugby. Without the Rugby Western Relief Road in place, any significant alteration to this corridor is not possible because of the impact it would have on traffic conditions on the Warwick Street gyratory, and the distribution of traffic around the town generally. Options to 'lock in' the benefits of the Western Relief Road in the town centre (including Church Street/North Street) will be explored as part of the forthcoming Rugby Transport Study. One possibility is either full or partial pedestrianisation, but the effect of closing the corridor to bus services will need to be carefully considered.							

2. Non-specific proposals for general improvement of air quality in the Borough

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
2.1 Decriminalisation of Parking Enforcement	Rugby Borough Council – Public Realm Unit and Regulatory Services Unit, and Warwickshire County Council - Highways	Decriminalised parking powers are being used by RBC (under agreement with WCC) to reduce illegal parking which restricts traffic flows	Local air quality	Yellow	Low	No extra funding required – funding secured	On-going
			Climate change	Green			
			Compatibility with other council policies	Green			
			Public perception	Red			
			Economic impact	Yellow			
			Social impact	Yellow			
			Feasibility	Green			
% of people positively affected	Yellow						
Background information: Decriminalisation of Parking Enforcement was introduced in Rugby Borough in October 2006. It is thought that availability of on-street parking spaces has increased and, therefore, there is less need for traffic to circulate unnecessarily within the town centre. Impact on air quality is considered low.							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
2.3 Rugby Town Centre 20:20 Vision	Rugby First in partnership with Rugby Borough Council and Warwickshire County Council	This is a strategic, long-term (15 year) vision for the Town Centre produced by a private venture and is aimed primarily at businesses	Local air quality	Green	Medium	No extra funding required – integrated with other initiatives	On-going
			Climate change	Yellow			
			Compatibility with other council policies	Green			
			Public perception	Yellow			
			Economic impact	Green			
			Social impact	Green			
			Feasibility	Green			
			% of people positively affected	Yellow			

Background information:

This is a strategic, long-term (15 year) vision for the Town Centre. It is a partnership document produced by Rugby First (formerly the Rugby Town Centre Company), with Rugby Borough Council (RBC) and Warwickshire County Council playing key roles in its development. It has been developed over the course of a year, beginning with a workshop event which involved a number of elected members.

The document is aimed primarily at businesses that may have an interest in investing in the town, and is intentionally designed as a high quality promotional publication. It was launched at an event in October 2005. It includes a foreword from the Leader of RBC, and the Labour Group Leader spoke at the launch. This document complements RBC’s Local Plan, which contains statutory planning policies for the town centre.

The 20:20 Vision statement is that:

“The Town Centre of Rugby will become the shopping, leisure and arts centre of choice for all sectors of the local community and importantly, owing to the distinctiveness of our offer, it will also attract customers from the sub-region.”

The document is available at:

<http://www.rtccompany.co.uk/uploaded/documents/rctvision.pdf>

See page 14 *Transport and Accessibility*.

Key actions in the Vision are improved public transport, improved access by foot and cycling, reducing town centre through traffic, pedestrianisation, Green Travel Plans for employers, improved connections to the railway station (walking, cycling, shuttle service), sufficient parking for visitors (employee parking reduced by improved public transport), improved pedestrian access from car parks, improved disabled access.

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
2.4 Re-Routing traffic – Lorry Route Maps and local agreements	Warwickshire County Council – Highways and Rugby Borough Council - Public Realm Unit and Regulatory Services Unit		Local air quality	Green	Medium	Possible extra funding required from the Highways Agency.	On-going. Main impact after completion of Rugby Western Relief Road in late 2009/early 2010.
			Climate change	Yellow			
			Compatibility with other council policies	Green			
			Public perception	Green			
			Economic impact	Yellow			
			Social impact	Green			
			Feasibility	Green			
% of people positively affected	Green						

Background information:

Currently traffic, especially HGVs have to go through the areas of the AQMA with the highest pollution levels. Source apportionment has shown the disproportionate impact of HGVs on air quality. The Rugby Western Relief Road provides an opportunity to encourage companies which use the Borough to use routes which minimise traffic pollution in the AQMA. Voluntary agreements can also be negotiated with local businesses or can be incorporated into new planning applications to encourage businesses to use specific routes and/or restrict the times when the routes should be used. Some voluntary agreements with local businesses are already in place, although mainly to prevent general nuisance. The Warwickshire Advisory Lorry Route Map was published in 2005. The Rugby Western Relief Road provides an improved opportunity to encourage companies which use the Borough to use routes which minimise traffic pollution in the AQMA. Signing on trunk roads and motorways is under the control of the Highways Agency and will require them to agree to change and/or fund any alterations.

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
2.5 Variable Message Signs	Warwickshire County Council - Highways	WCC will use VMS to improve car park usage and reduce traffic circulation in the town centre.	Local air quality	Green	Medium	No extra funding required – funding secured	Unknown.
			Climate change	Green			
			Compatibility with other council policies	Green			
			Public perception	Green			
			Economic impact	Green			
			Social impact	Green			
			Feasibility	Green			
% of people positively affected	Green						

Background information:

A series of signs will be provided on the key approaches to the town centre to inform drivers of car park locations and availability of spaces in the main off-street facilities. This will compliment the aim of Decriminalisation of Parking Enforcement by reducing the amount of traffic circulation within the town centre. Using VMS also has the potential to provide real time air quality information, to help to raise awareness of air quality issues and potentially persuade people to change mode of travel away from private vehicles. This is particularly important in relation to raising awareness during pollution episodes. VMS is also being pursued elsewhere in the County, most notably in Warwick and Leamington Spa.

3. Reducing vehicle emissions

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
3.1 Enforcement of idling vehicles legislation	Rugby Borough Council - Regulatory Services Unit	Not currently being implemented. Feasibility in terms of resources currently being investigated.	Local air quality	Yellow	Low	Low Cost	2008 for feasibility – ongoing if implemented
			Climate change	Yellow			
			Compatibility with other council policies	Green			
			Public perception	Green			
			Economic impact	Yellow			
			Social impact	Yellow			
			Feasibility	Green			
% of people positively affected	Yellow						
Background information: The Road Traffic (Vehicle Emissions) (Fixed Penalty) (England) Regulations 2002 (Statutory Instrument 2002 No. 1808) enables authorised individuals to issue a fixed penalty notice to vehicles stationary on a road and can require them to switch off their engine. In some circumstances, for example where buses congregate, this may provide localised improvements in air quality. Enforcement of this legislation is not currently underway in Rugby but prioritised locations for enforcement will be considered as part of this action plan. Rugby Borough Council is currently being restructured with parking enforcement being incorporated into a Regulatory Services Unit which also includes the team responsible for air quality. This gives the opportunity for targeted action in the town centre where the parking enforcement operators already operate. BID Area Rangers could also give advice to drivers.							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
3.2 Improve the Council fleet (in terms of emissions)	Rugby Borough Council – Works Services Unit	Currently fleet management is undertaken across the Council.	Local air quality	Yellow	Medium	No extra funding required – funding within existing funds	Ongoing
			Climate change	Green			
			Compatibility with other council policies	Green			
			Public perception	Green			
			Economic impact	Yellow			
			Social impact	Green			
			Feasibility	Green			
			% of people positively affected	Yellow			
Background information: As an organisation with a large vehicle fleet, it is important that Rugby Borough Council leads by example by favouring low emissions vehicles when purchasing vehicles for its own fleet. Works Services Unit is the main operator of RBC vehicles and has approximately 70 vehicles of which about 19 are refuse collection vehicles or large freighters. All the large vehicles are Euro III and will be replaced on a rolling replacement schedule starting in 2007 with Euro IV vehicles (fitted with AdBlue to control particulates) and Euro V when introduced in 2008. Eminox exhaust filters are also being fitted to some vehicles. The small, non-HGV type vehicles are replaced after 5 years fleet life, the larger vehicles after 7 years and some of the tractors after 10. Replacement vehicles are always purchased, meeting the emission controls applicable at that time, so as emission controls are tightened, vehicles purchased by RBC will always meet those requirements. At some point in their fleet life, if emission controls change, existing vehicles may not comply with the new legislation, but none of the emission controls are retrospective so RBC is compliant at all times. In addition, emissions are measured as part of the annual test of the vehicle, which unlike cars, is carried out from the vehicles first birthday. While environmental issues are of importance, the frequency of replacement of vehicles has to consider budgets.							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
3.3 Improve bus emissions	Stagecoach, as the largest fleet operator in the Borough, and potentially other key companies such as De Courcey Travel Ltd and Geoff Amos Coaches	The bus operators will continue modernisation of the bus fleets with low emission vehicles	Local air quality	Green	Medium	Commercial investment would be required for any large scale improvements	Ongoing
			Climate change	Green			
			Compatibility with other council policies	Green			
			Public perception	Green			
			Economic impact	Red			
			Social impact	Green			
			Feasibility	Red			
			% of people positively affected	Green			
Background information:							
<p>The introduction of increasingly stringent European emissions standards mean that new buses are increasingly cleaner. There is the potential for significant impact on air quality for Euro IV buses and potential for alternative low emission fuelled buses or electric buses if introduced by Stagecoach. Potentially important but subject to financial considerations by the private bus operators. Stagecoach take seriously any issues in regard to air/noise pollution. The introduction of Euro IV buses is ongoing throughout the whole company. The steering group are aware that there is a very significant financial implication of renewing every vehicle. Stagecoach are researching and upgrading older vehicles as much as possible as well as continuing to asses new low emission vehicles and electric buses. The County Council also has a role to play in bus vehicle replacement as part of the Quality Bus Initiative. This delivers new low floor, lower emission vehicles on selected tendered bus services.</p>							

4. Alternative transport modes/ policies

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
4.1 Cycling	Warwickshire County Council – Highways, and Rugby Borough Council - Public Realm Unit	WCC and RBC will continue to promote cycling as a lower polluting means of transport including new cycle lanes as part of the National Cycle Network and the local cycle network, and cycle parking	Local air quality		High	No extra funding required – funding secured through LTP2, Rugby Borough Council and supplemented by developer contributions	Ongoing
			Climate change				
			Compatibility with other council policies				
			Public perception				
			Economic impact				
			Social impact				
			Feasibility				
			% of people positively affected				
Background information:							
The Cycling Strategy is contained within the Warwickshire County Council LTP (http://www.warwickshire.gov.uk/ltp annex/chapter_151.html). The purpose of the Cycling Strategy is to bring together in a single document the policies and actions required to further improve conditions for cycling and deliver an increase in cycle journeys in Warwickshire. The strategy sets out a framework for the further development of cycling in Warwickshire as part of the overall integrated LTP strategy. The strategy forms a long-term strategy for cycling and it will not be possible to achieve everything within the life of this Local Transport Plan or even the subsequent one. The action plan at the end of the strategy lists the key steps that the County Council will take over the short, medium and long term, to encourage more people to cycle.							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
4.2 Walking	Warwickshire County Council – Highways, and Rugby Borough Council – Public Realm Unit	WCC and RBC will continue to promote walking as a lower polluting means of transport.	Local air quality		High	No extra funding required – funding secured through LTP2	Ongoing
			Climate change				
			Compatibility with other council policies				
			Public perception				
			Economic impact				
			Social impact				
			Feasibility				
			% of people positively affected				
<p>Background information: The Walking Strategy is contained within the Warwickshire County Council LTP (http://www.warwickshire.gov.uk/ltp/annex/chapter_168.html). The purpose of this strategy is to set out what is needed in Warwickshire to improve conditions for walking and encourage more people to walk for local journeys. The Walking Strategy sets out a range of policies and actions to encourage more walking in Warwickshire. The main aim is 'To improve the pedestrian environment and promote the benefits of walking to encourage more people to walk for short utility journeys and for recreation'. The walking strategy is a daughter document to the LTP and will contribute towards the achievement of the overall objectives of the Local Transport Plan</p>							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date
4.3 Work Travel Plans	Warwickshire County Council – Highways, Planning, and Rugby Borough Council - Development and Enforcement Unit	WCC and RBC will continue to require green travel plans with all major planning applications as well as continue to work with schools on school-based travel plans. Both Authorities already have their own Green Travel Plans which are ongoing in terms of their implementation.	Local air quality	High	No extra funding required – funding secured from internal budgets, commercial investment and developer contributions	Ongoing
			Climate change			
			Compatibility with other council policies			
			Public perception			
			Economic impact			
			Social impact			
			Feasibility			
			% of people positively affected			

Background information:

Travel Plans can help companies or schools reduce the traffic impacts of their activities. Travel Plans look to reduce work related car trips through initiatives such as car sharing, providing pool cars, cycling incentives, cycle parking, showers and changing facilities, video conferencing, flexible working and discounted bus and train tickets. Travel Plans can be extremely cost-effective and have proved very successful in cutting car use. In many cases Travel Plans have been shown to have positive economic impacts for the organisation involved particularly where the cost of land is high and parking spaces can be utilised for other uses.

Many travel plans are secured through the planning process using Conditions or Section 106 agreements.

WCC Policy PR1 encourages existing major employers to adopt travel plans. Travel plans form part of the LTP Changing Travel Behaviour Strategy (http://www.warwickshire.gov.uk/ltp annex/chapter_149.html).

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date
4.4 School Travel Plans and Safer Routes to School	Warwickshire County Council - Highways	WCC will continue to invest in encouraging school children and staff to use more sustainable forms of travel to get to school and back, through safer routes for walking and cycling	Local air quality	High	No extra funding required – funding secured through LTP2	Ongoing
			Climate change			
			Compatibility with other council policies			
			Public perception			
			Economic impact			
			Social impact			
			Feasibility			
			% of people positively affected			

Background information:

Safe Routes to Schools (SRS) was originally conceived by Sustrans www.sustrans.org.uk - a national organisation which promotes walking, cycling, and other forms of sustainable transport, but it is now substantially delivered by Local Authorities through the LTP process. One element of sustainable travel is to increase the safety of children and young people walking and cycling to/from school. Schools must have a Travel Plan in place prior to any Safer Routes to School schemes being implemented. These aim to encourage children to travel to school by more sustainable means and therefore cut car usage. This could have a positive localised benefit on air quality. WCC are investing heavily in Safer Routes to School. 2005 saw the completion of the Dunchurch Road cycleway serving Harris School. 2007 will see the construction of a new cycle route serving Avon Valley School from Brownsover. All new developments include cycle facilities.

Travel plans are part of the WCC LTP Changing Travel Behaviour Strategy (http://www.warwickshire.gov.uk/ltp annex/chapter_149.html).

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date
4.5 Public Transport Strategy, including the Bus Strategy	Warwickshire County Council - Highways	WCC will continue to encourage public transport. The key public transport mode in the AQMA is buses.	Local air quality	High	No extra funding required – funding secured through LTP2	Ongoing
			Climate change			
			Compatibility with other council policies			
			Public perception			
			Economic impact			
			Social impact			
			Feasibility			
			% of people positively affected			

Background information:

The purpose of the Public Transport Strategy (including the Bus Strategy) is to set out what is needed in Warwickshire to ensure excellent public transport services and facilities which will address the needs of both current and potential passengers in Warwickshire and deliver the transport objectives of the Government and the County Council.

The LTP Public Transport Strategy is actually made up of a number of subsidiary strategies as well as the Bus Strategy. These include the Bus Strategy, the Public Transport Strategy, the Bus Information Strategy and the Public Transport Interchange Strategy.

Details can be found at:

http://www.warwickshire.gov.uk/ltp annex/chapter_160.html

http://www.warwickshire.gov.uk/ltp annex/chapter_159.html

http://www.warwickshire.gov.uk/ltp annex/chapter_165.html

http://www.warwickshire.gov.uk/ltp annex/chapter_164.html

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date
4.6 Travel Awareness Campaigns	Warwickshire County Council - Highways	The TravelWise campaign brings together around 160 public sector organisations, including councils, health authorities and Government advisory groups, which work together to promote alternative ways to travel.	Local air quality	High	No extra funding required – funding secured through LTP2	Ongoing
			Climate change			
			Compatibility with other council policies			
			Public perception			
			Economic impact			
			Social impact			
			Feasibility			
			% of people positively affected			

Background information:

The main aims of the Warwickshire TravelWise Campaign are:

- to raise the awareness of the environmental, economic and social effects of travelling by foot, bike, motorcycle and public transport
- to encourage socially responsible car use
- to promote more sustainable modes of travel, and lifestyles which require less travel
- to increase the number of walkers, cyclists, motorcyclists, public transport users and car sharers.

Details can be found at:

[http://www.warwickshire.gov.uk/web/corporate/pages.nsf/\(DisplayLinks\)/583EB900B169BFB480256FB0005DC8DE](http://www.warwickshire.gov.uk/web/corporate/pages.nsf/(DisplayLinks)/583EB900B169BFB480256FB0005DC8DE)

<http://www.warwickshire.gov.uk/TravelWise>

5. Non-transport measures

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
5.1 Energy Efficiency measures	Rugby Borough Council – Corporate Planning Assurance and Improvement Team	RBC to continue its programme of energy efficiency improvements in the domestic and commercial sector.	Local air quality	Yellow	Medium	High for improvements in domestic sector (additional funding required)	Ongoing
			Climate change	Green			
			Compatibility with other council policies	Green			
			Public perception	Green			
			Economic impact	Yellow			
			Social impact	Green			
			Feasibility	Yellow			
			% of people positively affected	Green			
<p>Background information: Although not tackling the main source of pollution within the AQMA, energy efficiency measures should generally decrease NOx emissions from the domestic and commercial sector thus decreasing background concentrations across the Borough. Energy efficiency measures can also help in raising awareness of pollution issues more generally. A related initiative called <i>Switch it Off</i> is an energy saving campaign covering Coventry, Warwickshire and Worcestershire. Its aim is simple – to show the saving that can be achieved when a lot of people turn off unwanted lights and electrical appliances that have been left on standby. RBC and WCC are also partners in the Warwickshire Climate Change Partnership (see www.warwickshire.gov.uk/climatechange). The vision of The Warwickshire Climate Change Partnership is to reduce greenhouse gas emissions in Warwickshire to at least the level set out by Government policy. This means a 15%-18% reduction in emissions of carbon dioxide by 2010 and a 60% reduction by 2050 (against 1990 levels).</p>							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
5.2 Control of Industrial emissions	Rugby Borough Council – Regulatory Services Unit, Environment Agency	RBC will continue to actively regulate its processes under the Pollution Prevention and Control Act 1999. In addition the Council will survey its district for further premises requiring regulation under the above legislation	Local air quality		Medium	No extra funding required – within existing funds	Ongoing
			Climate change				
			Compatibility with other council policies				
			Public perception				
			Economic impact				
			Social impact				
			Feasibility				
			% of people positively affected				

Background information:

The Pollution Prevention and Control Act 1999 requires certain industrial processes to have a Permit to operate. This prior approval must be in place before the process is first operated. Rugby Borough Council is responsible for permitting 39 processes within the Borough including activities such as vehicle re-spraying, concrete batching and unloading of petrol at petrol stations by delivery tankers. The operator of the prescribed process must comply with the conditions of the permit, and they will be subject to inspection to ensure this is the case. Conditions relate to the control of pollution by for example setting emission limits for certain pollutants, materials handling, staff training and equipment maintenance. Again, although not tackling the main source of pollution within the AQMA this measure should generally reduce NOx emissions and therefore reduce background concentrations across the Borough. 6 sites are also regulated by the Environment Agency and Rugby Borough Council will work with them to ensure emissions are controlled.

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
5.3 Emissions from domestic and commercial sources	Rugby Borough Council - Regulatory Services Unit	RBC will continue to enforce the provisions of the Clean Air Act 1993 as applied to stack height provision, dark smoke offences and permitted domestic fuels.	Local air quality		Low	No extra funding required – within existing funds	Ongoing
			Climate change				
			Compatibility with other council policies				
			Public perception				
			Economic impact				
			Social impact				
			Feasibility				
			% of people positively affected				

Background information:

Similarly to measure 5.2, enforcing the Clean Air Act 1993 may make some improvements to background concentrations of pollutants, thereby helping to reduce concentrations over the Borough as a whole.

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date	
5.4 Control of Bonfires	Rugby Borough Council - Regulatory Services Unit	RBC will enforce the provisions of the Clean Air Act 1993 and part III of the Environmental Protection Act 1990 regarding emissions from bonfires within its area.	Local air quality	Yellow	Low	No extra funding required – within existing funds	Ongoing
			Climate change	Yellow			
			Compatibility with other council policies	Green			
			Public perception	Yellow			
			Economic impact	Yellow			
			Social impact	Yellow			
			Feasibility	Green			
			% of people positively affected	Yellow			
Background information: One particular statutory function of the Regulatory Services Unit is to respond to complaints, including those relating to bonfires, and thus control emissions from localised sources, which can add to the overall pollution in the Borough. This is unlikely to have much impact on concentrations of NO ₂ but may help to make some improvements to background concentrations.							

Measure	Stakeholder	Current/ planned projects	Feasibility/ impacts	Prioritisation	Cost/ Funding	Completion date
5.5 Planning Development and Planning Applications	Rugby Borough Council - Forward Planning and Economic Development Unit, Development and Enforcement Unit and Regulatory Services Unit	Air quality is specifically covered in the adopted Local Plan July 2006 (see section 8 of this action plan).	Local air quality	High	No extra funding required – within existing funds	Ongoing
			Climate change			
			Compatibility with other council policies			
			Public perception			
			Economic impact			
			Social impact			
			Feasibility			
			% of people positively affected			
Background information:						
<p>The assessment of planning applications in order to secure improvements in air quality through mitigation measures, emphasis on sustainable development and through contributions from planning obligations or conditions can in the long term make a significant step towards improving air quality or preventing deterioration. This measure is already being implemented. The adopted Local Plan (July 2006) contains a policy (GP16) which specifically covers Air Quality Management and sets thresholds above which an air quality assessment will be required. This is aimed at controlling the impact of development on air quality. The Local Plan also contains various policies relating to travel plans and reducing the impacts of development in terms of noise and air pollution. Among the key aims of the Local Plan is to promote more integrated and sustainable approach to transport and taking care of the environment. The preferred housing option for Rugby put forward in the West Midlands Regional Spatial Strategy (RSS) Phase Two Review is 10800 dwellings to be built over the period 2006 to 2026. The Council is in the process of starting work on its Local Development Framework which will replace the Local Plan and provide the long term planning framework for the Borough. Production has started on the Core Strategy (part of the LDF) which will set out the principles for development over the next 20 years. This will plan for all the types and levels of development set out by the RSS. It would be envisaged that any substantial increase in housing numbers would be accompanied by a need for increased infrastructure but would also lead to more traffic movements and potential air quality issues. This whole issue will require much further discussion once the RSS options have been finalised. The issue of parking provision is very relevant to Planning. The Local Plan adopts a maximum standard for new car parking which is split between sites that are of low and high access (dependent upon proximity to public transport) and these standards are to be applied along with the requirements for cycle parking facilities.</p>						

APPENDIX 2: AQAP STEERING GROUP

Sustainable Rugby

- Councillor Neil Sanderson, Chair (formerly Vice-Chair), Sustainable Rugby
- Martin Eversfield, formerly Chair, Sustainable Rugby

Rugby Borough Council Regulatory Services Unit (formerly Environmental Health)

- David Burrows, Commercial Manager

Rugby Borough Council Business Transformation Service (formerly part of Environmental Health)

- Stephen Marks, Sustainable Partnership Manager, Rugby Borough Council

Rugby Borough Council Public Realm Unit (formerly Engineers Division)

- David Hanger, Acting Transportation Services Manager

Rugby Borough Council Forward Planning and Economic Development Unit (formerly Planning Policy and Information Team)

- Rob Back, Forward Planning and Economic Development Manager
- Richard Cowell, Planning Officer

Faber Maunsell

- Gareth Collins, Technical Director

Warwickshire County Council Highways

- Adrian Hart, Team Leader - Transport Planning
- Nick Sidhu, Design Services, Environment and Economy

Rugby First (formerly The Town Centre Company)

- Robin Richter

Stagecoach

- Wayne Simpson, Depot Manager, Rugby

Cemex

- Ian Southcott, UK Community Affairs Manager

Invitations were also sent to

Road Haulage Association
Wincanton plc

Rugby Borough Council would like to extend its thanks to all the members of the steering group and to Kathryn Bell, Air Quality Officer, Coventry City Council, for their invaluable help in producing this action plan.

APPENDIX 3: STAKEHOLDER CONSULTATION

Formal Request for Comments will be sent to:

Sustainable Rugby
Secretary of State (Department of the Environment, Food and Rural Affairs (DEFRA))
The Environment Agency
The Highways Agency
The Health Protection Agency
Warwickshire Primary Care Trust
Warwickshire County Council
Nuneaton and Bedworth Borough Council
Warwick District Council
Stratford on Avon District Council
Daventry District Council
Harborough District Council
Hinckley and Bosworth Borough Council
Coventry City Council
Stagecoach
Cemex
De Courcey Travel
Geoff Amos Coaches
Rugby First
Coventry and Warwickshire Chamber of Commerce
Rugby Hackney Carriage Owners and Drivers Association (RHODA)
Road Haulage Association
Residents of Newbold Road (Wood Street to Corporation Street), Oliver Street and Lawford Road (junctions with Newbold Road and Lawford Road), Warwick Street (junctions Corporation Street, Bilton Road, Dunchurch Road and Lawrence Sheriff Street).

In line with the Warwickshire Compact 2005 agreement, at least 12 weeks will be given to receive consultation responses.

APPENDIX 4: AIR QUALITY STRATEGY, WCC LTP

WARWICKSHIRE COUNTY COUNCIL 2006-2011 MAIN LTP

PART 2 – THE CORE STRATEGIES

AIR QUALITY STRATEGY

Introduction

Air quality is a key issue for society, as it has the potential to impact on human health and the environment. Air quality is determined in part by the emissions from activities such as energy production, industrial processes and road transport. These activities contribute different pollutants at differing concentrations into the air.

Poor air quality can be particularly harmful for the most vulnerable members of society such as babies and young children, the elderly and those with pre-existing illnesses such as asthma, heart disease or other cardio-respiratory conditions. Exposure to poor air quality, particularly over a long time scale and at elevated concentrations, is believed to play a role in diseases such as asthma and cancer. Depending on the pollutant type, exposure to high levels over short time scales can lead to difficulties in breathing and acute symptoms such as wheezing, coughing, headache and nausea.

Poor air quality does not just impact upon human health; air pollution can also have an adverse effect upon wildlife and vegetation, including crops. Some pollutants contribute to acid rain which can erode the facades of buildings and other structures. Certain pollutants (specifically carbon dioxide in relation to road transport) are known to contribute to global climate change.

Activities such as those highlighted above can also affect the immediate environment and human health on a local scale. An Air Quality Strategy for Warwickshire will help to manage potentially polluting actions and activities, particularly the use of road transport and to minimise the impact on air quality thereby aiming towards a healthier environment.

The Air Quality Strategy aims to focus on air quality issues within Warwickshire, drawing strong links with the five District/Borough Councils, whilst also taking into account regional considerations and the UK National Air Quality Strategy objectives. The Government's targets on reducing greenhouse gas (carbon dioxide) emissions are also taken into consideration, as is the promotion of more sustainable lifestyles.

The Strategy focuses on road transport as this is the main contributor of polluting emissions in Warwickshire, and puts forward an Air Quality Action Plan for reducing these emissions. Warwickshire's air quality issues have been considered in an inclusive, multi-disciplinary fashion in order to achieve the most appropriate, realistic and practical solutions.

Many of the schemes and initiatives outlined in the Action Plan have common, interlinked approaches, answering directly to the most relevant air quality issues in the County, often seeking out the same end result. These are also used to inform transport policy for the County and complement the LTP objectives.

The Need for an Air Quality Strategy

Improving local air quality delivers a number of benefits, the most important of which is the improvement of public health and quality of life. In addition to influencing air quality, transport policy can determine other benefits including the improvement of road safety, increased provision, security and comfort of public

transport, the improvement of public spaces and the promotion of healthier lifestyles through the encouragement of walking and cycling. Addressing air quality issues can also help meet Governmental objectives on greenhouse gas emissions.

The Government has set out standards in legislation for seven key pollutants in its National Air Quality Strategy. The standards are in place to protect human health and are based on European legislation and guidance from organisations such as the World Health Organisation. In the UK each local authority is obliged to meet these standards within their respective areas.

The remainder of this Strategy sets out:

- The objectives of the Air Quality Strategy;
- Local, regional and national policy framework related to air quality;
- The current air quality in Warwickshire;
- Existing and potential air quality issues affecting the five Boroughs and Districts;
- The Air Quality Strategy developed in response to the cited issues;
- Constraints and limitations in carrying out the Air Quality Strategy;
- The Action Plan for delivering the proposed schemes and initiatives; and
- Monitoring of the Action Plan.

The Objectives of the Air Quality Strategy

The objectives for this Air Quality Strategy, which have been developed in conjunction with the Local Transport Plan, reflect local, regional and national policy on air quality and transport. The objectives of the Strategy are:

- To be primarily concerned with air quality issues that have, and will arise, due to transport-related issues;
- To create a general five-year Action Plan for Warwickshire with schemes and initiatives for improving air quality related to transport issues within the County;
- To inform the County Council's transport policy;
- To take a proactive stance, rather than a reactive one, foreseeing potential future problems and taking measures to minimise them before they occur;
- To integrate the Strategy fully within the Local Transport Plan, complementing the schemes and objectives contained within all other parts of the larger document; and
- To be able to act as a freestanding document on its own merits away from the Local Transport Plan.

Pollutants, Sources and Effects

There are seven key pollutants considered in the UK National Air Quality Strategy, and each of these have objectives set on them as threshold concentrations in the air to protect human health. All of these substances are present in the atmosphere, at 'background' levels. It is human activities that contribute to excess or elevated concentrations of these substances in quantities enough for them to become polluting. These seven pollutants, their primary sources and effects are briefly described below.

Nitrogen dioxide

The main source of nitrogen dioxide (NO₂) in the UK is road transport (around 43% of total emissions). It is the primary pollutant of concern in Warwickshire and gives rise most frequently to the declaration of Air Quality Management Areas.

The health effects of exposure to nitrogen dioxide at levels above normal ambient concentrations include irritation of the lungs and an increase in the symptoms felt by those with existing lung conditions such as asthma and also those with heart conditions. Exposure of young children to high levels of nitrogen dioxide can increase the risk of respiratory conditions and can even limit lung growth, leading to poor lung function in the long-term.

Particles (PM₁₀)

Particles less than 10 µm (0.01 mm) are considered a pollutant because they are easily inhaled into the human lungs and airways, potentially causing damage. In Warwickshire there are currently no exceedances of the PM₁₀ objective, although it is still a pollutant of some concern in the County.

Carbon Monoxide

Carbon monoxide levels have dropped considerably in the UK in the last 30 years and it is not a significant pollutant for Warwickshire.

Benzene

Benzene levels in Warwickshire are appreciably below the UK objective and this is not considered to be a pollutant of concern in the County.

1,3-Butadiene

1,3-butadiene levels in Warwickshire are not significant.

Lead

As a result of the introduction of unleaded fuels and the catalytic converter the emissions of lead from road transport have significantly reduced in the last 30 years and lead is not an air pollutant of significant concern in Warwickshire.

Sulphur Dioxide

The principal sources of sulphur dioxide in the UK are energy production and industrial combustion and road transport is a comparatively insignificant source.

Policy and Guidance Context

National Policy

National air quality policy comes in the form of the Local Air Quality Management Policy Guidance Note LAQM. PG(03) (2003), which provides guidance and assists local authorities in working towards meeting the UK air quality standards and objectives.

LAQM. PG(03) (2003) also provides guidance on the development of local and regional air quality strategies. Chapter 5 of the document includes particular points of guidance such as:

- Co-operation between local authorities, neighbouring authorities and local authority departments in the devising of air quality strategies to ensure a fully-integrated, “corporate” approach;
- Linking strategies to other local initiatives and strategies;
- Linking the strategy to plans such as the Local Transport Plan;
- Setting out measures to maintain or further improve areas with existing air quality as well as seeking to improve areas with poor air quality; and
- Following the same principles in developing an air quality strategy as one would in developing an Air Quality Action Plan for an Air Quality Management Area.

Advice is also given in the LAQM document to consider the National Society for Clean Air (NSCA) documents “Air Quality Action Plans: Interim Guidance for Local Authorities” and “Air Quality: Planning For Action”. These documents advise that objectives and targets within schemes and initiatives are:

- Practicable, to ensure that they can actually be carried out as desired;
- Measurable, in order to determine their success;
- Set to be carried out within a reasonable timescale; and
- Have the involvement and support of key stakeholders as well as ensuring that the wider benefits of a Strategy are given greater emphasis to the public.

It is also recommended that longer-term objectives and targets be considered as well as the more medium and short-term ones.

UK national policy also exists in terms of climate change and the emission of greenhouse gases. Following the Kyoto Protocol, the UK Government has committed itself to reducing carbon dioxide emissions by 20% below 1990 levels by 2010, and to cut overall greenhouse gas emissions by 12.5% below 1990 levels by 2008 – 2012. Some of these cuts will come from the transport sector with agreements with European car manufacturers to increase fuel efficiency, and for Government to invest in transport, aiming to cut congestion and pollution.

Regional Policy

There are a number of regional policies in the Regional Spatial Strategy (RSS11) relating directly to transport and therefore impacting on air quality. Policies include increasing the awareness of “alternative travel choices”, reducing current levels of car use (Policy T4) and encouraging more walking and cycling journeys (Policy T3).

Other policies that have positive implications for air quality include reducing the need to travel (Policy T2), improving access to public transport and providing attractive alternatives to the private car (Policy T5), putting in place Park and Ride schemes where viable (Policy T6) and addressing the issues of road freight, tackling problems with through traffic and encouraging the movement of freight away from the roads (Policy T10).

Local Policy

On a local level, the Warwickshire Structure Plan 1996 – 2011, in line with the Regional Spatial Strategy, also contains policies relating to transport, which have the potential to impact positively on air quality. Policy T1 aims to “reduce the impact of traffic on residential areas and the countryside whilst recognising travel needs”, and “encourage industry to develop distribution arrangements, including the use of rail, pipeline and canal, which minimise environmental damage.”

Other policies within the Warwickshire Structure Plan seek to promote alternative modes of transport, encourage the use of public transport, improve facilities for walking and cycling, reduce the number of short car journeys and encourage an overall modal shift away from the private car.

Air Quality in Warwickshire

Air quality across the County is largely good. There are a few areas however, where the air quality objective for nitrogen dioxide is not being met. In these locations Air Quality Management Areas (AQMA) have had to be declared or will soon be declared by the relevant District/Borough Council. In each of these AQMAs road transport has been identified as the most significant contributor to elevated air pollution levels.

North Warwickshire Borough

A declared AQMA for NO₂ at Coleshill in North Warwickshire has been in place since March 2001, and relates to one relevant residential property adjacent to Junction 4 of the M6. The AQMA is bounded by Stonebridge Road, Coleshill Heath Road, the M42 and the M6, and relates directly to the traffic on these major roads. The AQMA was declared for a marginal exceedance (42 µg/m³) of the annual NO₂ objective (40 µg/m³).

It is possible that the AQMA may be revoked in the near future, although continued monitoring, as set out in the North Warwickshire Borough Air Quality Action Plan will dictate the possible timescale of this. This monitoring programme will also assess the possible influence of the new M6 Toll Road on the AQMA.

Nuneaton and Bedworth Borough

There is a possibility that an AQMA may be declared on the Leicester Road gyratory, specifically around the Weddington Road/Old Hinckley Road and Old Hinckley Road/Leicester Road junctions. Modelling predicts the highest 2005 concentrations to occur at the junction of Weddington Road and Old Hinckley Road, with a value of 47.8 µg/m³. This road network is known to be particularly congested and recent works have been carried out to ease the flow of traffic. It is possible that the ambient air quality in the immediate area surrounding Weddington Road and Old Hinckley Road may improve slightly due to a freer flow of road traffic.

The County Council will work with Nuneaton and Bedworth Borough Council to put together an Air Quality Action Plan if/when an AQMA is declared.

Rugby Borough

An AQMA for exceedances of the NO₂ objective came into force across the entire urban area of Rugby in December 2004. The AQMA is bounded by the M45, M6, A45, minor roads to the west of Long Lawford and the boundary with Daventry District. Air quality problems in Rugby are directly related to the large number of peak hour vehicles and HGVs travelling through the town centre.

Exceedances of the NO₂ objectives (with concentrations of between 40 and 44 µg/m³) for the objective year of 2005 are predicted to occur around the gyratory in the centre of Rugby, specifically next to and approaching the Bilton Road, Lawford Road and Dunchurch Road junctions. It is on the basis of these predicted exceedances that the Rugby AQMA has been declared.

It is also possible that exceedances of the NO₂ objective could occur in the centre of the village of Dunchurch, although at present the highest predicted 2005 concentration is reported as being 40 µg/m³ at the façade of a property closest to the central crossroads in the village.

An Air Quality Action Plan to address the AQMA is currently being prepared by Rugby Borough Council in conjunction with the County Council, and is due for publication in July 2006.

Warwick District

There are a number of areas in Warwick District where there are potential exceedances of the 2005 NO₂ objective. As a result of this, three AQMA's were declared in December 2004 covering the following areas:

- Leamington Spa around the junction of Bath Street, High Street and Clemens Street. The highest predicted concentration at a roadside property is 56.9 µg/m³ and the lowest predicted concentration is 49.4 µg/m³;
- Warwick town centre, where exceedance of the 2005 NO₂ objective have been predicted in High Street, Jury Street, Church Street and Castle Street. The highest predicted concentration is at the corner of Jury Street and Castle Street (55.7 µg/m³); and
- Barford, where the highest 2005 concentration (59.1 µg/m³) is predicted to occur around Church Street and Bridge Street.

An Air Quality Action Plan to address these three AQMA's is currently being prepared by Warwick District Council in conjunction with the County Council, and is due for publication in July 2006.

Stratford-on-Avon District

There are currently no AQMA's declared within Stratford District. Monitoring undertaken by the District Council suggests that an AQMA is likely to be declared in the near future in Studley. This relates directly to the high traffic volumes carried by the A435 trunk road between the M42 and the A46 at Alcester. Further monitoring will continue to be undertaken by the District Council to identify other air quality problems as they arise, including within Stratford-upon-Avon town centre.

The County Council will work with Stratford District Council to put together an Air Quality Action Plan if/when an AQMA is declared.

Air Quality Challenges

There are a number of other air quality issues or potential issues that will need to be observed and monitored closely. It is partly the purpose of this Strategy to assist areas such as this and ensure that air quality does not deteriorate further and fail to achieve national objectives. The Strategy also aims to assist areas that have already declared AQMA's to help regain the UK standards for air quality.

If policies and action plans to improve and maintain air quality in Warwickshire are not put in place then problem areas may degrade further and areas that are seen as potential future problems may become real and significant problems. All the potentially emerging air quality issues in Warwickshire are related to road traffic in and around the county's town centres and along major commuter arterial routes and junctions.

There are a number of challenges related to air quality in Warwickshire that need to be addressed in the immediate future which this Strategy seeks to tackle. These include:

- Discerning whether movement of congested traffic to other areas is merely moving the entire problem, including air quality, to other areas;
- Continuing monitoring in areas that may emerge as significant air quality problem areas;
- Solving existing or potential air quality problems related to main arterial routes in the County;
- Assessing whether traffic problems are a result of localised traffic or through traffic in order to allow the best approaches to traffic and air quality management;

- Increased road traffic in the County associated with increased use of Coventry Airport;
- Dealing with town centre traffic, (both commuter and visitor/ tourist traffic in towns such as Warwick, Leamington Spa, Rugby and Nuneaton) where many air quality problems occur, including the presence of HGVs in town centres;
- School related traffic; and
- Assessing the impact that the newly opened M6 Toll will have on the AQMA at Coleshill. The real effect of this will not be fully realised for a number of years, as patterns of usage on the road need to become established. However, continued monitoring of air quality in the area for the foreseeable future will help establish any improvements or otherwise in air quality at Coleshill.

The Air Quality Strategy

The vision of Warwickshire County Council's Air Quality Strategy is:

'To take a proactive approach to maintaining and improving air quality within the County where transport is causing unacceptable levels of air pollution, in order to improve quality of life for all'.

The overall aim of the Air Quality Strategy is to work to improve areas of existing air quality problems, maintain areas with good air quality and to promote and support practices, activities and lifestyles, including modes of transport that can achieve this. The Air Quality Strategy also aims to support and promote all transport policies that contribute to improving air quality within Warwickshire.

The Air Quality Strategy seeks to present a number of broad ranging policies, highlighting the air quality problems specific to Warwickshire. These inform the specific schemes and initiatives in the Action Plan.

The major themes of the Air Quality Strategy are:

- To improve areas with poor air quality and maintain those areas that currently experience good air quality
- To encourage sustainable forms of transport, which reduces reliance on private cars and minimises emissions to air; and
- To promote awareness of alternative travel choices.

Air Quality Strategy Policies

Policy

Policy

Improving poor air quality through partnership working

The County Council will work in partnership with the five District/Borough Councils in Warwickshire to meet the UK air quality objectives, focusing on existing Air Quality Management Areas to achieve improved air quality. Within 18 months of the declaration of an AQMA, the County Council will work with the relevant District/Borough Council to formulate an Air Quality Action Plan designed to revoke the AQMA over a specified period. Where the air quality issues relate primarily to transport, the Action Plans will comprise existing schemes drawn from the LTP, plus other complementary measures.

Schemes and initiatives put in place to tackle poor air quality, by reducing the impact of road traffic on air quality, will assist in improving quality of life across Warwickshire.

The County Council will also make a commitment to increase its own awareness of air quality issues, in order to assist in improving air quality. The County Council will take greater involvement in local and regional air quality action groups.

Policy

Maintaining areas of good air quality

The County Council will seek to maintain good air quality in areas without any existing air quality problems.

A proactive approach will be undertaken with the five District/Borough Councils in Warwickshire to monitor and address known air quality problems in the County, in order to ensure that potential AQMAs are tackled prior to any formal declaration.

Policy

Education and information

The County Council will aim to promote, educate and inform as widely as possible about air quality, transport choices and their implications for air quality and health.

The County Council will place the LTP Air Quality Strategy on the Warwickshire website on a dedicated air quality page, also providing other air quality information. The page will be updated with relevant information on a regular basis and will be related to the transport pages of the existing website.

The County Council will promote the implementation of travel plans amongst companies and schools in the County. Reducing dependency on cars, especially in congested areas, will be a key focus.

The County Council will actively encourage its staff members to travel to work and undertake work related activities through the use of public transport, cycling or walking.

Policy

Strategy Review

The Air Quality Strategy will be reviewed at regular intervals, keeping it up to date with the latest air quality information in the County, advances in air quality knowledge and best practice techniques, regional and national policy and legislative developments. The schemes and initiatives in the Action Plan will also be revised as necessary to reflect any changes to the Strategy.

Progress on addressing air quality issues within the County will be reported annually through the LTP Annual Progress Report.

Policy

Integration of air quality and transport planning goals

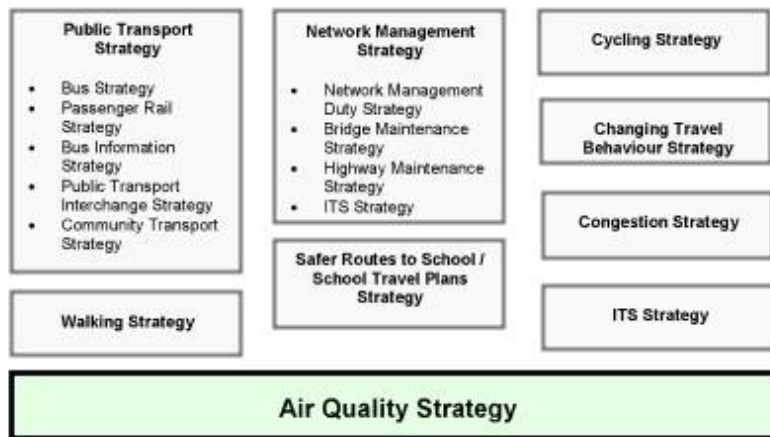
Warwickshire County Council will promote the use of public transport, and will seek to provide better facilities and services to improve accessibility and safety, and reduce dependency on the car. The County Council will aim to limit road traffic growth, particularly in areas with existing poor air quality.

The County Council will actively promote cycling and walking as alternative modes of transport to the car, especially for shorter journeys.

Freight vehicles will be encouraged, where possible, to travel on designated freight routes only. Drivers will be encouraged to do this through the promotion and use of the Warwickshire Lorry Route Map.

The County Council will promote and use cleaner vehicles and fuels where it is economically viable to do so

The figure below highlights the key links between the Air Quality Strategy and the other LTP strategies.



Constraints to Delivering the Strategy

There are a number of constraints on the delivery of the Air Quality Strategy, due to transport schemes that are already planned and are being implemented, or which are due to be implemented in the near future. Constraints also exist because motorways and trunk roads are outside the control of the County Council.

In terms of planned schemes, the Leamington Urban Mixed Priority (LUMP) scheme in the Parade, Victoria Terrace and Bath Street, is being implemented during 2006/07. One element involves traffic signal management to promote smoother traffic flow. This scheme in itself may have a positive impact on air quality in this area, although clearly monitoring and modelling work will have to be carried out to confirm this. Given that the LUMP scheme is a demonstration project being undertaken in partnership with DfT, it is unlikely that any further schemes to address air quality in this area will be implemented given the need to monitor the impact of the project over the next few years.

With regard to motorways and trunk roads passing through Warwickshire, these and any schemes related to them are the responsibility of the Highways Agency. The County Council will maintain regular contact with the Highways Agency to ensure that it is fully aware of any future schemes which could impact on any declared AQMAs or air quality issues generally on the strategic network.

The Action Plan

Actions for delivering the Air Quality Strategy are as follows:

Action AQA1 - Improving poor air quality through partnership working

Improving air quality in the County will include assisting the District/Borough Councils in drawing up Air Quality Action Plans as required (if and when Air Quality Management Areas are declared) and providing support in implementing the Plans.

Regular communication with the District/Borough Councils, as well as neighbouring authorities and other organisations such as the Highways Agency, will be carried out to ensure maximum awareness of all air quality issues.

The County Council will seek to implement traffic management schemes where air quality is poor, particularly within town centres.

Air quality monitoring will be carried out in support of the District/Borough Councils, in order to foresee any potential air quality problems, improve the local and regional air quality data set, and improve the knowledge and understanding of the air quality situation in the County.

The County Council has recently published a Lorry Route Map for Warwickshire, which aims to take road freight vehicles away from sensitive locations, such as residential areas and onto more appropriate routes.

The Council also aims to operate a “cleaner” vehicle fleet by introducing alternative-fuel vehicles, as they become economically viable. The Council currently operates 344 vehicles, of which 222 are diesel, 94 are petrol (largely motor scooters used in the “Wheels To Work” scheme) and 28 are rebated diesel. Fleet vehicles are currently purchased according to the carbon dioxide performance of the vehicle.

Action AQA2 - Maintaining areas of good air quality

Maintaining on-going communication with the District/Borough Councils to ensure full awareness of potential future air quality issues.

Implementation and promotion of a Lorry Route Map for the County, encouraging goods vehicles to remain on designated routes.

Action AQA3 - Education and information

Increasing public awareness of road transport-related air quality issues, through a number of initiatives, including a dedicated air quality page on the Warwickshire County Council website.

Promoting the use of public transport and alternative methods of transport to the private car, including TravelWise initiatives and travel plans for schools and workplaces. Promotion of cycling and walking as alternative methods of transport, highlighting the health benefits that both these modes can bring.

Continued promotion of the Safer Routes to School initiative, including Walk to School Weeks throughout the County and possible introduction of Car Free Days to the main town centres of the County.

Improving route signage, particularly in town centres, in order to alert drivers to more preferable, possibly less congested routes.

It is anticipated that the Council's use of "cleaner" vehicle technology will encourage other employers to make use of similar types of vehicles.

Action AQA4 - Strategy review

The Air Quality Strategy is to be reviewed no less than once a year and is to be informed by the District/Borough Council reviews of air quality.

Action AQA5 - Integration of air quality and transport planning goals

Traffic will be managed, where possible, to take account of the need to minimise impacts on local air quality. In new developments, air quality issues will be considered in all situations, including the consideration that all new developments are to have reasonable access to public transport and sufficient provision is made for pedestrians and cyclists.

Local bus services will be improved, by increasing the accessibility, affordability and safety of services.

The County Council will contribute to the national targets on greenhouse gases, which includes an overall reduction of 20% in CO₂ emissions by 2010.

Targets, Indicators and Monitoring

Targets and indicators are described in the table below. These have been set within the context of other LTP strategies that impact on air quality, including:

- Congestion Strategy;
- Sustainable Freight Distribution Strategy;
- Public Transport Strategy;
- Cycling Strategy;
- Walking Strategy;
- Safer Routes to School/School Travel Plan Strategy;
- Changing Travel Behaviour Strategy; and,
- Land Use and Transportation Strategy.

Extensive modelling has been carried out to ascertain the degree of change in traffic levels that will be required to address the current AQMAs and return air quality to within national guidelines for NO₂. This data, plus predictions related to improvements in vehicle emissions, have been instrumental in developing appropriate targets.

Table 8 Targets and Indicators			
Air Quality Strategy - Targets and Indicators			
Local Target/Indicator	Performance Indicator	Source of Data	Frequency of Monitoring
Target (LTP8): Reduce the number of exceedances of the national air quality standards and objectives between 2005 and 2010.	Monitored and modelled pollutant levels across the County. The revocation of AQMAs.	Countywide air quality monitoring stations.	Annual
Target: Retain traffic volumes at 2004 levels in the urban areas of Nuneaton, Rugby, Warwick and Leamington Spa.	Road traffic levels on local road networks.	Road traffic surveys. Traffic modelling.	Annual
Local Indicator: Ensure that air pollutant levels do not exceed national standards in the County where they previously have not.	Air quality assessment of major transport proposals within Warwickshire.	Countywide air quality monitoring stations. Regular and continued dialogue with the District/Borough Councils.	Annual