Rushcliffe

Air Quality Action Plan for Rushcliffe

November 2006

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Rushcliffe Borough Council

Local Air Quality Management

Air Quality Action Plan for West Bridgford

CONTACT INFORMATION

This Action Plan has been produced by:-

Environmental Health Service
Rushcliffe Borough Council
Civic Centre
Pavilion Road
West Bridgford
Nottingham
NG2 5FE

Tel: 0115 9148322

Copies of the Action Plan are available on the Rushcliffe Borough Council Web Site www.rushcliffe.gov.uk, or by writing to the above address.

Specific comments or information can be obtained by contacting the following Officers:-

Officer	Designation	Tel. Number	E-mail
Alan Twells	Principal EHO	0115 9148242	atwells@rushcliffe.gov.uk
John Pemblington	Technical Officer	0115 9148556	jpemblington@rushcliffe.gov.uk
Ian Grand	Technical Officer	0115 9148486	igrand@rushcliffe.gov.uk

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1. The Council would like to acknowledge the help and co-operation of the many organisations that have contributed information and provided assistance to enable the Action Plan to be undertaken. The cooperation and information supplied by the Environment Agency, Highways Agency, Nottinghamshire County Council, and neighbouring authorities have been critical to completion of this work.

Contents **Page No.**

1. Executive Summary.

Rushcliffe Borough Council has carried out a Stage Four Review and Assessment of Air Quality in West Bridgford as part of its duty under the Environment Act 1995.

The report follows the Detailed Assessment published in May 2005, which concluded that the annual mean objective for nitrogen dioxide would not be met at some locations close to busy roads in West Bridgford, and as a result, two Air Quality Management Areas were declared in September 2005 for traffic related nitrogen dioxide exceedences of the National Air Quality Objectives.

The Detailed Assessment also concluded that in the vicinity of the Lafarge UK cement works in Barnstone, there were exceedences of the sulphur dioxide objectives, and an AQMA was declared covering the Barnstone area. The kiln operations that were responsible for these exceedences closed in May 2006, and as a result of the ambient sulphur dioxide monitoring confirming that the objectives are no longer being breached, the AQMA will be formally revoked in March 2007, after consultation.

The Stage Four assessment for nitrogen dioxide involved further monitoring and modelling, and confirmed the findings of the 2005 Detailed Assessment and also that the decision to declare the AQMAs was correct, and that the boundaries set do not require any adjustments. Modelling predictions carried out for 2010 suggest that reductions in the levels of nitrogen dioxide concentrations of 3 to 6µg/m^3 are required to meet the annual mean objective at Radcliffe Road, Trent Boulevard and Trent House in West Bridgford.

Source apportionment assessments have also confirmed that emissions from roads are found to be the main contributor to the annual average concentrations of nitrogen oxides (NOx = nitrogen dioxide (NO_2) plus nitric oxide (NO)) at all the relevant locations in AQMA1 and AQMA2, for 2005 and 2010.

The full Stage Four Air Quality Assessment report can be viewed or downloaded from the website, www.rushcliffe.gov.uk.

This Action Plan has been drawn up and outlines the options that the council and partner organisations need to undertake to work towards reducing the levels of nitrogen dioxide to below the National Air Quality Objectives. The Action Plan will feed directly into the Nottinghamshire County Council Local Transport Plan, which will contribute to improvements in air quality.

The main measures of the Action Plan are:

- Information and awareness.
- Consideration of alternative means of transport.
- Road network management.
- Management of emissions.

The Council will continue to monitor air quality in the area to confirm that the measures included in the Action Plan are reducing the levels.

The Air Quality Management Areas will be revoked when it has been confirmed that the Objectives are no longer being exceeded.

2. Introduction.

Rushcliffe Borough Council has a responsibility under Section 84(2) of the Environment Act 1995 to draw up an Air Quality Action Plan, detailing the measures that need to be taken to improve air quality in the Air Quality Management Areas, which were declared in September 2005 as a result of the findings of the detailed assessment carried out in February 2005.

AQMA 1 and 2 were declared for traffic related nitrogen dioxide exceedences in West Bridgford, and the AQMAs cover Lady Bay, Radcliffe Road, Trent Bridge, Loughborough Road, Melton Road, Wilford Lane and part of the A52 Ring Road from the Nottingham City boundary to the A52/A60. The Stage 4 assessment confirmed the findings of the detailed assessment.

AQMA 3 was declared as a result of the exceedences of the sulphur dioxide objectives caused by emissions from the production of Rockfast clinker at the Lafarge cement works in Barnstone. The kiln closed in May 2006, and as a result of the ambient sulphur dioxide monitoring confirming that the objectives are no longer being breached, the AQMA will be formally revoked in March 2007, after consultation.

The AQMA maps are shown in the figures 2.1, and 2.2, showing the AQMA1, 2 boundaries and the main roads in West Bridgford, and figure 2.3 showing the AQMA3 boundary and the location of the Lafarge cement works.

This Action Plan will therefore concentrate on actions to reduce nitrogen dioxide emissions in AQMA1 and AQMA2.

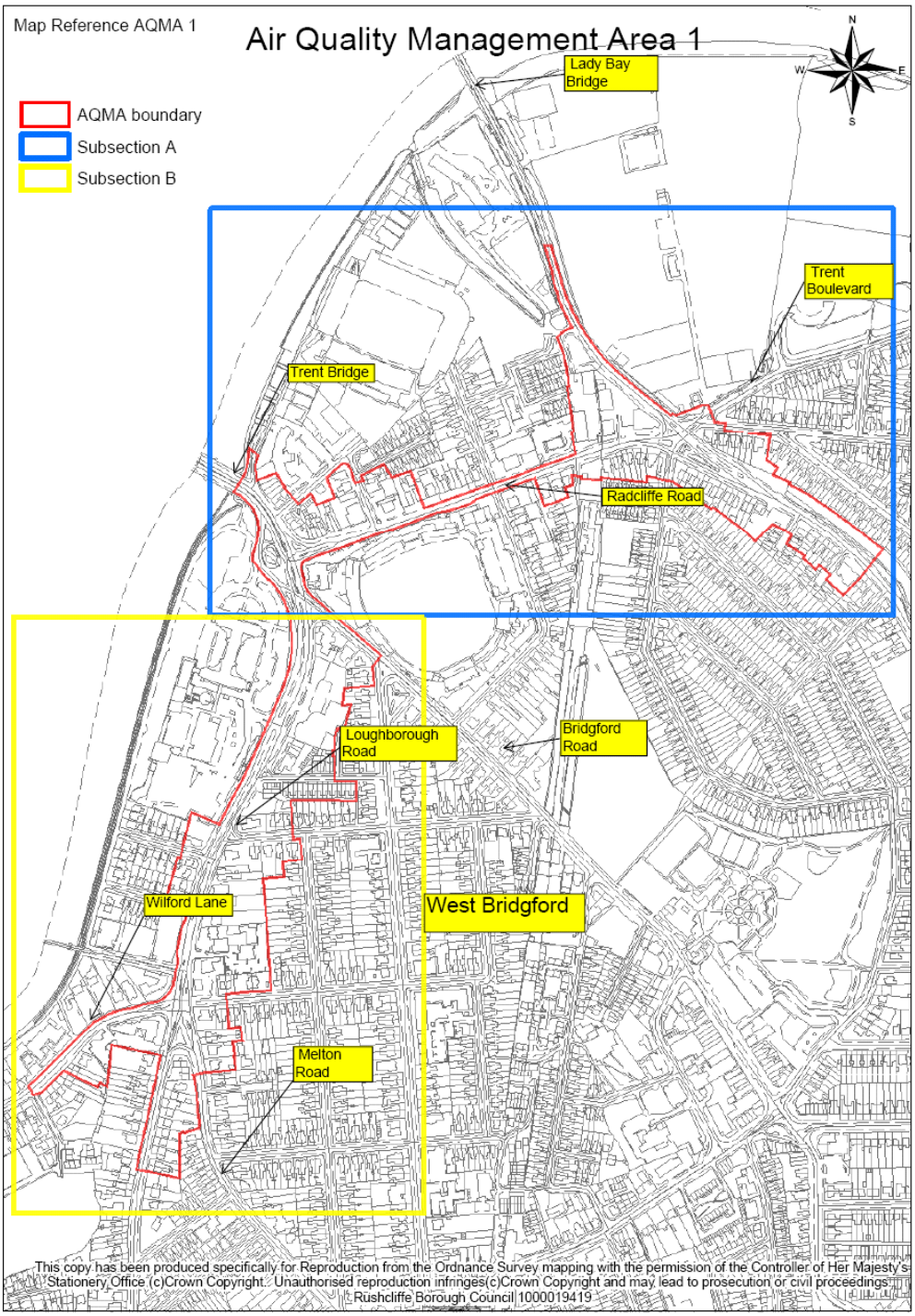
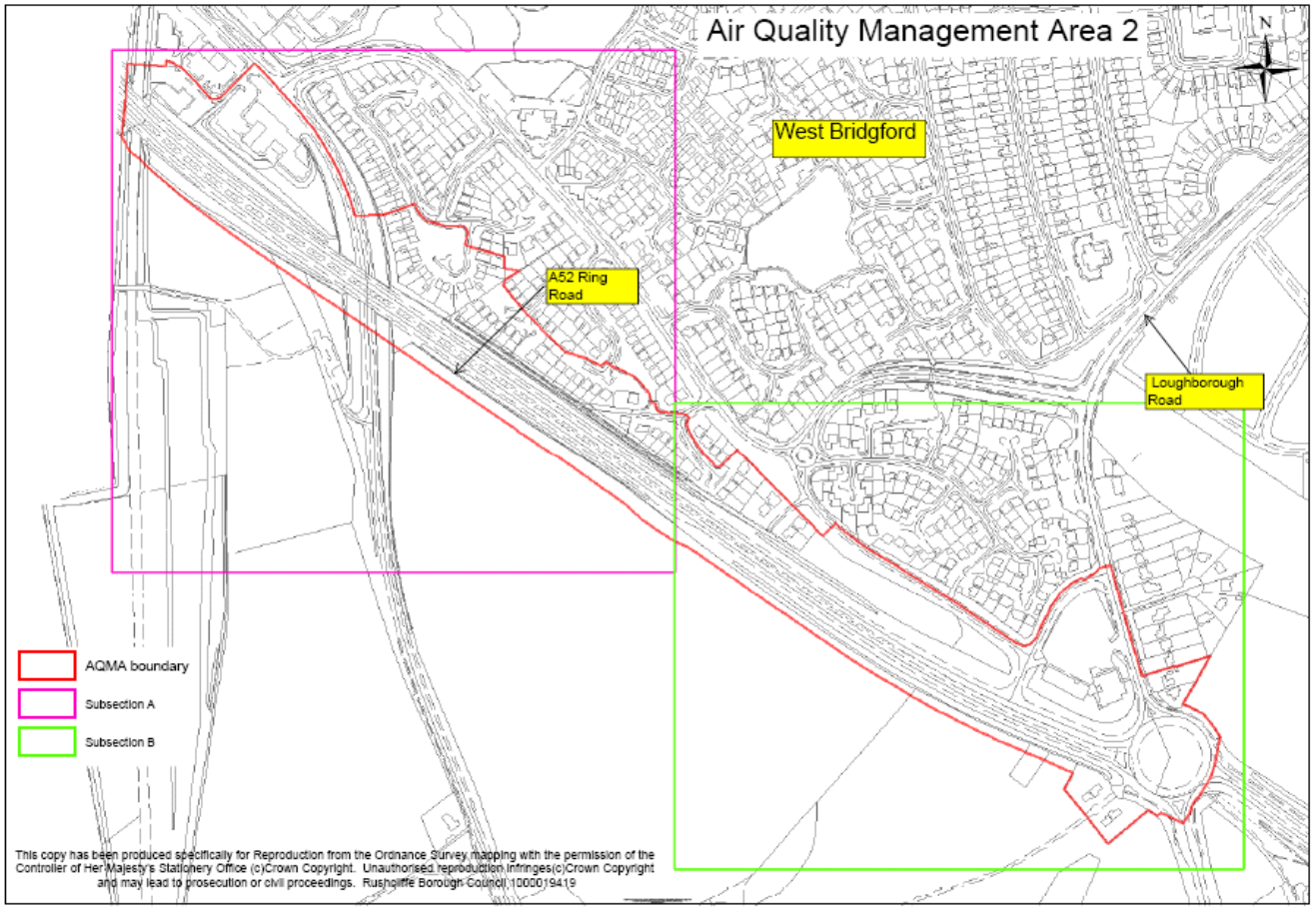


Fig. 2.1. AQMA1 map (boundary marked in red), showing main roads in West Bridgford.

Fig. 2.2. AQMA2 map (boundary marked in red), showing main roads in West Bridgford.



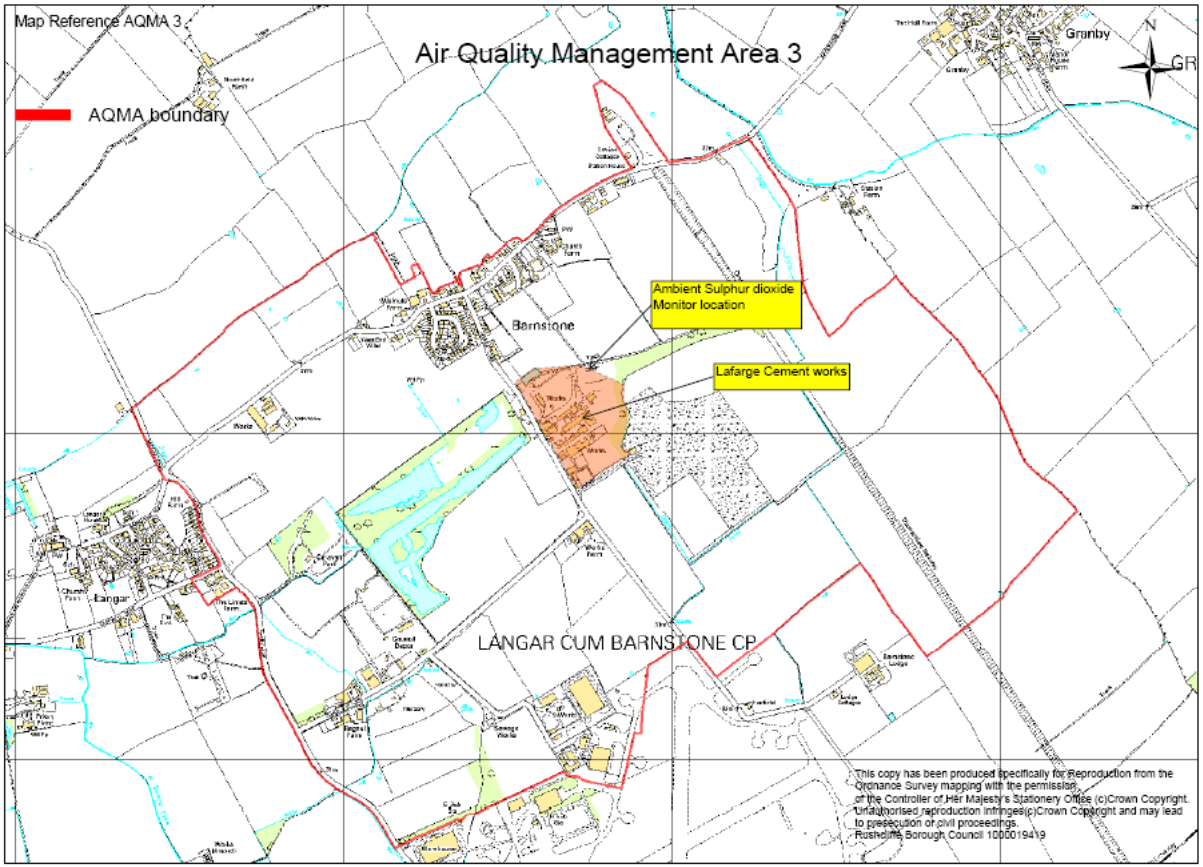


Fig. 2.3. AQMA3 map (boundary outlined in red), showing the location of Lafarge Cement Works (shaded pink area), Barnstone.

3. Overview of the local air quality management in Rushcliffe.

3.1. Summary of Rushcliffe Borough Councils Local Air Quality Management 2000 – 2006.

The following information can be viewed or downloaded from the Rushcliffe Borough Council Web Site www.rushcliffe.gov.uk

3.2. Air Quality Review and Assessment 2000.

In 2000, Rushcliffe Borough Council reported the findings of its original Review and Assessment of local air quality. This was a 3-stage process, concluding that with the exception of particulates, there was no need to proceed beyond Stages 1 and 2.

A more detailed Stage 3 assessment was carried out for particulates (PM_{10}), due to both potential inaccuracies in the atmospheric dispersion modelling and the predicted concentrations being close to the objective. Monitoring data was used to validate the computer modeling. It determined that the objective would be unlikely to be exceeded. It was therefore concluded that there was no need to declare an Air Quality Management Area.

3.3. Updating and Screening Assessment. Review and Assessment of Local Air Quality 2003.

The 2003 Updating and Screening Assessment showed that a detailed assessment was required for traffic related nitrogen dioxide around some roads in West Bridgford, and for sulphur dioxide emissions from the kiln operations at Lafarge UK Ltd cement works in Barnstone.

3.4. Detailed Assessment of Sulphur Dioxide and Nitrogen Dioxide. Review and Assessment of Local Air Quality. Second Round 2005.

The 2005 Detailed Assessment showed that the levels for both nitrogen dioxide and sulphur dioxide at the relevant locations exceeded the air quality objectives and as a result, three Air Quality Management Areas were declared on 1 September 2005 (figs 2.1 to 2.3 – Maps of Rushcliffe Borough Council AQMAs).

3.5. Air Quality Review and Assessment Progress Report – 2005.

The purpose of the Progress Report was to provide an annual review and update on air quality issues, and included developments that might be significant to air quality and an update on the ongoing air quality monitoring within the Borough since the last Updating and Screening Assessment.

3.6. Updating and Screening Assessment, Review and Assessment of Local Air Quality 2006.

The Updating and Screening Assessment 2006 re-examined those emission sources within the Borough, which were considered during the original 2000 Review and Assessment, the 2003 Updating and Screening Assessment, as well as any new emission sources.

This Updating and Screening Assessment 2006 determined that it was not necessary to undertake a detailed assessment with respect to:

- Benzene.
- 1,3 Butadiene.
- Carbon monoxide.
- Lead.
- Nitrogen dioxide outside of the declared AQMAs, and additional sources within the AQMAs.
- PM10.
- Sulphur dioxide outside of the declared AQMA, and additional sources within the AQMA.

3.7. Nottinghamshire Atmospheric Emissions Inventory.

The first Nottinghamshire Atmospheric Emissions Inventory was first compiled on behalf of all the Nottinghamshire Authorities in 1997, updated in 2001, and revised in 2006. The purpose of the inventory is:

- As an underpinning tool for undertaking air quality reviews as described by the Air Quality Strategy (DETR, 2000) and enshrined in the Environment Act 1995;
- For assessing the impact of new development and the changes to road infrastructure; or their use of identifying the environmental benefits of proposed urban change;
- For developing air quality action plans; and
- To provide input to dispersion modelling which can be used to guide or refine air quality monitoring networks.

3.8. Stage Four Assessment for nitrogen dioxide.

As a precursor to the action plan, a further assessment was carried out. The Stage Four assessment included further monitoring within the AQMA1 and AQMA2 to confirm the exceedences of the objectives, and also at locations near the AQMAs, to confirm the geographical extent of the areas of exceedences. Remodelling of the air quality within AQMA1 and AQMA2 for 2005 and predictions for 2010 was carried out on behalf of the Council by Cambridge Environmental Research Consultants (CERC).

Short term ambient monitoring for sulphur dioxide was carried out in AQMA3 to confirm that the concentrations were below the objectives following the kiln closure at the Lafarge cement works.

3.9. Summary of the monitoring.

Nitrogen dioxide (NO_2).

There are two objectives for NO_2:

(1) 200μg/m^3 measured as a 1 hour mean, not to be exceeded more than 18 times a year, by December 2005.
(2) 40μg/m^3 measured as an annual mean, by December 2005.
(μg/m^3 = micrograms/cubic metre)

The 2005 annual mean diffusion tube nitrogen dioxide concentrations at the relevant locations (facades) and kerbside monitoring sites in AQMA1 (red) and AQMA2 (blue) are shown in figure 3.4 and table 3.1 A summary of the continuous nitrogen dioxide analyser results (located on Loughborough Road) are shown in table 3.2.

The monitoring confirms that the annual mean objective is being exceeded at 13 out of 18 sites, 7 of which are relevant locations near to busy roads and junctions within the AQMAs.

The continuous monitoring results show the annual mean for 2005 was 39.93μg/m^3 at that location and that the hourly objective of 200μg/m^3 is already being met.

The locations of all the monitoring sites in and around West Bridgford are shown in figure 3.2. and figure 3.3. These also show the corresponding 2005 annual average nitrogen dioxide concentrations.

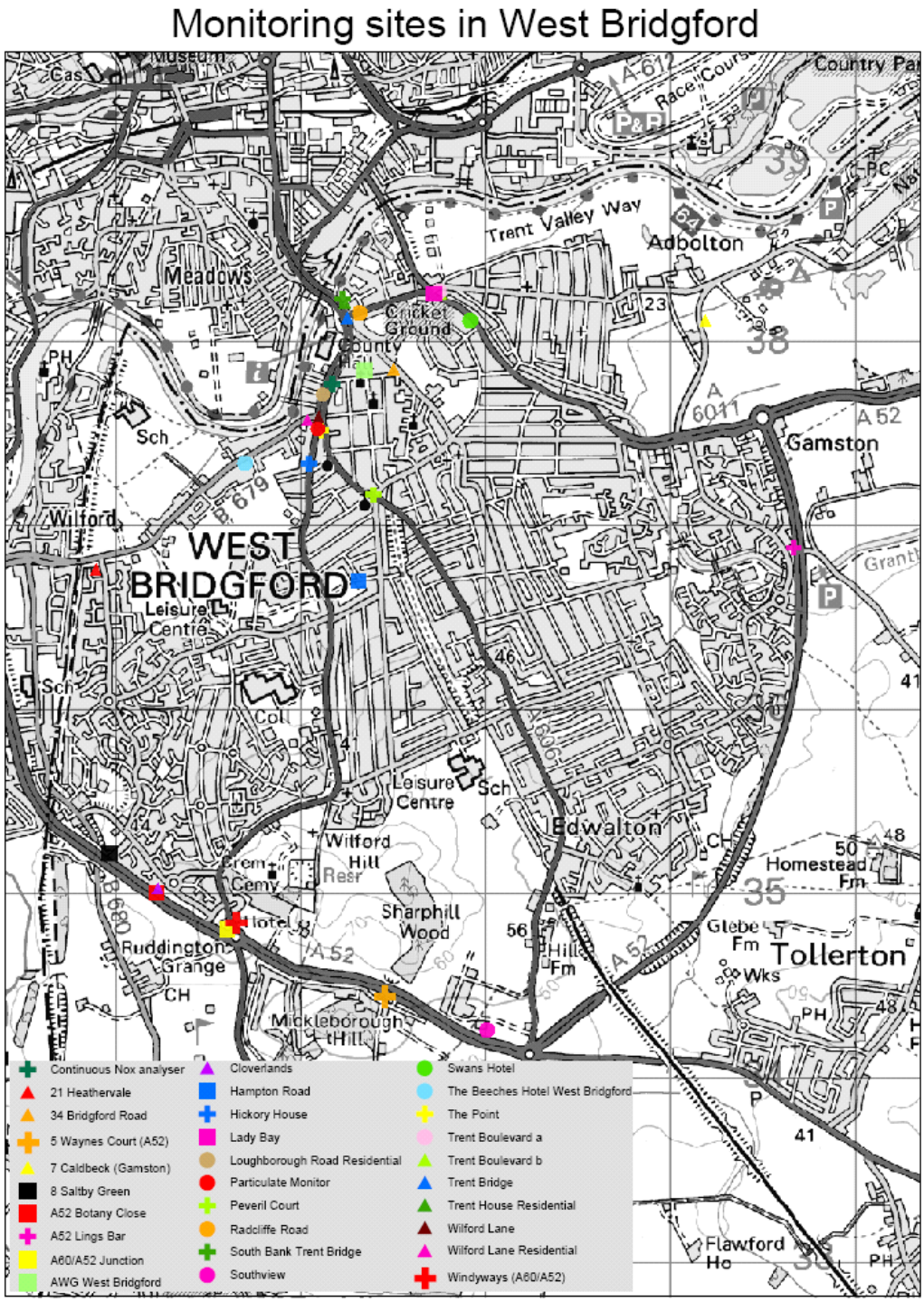


Figure 3.1. Monitoring locations in West Bridgford.

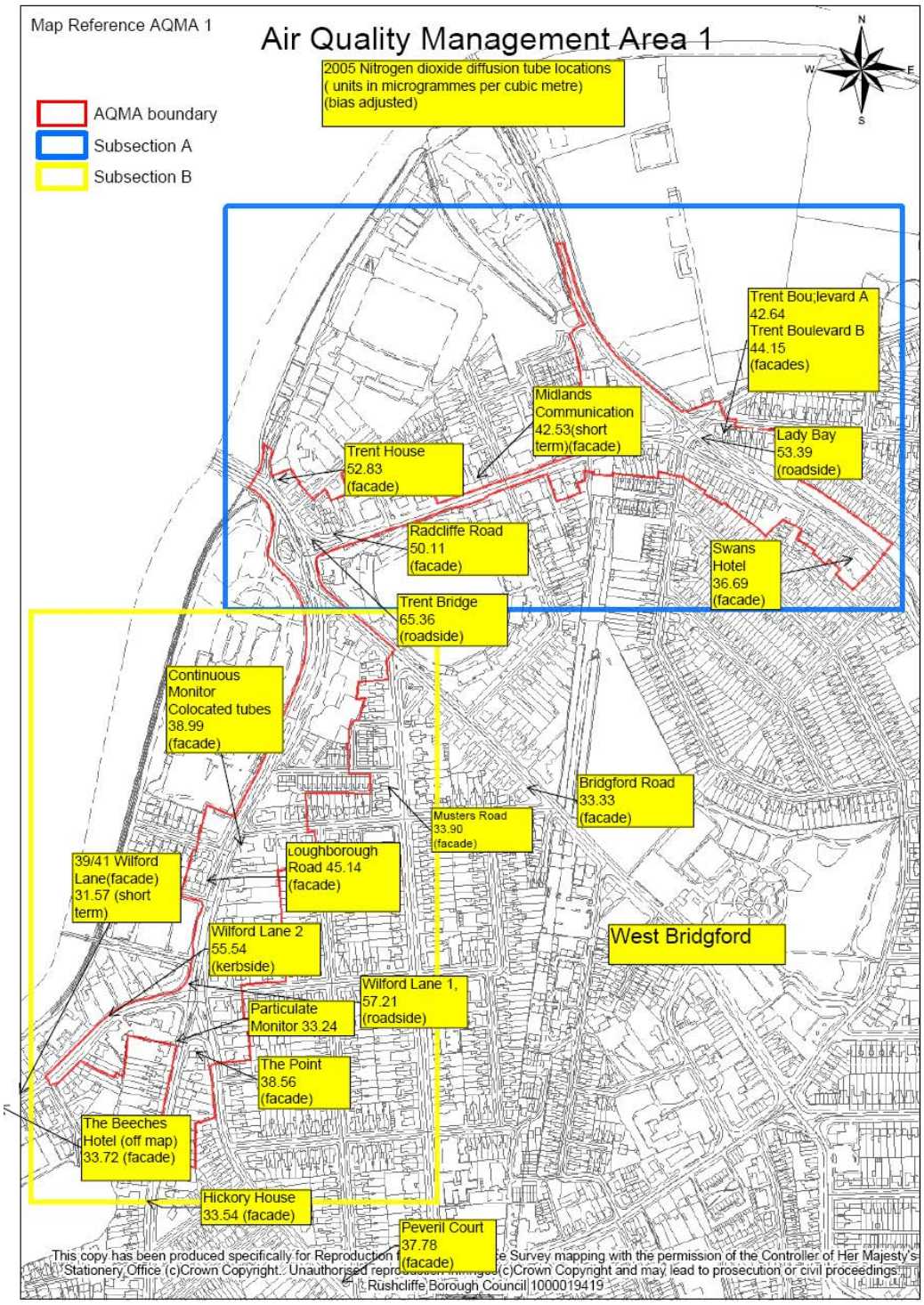
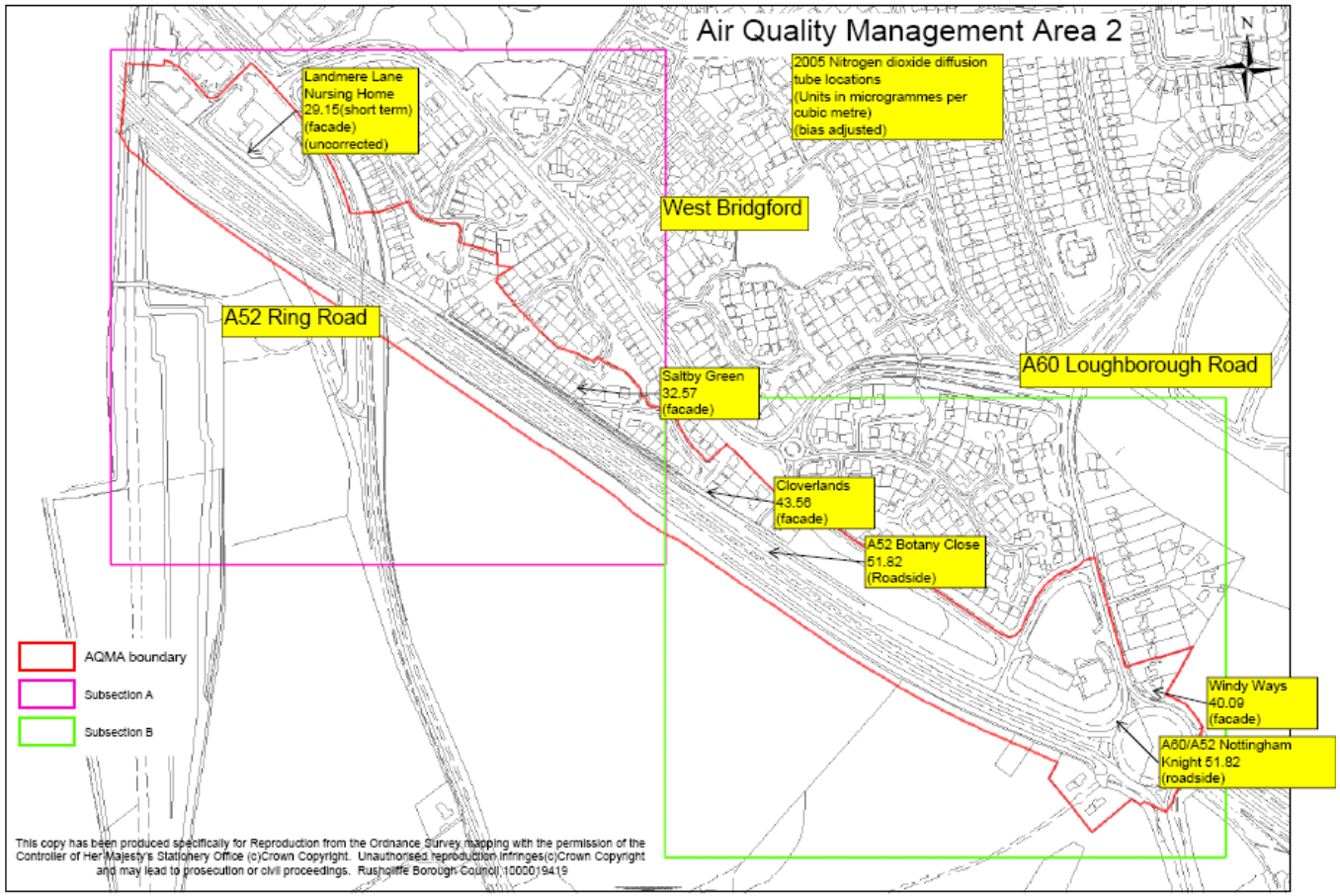
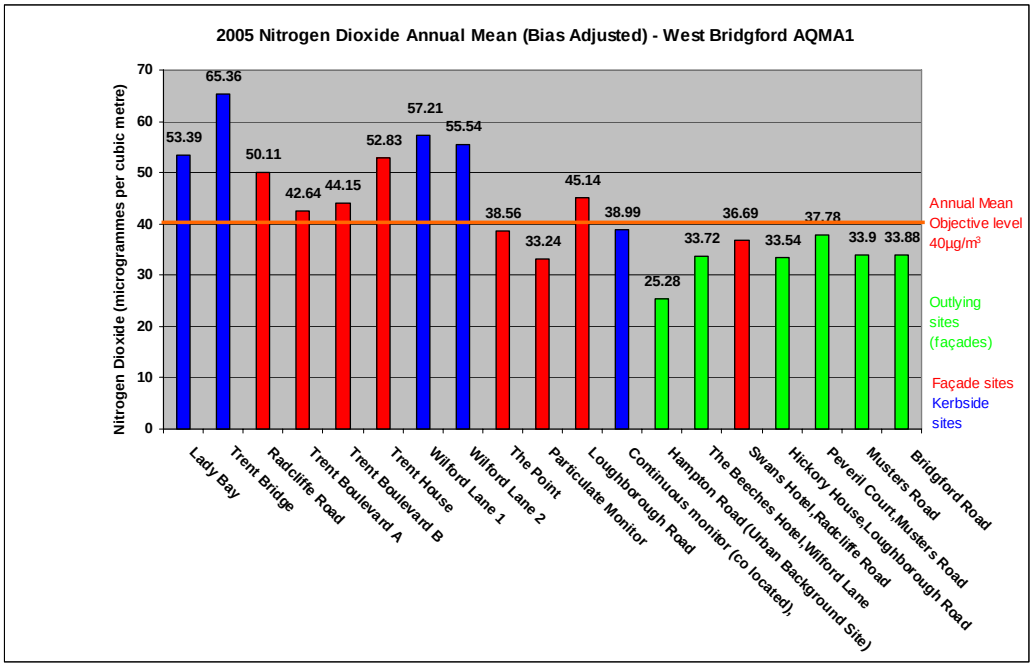


Figure 3.2. AQMA 1, location of nitrogen dioxide monitoring points, showing 2005 annual average nitrogen dioxide concentrations.

Figure 3.3. AQMA 2, location of nitrogen dioxide monitoring points, showing 2005 annual average nitrogen dioxide concentrations.





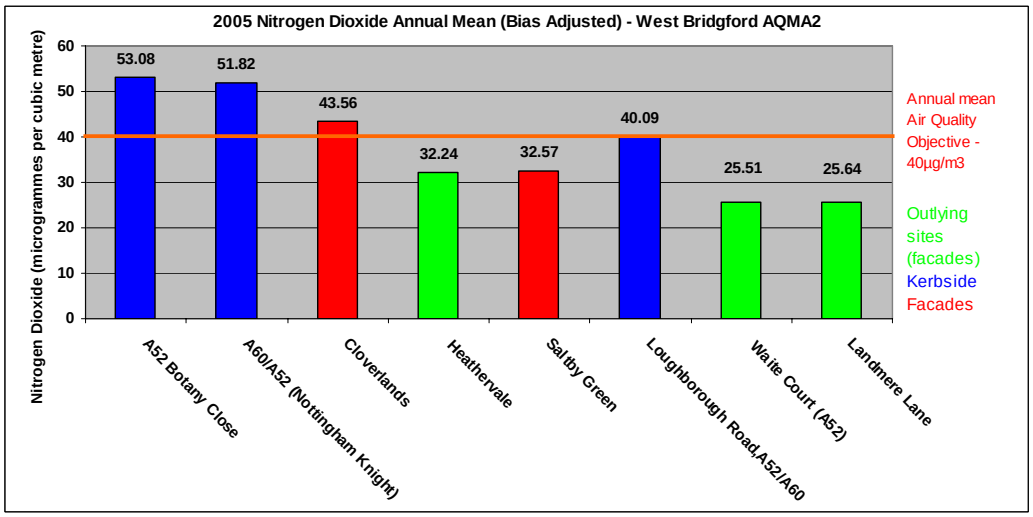


Figure 3.4. 2005 nitrogen dioxide annual mean concentrations in AQMA1 and AQMA2, West Bridgford.

Table 3.2.
Nitrogen Dioxide Continuous Monitoring Results 2005.

Summary of NO_2 Continuous Monitoring Results for 2005 based on Hourly Averages ($\mu g/m^3$)													
	Jan 05	**Feb 05**	**Mar 05**	**Apr 05**	**May 05**	**Jun 05**	**Jul 05**	**Aug 05**	**Sept 05**	**Oct 05**	**Nov 05**	**Dec 05**	**2005**
Mean	38.46	46.10	42.96	37.70	32.70	32.32	28.70	33.66	39.06	37.40	58.67	52.37	**39.93**
Min	1.20	2.80	3.80	2.85	3.11	3.97	3.07	5.26	4.18	0.60	3.71	2.06	**0.60**
Max	123.80	140.60	138.20	110.50	102.70	103.50	102.95	134.65	106.75	111.96	213.10	159.00	**213.10**
No of exceedences of 1 hour mean	0	0	0	0	0	0	0	0	0	0	3	0	**3**

Location AQMA1 AQMA2	GR Northing	GR Easting	Site Type	Mean ($\mu g/m^3$)	Bias adjusted mean
Lady Bay	458724	338266	Kerbside	49.9	53.39
Trent Bridge	458252	338146	Kerbside	61.08	65.36
Radcliffe Road	458284	338150	Façade	46.83	50.11
Trent Boulevard A	458752	338278	Façade	39.85	42.64
Trent Boulevard B	458756	338267	Façade	41.26	44.15
Trent House	458218	338209	Façade	49.37	52.83
Wilford Lane 1	458100	337601	Kerbside	53.47	57.21
Wilford Lane 2	458037	337578	Kerbside	51.91	55.54
The Point	458114	337518	Façade	36.04	38.56
Particulate Monitor	458090	337527	Façade	31.07	33.24
Loughborough Road	458126	337727	Façade	42.19	45.14
Continuous monitor (co located). Loughborough Road	458172	337775	Façade	36.44	38.99
A52 Botany Close	457222	335016	Kerbside	49.61	53.08
A60/A52 (Nottingham Knight)	457595	334815	Kerbside	48.43	51.82
Cloverlands	457223	335033	Façade	40.71	43.56
Saltby Green	456893	335226	Façade	30.44	32.57
Windy Ways ,Loughborough Road	457651	334840	Façade	37.47	40.09
Swans Hotel, Radcliffe Road	458919	338120	Façade	34.29	36.69

Table 3.1. 2005 nitrogen dioxide diffusion tube results for AQMA1 and AQMA2.

3.10. Summary of the modelling.

For 2005, Cambridge Environmental Research Consultants (CERC) carried out mathematical air dispersion calculations using ADMS Urban (Atmospheric dispersion modelling system), utilising traffic data, including annual average traffic flows, speeds, vehicle compositions, traffic queue lengths, industrial and domestic emissions, wind speed and direction data from a local meteorological station. The modelling confirmed that the annual average concentrations of NO_2 exceeded the Air Quality Objective of 40µg/m^3 for 2005 within both AQMA1 and AQMA2.

The 99.79th percentile of hourly average concentrations of NO_2 also predicted an exceedence of the Air Quality Objective of 200 µg/m^3 in AQMA1. The nearest location to the modelled exceedence is Trent Bridge and Trent House, which have predicted 99.79th percentiles of 148µg/m^3. The exceedence area is however not deemed to be a relevant location.

There were no modelled exceedences of the 99.79th percentile of hourly average concentrations of NO_2 in AQMA2 for 2005.

In 2010, annual average concentrations of NO_2 are predicted to exceed the Air Quality Objective of 40µg/m^3 within AQMA1, but there are no predicted exceedences for the 99.79th percentile of hourly average concentrations of NO_2 in either AQMA1 or AQMA2. Appendix 4 shows the modelled NO_2 concentrations as contour plots.
The required reductions in nitrogen dioxide concentrations at relevant locations in AQMA1 range from 3-6µg/m^3 at Trent House flats to 0-3µg/m^3 at Trent Boulevard.

3.11. Conclusions of the Stage 4 assessment for AQMA1 and AQMA2.

- The stage 4 assessment confirmed that the annual mean objective for nitrogen dioxide continues to be exceeded at relevant locations in AQMA1 and AQMA2, and that the decision to declare was correct.
- The geographical area of exceedences has been reassessed and it is concluded that the boundaries of the AQMAs were accurate and do not need to be redrawn.
- The annual mean objective is predicted to be exceeded at three relevant locations in AQMA1, Radcliffe Road, Trent House and Trent Boulevard, in 2010.
- The 99.79th percentile concentrations of nitrogen dioxide are not currently being exceeded at relevant locations in the AQMAs in West Bridgford, or likely to be exceeded in 2010.
- Reductions in nitrogen dioxide concentrations in AQMA1, of between 3 to 6µg/m^3 are required to meet the annual mean objective at the three relevant locations in 2010.

Source apportionment has confirmed that the major contribution of nitrogen dioxide is from traffic. The pie charts in figures 3.5 and 3.6 show the total NOx (NO_2 plus NO (nitric oxide)) contributions from general road traffic (roads), vehicle queues (queues), and all other sources (other), for 2005 and 2010. A proportion of NOx emissions will be in the form of NO_2, and NO will be converted to NO2 through chemical reactions in the atmosphere. It is therefore important to evaluate and express emissions in terms of NOx.

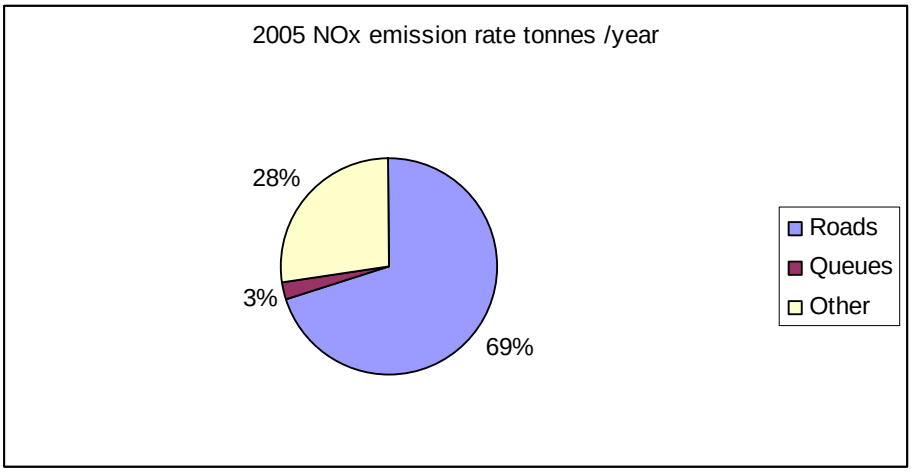


Figure 3.5. NOx contributions for 2005.

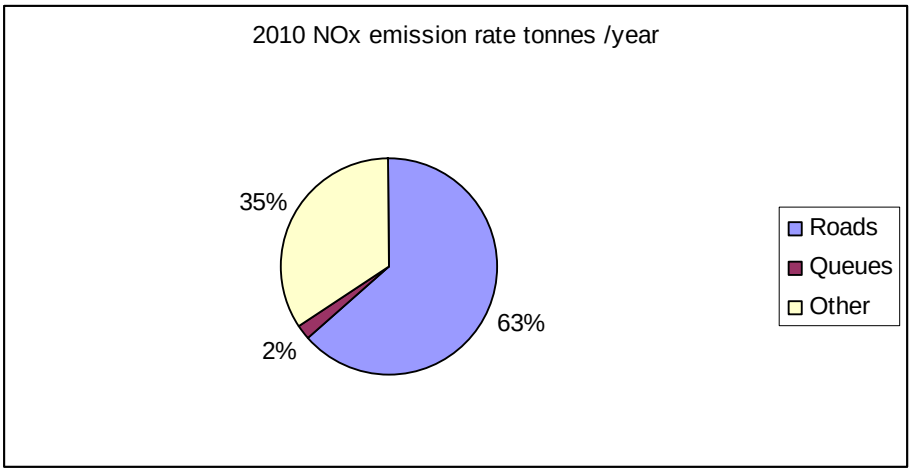


Figure 3.6. NOx contributions for 2010.

3.12. Stage 4 assessment of sulphur dioxide in AQMA 3.

3.13. Air Quality Objectives.

There are three objectives that need to be achieved:

(i) 266µg/m^3 (100ppb) measured as a 15 minute mean, not to be exceeded more than 35 times a year, by 31 December 2005.

(ii) 350µg/m^3 (132ppb) measured as a 1 hour mean, not to be exceeded more that 24 times a year, by 31 December 2004.

(iii) 125µg/m^3 (47ppb) measured as a 24 hour mean, not to be exceeded more than 3 times a year, by 31 December 2004

3.14. Summary of the sulphur dioxide monitoring.

The sulphur dioxide monitoring results for 2005 (table 3.3, summary of monitoring results), clearly show that all three objectives for sulphur dioxide were being exceeded and the decision to declare the AQMA was correct.

	Sulphur Dioxide (µg/m^3)		
Averaging Period	**15 minute mean**	**1 hour mean**	**24 hour mean**
Limit	**266**	**350**	**125**
Exceedences per year	**35**	**24**	**3**
Exceedences	**1642**	**311**	**39**
Maximum	**2415.1**	**1467.0**	**535.0**
Mean	**42.7**	**42.5**	**42.2**

Table 3.3. Summary of 2005 sulphur dioxide monitoring results – Barnstone Works.

Lafarge UK Ltd has however, confirmed that the company ceased the kiln operations, which were responsible for the emissions of sulphur dioxide during clinker production at Barnstone, on 30 May 2006, and this has resulted in a significant improvement in the local air quality.

The monitoring undertaken since the kiln closure clearly shows that the ambient sulphur dioxide concentrations are well below the objectives (tables 3.4 – 3.6)

The 10 exceedences in Table 3.4 occurred on June 12 2006, and were considered to be spurious readings caused by heavy rainfall that occurred on that day, and were not attributed to any local source. The results clearly show that all the objectives for sulphur dioxide are being met.

Table 3.4	Sulphur Dioxide (µ/m^3) 22/05/2006 – 18/06/2006		
Averaging Period	**15 minute mean**	**1 hour mean**	**24 hour mean**
Limit	**266**	**350**	**125**
Exceedences per year	**35**	**24**	**3**
Exceedences	**10**	**0**	**0**
Maximum	**413.3**	**335.5**	**68.2**
Mean	**11.8**	**11.8**	**11.7**

Table 3.5	Sulphur Dioxide (µ/m^3) 19/06/2006 – 16/07/2006		
Averaging Period	**15 minute mean**	**1 hour mean**	**24 hour mean**
Limit	**266**	**350**	**125**
Exceedences per year	**35**	**24**	**3**
Exceedences	**0**	**0**	**0**
Maximum	**81.4**	**73.5**	**16.8**
Mean	**6.8**	**6.8**	**6.8**

Table 3.6	Sulphur Dioxide (µ/m^3) 17/07/2006 – 13/08/2006		
Averaging Period	**15 minute mean**	**1 hour mean**	**24 hour mean**
Limit	**266**	**350**	**125**
Exceedences per year	**35**	**24**	**3**
Exceedences	**0**	**0**	**0**
Maximum	**21.7**	**19.8**	**9.4**
Mean	**5.8**	**5.7**	**5.7**

Tables 3.4–3.6. Post kiln closure ambient sulphur dioxide monitoring results, May to August 2006.

Conclusions of the Stage 4 assessment for AQMA3.

- The stage 4 assessment confirmed that for 2005, all three air quality objectives for sulphur dioxide were being exceeded at relevant locations in AQMA3, and that the decision to declare was correct.
- The ambient monitoring post kiln closure shows that the air quality objectives are no longer being exceeded.

3.15. Recommendations of the Stage 4 assessment.

The report recommended that Rushcliffe Borough Council:

1. **AQMA1 and AQMA2.**

- Continue to monitor ambient nitrogen dioxide concentrations in the AQMAs , West Bridgford, and throughout the borough.
- Carry out further source apportionment work to determine the reduction in traffic needed to achieve the annual mean objective for nitrogen dioxide.
- Develop an air quality action plan with the relevant organisations, to work towards achieving the air quality objectives.
- AQMA1 and AQMA2 are not revoked or amended at this time.
- Continue to review AQMA1 and AQMA2 as part of the Councils air quality management regime.
- Consult on the findings and conclusions of the report.

2. **AQMA3.**

- Formally revoke the AQMA3, after consultation with the relevant stakeholders.

An Action Plan is therefore not required for AQMA3.

4. Air Quality Policies and existing strategies.

4.1 National Policies.

National legislation, such as the Pollution Prevention and Control Act 1999, and the Waste Incineration Directive regulating Part A and Part B industrial process emissions has been in place for many years, and these measures have helped to reduced pollution from these sources. The Clean Air Acts have improved domestic emissions through the creation of the West Bridgford Smoke Control Areas and the use of exempt appliances and smokeless fuels.

The main driving force for air quality in the UK is the National Air Quality Strategy, made under the Environment Act 1995 which sets out how the problem of air pollution should be addressed. The strategy, first published in 2000, and an Addendum issued in 2003, introduced a new national approach to air quality management and raised the importance of the need to monitor air quality.

Local authorities were given the task of ensuring that nationally set objectives are achieved for seven of the pollutants within specific target times:-

- Benzene.
- Carbon Monoxide.
- Sulphur Dioxide.
- Nitrogen Dioxide.
- Particulate Matter (PM_{10}).
- Lead.
- 1,3 Butadiene.

The remaining pollutant, Ozone, is being dealt with at a national level since local authorities cannot achieve the objective through individual local action (appendix 1, air quality objectives).

Pollution from transport is a main cause of poor air quality and policies have been put in place that have led to improvements in air quality. In particular, the Auto Oil programme works with motor manufactures and oil companies to produce less polluting fuels and cleaner vehicles. Stringent European Commission emission standards for cars and light vans (directives 70/220/EC and 88/77/EC), applied to all new vehicles sold from 1 January 2001, the Euro III standards. More stringent standards applied from 1 January 2006, the Euro IV standards, and there are proposals for more stringent Euro V and VI standards, likely to come into force in 2010. The proposals can be viewed on the website, www.ec.europa.

The UK Governments transport plan also aims to limit traffic growth, and taxation measures on fuel and vehicles will encourage the use of smaller, more fuel efficient cars.

4.2. Climate Change.

Climate change – The UK Programme 2006, a Government paper published in March 2006, recognises that climate change is a major challenge for the future, and targets have been set for reducing carbon emissions. The UK has already taken significant steps to meet this challenge, and has introduced policies, such as the Climate Change Levy and agreements, Renewables Obligation and Energy Efficiency Commitment.

Local authorities are likely to be critical to delivering carbon dioxide emissions reductions, and will provide vision and leadership to local communities, and raise awareness and help change behaviours. The housing, planning, and local transport functions, local procurement and operations of local authorities can have significant influence over emissions in their local areas.

Many local authorities are already taking action on climate change, in response to their responsibilities under the Home Energy Conservation Act, and through initiatives such as the Nottingham Declaration on Climate Change.

4.3. International Policies.

Air pollution moves across international boundaries, and the Government recognises the importance of European and international legislation to lay down the responsibilities of national governments and to improve air quality.
This impacts on all aspects of the UK national air quality policies, from the setting of limits for ambient air quality to the control of emissions to air from a wide range of industrial processes.

4.4. European Directives.

The following European directives have been successfully integrated into the UK national air quality and pollution control legislation:

- National Strategy to Combat Ozone.
- Large Combustion Plant Directive.
- Solvent Emissions Directive/Paints Directive.
- Petrol Vapour Recovery.
- EU Air Quality Directives.
- Integrated Pollution Prevention and Control Directive (IPPC).
- Waste Incineration Directive (WID).

4.5. Clean Air for Europe (CAFÉ).

The Clean Air for Europe (CAFE) was introduced in March 2001 with the aim of developing long term and integrated policy advice to prevent air pollution adversely affecting human health and the environment throughout Europe.

CAFÉ underpins the development of the Thematic Strategy on Air Pollution which has been adopted by the European Commission.

The focus for the next ten years will be implementation of air quality standards and coherency of all air legislation and related policy initiatives.

- The CAFE Programme/ implementation of the Thematic Strategy on Air Pollution.
- Ambient Air Quality.
- National Emission Ceilings.
- EU Focus on Clean Air.
- Auto Oil II.
- Development of the TREMOVE transport model.

Full details of the CAFÉ programme can be viewed at the CAFÉ website http://www.ec.europa.eu/environment/air

4.6. Rushcliffe Borough Council local air quality management and strategies.

4.7. Local strategies and initiatives.

In addition to the national strategies, local authorities have developed local strategies to assess and tackle air quality issues. These strategies aim to address the predicted increase in pollution by establishing a comprehensive action plan that will not only require action by the Council's services, but also the support of the Highways Authorities, other neighbouring authorities and stakeholders.

4.8. Nottinghamshire Initiatives.

In Nottinghamshire, partnership working is important in developing local strategies, and to facilitate this, the following groups were formed:

- **Nottinghamshire Environmental Protection Working Group.**

  The Council is a member of the Nottinghamshire Environmental Protection Working Group (NEPWG) formed in partnership with Nottinghamshire County Council, Ashfield District Council, Bassetlaw District Council, Broxtowe Borough Council, Gedling Borough Council, Mansfield District Council, Newark and Sherwood District Council Nottingham City Council, Environment Agency, Health Protection Agency and the Highways Agency.

  The NEPWG works under the direction of the Nottinghamshire Chief Environmental Health Officers Group. The NEPWG enables the

authorities to work collaboratively on the full range of pollution issues, demonstrating that liaison on a technical level is already well established.

- **The Nottinghamshire Air Quality Steering Group.**

  The Nottinghamshire Air Quality Steering Group was formed in 1998 and comprises representatives from each local authority, Health Protection Agency, Highways Agency, Nottinghamshire County Council University of Nottingham and the power generators. The group acts as a consultation body to advise local authorities of procedures, to ensure wide consultation in relation to air quality issues, and in particular air quality reviews and assessments.

The Nottinghamshire Environmental Protection Working Group produced the Nottinghamshire Air Quality Strategy – A Framework for Action, first published in 2001, and was adopted by all the above authorities. The strategy is currently being revised and will be published in 2007.

The framework outlines how the authorities intend to collectively tackle the problems highlighted by the authorities review and assessments. Broad objectives and actions were identified and agreed to ensure effective consultation and co-operation between organisations to improve air quality in Nottinghamshire.

Each Authority has drawn up and implemented their own air quality strategy based on the framework, and specifying actions to be taken to address air quality issues.

The Nottinghamshire Air Quality Strategy is currently being revised and the main objectives are:

1) To minimize air pollution and green house gases and encourage sustainable development in Nottinghamshire to protect the health and well being of the population.

2) To work with businesses, stakeholders and the residents of Nottinghamshire to encourage sustainable improvements in air quality.

3) To support and maintain the work of the Nottinghamshire Air Quality Steering Group.

4) To complement other county wide and local strategies adopted and supported by Local Authorities and other organisations such as the Environment Agency, Primary Care Trusts, Nottinghamshire County Council, Highways Agency and the Health Protection Agency.

5) To ensure that the framework for action to improve air quality in Nottinghamshire is reviewed once every 5 years.

4.9. Rushcliffe Air Quality Strategy.

Rushcliffe Borough Councils Air Quality Strategy was last published in July 2002, and updated in July 2003, the Strategy can be viewed or downloaded from The Councils website: www.rushcliffe.gov.uk.

The key actions of the Strategy are:

Planning and Land use.

- Review existing liaison and consultation arrangements for Local, Structure and Regional Plans.
- Produce clearer guidelines for Development Control where a significant deterioration in air quality has been predicted, ensuring air quality issues are fully taken into account in deciding planning applications. Where appropriate, conditions will be imposed to minimise the impact on the environment.
- Use Section 106 agreements to:
  i) require developers to carry out an air quality impact assessment where appropriate, and
  ii) secure funding by developers to contribute towards air quality monitoring and initiatives, to redress the impact on air quality from proposed developments.
- Consider the adoption of maximum parking standards for new developments and actively seek contributions from developers for sustainable transport measures.
- Ensure that the review of the Council's Economic Development Strategy incorporates the principle of sustainable development, with specific reference to the aims and objectives in this strategy.

Transport.

- Strengthen the consultation protocol with Nottingham City Council and Nottinghamshire County Council to ensure air quality targets are incorporated into the five-yearly review of the Local Transport Plan.
- Contribute to appraising options considered in any major road network reviews which will have a direct affect on the Borough.
- Review the current taxi and private hire vehicle licensing requirements with a view to improving vehicle emissions.
- Reduce levels of CO_2 emissions generated by journeys at work by 5%.
- Reduce the number of car business mileage claims by 5%.
- Reduce the number of single occupant car journeys made to and from Work by 5%.

Enforcement.

- Ensure all authorised processes are managing emissions to air and complying with emission limits, by completing all programmed inspections within the requisite time period.

- Enforce the provisions of the Clean Air Act 1993 and review the existing smoke control areas within the Borough.

Health Education and Information.

- To work with Rushcliffe Primary Care Trust and other health professionals to raise public awareness about the health affects of poor air quality and how individuals can contribute to reducing emissions.
- Publish an annual report on air quality in Rushcliffe.
- Complete a second review and assessment of air quality within Rushcliffe against national health-based objectives. Manage and update the existing emissions database covering the Borough and carry out remodelling.
- Maintain and update air quality monitoring data on the Council's website.
- Promote the DETR's Air Pollution and Public Information Bulletin.

Energy efficiency.

- Promote home energy efficiency schemes.
- Replace all timber framed windows in Council-owned property and upgrade loft insulation to 250mm.
- Review the Council's energy use and where appropriate, implement initiatives to improve energy efficiency with a view to gaining Eco-Management and Audit Scheme accreditation.
- Encouraging recycling and composting of domestic waste to reduce the quantity of waste deposited to landfill or incineration.
- Review the use of alternative fuels by the Council fleet.
- Ensure that Building Control policies encourage the inclusion of more energy efficient heating systems in new developments.

The Rushcliffe Air Quality Strategy will be reviewed in line with the revised Nottinghamshire framework, when it is published in 2007. This will be form part of the actions detailed later in the report.

5.0. Rushcliffe Borough Councils policies and current actions to improve air quality – What are we doing already?.

5.1. Rushcliffe Corporate Strategy.

Rushcliffe Borough Councils third corporate strategy published in May 2004, is the keystone for many of the Councils policies and actions, and sets out a vision for 2020, to ensure that Rushcliffe continues to be an excellent place to live, work and visit.

The guiding principles and core values of the strategy are:

- Providing community leadership.
- Delivering quality services.
- Recognising diversity.

The strategy also sets down priorities for improvements and details a strategic action plan with goals in particular, to reduce pollution and traffic congestion, and to improve public transport, and to reduce impacts on the environment.

5.2. Pollution Control.

Rushcliffe Borough Council has enforced Smoke Control Areas in West Bridgford for many years resulting in a steady reduction in emissions from domestic coal fires. The Council also regulates some industrial processes, under the Pollution Prevention and Control Act 1999, and have a reactive approach to dealing with nuisance and air pollution from domestic and commercial premises (appendix 3a, 3b Industrial installations permitted by Rushcliffe Borough Council, and appendix 3c, Environment Agency IPPC installations).

5.3. Environment Policy.

The Councils Environment Policy (appendix 2) states that the “Council recognizes the effect of its operations on the environment and the influence it can have on the community through its actions. It undertakes to promote an environment compatible with healthy, balanced life styles where the whole community plays its part in environmental protection and improvement”.

The policy also states the Councils aims and commitments, and how these are to be achieved through initiatives such as the Staff Travel Plan, Good Vehicle Management, and the Eco Management and Audit scheme, which are all currently under review.

5.4. Energy Strategy 2000 / 2010.

The strategy proposes that the Council’s Energy Strategy for the ten year period to 2010 be as follows:

- The Council will adopt a target of 10% reduction in CO_2 emissions resulting from its operations for the period 2000/2010.

- This target will be achieved by:-
    i. Avoiding the unnecessary use of energy – by staff training and improvements in building fabric.
    ii. Increasing the efficiency of the conversion of energy – by implementing improvements to plant and equipment.
    iii. Using the least environmentally damaging forms of energy – by using renewable energy sources wherever possible.
- Progress against the target will be monitored and the results reported on a regular basis.
- Regular monitoring reports on the progress of the Strategy are submitted to the Environment Scrutiny Group.

Rushcliffe Borough Council has already succeeded in exceeding the target to reduce energy usage by 1% per year since 2000, by putting in place energy efficient technologies and reviewing management procedures, and have also reduced CO_2 emissions from leisure centres, the depot and from the Civic Centre (Table 5.1. Shows energy consumption for 2000 to 2005).

Energy consumption		
Year	**Electricity**	**Gas**
2000/2001	**3711355**	**10533153**
2001/2002	**3415686**	**10532452**
2002/2003	**3397778**	**9474573**
2003/2004	**3302008**	**8780560 (estimated)**
2004/2005	**2606125**	**7360610 (does not include two leisure centres)**

Table 5.1. Energy consumption at Rushcliffe Borough Council premises.

5.5. Eco Management and Audit Scheme – EMAS.

The Council have an EMAS system in place, overseen by a management team and working group. The aim is to promote "green thinking" and environmental awareness within the Council, and to reduce its impact on the environment.

The main areas of focus are:

- **Transport – Fleet vehicles, "Travel Smart", promoting walking, cycling and car sharing**

    1. Objectives for 2001/02 – 2004/05. Reduce energy consumption within the Borough.
    -Reduce the environmental impact of our own activities whilst providing community protection, which should include the Council purchasing recycled goods where at all possible and a policy to that effect

-Reduce traffic congestion. Integrate transport system. Improve public transport.
-Increase incidences of 'non-car' business travel claims by 5% over the next five years (from 1999/2000 levels). (Data for showing progress against this target is currently unavailable.)
-Reduce number of single occupant car journeys made to and from work by 5% by 2005. Efforts so far have not managed to reduce single occupant car use.

2. Actions: Staff Travel Plan has helped raise awareness among staff about how they can reduce their transport usage, and some alternatives to single occupant car use have increased.
A fleet fuel policy has been endorsed, helping to reduce energy used in the form of fuel consumption and using alternative fuels such as LPG.
A 'remote working' pilot was initiated in August 2004 within the Environmental Health service. As a result the service has significantly reduced the number of car business miles and CO_2 emissions in 2004 and 2005 compared to previous years.

- **Energy Use.**

1. Objective for 05/06 -Reduce the Council's consumption of gas and electricity to 10% below 2000 levels by 2010.
2. Actions: Raise awareness amongst staff.

- **Use of Resources – Reuse and Recycling.**

1. Objectives for 01/02- 04/05**:** To optimise recycling.
Reduce the Council's consumption of paper by 10% of 2000 level by 2005.
2. Action: The Council will audit our general waste to ensure that all recyclable items are recycled.

The Council are now looking to work in partnership with other local authorities as a result.

- **Waste Management – reduce waste produced by the council.**

1. Objective for 2001/02 - 2004/05: Reduce waste through Municipal Waste Management Strategy.
2. Action: Municipal Waste Management Strategy adopted by RBC.
3. Objective for 2005/06: Monitor the impact on improvements to cleanliness of the borough, resulting from the new Streetwise service.
4. Action: Review the implementation of the new Streetwise service March 2006; Relocate the Depot by November 2006; Roll out dry recyclables kerbside collection service by March 2007.

5.6. Nottingham Declaration on Climate Change.

Rushcliffe Borough Council have signed the Nottingham declaration in August 2006, and acknowledges the increasing impact that climate change will have on the community and the council is committed to tackling the causes and effects of climate change on the borough.

Full details of the Nottingham Declaration can be found on their website: www.est.org.uk/housingbuildings/localauthorities/NottinghamDeclaration

The Council will commit to:

- Work with central government to contribute, at a local level, to the delivery of the UK Climate Change Programme, the Kyoto Protocol and the target for carbon dioxide reduction by 2010.
- Participate in local and regional networks for support.
- Within the next two years develop plans with its partners and local communities to progressively address the causes and the impacts of climate change, according to its local priorities, securing maximum benefit for the community.
- Publicly declare, within appropriate plans and strategies, the commitment to achieve a significant reduction of green house gas emissions from the authorities own operations, especially energy sourcing and use, travel and transport, waste production and disposal and the purchasing of goods and services.
- Assess the risks associated with climate change and the implications for its services and its communities of climate change impacts and adapt accordingly.
- Encourage all sectors in the local community to take the opportunity to adapt to the impacts of climate, to reduce their own greenhouse emissions and to make public their commitment to action.
- Monitor the progress of its plans against the actions needed and publish the results.

5.7. Staff Travel Plan.

Rushcliffe Borough Councils headquarters are located at the Civic Centre at Trent Bridge in West Bridgford, which is adjacent to AQMA1, and Trent Bridge, which is an important river crossing to the City of Nottingham, and subject to high traffic flows and congestion. The Council recognizes that significant travel is undertaken by its employees coming to work and also in order to fulfill their service and regulatory duties, and therefore contributing to the problem.

The Council further recognizes the impact that its operations have on the environment and the influences its actions can have on the community. The Council is therefore committed to the continual improvement of its performance and of its actions to reduce the environmental impacts. A staff

travel plan “Travelsmart” (under revision), aims to reduce pollution arising from the use of employees vehicles, and its main objectives are:

- To support employees in managing their travel needs in a more effective and less environmentally damaging way.
- To promote the use of alternatives to car travel by encouraging different modes of travel and by different modes of working.
- To promote environmental awareness and encourage healthier lifestyles of the workforce.
- Investigate and develop proposals for working in partnership with organisations that have a negative effect on the two AQMAs, i.e major companies/housing developers that could have a major impact on traffic levels.

The Travel Plan was drawn up after consultation with Local Plans, Environmental Health Service, Human Resources, and other interested parties. The plan is to be fully integrated into the EMAS programme and the EMAS Working Group will assist in meeting the targets of the plan.

The targets of the plan are:

- To reduce levels of CO_2 emissions generated by journeys at work by a further 5% by 2009/10 compared to results from 2004/5.
- To reduce the number of car business miles by 5% over the next 5 years based on 2004/5 data.
- To reduce the number of single occupant car journeys made to end from work by 5% over the next 5 years based on 2004/5 data.
- To increase the number of car sharers each year.

The Councils EMAS group will be responsible for monitoring arrangements, reviewing indicators and targets and will report on the progress to the Management Team.

5.8. RBC Car Leasing/Loan Scheme.

The Council has approved a car lease scheme as an alternative to essential/casual user allowances and car loan facilities under which the Council will provide cars to employees to be used for business and private travel.

In line with the Council’s Travel Plan, cars with a CO_2 emission of more than 185g/km are not be permitted under the scheme.

5.9. Remote/Home Working Initiatives.

The Council’s Environmental Health and Building Control Services have established a remote working scheme and this has led to a reduction in business trips and mileage, which has reduced CO_2 and NO_2 emissions.

The success of the scheme will mean that it will be rolled out to other services of the Council.

5.10. Good Vehicle Management – Vehicle Fuel and Fuel Usage Policy.

The Council operate a fleet of vehicles for delivering a variety of public services operating out of the Central Works Depot In West Bridgford. The Council uses ultra low sulphur diesel, continuously regenerating particulate traps for 3.5 tonne to 26 tonne vehicles and all new vehicles will have to conform to Euro 4 standards.

The fleet also has dual fuel vehicles and one electric vehicle.

The policy states that the Council will " Set up a specialist panel with air pollution expertise to investigate the possibility of increasing the Councils usage of LPG and using Bio-diesel fuel in the larger vehicles " and " Review its policy on fuel usage, due to the pace of change and continued improvements in engine and fuel manufacture, every two years ".

The Council also has a fuel procurement agreement in a consortium with Nottingham City Council and Nottingham City Transport, for all fuel including LPG and biodiesel.

The Council also considers alternative fuels and options such as retrofitting, trip rationalization and driver training.

5.11. Rushcliffe Borough Councils Local Development Frameworks.

In the Planning and Compulsory Purchase Act (2004), the Government announced proposals for reforming the planning system. These include the introduction of 'Regional Spatial Strategies' (RSS) and the replacement of the current Local Plans system with 'Local Development Frameworks'.

The Local Development Framework for Rushcliffe is the mechanism for delivering the spatial element of the Community Strategy. The Local Development Framework will also complement the objectives of the Borough Councils Corporate Plan.

The Borough Council has an important role to play in enforcing environmental control and also in consultation with other bodies such as the Environment Agency. Development proposals that would give rise to an unacceptable level of pollution or are sensitive to pollution, planning permission will not be granted. Where development is permitted the Borough Council will, where appropriate attach conditions to the approval to minimise any potential pollution levels or, where appropriate, a section 106 agreement sought to ensure that mitigation measures are implemented.

5.12. Rushcliffe Community Strategy.

The Local Government Act 2000 requires all local authorities to produce a community strategy within the framework of the UK Sustainable Development Strategy "A Better Quality of Life", and at a local level to form Local Strategic Partnerships (LSP).

Rushcliffe Borough Council formed the Rushcliffe Community Partnership, which is this Authorities LSP, and this links to the Greater Nottingham Partnership.

The first Rushcliffe Community Strategy was published in 2002, and the latest strategy was launched in April 2005 with the five key themes:

- Protecting and improving our environment
- Supporting the local economy
- Making communities safer
- Helping people to live healthier lives

The strategy contains a 15 year vision to 2020 with a summary rolling action plan

5.13. Rushcliffe Community Partnership – Environmental Issues Group.

The Rushcliffe Community Partnership Environmental Issues Group was formed in 2006 to support the Local Strategic Partnership in the implementation of the Rushcliffe Community Strategy. The group aims to promote environmentally responsible behaviour and attitudes and to protect and improve the built and natural environment.

The partnership has links to the Local Area Agreement and the East Midlands Rural Action Plan and will contribute to the air quality priorities taken from them.

Key objectives of the group are:

- To reduce the eco footprint for Rushcliffe from 5.5ha/person to 5.27ha/person by 2010
- To reduce carbon dioxide emissions from across Rushcliffe by 60% by 2050

Actions on air quality such as the traffic reduction measures in the AQMAs are also linked to these key objectives.

5.14. Nottinghamshire County Council Actions.

5.15. Local Transport Plan for Greater Nottingham 2006 – 2011.

Road transport is the major source of pollution in Rushcliffe and the main focus of this action plan will revolve around measures to reduce transport

emissions, and the Nottinghamshire County Council Local Transport Plan will play an important role in working towards improving air quality.

Nottinghamshire County Council has produced the Local Transport Plan and the main function of the Plan is to set out the local transport strategy and priority areas for investment over the next five years.

The Plan area includes Rushcliffe, the City of Nottingham, and the neighbouring boroughs of Broxtowe, Gedling, and parts of Ashfield. The objectives of the plan are based on the Governments "Shared Priority for Transport" and the two relevant themes for this Action Plan are tackling congestion and reducing air pollution.

For tackling congestion the Plan considers:

- Improving transport choices
- Making better use of the existing network
- Parking controls
- Land use planning, and
- Promoting public transport growth through demand management and integration.

Proposed measures for tackling congestions include:

- Extension of the tram network, NET Phase 2 and to include West Bridgford
- Partnership to deliver high quality bus services with a particular focus on reducing bus journey times
- Integration of public transport services, ticketing and travel information with consideration of intervention mechanisms
- Upgrading of the A52 Ring Road
- Gamston park and ride
- "Smarter Travel Choices" measures including work and school travel plans and building on the 'Big Wheel' marketing campaign
- Comprehensive parking strategy including possible Workplace Parking Levy within the City boundary
- Decriminalised parking enforcement for whole Plan area
- Local authority bus lane and other moving traffic offence enforcement
- Traffic Managers to oversee network management including traffic control, incident response and road works coordination
- Highway direction signing and car park electronic signing
- Upgrading of walking and cycling networks,
- Working with regional partners to deliver key strategic projects, particularly A453 and rail links.

For tackling air quality and environmental issues the Plan considers:

- AQMA1 and 2 in West Bridgford and along the A52 Ring Road.

Proposed general measures for tackling air quality include:

- Reducing the need to travel through coordinated land use and transport planning,
- Promotion of cleaner alternatives to the car i.e. walking, cycling and public ransport,
- Promoting 'Smarter Travel Choices',
- Education and awareness raising measures including 'Big Wheel',
- Active traffic management to prevent high pollution levels in sensitive areas,
- Promote procurement and use of cleaner vehicles,
- Enforcing emission standards,

The Local Transport Plan for Greater Nottingham 2006 – 2011can be viewed or downloaded from www.nottinghamshire.gov.uk

5.16. The Highways Agency actions.

The Highways Agency maintains, operates and improves the network of trunk roads and motorways in England on behalf of the Department of Transport, and it is identified as a statutory consultee through the Environment Act 1995.

The A52 ring road passes through AQMA2 and the Highways Agency has responsibility for that section of road.

The Highways Agency (www.highways.gov.uk) have produced a report - The role of the Highways Agency in local air quality management – which states that it is committed to working in partnership with local authorities to deliver the Air Quality Strategy through:

- Contributing to strategic planning through multi-model studies, managing demand and route management,
- Road and junction improvements, including procedures for appraisal and impact assessments,
- Integrating transport and encouraging sustainable travel,
- Providing better information for improved operation through real-time traffic information, active traffic management, message signs and traffic management during high pollution episodes,
- Working with local authorities to deliver the Air Quality Strategy through the use of the DMRB screening method, monitoring concentrations and supplying traffic data.

6. The Air Quality Action Plan for Rushcliffe.

6.1. The Action Planning Process.

Guidance has been issued by both DEFRA and the National Society for Clean Air and Environmental Protection (NSCA). The guidance lists four factors that have to be considered in the selection of options:

- Air quality improvement
- Non air quality effects
- Cost effectiveness
- Perception and practicability

Air quality improvement: Analysis starts by considering the sources of air pollution that lead to exceedences of the air quality standards to quantify the improvements required. In the case of NO_2 the link between emission and concentration needs to take account of chemical processes in the atmosphere – there is not a simple linear relationship between reduced emissions of NOx and reduced concentrations of NO_2.

Non-air quality effects: An action plan should be designed to account for other policies. By doing so it should account also for the social, economic and broader environmental impacts of the measures considered.

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

Perception and practicability: To be successful an action plan needs to gain wide support across the community. The guidance considers four groups of stakeholders, the public, industry and commerce, elected representatives and external agencies. Each of these groups has different views and concerns when a specific measure is recommended to improve air quality, and so need to be involved in the consultation process. This process began with the involvement of key stakeholders in developing this report. It shall continue with a much wider consultation on the plan developed so far.

6.2. Development of the Rushcliffe Air Quality Action Plan.

The development of the Rushcliffe AQAP is unique to Rushcliffe due to the unique AQMAs and the particular characteristics of the departments, partners and other agencies involved in the process. However, some basic elements of the work are common to each AQAP developed.

The NSCA guidance also describes the following stages for action planning:

- **Establish baseline conditions –From Stage 4 Assessment (Single Action Plan for the AQMA1 and 2)**
- **Involve relevant stakeholders**
- **Generate a list of options**
- **Consider the costs and effects of these options**
- **Prioritise options**
- **Evaluate and monitor the plan**
- **Continue consultation on the plan during its implementation**.

The air quality issues highlighted in the Detailed Assessment 2005 and Stage 4 Assessment requires that Rushcliffe Borough Council develop an action plan aimed at implementing measures that will work towards meeting and securing the air quality objectives.

The Action Plan should detail the specific options and measures that can be put in place within a given timescale to work towards meeting annual mean nitrogen dioxide levels at the façade of residential properties (relevant locations) within the AQMA1 and AQMA2 (maps – appendix 2) and to try to reduce the levels to below the objective level of 40 µg/m^3 as soon as possible.

The options and measures will involve balancing the economic and social costs with the benefits.

6.3. Relationship between Air Quality Action Plans and Local Transport Plans.

In circumstances where transport emissions are the major reason for exceedence of air quality objectives, DEFRA recommends that consideration be given to full integration of the Action Plan with the Local Transport Plan (LTP), and this is clearly the case in Rushcliffe with AQMA 1 and 2.

6.4. Objectives of the Air Quality Action Plan.

In developing this Action Plan the following underpinning principles were taken from Rushcliffe Borough Councils Corporate Strategy and the priorities in the Strategic Action Plan:

- Providing community leadership

- Sustainable development
- Communication
- Consultation
- Partnership working
- Accountability
- Community responsibility
- Achieving a cleaner, greener environment throughout the borough
- Reducing pollution
- Achievement of the National Air Quality Objectives for key pollutants

The adopted objectives of the Rushcliffe Borough Councils Air Quality Action Plan are therefore:

To work towards achieving the air quality objectives laid down in the National Air Quality Strategy, and:

a. I**mproving the quality of life and health of the residents and workers in Rushcliffe.**

b. **Acting in a cost effective manner, through the careful selection of options.**

c. **Integrating the air quality work with other Council strategies and policies, and with the activities of other Council Departments, regional bodies and Agencies and other stakeholders, taking into account the needs and views of the local community.**

Based on these principles, Rushcliffe Borough Council involved partners and key stakeholders in the local authority, the County Council and the Highways Agency.

Prior to the development of this action plan, the Council has consulted with;

1. External agencies.

- Nottinghamshire County Council
- Highways Agency,
- Government Office for the East Midlands.
- Nottinghamshire Environmental Pollution Working Group
- Neighbouring Authorities

2. Internal departments.

- Community Services
- Development Control
- Local Plans
- Policy and performance
- Depot

7. Air Quality Action Plan – The options and measures considered.

A list of options for addressing the air quality problems highlighted in the Stage 4 assessment has been developed and the effects of these options have been evaluated. A set of options has been prioritised to form the basis of the action plan.

The following options have been considered for inclusion in the final actions:

7.1. Rushcliffe Borough Council options:

- Travel Plan
- Car leasing/loan scheme.
- RBC fleet - Good Vehicle Management
- Remote/home working initiatives
- EMAS
- Green procurement
- Walking and cycling strategies
- Air quality monitoring and the development of air quality website
- Supplementary Planning Guidance/Development Control strategies
- Local Plans
- Partnership working with the Nottinghamshire Pollution Working Group and Air Quality Steering Group - Nottinghamshire Air Quality Strategy
- Domestic and commercial measures - energy conservation/efficiency/fuels/appliances/smoke control/bonfires
- Local authority pollution prevention and control – Liaise with Environment Agency - Industrial measures – abatement/emission reduction/closure/relocation
- Compulsory purchase

7.2. Nottinghamshire County Council options:

- Local Transport Plan – managing the road network
- Enforcement of speed limits and parking
- Safer Routes to school
- Bus priority routes
- Bus emission regulation
- Park and Ride schemes
- Low emission zones
- Climate change initiatives
- Congestion charging/road user charging
- Car parking charges
- Improved road network
- Extended Tram network - Nottingham Express Transit (NET)
- Liaison with stake holders
- VOSA vehicle emissions testing/vehicle maintenance

- Green commuter plans
- Company Travel Plans in Nottinghamshire
- Road Signs
- Traffic information
- Traffic management
- Education/awareness/public information

7.3. Highways Agency options for the A52 ring road.

The stage 4 assessment confirms that the annual mean objective for nitrogen dioxide continues to be exceeded at relevant locations in AQMA2, and that the decision to declare was correct. Source apportionment has also confirmed that the major contribution of nitrogen dioxide is from traffic. The predictions for 2010 however, suggest that the objectives will be met at relevant locations in AQMA1.

The Highways Agency has responsibility for the A52/A60 which passes through AQMA2, and possible actions to work towards improving the air quality as soon as possible could include:

Route Management:

- study of existing and likely future conditions;
- involving key groups including road user organisations, Rushcliffe Borough Council and Nottinghamshire County Council;
- closer involvement of these groups in the decision-making process should encourage partnerships to develop between various transport modes, encouraging a more unified approach to improving services;
- workshops and seminars, public exhibitions and roadshows; and
- publishing strategy and delivering improvements.

Encouraging travel changes:

- Developing solutions to facilitate the provision of interchanges between road and public transport, walking or cycling.
- Assist bus and coach operators, and promoting car sharing on and around the network, through designated lanes and priority measures.
- Investigating ways to improve freight operations on the network, including consideration of designated lanes and the potential for freight interchange facilities and transhipment depots.
- Working with EMA operators to further encourage access to the airport by bus and rail.

- Working with British Waterways and associated organisations to further encourage sustainable transport using the River Trent and canal systems.
- Increasing the quality and availability of travel information in order to enable informed choices to be made.
- Setting an example by encouraging greater use of technology within the Agency to reduce the need to travel.
- Continuing to review design standards to ensure that the needs of all users are reflected.
- Supporting the development of school travel initiatives
- Promoting healthy lifestyles, by encouraging walking and cycling.

Encouraging sustainable travel:

- Working with public transport operators, Rushcliffe Borough Council and Nottinghamshire County Council to address access to bus and rail services on foot and by cycle and to improve facilities at bus stops.
- Working in partnership with Rushcliffe Borough Council and Nottinghamshire County Council in drawing up walking and cycling strategies.
- Working with Sustrans to assist in the completion of the National Cycle Network.
- Working with schools, Rushcliffe Borough Council and Nottinghamshire County Council, employers and other bodies to develop and implement school and workplace travel plans.
- Working with Rushcliffe Borough Council and Nottinghamshire County Council and other groups to improve conditions in bypassed towns.
- Continuing the introduction of traffic calming schemes.
- Investigating the effects of vehicle speed, and introducing speed-reducing and speed- controlling measures where appropriate.
- Developing innovative measures to enable pedestrians, cyclists and equestrians to cross busy trunk roads with improved safety and personal security.
- Working to ensure good access arrangements for pedestrians and cyclists in and around developments near the A52.
- Ensuring that maintenance of footways, cycle tracks and crossings is carried out regularly and using maintenance schemes to provide enhanced facilities.
- Where possible, working with other bodies to provide more direct routes for walking and cycling between key destinations.
- Upgrading existing facilities as new ideas are introduced.

- Working with public transport operators, Rushcliffe Borough Council and Nottinghamshire County Council to ensure that infrastructure improvements are implemented in tandem with service fleet changes.

7.4. Other possible actions to be considered:

- Inland waterways. Working with British Waterways and associated organisations to further encourage sustainable transport using the River Trent and canal systems.
- Freight measures. Liaising with road haulage associations.

8. Rushcliffe Borough Council preferred options.

In addition to the Rushcliffe Borough Councils policies and current actions detailed in section 5 that are already improving air quality, the list of options in section 7.1 for further addressing the air quality problems in the AQMA areas have been evaluated and the following set of options have been prioritised and these preferred actions will form the part of the basis for Rushcliffe Borough Councils input into the action plan. The costs and the air quality benefits of these options have also been estimated (table 8.1).

8.1. Travel Plan.

Rushcliffe Borough Councils staff travel plan – TRAVELSMART, is a key plan to reduce the impact of staff travel and the plan will be revised. The objectives of the current plan are:

(a) To support our employees in managing their travel needs in a more effective and less environmentally damaging way.

(b) To promote the use of alternatives to car travel by encouraging different modes of travel and by different ways of working.

(c) To promote environmental awareness and encourage healthier lifestyles of the workforce.

(d) Investigate and develop proposals for working in partnership with organisations within the AQMA.

The key actions to be included in travel plan are:

- **Promoting alternatives to car travel to work.**

(a) Continue to provide bus and train information in order that staff can plan their routes.

(b) Publicise the car-share scheme within the Council.

(c) Encourage cycling with the use of pool bikes and a bike loan

(d) Promote walking.

(e) Re-emphasise the flexibility available within current workingarrangements and review its use periodically.

(f) Support season ticket loans for travel to and from work.

(g) Investigate setting up car-sharing within service areas.

(h) Phase in the use of remote working into more service areas, and monitor car business mileage.

(i) Investigate introducing a car club where car is available for staff during weekdays and available for residents in evenings and weekends.

- **Promoting less car use at work.**

(a) Review of the car lease scheme to encourage take up of vehicles with less harmful emission levels.

(b) Review of the car allowance scheme to encourage reduced mileage and provide incentives to use less environmentally damaging vehicles.

(c) Review of the cycle allowance scheme to make it more attractive to users.

(d) Consideration of work practices such as reporting in the Civic Centre first thing in the morning, after lunch and in the evening.

(e) Send new employees a travel plan.

(f) Encourage the use of alternative transport for business purposes.

(g) Investigate the development of courier services between sites to reduce the number of duplicated or unnecessary journeys.

(h) Review the allocation of car parking spaces at the Civic Centre.

(i) Undertake a feasibility study into provision of a car pool/car club to encourage employees to leave their car at home.

- **Raising awareness of the environmental consequences of travel choices.**

(a) Include environmental consequences of transport choices in EMAS training session.

(b) Work with other organisations in Rushcliffe to promote alternative transport choices.

(c) Incorporate health issues with environmental awareness campaigns.

- **Raising awareness of alternative fuels.**

(a) Promote the use of alternatives to petrol and grants that are available.

(b) investigate procuring alternative fuelled vehicle for essential car users.

The Travel Plan also aims to support other initiatives and objectives of the authority relating to sustainability issues which are addressed through the Environmental Policy and Air Quality Strategy.

8.2. Car leasing/loan scheme.

The existing scheme will be evaluated, and key options to be considered will include imposing limits on NOx emissions, engine size, fuel consumption. Incentives could be given to encourage lease purchase of cleaner cars/hybrids and to rationalize the existing car allowances to facilitate this.

8.3. RBC fleet - Good Vehicle Management Vehicle Fuel and Fuel Usage Policy.

Actions included in the policy are:

- To set up a specialist panel with air pollution expertise to investigate the possibility of increasing the Council's usage of LPG and using Bio diesel fuel in the larger vehicles

- To review its policy on fuel usage, due to the pace of change and continued improvements in engine and fuel manufacture, every two years

Nottinghamshire's waste collection authorities have also joined forces in a partnership designed to procure Refuse Collection Vehicles (RCVs) and will include the requirement for cleaner and more fuel efficient engines.

8.4. Remote/home working initiatives.

Expand the remote/home working initiatives to other departments of the Council to achieve a further reduction in business trips and mileage and therefore reducing CO_2 and NO_2 emissions.

8.5. EMAS.

The Eco-management and Audit Scheme at Rushcliffe has been implemented through ISO 14001.

Key actions are:

- To consolidate the EMAS objectives and expand to include achieving NOx reductions from the Councils activities.
- To ensure that internal audits and external verifications are carried out and certification is achieved.

- Integrate EMAS with current and proposed management systems.
- To review the targets and actions of the scheme.

8.6. Green procurement.

The Corporate Procurement Strategy 2004 – 2007 is aimed at promoting effective procurement throughout the council. A key action will be to consider the development and implementation of a green corporate procurement strategy to ensure that goods and services are sourced locally and from sustainable sources, to reduce transport related mileage and reduce pollution. The Council have produced an environmental purchase guide to provide practical help and advice to all staff who purchase goods and services on behalf of Rushcliffe Borough Council. The information will be updated regularly in response to changes in Council Policy, Statutory Legislation and the emergence of less damaging products and practices.

8.7. Air quality monitoring and the development of air quality website.

Rushcliffe Borough Council will continue to refine and expand its air quality monitoring network and work with the other Nottinghamshire authorities in developing the Nottinghamshire Air Quality website with the aid of a DEFRA grant. This will facilitate greater public awareness of the air quality issues throughout the County.

8.8. VOSA vehicle emissions testing.

Roadside emissions testing will be considered as an action to increase awareness of the importance of regular maintenance and emissions management of vehicles.

8.9. Supplementary Planning Guidance/Development Control strategies.

Development and implement a Supplementary Planning Document on air quality, linked to policies contained in the Regional Spatial Strategy.

Air quality is a material consideration in planning matters and specific conditions relating to land use and traffic impacts could be attached to planning conditions for developments within or close to AQMAs.

8.10. Control of industrial emissions - Regulation of Part A and Part B installations.

There are no permitted industrial installations within the AQMAs, but the council will continue to liaise with the Environment Agency and installation operators in the borough, and enforce the permit conditions relating to emissions to air.

8.11. Energy efficiency.

The Council will continue to give advice and promote energy efficiency for homes and businesses, with the aim of reducing emissions of greenhouse gases and nitrogen dioxide.

Energy efficiency actions include reviewing building fabric and plant and identifying improvements for inclusion in future capital projects.

The Council also seeks to purchase electricity from renewable sources through suppliers green tariffs.

A key action in the energy policy adopted by the Council is to reduce carbon dioxide emissions through the use of energy in buildings, by 10% by 2010, from the levels used in 2000.

8.12. Smoke control.

The AQMAs are within the West Bridgford Smoke Control Areas (SCAs) and the Council will continue to enforce the smoke control areas and give advice on exempt appliances.

Smoke emissions from domestic chimneys within the AQMAs are minimal and there are no plans to extend the current SCAs.

8.13. Bonfires.

Encourage recycling of garden waste to reduce the number of bonfires. Enforce bonfire controls on construction and demolition sites.

8.14. Local Strategic Partnership.

Within the Environmental Issues Sub Group of the Local Strategic Partnership key actions on air quality improvement will be agreed with relevant partner organisations for the next 3-4 years. The Council will continue to support the development of actions within the Environmental Issues group.

8.15. Liaison with the Highways Agency.

The Environmental health service will continue to liaise with the Highways Agency directly and through the Nottinghamshire Air Quality Steering Group to develop further actions for the improvement of air quality within the AQMAs. In addition any major road network development proposed by the Highways Agency will be assessed by the Council for air quality impacts and comments and recommendations put forward as appropriate for each scheme. Some of the major schemes that may occur in the next 5-10 years include the A453 and A46.

8.16. Revision of the Nottinghamshire Air Quality Strategy.

The Nottinghamshire Air Quality Steering Group is undertaking a full review of the Nottinghamshire Air Quality Framework Document. The Environmental Health Service will be involved in the review of this document. It will have an impact on the improvement to air quality across the County.

8.17. Estimated costs and air quality benefits of the preferred options.

The costs and air quality benefits of each of the preferred options have been estimated and are shown in table 8.1. The estimates are based on professional judgement, but further air quality monitoring and modelling will be used to refine the estimations after the measures have been put in place.

8.18. Explanatory note.

The following notes outline how each item in the table has been assessed:-

Air quality impact (nitrogen dioxide)	High (> 2µg/m^3) = 3, Medium (1-2µg/m^3) = 2, Low (<1µg/m^3) = 1
Timescale	Short (less than 2 years) = 3, Medium (2 to 5 years) = 2, Long (5 to 10 years) = 1
Likelihood	High = 3, Medium = 2, Low = 1, None = 0

Score assessed by multiplying three scores. (Impact x time x likelihood)

Cost :	££££ > £1 million, £££ = £500k - £ 1 million, ££ = £100k - £500k, £ = <100k

Measures	Action	Air Quality Impact	Time scale	Cost	Likelihood	Score
RBC Travel Plan	Reduce impact of RBCs business and staff travel	L	S	£	H	9
RBC Car leasing/loan scheme	Expand to include limits on NOx emissions. Evaluate cleaner fuels/vehicles	L	M	£	M	4
RBC fleet and fuel policy	Use good vehicle management. Evaluate cleaner fuels/vehicles	L	M	££	H	6
Remote/home working	Expand to other Service areas	L	S	£	M	6
RBC EMAS	Consolidate objectives and integrate with management systems. Reduce NOx emissions. Promote walking, cycling car sharing	L	S	£	M	6
RBC procurement	Implement a green corporate procurement strategy to reduce pollution	L	S	£	M	6
AQ monitoring/ information	Continued monitoring throughout the borough. Development of County wide AQ website and develop consistent monitoring procedures.	L	M	£	M	4
VOSA vehicle emissions testing	Liaise with NCC and evaluate feasibility enforcement of emission standards within AQMAs	L	M	£	L	2

Table 8.1. Cost/benefit estimations of the proposed measures.

Measures	Action	Air Quality Impact	Time scale	Cost	Likelihood	Score
Local Plans. Development Control Strategies.	Develop Supplementary Planning Documents. Ensure air quality is a material consideration for key developments in the Borough	L	S	£	M	6
Control of industrial emissions	Liaise with Environment Agency to ensure that air quality is considered as part of the IPPC regime	L	S	£	M	6
Energy efficiency	Reduce emissions of greenhouse gases and nitrogen dioxide from RBC premises and domestic premises and establish targets	L	M	£	M	4
Smoke control	Enforce the requirements of the Smoke Control Areas In West Bridgford	L	S	£	M	6
Bonfires	Encourage composting recycling and enforce bonfire controls on demolition sites	L	S	£	M	6
Local Strategic Partnership	Develop key actions on air quality improvement within the Environmental Issues Group	L	M	£	M	4
Liaison with the Highways Agency	Develop further actions for the improvement of air quality within the AQMAs	L	M	£	M	4
Nottinghamshire Air Quality Strategy	Review the strategy through the Nottinghamshire Air Quality Steering Group	L	S	£	H	9

9. Measures from the Nottinghamshire County Council Local Transport Plan.

Road transport is the major source of pollution in Rushcliffe, and in the West Bridgford AQMAs, the traffic emissions are the major reason for exceedence of air quality objectives. The integration of the Action Plan with the Local Transport Plan (LTP) will be the main focus of this action plan and will revolve around measures to reduce congestion and transport emissions. The Local Transport Plan sets out the local transport strategy and priority areas for investment over the next five years and includes the City of Nottingham, the boroughs of Broxtowe, Gedling, Rushcliffe and part of Ashfield.

It should be noted that the Local Transport Plan was published before the completion of the Stage Four Air Quality Review and Assessment and there are few specific measures relating to the Rushcliffe AQMAs in the current plan. Rushcliffe Borough Council and Nottinghamshire County Council will work in partnership during the preparation of the next Local Transport Plan, to ensure further measures are considered for the improvement of air quality within the AQMAs.

The table 9. shows a prioritised list of measures (see section 7.2) taken from the Nottinghamshire County Council Local Transport Plan that will play an important role in working towards improving air quality. The estimated costs and air quality effects of these options have been evaluated (see explanatory note, section 8.18), and these set of prioritised options will form the basis of the action plan.

Measure	Air quality impact	Timescale	Likelihood occurring before 2011	Cost	Score
Fourth Trent crossing	MEDIUM	LONG	NONE	££££	0
Park and ride (Gamston)	LOW	MEDIUM	HIGH	££££	6
Road user charging	UNKNOWN	LONG	LOW	££££	
NET phase 2 (lines 2 and 3)	LOW	LONG	LOW	££££	1
NET future phases(beyond lines 2 and 3)	LOW	LONG	NONE	££££	0
Workplace parking levy	MEDIUM	MEDIUM	Dependent upon successful bid for NET lines 2 and 3	££££	0
Parking standards	LOW	SHORT to LONG	HIGH	£	9

Table 9. Local Transport Plan Measures.

Measure	Air quality impact	Timescale	Likelihood occurring before 2011	Cost	Score
Smarter travel choices	LOW	SHORT to LONG	HIGH	£	9
Walking/cycling strategy including upgrading walking and cycling networks	LOW	MEDIUM to LONG	HIGH	££££	6
Improved bus services	LOW	MEDIUM to LONG	HIGH	££	6
Co-ordinated land use and transport planning	LOW	SHORT to LONG	HIGH	£	9
Section 106 Developer contributions	LOW	SHORT to LONG	HIGH	£	9
Enforcing emissions standards	LOW	SHORT to LONG	HIGH	£	9
Highways Agency A52 ring road upgrading	MEDIUM	LONG	MEDIUM/LOW	££££	2
Car club	LOW	SHORT to LONG	HIGH	£	9
County Council's Travel Plan	LOW	SHORT to LONG	HIGH	£	9
Environment Agency's travel plan	LOW	MEDIUM to LONG	MEDIUM	£	4
County Council's vehicle fleet	LOW	SHORT to LONG	MEDIUM	££££	6
Bingham Park and Ride	LOW	LONG	NONE	££££	0
Road and traffic signing policy	LOW	SHORT to LONG	HIGH	££	9
Traffic control and information	LOW	SHORT to LONG	HIGH	££	9
Decriminalised parking enforcement	LOW	MEDIUM to LONG	HIGH	£££	6

Table 9. (cont'd).

Measure	Air quality impact	Timescale	Likelihood occurring before 2011	Cost	Score
Low emission zones	HIGH	LONG	NONE	£££££	0
Inland water ways	LOW	LONG	NONE	£££££	0
Bus emissions standards	LOW	SHORT to LONG	HIGH	£££	9

Table 9. (cont'd).

9.1. Measures that are likely to occur during the second local transport plan period (2006-2011) as at November 2006.

The following table (Table 9.1) provides more detail on the individual actions that are contained within the Local Transport Plan. More information has been provided on whether funding will be available and also whether the project is likely to be implemented within the current Local Transport Plan duration.

Table 9.1. Detail of the measures.

Measures that are likely to occur during the second local transport plan period (2006-2011) as at November 2006.

Measure	Likelihood occurring before 2011	Funding status	Detail
Park and ride (Gamston)	High – due to be completed in 2009	Capital funding provisionally allocated for period 2006-2009	Feasibility studies complete, awaiting feedback from statutory consultees. Further Transport Assessments may be required to satisfy Highways Agency requirements. Planning permission due to be submitted during 2006/07 financial year.
Smarter travel choices	High – Action Plan 06/07 – 10/11	LTP2 Funding Allocated 06/07, planned funding to 10/11	The Smarter Choices Action Plan 06/07 -10/11 encompasses 'soft measures' including workplace and school travel; plans, personalised travel planning, public transport information, marketing and travel awareness campaigns, car clubs, car sharing, teleworking and teleconferencing.
Walking/cycling strategy	High	Capital funding provisionally allocated for period 2006-2011	Cycling and walking networks will be upgraded, identified on a prioritised system based on accessibility, safety, modal shift and making best use of existing networks.
Improved bus services	High	Capital funding provisionally allocated for period 2006-2011	Bus punctuality, patronage, satisfaction levels, perceptions of safety and accessibility targets have been determined and are included within LTP2 to improve accessibility, punctuality, quality, reliability and infrastructure of services. Programmes of work have been developed in partnership with bus operators to help ensure these are delivered.
County Council's Travel Plan	High	Annual funding programme	STEPS, the County Council Travel Plan has been in operation for the past 10 years and is designed to reduce the environmental impact of the employee commute and business journeys. The plan has been incorporated into the climate change action plan for the County Council.

Measure	Likelihood occurring before 2011	Funding status	Detail
County Council's vehicle fleet	High	Funding offset against annual expenditure	Rolling vehicle replacement programme to improve the energy efficiency of the County Council fleet. The work will implement the actions of the Energy Savings Trust fleet health check report including driver training.
Signing policy (Advanced direction signing and variable message signs)	High	Capital funding provisionally allocated for period 2006-2011	Signing will be upgraded, identified on a prioritised system based on accessibility, safety and making best use of existing networks. Strategy identified to optimize the performance of the network and thereby reducing congestion and improving air quality.
Traffic control and information	High	Funding provisionally allocated to traffic control centre for period 2006-2011	The County and City Councils jointly fund the traffic control centre that monitors traffic movement and provides real time traffic control over many traffic signal installations. Real time information is conveyed onto the local media and disseminated via the County Council's web site.
Civilised parking enforcement (CPE)	High	Funding secured for introduction of scheme, self-financing thereafter	A draft Special Parking Area (SPA) was submitted to the Department for Transport (DfT) in May 2005. The Borough Council is currently negotiating with the County Council on the CPE partnership agreement as well as with neighbouring authorities, the emergency services, bus operators and other interested stakeholders. Upon completion of these discussions the County Council will submit a formal application for a SPA. At this stage, the earliest date achievable for the assumption of enforcement responsibility will be late 2007.

Measure	Likelihood occurring before 2011	Funding status	Detail
Bus emissions standards	High	Bus operators fund improvements to their fleet	Encourage the take up of cleaner vehicles through partnership working. Due to sustained high levels of investment by the two main bus operators the average age of the bus fleet in Greater Nottingham is already less than 6 years old, and by the end of 2005/06, approximately 84% of the conurbation's bus fleet were low-emission Euro 2 or Euro 3 standard.
Car club	Medium/High	Feasibility study funded through LTP 07/08. Project self funding	The City and County Council are investigating a car club for the City and Rushcliffe area with one of the national car club operators. A feasibility study to identify operator and location is planned for 2007/08.
Environment Agency's travel plan	Medium/High	None allocated as of September 2006	The County Council will make contact with the Environment Agency to highlight the benefits of implementing a travel plan.
Workplace parking levy	Medium	Scoping funding allocated in 2001/02	A study was carried out into the feasibility of introducing a workplace parking levy within the City of Nottingham. The City Council remains of the opinion that workplace parking levy is a suitable toll to pursue at this stage and continues to investigate its feasibility.
A52 ring road upgrading	Medium/Low	Funding allocated for 2010/11	The scheme is currently considered a medium priority in regional funding priorities and is programmed for 2010/11. Regional priorities are, however, due to be reviewed within three years.

Table 9.1. (cont'd).

Measure	Likelihood occurring before 2011	Funding status	Detail
Road user charging	Low	Government have provisionally allocated 'Transport Innovation Funding' for a feasibility study	A successful joint bid for funding was made to DfT to undertake a joint feasibility study into road user charging in the Nottingham, Leicester and Derby cities and Nottinghamshire, Leicestershire and Derbyshire counties. The feasibility study is due to be completed by 2008, at which time further bids will need to be made to DfT for funding if it is considered appropriate.
Nottingham Express Transit (NET) Phase 2 (lines 2 - Clifton and 3 - Beeston)	None	Programme entry approval announced in October 2006	The official application for funding for Phase 2 was submitted to DfT in July 2003, and was granted programme entry in October 2006. By approving the entry of the project into DfT's local authority major schemes programme, Government has provisionally confirmed its intention to financially support the project. The County and City Councils will now consider whether to apply for a Transport and Works Act Order (TWAO), and confirm the scheme proposals. It is likely that this decision will be made in Spring 2007. If the councils decide to proceed with the project it is anticipated that the lines would be operational in 2013.
Low emission zones	None	None applied for as at November 2006	The introduction of low emission zones on Trent Bridge and Lady Bay Bridge would not be feasible due to the fact that they are two of the three River Trent crossings and therefore require access throughout the day and night.

Measure	Likelihood occurring before 2011	Funding status	Detail
Fourth Trent crossing	None	None allocated as at November 2006	A fourth bridge crossing is not planned until after the 'dualling' of A52 between Clifton Bridge and Saxondale island (including grade separated junctions between these two locations, which is the latter part of the 2011-2016 period at the earliest. The 'dualling' of A52, however, does not feature as a regional priority for the period up to 2020. Regional priorities are due to be reviewed in 2008.
NET future phases (beyond lines 2 and 3)	None	None applied for as at November 2006	Two NET route options running over Trent Bridge and through the West Bridgford area were studied as part of feasibility work for the NET network. Research revealed that these two options were not viable as part of Phase 2, although they may be considered for future phases.
Bingham Park and Ride	None	None applied for as at November 2006	No negotiations undertaken with rail authority yet. Intended for inclusion within LTP3 (2012-2017) and, if the scheme proceeds, likely delivery would be latter end of that period.
Inland water ways	None	None applied for as at November 2006	Due to a lack of demand no facilities have been provided to allow the transfer of freight from road to water. Discussions were held over providing a facility in the Trent Basin but this has not been developed further due to a current lack of demand.

Table 9.1. (cont'd).

9.2. The Regional Funding Allocation (RFA) for transport investment programmes.

Many of the measures in the LTP detailed in table 9.2 are dependent upon regional priorities and financial resources from central government fundings. The Government has issued guidance on how advice from the regions on regional funding allocations should be prepared and submitted to the Government to have the greatest influence on Government policy development and future spending decisions.

The Regional Funding Allocation (RFA) seeks greater alignment of the key regional strategies for economic development, housing and transport at a regional level. RFA also provides enhanced input to Government decisions by the regions, providing advice on scheme prioritisation.

The regional advice informs decisions currently made centrally on two transport investment programmes – all major local authority schemes which cost more than £5m and Highways Agency programmes except on roads deemed to be of national significance (which are M1 and A14 within the East Midlands).

East Midlands Regional Assembly commissioned consultants Steer Davies Gleave to develop and apply an assessment methodology on all the transport schemes in the region. The assessment methodology considered many factors including the objectives of the scheme and how these support wider national, regional and local strategy objectives. The proposed investment programmes reflected not only priorities arising from the assessment criteria but also speed of scheme delivery in the early years and their degree of risk.

The programme of priorities was agreed by the Regional Assembly and represented a regional view on what ultimately is a funding decision made by the Secretary of State.

It is anticipated that there will be a review of the regional transport priorities in about three years and this may have an impact on actions in the LTP.

10. Implementation, Monitoring and Review of the Action Plan.

10.1. Rushcliffe Borough Council actions.

Implementation.

Many of the actions for working towards reducing air pollution and achieving the air quality objectives are already in place, and the further proposed actions will be implemented as soon as possible.

A timetable for implementation of all the proposed actions will be drawn up, and this will be included in the Action Plan Progress Report.

10.2. Monitoring.

Monitoring of Rushcliffe Borough Council's actions in the plan will initially be monitored by the EMAS and the Environmental Issues Group. It is also proposed that an internal Action Plan Working Group to oversee the actions is set up.

The Council will continue to undertake the programme of air quality monitoring within and outside of the Air Quality Management Areas. This is to check on the progress towards achieving the main objective in reducing levels below the national air quality objectives.

Regular monitoring meetings will continue with Nottinghamshire County Council to ensure the integration of air quality improvements are maintained in the Local Transport Plan.

Annual Progress Reports will be submitted to the Department for the Environment, Food and Rural Affairs, in line with the policy guidance that has been issued.

Finally, progress will also be reported on an annual basis to the Council's Performance Management Board.

10.3. Nottinghamshire County Council Local Transport Plan.

10.4. Implementation Programme.

Table 10.1 shows the proposed spending and delivery programmes for the period of the plan, and has been based on allocations set out by the government. The programme covers the whole of the plan area including Rushcliffe.

Major schemes proposed in the plan that are likely to affect Rushcliffe are improvements to the A52 ring road and the Nottingham tram extension (NET).

The tram extension through Wilford and terminating at Clifton may have an affect on traffic movements in Rushcliffe, and the AQMAs.

Greater Nottingham Resource Allocations

All figures £000s	2006/07	2007/08	2008/09	2009/10	2010/11	Total
Bus priority schemes	787	800	700	950	1,350	4,587
Public Transport interchanges	110	80	90	100	100	480
Park and Ride schemes	50	70	1,150	1,150	60	2,480
Bus infrastructure schemes	1,741	1,185	1,250	1,090	1,200	6,466
Cycling schemes	870	500	550	700	885	3,505
Light rail schemes	450	400	400	400	500	2,150
Walking schemes	2,306	1,175	891	900	1,020	6,292
Travel plans	280	325	275	275	445	1,600
Safer routes to school	800	760	725	790	850	3,925
Local safety schemes	1,350	1,260	1,175	1,240	1,475	6,500
Traffic management schemes	1,455	1,030	975	1,025	1,185	5,670
Road crossings	255	235	190	224	270	1,174
New roads and local road schemes	170	728	850	1,080	1,110	3,938
Maintenance- roads & footways	6,813	6,685	7,102	7,545	8,020	36,165
Maintenance- Bridge strengthening	632	570	580	590	600	2,972
Structural maintenance	674	570	580	590	600	3,014
Other maintenance schemes	200	220	220	215	210	1,065
Other schemes	1,168	938	825	718	815	4,464
TOTALS	**20,111**	**17,531**	**18,528**	**19,582**	**20,695**	**96,447**

Table 10.1. Implementation programme and funding for the period of the plan.

The Local Transport Plan for Greater Nottingham sets out the targets for the mandatory and local indicators against which the success of the plan will be assessed.

These targets include:

- Actions to tackle congestion
- Actions to improve air quality

Mandatory indicators relating to the targets are detailed in table 10.2

Mandatory Indicators	Source of Data	Baseline Position (year)	Target for 2010/11
BV102: Public transport passenger journeys (Bus and Tram)	Operators' returns	68.5 million (2003/4)	73.9 million (8% increase)
BV104: Satisfaction with bus services	Citizens' Panel	City = 64% County = 64% (2003/04)	City = 75% County = 75% (2009/10)
LTP1: % of households within 30 minutes travel time of a town centre by bus, train or tram with no more than a 400 metre walk to a stop	Accession software	93% (2006)	93%
LTP2: Change in area wide road traffic mileage	Council monitoring	2,933 million vehicle kilometres per annum (2004)	3,109 million vehicle kilometres per annum (6% increase)
LTP3: Cycling trips (annualised index at selected sites)	Council monitoring	100 (2003)	107
LTP4: % journeys to school by car	Council monitoring	29% (2004/5)	25%
LTP5: Bus punctuality a. Buses starting the route on time, b. Arriving at intermediate timing points on time, and c. Excessive waiting time for frequent services	Council monitoring	a. 92% b. 77% c. 0.71 mins (2005/6)	a. 95% b. 82% c. 0.66 mins
LTP6: Changes in peak period traffic flows to the urban centre	Council monitoring	34,590 (2003)	34,590
LTP7: Congestion: Average journey time per person per mile, related to person throughput	DfT / Council monitoring	Not required for final submission	Not required for final submission
LTP8: Concentrations of nitrogen dioxide in Air Quality Management Areas	Local air quality monitoring	City Centre = 43 µgm^3 Ring Road = 42 µgm^3	City Centre = 38 µgm^3 Ring Road = 38 µgm^3

Table 10.2. Mandatory Indicators.

Baseline positions and targets for Rushcliffe's AQMAs will need to be determined and these will be reported in the Action Plan Progress Reports.

The local indicators and targets are shown in table 10.3.

Local Indicators	Source of Data	Baseline Position (year)	Target for 2010/11
L1: % of single occupant car journeys to work for employers with travel plans	Employers' surveys	69% (2005)	69%
L2: % of new non-residential development complying with RSS car-parking standards	Council monitoring	100% (2004/5)	>90%
L3: % of employees covered by commuter travel plans	Employers' surveys / Councils' employment predictions	15% (2005)	20%
L4: % of schools with an approved travel plan	Councils' monitoring	15% (2004/05)	80%
L5: Number of services with a reduction in bus journey times	Bus operators' timetables	0 (2005/06)	5
L6: % of scheduled bus services operating	Council monitoring	99.6% (2005/06)	Maintain above 99.5%
L7: % of households within 45 minutes of hospital by bus or tram	Accession software	87% (2006)	90%
L8: % of eligible population taking up concessionary fares entitlements	Council monitoring	62% (2004/05)	70%
L9: (BVPI 103) % of users satisfied with public transport information	Citizens Panel	City = 72% County = 52% (2003/04)	City = 78% County = 60% (2009/10)
L10: (BV178a) Percentage of footpaths and other rights of way which are easy to use by the public	Council monitoring	61% (2003/04)	67%
L11: Number of fully accessible bus services	Councils' monitoring	2 (2005/06)	7
L12: (BV165) Percentage of crossings with facilities for disabled people	Councils' monitoring	80% (2003/04)	90%
L13: Number of services where buses are Real Time enabled	City Council monitoring	4 (2005/06)	9

Table 10.3. Local Indicators and targets.

Local Indicators	Source of Data	Baseline Position (year)	Target for 2010/11
L14: Volume of carbon dioxide emitted by vehicles in Greater Nottingham	Traffic volume, and DfT emission factors	248,000 tonnes (2004)	269,000
L15: (BV106) % of residential development on brownfield land	Council monitoring	89% (2003/04)	Maintain at above 85%
L16: Perception of safety when using the bus at night (journey, waiting and accessing stops – after 7pm)	Quarterly surveys of 600 people at the main travel centre	65% (2005/6)	67%
L17: Pedestrian flow on primary pedestrian network (annualised index at selected sites)	Council monitoring (2003/04)	100	110

Table 10.3. (cont'd). Local Indicators and targets.

10.5. Review of the Air Quality Action Plan.

It is intended that the Action Plan will be a live document, to be reviewed and updated as further air quality assessments and monitoring are undertaken, and when actions put in place to improve air quality take affect, and new actions are considered.

The Councils Environmental Health Service will take the lead in partnership with the County Council, in delivering, implementing and reviewing the Action Plan.

11. Consultation.

Policy Guidance Note LAQM.PG(03) details the statutory basis for consultation and liaison in respect of this action plan. With regard to consultations on Action Plans, Schedule 11 of the Act requires this Council to consult:

- the Secretary of State (DEFRA)
- the Environment Agency
- the Highways Agency
- neighbouring local authorities
- Nottinghamshire County Council
- other public authorities and local organisations as appropriate
- the public as appropriate

The Council view the consultation part of this process as a very important part and will endeavour to ensure views and opinions on this report and any proposed actions are sort as widely as practicable. With this in mind, the Council intend to undertake this consultation in a number of ways to try and achieve a good input from all stakeholders. This will include the following:-

- Copies of this report sent to the key stakeholders, including the above consultees
- Information on the Rushcliffe Web Site - www.rushcliffe.gov.uk
- Articles within Rushcliffe Reports (circulated to all residents in the borough).

This report will be presented to the Cabinet committee of this Authority for approval, and Members will be made aware through Members Matters Bulletins.

12. Glossary of Terms.

AADT – Annual average daily traffic count

Air Dispersion Modelling -mathematical modelling calculations using emissions data from an emissions inventory.

Air Quality Standard – these standards represent minimal/no risk health based standards, for ambient concentrations of pollutants. They are based purely on medical evidence, taking no account of costs, benefits or technical feasibility.

Air Quality Objective – these objectives take account of both costs and benefits, forming benchmarks in time, against which "Air Quality Standards" can be achieved.

ADMS Urban – An air dispersion model developed by CERC specifically to deal with modelling urban pollution or pollution from many sources.

Annual mean – The average of the concentrations measured or calculated for each pollutant for one calendar year.

AQAP – air quality action plan

AQMA – Air Quality Management Area

Assessment – The consideration of whether estimated levels for the relevant future period are likely to exceed the levels set in the objectives.

Background concentration – Concentration of a particular pollutant thought to be present in an area, which cannot be accounted for by dispersion modelling from local emissions. It is generally caused by transportation of pollutants over long distances.

CERC – Cambridge Environmental Research Consultants

Data Capture – The percentage of all the possible measurements for a given period that were validly measured

DEFRA – Department for Environment, Food and Rural Affairs

DETR – Department for the Environment and the Regions (Now DEFRA)

DfT – Department of Transport

DMRB – Design Manual for Roads and Bridges

EMAS – Eco-management and audit scheme

Emissions Inventory – A full list of sources that emit pollutants into the atmosphere over a sustained period of time.

Exceedence – A period of time where the concentration of a pollutant is greater than, or equal to, the appropriate air quality objective.

IPPC – Integrated Pollution, Prevention and Control Act 2000

Maximum hourly average – The highest hourly reading of air pollution obtained during the time period under study.

NETCEN – National Environmental Technology Centre

NO_2 – Nitrogen dioxide

NO_x – Nitrogen oxides

Part A installations – Large emitters of pollution, which are regulated by either the Environment Agency (A1) or Local Authorities (A2)

Part B installations – Smaller emitters of pollution, which are regulated by local authorities

Percentile – A value found by listing a set of numbers in order and calculating the number below which a certain percent of the data set lies. For example, the 99^{th} percentile of values in a data set is the value below which 99% of the data falls.

QA/QC – Quality Assurance/Quality Control.

SEA – Strategic environmental assessment

SO_2 – Sulphur dioxide

VOSA – Vehicle and Operator Services Agency

µg/m^3 – Microgrammes per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1µg/m^3 means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.

13. Reference Bibliography. Sources of references used in this report.

1. Rushcliffe Borough Council (2000) "Air Quality Review and Assessment" www.rushcliffe.gov.uk

2. Rushcliffe Borough Council (2003) "Updating and Screening Assessment of Local Air Quality". www.rushcliffe.gov.uk

3. Rushcliffe Borough Council (2005) "Detailed Assessment of Sulphur Dioxide and Nitrogen Dioxide". www.rushcliffe.gov.uk

4. Rushcliffe Borough Council (2005) "Air Quality Review and Assessment – Progress Report". www.rushcliffe.gov.uk

5. Rushcliffe Borough Council (2006) "Updating and Screening Assessment of Local Air Quality". www.rushcliffe.gov.uk

6. DEFRA "Review and Assessment: Policy Guidance LAQM.TG(03)".and Update – January 2006.

7. DEFRA "Local Air Quality Management Policy Guidance LAQM.PG(03)"

8. DEFRA "Local Air Quality Management Policy Guidance: Addendum LAQM.PGA(05)
(DEFRA documents available to download at:
www.defra.gov.uk/environment/consult/laqm/index.htm)

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

10. Bureau Veritas Action Plan Appraisal Helpdesk.
www.casellastanger.com/actionplan

11. Rushcliffe Borough Council (2006) Air Quality Strategy.
www.rushcliffe.gov.uk.

12. Nottinghamshire Air Quality Strategy a Framework for Action
www.rushcliffe.gov.uk.

13. Local Transport Plan for Greater Nottingham - Final Plan 2006/7 - 2010/11. www.nottinghamshire.gov.uk

14. Air quality modelling within Air Quality Management Areas in West Bridgford. CERC report. www.rushcliffe.gov.uk.

15. The role of the Highways Agency in Local Air Quality Management.
www.highways.gov.uk

APPENDIX 1.

Air Quality Objectives.

The air quality objectives, including target dates by which they should be achieved, are set out in the Air Quality Regulations 2000 (as amended) and are reproduced below. Additionally there are provisional objectives for particles although they have not been included in the Regulations.

Objectives included in the Air Quality Regulations 2000 and (Amendment) Regulations 2002 for the purpose of Local Air Quality Management			
Pollutant	**Air Quality Objective**		**Date to be achieved by**
	Concentration	**Measured as**	
Benzene	16.25µg/m^3	running annual mean	31.12.2003
	5µg/m^3	annual mean	31.12.2010
1,3 Butadiene	2.25µg/m^3	running annual mean	31.12.2003
Carbon monoxide	10.0mg/m^3	maximum daily running 8-hour mean	31.12.2003
Lead	0.5µg/m^3	annual mean	31.12.2004
	0.25µg/m^3	annual mean	31.12.2008
Nitrogen dioxide	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40µg/m^3	annual mean	31.12.2005
Particles (PM10)(gravimetric)	50µg/m^3 not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40µg/m^3	annual mean	31.12.2004
Sulphur dioxide	350µg/m^3 not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125µg/m^3 not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m^3 not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

Provisional Objectives for Particles not included in the Air Quality Regulations for the purpose of Local Air Quality Management			
Pollutant	**Air Quality Objective**		**Date to be achieved by**
	Concentration	**Measured as**	
Particles (PM10)(gravimetric)	50µg/m^3 not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
	20µg/m^3	annual mean	31.12.2010

Appendix 2. Rushcliffe Borough Council Environment Policy.

RUSHCLIFFE BOROUGH COUNCIL ENVIRONMENT POLICY (2002)

Corporate Policy Statement.

Rushcliffe Borough Council recognises the effect of its operations on the environment and the influence it can have on the community through its actions. It undertakes to promote an environment compatible with healthy, balanced life styles where the whole community plays its part in environmental protection and improvement.

The Council will play its full part in achieving this aim by: -

- Ensuring that its own operations meet or exceed all statutory environmental requirements.
- Encouraging others in the community to reduce their negative impact on the environment through information, education and publicity and, where necessary, by enforcement of environmental legislation.
- Identifying areas of public concern and seeking improvements by working in partnership with other interested parties, and co-ordinating their efforts through the Agenda 21 process.
- Carrying out periodic reviews of its own policies and actions and seeking continual improvement through its Eco-Management and Audit Scheme.
- Striving to provide, through its Best Value programme, the highest quality and most efficient services possible.

Commitments.

1. Environmental Improvement.

We are committed to continual improvement of our performance in order to reduce adverse environmental impacts. We will use the best technology available within our resources to meet our objectives.

2. Legislation.

We will ensure that all our operations, whether carried out directly or through contractors, comply with or exceed all statutory environmental requirements.

3. Energy.

We will seek to reduce energy and water usage in Council buildings and to reduce fuel used by vehicles engaged in Council business. We will use environmentally safe and renewable energy sources where possible.

4. Waste Management and Recycling.

We undertake to reduce the amount of waste produced by the Council and to encourage and provide facilities to maximise the recycling of waste produced both by the Council and by the businesses and households of the Borough. We will dispose of our waste in a safe and responsible way.

5. Environmental Protection.

We will adopt the principles of best practice and best available technology to minimise and, where possible, eliminate the release of any pollutant that may cause environmental damage to air, water or land.

6. Use of Materials.

We will progressively specify and purchase the least environmentally damaging and wasteful products and materials which adequately serve requirements within financial and other constraints, taking into consideration manufacture, packaging, transport and disposal.

7. Planning and Transportation.

We will encourage sustainable patterns of development which will help conserve the environment and we will promote energy efficient and environmentally friendly means of transport for our staff, Elected Members and the public at large.

The council will carry out these commitments by: -

- Ensuring that our environmental principles, and the specific requirements that flow from them are met by our contractors and suppliers.
- Respecting the diversity and balance of plant and animal life in the Borough
- Conserving natural landscapes and distinctive buildings
- Employing 'safe' technologies and operating procedures to minimise the risk of environmental damage.
- Preparing contingency procedures to deal with environmental emergencies
- Assessing that all proposed policies, activities and practices for their effect on the environment before they are implemented.
- Providing training for all our employees and Elected Members to ensure that they are aware of the Council's environmental responsibilities.
- Encouraging environmentally-friendly behaviour by the residents of Rushcliffe by providing appropriate information and advice.

Publicity.

This policy will be publicised to the Council's staff and to residents and businesses of the Borough. We undertake to disclose information regarding our performance measured against this policy and to encourage comment and feedback from the community.

Approval.

This revised policy has been approved by the Council's Executive Management team on

Review.

This policy will be reviewed annually by senior management and the relevant scrutiny group and any proposed changes ratified by the Council.

Signed by [signature] Chief Executive Date 28 Nov. 2002

Signed by [signature] Leader of the Council Date 27th Nov 2002

Appendix 3a. Part A2/B PPC Installations.

PPC Ref Number	Company	Process
92/001	Barry's Autos, Unit 5 Candleby Lane, Cotgrave	Waste Oil Burner
92/002	Black Star Motors, 34a Blake Road, West Bridgford	Waste Oil Burner
95/006 Part A1	University of Nottingham, Faculty of Agriculture and Food Sciences, Sutton Bonington	Clinical Waste Incinerator
92/006	Wilford Hill Crematoria, Southern Cemetery, Wilford Hill, West Bridgford	Crematoria
92/010	Veterinary Laboratories Agency, The Elms, College Road, Sutton Bonington	Animal Carcass Incinerator
95/005	E.ON Plc, A453 Winking Hill, Ratcliffe on Soar	Pulverised fuel ash management scheme
99/002	Conoco Limited, Kings Filling Station, Grantham Road, Bingham	Unloading of Petrol
99/003	Morrisons Supermarkets plc, Ambleside, Gamston	Unloading of Petrol
99/004	Cotgrave Service Station, Main Road, Cotgrave	Unloading of Petrol
99/006	Total Convenience Store, Lane End, 94 Melton Road, Tollerton	Unloading of Petrol
99/007	Shell, Saxondale Service Station, Saxondale Crossroads, Bingham	Unloading of Petrol
99/009	Brobot Service Station, Fosse Way, East Bridgford	Unloading of Petrol
99/010	Brobot, Rancliffe Service Station, Loughborough Road, Bunny	Unloading of Petrol
99/011	Pierrepont Service Station, Radcliffe Road, Holme Pierrepont	Unloading of Petrol
99/012	Melton Road Service Station, Melton Road, West Bridgford	Unloading of Petrol
99/013	Wolds Service Station, Melton Road, Stanton on the Wolds	Unloading of Petrol
99/015	Fosseway Service Station, Nottingham Road, Cropwell Bishop	Unloading of Petrol
99/018	Asda, Loughborough Road, West Bridgford	Unloading of Petrol
99/016	Esso Petroleum Company Ltd, Ruddington Service Station, 130 Loughborough Road, Ruddington	Unloading of Petrol
99/019	Charnwood Truck Services, Hillside, Gotham Road, Kingston on Soar	Waste Oil Burner
02/001	Johnson's Garage, 28 Main Street, East Leake	Waste Oil Burner
03/001	Bingham Garage, Nottingham Road, Bingham	Waste Oil Burner
03/003	Nottingham Volkswagen, Loughborough Road, West Bridgford	Re-spraying of road vehicles

Appendix 3b. Part B PPC Installations. New applications.

Company	Process
Finishing Touch Dry Cleaners,13 Main Street, Keyworth	Dry Cleaners
Giltbrook Cleaners. 52 Rectory Road, WB	Dry Cleaners
Speedy Clean,6 Wilford Lane, Ruddington	Dry Cleaners
Morrison Supermarket, Ambleside, Gamston	Dry Cleaners
Johnson Cleaners, Bridgford Point, Unit 1a, Radcliffe Road, West Bridgford	Dry Cleaners
Trent Shot Blasting, Harby Road, Langar	Metal Coating

Appendix 3c. Part A1 IPPC Installations.

Company	Location	Process
E.ON UK Ltd (formerly Powergen)	Ratcliffe on Soar	Combustion process/Waste Management
Lafarge Cement UK	Barnstone	Cement manufacture
Star Energy Gas and Oil	Rempstone	Crude oil production
British Gypsum	East Leake	Combustion process/ Manufacture of Plasterboard

Appendix 4.
Modelled nitrogen dioxide concentration contour maps (CERC report: Air quality modelling within Air Quality Management Areas (AQMAs) in West Bridgford).