Ashfield District Council

Local Air Quality Management
Progress Report 2008

Environmental Protection Team

ASHFIELD DISTRICT COUNCIL

Review & Assessment
Local Air Quality Management

Progress Report
APRIL 2008

Content

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The Council would like to thank those who have provided help, co-operation, information and resources to enable Ashfield District Council to undertake this Progress Report.

Executive Summary

Part IV of the Environment Act 1995 requires local authorities to review and assess the current and future air quality in their areas against objectives set out for eight key air pollutants, under the provisions of the National Air Quality Regulations 2000 and the Air Quality (Amendment) Regulations 2002 (Table 1.0).

A review and assessment of air quality is the first step in the Local Air Quality Management (LAQM) process. Part IV of the Act requires each local authority to review air quality 'from time to time'. The National Air Quality Regulations 2000 and the Air Quality (Amendment) Regulations 2002 prescribe air quality objectives and the dates for meeting them. For each objective, local authorities have to consider present and future air quality and assess whether the objectives are likely to be achieved by the prescribed date.

Review and assessment is now undertaken using a phased approach, initially conducting an 'Updating and Screening Assessment'; this is based on a checklist approach to identify those matters that have changed since the first round of review and assessment was completed and which now require further assessment. Then a 'Detailed Assessment' where the updating and screening assessment indicates that an Air Quality Objective may be compromised. Guidance for progress reports has been given in Technical Guidance LAQM. TG(03).

1.1 Progress Reports

Progress reports were introduced into the Local Air Quality Management (LAQM) system following a detailed evaluation of the first round of review and assessment. The evaluation report recommended that:

"Careful consideration should be given to requiring an annual LAQM report instead of less frequent review and assessment reports. It would help ensure continuity in resourcing air quality within local authorities so as to maintain the capacity and skills required to manage LAQM. Such a report should provide both a review and update on air quality issues, including information on developments that might affect air quality and the results of monitoring. It would ensure that circumstances requiring a detailed assessment were identified early and acted upon without delay".

Progress reports are designed to ensure continuity in the LAQM process. They thus fill the gaps between the three yearly requirements to carry out a review and assessment of air quality. Guidance for progress reports has been given in LAQM.PRG(03).

Progress reports are only required in years when the authority is not carrying out an Updating and Screening Assessment or a Detailed Assessment. Thus, this report forms the third Progress Report produced by Ashfield District Council following the most recent Updating and Screening Assessment submitted to Defra in 2006.

1.2 Summary

A review of air quality measurement during 2007/08 has demonstrated that all the air quality objectives continue to be achieved across Ashfield. There is no requirement to proceed to a Detailed Assessment for any of the Air Quality Strategy pollutants as a result of air quality data reported within this Progress Report.

1.3 Introduction

The aim of this report is to detail the progress on implementing local air quality management across Ashfield by presenting new monitoring data and a review of local developments which might affect local air quality. This Progress Report represents the eighth report on air quality produced by Ashfield District Council. It is recommended that the report is read in conjunction with the preceding reports:

Air Quality Review and Assessment Third Stage August 2001
Updating and Screening Assessment May 2003,
Detailed Assessment April 2004,
Detailed Assessment December 2004.
Progress Report April 2005,
Updating and Screening Assessment April 2006,
Progress Report 2007,

The objectives of this report are to:

- Provide an update on monitoring that has taken place over 2007/08.
- Review any new developments or changes that might have an affect on local air quality
- Provide the means for communicating air quality information to members and the public.

The report adopts the same format as the Updating and Screening Assessment by utilising the profile suggested within the Technical Guidance LAQM. TG(03) and the Progress Report Guidance LAQM.PRG(03). Air quality has been assessed against a list of guidance criteria and where necessary new monitoring data has been reviewed and updated.

1.4 Public Exposure

The Regulations make clear that likely exceedances of the objectives should be assessed in relation to 'the quality of the air at locations which are situated outside of buildings or other natural or man-made structures, above or below ground, and where members of the public are regularly present[1].' Review and assessments should thus be focussed on those locations where members of the public are likely to be regularly present and are likely to be exposed over the averaging period of the objective. Authorities are advised not to consider exceedances of the objectives at any location where public exposure would not be realistic[2].

1 Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, LAQM.TG(03), DEFRA. 2003

2 Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, LAQM.TG(03), DEFRA. 2003.

1.5 Consultation

DEFRA advise that local authorities will not need to consult widely on progress reports however they have advised that results from this process should be made available to the public.

This report and associated appendices will be made available to the public via libraries in the district, at the Council Offices in Kirkby-in-Ashfield and on the Council's Web Site. The Nottinghamshire Air Quality Steering Group, established during the first round of review and assessment to co-ordinate consultation across Nottinghamshire authorities, will continue to be involved in Local Air Quality Management.

Table 1.0 Objectives included in the Air Quality Regulations (England) (Wales) 2000 and in Air Quality (England) (Wales) (Amendment) Regulations 2002 for the purpose of Local Air Quality Management.

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured As	
Benzene [1.]	16.25 µg/m^3	Running annual mean	31.12.2003
	5 µg/m^3	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon monoxide[1.]	10.0 mg/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[2.]	200 µg/m^3 not to be exceeded more than 18 times a year.	1-hour mean	31.12.2005
	40 µg/m^3	annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)[3.]	50 µg/m^3 not to be exceeded more than 35 times a year.	24-hour mean	31.12.2004
	40 µg/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
	266µg/m^3 not to be exceeded more than 35 times a year.	15-minute mean	31.12.2005

[1.] The Air Quality Objective of 5 µg/m^3 for benzene and the objective of 10µg/m^3 for carbon monoxide came into force in separate Air Quality (Amendment) Regulations for England and Wales on 11 December 2002 and 31 December 2002 respectively.
[2.] The objectives for nitrogen dioxide are provisional.
[3.] Measured using the European gravimetric transfer sampler or equivalent

Section Two

Carbon Monoxide

The Government and Devolved Administrations have set a new objective of 10mg/m^3 as a daily running mean concentration, which was to be achieved by the end of 2003, bringing it into line with the Second Air Quality Daughter Directive limit value.

National Objective:

10mg/m^3 Max daily running eight-hour mean (31st December 2003).

2.1 (A) Monitoring Data

No local monitoring has been undertaken for carbon monoxide in Ashfield since the Updating and Screening Assessment reported in 2003, which concluded that the annual objective concentration of 10mg/m^3 in 2003 will be met across the district. There has been no significant increase in carbon monoxide sources identified within Ashfield.

Air Quality Emission Inventory

A carbon monoxide emission inventory for Ashfield has been revised since the second round of review and assessment, undertaken by consultants acting on behalf of Nottinghamshire authorities and based upon 2004 data[3]. Considerable data relating to emissions of carbon monoxide was compiled and entered into the inventory. The inventory clearly demonstrates a reduction in carbon monoxide levels across Ashfield and Nottinghamshire since the second round.

Table 2.0 tabulates the reduction in carbon monoxide emissions from road transport along with a number of other pollutants evaluated within this Progress Report predominantly showing a downward trend.

Table 2.0 Emission reductions from Road Transport within Nottinghamshire 1997 –2004 (tonnes/year)

Pollutant	**Emissions from Road Transport**			
	1997 (tonnes /year)	**2001 (tonnes /year)**	**2004 (tonnes /year)**	**% Reduction***
Carbon Monoxide (CO)	45283	29863	15291	49
Nitrogen Oxides (NOx)	16812	12993	10223	23
Non Methane Volatile Organic Compounds (NMVOCs)	9095	3280	1334	64
Particulates PM_{10}	769	462	389	40
Benzene	312	45	49	-
1,3 Butadiene	75	51	25	32

[3] Nottingham Emissions Inventory, (AQA Ltd) April 2004

There has been no significant increase in carbon monoxide sources identified within Ashfield. Low resolution modelling conducted during the first round of review and assessment indicated that carbon monoxide levels were predicted to be between 0.3 mg/m^3 – 0.6 mg/m^3 (1997), considerably below the new objective.

Automatic Urban Network Stations

A summary of maximum 8-hour mean concentrations measured at nearby Automatic Urban Network Stations (Table 2.1) indicate there has been no exceedances of the objective and results are well below the standard. *Note that data for 2007 is provisional and un-ratified data.

Table 2.1 Summary of Maximum Carbon Monoxide 8-Hour mean concentrations measured at a number of National Network Monitoring Sites (2001 – 2007)

Site	Site Classification	Maximum daily 8-hour mean concentration (Objective 10mg/m^3)					
		2002 mg/m^3	2003 mg/m^3	2004 mg/m^3	2005 mg/m^3	2006 mg/m^3	2007 mg/m^3
Nottingham Centre	Urban Centre	0.39	0.43	0.47	0.4	0.25	*0.21
Birmingham East (Centre)	Urban Background	0.26	0.27	0.23	0.35	0.35	*0.33
Sheffield Centre	Urban Centre	0.41	0.40	0.37	0.36	0.31	*0.29
Leicester Centre	Urban Centre	0.49	0.49	0.34	0.24	0.23	*0.23

* Preliminary data

Background concentrations

Background concentration maps for carbon monoxide were not updated by Defra for the third round of review and assessment, as this pollutant is not considered a high priority. The maximum estimated background concentration within Ashfield in 2001 was 0.458mg/m^3. When corrected to the objective year of 2003 the maximum estimated background concentration in Ashfield was calculated as 0.378mg/m^3, well below the air quality objective.

2.2 (B) Very Busy Roads or junctions in built-up areas

Local authorities are only required to undertake a review and assessment for road traffic sources of carbon monoxide in respect of the 2003 objective, where the background concentration is expected to be above 1 mg/m^3 in areas where there are 'very busy' roads with daily average traffic (AADT) flows that exceed the following criteria:

i. single carriageway roads with daily average traffic flows which exceed 80,000 vehicles per day.
ii. dual carriageway (2 or 3 lanes) roads with daily average traffic flows which exceed 120,000 vehicles per day.
iii. Motorways with daily average traffic flows which exceed 140,000 vehicles per day.

Updated traffic flow data for 2004 has been reviewed and it has been determined that there are no roads in Ashfield that have been identified as 'very busy' and therefore no further assessment has been undertaken for this section.

2.3 CONCLUSION

The assessment of carbon monoxide has been reviewed against the 2006 revised checklist criteria contained in the LAQM Technical Guidance (03) and updated for 2007. It is expected that the annual objective concentration of 10mg/m^3 in 2003 will continue be met across Ashfield.

There is no requirement to undertake a detailed assessment for carbon monoxide in any location within Ashfield.

Section Three Benzene

The Government and Devolved Administrations have adopted a running annual mean of 16.25µg/m^3 as the air quality standard for benzene, with an objective for the standard to be achieved by the end of 2003. However, in light of the health advice from the Expert Panel on Air Quality Standards (EPAQS) and the Department of Health's Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC), additional tighter objectives have been set. The Second Air Quality Daughter Directive for benzene, which has been transposed into UK legislation, sets a limit value, annual mean of 5µg/m^3 to be achieved by 1st January 2010[4].

National Objectives:

16.25 µg/m^3 running annual mean 31st. December 2003

5 µg/m^3 annual mean 31st. December 2010

3.1 (A) Monitoring Data

No local monitoring has been undertaken for benzene in Ashfield since the Updating and Screening Assessment reported in 2003, which concluded that the annual objective concentrations of 16.25µg/m^3 (2003) and 5µg/m^3 (2010) would be met across Ashfield.

Air Quality Emission Inventory

A benzene emission inventory for Ashfield has been revised since the second round of review and assessment, undertaken by consultants acting on behalf of Nottinghamshire authorities and based upon 2004 data[5]. Considerable data relating to emissions of benzene has been compiled and entered into the inventory. The inventory identifies that benzene levels have increased very slightly which may be associated with the inventory reflecting a more accurate determination of concentrations than in previous years (see table 2.0 Chapter 2).

Automatic Monitoring Network Data

A summary of maximum annual running mean concentrations measured at nearby Automatic Urban Network Stations (Table 3.0) indicate there has been no exceedances of the objective and results are well below the standard.

Figures in the table are well below the air quality objective before correction factors have been applied (which will reduce the figures further). *Note that data for 2007 is provisional and un-ratified.

[4] Part IV of the Environment Act 1995, Local Air Quality Management, Policy Guidance, LAQM.PG(03), DEFRA. 2003.
[5] Nottingham Emissions Inventory, (AQA LTD) April 2004

Table 3.0 Summary of Maximum Running Annual Mean Concentrations measured at National Monitoring Sites (2001-2007)

AUN Site		Maximum Running Annual Mean Concentration						
		2001	2002	2003	2004	2005	2006	2007
		µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Urban Centre	London Marylebone Rd	4.55	3.93	3.31	2.76	2.28	2.18	*1.90
Rural	Harwell	0.62	0.62	0.58	0.42	0.42	0.45	*0.35

3.2 (B) Monitoring data within an AQMA

The assessment for this section is only applicable to authorities that have declared Air Quality Management Areas. Ashfield have not declared any Air Quality Management Areas within the district.

3.3 (C) Very busy roads or junctions in built-up areas

Local authorities are only required to undertake a review and assessment for road traffic sources of benzene in respect of the 2003 objective, where there are 'very busy' roads with daily average traffic (AADT) flows that exceed the following criteria:

i. single carriageway roads with daily average traffic flows which exceed 80,000 vehicles per day.
ii. dual carriageway (2 or 3 lanes) roads with daily average traffic flows which exceed 120,000 vehicles per day.
iii. Motorways with daily average traffic flows which exceed 140,000 vehicles per day.

There are no roads in Ashfield that have been identified as 'very busy' and therefore no further review and assessment has been undertaken for this section.

3.4 (D) Industrial sources

There have been no new industrial sources of benzene identified within Ashfield and there are no sources within neighbouring authorities close to the district boundary as determined against the checklist in Annex 2 of the LAQM Technical Guidance (03) and therefore no further assessment has been undertaken for this section.

3.5 (E) Industrial sources with substantially increased emissions, or new relevant exposure.

There have been no new industrial sources with substantially increased emissions identified within Ashfield. No assessment has been undertaken for this section.

3.6 (F) Petrol stations

None of the Petrol stations in Ashfield meet the required criteria for assessment stipulated in the LAQM Technical Guidance (03) and therefore no further assessment has been undertaken**.**

3.7 (G) Major fuel storage depots (Petrol only)

There are no major fuel storage depots located within Ashfield or within adjacent authorities close to the district boundary and therefore no further assessment has been undertaken for this section.

3.8 CONCLUSION

Monitoring data has been updated for this section which continues to show that it is expected that the annual objective concentrations of 16.25 µg/m^3 (2003) and 5µg/m^3 (2010) for Benzene will be met across Ashfield.

There is no requirement to undertake a detailed assessment for benzene within Ashfield.

Section Four 1,3 Butadiene

The Government and Devolved Administrations have adopted a maximum running annual mean concentration of 2.25 µg/m^3 as an air quality standard for 1,3 butadiene. The objective is for the standard to be achieved by the end of 2003.

National Objectives:

2.25µg/m^3 running annual mean 31st. December 2003

4.1 (A) Monitoring Data

No monitoring for 1,3-butadiene has been undertaken in Ashfield since the Updating and Screening Assessment in 2003, which concluded that the annual objective concentration of 2.25µg/m^3 (2003) will be met across the district. There has been no significant increase in 1,3-butadiene sources identified within Ashfield.

Air Quality Emission Inventory

A 1,3-butadiene emission inventory for Ashfield has been revised since the second round of review and assessment, undertaken by consultants acting on behalf of Nottinghamshire authorities and based upon 2004 data[6]. Considerable data relating to emissions of 1,3-butadiene has been compiled and entered into the inventory. The inventory clearly demonstrates a reduction in the levels of this pollutant across Ashfield and Nottinghamshire since the second round (see table 2.0, chapter 2).

Automatic Monitoring Network Data

A summary of annual mean concentrations measured at Automatic Urban Network Stations (Table 4.0) has been updated for 2007 and demonstrates there have been no exceedances of the objective and results are well below the standard.

Table 4.0 Summary of annual mean concentration of 1,3-butadiene (2002 – 2007)

Annual Mean Concentration						
AUN Site		**2003**	**2004**	**2005**	**2006**	**2007**
		µg/m^3	µg/m^3	µg/m^3	µg/m^3	µg/m^3
Rural Background	Harwell	0.03	0.02	0.01	0.02	*0.01
Urban Background	London Marylebone	0.64	0.57	0.52	0.43	*0.40

*Note that data for 2007 is provisional and un-ratified data.

4.2 (B) New Industrial Sources

There have been no new industrial sources identified since the previous Updating and Screening Assessment likely to give rise to exceedances of the running average mean objective for 1,3-butadiene.

6 Nottingham Emissions Inventory, (AQA LTD) April 2004

4.3 (C) Industrial sources with substantially increased emissions.

There has been no substantial increase of 1,3-butadiene emissions identified in Ashfield since the previous Updating and Screening Assessment likely to give rise to exceedances of the running average mean objective for 1,3-butadiene.

4.4 CONCLUSION

The assessment of 1,3-butadiene has been reviewed against the 2006 revised checklist criteria contained in the LAQM Technical Guidance (03). There have been no significant changes and it is expected that the annual objective concentration of 2.25µg/m^3 (2003) will continue to be met across Ashfield.

There is no requirement to undertake a detailed assessment for 1,3-butadiene within Ashfield.

Section Five Lead

The Government and Devolved Administrations have adopted an annual mean concentration of 0.5µg/m^3 as the air quality standard for lead, with an objective for the standard to be achieved by the end of 2004. In addition, a lower air quality objective of 0.25µg/m^3 to be achieved by the end of 2008 has also been set[7].

National Objectives:

0.5 µg/m^3 annual mean 31st. December 2004

0.25 µg/m^3 annual mean 31st. December 2008

5.1 (A) Monitoring Data

No local monitoring has been undertaken within Ashfield to determine the concentrations of lead against the objective concentrations. The emission inventory compiled for Ashfield did not consider this pollutant as evidence suggested that there was no risk of the objective being exceeded. There has been no significant increase in sources of lead since the previous Updating and Screening Assessment.

5.2 (B) New industrial sources

There have been no new industrial sources of lead identified since the Updating and Screening Assessment as likely to give rise to exceedances of the annual mean objectives for lead in 2004 or 2008.

5.3 (C) Industrial source with substantially increased emissions

There has been no substantial increase in lead emissions from any source within Ashfield therefore no further assessment has been made.

5.4 CONCLUSION

The review for lead has been completed against the 2006 revised criteria contained in the LAQM Technical Guidance (03). It is expected that the annual objective concentration of 0.5 µg/m^3 (2004) and 0.25 µg/m^3 (2008) will be met across Ashfield.

There is no requirement to undertake a detailed assessment for lead within Ashfield.

7 Part IV of the Environment Act 1995, Local Air Quality Management, Policy Guidance, LAQM.PG(03), DEFRA. 2003.

Section Six Nitrogen Dioxide (NO_2)

The Government and Devolved Administrations have adopted two Air Quality Objectives for nitrogen dioxide, as an annual mean concentration of 40µg/m^3 and a 1-hour mean concentration of 200µg/m^3, not to be exceeded more than 18 times per year. The objectives are to be achieved by the end of 2005[8].

The first Air Quality Daughter Directive also sets limit values for nitrogen dioxide, which has been transposed into UK legislation. The directive includes a 1-hour limit value of 200µg/m^3 not to be exceeded more than 18 times per year and an annual mean limit value of 40µg/m^3 both to be achieved by 1st January 2010[9].

UK National Objectives:

200 µg/m^3 1 hour mean (18 exceedances) 31st. December 2005

40 µg/m^3 annual mean 31st. December 2005

6.1 (A) Monitoring Data

Monitoring Equipment

Monitoring for nitrogen dioxide has been undertaken using a chemiluminescence NO-NO_2-NO_x analyser. This instrument continuously draws a sample of air into the unit and analyses it to determine the NO and NO_x concentrations in the air. This information is used to calculate the NO_2 concentrations in the air.

The analyser is a Thermo model 42c supplied by Thermo Limited and is USA–EPA approved for the measurement of ambient concentrations of NO_2. It has a precision of ± 0.4ppb and is set up with a flow rate of 0.5 litres per minute. Instrument diagnostics as well as the NO and NO_x concentrations of the air sample are continuously updated.

The analyser is set up to log the mean NO and NO_x concentrations and instrument diagnostics every 15 minutes. Whilst there are no daily span and zero checks on the performance of the instrument the unit is calibrated once every 7 days using certified standard gases for the NO and NO_2 span calibration and zero scrubber for the zero calibration. Data is downloaded from the analyser once every 7 days, examined and reformulated as hourly and other averages for direct comparison with the objectives.

The unit is located inside a purpose built small mobile trailer and the sample inlet is on top of the trailer approximately 2.5 metres above ground level.

Air Quality Emission Inventory

A nitrogen dioxide emission inventory for Ashfield has been revised since the second round of review and assessment, undertaken by consultants acting on behalf of Nottinghamshire authorities and based upon 2004 data[10]. Considerable data relating to emissions of nitrogen dioxide has been compiled and entered into the inventory. The inventory clearly demonstrates a reduction in nitrogen dioxide

8 Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, LAQM.TG(03), DEFRA. 2003.
9 Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, LAQM.TG(03), DEFRA. 2003.
10 Nottingham Emissions Inventory, (AQA LTD) April 2004

levels across Ashfield and Nottinghamshire since the second round (see Chapter Two, Table 2.0).

Monitoring of nitrogen dioxide at Royal Oak Drive, Selston (M1 Location)

The monitoring trailer has been relocated at Royal Oak Drive Selston since 6th October 2007. M1 widening work has commenced on this stretch of the motorway and baseline monitoring will enable improvements to the motorway to be assessed. There is however only short-term data to report within this air quality progress report. The monitor will remain at this location for a further 8 months to collate a full 12 months data. The final results will be reported in the next Updating and Screening Assessment due in 2009.

Figure 6.1 Location of Air Monitoring trailer at Royal Oak Drive close to the M1 Motorway' Selston, Nottingham.

6.2 Results of monitoring results at Royal Oak Drive, Selston, Nottingham.

Table 6.1 Measured nitrogen dioxide annual mean concentration for 2007/8 Royal Oak Drive, Selston, Nottingham 6th October 2007 to 31st January 2008.

	24 hour means (monitoring period)			EU 2010
Location	**Measured Period Mean (µg/m^3)**	**Min 1 hour (µg/m^3)**	**Max 1hour mean (µg/m^3)**	**No of 1-hour limit value exceedances >200 (µg/m^3)**
Royal Oak Drive	25.1	1.6	121.8	0

Only short-term data was available for the Progress Report at this location as recorded above (Oct 2007 to January 2008). The estimated annual mean was calculated in accordance with the LAQM Technical Guidance (03) to determine whether the 2005 or 2010 (Ref. Box 6.5 and 6.6 of guidance) objectives would be compromised. Table 6.2 tabulates the results for this location.

Table 6.2 Estimated nitrogen dioxide annual mean concentration for Royal Oak Drive.

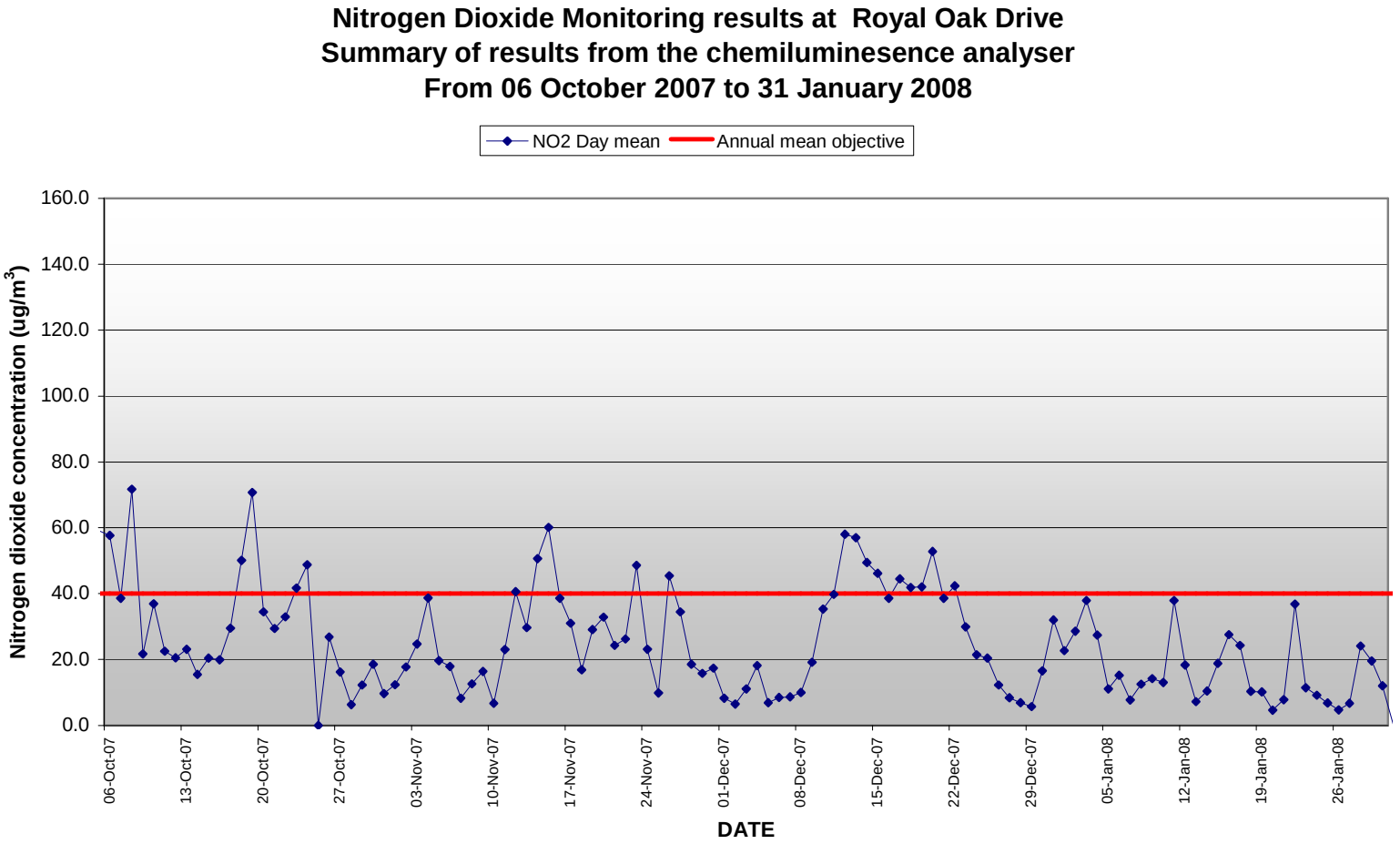
Location	**Measured Period Mean ($\mu g/m^3$)**	**Estimated Annual mean in 2007/8 ($\mu g/m^3$)**	**Estimated Annual mean in EU 2010 ($\mu g/m^3$)**	**2005 & 2010 Annual mean Objective ($\mu g/m^3$)**
Royal Oak Drive	25.1	20.3	18.2	40

The estimated annual mean at Royal Oak Drive for 2007/08 for a 12 month monitoring period was calculated as 20.3µg/m^3 well below the air quality objective of 40µg/m^3. The estimated annual mean at Royal Oak Drive for 2010 was calculated as 18.2µg/m^3 well below the 2010 objective of 40µg/m^3.

Conclusion

Assessment has been made against the NO_2 air quality objectives for 2005 and 2010. Monitoring will continue at this location to collect of a full 12 months data.

Figure 6.2


Nitrogen Dioxide Monitoring results at Royal Oak Drive
Summary of results from the chemiluminesence analyser
From 06 October 2007 to 31 January 2008
NO2 Day mean
Annual mean objective
Nitrogen dioxide concentration (ug/m3)
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
06-Oct-07
13-Oct-07
20-Oct-07
27-Oct-07
03-Nov-07
10-Nov-07
17-Nov-07
24-Nov-07
01-Dec-07
08-Dec-07
15-Dec-07
22-Dec-07
29-Dec-07
05-Jan-08
12-Jan-08
19-Jan-08
26-Jan-08
DATE

6.3 Nitrogen Dioxide Diffusion Tubes Network - update

The supply and analysis of nitrogen dioxide diffusion tubes is currently undertaken by Harwell Scientifics who have held this contract since October 1999. A UKAS 1:1 actetone:triethanolamine method is utilised based upon a four week tube exposure period.

Bias adjustment factor

Ashfield have not undertaken a collocation study in order to derive a suitable bias factor for adjusting the diffusion tubes results for 2007. The bias factor has been determined from the spread sheet proved by Air Quality Review and Assessment Help Desk. An average bias factor of 0.78 taken from 11 other local authority studies has been used to adjust the figures in table 6.3. This was based on suitable co-locations conducted during 2006 as this was the closest year's data available at the time this report was being compiled.

Table 6.3 Measured annual mean nitrogen dioxide concentrations compared with the 2005/2010 Air Quality Objectives.

Diffusion Tube Location	**Measured Annual Mean For 2007 Based on 12 months data** **(µg/m^3)**	**Harwell Scientific Average 2006[11] Bias Factor (A) 0.78** **(2005 AQ Objective 40 µg/m^3)** **(µg/m^3)**	**Estimated Annual Mean (Road side)** **(2010 AQ Objective 40 µg/m^3)[12]** **(µg/m^3)**
Sutton Outram Street	48.8	38.1	34.1
Ashgate Road Hucknall	38.3	29.9	26.8
A 38 Fire Station	43.1	33.6	30.1
Selston Kwik Save	37.1	28.9	25.9
Hucknall High Street	51.3	40.0	35.8
Hucknall Croft/Beardall St	34.0	26.5	23.7
Kirkby Naggs Head (new)	45.3	35.3	31.6
Forest Close M1 (new)	38.7	30.2	27.0
M1 Pinxton	44.6	34.6	31.0
Church Hill Kirkby	54.5	42.5	38.0
Oakfield Ave Sutton	41.1	32.1	28.7
Dalestorth Street Sutton[13]	54.5	42.5	38.0

[11] Co-locations conducted during 2006 as this was the closest year's data available at the time the report was being compiled
[12] Annual diffusion tube averages were adjusted to 2010 using the calculator v2.2a road side provided by Air Quality archive web site tools.
[13] Based upon 8 months tube data due to loss of tubes.

Monitoring Results

Spatial monitoring of Nitrogen dioxide utilising ADCs diffusion network has demonstrated that concentrations of nitrogen dioxide are generally well within the air quality objectives in most locations. The most recent bias adjusted nitrogen dioxide diffusion tube monitoring results indicate that the highest annual mean concentrations are typically situated along roads within the urban centres of Hucknall and Sutton. The annual mean concentrations estimated for 2007 at these locations were between 40.0 – 42.5µg/m^3 with the exception of 42. 5µg/m^3 at Church Hill in Kirkby.

Hucknall High Street

This is a town centre roadside location where it is unlikely that people will be exposed to levels of NO_2 over a full 24 hour period. It does however provide an indication of annual spatial concentration for this area. A 13 million pound investment in the town centre will incorporate the pedestrianisation of the main high street.

Church Hill Road

This tube is situated at a kerbside location with the tube affixed to a lamp column very close to the edge of the road which therefore represents a maximum concentration. This is not a particularly busy road nor is the road substantially enclosed. A traffic control system was in place for a number of months in 2007 whilst pavement improvements were carried out which may have contributed to the elevated concentrations however these high concentrations are not fully understood. It is possible that traffic flow turbulence might be a factor for the high concentrations or the fact that this location is on a steep hill where car engines are operating much harder. The nearest property is only 2-3m meters back from this position and it is clear further monitoring will be required to understand why concentrations are elevated at this location.

Dalestorth Street Sutton

This tube is located at a kerbside with the tube affixed to a lamp column close to the junction of Dalestorth Street and Mansfield Road but some distance away from properties. The average for this location was based upon 8 months data due to loss of tubes at this site. The tube data missing included the periods for June and July 2007 where concentrations were generally much lower across the whole network (31µg/m^3 – 38µg/m^3 uncorrected). Even using the highest average data it is likely that the annual average would have been around 40µg/m^3 if this data had been available. It has been agreed to move this tube to a lamp column further along the street which would more appropriately represent receptors whilst being less of a target for vandalism. Monitoring using the Council's Chemiluminescene monitor at a busier junction just across from this location during 2006 demonstrated that NO_2 levels were below the objective in this area (see 2006 progress report).

Kirkby Nagg's Head and Salmon Lane

The diffusion tubes located at Salmon Lane and Kirkby Nagg's Head were repositioned at the beginning of 2007 to more appropriately reflect exposures in these locations. As anticipated concentrations monitored during 2007 have reduce significantly and now demonstrate that the air quality objectives are now being achieved (see figure 6.3).

Nottinghamshire Air Quality Steering Group – Collaborative Working
Nottinghamshire Authorities have agreed to employ a single laboratory to undertake the supply and analysis of diffusion tubes over the next 3 years. All authorities have agreed to use Gradco Laboratories utilising the 20% TEA in Water. This will enable the authorities to effectively compare results over the whole of the county. To accompany the change in supplier it has been decided to review Ashfield's diffusion tube network and ensure that tubes and locations reflect the most appropriate areas and exposures. It is likely that a number of tube locations will be changed to provide more representative data.

Conclusions
The nitrogen dioxide diffusion tube results indicate that three locations will slightly exceed or be at the 2005 objective (see comments above). However, it should be noted that these sites are kerbside locations where public exposure would be expected to be short term. They are therefore not considered suitable to represent relevant exposure with the annual mean objective (LAQM TG(03) Box 1.4), More suitable screening using diffusion tubes closer to the receptors will be undertaken during 2008/09 to determined whether the NO_2 air quality objective is being achieved at these locations.

The nitrogen dioxide diffusion tube results do not required Ashfield to proceed to a detailed assessment in these areas.

6.4 (B) Monitoring data within an AQMA.

The assessment for this section is only applicable to authorities that have declared Air Quality Management Areas. Ashfield have not declared any Air Quality Management Areas within the district. No further updating and screening assessment has been undertaken for this section.

6.5 (C) Narrow congested streets with residential properties close to the kerb.

Local authorities are only required to undertake assessments of roads where there are narrow congested streets with residential properties within 5m of the kerb and which have traffic flows greater than 10,000 per day. This criterion has been reassessed against roads which have seen an increase above 10,000 ADDT since the previous 2nd round USA.

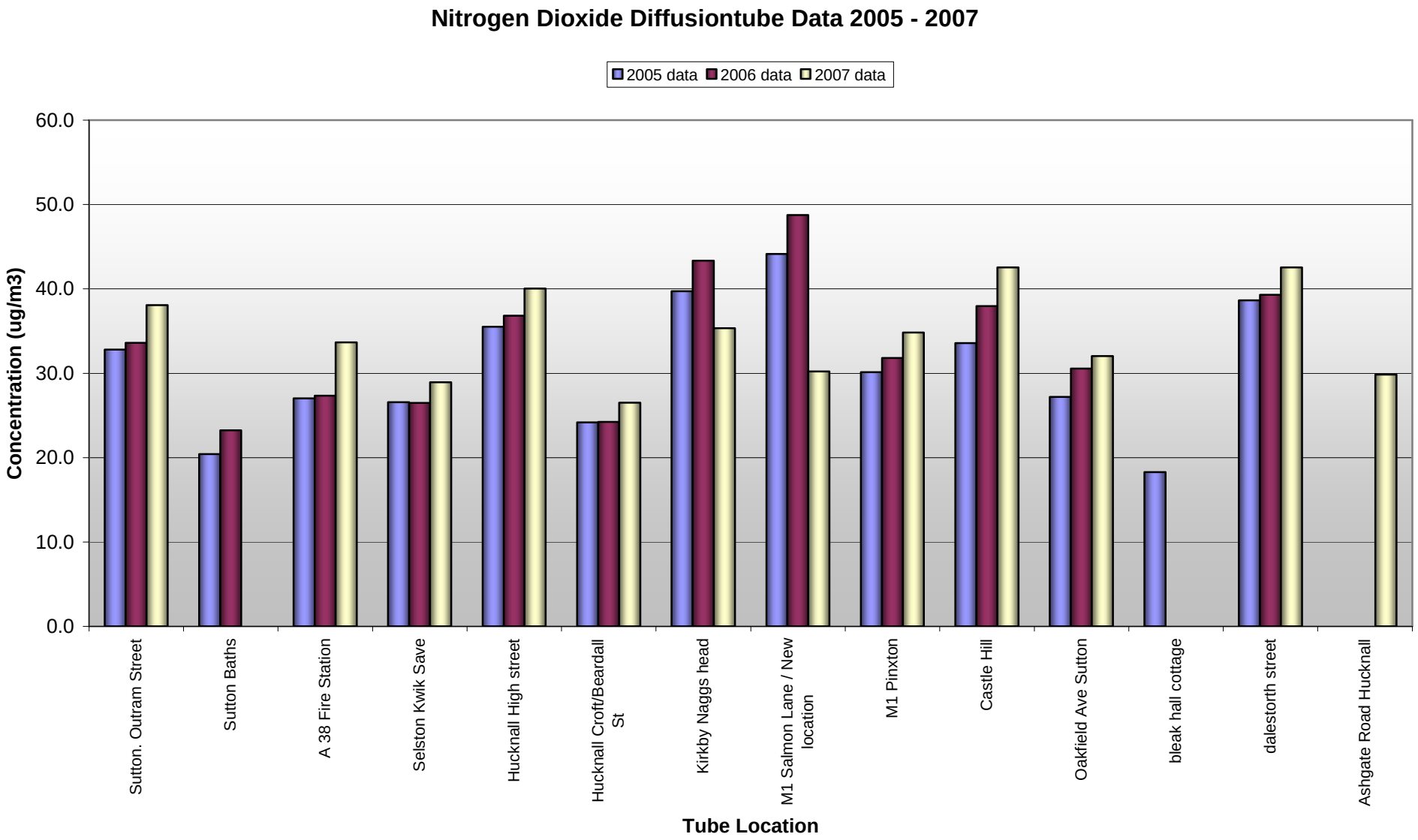
No locations were identified to warrant the use of the DMRB screening model for narrow congested streets in any location within Ashfield and therefore no further assessment has been undertaken for this section.

6.6 (D) Junctions.

Local authorities are required to undertake assessment of busy junctions within their districts. The LAQM Technical Guidance (03) interprets a 'busy' junction as '*one with more than 10,000 vehicles per day*'. Additionally there should be a relevant exposure within 10 metres of the kerb. A comprehensive assessment of busy junctions was undertaken during the 2nd Round USA utilising GIS software and local knowledge.

There has been no change to this position.

Figure 6.3


Nitrogen Dioxide Diffusiontube Data 2005 - 2007
2005 data
2006 data
2007 data
Concentration (ug/m3)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Sutton. Outram Street
Sutton Baths
A 38 Fire Station
Selston Kwik Save
Hucknall High street
Hucknall Croft/Beardall St
Kirkby Naggs head
M1 Salmon Lane / New location
M1 Pinxton
Castle Hill
Oakfield Ave Sutton
bleak hall cottage
dalestorth street
Ashgate Road Hucknall
Tube Location

6.7 (E) Busy streets where people may spend 1-hour or more close to traffic.

Local authorities are only required to undertake review and assessment against this section where there are busy street locations identified where members of the public might regularly spend 1-hour or more, e.g. streets with many shops, streets with outdoor cafes/bars. The guidance interprets 'busy' as those streets with more than 10,000 vehicles per day. This criterion has been reassessed against roads which have seen an increase above 10,000 ADDT since the previous 2nd Round USA.

There are no streets within Ashfield, which meet all the criteria of this section and therefore no further assessment has been undertaken.

6.8 (F) Roads with high flows of buses and/or HGVs

Authorities are only required to undertake an updating and screening assessment for this section where roads are identified as having an unusually high proportion of buses or HGVs. An 'unusual high proportion of Buses or HGVs' is taken to be greater than 20% of the AADT, LAQM Technical Guidance (03) Box 6.2.

This was evaluated during the 2nd round USA. There were no roads determined as having an unusually high proportion of buses or HGV's. There has been no change to this position.

6.9 (G) New roads constructed or proposed since first round of review and Assessment.

Ashfield District Council and Nottinghamshire County Council have committed to improving the environment in Hucknall town centre and economic recovery of the area. The Councils have been working in joint partnership to develop an inner relief road scheme to reduce congestion in the town centre and improve the retail environment. The scheme will be funded by the Government, the County Council and developer contributions.

6.10 (H) Roads with significantly changed traffic flows

Authorities are only required to undertake the assessment of roads with traffic flows greater than 10,000 vehicles per day that have experienced a large increase in traffic. The LAQM Technical Guidance (03) has interpreted 'large increase' as '*more than a 25% increase in traffic*'. The aim of the assessment is to establish whether there is a risk of exceedances along the existing roads with a significant change in flows.

There have been no roads which have experienced a large increase in traffic flows.

6.11 (I) Bus Stations

There is only one bus station within Ashfield located at Sutton-in-Ashfield. The guidance only requires the updating and screening process to be undertaken if bus movements exceed 1000 movements a day, and if there is a relevant receptor within 10m, assessed against the 1-hour objective. An evaluation of the bus station has determined that there are well below 1000 bus movements per day. It is also very unlikely that any members of the public would remain in this location for over an hour.

No further review and assessment has been undertaken for this section.

6.12 (J) New Industrial sources

A considerable amount of data relating to emissions of nitrogen dioxide has been compiled and entered into a revised emission inventory. There have been no new industrial sources of nitrogen dioxide identified within Ashfield.

There is no change to this position

6.13 (K) Industrial sources with substantially increased emissions

There have been no new industrial sources with substantially increased emissions identified within Ashfield. No further updating and screening assessment has been undertaken for this section.

6.14 (L) Aircraft

There are no relevant air quality issues relating to aircraft within Ashfield and therefore no further updating and screening has been undertaken for this section.

6.15 CONCLUSION

Further assessment for nitrogen dioxide has been completed against the 2006 revised checklist criteria listed in the LAQM Technical Guidance (03). It is expected that the Air Quality Objectives of 200µg/m^3 1-hour mean (18 exceedances) 2005 and 40µg/m^3 annual mean 2005, will be met across Ashfield.

There is no requirement for Ashfield to proceed to a detailed assessment for nitrogen dioxide at any location within the district.

Section Seven SULPHUR DIOXIDE (SO_2)

The Government and Devolved Administrations have adopted a 15-minute mean of 266µg/m^3 as an air quality standard for sulphur dioxide, with an objective for the standard not to be exceeded more than 35 times per year by the end of 2005. Additional objectives have also been set which are equivalent to the EU limit values specified in the First Daughter directive. These are for a 1-hour mean objective of 350µg/m^3 to be exceeded no more than 24 times per year and a 24-hour objective of 125 µg/m^3 to be exceeded no more than 3 times per year, to be achieved by the end of 2004[4].

UK National Objectives:

266 µg/m^3 15 minute mean (35 exceedances) 31st. December 2005

350 µg/m^3 1-hour mean (24 exceedances) 31st. December 2004

125 µg/m^3 24-hour mean (3 exceedances) 31st. December 2004

7.1 (A) Monitoring Data

Air Quality Emission Inventory

A sulphur dioxide emission inventory for Ashfield has been revised since the second round of review and assessment, undertaken by consultants acting on behalf of Nottinghamshire authorities and based upon 2004 data[14]. Considerable data relating to emissions of sulphur dioxide has been compiled and entered into the new inventory. The inventory clearly demonstrates a reduction in sulphur dioxide levels across Ashfield and Nottinghamshire since the second round assessment.

King's Mill Hospital

Kings Mill Hospital was the subject of a Stage Three review during the first round of review and assessment against the 15-minute objective. Monitoring undertaken for the assessment determined that the objective would not be compromised subject to the hospital burning low sulphur coal[15]. The Trustee's contractors have confirmed that the original boiler house will continue to function until March 2011 at which point it will be decommissioned. However the load it supplies will reduce each year by 10 – 30% between now and 2011. The new boiler house is currently in its commissioning stage and incorporates a sophisticated heat pump system utilising the adjacent Kings Mill reservoir.

7.2 (B) Monitoring data within an AQMA

The assessment for this section is only applicable to authorities that have declared Air Quality Management Areas. Ashfield have not declared any Air Quality Management Areas within the district. No further assessments have been undertaken for this section.

[14] Nottingham Emissions Inventory, (AQA LTD) April 2004

[15] Air Quality Review and Assessment Stage Three Report, Ashfield District Council, 2001.

7.3 (C) New Industrial Source

A considerable amount of data relating to emissions of sulphur dioxide has been compiled and entered into a revised emission inventory[16]. There have been no new industrial sources of sulphur dioxide identified within Ashfield. No further updating and screening assessment has been undertaken for this section.

There have been no new sources of sulphur dioxide identified within Ashfield. No further assessment has been undertaken for this section.

7.4 (D) Industrial Sources with substantially increased emissions

There have been no new industrial sources with substantially increased emissions identified within Ashfield. No further updating and screen has been undertaken for this section.

7.5 (E) Areas of domestic coal burning

Consideration of results from the first round of review and assessment has indicated that areas of densely populated houses burning solid fuel could constitute significant sources of sulphur dioxide, even if smokeless fuel is consumed. The LAQM Technical Guidance (03) has determined 'significant coal burning' as 'any area of 500x500m which contains more than 100 houses burning solid fuel as their primary source of heating'[17].

No further assessments have taken place since the 2007 Updating and Screening Assessment. It is envisaged that solid fuel burning will continue to decrease throughout all areas in the district.

7.6 (F) Small boilers >5 MW (thermal)

An emissions inventory for Ashfield has been revised and updated for the Updating and Screening Assessment, which included all boilers above 0.4MW. Details relating to boiler plants have been used to derive estimated emission maps for the district. There were no boilers within the district identified as being greater than 5MW$_{(thermal)}$.

No further assessment has been undertaken for this section.

7.7 (G) Shipping

There are no relevant air quality issues relating to shipping within Ashfield. No further assessment has been undertaken for this section.

7.8 (H) Railway Locomotives.

Authorities are only required to undertake assessment at locations where there is relevant exposure to diesel or coal fired locomotives, which are regularly stationary for periods of 15-minutes or more. There are no locations identified within Ashfield, which meet these criteria, and therefore no further assessment has been undertaken.

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16 Nottingham Emissions Inventory, (AQA LTD) April 2004

17 Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, LAQM.TG(03), DEFRA. 2003.

7.9 CONCLUSION

The continual assessment for sulphur dioxide has been completed against the checklist criteria contained in the LAQM Technical Guidance (03). It is expected that the Air Quality Objectives of 266µg/m^3 15 minute mean (35 exceedances) 2005, 350µg/m^3 1-hour mean (24 exceedances) 2004, and 125µg/m^3 24-hour mean (3 exceedances) 2004, will be met across Ashfield. As there are no new sources of Sulphur Dioxide likely to compromise the Air Quality Objective, Ashfield District Council no longer undertake real-time monitoring for this pollutant.

There is no requirement for Ashfield to proceed to a detailed assessment for sulphur dioxide in any location within the district.

Section Eight FINE PARTICLES

The Government has adopted two Air Quality Objectives for fine particles (PM_{10}), which are equivalent to the European Union Stage 1 limit values in the first Air Quality Daughter Directive. The objectives are 40µg/m^3 as the annual mean and 50µg/m^3 as the fixed 24-hour mean not to be exceeded more than 35 days per year. Both standards must be achieved by the end of 2004[18].

UK National Objectives:

50 µg/m^3 (35 exceedances) 24hr mean to be achieved by 31st. December 2004

40 µg/m^3 annual mean to be achieved by 31st. December 2004

UK Air Quality Strategy – Exposure Reduction $PM_{2.5}$

The UK Air Quality Strategy has recently been revised and published in July 2007. The latest strategy retains the objectives for particles set out in it's previous strategy or its addendum, apart from replacing the provisional 2010 PM_{10} objective in England, Wales and Northern Ireland with an 'exposure reduction' approach.

The UK has recently adopted an 'exposure reduction' approach for $PM_{2.5}$. There is clear and unequivocal health advice that there is no acceptable threshold effect, i.e. no recognised safe level for exposure to fine particles. Therefore the previous provisional objectives focus predominantly on hot spots (small areas of elevated concentration) where as the exposure reduction provides an efficient way of driving further reductions in health effect right across the UK and not just in small areas.

The exposure reduction approach is based on the principle that for pollutants with a low or zero threshold for adverse effects, it will generally be more beneficial to public health, and potentially more cost-effective to reduce pollution levels across the whole population of an urban area or region rather than in a small area or 'Hot Spot'. The framework of delivering this approach contains two inseparable parts:

i. air quality objectives/limit values (often called 'backstop objective' or 'concentration cap') to ensure a basic level or quality of air which citizens should experience, embodying the 'environmental justice' concept;

ii. an objective based on reducing average exposures across the most heavily populated areas of the country (often called 'percentage reduction' or 'exposure reduction objective') in order to generate further cost effective public health improvements over and above the basic level of protection generated by the objective.

8.1 (A) Monitoring Data

Ashfield District Council has undertaken two Detailed Assessments for particles since the submission of the first Updating and Screening Assessment in 2003. Both assessments have been submitted and approved by Defra. No Air Quality

[18] Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, LAQM.TG(03), DEFRA. 2003.

Management Areas were determined following these assessments. The reader is referred to the Detailed Assessments for more comprehensive information[19] [20].

Air Quality Emission Inventory

A fine particles emission inventory for Ashfield has been revised since the second round of review and assessment, undertaken by consultants acting on behalf of Nottinghamshire authorities and based upon 2004 data[21]. Considerable data relating to emissions of fine particles was compiled and entered into the inventory. The inventory clearly demonstrates a reduction in fine particles levels across Ashfield and Nottinghamshire since the second round (see Table 2.0 Chapter two).

8.2 Monitoring of nitrogen dioxide at Royal Oak Drive, Selston

Monitoring Equipment

Particle measurement has been undertaken using an ESM Sequential particulate sampler, type FH95 SEQ. It is designed for the manual gravimetric mass concentration determination of suspended particulate in the ambient air and has 16 filter cassettes stacked in a magazine to allow an automated and accurate filter change. The sampler is located inside a purpose built mobile trailer. The trailer is equipped with air conditioning required during the summer months to keep the trailer cool. Care is taken to ensure excessively warm temperatures inside the trailer do not compromise particulates collected on filters. The inlet is on top of the trailer approximately 2.5 metres above ground level. Filters are changed approximately once every 14 days.

The monitoring trailer has been relocated at Royal Oak Drive Selston since 28th September 2007. Whilst there is only limited results to report the monitor will remain in this location for a further 8 months to collate a full 12 months data. The final results will be reported in the next Updating and Screening Assessment in 2009.

19 Air Quality Review and Assessment, Detailed Assessment for PM10 at Oakfield Ave, Kirkby (December 2004)

20 Air Quality Review and Assessment, Detailed Assessment for PM10 at Pinxton Green (April 2004)

21 Nottingham Emissions Inventory, (AQA LTD) April 2004

Fig 8.0 Location of Air Monitoring trailer at Royal Oak Drive close to the M1 Motorway' Selston, Nottingham.

Monitoring Results

The 24-hour objective refers to 35 allowable exceedances per year. This assessment considered a monitoring period of 103 days which roughly equated to 10 permitted exceedances for this period. There have only been 4 observed exceedances, two of which were possibly associated with bonfire night and two which were isolated incidences (see figure 8.1). The mean PM_{10} concentration during this monitoring period was 21.1µg/m^3, well below the annual mean objective of 40µg/m^3 (see table 8.1).

Table 8.1 Royal Oak Drive, Selston, Measured data 28th September to 22nd January 2008

	24 hour means			
Location	**Measured Period Mean (µg/m^3)**	**Min (µg/m^3)**	**Max (µg/m^3)**	**No. of exceedances 24-hour mean objective (35 allowable)**
Royal Oak Drive	21.1	5	127	4

Table 8.2 Royal Oak Drive , Selston, Estimated concentrations for future years.

Location	Estimated Annual Mean 2007 ($\mu g/m^3$)	Estimated Exceedances in 2007 24-hour mean objective (35 allowable)	Estimated Annual mean in 2010 ($\mu g/m^3$)	Estimated Exceedances in 2010 24-hour mean objective
Estimated results Royal Oak Drive, Selston	20.0	3	19.0	2

The estimated annual average for Royal Oak Drive in 2007 was calculated as 19µg/m^3 well below the current objective of 40µg/m^3. The estimated annual average in 2010 was calculated as 19µg/m^3. The number of 24-hour exceedances of 50µg/m^3 was calculated using the method described in the LAQM Technical Guidance (03) as 3 exceedances in 2007 (note, there have already been 4 exceedances) and 2 exceedances in 2010.

Conclusion

PM_{10} concentrations currently measured at Royal Oak Drive suggest that the 2004 air quality objectives continue to be achieved. Future projections demonstrate that the estimated annual mean will reduce slightly to 19µg/m^3 by 2010.

8.3 (B) Monitoring Data within an Air Quality Management Area.

The assessment for this section is only applicable to those authorities that have declared Air Quality Management Areas. Ashfield have not declared any Air Quality Management Areas within the district. No further assessment has been undertaken for this section.

8.4 (C) Busy roads and junctions in Scotland

This section is not applicable to Ashfield.

8.5 (D) Junctions.

Local authorities are required to undertake assessment of busy junctions within their districts. The LAQM Technical Guidance (03) interprets a 'busy' junction as 'one with more than 10,000 vehicles per day'. Additionally there should be a relevant exposure within 10 metres of the kerb. A comprehensive assessment of busy junctions was undertaken during the 2nd Round USA utilising GIS software and local knowledge. Busy junctions have been considered in previous assessments. No further assessments have been made.

8.6 (E) Roads with high flow of buses and/or HGVs

Authorities are only required to undertake an assessment for this section where roads are identified as having an unusually high proportion of buses or HGVs. An 'unusual high proportion of Buses or HGVs' is taken to be 'greater than 20% of the AADT' LAQM Technical Guidance (03) Box 8.4. There have been no roads

identified within Ashfield which demonstrate an 'unusually high proportion of buses and/or HGVs' and therefore no further assessment has been undertaken for this section.

8.7 (F) New roads constructed or proposed since the last round of review and assessment.

A scoping study has been undertaken for an inner relief road for Hucknall Town Centre. This is currently being assessed through the planning regime.

8.8 (G) Roads close to the objective during the first round of review and assessment.

As a recommendation from the 2nd Round USA a Detailed Assessment for PM_{10} has been undertaken at a relevant location adjacent to the M1 Motorway[22]. Additionally a further detailed Assessment for PM_{10} has been undertaken at Oakfield Avenue adjacent to a single dwelling within close proximity to the junction of the A38 and B6018[23]. Both assessments concluded that the air quality objective would not be compromised at these locations.

No further assessment has been undertaken for this section.

8.9 (H) Roads with significantly changed traffic flows.

Authorities are only required to undertake the assessment of roads with traffic flows greater than 10,000 vehicles per day that have experienced a large increase in traffic. The LAQM Technical Guidance (03) has interpreted 'large increase' as 'more than a 25% increase in traffic'. The aim of the assessment is to establish whether there is a risk of exceedances along the existing roads with a significant change in flows.

Improved AADT traffic data for 2006 has been reviewed to identify roads which had experienced an increase in traffic flow above 25%. No increases have been determined. No further assessments have been necessary.

8.10 (I) New industrial sources

A considerable amount of data relating to emissions of PM_{10} has been compiled and entered into a revised emission inventory. There have been no new industrial sources of PM_{10} identified within Ashfield. No further updating and screening assessment has been undertaken for this section.

8.11 (J) Industrial sources with substantially increased emissions.

There have been no new industrial sources with substantially increased emissions of PM_{10} identified within Ashfield. No further assessment has been undertaken for this section.

8.12 (K) Areas of domestic solid fuel burning.

Consideration of results from the first round of review and assessment has indicated that areas of densely populated houses burning solid fuel could constitute significant sources of particulate matter, even if smokeless fuel is consumed. The LAQM Technical Guidance (03) has determined 'significant coal burning' as 'any

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22 Air Quality Review and Assessment, Detailed Assessment for PM10 at Pinxton Green (April 2004)

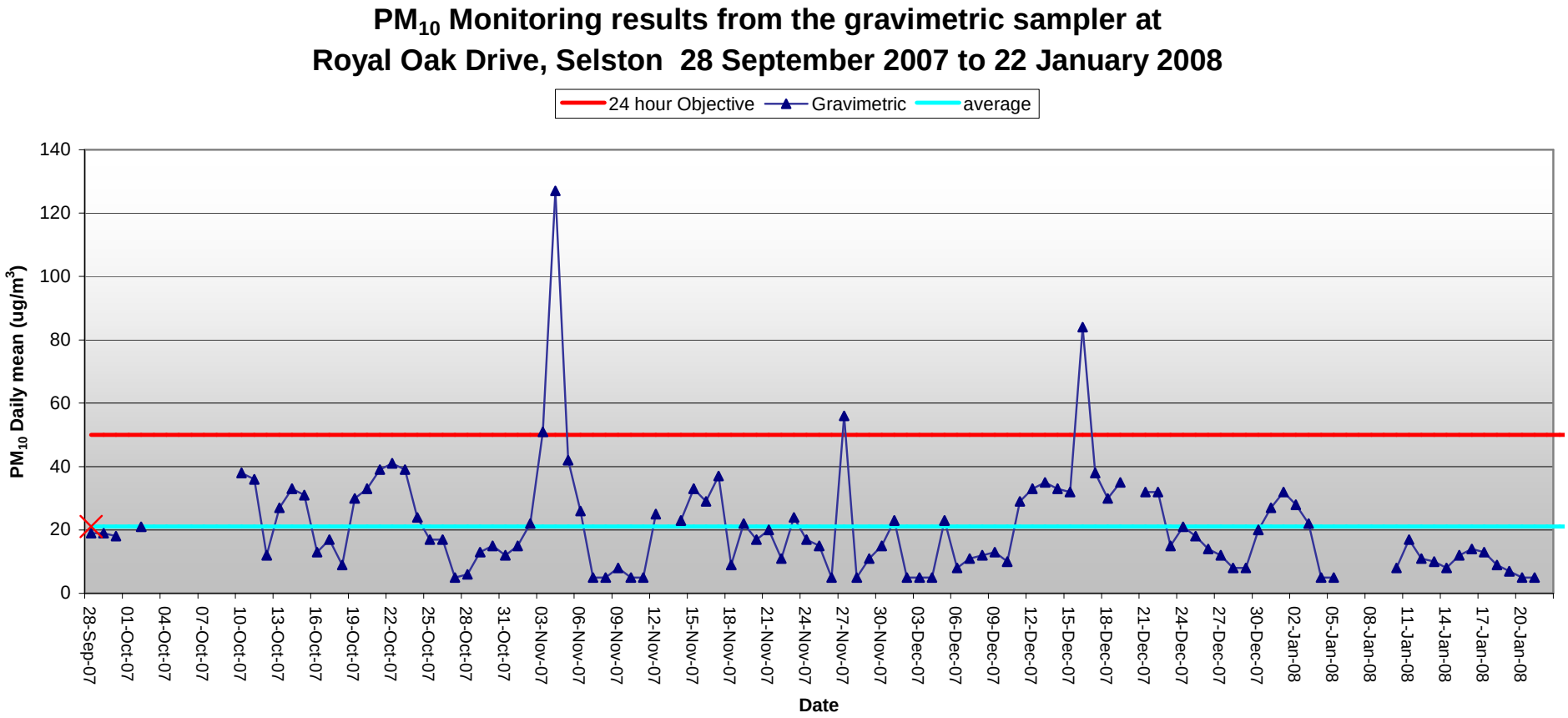
23 Air Quality Review and Assessment, Detailed Assessment for PM10 at Oakfield Ave, Kirkby (December 2004)

area of 500x500m which contains more than 100 houses burning solid fuel as their primary source of heating[24].

No further assessments have taken place since the 2006 Updating and Screening Assessment. It is envisaged that solid fuel burning will continue to decrease throughout all areas in the district.

[24] Part IV of the Environment Act 1995, Local Air Quality Management, Technical Guidance, LAQM.TG(03), DEFRA. 2003.

Fig 8.1


PM10 Monitoring results from the gravimetric sampler at
Royal Oak Drive, Selston 28 September 2007 to 22 January 2008
24 hour Objective
Gravimetric
average
PM10 Daily mean (ug/m3)
0
20
40
60
80
100
120
140
28-Sep-07
01-Oct-07
04-Oct-07
07-Oct-07
10-Oct-07
13-Oct-07
16-Oct-07
19-Oct-07
22-Oct-07
25-Oct-07
28-Oct-07
31-Oct-07
03-Nov-07
06-Nov-07
09-Nov-07
12-Nov-07
15-Nov-07
18-Nov-07
21-Nov-07
24-Nov-07
27-Nov-07
30-Nov-07
03-Dec-07
06-Dec-07
09-Dec-07
12-Dec-07
15-Dec-07
18-Dec-07
21-Dec-07
24-Dec-07
27-Dec-07
30-Dec-07
02-Jan-08
05-Jan-08
08-Jan-08
11-Jan-08
14-Jan-08
17-Jan-08
20-Jan-08
Date

8.13 (L) Quarries/Landfill sites/opencast coal/handling of dusty cargoes at ports etc.

Authorities are only expected to undertake a detailed assessment for PM_{10} in regard to this section where locations with relevant exposure and substantiated problems associated with dust have been determined.

Proposed Landfill Site at Bentinck Void Selston

Ashfield District Council has been consulted on a planning application for a new landfill site and combined restoration of a coal tip at Bentinck Void in Selston. The Air Quality elements of the planning application have been appraised by the Council and submitted to Nottinghamshire County Council who is the relevant planning authority. Background monitoring for PM_{10} was conducted during 2004/05 and the results were reported in the April 2006 Updating and Screening Assessment.

The applicants have since submitted an A1 IPPC Permit application to the Environment Agency. Both the planning and permit applications are currently being determined.

8.14 (M) Aircraft.

There are no relevant air quality issues relating to aircraft within Ashfield. No updating and screening has been undertaken for this section.

8.15 CONCLUSION

Assessment for PM_{10} has been completed against the criteria listed in the LAQM Technical Guidance (03). It is expected that the Air Quality Objectives of 50µg/m^3 (35 exceedances) 24hr mean 31st. December 2004 and 40µg/m^3 annual mean 31st. December 2004 will be met across Ashfield.

There is no requirement for Ashfield to proceed to a detailed assessment for PM_{10} in respect of the 2004 objectives. Further assessments will be undertaken against the 2010 annual mean and 24-Hour mean objectives

Section Nine RECOMMENDED ADDITIONAL ELEMENTS

It is recommended that Local Authorities use the Progress Report to provided additional information to support their general air quality management duties which are not covered by the regulations.

9.1 Nottinghamshire Air Quality Strategy and Ashfield District Council's Local Air Quality Strategy

Ashfield's Air Quality Strategy - The Air We Breathe

Under the headings of Planning and Land Use, Transport, Health and Education, Energy Efficiency, Public Sector, Commercial and Industry, Domestic Sector, and Information and Services, the strategy identifies individual objectives, the achievement of which will bring about significant improvements in air quality. For each objective listed under the above headings a tabulated action plan identifies the Council Divisions and Sections responsible for actions to be taken, deadline for achieving the objective and lists those partner agencies that have a role to play in the delivery of the objective. The strategy also attempts to consolidate into one comprehensive document those initiatives being undertaken elsewhere in the council or by other stakeholders that will also deliver an air quality benefit to the District of Ashfield.

The revised strategy was approved by the Council in April 2007.

9.2 Nottinghamshire Website Project

In 2007 Nottinghamshire authorities were successful in receiving a Defra grant to support the creation of a County wide website to present real-time air quality monitoring data and air quality information. The project is now in its commissioning stages of installation with a number of sites collecting and reporting data on a beta version of the web site. It is envisaged that the website will go live within the next few months and provide a comprehensive one stop shop of air quality information for Nottinghamshire.

This project plans to deliver the automatic collection, collation and presentation of air quality monitoring data from real time monitoring sites across Nottinghamshire's local authorities. Officers, students and members of the public will be able to access county wide air quality data from each local authority's real time monitoring sites, access archive information from each local authority's monitoring diffusion tube and gravimetric data and access databases and information on local authority regulated A2 & Part B and Environment Agency A1 Installations.

There will be links to national databases such as the NAEI and Air Quality Archive and links to external related websites such as Defra, Environment Agency, Health Protection Agency, Department of Health, and Highways Agency. We will provide a FAQ's database and a point of contact for stakeholders and public. We aim to support the website with survey and customer feedback sections and encourage community engagement in the Local Air Quality Management process.

9.3 Planning Applications

Close co-operation exists between the Council's Planning Officers and Air Quality Officers. Procedures are in place which requires all planning applications to be

reviewed for their impact on air quality during the planning application process.

9.4 Planning Applications in the pipe line

Ashfield are still reviewing a planning application for a large combined landfill development and restoration of a pit tip site at Bentinck Void in Selston Nottinghamshire. This location is adjacent to the M1 motorway which intersects the district and the residential areas of Annesley and Selston. Nottinghamshire County Council is the relevant planning authority for the application.

9.5 Large Developments

Hucknall Inner Relief Road Scheme

In order to seek a significant funding commitment from the Government toward the Hucknall Town Centre Improvement Scheme, Nottinghamshire County Council submitted a Major Scheme Business Case (MSBC) in October 2007 to the Department for Transport. The MSBC was compiled in line with the New Approach to Transport Appraisal (NATA) set out by the Government which assesses the scheme against a range of environmental, social and economic factors.

The Department for Transport is now assessing the submission using a framework to determine how well it satisfies the Government's five objectives for transport: Environmental, Safety, Economy, Accessibility and Integration and whether the scheme represents good value for money. The County Council expect to hear in early 2008 if the scheme has been accepted for 'Programme Entry' and can therefore move to the next stage of design.

Future stages include development of a design, submission of a planning application, further consultation, statutory processes, the opportunity to object formally to proposals and potentially a public inquiry, all of which may take several years to complete before proposals are implemented on the ground. Provided that the outcome of each stage is positive the programmed year for the earliest start of construction is 2010.

9.6 Nottinghamshire County Council Local Transport Plans (LTPs)

The North Nottinghamshire Local Transport Plan covers the districts of Ashfield (excluding Hucknall), Bassetlaw, Mansfield and Newark & Sherwood. The Greater Nottingham Local Transport Plan is developed in partnership with Nottingham City Council, and covers the Broxtowe, Gedling and Rushcliffe districts, as well as Hucknall and the City of Nottingham.

The aims and objectives of the second local transport plan have been developed both nationally and locally. Nationally, the objectives were developed through the Department for Transport and Local Government Association. Locally, through consultation the plans have also been developed to take account of what local people feel is important. Nationally, four objectives were determined which all local authorities in the country must address within their transport plans.

9.7 M1 Widening M1 (Junctions 21-31)

The Highways Agency has commenced work on widening and junction works for approximately 50 miles (85km) of the M1 between Leicester (Junction 21) and Chesterfield (Junction 30). This includes a stretch of the M1 Motorway between Junctions 27 and 28 which falls within the district of Ashfield.

Contract 1 works has now commenced with completion of the works due early in 2010. This change in project timescale is not predicted to significantly alter the findings of the air quality assessment undertaken by ARUP. This first phase of the widening scheme undertakes works within the existing highway boundary to enable early congestion relief between Junctions 25 to 28; and Contract 2: the remainder of the improvement works between Junctions 21 and 30 including works at junctions, link roads and crossings that require additional land take.