

The background of the cover is a photograph of a vast green field in the foreground, leading to a distant horizon. The sky above is a deep blue, filled with scattered white and grey clouds. The overall scene is bright and clear, suggesting good air quality.

Air Quality Review and Assessment

**Cambridgeshire Local
Authorities Updating and
Screening Assessment 2006**



Huntingdonshire

d i s t r i c t c o u n c i l



Contents

Section	Page Number
Preface	ii
Acknowledgements	iii
Executive Summary	iv
1.0 Introduction	1
2.0 Changes since the 2003 Updating and Screening Assessment	5
3.0 Cambridge City Council USA	9
4.0 East Cambridgeshire District Council USA	22
5.0 Fenland District Council USA	34
6.0 Huntingdonshire District Council USA	46
7.0 South Cambridgeshire District Council USA	58

Appendices

Appendices	Page Number
Appendix 1. 2005 Progress Report for the SO ₂ and PM ₁₀ AQMAs in Wisbech	68
Appendix 2. Cambridge City NO ₂ Air Quality Management Area	78
Appendix 3. Huntingdon NO ₂ Air Quality Management Area	80
Appendix 4. St Neots NO ₂ Air Quality Management Area	82
Appendix 5. Wisbech NO ₂ Air Quality Management Area	84
Appendix 6. Detailed Assessment of NO ₂ in the A1 and A14 corridors in Huntingdonshire	86
Appendix 7. Pollution Prevention and Control Permitted Processes in Cambridgeshire	108
Appendix 8. Real-time Monitoring Locations in Cambridgeshire	124
Appendix 9. Defra commentary on draft report and responses by author authorities.	126

Preface

The Review and Assessment Process

A system of Local Air Quality Management (LAQM) was established in response to requirements of the Environment Act 1995. Under this new duties were placed on local authorities to periodically review and assess air quality in their areas and work towards achieving national objectives for prescribed pollutants. The main reason for the introduction of this system was to tackle the issue of air pollution where the risk of poor air quality to human health, and quality of life, need to be addressed to achieve an acceptable life balance.

Review and assessment is the first step in LAQM. It forms a key part of the Government's strategy to achieve air quality objectives. The aim is to identify areas with poor air quality where the objectives are unlikely to be met. The first review and assessment of air quality in Cambridgeshire was completed in 2000. The second round was completed in 2003. This document constitutes the first stage of the third round of Review and Assessment.

In Cambridgeshire a working group formed by the five District Councils and the County Council carries out the process jointly. The working groups approach is to screen each of the seven prescribed pollutants in turn before concluding if any must be taken forward to a detailed assessment. The advantages of working in a group include joint working on common areas, consistency of approach, peer review of work, pooling of expertise and cost savings on document production and consultation.

Local Transport Planners at the County Council are responsible for creating Local Transport Plans for the County, working in conjunction with the District Councils. The latest Local Transport Plan (LTP) covers 2006 – 2011 and was published in March 2006 as required by the Transport Act 2000. This LTP was the first to be produced in a new format in accordance with The Full Guidance on Local Transport Planning 2004 produced by the Department for Transport. This guidance makes air quality one of the priority issues in the LTP and as a result partnership working between district based air quality professionals and the County transport planners has increased significantly.

Consultation forms a key part of the process, informing statutory consultees and inviting their comments on the process and its conclusions. Draft reports are submitted to DEFRA for approval of methods and conclusions prior to publishing.

The commentaries received from Defra on each District Councils' sections are in Appendix 9, followed by the response from the relevant Council.

Acknowledgements

This report has been compiled by a working group of officers from the District Councils in Cambridgeshire and the County Council.

The following officers have contributed to the work of the group:

Cambridge City Council	Jo Dicks, Anita Lewis
East Cambridgeshire District Council	Marcus Bell
Fenland District Council	Graeme Carson, Giles Hine
Huntingdonshire District Council	Toby Lewis
South Cambridgeshire District Council	Susan Walford, David McKee
Cambridgeshire County Council	Janet Martin

Executive Summary

Cambridgeshire's local authorities remain committed to the process known as Local Air Quality Management and support Government plans to protect and improve ambient air quality. This joint report sets out the findings of the first stage (Updating and Screening Assessment) of the third review and assessment of local air quality in the county.

The Updating and Screening Assessment (USA) has involved each district analysing the prescribed pollutants to see if they require further detailed assessment. All district councils have used the same checklist to assess air quality in its locality – thus ensuring a common approach across the county.

The following table sets out the results of the USA. A tick indicates that the USA has shown that no further detailed assessment is necessary. A cross indicates that detailed assessment will be required. More summary information can be found on air quality issues in each District in the District specific summaries at the beginning of each USA section below.

The conclusions of this report have been accepted by Defra, who made the comments shown in Appendix 9. This report forms the basis for consultation with statutory consultees and other interested parties. Representations regarding its content should be made to local Environmental Health Departments, the contact addresses for which are provided below, by 28 October 2006.

Summary of 2006 USA Results					
Pollutant	Local Authority				
	CCC	ECDC	FDC	HDC	SCDC
Benzene	✓	✓	✓	✓	✓
1,3-butadiene	✓	✓	✓	✓	✓
Carbon monoxide	✓	✓	✓	✓	✓
Lead	✓	✓	✓	✓	✓
Nitrogen dioxide	✓	✓	✗	✓	✓
Fine Particles (PM ₁₀)	✓	✓	✗	✓	✓
Sulphur dioxide	✓	✓	✓	✓	✓

Key for Table

- ✓ = The USA has shown that no further detailed assessment is needed.
- ✗ = Detailed Assessment will be required.

As a result of previous review and assessment work Cambridge City Council, Fenland District Council and Huntingdonshire District Council have already declared parts of their areas as Air Quality Management Areas and these can be seen in appendices 1-5. South Cambridgeshire District Council is also currently conducting a Detailed Assessment of NO₂ close to the A14 which will be completed later in 2006.

Contact addresses

Cambridge City Council (CCC), Mandela House, 4 Regent Street, Cambridge CB2 1BY Tel 01223 457892

East Cambridgeshire District Council (ECDC), The Grange, Nutholt Lane, Ely, CB7 4PL Tel 01353 665555

Fenland District Council (FDC), Fenland Hall, County Road, March PE15 8NQ Tel 01354 622431

Huntingdonshire District Council (HDC), Pathfinder House, St Marys Street, Huntingdon PE29 3TN Tel 01480 388363

South Cambridgeshire District Council (SCDC), Cambourne Business Park, Cambourne, Cambridge, CB3 6EA Tel 08450 450 063

1.0 Introduction

1.1 Legislative Background

The Environment Act 1995 introduced a framework for local air quality management across England and Wales. The provisions in Part IV of the 1995 Act give local authorities responsibilities to periodically ‘review and assess’ the air quality in their areas. Where the national air quality objectives are likely to be exceeded, local authorities are obliged to take action. They must declare Air Quality Management Areas (AQMAs) and create Air Quality Action Plans (AQAPs) in pursuit of the air quality objectives.

Statutory timescales were introduced in the 2003 revision of policy guidance and the process is now effectively continuous with each review and assessment leading into the next. Local Authorities are also encouraged to draw up Local Air Quality Strategies to preserve the status quo where air quality is good and improve air quality where required.

The legislation is designed to be flexible to allow local authorities to undertake measures, appropriate for their localities, in pursuit of the air quality objectives. Local circumstances, therefore, determine the designation of AQMAs and the content of measures included in AQAPs and local air quality strategies.

The Transport Act 2000 requires County and Unitary Authorities to create Local Transport Plans and the Full Guidance on Local Transport Planning 2004 requires these plans to include Air Quality. There is, therefore, some additional reporting of data and conclusions via these documents.

1.2 Summary of the Previous Review and Assessment Findings

The first round of Review and Assessment was carried out in three stages involving initial screening of pollutants and culminating in detailed assessment work where necessary. In Cambridgeshire the exercise was conducted jointly by the District Councils working together with the County Council. It was commenced in 1997 and completed in 2000, concluding that Air Quality Management Areas were necessary in Wisbech for SO₂ and PM₁₀ as a result of emissions from coal fired boiler plant close to the town centre. The 2005 Progress Report for these areas is appended as appendix 1.

The second round of Review and Assessment benefited from the publication of new technical guidance LAQM.TG(03) which reduced the stages of the process to two and introduced statutory timescales and a more formalised approach generally. In Cambridgeshire this process was, again, conducted jointly. During the second round (2003 – 2005) there were several instances of likely exceedences found in the County. These included:

- NO₂ in Cambridge City resulting in declaration of the Cambridge AQMA in 2004 (see appendix 2)
- NO₂ in Huntingdon resulting in declaration of the Huntingdon AQMA in 2005 (see appendix 3)
- NO₂ in St Neots resulting in declaration of the St Neots AQMA in 2005 (see appendix 4)
- NO₂ in Wisbech resulting in declaration of the Wisbech NO₂ AQMA in 2006 (see appendix 5)
- NO₂ in parts of Huntingdonshire close to the A1 and the A14 resulting in the detailed assessment appended to this report for consultation (see appendix 6)

1.3 Air Quality Objectives

The air quality objectives are prescribed in regulations made by the Secretary of State. These are periodically updated as required by European and domestic drivers. Owing to a national commitment to research there is also a better understanding of the short-term and the long-term health effects of air pollution largely due to the work undertaken by the Committee on the Medical Effects of Air Pollutants (COMEAP 4). The current health based objectives are shown in the table overleaf.

The Air Quality Objectives

Pollutant	Concentration	Measured As	Date to be achieved
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean.	31/12/2003
	5 $\mu\text{g}/\text{m}^3$	Annual mean.	31/12/2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean.	31/12/2003
Carbon Monoxide	10 mg/m^3	Maximum daily running 8-hour mean.	31/12/2003
Lead	0.5 $\mu\text{g}/\text{m}^3$	Annual mean.	31/12/2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean.	31/12/2008
Nitrogen Dioxide	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year.	1-hour mean	31/12/2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31/12/2005
Particles (PM ₁₀) (Gravimetric)	50 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 35 times a year.	24-hour mean.	31/12/2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31/12/2004
Sulphur Dioxide	350 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 24 times a year	1-hour mean	31/12/2004
	125 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 3 times a year	24-hour mean	31/12/2004
	266 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 35 times a year	15-minute mean	31/12/2005

1.4 Objective of the Updating and Screening Assessment

This document constitutes the first stage of the third round of AQR&A and is the Updating and Screening Assessment for Cambridgeshire 2006. It involves screening each of the prescribed pollutants to see if they will require a more detailed assessment to determine if they are going to meet their respective objectives. It involves looking at busy and congested roads, factories and other sources of air pollution to see if the particular components are present that are likely to give rise to an air quality issue. Where certain factors are present in combination then the situation is studied using screening tools provided by the Department of Environment, Food and Rural Affairs (defra) in their Technical Guidance LAQM. TG(03). Where scenarios are identified as potential problems they will be progressed through to the detailed assessment, which is due to be completed by April 2007.

2.0 Changes since the 2003 Updating and Screening Assessment

2.1 Population Growth

The 2001 Population Census confirmed that Cambridgeshire is the fastest growing shire county in the country. Since 2001 the population of Cambridgeshire has increased by 2.4% to 565,700. The largest percentage increase has been in East Cambridgeshire where the population has increased by 5.2% to 74,600 since 2001. Cambridge City has had the smallest percentage change since 2001 at only 0.4%.

Summary of Cambridgeshire population estimates by district

District	Mid-2001 population	Mid-2004 population	% change 2001-2004
Cambridge City	109,900	110,300	0.4%
East Cambridgeshire	70,900	74,600	5.2%
Fenland	83,700	86,600	3.5%
Huntingdonshire	157,200	159,000	1.2%
South Cambridgeshire	130,500	135,200	3.6%
County	552,200	565,700	2.4%

Source: Cambridgeshire County Council Research Group

Population forecasts used to inform the Cambridgeshire and Peterborough Structure Plan 2003 (see Table 2.2) indicated that South Cambridgeshire is forecast to be the fastest growing district between 1999 and 2016. Cambridge City is also forecast to show greater growth between 1999 and 2016 than was experienced between 1991 and 1999. Growth in the other districts is forecast to be lower. This mainly reflects the changes in distribution of house-building as the Structure Plan aims to concentrate development in and around Cambridge.

Actual and Forecast Annual Population Change

	Annual Change (%)	
	1991 - 1999	1999 - 2016
Cambridge City	0.5	1.0
East Cambridgeshire	1.3	0.9
Fenland	1.0	0.7
Huntingdonshire	0.9	0.3
South Cambridgeshire	0.7	1.7

Source: Cambridgeshire County Council Research Group.
These figures refer to compound change

2.2 Development Proposals

The 2003 Structure Plan made provision for the construction of new homes between 1999 – 2016 as follows

Proposed new homes in the 2003 Structure Plan

District	Number dwellings
Cambridge City	12,500
East Cambridgeshire	7,300
Fenland	8,100
Huntingdonshire	9,500
South Cambridgeshire	20,000

A total of 478,000 dwellings are now required by the Government Office for the East of England for the period 2001 – 2021 (Draft East of England Plan, December 2004). Local Development Framework documents will be required to provide for the following between 2001 and 2011

Dwellings Required by the Draft East of England Plan

District	Number dwellings
Cambridge City	14,700
East Cambridgeshire	8,600
Fenland	10,100
Huntingdonshire	11,200
South Cambridgeshire	23,500

Progress on main (>500 Dwellings) development proposals expected to be brought forward before 2016

	Dwellings completed 1999 - 2005	Dwellings with Planning Permission	Dwellings without permission but sites allocated	Total
Cambridge City				
Cambridge	1109	3130	11774	16013
East Cambs				
Ely	1588	524	189	2301
Huntingdonshire				
Huntingdon	467	324	675	1466
Little Paxton	35	537		572
St Neots	740	249	1131	2120

	Dwellings completed 1999 - 2005	Dwellings with Planning Permission	Dwellings without permission but sites allocated	Total
South Cambridgeshire				
Cambourne	1991	1965		3956
Longstanton	43	457		500
Northstowe			6000	6000
Papworth Everard	309	387		696

Number of dwellings around Cambridge City expected before 2016

	Cambridge City	South Cambridgeshire
Arbury Park		900
Cambridge East	1150	2050
North West Cambridge	2930	
Northern Fringe East	300	600
Southern Fringe	3390	630

2.3 Traffic levels/growth

Over the last 10 years there has been considerable traffic growth in the county. Traffic crossing the county screenline has grown by 23%, compared with national traffic growth of 16%. Traffic measured on the A428 has increased by 60% since 1995, although the A14 continues to experience the highest volume of traffic. Traffic density on Cambridgeshire's rural trunk 'A' roads is twice the national average, and is 40% above average on other rural 'A' roads.

Over the last ten years there has been a significant growth in the number of heavy goods vehicles with five or more axles, with increases of between about 60% - 70% on the M11, A142 and A14. The density of HGV traffic on Cambridgeshire's trunk 'A' roads is three times the national average, and on non-trunk main roads it is nearly twice the national average.

Although slightly more motor vehicles (just over 170,700 per 12-hour day) entered and left Cambridge in 2005 than in 2004, there has been an underlying flat trend over the past ten years, which is in line with the County Council's target to stabilise motor vehicle traffic on the radial routes. The City's main traffic management scheme (Cambridge Core Scheme) is now into its fourth stage of implementation. This is a key element in achieving the County Council's target of increasing bus patronage in Cambridge by 70% by 2010 (from the 1999 base). Based on the anticipated growth in Cambridge and the surrounding area, it is expected that the number of buses to be accommodated in the city centre would increase by 40% by 2011.

Major transport infrastructure improvements are planned to support the new development that the county has to accommodate. These include:

The Highways Agency plans to improve the A14 between Ellington, to the west of Huntingdon, and Fen Ditton, to the northeast of Cambridge, as part of the Agency's ongoing programme of improvements on the A14. Funding for this scheme should become available in 2008.

The Cambridgeshire Guided Busway was granted approval under the Transport and Works Act Order in December 2005. This gives the County Council powers to construct and operate the guideway, and deemed planning consent subject to detailed conditions. It is anticipated that construction will commence end 2006/beginning 2007 and the guideway will be completed end 2008.

2.4 Industrial Processes – Pollution Prevention and Control Regulations 2000

A complete list of IPPC, LA-IPPC and LAPPC Processes authorised under the Environmental Protection Act 1990 are assimilated for each district in Appendix 7. Each process has been considered in conjunction with Annex 2 Appendix E of Technical Guidance LAQM.TG(03) to identify those which may have significant emissions of prescribed pollutants. Where there is judged to be a potentially significant release these have been screened in accordance with pollutant specific guidance and the results reported within the pollutant screen commentary.

3.0 Cambridge City Council

Summary

Pollutant	Exceedence Observed/predicted	Existing AQMA	Proposed AQMA	Proposed DA
Benzene	No	No	No	No
1,3 Butadiene	No	No	No	No
Carbon Monoxide	No	No	No	No
Lead	No	No	No	No
Nitrogen Dioxide	Yes	Yes	No	No
Fine Particles (PM ₁₀)	No	No	No	No
Sulphur Dioxide	No	No	No	No

3.1 Checklist for Carbon Monoxide (CO)

A) Monitoring data

There is one continuous monitor based in the City Council offices at Regent Street. Monitoring data is only available for November and December 2005 (typically months of poor air quality). Whilst insufficient for compliance, the data collated does not show an 8-hour running mean of more than 2 mg/m³. Historically, levels of CO at this site have never exceeded the 8-hour running mean target, therefore, we do not consider that a detailed assessment of carbon monoxide is required.

B) Very busy roads or junctions in built-up areas

There are no very busy roads with flows in excess of 80,000 vpd.

3.2 Checklist for Benzene (C₆H₆)

A) Monitoring data outside an AQMA

No monitoring of benzene is carried out.

B) Monitoring data within an AQMA

No monitoring is carried out.

C) Very busy roads or junctions in built up areas

There are no roads with daily average traffic flows that exceed 80,000 vpd.

D) New industrial sources

There are no known new or proposed sources since the second review and assessment.

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

There are no industrial sources of this nature.

F) Petrol stations

There are no petrol filling stations that meet the criteria described in LAQM. TG(03) Box 3.2 (D).

G) Major fuel storage depots (petrol only)

There are no fuel storage depots.

3.3 Checklist for 1,3-butadiene (C₄H₆)

A) Monitoring data

No monitoring of 1,3-butadiene is carried out.

B) New industrial sources

There are no new industrial sources that emit 1,3-butadiene.

C) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources of this nature.

3.4 Checklist for Lead (Pb)

A) Monitoring data

No monitoring of lead is carried out.

B) New industrial sources

There are no known new or proposed sources since the second review and assessment.

C) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources of this nature.

3.5 Checklist for Nitrogen Dioxide (NO₂)

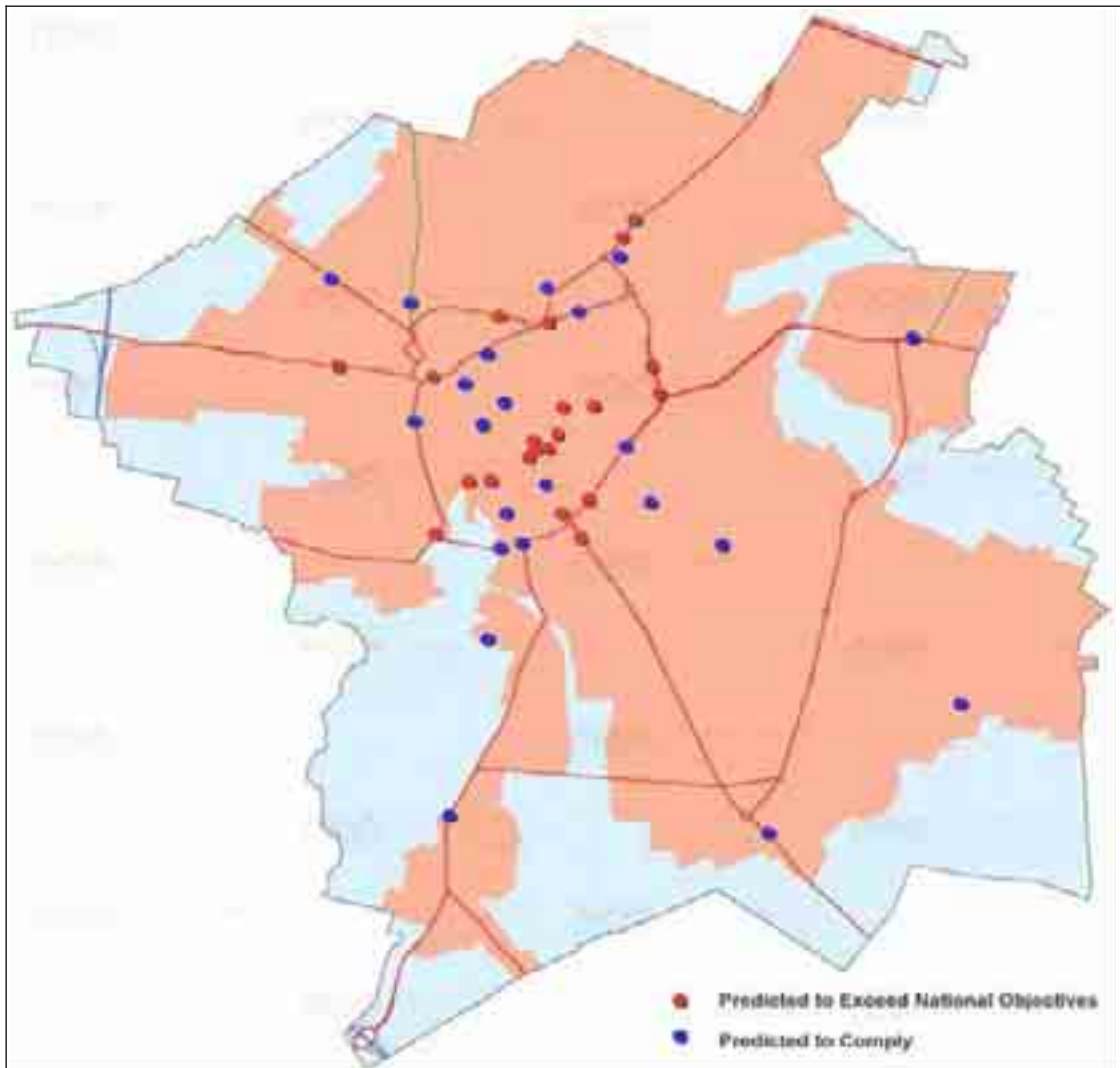
Introduction

A detailed assessment of nitrogen dioxide was carried out as part of the Second Review and Assessment process. As a result an Air Quality Management Area was declared in August 2004. Modelling for the Detailed Assessment (using 2002 data) predicted which sites would record an exceedence of the annual objective in 2005. Comparison of the 2005 predictions and the 2005 data showed that the predictions were very close to the actual data. All tubes that were predicted to exceed in 2005 did exceed. The four tubes that were predicted not to exceed the annual objective actually did so (kerbside sites), of these only Milton Road is predicted to exceed in 2010.

Traffic data provided by Cambridgeshire County Council (Traffic Monitoring Report 2005) showed that the number of motor vehicles entering and leaving Cambridge has an underlying flat trend. Similarly, the number of motor vehicles crossing the River Cam bridges within Cambridge was 'slightly more', 1%, than in 2004, but less than in 1995.

If traffic numbers remain level then the Air Quality Management boundary does not need to be altered at this stage. Therefore, the modelling has not been re-visited because the traffic increase has been minimal and the actual and predicted concentrations are very close. Continuing liaison with the County Council on the Local Transport Plan will enable us to monitor traffic numbers closely in forthcoming years. A watching brief on the areas close to exceedence will be maintained.

Map of NO₂ Diffusion Tubes Locations in Cambridge City



Maps reproduced from the Ordnance Survey Mapping with the permission of the Controller of Her Majesty's Officer (C) Crown Copyright. Unauthorised reproduction infringes Crown Copyright and made lead to prosecution or civil proceedings. Cambridge City Council Licence no LA077372.

A) Monitoring data outside an AQMA

Yes. There are 12 NO₂ diffusion tubes sites outside the AQMA. The diffusion tube values have been multiplied by a bias correction factor of 0.93 (the February Update) obtained from the AQR&A Helpdesk at UWE. The diffusion tubes are supplied by Harwell Scientifics and the method is 50% TEA in Acetone.

The prediction of 2010 concentrations was carried out using the Year Adjustment calculator version 22A from www.airquality.co.uk.

Forward projections from 2005 indicate that only Milton Road is likely to exceed the national objective for nitrogen dioxide in 2010.

Annual mean bias-adjusted diffusion tube data and predicted 2010 data in $\mu\text{g}/\text{m}^3$.		
LOCATION	Bias Adjusted 2005 Annual mean	2010 Prediction from 2005 data
Gilbert Road	30.0	24.6
Latham Road	21.0	17.2
Milton Road	50.0*	41.0
Newmarket Road - 2	34.0	27.9
Madingley Road	45.0*	36.9
Huntingdon Road	36.0	29.5
Histon Road	38.0	31.2
Trumpington Road	38.0	31.2
Babraham Road	42.0*	34.4
Cherry Hinton Road	36.0	29.5
Arbury Road	44.0*	36.1
Cockburn Street	28.0	23.0

* These locations do not represent relevant exposure locations.

B) Monitoring data within an AQMA

Yes, there are 5 continuous monitoring sites within the AQMA. There are three chemiluminescence monitors supplied and maintained by Monitor Labs (Casella) and two chemiluminescence monitors supplied and maintained by Thermo Environmental Instruments Inc. All five sites are roadside. The AURN site has been in place since 1993, Silver Street, Gonville Place and Parker Street were commissioned in 1998 and Newmarket Road was commissioned in 2001. Each of the sites is calibrated and maintained regularly serviced by the supplier and audited by NETCEN either as part of AURN or through the Calibration Club. All data is collated and ratified by AEA Technology. Data capture for nitrogen dioxide at Parker Street was less than 90%. A correction factor of 0.86 has been calculated and applied (as per Box 6.5 of Technical Guidance LAQM. TG(03)).

Forward projections from 2005 indicate that Parker Street is likely to exceed the national objective for nitrogen dioxide in 2010.

Location	2005 Annual Mean NO_2 $\mu\text{g}/\text{m}^3$	Exceedences of the hourly mean	Predicted 2010 Annual Mean NO_2 $\mu\text{g}/\text{m}^3$
Gonville Place	48	9	39
Newmarket Rd	30	0	25
Parker St	44	0	42
Regent St	45	0	37
Silver St	34	0	28

There are 33 NO₂ diffusion tubes sites within the AQMA. The diffusion tube values have been multiplied by a bias correction factor of 0.93 (the February Update) obtained from the AQR&A Helpdesk at UWE. The diffusion tubes are supplied by Harwell Scientifics and the method is 50% TEA in Acetone. The prediction of 2010 concentrations was carried out using the Year Adjustment calculator version 22A from www.airquality.co.uk.

Annual mean bias-adjusted diffusion tube data and predicted 2010 data in µg/m³.		
LOCATION	2005 reading bias adjusted	2010 Estimate from 2005 data
Emmanuel St	63.0	54.8
Jesus Lane	53.0	43.5
Magdalene St	40.0	32.8
Northampton St	49.0	40.2
Silver Street	47.0	38.5
Regent Street ¹	53.0	43.5
Newmarket Rd	47.0	38.5
Drummer Street	57.0	46.7
East Road	39.0	32.0
Mill Road	38.0	31.2
Hills Road	46.0	37.7
Regent Street ²	42.0	34.4
Trinity Street	35.0	28.7
Pembroke St	50.0	41.0
Gonville Place	35.0	28.7
Elizabeth Way	43.0	35.3
Victoria Road	44.0	36.1
Queens Road	36.0	29.5
Fen Causeway	34.0	27.9
Newnham Road	52.0	42.6
Chesterton Rd	42.0	34.4
Victoria Avenue	54.0	44.3
Parker Street	47.0	38.5
Abbey Road	50.0	41.0
Oaktree Avenue	28.0	23.0
Chesterton Rd	38.0	31.2
Maids Causeway	49.0	40.2
Emmanuel Rd	59.0	48.4
Downing Street	52.0	42.6
Trumpington St	35.0	28.7
Lensfield Rd	37.0	30.3
Park Terrace*	49.0	40.2
St Andrew's St*	74.0	60.7

* These sites are not part of the City Council monitoring network. They are additional sites, recently placed as temporary indicators of changes relating to implementation of traffic alterations in the inner core area of Cambridge and in place at the request of the County Council. Results are included here for completeness. The results are an average of 2 months data (November and December 2005).

Forward projections from 2005 indicate that 14 sites within the AQMA are likely to exceed the national objective for nitrogen dioxide in 2010. These sites are all on the inner ring road or within the inner core of Cambridge. The AQMA does not require revocation at this stage.

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

These locations were assessed during the previous round of R&A.

D) Junctions

Busy junctions were assessed during the previous round of R&A.

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

Busy streets where people may spend 1-hour or more close to traffic were assessed during the previous round of R&A.

F) Roads with high flow of buses and/or HGVs

Roads with high flow of buses and/or HGVs were assessed during the previous round of R&A.

G) New roads constructed or proposed since the previous round of R&A

A new road is proposed to the south of the City, the Addenbrookes Access road. An environmental statement including an air quality assessment has been submitted. Planning approval has not yet been granted.

H) Roads with significantly changed traffic flows, or new relevant exposure

There are no roads with significantly changed traffic flows, or new relevant exposure.

I) Bus Stations

The bus station is already within the AQMA.

J) New industrial sources

There are no known new or proposed industrial sources since the second review and assessment.

K) Industrial sources with substantially increased emissions, or new relevant exposure

There are no known industrial sources with substantially increased emissions, or new relevant exposures.

L) Aircraft

Annual flight numbers at Cambridge airport are approximately 50,000, most of which is light private aircraft (no passenger numbers) at the weekends. Approximately 5% of flights are related to empty transporter airplanes being flown in maintenance. There is no cargo freight, only live freight of 50 racehorses in a typical year, equivalent to around 50 tonnes (1 tonne per horse, including equipment). There are some scheduled flights in the summer (1100 passengers). However, it does not appear likely that the total equivalent passenger number will approach 5 mppa.

3.6 Checklist for Sulphur Dioxide (SO₂)

A) Monitoring data outside an AQMA

No monitoring of sulphur dioxide is carried out.

B) Monitoring data within an AQMA

No monitoring of sulphur dioxide is carried out.

C) New industrial sources

There are no known new or proposed industrial sources since the second review and assessment.

D) Industrial sources with substantially increased emissions, or new relevant exposure

There are no known industrial sources with substantially increased emissions, or new relevant exposures.

E) Areas of domestic coal burning

This was examined in the 2003 USA. No areas of domestic coal burning were identified and there has been no change in this position.

F) Small Boilers > 5 MW (thermal)

Medium and large commercial and industrial premises were contacted during the first round of R&A. Only one site was identified as a potential source of problems. The company at this site has changed its working practices, so that sulphur dioxide emissions no longer present a problem. No significant industrial development has occurred since the last USA.

G) Shipping

There are no local sources of shipping emissions.

H) Railway Locomotives

The district EHO confirmed that incidences of freight trains left running for extended periods have declined in the last 2 years. Normally they would only idle at the train wash (>15 m from a receptor) or during a delay at the station. Central trains run passenger diesel trains from Birmingham to Stansted via Cambridge, with a scheduled stop time of 2-3 minutes. Other passenger services run electric trains.

3.7 Checklist for PM₁₀

Introduction

The results of the first and second Review and Assessments indicated that objectives for Fine Particles were being met and were likely to be met by the objective due date. This was the case. However, there will be continued monitoring to ensure compliance.

A) Monitoring data outside an AQMA

Yes, there are 4 continuous monitoring sites within the AQMA. There are three TEOM monitors supplied and maintained by Monitor Labs (Casella) and one beta attenuation monitor supplied and maintained by Thermo Environmental Instruments Inc. All four sites are roadside. Silver Street, Gonville Place and Parker Street were commissioned in 1998 and Newmarket Road was commissioned in 2001. Each of the sites is calibrated and maintained regularly serviced by the supplier and audited by NETCEN either as part of AURN or through the Calibration Club. All data is collated and ratified by AEA Technology. Data capture for Gonville Place was less than 90%. A correction factor of 1.1 has been calculated and applied (as per Box 8.5 f Technical Guidance LAQM. TG(03)).

Location	Analyser	2005 Annual Mean NO ₂ µg/m ³ .	Exceedences of 24 hour mean.
Gonville Place	TEOM	24	0
Newmarket Road	BAM	23	4
Parker Street	TEOM	33	20
Silver Street	TEOM	23	3

All data have been multiplied by 1.3 to convert to a gravimetric equivalent. Data has been fully scaled and ratified by netcen. It is considered unlikely that the PM₁₀ objectives will be exceeded at any of these locations. A detailed assessment is not required.

The predicted concentrations for 2010 are calculated using the method in LAQM TG(03) Box 8.6 and the new fractions and adjustment factors from www.airquality.co.uk.

Gonville Place	
Measured annual mean 2005	24
2005 Residual	5.8
2005 Primary	7.5
2005 Secondary	10.5
2010 Residual	5.8
2010 Primary	$7.5 * ((0.9247/1.0174) = 6.8$
2010 Secondary	$10.5 * (0.8522/0.9754) = 9.2$
Predicted annual mean 2010	$5.8 + 6.8 + 9.2 = 21.8$
Newmarket Road	
Measured annual mean 2005	23
2005 Residual	5.8
2005 Primary	6.5
2005 Secondary	10.5
2010 Residual	5.8
2010 Primary	$6.5 * (0.9247/1.0174) = 5.9$
2010 Secondary	$10.5 * (0.8522/0.9754) = 9.2$
Predicted annual mean 2010	$5.8 + 5.9 + 9.2 = 20.9$
Parker Street	
Measured annual mean 2005	33
2005 Residual	5.8
2005 Primary	16.5
2005 Secondary	10.5
2010 Residual	5.8
2010 Primary	$16.5 * (0.9247/1.0174) = 15.0$
2010 Secondary	$10.5 * (0.8522/0.9754) = 9.2$
Predicted annual mean 2010	$5.8 + 15.0 + 9.2 = 30.0$
Silver Street	
Measured annual mean 2005	23
2005 Residual	5.8
2005 Primary	6.5
2005 Secondary	10.5
2010 Residual	5.8
2010 Primary	$6.5 * 0.9247/1.0174) = 5.9$
2010 Secondary	$10.5 * (0.8522/0.9754) = 9.2$
Predicted annual mean 2010	$5.8 + 5.9 + 9.2 = 20.9$

B) Monitoring data within an AQMA

Not applicable as there is no AQMA for PM₁₀ (NO₂ only).

C) Busy roads and junctions in Scotland

NA

D) Junctions

Busy junctions were assessed during the previous round of R&A.

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

Roads with high flow of buses and/or HGVs were assessed during the previous round of R&A.

F) New roads constructed or proposed since last round of R&A

A new road is proposed to the south of the City, the Addenbrookes Access Road. An environmental statement including an air quality assessment has been submitted. Planning approval has not yet been granted.

G) Roads with significantly changed traffic flows, or new relevant exposure.

There are no roads with significantly changed traffic flows, or new relevant exposure.

H) Roads close to the objective during the second round of Review and Assessment

There were no roads close to the objective during the second round of Review and Assessment.

I) New industrial sources

There are no known new or proposed sources since the second review and assessment.

J) Industrial sources with substantially increased emissions, or new relevant exposure

There are no known industrial sources with substantially increased emissions, or new relevant exposures.

K) Areas of domestic solid fuel burning

This was examined in the 2003 USA. No areas of domestic coal burning were identified and there has been no change in this position.

L) Quarries / landfill sites / opencast coal / handling of dusty cargoes at ports etc.

Not applicable.

M) Aircraft

Annual flight numbers at Cambridge airport are approximately 50,000, most of which is light private aircraft (no passenger numbers) at the weekends. Approximately 5% of flights are related to empty transporter airplanes being flown in maintenance. There is no cargo freight, only live freight of 50

racehorses in a typical year, equivalent to around 50 tonnes (1 tonne per horse, including equipment). There are some scheduled flights in the summer (1100 passengers). However, it does not appear likely that the total equivalent passenger number will approach 5 mppa.

4.0 East Cambridgeshire District Council

Summary

Pollutant	Exceedence Observed/predicted	Existing AQMA	Proposed AQMA	Proposed DA
Benzene	No	No	No	No
1,3 Butadiene	No	No	No	No
Carbon Monoxide	No	No	No	No
Lead	No	No	No	No
Nitrogen Dioxide	No	No	No	No
Fine Particles (PM ₁₀)	No	No	No	No
Sulphur Dioxide	No	No	No	No

4.1 Checklist for Carbon Monoxide (CO)

A) Monitoring data

No monitoring of CO has been carried out.

B) Very busy roads or junctions in built-up areas

There are no roads with flows in excess of 80,000vpd.

4.2 Checklist for Benzene (C₆H₆)

A) Monitoring data outside an AQMA

No monitoring of Benzene has been carried out.

B) Monitoring data within an AQMA

There are currently no Air Quality Management Areas in East Cambridgeshire.

C) Very busy roads or junctions in built up areas

There are no roads with flows in excess of 80,000vpd.

D) New industrial sources

There are no new industrial sources.

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

There are no industrial sources of this nature.

F) Petrol stations

There are no petrol filling stations that meet the criteria described in LAQM. TG(03) Box 3.2 (D).

G) Major fuel storage depots (petrol only)

There are no fuel storage depots.

4.3 Checklist for 1,3-butadiene (C₄H₆)

A) Monitoring data

No monitoring of 1,3-butadiene has been carried out.

B) New industrial sources

There are no new industrial sources which emit 1,3-Butadiene.

C) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources of this nature. A potential source was identified in the previous round of Updating and screening Assessment (2003), EPR Sutton, a combustion process, but the emissions were deemed nil/insignificant and have remained the same. This was originally confirmed with the EA.

4.4 Checklist for Lead (Pb)

A) Monitoring data

No monitoring of Lead has been carried out.

B) New industrial sources

There are no new industrial sources.

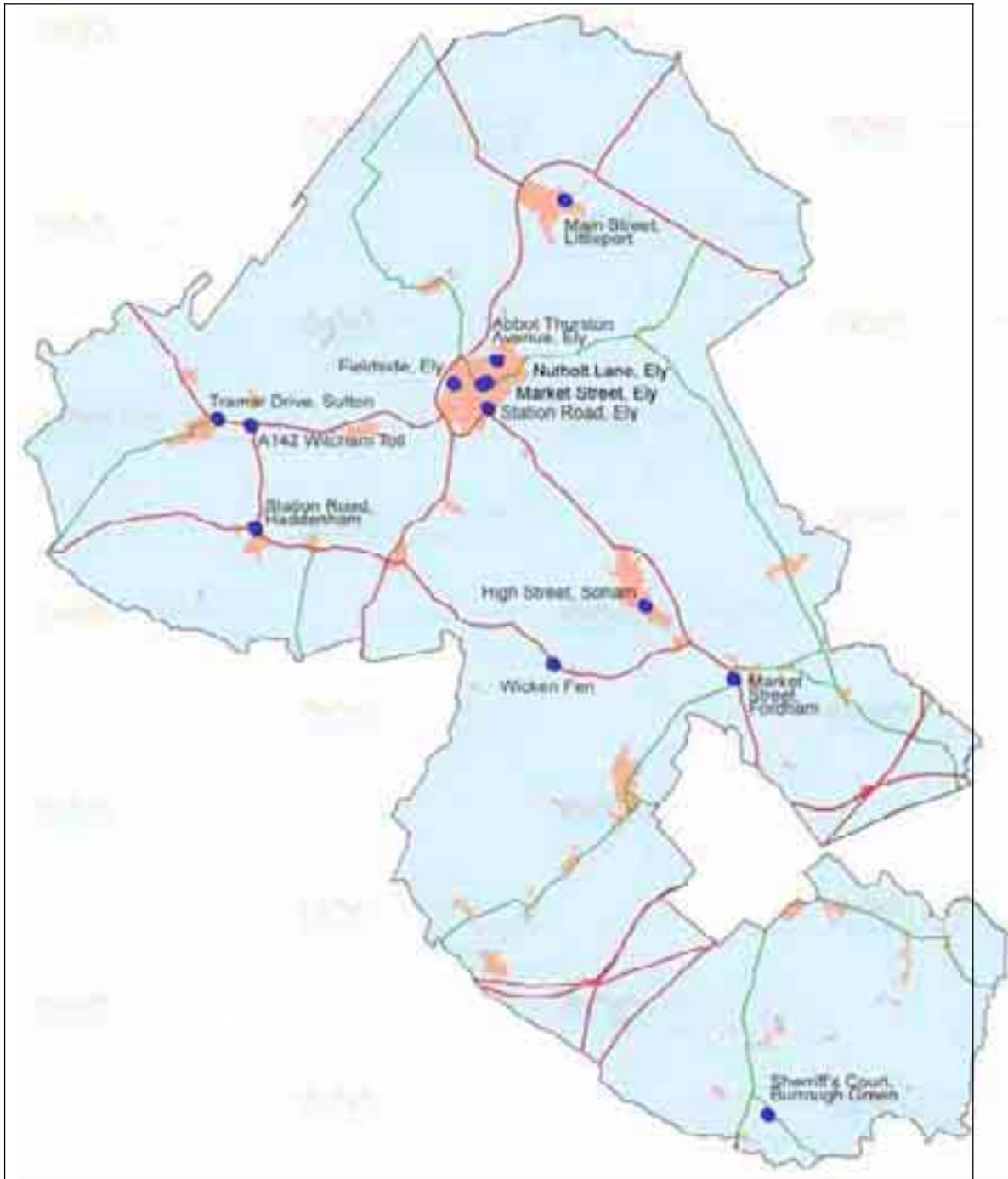
C) Industrial sources with substantially increased emissions, or new relevant exposure

No. A potential source was identified in the previous round of Updating and screening Assessment (2003), EPR Sutton, a combustion process, but the

emissions were deemed nil/insignificant and have remained the same. This was originally confirmed with the EA.

4.5 Checklist for Nitrogen Dioxide (NO₂)

Map of NO₂ Diffusion Tube Locations in East Cambridgeshire



Maps reproduced from the Ordnance Survey Mapping with the permission of the Controller of Her Majesty's Officer (C) Crown Copyright. Unauthorised reproduction infringes Crown Copyright and made lead to prosecution or civil proceedings. East Cambridgeshire District Council Licence no LA0778361.

A) Monitoring data outside an AQMA

(No AQMA)

Yes. There are twelve diffusion tube sites that are located around the district.

The diffusion tube values have been multiplied by a bias correction factor obtained from the AQR&A Helpdesk at UWE. The diffusion tubes are supplied by Harwell Scientifics and are 50% TEA in Acetone. The bias correction factor was derived from ten sets of diffusion tubes which were collocated with real-time analysers in 2005 and is known as the 'February Update'. The factor was 0.93.

The prediction of 2010 concentrations was carried out using the Year Adjustment Calculator version 22A from www.airquality.co.uk.

12 NO₂ Diffusion tube sites:-

2005 Annual mean NO₂ bias adjusted diffusion tube data and predicted 2010 data in µg/m³.		
Location	2005 Concentration	2010 Concentration
Ely: Market St (National site)	28	25
Ely: Abbot Thurston Ave (National site)	19	18
Ely: Nutholt Lane	30	27
Ely: Station Road (National site)	32	29
Ely: Fieldside (National site)	20	19
Littleport: Main St	21	19
Soham: High St	24	22
Fordham: Market St	33	30
Burrough Green: Sheriff's Court	16	15
Haddenham: Station Rd	29	26
Sutton: Tramar Dr	22	20
Witcham Toll: A142	32	29

No Detailed Assessments (DA's) have been carried out in relation to Nitrogen Dioxide in East Cambridgeshire.

No exceedances of the annual mean objectives have been reflected in the NO₂ diffusion tube network. Therefore it is not considered necessary to carry out a Detailed Assessment based on this data at any location throughout the district.

There are no real-time/continuous NO₂ monitoring sites in East Cambridgeshire.

B) Monitoring data within an AQMA

N/A

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

A small number of locations exist in the district where this scenario is present. These locations included the 5 detailed in the previous Updating and Screening Assessment (2003) which were as follows; Newmarket Rd, Bottisham, Heath Rd, Burwell, Newmarket Rd, Snailwell, Station Road Kennett and Norwich Rd, Kennett. DMRB screening assessments were carried out on all these locations and provided acceptable results in the range of 19 - 30 $\mu\text{g}/\text{m}^3$. As these assessments were carried out using conservative traffic flows (considerable distances to given counts) and that the background NO_x (2005) concentrations are lower than those used previously (2002), it is considered unnecessary to repeat the screening exercise for the purpose of this report.

D) Junctions

There are two busy junctions (with more than 10,000 vpd) that are relevant, with respect to Nitrogen Dioxide. These sites are as follows:

Mkt St Fordham (pre bypass)
A142 Witcham Toll

DMRB screening assessments have not been carried out for the reason set out above and that the relevant traffic counts for the respective locations have reduced since the previous Updating and Screening Assessment (2003), the DMRB results calculated in the previous USA were acceptable. For information, both sites have a diffusion tube placed at the relevant location. In the case of Fordham; Market St, it was only busy (10,000 vpd+) prior to completion of the Fordham Bypass in June 2005. Tube data and traffic counts are shown for both before and after the bypass completion, also see graph below.

A142/B1102 (Mkt St) 24 hr AADT Flow (7 day AVG) 2005

NO₂ Adjusted AVG for 2005.

Pre Bypass completion (A142)

Traffic: 16,448 NO₂: 43.8 $\mu\text{g}/\text{m}^3$

Post Bypass completion (B1102)

Traffic: 5,017 NO₂: 28.1 $\mu\text{g}/\text{m}^3$

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

See paragraph C above.

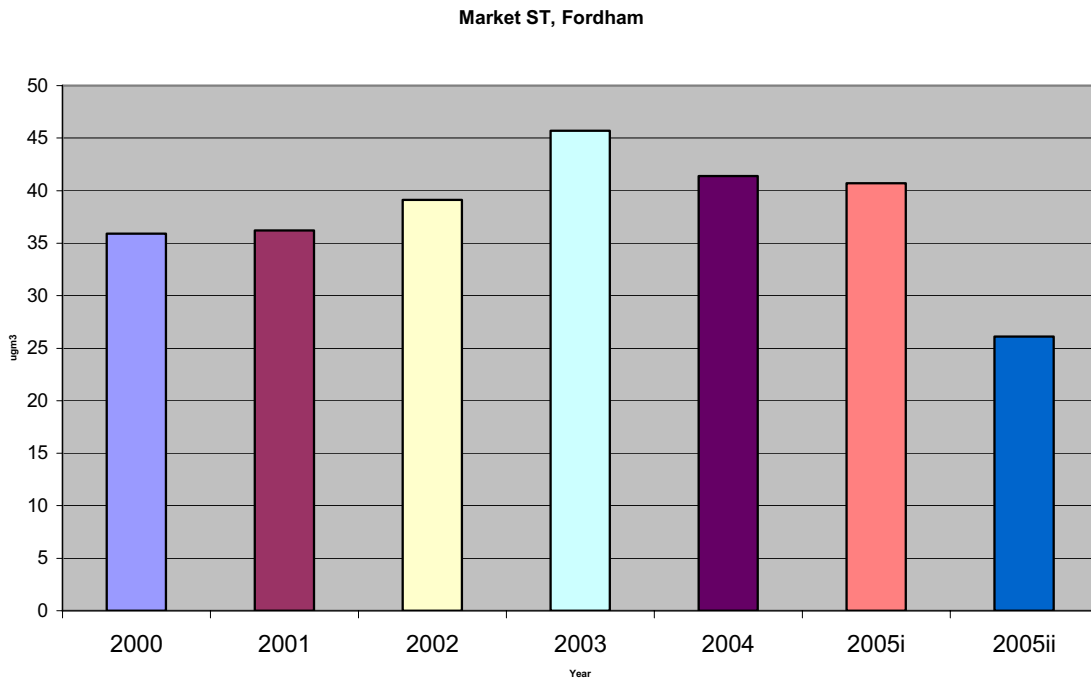
F) Roads with high flow of buses and/or HGVs

Not present.

G) New roads constructed or proposed since the previous round of R&A

The Fordham bypass was constructed in June 2005 and had a positive impact air quality and the amount of traffic along on the former route through the Village of Fordham. No additional receptors were introduced on the new route.

See the graph below for further clarification. Please note that the data used was bias adjusted in accordance with bias adjustment figures obtained from the AQR&A Helpdesk at UWE. Data from 2005 is split into i & ii. This shows the impact of the completion of the bypass in June, approximately half way through the year, 2005.



H) Roads with significantly changed traffic flows, or new relevant exposure

There are no roads that meet the description given in LAQM. TG(03) Box 6.2

I) Bus Stations

There are no bus stations that meet the criteria described in LAQM. TG(03) Box 6.2 (J). Time tables from the County Council’s website show that bus movements for Ely Bus Station are significantly below the threshold of 100 as outlined in LAQM. TG (03).

J) New industrial sources

There are no new industrial sources of NO₂.

K) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources with increased emissions of NO₂.

L) Aircraft

There are no airfields/airports that approach the criteria described in LAQM. TG(03) Box 6.2 (M).

4.6 Checklist for Sulphur Dioxide (SO₂)

A) Monitoring data outside an AQMA

No monitoring of SO₂ has been carried out.

B) Monitoring data within an AQMA

No monitoring of SO₂ has been carried out.

C) New industrial sources

There are no new industrial sources of SO₂.

D) Industrial sources with substantially increased emissions, or new relevant exposure

A review of the fuel use survey carried out for the last round of review and assessment, which included schools and large commercial buildings, indicates no significant change, hence no plant of this capacity was identified. East Cambridgeshire has no large hospitals or universities.

Inspection of the relevant public registers together with compliance inspections of Part B processes indicate no increase of this magnitude.

E) Areas of domestic coal burning

The housing condition survey carried out in June 2002 is the most recent information. It is unlikely that another survey will be carried out before 2008. The 2002 survey included fuel use.

The results for fuel use were as follows:-

On peak electricity 1.3%
Off peak electricity 13.4%
LPG 1.5%

Oil 19.3%
Solid fuel/wood 3%
Gas 61.4%
Other 0.1%

However, despite the dominance of gas there are small settlements within the District which are not on mains gas and thus the 3% figure could, reasonably be expected to be significantly higher.

The same could also be assumed for off/on peak electricity, LPG and oil when gas is not available.

F) Small Boilers > 5 MW (thermal)

No planning applications which would give rise to the installation of such a boiler have been granted.

G) Railway Locomotives

A review of the railway locations throughout the district has been conducted. It has shown that it is highly unlikely that any diesel locomotives will be stationary with engines running for more than 15 minutes twice a day. In addition, there are no relevant receptors within 15m of station areas. All (2) passenger stations in the district no longer have track capacity to allow for scheduled delays or interruptions.

H) Shipping

N/A

4.7 Checklist for PM₁₀

A) Monitoring data outside an AQMA

No AQMA.

Yes, there is a beta attenuator located at Wicken Fen, Burwell, data capture at this site was 100% for 2005.

The annual mean gravimetric equivalent for PM₁₀ for 2005 was 20.4µg/m³. There were 16 exceedances of the 24-hour mean objective. The predicted concentration for 2010 is calculated using the method in LAQM TG(03) Box 8.6 and the new fractions backgrounds and adjustment factors from the www.airquality.co.uk website.

For Wicken Fen this is as shown overleaf.

Parameter	$\mu\text{g}/\text{m}^3$
Measured annual mean 2005	20.4
2005 Residual	5.8
2005 Primary	4.0
2005 Secondary	10.34 (adjusted to 2005)
2010 Residual	5.8
2010 Primary	$4.0 \times (0.9247/1.0174) = 3.6$
2010 Secondary	$10.34 \times (0.8522/0.9754) = 9.0$
Predicted annual mean 2010	$5.8 + 3.6 + 9.0 = 18.4$

B) Monitoring data within an AQMA

N/A.

C) Busy roads and junctions in Scotland

N/A.

D) Junctions

Yes, the junction on the A142 at Witcham Toll.

A DMRB screening assessment has been carried out for this location and the figures are shown below.

No traffic data exists for the exact point on the A142 that is link 1, however information is available for the A142 at Fordham a few miles east which is considered representative. Link two is an A road which carries less traffic than the A142 however no traffic information is available for this road so data from the A142 has been used to produce a conservative DRMB assessment. Link three is an unmarked road that has not been classified as an A or B and again no data is available, to produce a conservative DRMB assessment, a flow of roughly 25% of the A142 at Fordham has been used.

The proportion of HDV's in the ADWT's has been approximated, based on the previous USA (2003) traffic data with an extra 1% (approximated from 2005 traffic data for the location) to allow for buses and coaches. It is based on pre – bypass traffic data (Jan-June 2005). Traffic counts have decreased since the previous Updating Screening.

Assessment for the relevant location in this DMRB assessment.

DMRB v 1_02 calculation for Witcham Toll, A142.	
Receptor	“Two Jays” House
Distance from link:	
1	12m
2	30m
3	50m
AADT, Link:	
1	16,448(13% HDV)
2	16,448(13% HDV)
3	5,000(2% HDV)
Average speed	Kph
1	74
2	20
3	20
Road type, Link:	Type
1	A
2	A
3	C
Background Year	2005
Background Grid Square, Link:	NGR
1	546,282
2	546,276
3	mean
Background Concentrations	
PM ₁₀	17.7µg/m ³ (Highest of 3 background levels)
Outputs	
Annual Mean PM ₁₀	26.8µg/m ³
No. of exceedances of the 50µg/m ³ PM ₁₀ objective.	17

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

See DMRB above.

F) New roads constructed or proposed since last round of R&A

No receptors on Fordham Bypass.

G) Roads with significantly changed traffic flows, or new relevant exposure.

There are no roads that meet this description.

H) Roads close to the objective during the second round of Review and Assessment

There were no roads that were close to the objective.

D) New industrial sources

There are no significant new industrial sources.

J) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources that meet this description.

K) Areas of domestic solid fuel burning

See Section 4.6 Paragraph E above. These areas were considered in the 2003 USA and screened out as comfortably below the criteria in LAQM. TG(03) Box 7.2 (E).

L) Quarries / landfill sites / opencast coal / handling of dusty cargoes at ports etc

In the previous Updated Screening Assessment (2003), two landfill sites and one quarry were identified as potential sources of particulates. These sites (Grunty Fen Landfill Site, Kennett Landfill Site and Francis Flower Quarry, Wicken) have downsized in the following ways. Grunty Fen Landfill site no longer accepts any waste and has effectively closed, therefore its potential to emit particulates has reduced. Kennett Landfill site has closed. Francis Flower Quarry, Wicken has downsized significantly and now only a small area of one face is still being worked.

M) Aircraft

There are no airfields/airports that approach the criteria described in LAQM. TG(03) Box 8.4 (M).

5.0 Fenland District Council

Summary.

Pollutant	Exceedence Observed/predicted	Existing AQMA	Proposed AQMA	Proposed DA
Benzene	No	No	No	No
1,3 Butadiene	No	No	No	No
Carbon Monoxide	No	No	No	No
Lead	No	No	No	No
Nitrogen Dioxide	Yes	Yes	No	Yes
Fine Particles (PM ₁₀)	Yes	Yes	No	Yes
Sulphur Dioxide	Yes	Yes	Yes	No

5.1 Checklist for Carbon Monoxide (CO)

A) Monitoring data

No monitoring of CO has been carried out.

B) Very busy roads or junctions in built-up areas

There are no roads with flows in excess of 80,000vpd.

5.2 Checklist for Benzene (C₆H₆)

A) Monitoring data outside an AQMA

No monitoring of benzene has been carried out.

B) Monitoring data within an AQMA

No monitoring of benzene has been carried out inside any AQMAs.

C) Very busy roads or junctions in built up areas

There are no roads with flows in excess of 80,000vpd.

D) New industrial sources.

There are no new industrial sources.

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

There are no industrial sources of this nature.

F) Petrol stations

There are no petrol filling stations that meet the criteria described in LAQM. TG(03) Box 3.2 (D).

G) Major fuel storage depots (petrol only)

There are no fuel storage depots.

5.3 Checklist for 1,3-butadiene (C₄H₆)

A) Monitoring data

No monitoring of 1,3-butadiene has been carried out.

B) New industrial sources

There are no new industrial sources which emit 1,3-Butadiene.

C) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources of this nature.

5.4 Checklist for Lead (Pb)

A) Monitoring data

No monitoring of Lead has been carried out.

B) New industrial sources

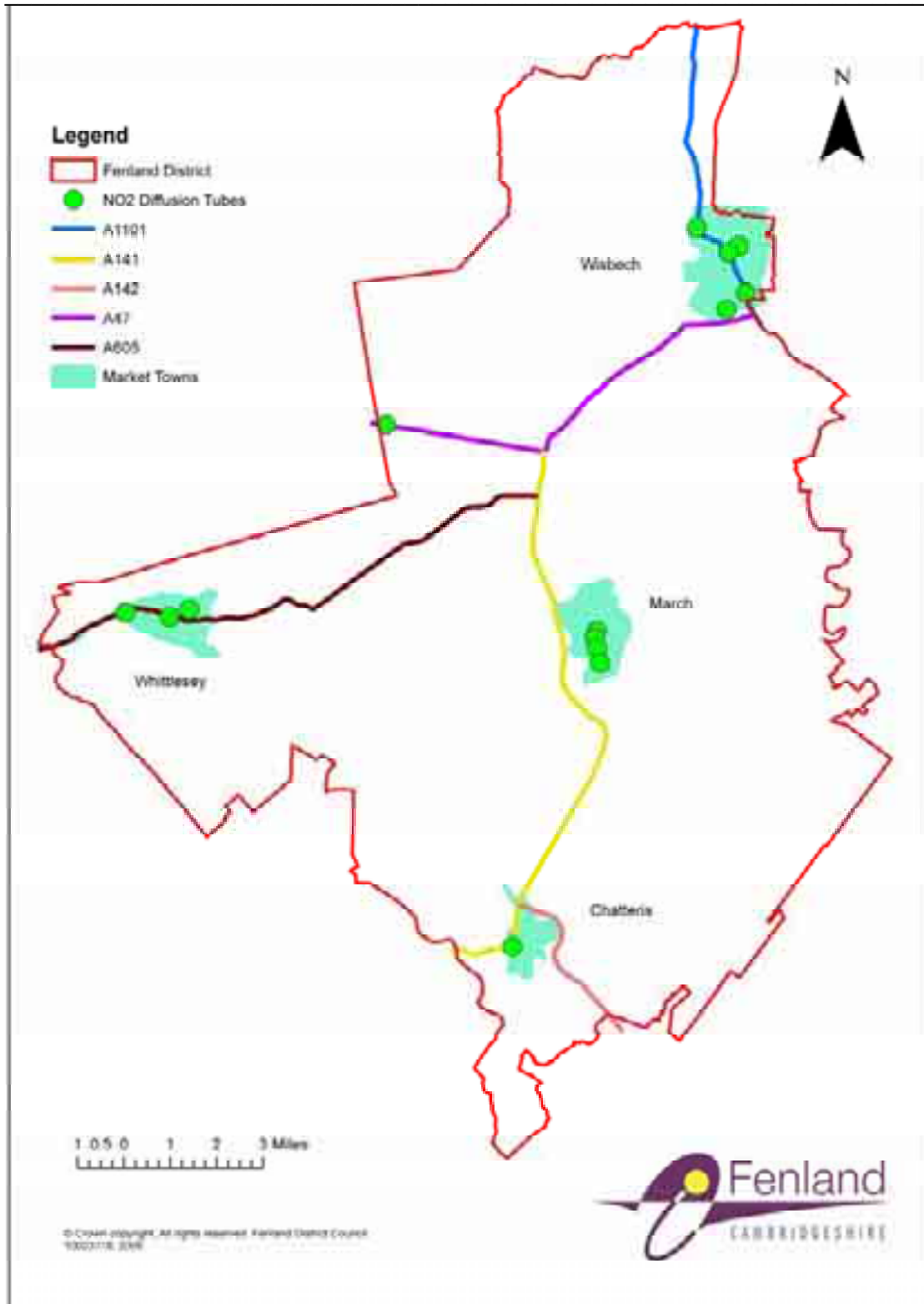
In the second review and assessment, a lead foundry using scrap lead was identified in Whittlesey. The Council has never received any application for a permit and are considering legal proceedings under the Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended)

C) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources of this nature.

5.5 Checklist for Nitrogen Dioxide (NO₂)

Map of NO₂ Diffusion Tubes in Fenland District.



This map is reproduced from Ordnance survey material with the permission of OS on behalf of the controller of Her Majesty's Stationery Office ©. Crown copyright. Unauthorised reproduction

infringes Crown copyright and may lead to prosecution or civil proceedings. Fenland District Council 10023778, 2006.

A) Monitoring data outside an AQMA

Yes. There are seventeen diffusion tube sites and one real-time monitoring station that are located outside AQMAs. The diffusion tube values have been multiplied by a bias correction factor obtained from the AQR&A Helpdesk at UWE. The diffusion tubes are supplied by Harwell Scientifics and are 50% TEA in Acetone. The bias correction factor was derived from ten sets of diffusion tubes which were collocated with real-time analysers in 2005 and is known as the 'February Update'. The factor was 0.93.

The prediction of 2010 concentrations was carried out using the Year Adjustment Calculator version 22A from www.airquality.co.uk.

2005 Annual mean NO₂ bias adjusted diffusion tube data and predicted 2010 data in µg/m³.		
Location	2005 Concentration	2010 Concentration
Thorney Toll	33	28
Sutton Rd, Wisbech.	23	19
Wisbech. AQ	27	23
Lynn Rd, Wisbech.	53	45
Churchill Rd, Wisbech	46	39
New Drove, Wisbech	17	14
Broad St, March	32	27
City Rd, March	20	19
High Rd, March	32	27
Cavalry Pk, March	23	19
Chatteris	28	23
Orchard Rd, Whittlesey	42	35
Drybread Rd, Whittlesey	19	16

The Diffusion tubes at Wisbech Lynn Road and Churchill Road indicated exceedences of the annual mean objective. These locations have recently been the subject of a Detailed Assessment (DA) for NO₂. The DA is appended to this report and recommends declaration of an Air Quality Management Area. The diffusion tube at Whittlesey Orchard Road Roundabout has indicated an exceedance of the annual mean objective and therefore the Council will proceed to a Detailed Assessment at this property.

Following the DA of NO₂ in 2005, diffusion tube locations were reviewed and some additional tubes deployed to improve coverage in areas where concentrations of NO₂ were thought to be close to the annual mean objective.

B) Monitoring data within an AQMA

No AQMA was declared during the monitoring period.

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

No change since previous R & A.

D) Junctions

Whitmore Street and Orchard Road in Whittlesey have residential properties adjacent to the A605 roundabout. The diffusion tube at this location has exceeded for the year so the Council will proceed to a Detailed Assessment for NO₂ in Whittlesey.

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

No change since previous R & A.

F) Roads with high flow of buses and/or HGVs

No change since previous R & A.

G) New roads constructed or proposed since the previous round of R&A

The A47 has been bypassed and duelled at Thorney in Peterborough. This may divert more traffic through Thorney Toll instead of using the congested A605 or A17. Discussions with the Highways Agency indicate that the AADT flows at Eye are the same for February 2006 as February 2005. Traffic data will be available soon for the bypass at Thorney. Assumptions cannot be made about increase in annual average until the summer has passed, as the A47 is the main trunk route to the West Norfolk Coast. If the summer months significantly raise the AADT, then DMRB screening will be carried out to determine whether receptors at Thorney Toll require Detailed Assessment.

H) Roads with significantly changed traffic flows, or new relevant exposure

The Council has identified the need to progress to Detailed Assessment for the A605 corridor in Whittlesey, Eastrea, and Coates.

Fenland District Council is liaising with Kings Lynn and West Norfolk Borough Council to share diffusion tube results on either side of the county/district boundary relating to traffic from the A1101.

I) Bus Stations

No change since previous R & A.

J) New industrial sources

Garden Isle are applying for a permit to operate their new boiler furnace under PG note 1/3(95) [as amended by AQ23 (04)].

K) Industrial sources with substantially increased emissions, or new relevant exposure

No such source.

L) Aircraft

No change since previous R & A.

5.6 Checklist for Sulphur Dioxide (SO₂)

A) Monitoring data outside an AQMA

Monitoring has been undertaken by Hanson Building Products this relates to emissions from the brick making industry. An AQMA is due to be declared for SO₂ in an area of Whittlesey. The monitoring data is not available whilst Hanson appeal the IPPC permit issued by the Environment Agency.

B) Monitoring data within an AQMA

Yes, the API M100x SO₂ analyser is located in the Fenland District Council AQ Monitoring Station within Anglian Water Services' pumping station on Lynn Road in Wisbech.

The 15-minute mean national objective of 266µg/m³ was breached 80 times in the year by Premier Foods. All these breaches occurred during January when the supply of Low-sulphur coal was interrupted. Premier Foods have secured their coal supply and are expected to be issued with an IPPC permit in April 2006. This will include an improvement plan to attach scrubbers to the boilers further reducing SO₂ emissions.

The Data Collection has stopped since November 2005, this is due to a breakdown in the hardware/software of the data collection computer. Twice annual maintenance on the site was carried out by EnviroTechnology. Verification of data was carried out by Prior Associates.

C) New industrial sources

No industrial sources have been identified that have emissions that would cause exceedance of the objective.

D) Industrial sources with substantially increased emissions, or new relevant exposure

No such source.

E) Areas of domestic coal burning

There are no areas in Fenland where the density of domestic coal burning will lead to exceedance of the objectives.

F) Small Boilers > 5 MW (thermal)

Garden Isle are applying for a LAPPC permit to operate their new boiler furnace under PG note 1/3(95) [as amended by AQ23 (04)] the boiler will mostly burn gas and therefore is not expected to exceed any objective.

G) Shipping

Due to the low level of commercial shipping using Wisbech Port (67 in 2005) and Port Sutton Bridge (325 in 2005), all ships using marine gas-oil. Fenland District Council does not believe a Detailed Assessment is necessary for this situation.

H) Railway Locomotives

There is a Network Rail Local Distribution Centre that has opened in March since the last round of Review and Assessment. The distance from residential properties' gardens to idling trains is greater than 15 metres. Fenland District Council does not believe Detailed Assessment is necessary for this situation.

5.7 Checklist for PM₁₀

A) Monitoring data outside an AQMA

No monitoring of PM₁₀ has been carried out.

B) Monitoring data within an AQMA

Yes, the beta attenuator is located in the Fenland District Council AQ Monitoring Station within Anglian Water Services' pumping station on Lynn Road in Wisbech

Due to the breakdown with downloading software/hardware data capture is low 79.5%.

Twice annual maintenance on the site was carried out by EnviroTechnology. Verification of data was carried out by Prior Associates.

Annual Average – 28µg/m³

Number of Exceedances – 31 – It is possible that the objective was exceeded, however, the computer breakdown meant that half of November and all of December were unmeasured.

J	F	M	A	M	J	J	A	S	O	N	D
1	1	6	2	0	3	4	4	4	6	0	N/A

As Premier Foods is to be regulated by the Environment Agency under IPPC regime, it is expected that PM₁₀ emissions will meet European objectives by employing BAT i.e. scrubbers on boiler plant.

C) Busy roads and junctions in Scotland

Not Applicable.

D) Junctions

DMRB screening was carried out on junctions around the district that had undergone Detailed Assessment for NO₂. The screening is included below:

Wisbech - Lynn Road Roundabout

DMRB v 1_01 calculation for Freedom Bridge Roundabout	
Receptor	5 Lynn Road
Distance from link 1	12.5m
AADT	19220 (5% HDV)
Average speed	5kph
Road type	A
Distance from link 2	17.5
AADT	14950 (7% HDV)
Average speed	5
Road type	A
Distance from link 3	4.6
AADT	1790 (7% HDV)
Average speed	40
Road type	B
Distance from link 4	78
AADT	5700 (2% HDV)
Average speed	5
Road type	B
Background Year	2005
Background Grid Square	546500, 309500
Background Concentrations	
NO _x	16.4µg/m ³
NO ₂	12.8µg/m ³
PM ₁₀	20.35µg/m ³
Outputs	
Annual Mean NO ₂	34.8µg/m ³
Annual Mean PM ₁₀	38.6µg/m ³
No. of exceedences of the 50µg/m ³ PM ₁₀ objective.	70

Wisbech - Norwich Road/Churchill Road Junction

DMRB v 1_01 calculation for Churchill Road.	
Receptor	Napier Court
Distance from link 1	15.3m
AADT	19000 (7% HDV)
Average speed	15kph
Road type	A
Distance from link 2	15.5
AADT	8470 (1% HDV)
Average speed	10
Road type	B
Background Year	2005
Background Grid Square	546500, 309500
Background Concentrations	
NO _x	17.2µg/m ³
NO ₂	13.5µg/m ³
PM ₁₀	21.0µg/m ³
Outputs	
Annual Mean NO ₂	25.7µg/m ³
Annual Mean PM ₁₀	28.6µg/m ³
No. of exceedences of the 50µg/m ³ PM ₁₀ objective.	23

Wisbech – Weasenham Lane/Churchill Road/Ramnoth Road/ Elm High Road Junction

DMRB v 1_01 calculation for Churchill Road.	
Receptor	Post Office, Newcommon Bridge Road
Distance from link 1	12.5m
AADT	19000 (7% HDV)
Average speed	5kph
Road type	A
Distance from link 2	25.6
AADT	7260 (10% HDV)
Average speed	5
Road type	B
Distance from link 3	4.4
AADT	5930 (2% HDV)
Average speed	15
Road type	B
Background Year	2005
Background Grid Square	546500, 308500
Background Concentrations	
NO _x	16.4µg/m ³
NO ₂	12.8µg/m ³
PM ₁₀	20.35µg/m ³
Outputs	
Annual Mean NO ₂	33.8µg/m ³
Annual Mean PM ₁₀	37.0µg/m ³
No. of exceedences of the 50µg/m ³ PM ₁₀ objective.	61

Whittlesey – Whitmore Street(A605)/Orchard Road Roundabout

DMRB v 1_01 calculation for A605.	
Receptor	30 Whitmore Street
Distance from link 1	12.5
AADT	11350 (8% HDV)
Average speed	10kph
Road type	A
Distance from link 2	12.5
AADT	9275 (4% HDV)
Average speed	10
Road type	B
Background Year	2005
Background Grid Square	526500, 297500
Background Concentrations	
NO _x	15.6µg/m ³
NO ₂	12.25µg/m ³
PM ₁₀	20.35µg/m ³
Outputs	
Annual Mean NO ₂	26.0µg/m ³
Annual Mean PM ₁₀	29.1µg/m ³
No. of exceedences of the 50µg/m ³ PM ₁₀ objective.	24

The DMRB screening suggests that the Freedom Bridge Roundabout and the Churchill Road / Weasenham Lane junction are exceeding the objective for daily means and that they are close to exceeding the annual mean objective. Therefore, the Council will proceed to a further detailed assessment of PM₁₀ in Wisbech.

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

No change since previous R & A.

F) New roads constructed or proposed since last round of R&A

A47 Thorney Bypass – The traffic flow on the A47 is not expected to increase significantly. If the summer months significantly raise the AADT, then DMRB screening will be carried out to determine whether receptors at Thorney Toll require Detailed Assessment.

G) Roads with significantly changed traffic flows, or new relevant exposure

No change since previous R & A.

H) Roads close to the objective during the second round of Review and Assessment

No roads identified at last round of Review and Assessment.

I) New industrial sources.

Garden Isle are applying for a LAPPC permit to operate their new boiler furnace under PG note 1/3(95) [as amended by AQ23 (04)] the boiler will mostly burn gas and therefore is not expected to exceed the objective.

J) Industrial sources with substantially increased emissions, or new relevant exposure

No change since previous R & A.

K) Areas of domestic solid fuel burning

No area where solid fuel is the primary source of heating in Fenland.

L) Quarries / landfill sites / opencast coal / handling of dusty cargoes at ports etc

No change since previous R & A.

M) Aircraft

No change since previous R & A.

6.0 Huntingdonshire District Council.

Summary.

Pollutant	Exceedence Observed/predicted	Existing AQMA	Proposed AQMA	Proposed DA
Benzene	No	No	No	No
1,3 Butadiene	No	No	No	No
Carbon Monoxide	No	No	No	No
Lead	No	No	No	No
Nitrogen Dioxide	Yes	Yes	Yes	No
Fine Particles (PM ₁₀)	No	No	No	No
Sulphur Dioxide	No	No	No	No

6.1 Checklist for Carbon Monoxide (CO)

A) Monitoring data

No monitoring of CO has been carried out.

B) Very busy roads or junctions in built-up areas

There are no roads with flows in excess of 80,000vpd.

6.2 Checklist for Benzene (C₆H₆)

A) Monitoring data outside an AQMA

Yes, a diffusion tube survey was carried out in 2004 at dwellings close to a landfill site. Annual mean results are shown below.

Tube Location	Benzene $\mu\text{g}/\text{m}^3$.
Warboys Landfill	1.0
Woodview (Dwelling)	0.9
Wingate (Dwelling)	1.0

B) Monitoring data within an AQMA

No monitoring of benzene has been carried out inside any AQMAs.

C) Very busy roads or junctions in built up areas

There are no roads with flows in excess of 80,000vpd.

D) New industrial sources

There are no new industrial sources

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

There are no industrial sources of this nature.

F) Petrol stations

There are no petrol filling stations that meet the criteria described in LAQM. TG(03) Box 3.2 (D).

G) Major fuel storage depots (petrol only)

There are no fuel storage depots.

6.3 Checklist for 1,3-butadiene (C₄H₆)

A) Monitoring data

No monitoring of 1, 3-butadiene has been carried out.

B) New industrial sources.

There are no new industrial sources which emit 1, 3-Butadiene.

C) Industrial sources with substantially increased emissions, or new relevant exposure

One industrial source was considered in the 2003 USA and its emissions were found to be extremely low. Their emissions have since reduced.

6.4 Checklist for Lead (Pb)

A) Monitoring data

No monitoring of Lead has been carried out.

B) New industrial sources

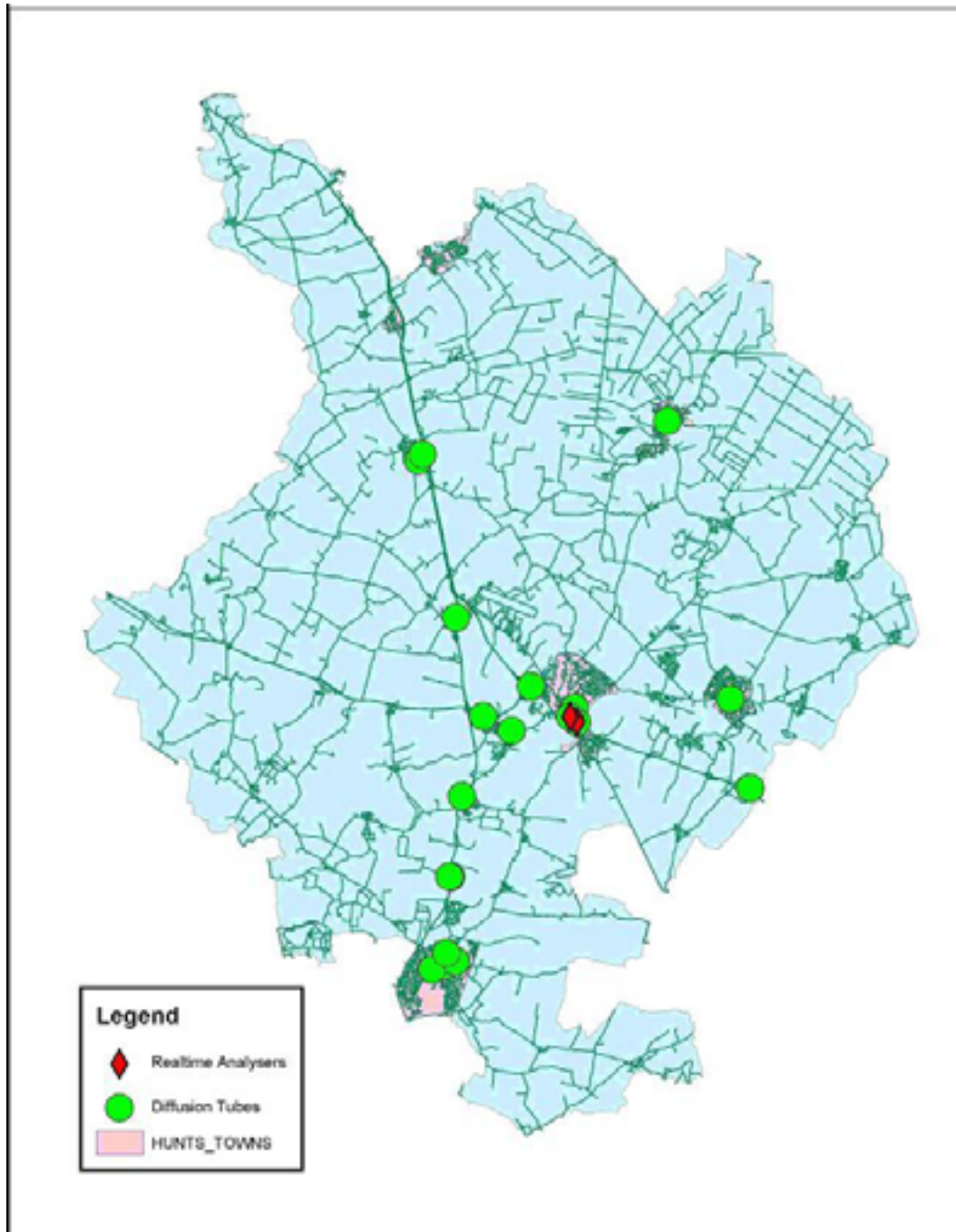
There are no new industrial sources.

C) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources of this nature.

6.5 Checklist for Nitrogen Dioxide (NO₂)

Map of NO₂ Diffusion Tube Locations in Huntingdonshire



Maps reproduced from the Ordnance Survey Mapping with the permission of the Controller of Her Majesty's Officer (C) Crown Copyright. Unauthorised reproduction infringes Crown Copyright and made lead to prosecution or civil proceedings. HDC 10002322.

A) Monitoring data outside an AQMA

Yes. There are seventeen diffusion tube sites and one real-time monitoring station that are located outside AQMAs. The diffusion tube values have been multiplied by a bias correction factor obtained from the AQR&A Helpdesk at UWE. The diffusion tubes are supplied by Harwell Scientifics and are 50% TEA in Acetone. The bias correction factor was derived from ten sets of diffusion tubes which were collocated with real-time analysers in 2005 and is known as the 'February Update'. The factor was 0.93.

The prediction of 2010 concentrations was carried out using the Year Adjustment Calculator version 22A from www.airquality.co.uk.

2005 Annual mean NO₂ bias adjusted diffusion tube data and predicted 2010 data in µg/m³.		
Location	2005 Concentration	2010 Concentration
Brampton 1	26	22
Brampton 2	43	36
Southoe 1	24	20
Southoe 2	24	20
Godmanchester 1	32	27
Godmanchester 2 (triplicate mean)	25	22
Fenstanton	31	27
St Ives	28	24
Buckden	28	24
Alconbury	29	24
Sawtry 1	25	21
Sawtry 2	26	22
Ramsey	26	22
St Neots – The Paddocks	30	25
St Neots – Avenue Road	25	21
St Neots – Harland Road	23	19

The Diffusion tube at Brampton 2 indicated an exceedence of the annual mean objective in 2005. This location, however, has recently been the subject of a Detailed Assessment (DA) for NO₂. The DA is appended to this report and recommends declaration of an Air Quality Management Area.

The real-time monitoring location is at the District Council Depot, close to the elevated A14 in Godmanchester and data capture at this site was 96% for 2005. The measured annual mean was 28µg/m³ and there were no exceedences of the hourly objective. When this concentration is adjusted to predict the concentration in 2010 the result is 24µg/m³. Twice annual maintenance on the site was carried out by Thermo Electron. Twice annual Independent QA/QC on the monitoring site was carried out by Air Quality Monitoring Services Ltd and the instruments were consistently found to be responding well. Verification and ratification of data was carried out in house. Following the DA of NO₂ in 2005, diffusion tube locations were reviewed and some additional tubes deployed to improve coverage in areas where concentrations of NO₂ were thought to be close to the annual mean objective.

B) Monitoring data within an AQMA

Yes. There is a real-time analyser and three diffusion tubes within the Huntingdon AQMA and there is a real-time analyser and one diffusion tube within the St Neots AQMA.

2005 NO₂ monitoring data and predicted 2010 concentrations in µg/m³. All tube data bias adjusted and real-time data corrected.			
Location	Annual Mean 2005	Annual Mean 2010	Hourly exceedences
Huntingdon			
Pathfinder House Real-time Analyser	35	29	0
Pathfinder Tube	51	43	NA
Blethan Drive Tube	42	35	NA
Tennis Court Tube	36	30	NA
St Neots			
St Neots Real-Time Analyser	53	45	3
High Street Tube	42	35	NA

The real-time monitoring location in Huntingdon is at the Council's HQ, Pathfinder House, located on the Huntingdon Ring Road, and this analyser achieved 99% data capture for 2005. The measured annual mean was 35µg/m³ and there was no exceedence of the hourly objective. Twice annual maintenance on the site was carried out by Thermo Electron. Twice annual Independent QA/QC on the monitoring site was carried out by Air Quality Monitoring Services Ltd and the instruments were consistently found to be responding well. Verification and ratification of data was carried out in house.

The real-time monitoring location in St Neots is at the Cambridge Building Society in the High Street. Due to instrument and communications problems during 2005 only 45% data capture was achieved. The data was corrected, in accordance with box 6.5 in LAQM TG(03), using four monitoring locations from Cambridge City. All four sites in Cambridge were similar to the St Neots site, had good data capture rates and had been ratified.

Summary data is shown overleaf

Parameter	Site Names (All Cambridge City Council)			
	Parker Street	Gonville Place	Silver Street	Newmarket Road
Annual Mean $\mu\text{g}/\text{m}^3$	26	25	18	15
Period Mean $\mu\text{g}/\text{m}^3$	30	26	19	16
Ratio	0.88	0.95	0.95	0.98
Average Ratio	0.94			
Correction	$55.91(\text{St Neots Raw}) * 0.94 = 52.56\mu\text{g}/\text{m}^3$			

Maintenance on the site was carried out by Thermo Electron. Independent QA/QC on the monitoring site was carried out by Air Quality Monitoring Services Ltd. Verification and ratification of data was carried out in house.

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

Yes. Post Street, Godmanchester and Barford Road, St Neots.

DMRB inputs and outputs below:

DMRB v 1_01 calculation for Post Street, Godmanchester.	
Receptor	35 Post Street
Distance from link	5.4m
AADT	18072 (1% HDV)
Average speed	20kph
Road type	B
Background Year	2005
Background Grid Square	524500, 270500
Background Concentrations	
NO _x	27.6 $\mu\text{g}/\text{m}^3$
NO ₂	18.8 $\mu\text{g}/\text{m}^3$
PM ₁₀	21.3 $\mu\text{g}/\text{m}^3$
Outputs	
Annual Mean NO ₂	23.6 $\mu\text{g}/\text{m}^3$
Annual Mean PM ₁₀	24.4 $\mu\text{g}/\text{m}^3$
No. of exceedences of the 50 $\mu\text{g}/\text{m}^3$ PM ₁₀ objective.	11

DMRB v 1_01 calculation for Barford Road, St Neots.	
Receptor	33 Maule Close
Distance from link	12m
AADT	15864 (4% HDV)
Average speed	25kph
Road type	B
Background Year	2005
Background Grid Square	518500, 258500
Background Concentrations	
NO _x	19.9µg/m ³
NO ₂	15.4µg/m ³
PM ₁₀	21.2µg/m ³
Outputs	
Annual Mean NO ₂	21.1µg/m ³
Annual Mean PM ₁₀	24.1µg/m ³
No. of exceedences of the 50µg/m ³ PM ₁₀ objective.	10

D) Junctions

Yes. The junction of Houghton Road and Hill Rise in St Ives.

DMRB v 1_01 calculation for Houghton Road, St Ives.	
Receptor	1 Hill Rise
Distance from links	
Hill Rise	9.8m
Houghton Road	14.9m
AADT	
Hill Rise	6600 (2% HDV)
Houghton Road	19608 (3% HDV)
Average speed	15kph
Road type	B
Background Year	2005
Background Grid Square	523500, 272500
Background Concentrations	
NO _x	19.9µg/m ³
NO ₂	15.4µg/m ³
PM ₁₀	21.1µg/m ³
Outputs	
Annual Mean NO ₂	23.3µg/m ³
Annual Mean PM ₁₀	26.0µg/m ³
No. of exceedences of the 50µg/m ³ PM ₁₀ objective.	15

- E) Busy streets where people may spend 1-hour or more close to traffic**
Only those that have already been considered and are now in AQMAs.
- F) Roads with high flow of buses and/or HGVs**
Only those that have already been subject to Detailed Assessment of NO₂.
- G) New roads constructed or proposed since the previous round of R&A**
Rerouting of a section of the A14 does not yet have planning permission and the consultation process is currently subject to the process of judicial review.
- H) Roads with significantly changed traffic flows, or new relevant exposure**
There are no roads that meet the description given in LAQM. TG(03) Box 6.2
- I) Bus Stations**
There are no bus stations that meet the criteria described in LAQM. TG(03) Box 6.2 (J). The bus station at Huntingdon was screened in the 2003 USA and was modelled as part of the DA of NO₂ in 2005.
- J) New industrial sources**
There are no new industrial sources of NO₂.
- K) Industrial sources with substantially increased emissions, or new relevant exposure**
There are no industrial sources with increased emissions of NO₂.
- L) Aircraft**
There are no airfields/airports that approach the criteria described in LAQM. TG(03) Box 6.2 (M).

6.6 Checklist for Sulphur Dioxide (SO₂)

- A) Monitoring data outside an AQMA**
No monitoring of SO₂ has been carried out.
- B) Monitoring data within an AQMA**
No monitoring of SO₂ has been carried out.
- C) New industrial sources**
There are no new industrial sources of SO₂.

D) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources of SO₂ with increased emissions or new relevant exposure. The two sources of SO₂ identified in the previous two rounds of USA were contacted and their usage figures checked.

E) Areas of domestic coal burning

These areas were considered in the 2003 USA and screened out as comfortably below the criteria in LAQM. TG(03) Box 7.2 (E).

F) Small Boilers > 5 MW (thermal)

No new sources have appeared since the comprehensive review of fuel usage carried out for the first review and assessment.

G) Shipping

Not applicable

H) Railway Locomotives

There are no relevant receptors within 15m of any sidings.

6.7 Checklist for PM₁₀

A) Monitoring data outside an AQMA

Yes, there is a beta attenuator located at the District Council Depot, close to the elevated A14 in Godmanchester and data capture at this site was 96% for 2005. Data from this analyser was subject to a 1.3 correction factor to allow for loss of volatiles from the heated inlet.

The annual mean gravimetric equivalent for PM₁₀ for 2005 was 24µg/m³. There were 11 exceedences of the 24 hour mean objective. The predicted concentration for 2010 is calculated using the method in LAQM TG(03) Box 8.6 and the new fractions backgrounds and adjustment factors from the www.airquality.co.uk website.

For Godmanchester this is shown overleaf

Parameter	µg/m³
2005 Measured annual mean	24
2005 Residual	5.8
2005 Primary	7.9
2005 Secondary	10.3
2010 Residual	5.8
2010 Primary	$7.6 * (0.9247 / 1.0174) = 6.9$
2010 Secondary	$10.3 * (0.8522 / 0.9754) = 9.0$
2010 Predicted annual mean	$5.8 + 6.9 + 9.3 = 21.7$

Unfortunately the beta attenuator commissioned at the beginning of 2005 on the Huntingdon Inner Ring Road developed a systemic fault that has affected all the data captured by an inconsistent amount and this data is unusable.

B) Monitoring data within an AQMA

No.

C) Busy roads and junctions in Scotland

Not applicable.

D) Junctions

Yes, See DMRB for St Ives above.

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

Yes, screened out with wide margins for error in the 2003 USA

F) New roads constructed or proposed since last round of R&A

Rerouting of a section of the A14 does not yet have planning permission and the consultation process is currently subject to the process of judicial review.

G) Roads with significantly changed traffic flows, or new relevant exposure.

There are no roads that meet this description.

H) Roads close to the objective during the second round of Review and Assessment

There were no roads that were close to the objective that were not taken forward to DA following the Progress Report in 2004.

I) New industrial sources

There are no significant new industrial sources.

J) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources that meet this description.

K) Areas of domestic solid fuel burning

These areas were considered in the 2003 USA and screened out as comfortably below the criteria in LAQM. TG(03) Box 7.2 (E).

L) Quarries / landfill sites / opencast coal / handling of dusty cargoes at ports etc

No.

M) Aircraft

There are no airfields/airports that approach the criteria described in LAQM. TG(03) Box 8.4 (M).

7.0 South Cambridgeshire District Council.

Summary

Pollutant	Exceedence Observed/predicted	Existing AQMA	Proposed AQMA	Proposed DA
Benzene	No	No	No	No
1,3 Butadiene	No	No	No	No
Carbon Monoxide	No	No	No	No
Lead	No	No	No	No
Nitrogen Dioxide	Yes	No	No	Yes
Fine Particles (PM ₁₀)	Yes	No	No	Yes
Sulphur Dioxide	No	No	No	No

7.1 Checklist for Carbon Monoxide (CO)

A) Monitoring data

There is no monitoring undertaken for this pollutant in South Cambs.

B) Very busy roads or junctions in built-up areas

There are no roads exceeding the thresholds defined in LAQM.TG(03) in South Cambs.

7.2 Checklist for Benzene (C₆H₆)

A) Monitoring data outside an AQMA

There is no monitoring undertaken for this pollutant in South Cambs.

B) Monitoring data within an AQMA

There are no AQMA's for this pollutant in South Cambs.

C) Very busy roads or junctions in built up areas

There are no roads exceeding the thresholds defined in LAQM.TG(03) in South Cambs.

D) New industrial sources

There are no new industrial processes which emit significant quantities of benzene in South Cambs.

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

Not applicable.

F) Petrol stations

There are no locations in South Cambs that meet the relevant criteria described in LAQM.TG(03) Box 3.2 (D).

G) Major fuel storage depots (petrol only)

There are no major fuel storage depots in South Cambs.

7.3 Checklist for 1,3-butadiene (C₄H₆)

A) Monitoring data

There is no monitoring undertaken for this pollutant in South Cambs.

B) New industrial sources.

There are no new industrial processes which emit significant quantities of 1,3 butadiene in South Cambs.

C) Industrial sources with substantially increased emissions, or new relevant exposure

Not applicable.

7.4 Checklist for Lead (Pb)

A) Monitoring data

There is no monitoring undertaken for this pollutant in South Cambs.

B) New industrial sources.

There are no new industrial processes which emit significant quantities of lead in South Cambs.

C) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources with substantially increased emissions of lead in South Cambs.

7.5 Checklist for Nitrogen Dioxide (NO₂)

Map of NO₂ Diffusion Tube Locations in South Cambridgeshire



A) Monitoring data outside an AQMA

Yes. There are twelve diffusion tube sites and two real-time monitoring stations that are located outside AQMA's. The diffusion tube values have been multiplied by a bias correction factor obtained from the AQR&A Helpdesk at UWE. The diffusion tubes are supplied by Harwell Scientifics and are 50% TEA in acetone. The bias correction factor was derived from ten sets of diffusion tubes which were collocated with real time analysers in 2005 and is known as the 'February Update'. The factor was 0.93. The prediction of 2010 concentrations was carried out using the Year Adjustment Calculator version 22A from www.airquality.co.uk.

2005 Annual Mean NO₂ Bias Corrected Diffusion Tube Data in µg/m³		
Location	2005 Concentration	2010 Concentration
The Coppice, Impington	25.0	21.0
The Gables, Histon	36.4	30.6
Narrow Lane, Histon	20.3	17.1
High St, Sawston	36.5	30.7
Paddock Way, Sawston	19.4	16.3
Linton	29.8	25.1
Tadlow	16.2	13.6
Harston	29.9	25.2
Milton	21.8	18.3
Girton	41.8	35.2
Thriplow	27.7	23.3
Lone Tree Avenue, Impington	27.3	23.0

The diffusion tube at Girton indicated an exceedence of the annual mean objective. This location, however, is currently the subject of a Detailed Assessment (DA) for NO₂. The DA is due to be completed later in 2005 and it is likely that it will recommend the declaration of an air quality management area.

The two locations at which real-time monitoring is carried out are at Bar Hill and Impington, both sites are adjacent to the A14 trunk road. At Bar Hill data capture was 90.4% for 2005. The measured annual mean was **42 µg/m³** and there were no exceedences of the hourly objective. At Impington data capture was 92.4% for 2005. The measured annual mean was 31µg/m³ and there was one exceedence of the hourly objective. Thermo Electron provides maintenance at both sites. Netcen provides quality control services consisting of six monthly quality control audits of the monitoring station equipment and data management services.

Following the DA of NO₂ in Sawston and Histon in 2005 diffusion tube locations were reviewed and some additional tubes deployed to extend coverage to areas where more information was deemed appropriate. These results will be reported in future years.

B) Monitoring data within an AQMA

No declarations have been made in South Cambs to date however both the real time monitor at Bar Hill and the diffusion tube at Girton (reported above) measured annual means above the objective.

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

There have been no significant changes in traffic flows or new receptors since the last review.

D) Junctions

These were assessed during the last updating and screening assessment, there have been no significant changes in traffic or relevant receptors introduced at these locations.

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

These were assessed during the last updating and screening assessment. The diffusion tube-monitoring network has been extended to give better coverage to these areas and preliminary results show no exceedences of the annual mean air quality objective.

F) Roads with high flow of buses and/or HGVs.

Such roads have been the subject of a detailed assessment for nitrogen dioxide.

G) New roads constructed or proposed since the previous round of R&A

There have been 3 new roads proposed since the last round of R&A. The A428 dualling between Cambridge and Caxton, the A14 upgrading and the new access roads to Northstowe the proposed new town north of Cambridge. Of these planning permission has not been granted for the A14 and it is currently the subject of a judicial review. An Environmental Statement for the new access road to Northstowe has shown that there is unlikely to be any exceedence of the objective. The A428 dualling is currently under construction. The new route takes traffic further away from sensitive receptors and whilst there is estimated to be a significant increase in flows it is unlikely that there will be an exceedence of the objective at a sensitive receptor.

H) Roads with significantly changed traffic flows, or new relevant exposure

The Cambridgeshire Traffic Monitoring report 2005 indicated that there are no roads that have experienced “large” increases in traffic (greater than 25%) since the last round of R&A.

I) Bus Stations

There are no bus stations operating in South Cambs that are above the threshold defined in LAQM.TG(03) Update.

J) New industrial sources

There are no new industrial sources of nitrogen dioxide within the District.

K) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources with significantly increased emissions of NO₂ within the District.

L) Aircraft

There have been no significant increase in aircraft movements at Cambridge Airport since the last round of R&A.

7.6 Checklist for Sulphur Dioxide (SO₂)

A) Monitoring data outside an AQMA

There is one real time monitor in South Cambs located at the Fruit Farm, Barrington. Netcen scale and ratify the data at this site and Thermo Electron service and maintain the equipment. Data capture for 2005 was 78.1% with 3 significant periods of down time due to an analyser fault. As this did not meet the defra standard of 90% for ratified data sets comparisons of the descriptive statistics with legislative objectives should be treated with caution.

Measurement	Concentration µg/m ³
Maximum 15 minute mean [99.9th percentile]	21 [13]
Maximum one hour mean [99.7th percentile]	19 [11]
Maximum 24 hour mean [99th percentile]	6 [5]
Annual Mean	1

It is unlikely that any of the objectives for sulphur dioxide were exceeded at this location.

B) Monitoring data within an AQMA

There are no AQMA's for Sulphur Dioxide in South Cambs.

C) New industrial sources.

There are no new industrial sources of sulphur dioxide.

D) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources with significantly increased emissions of sulphur dioxide or with new relevant exposure in South Cambs.

E) Areas of domestic coal burning

These areas were considered in the 2003 USA and did not exceed the threshold for further investigation defined in LAQM.TG(03)Box7.2(E).

F) Small Boilers > 5 MW (thermal).

No new sources have been identified since the comprehensive review of fuel usage carried out during the first round review and assessment.

G) Shipping

This is not applicable to South Cambs area.

H) Railway Locomotives

There are no relevant receptors within 15 metres of any rail sidings.

7.7 Checklist for PM₁₀

A) Monitoring data outside an AQMA

There are 2 beta attenuator monitors located in South Cambs. One at Bar Hill and one at Impington, both adjacent to the A14. Thermo Electron provide maintenance at both sites and netcen are contracted for data management and ratification purposes.

At Bar Hill the data capture for 2005 was 93%. The annual mean gravimetric equivalent was 29 µg/m³ and there were 25 recorded exceedences of the objective.

At Impington the data capture was very low at 42%. However when corrected the mean concentration was 42 µg/m³ gravimetric equivalent, 37 exceedences of the objective were recorded over the measurement period.

The predicted concentration for 2010 was calculated using the year adjustment calculator spreadsheet and the principles outlined in Box 8.6 from LAQM.TG(03).

Parameter	Impington	Bar Hill
Measured annual mean 2005 grav equiv	42	29
2004 secondary part from bkgd maps	10.6	10.6
Secondary part. Adj to 2005 (yr adj calc)	10.34	10.34
2005 residual PM ₁₀	5.8	5.8
2005 Primary PM ₁₀	25.86	12.86
2010 Primary PM ₁₀	23.5	11.69
2010 Secondary PM ₁₀	9.03	9.03
2010 Residual PM ₁₀	5.8	5.8
2010 Predicted Annual Mean PM ₁₀	38.3	27.0

A detailed assessment of PM₁₀ is expected to be completed soon.

B) Monitoring data within an AQMA

There are no declared AQMA's for PM₁₀ in South Cambs

C) Busy roads and junctions in Scotland

Not applicable to this assessment.

D) Junctions.

These were assessed during the last updating and screening assessment, there have been no significant changes in traffic or relevant receptors introduced at these locations.

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

Such roads have been the subject of a detailed assessment for PM₁₀

F) New roads constructed or proposed since last round of R&A

There have been 3 new roads proposed since the last round of R&A. The A428 dualling between Cambridge and Caxton, the A14 upgrading and the new access roads to Northstowe the proposed new town north of Cambridge. Both the A428 and Northstowe access routes are unlikely to contribute to an exceedence of the air quality objectives.

The A14 upgrading does not have planning permission and is currently the subject of a judicial review.

G) Roads with significantly changed traffic flows, or new relevant exposure.

The Cambridgeshire Traffic Monitoring report 2005 indicated that there are no roads that have experienced “large” increases in traffic (greater than 25%) since the last round of R&A.

H) Roads close to the objective during the second round of Review and Assessment

These roads were taken forward to detailed assessment in the last updating assessment.

I) New industrial sources.

There are no new significant industrial sources.

J) Industrial sources with substantially increased emissions, or new relevant exposure

There are no industrial sources that meet this description.

K) Areas of domestic solid fuel burning

These areas were considered in the 2003 USA and did not exceed the threshold for further investigation defined in LAQM.TG(03)Box7.2(E).

L) Quarries / landfill sites / opencast coal / handling of dusty cargoes at ports etc.

These were assessed and screened out during the last USA 2003. One quarry has since submitted an application to expand but environmental assessment has shown that there will be no significant effect at the nearest relevant receptor.

M) Aircraft

There has been no significant increase in operations at the airport since the last round of R&A.

Appendix 1

2005 Progress Report for the SO₂ and PM₁₀ AQMAs in Wisbech

ENVIRONMENT ACT 1995 PART IV

**AN ACTION PLAN IN PURSUIT
of the
AIR QUALITY OBJECTIVES
in
WISBECH**

PROGRESS REPORT NUMBER 3

January 2005 – December 2005



Executive Summary

This progress report covers the period 1 January 2005 to 31 December 2005.

There has been an overall improvement in air quality in Wisbech in the period covered by this progress report compared with the previous one. It appears that there is current compliance with the hourly mean and daily mean sulphur dioxide air quality limit values, but not with the domestic fifteen minute mean air quality objective. Data capture rates are too low to determine whether or not the PM10 air quality limit value is being complied with but this seems unlikely. The Council is currently addressing this problem, which has arisen because of hardware and data collection software problems in 2005. Addressing this issue has meant the purchase of completely new software, which in turn has led to a total loss of data for at least three months (December 2005 to February 2006). Data capture in 2006 is therefore unlikely to be of suitable quality to determine compliance or otherwise with objectives in the 2006 progress report.

The next progress report will cover the period 1st January 2006 to 31st December 2006.

Background

In 2003, the Department for Environment, Food and Rural Affairs (DEFRA) issued new Local Air Quality Management (LAQM) Policy Guidance to Local Authorities. An extract from the guidance document (LAQM.PG (03)) says: -

“1.76 Local authorities should note the need to submit an action planning

Progress Report following completion of the final action plan. Once a local authority has produced its final action plan, it will generally need to submit a first Progress Report by the end of the following April. In some cases, where this Progress Report would only cover a period of a few months, the requirement to produce a first Progress Report may be waived. Thereafter, Progress Reports will need to be submitted by end of April every year. These reports are to be submitted to DEFRA, the Mayor of London and the National Assembly for Wales to update them on progress on implementing the measures (see paragraph 3.36 in chapter 3 and Appendix B)”.

Introduction

The paragraphs below are copied from the Air Quality Action Plan, and show the various actions expected from the various stakeholders in pursuit of the Air Quality Objectives. It has been acknowledged that the Council has very few powers to exercise in pursuit of the objectives.

Planned Actions by Fenland District Council

<i>Details of Actions</i>	<i>Timing of Actions</i>
Continuous air quality monitoring in Wisbech	Current, and to continue for the foreseeable future
Ensure compliance with the dark smoke emission requirements of the Clean Air Act 1993	Current, and to continue for the foreseeable future
Investigate and deal with complaints of statutory nuisance where appropriate	Current, and to continue for the foreseeable future
Consultation, liaison and co-operation with the process operator	Current, and to continue for the foreseeable future
Statutory consultation with the Environment Agency during the IPPC permitting process. Aimed at seeking compliance with the 15 minute mean Sulphur Dioxide objective	Early in 2005
On-line air quality forecasting and dissemination of air quality information	Start in summer of 2002 and to continue for the foreseeable future

Actions expected from the Environment Agency

<i>Details of Actions</i>	<i>Timing of Actions</i>
Consult with Fenland District Council on the process operator's application for a permit under IPPC	Current and to continue to application date, early 2005 at the latest
Issue a permit for the process	April 2006
Ensure compliance with emission limits in accordance with the conditions of the permit	As soon as is possible after permitting

Actions undertaken or under discussion with the process operator

<i>Details of Actions</i>	<i>Timing of Actions</i>
Retrofitting of variable speed fans and coal feed screws to boilers 1 and 2 and minimising fugitive emissions from coal handling	Completed 2001/2
Emissions monitoring	Completed 2000/1
Low sulphur coal burning trials	Completed 2000/1
Longer term low sulphur coal burning trials with emissions monitoring	Process operator now using imported low sulphur coal on a long term basis.

Progress**Planned Actions by Fenland District Council****Monitoring**

Automatic monitoring of Sulphur Dioxide and Fine Particles PM₁₀ is continuing within the two air quality management areas in Wisbech although there have been major problems with equipment reliability.

Clean Air Act and Statutory Nuisance

The Council continues to monitor the installation with respect to these two statutory functions.

Liaison with the Process Operator

The Council continues to liaise closely with the process operator, particularly in the areas of air quality monitoring and the continuing burning of low sulphur coal.

Consultation with the Environment Agency

The Council continues to liaise regularly with the Agency regarding the results of Local Air Quality Management and monitoring. Statutory consultation began when the process operator submitted an application for a PPC Permit.

Air Quality Forecasting

5 day ahead air quality forecasting is now published daily on the internet and can be viewed at <http://www.metoffice.com/environment/aq/cambs/cambs/html> . Point source emissions are not yet included in the forecast, but are planned to be included in the future.

Actions expected from the Environment Agency

Month	Daily Means >50ug/m3 (35 allowed in a year)	Data Capture %
Jan 05	1	76
Feb 05	1	100
Mar 05	6	100
Apr 05	2	100
May 05	0	45
June 05	3	84
Jul 05	4	100
Aug 05	4	93
Sep 05	4	100
Oct 05	6	95
Nov 05	0	66
Dec 05	No Data	0

Actions by the Environment Agency will not commence until the PPC permitting process commences in 2005. The PPC Permit Application has now been duly made and the issue of a Permit is

expected in April 2006.

Actions undertaken or under discussion with the process operator

Coal Screw Feeds and Fans

During the period covered by this Progress Report, the operator has continued with the programme of fitting variable speed fans and coal screw feeds to the boilers. At the date of this report, the retrofitting programme is complete on all six boilers. It is thought that these actions may have had an impact on ambient concentrations of PM₁₀. Table 1 below shows the statistics for monthly monitoring for the period covered by this Progress Report.

PM₁₀ Monitoring in Wisbech Table 1

Low sulphur coal burning.

This is considered essential if all three of the air quality objectives and limit values are to be achieved. Over the period covered by this Progress Report, apart from the month of January 2005, the operator has maintained continuity of supply of low sulphur coal from Russian and Colombian suppliers, leading to complete compliance for the 10 months that monitoring data are available for. Table 2 below shows the statistics for monthly monitoring for the period covered by this Progress Report.

Sulphur Dioxide Monitoring in Wisbech Table 2

Month	No 15 Minute Means >266ug/m3	No Hourly Means >350ug/m3	No Daily Means >125ug/m3	Data Capture %
Jan 05	80	7	1	96
Feb 05	0	0	0	98
Mar 05	0	0	0	98
Apr 05	0	0	0	100
May 05	0	0	0	94
June 05	0	0	0	98
Jul 05	0	0	0	96
Aug 05	0	0	0	91
Sep 05	0	0	0	46
Oct 05	0	0	0	88
Nov 05	0	0	0	98
Dec 05	No Data	No Data	No Data	0

Emissions Abatement

The operator submitted an IPPC Permit application by 31st March 2005. This application contained proposals for the installation of wet caustic scrubbing to four base load boilers by the 31 December 2006. The preliminary specification for this plant is to reduce sulphur dioxide emissions to 20mg/Nm³ and particles emissions to 50mg/Nm³. Emissions are currently about 3800mg/Nm³ for sulphur dioxide and 300mg/Nm³ for particles. These proposals, when implemented will further contribute to compliance with the relevant air quality objectives and limit values, and have the added advantage of substantial heat recovery (1350kwh per boiler).

Compliance with the Air Quality Objectives

Table 3 below shows the air quality monitoring statistics in the air quality management areas in Wisbech for the period covered by this progress report and the two previous reports

Table 3

Year Ending End of month	SULPHUR DIOXIDE				PM 10		
	No 15 Minute Means >266ug/m ³ (35 allowed)	No Hourly Means >350ug/m ³ (24 allowed)	No Daily Means >125ug/m ³ (3 allowed)	Data Capture %	Daily Means >50ug/m ³ (35 allowed)	Annual Mean (Limit is 40ug/m ³)	Data Capture %
Dec 02	762	135	14	93	41	31.1	95
Dec 03	41	0	1	91	77	37.0	84
Dec 04	169	7	2	79	32	31.8	63
Dec 05	80	7	1	83	32	28.4	79

The situation regarding compliance, particularly in respect of the sulphur dioxide air quality limit values and objectives, is much improved during the period covered by these progress reports.

The monitoring station is located at the (modelled) predicted highest area of ground level concentrations. Despite the lower than desired monitoring data capture rates, it seems likely that there is current compliance with the hourly mean and daily mean sulphur dioxide air quality limit values.

The domestic fifteen minute mean sulphur dioxide air quality objective is obviously not being complied with at present, but it is anticipated that with uninterrupted usage of low sulphur coal and abatement to 4 base load boilers, this situation will improve.

The annual mean PM₁₀ limit value is currently being met as it always has been. (The AQMAs were not declared in respect of this air quality limit value).

The daily mean PM₁₀ limit value may or may not be met. Poor monitoring data capture rates mean that the position regarding this air quality limit value is unclear.

Further Action by the Council

The Council will continue to monitor ambient air quality in Wisbech and will strive to achieve data capture rates that will enable compliance (or otherwise) with the air quality limit values and objectives to be properly assessed.

The operator will shortly be issued a IPPC Permit for the installation. The Permit will ensure compliance with all the EUDD air quality limit values either at the time of issue or in line with an improvement programme, but not necessarily the domestic fifteen minute mean sulphur dioxide air quality objective. In respect of this later objective, the Council will continue to liaise closely with the operator in an attempt to ensure they continue to work towards compliance.

Once the PPC Permit is issued and the abatement equipment installed, the Council will carry out further modelling work to reassess the extent of any exceedence of the air quality objectives. Model predictions will not be able to be confirmed by monitoring data until at least the end of 2007.

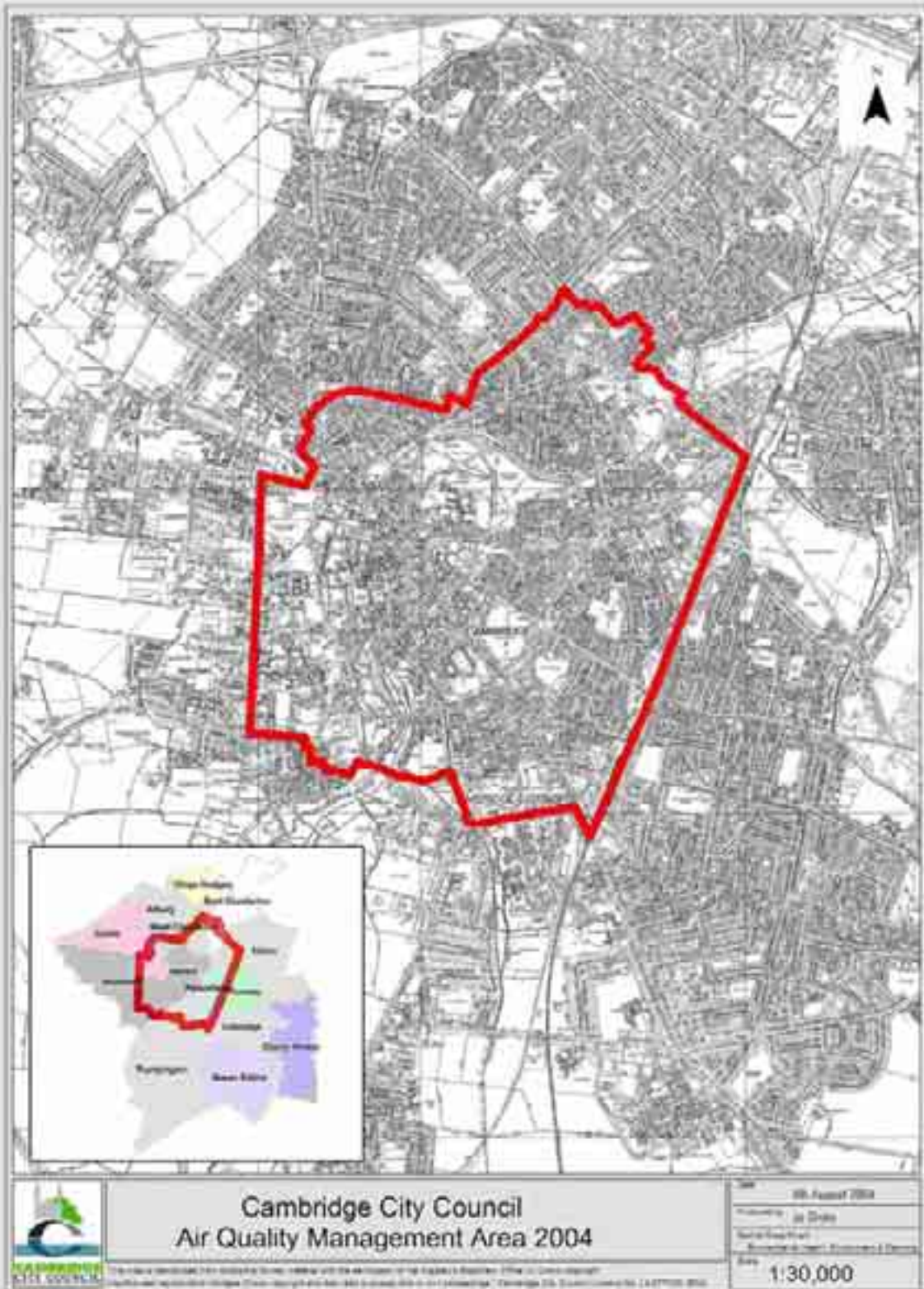
Conclusions

There has been an overall improvement in air quality in Wisbech in the period covered by progress reports issued since the original declaration of the air quality management areas. It appears that there is current compliance with the hourly mean and daily mean sulphur dioxide air quality limit values, but not with the fifteen minute mean air quality objective. Data capture rates are too low to determine whether or not the PM10 air quality limit value is being complied with.

The next progress report will cover the period 1st January 2006 to 31st December 2006.

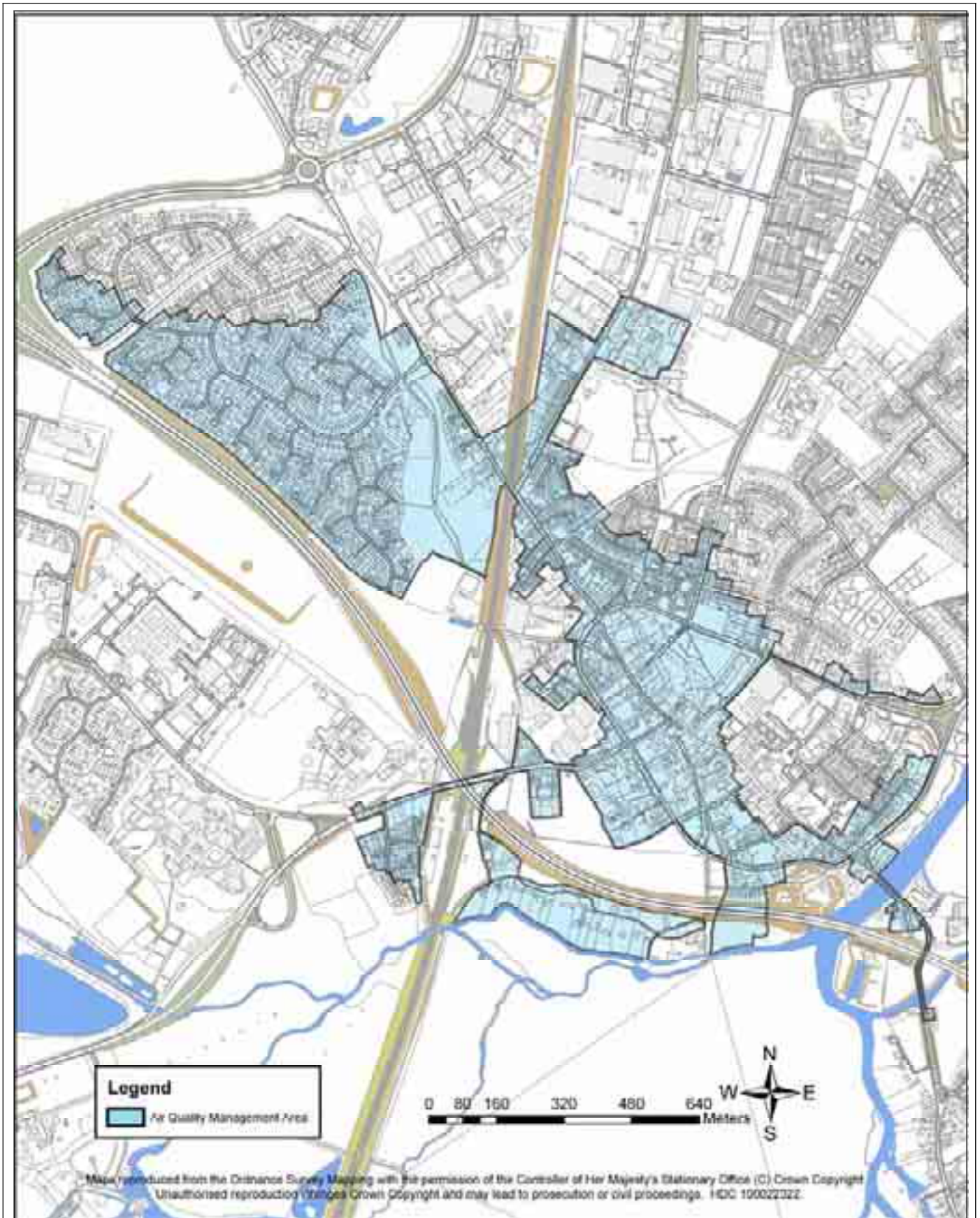
Appendix 2

Cambridge City Council Air Quality Management Area for NO₂



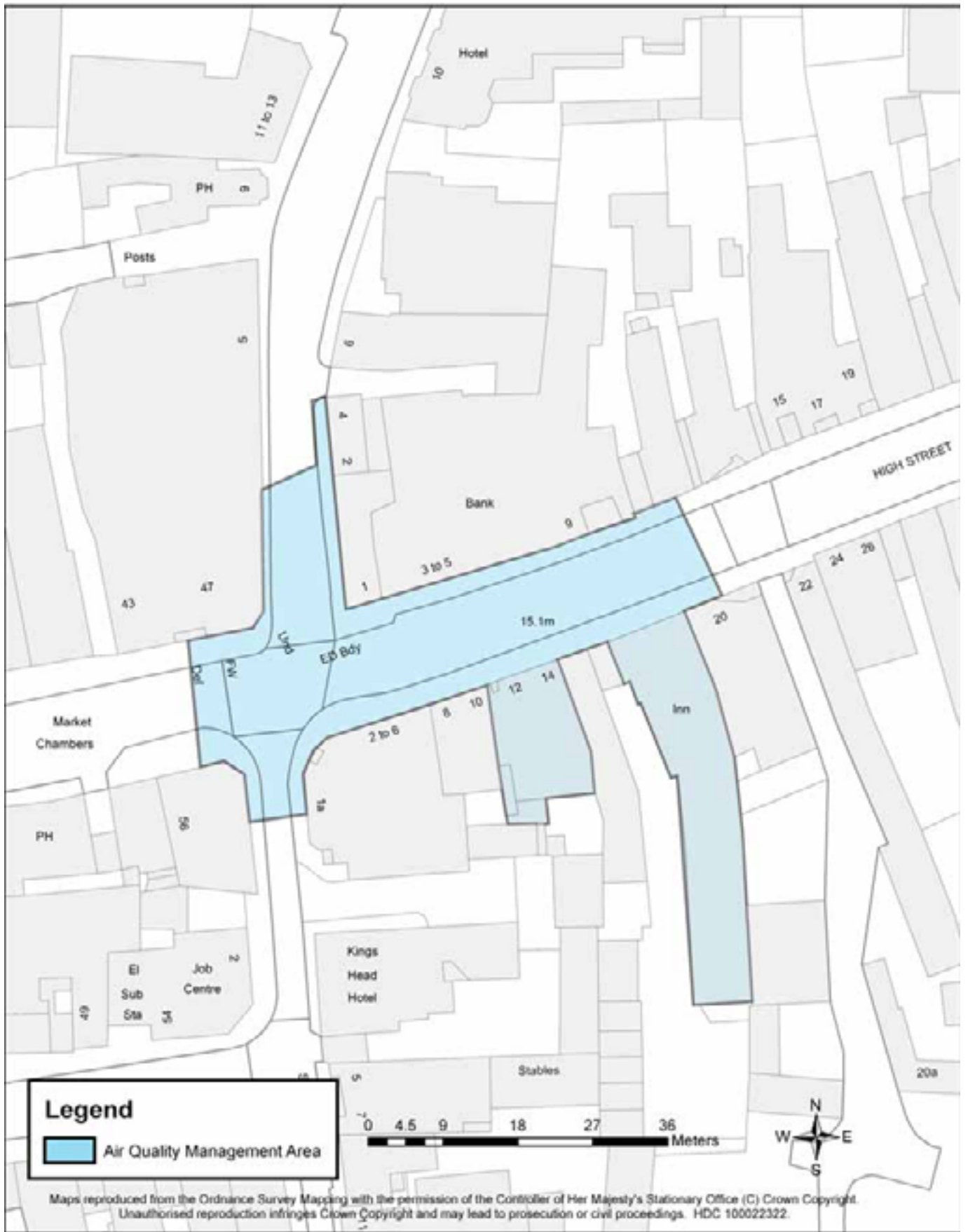
Appendix 3

The Huntingdon Air Quality Management Area for NO₂



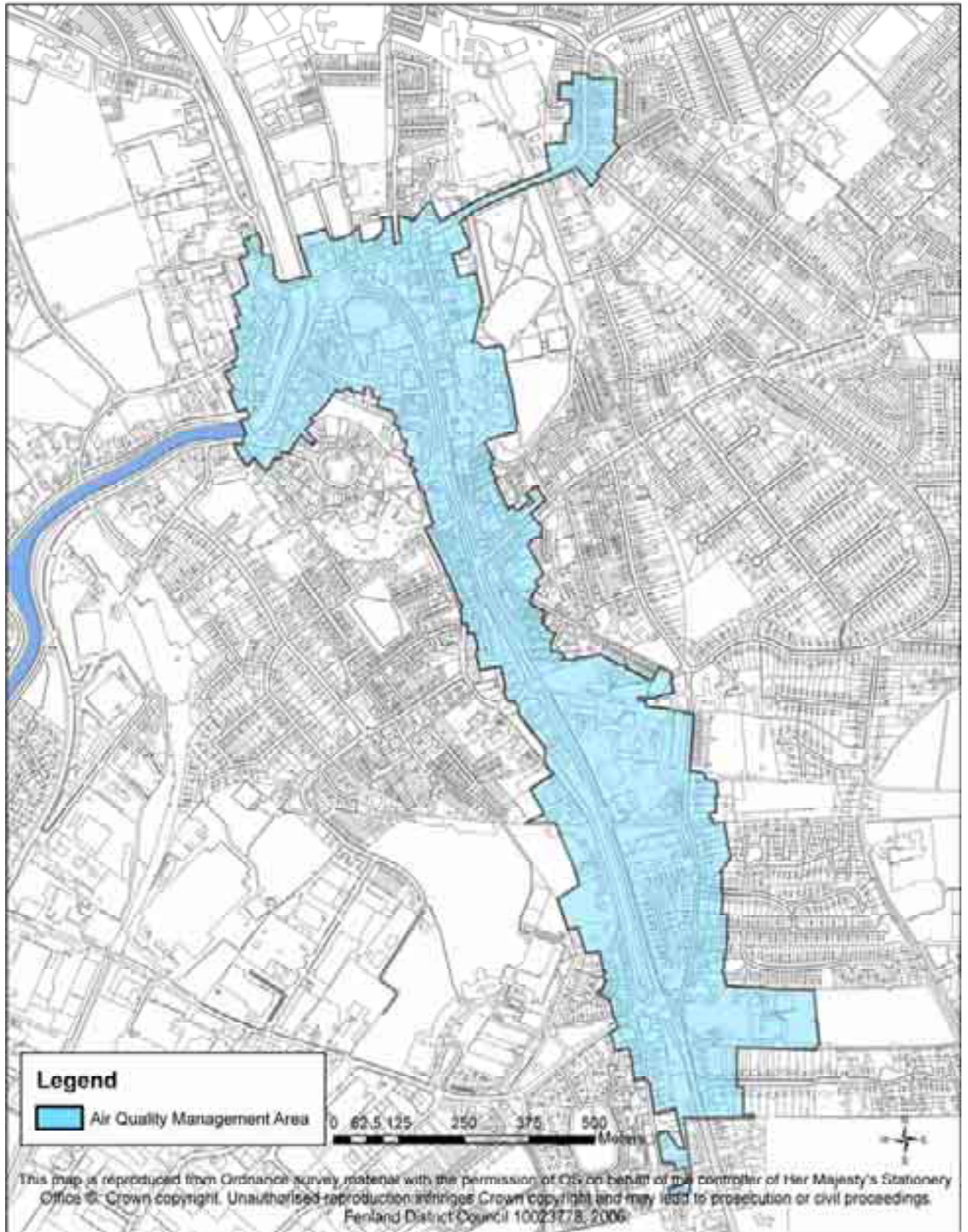
Appendix 4

The St Neots Air Quality Management Area for NO₂



Appendix 5

The Wisbech Air Quality Management Area for NO₂ (Fenland)



Appendix 6

Detailed Assessment of NO₂ in the A1 and A14 corridors in Huntingdonshire

Contents

Section	Page Number
1.0 Introduction	88
2.0 Dispersion Modelling	90
3.0 Detailed Assessment of Scenario 2	92
4.0 Detailed Assessment of Scenario 3	96
5.0 Detailed Assessment of Scenario 4	100
6.0 Conclusion	105

List of Figures	Page Number
3.1 Map of Study Area 2	92
4.1 Map of Study Area 3	96
4.2 Area of Exceedence and Proposed Air Quality Management Area	99
5.1 Map of Study Area 4	100
5.2 Area of Exceedence and Proposed Air Quality Management Area	104

List of Tables	Page Number
3.1 Verification Run Inputs	93
3.2 Verification Run Settings	93
3.3 Final Verification Run Agreement	94
3.4 Model Standard Deviation	94
3.5 Model Point Outputs	95
4.1 Traffic Flows	97
4.2 Verification Run Inputs	97
4.3 Verification Run Settings	98
4.4 Final Verification Run Agreement	98
5.1 Traffic Flows	101
5.2 Verification Run Inputs	101
5.3 Verification Run Settings	102
5.4 Final Verification Run Agreement (from South Cambridgeshire)	102
5.5 Model Standard Deviation (from South Cambridgeshire)	102
5.6 Model Point Outputs	103

1.0 Introduction.

The Air Quality Review and Assessment (AQR&A) Progress Report produced jointly by East Cambridgeshire DC, Fenland DC, Huntingdonshire DC and South Cambridgeshire DC in 2004 identified two potential areas of exceedence of the annual mean NO₂ objective in Huntingdonshire. The largest of these areas was in Huntingdon and a smaller area was in the middle of St Neots. A Detailed Assessment (DA) was carried out in 2005 which resulted in the declaration of Air Quality Management Areas (AQMAs) in both of these towns.

Whilst conducting the DA, and gaining improved understanding of the relative importance of different sources, it was realised that some other areas of the district close to the A1, A1(M) and A14 may be close to, or exceeding, the annual mean objective concentration.

Following consultation with the Department for the Environment, Food and Rural Affairs (DEFRA) it was decided to conduct further dispersion modelling for the following seven areas during 2005.

- 1) Relevant locations in Eaton Socon and Eaton Ford east of the A1 near St Neots.
- 2) Relevant locations close to the A1 between the villages of Little Paxton and Buckden.
- 3) Relevant locations in Brampton, a village which is flanked closely by the A1 to the west and the A14 link road to the north.
- 4) Relevant locations close to the A14 between the villages of Godmanchester and the eastern boundary of the district, particularly parts of the village of Fenstanton immediately north of the A14.
- 5) Relevant locations close to and within the village of Alconbury close to the A1(M) and its junction with the A14.
- 6) Relevant locations close to the A1(M) between the village of Sawtry and Norman Cross.
- 7) Relevant locations close to the A1 between Alwalton and Stibbington.

Scenario 2 represented the most likely area of exceedence on the A1, due to it having the highest flows and the closest relevant locations, so this scenario was modelled first. This modelling exercise demonstrated that the annual mean NO₂ objective was not likely to be exceeded at the relevant locations in this area. Given that this stretch of the A1 is subject to higher traffic flows, poorer dispersion and closer receptors than the parts of the road in scenarios (1), (5), (6) and (7) it was agreed with DEFRA that DAs for these four scenarios was not now necessary.

Traffic flows on the A14 are significantly greater than those on the A1 and also have a higher proportion of heavy duty vehicles (HDVs). Modelling of scenarios (3) and (4), on the A14, indicated that some of these relevant locations were likely to experience

annual mean concentrations of NO₂ in excess of the annual mean objective as a result of traffic emissions. Under these circumstances it is now proposed to declare AQMAs at these locations.

2.0 Dispersion Modelling.

Mathematical dispersion modelling is a computer-based technique for showing the dispersion of pollutants across a geographical area. Whereas pollution monitoring can only record the concentration of a pollutant at a single point, dispersion modelling allows these concentrations to be extrapolated over a wider area.

The type of model constructed for this exercise modelled dispersion over a calendar year (2003) to provide annual mean concentration figures. To enable the model to carry out this series of algorithms it requires an entire year of hourly meteorological data taken from a representative source. This data includes wind direction, wind speed, temperature, relative humidity, precipitation and cloud cover.

Several 'layers' of pollution sources are then imposed onto the base map of the study area. These were:

- A 'rural background' file, representing air pollution levels typical of the ambient air without any local sources included.
- A 'grid emission' source that is an aggregate of all emissions, from all sectors, on a geo-located 1km² grid. For nitrogen dioxide the majority of this source is usually from road traffic but includes residential, commercial and industrial emissions.
- Road Sources. Where there is appropriate traffic data available individual roads can be added to the model. Traffic flows, speeds and modal splits are added and the model then calculates the emissions using vehicle fleet emission factors. Once a road source has been added the contribution is deducted from the total included in the 'grid emission'.
- Point Sources. Where there is a significant point source, such as a power station or certain types of industrial process, the pollutant release details are added to the model. Again this emission is deducted from the 'grid source' total.
- Area Sources. These include car parks, bus stations and depots, lorry parks and the like.

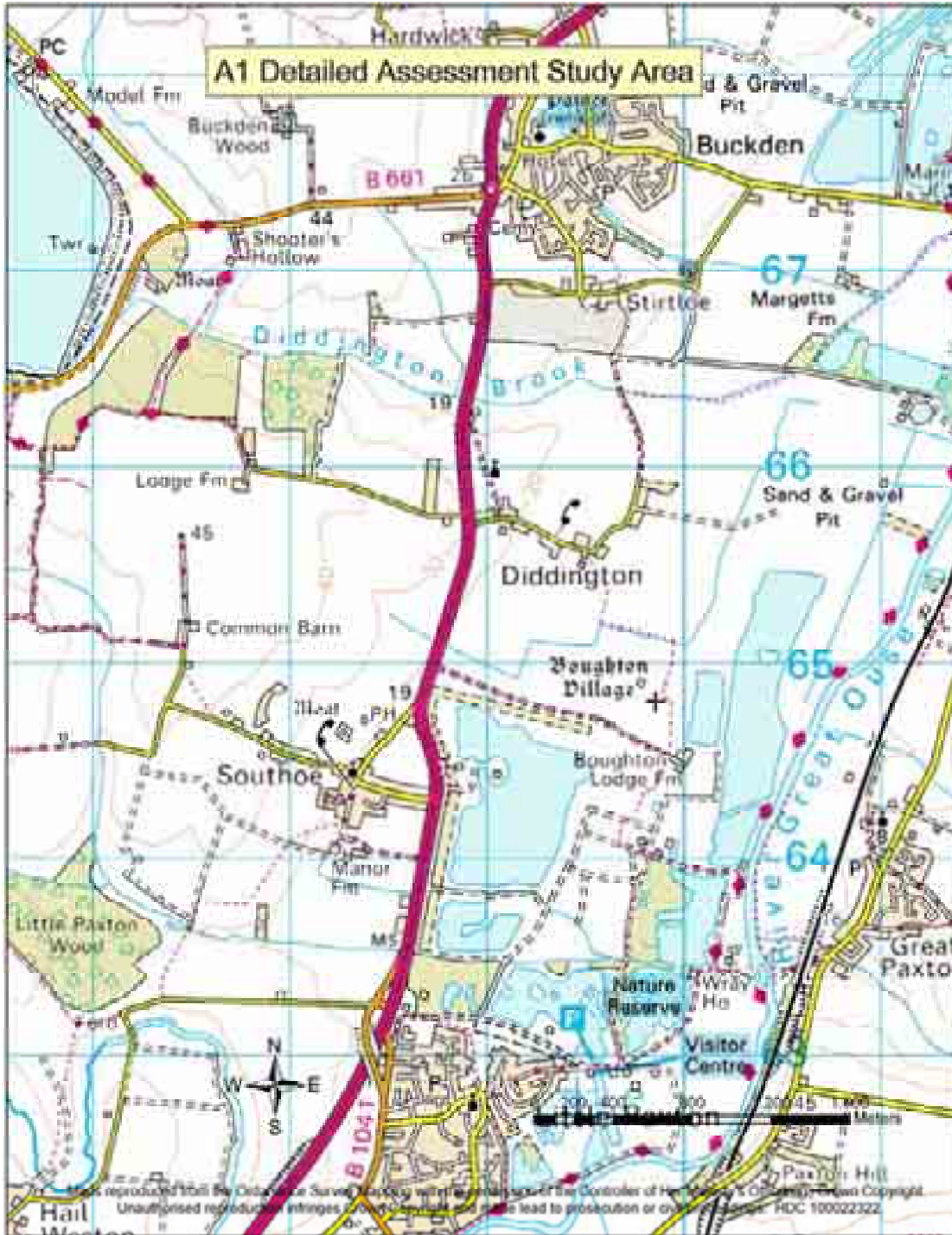
Because of the huge amount of data being fed into the model, and the large number of variable parameters, it is possible for a model output to be extremely inaccurate. In order to verify the model output it is essential that accurate monitoring data is available within the study area for the year in question. More than one monitoring location is desirable to enable a reasonable degree of confidence in the model output.

Once the model has been verified it is possible to change traffic flows and emission factors to those predicted for 2005, the objective year, to provide a predicted area of exceedence. Contours can then be drawn showing the extent of the area in which the objective exceedence is predicted. To allow for the slight variation between the model output and the monitoring data, one model standard deviation is used. In the context of Air Quality Review and Assessment these contours enable boundaries to be drawn defining the geographical extent of likely exceedences of air quality objectives and any subsequent Air Quality Management Areas.

Following submission of the 2005 Detailed Assessment of NO₂ to DEFRA several comments were made concerning the modelling information submitted. These comments have been considered and additional detail included in the following modelling reports. One general comment was concerning the possibility that background NO_x had been double counted in the model runs. This was not the case. The reason that it may have appeared so was that the background NO_x added was a rural background and so all of the component sources of an urban background were also added as grid emissions. This approach was confirmed as correct by the model suppliers, CERC.

3.0 Detailed Assessment of Scenario (2). Relevant locations close to the A1 between the villages of Little Paxton and Buckden.

Figure 3.1 Map of Study Area.



The traffic flow rate on this stretch of the A1 is higher than any other on the A1 in Huntingdonshire District. This stretch also has some dwellings that are very close to the road. There were three diffusion tube monitoring locations in this study area in 2003 and 2005 and the data from 2003 was used to verify the 2003 model output to ensure the model was performing well. It took ten model runs before a good agreement was reached with the monitoring data using parameters that were thought to be reasonable and realistic. The final verification run inputs are shown below.

Table 3.1 Verification Run Inputs

Input Data	Source	Year
Base Mapping	Ordinance Survey	2003
MET Information	MET Office (Wattisham)	2003
Background NO _x	NAEI	2003
Grid Source NO _x	AEAT	2002
Traffic Flows	County Council Counts	2002/2003
Industrial Sources	Environment Agency/operator	2003
Car Parks/Buses	District Council/operators	2003

The traffic flows used for this model were based on 2003 16 hour AAWFs recorded by WS Atkins on behalf of Cambridgeshire County Council. These 16 hour flows were adjusted to absolute hourly means by using a MS Excel Macro built by WS Atkins for Huntingdonshire District Council specifically for the purpose. The recorded 16 hour AAWF of 40,100 vehicles thus converted to 1,707 vehicles per hour. The percentage of HDV remained the same at 12% and the average speed was estimated as between 100kph and 65kph depending on location. These average speeds were estimated following consultation with frequent users of this stretch of road.

The model settings for the final verification run were as follows.

Table 3.2 Verification Run Settings

Model Parameter	Setting
Chemical Reactions (NO _x – NO ₂)	Chemical Reactions Scheme
Surface Roughness	0.2
Minimum Monin-Obukhov Length	10m
DMRB Data Set	2003
Emission Year	2003
Road Type	Motorway

The agreement reached by the final verification run output with the tube monitoring data is shown overleaf

.Table 3.3 Final Verification Run Agreement

Tube location	2003 bias adjusted tube annual mean NO ₂ µg/m ³	2003 model output annual mean NO ₂ µg/m ³
Southoe 1	31.4	29.0
Southoe 2	25.6	25.2
Buckden	29.0	29.4

The variation between the monitored and modelled values is termed the deviation. The average of these values is the ‘standard deviation’ and the ‘model standard deviation’ can be derived from this using ‘Approach A’ in the NSCA publication ‘Air Quality Management Areas: Turning Reviews into Action’. The ‘model standard deviation’ is an indication of model uncertainty. The model standard deviation figures are given below.

Table 3.4 Model Standard Deviation

Location	Modelling Deviation
Southoe 1	0.7589
Southoe 2	0.5477
Buckden	-1.2958
Standard Deviation.	1.1270
Model Standard Deviation µg/m ³ .	1.5723

To allow for model uncertainty it is good practice to allow for one standard deviation model error. In accordance with the precautionary principle the predicted area of exceedence generated by the 2005 model run is assumed to be the objective level minus one model standard deviation, in this case 38.4µg/m³.

The 2005 run was made using identical parameters to the 2003 verification run except that 2005 traffic flows and emission factors were used. Preliminary traffic flows were predicted using a year adjustment factor obtained from WS Atkins but the final 2005 run was carried out using newly available 2005 counts.

The 2005 run included both point and grid outputs. The point outputs included the most vulnerable relevant locations and additional points close to these locations designed to increase the accuracy of predictions at these points. The point output is shown overleaf.

Table 3.5 Model Point Outputs

Receptor Name	Receptor Type	Distance from the A1 in metres	Modelled annual mean conc $\mu\text{g}/\text{m}^3$
Zaria, Southoe	Dwellings	15	29
The Georgian House	Dwelling	9	28
North Lodge, Diddington	Dwelling	14	28
Buckden Hill Cottages	Dwellings	8.5	30
15 GNR, Buckden	Dwelling	14	30
6 Perry Road, Buckden	Dwelling	8	29
2 High Street, Buckden	Dwelling	9	31
5 The Maltsters	Dwelling	4	33
8 Taylors Lane	Dwelling	11	32
1 Hardwick Lane	Dwelling	5	32
133 GNR, Buckden	Dwellings	4	31
90 GNR, Buckden	Dwellings	13	29

Due to all of the receptors being predicted as exposed to levels of NO_2 significantly less than the objective it was concluded that it would not be necessary to declare an AQMA for relevant locations close to the A1.

4.0 Detailed Assessment of Scenario (3) Relevant locations in Brampton, a village which is flanked closely by the A1 to the west and the A14 link road to the north.

Fig 4.1 Map of Study Area



The village of Brampton is flanked closely by the A1 and the A14 and emissions from both of these roads contribute to NO₂ concentrations in the village. Whilst it has been demonstrated by modelling that the A1 and A1(M) in Huntingdonshire District Council will not result in any exceedences of the objective in isolation, when these emissions are combined with those of another source the resulting ambient concentration may be high enough to exceed the objective. In the case of Brampton the high traffic flows on the A14, combined with the proximity of the A1, has resulted in predicted exceedences at relevant locations.

The traffic flows for the model were taken from the Cambridgeshire County Counts and converted into hourly average flows by using a macro designed specifically for the purpose by WS Atkins. The following flows were used.

Table 4.1 Traffic Flows

Road Section	2003			2005		
	AAWF	Hourly fl	% HDVs	AAWF	Hourly fl	% HDVs
A1 South of Brampton	32700	1392	16	33800	1439	16
A1 North of Brampton	26700	1136	10	27800	1183	10
A14 North of Brampton	47500	1908	18	47800	1920	18

The model inputs are summarised in the table below. Traffic flows and modal splits were obtained from Cambridgeshire County Council counts and converted to hourly average flows using a calculator specifically designed for the purpose by WS Atkins.

Table 4.2 Verification Run Inputs

Input Data	Source	Year
Base Mapping	Ordinance Survey	2003
MET Information	MET Office (Wattisham)	2003
Background NO _x	NAEI	2003
Grid Source NO _x	AEAT	2002
Traffic Flows	County Council Counts	2002/2003
Industrial Sources	Environment Agency/operator	2003
Car Parks/Buses	District Council/operators	2003

The model settings for the final verification run were as follows.

Table 4.3 Verification Run Settings

Model Parameter	Setting
Chemical Reactions (NO _x – NO ₂)	Chemical Reactions Scheme
Surface Roughness	0.2
Minimum Monin-Obukhov Length	15m
DMRB Data Set	2003
Emission Year	2003
Road Type	Various

Two diffusion tubes located in the village of Brampton have enabled some verification of the model but are insufficient in number to permit the verification method used for the A1 north of St Neots, above, and the A14 near Fenstanton below. Where there are less than three verification points the guidance (Ref: NSCA document Air Quality Management Areas: Turning Reviews into Action) directs the use of 'Approach B'. The agreement between monitoring data and model predictions is shown below.

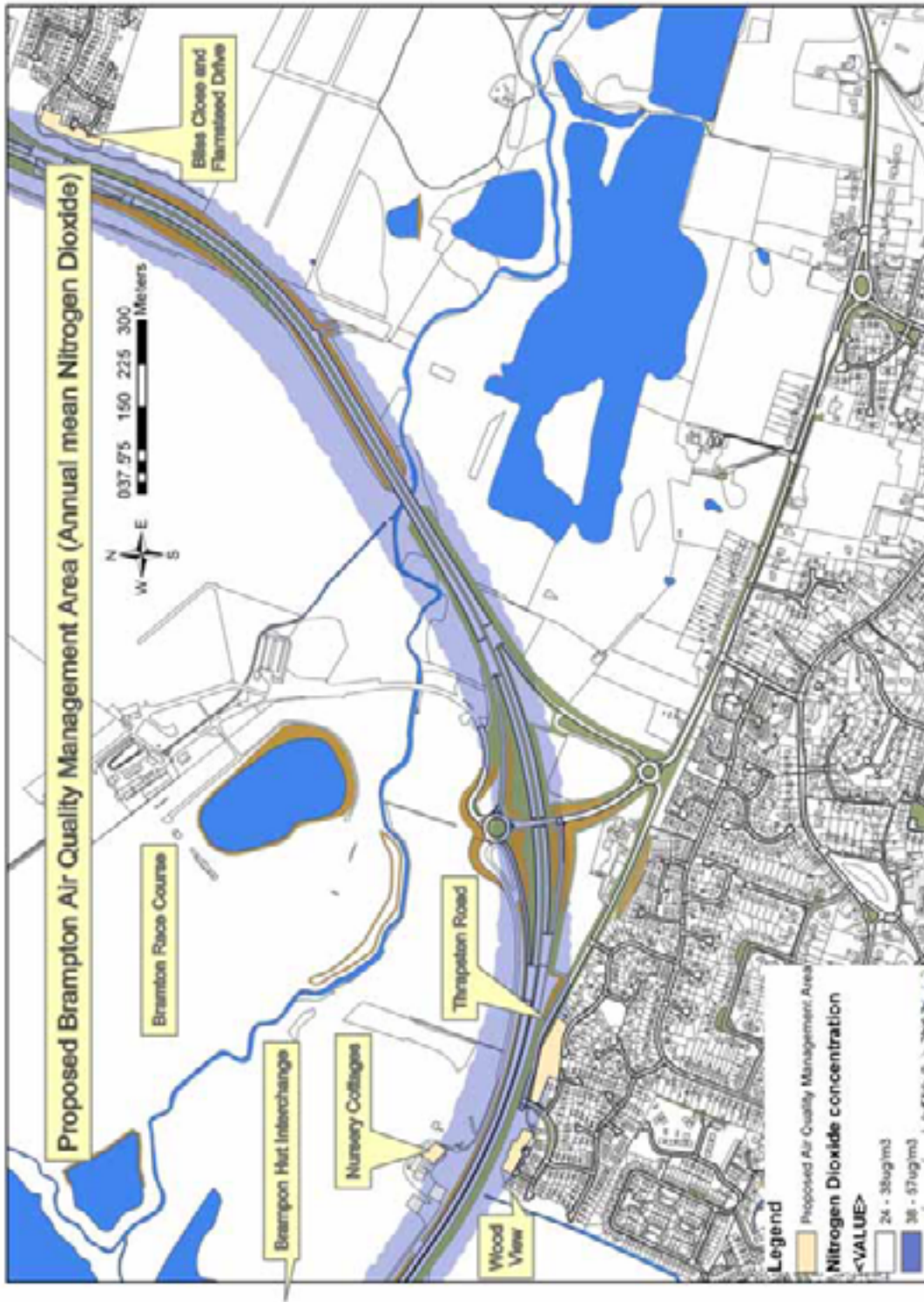
Table 4.4 Final Verification Run Agreement

Tube location	2003 bias adjusted tube annual mean NO ₂ µg/m ³	2003 model output annual mean NO ₂ µg/m ³
Brampton 1	26	29
Brampton 2	40	40

The Standard Deviation for this model is calculated as 1.97µg/m³ so the precautionary plot of the area of exceedence will be areas with predicted concentrations in excess of 38.03µg/m³.

As can be seen below a number of the most vulnerable relevant locations are predicted to have concentrations in excess of 38.03µg/m³ and so a gridded output has been plotted over mapping to define the predicted area of exceedence. This area is shown below and will form the basis of the recommended Air Quality Management Area.

Fig 4.2 Area of Exceedence and Proposed Air Quality Management Area



Maps reproduced from the Ordnance Survey Mapping with the permission of the Controller of Her Majesty's Officer (C) Crown Copyright. Unauthorised reproduction infringes Crown Copyright and made lead to prosecution or civil proceedings. HDC 100022322.

5.0 Detailed Assessment of Scenario (4). Relevant locations close to the A14 between the villages of Godmanchester and the eastern boundary of the district, particularly parts of the village of Fenstanton immediately north of the A14.

Fig 5.1 Map of Study Area.



A map of the study area may be seen overleaf. The traffic flow rate on this stretch of the A14 is the highest in the District. This stretch of road also has a number of isolated dwellings and parts of the village of Fenstanton close to the carriageway.

Unfortunately there is only one NO₂ monitoring location in this study area and that is a diffusion tube in the village of Fenstanton. This diffusion tube is 350m from the A14 and, therefore, is not in a suitable location to be helpful in the verification runs. Two new diffusion tube locations were established in Fenstanton at the beginning of 2005 to allow for improved verification in future years.

South Cambridgeshire District Council is located immediately to the east of Huntingdonshire and the A14 runs east-west through both districts. Although there are higher flows on the A14 in South Cambridgeshire, as the road passes north of Cambridge, the other characteristics of the road and the surrounding topography are very similar. South Cambridgeshire have several NO₂ monitoring stations close to the A14 and, like Huntingdonshire, are required to conduct a detailed assessment of NO₂ from the road. Both districts have worked closely together using the CERC ADMS-Urban dispersion model to derive robust local model verification for the A14. Following consultation with the UWE helpdesk it was agreed that this verification would be suitable for use for the Fenstanton scenario.

The traffic flow data, taken from Cambridgeshire County Counts is shown below.

Table 5.1 Traffic Flows

Road Section	2003			2005		
	AAWF	Hourly fl	% HDVs	AAWF	Hourly fl	% HDVs
A14 west of the A1096	63400	2547	21	68200	2740	21
A14 east of the A1096	69000	2772	20	71800	2884	18

The data inputs were sourced as shown below.

Table 5.2 Verification Run Inputs

Input Data	Source	Year
Base Mapping	Ordinance Survey	2003
MET Information	MET Office (Wattisham)	2003
Background NO _x	NAEI	2003
Grid Source NO _x	AEAT	2002
Traffic Flows	County Council Counts	2002/2003
Industrial Sources	Environment Agency/operator	2003
Car Parks/Buses	District Council/operators	2003

The model settings for the final verification run are shown below.

Table 5.3 Verification Run Settings

Model Parameter	Setting
Chemical Reactions (NO _x – NO ₂)	Chemical Reactions Scheme
Surface Roughness	0.3
Minimum Monin-Obukhov Length	10m
DMRB Data Set	2003
Emission Year	2003
Road Type	Motorway

The agreement reached by the South Cambridgeshire final verification run output with the 2003 monitoring data is shown below. The monitoring data was corrected and ratified real-time data (Bar Hill and Impington) and bias adjusted diffusion tube data (Girton and Lone Tree Avenue).

Table 5.4 Final Verification Run Agreement (from South Cambridgeshire)

Monitoring location	2003 bias adjusted tube annual mean NO ₂ µg/m ³	2003 model output annual mean NO ₂ µg/m ³
Bar Hill	50	48
Impington	52	48
Girton	44	43
Lone Tree Avenue	31	41

The variation between the monitored and modelled values is termed the deviation. The average of these values is the ‘standard deviation’ and the ‘model standard deviation’ can be derived from this using ‘Approach A’ in the NSCA publication ‘Air Quality Management Areas: Turning Reviews into Action’. The ‘model standard deviation’ is an indication of model uncertainty. The model standard deviation figures are given below.

Table 5.5 Model Standard Deviation (from South Cambridgeshire)

Location	Modelling Deviation
Bar Hill	-0.987
Impington	-0.2874
Girton	1.9142
Lone Tree Avenue	-0.6332
Standard Deviation.	1.3066
Model Standard Deviation µg/m ³ .	1.1811

To allow for model uncertainty it is good practice to allow for one standard deviation model error. In accordance with the precautionary principle the predicted area of exceedence generated by the 2005 model run is assumed to be the objective level minus one model standard deviation, in this case 38.8µg/m³.

The 2005 run was made using identical parameters to the 2003 verification run except that 2005 traffic flows and emission factors were used. Traffic flows were predicted using a year adjustment factor obtained from WS Atkins.

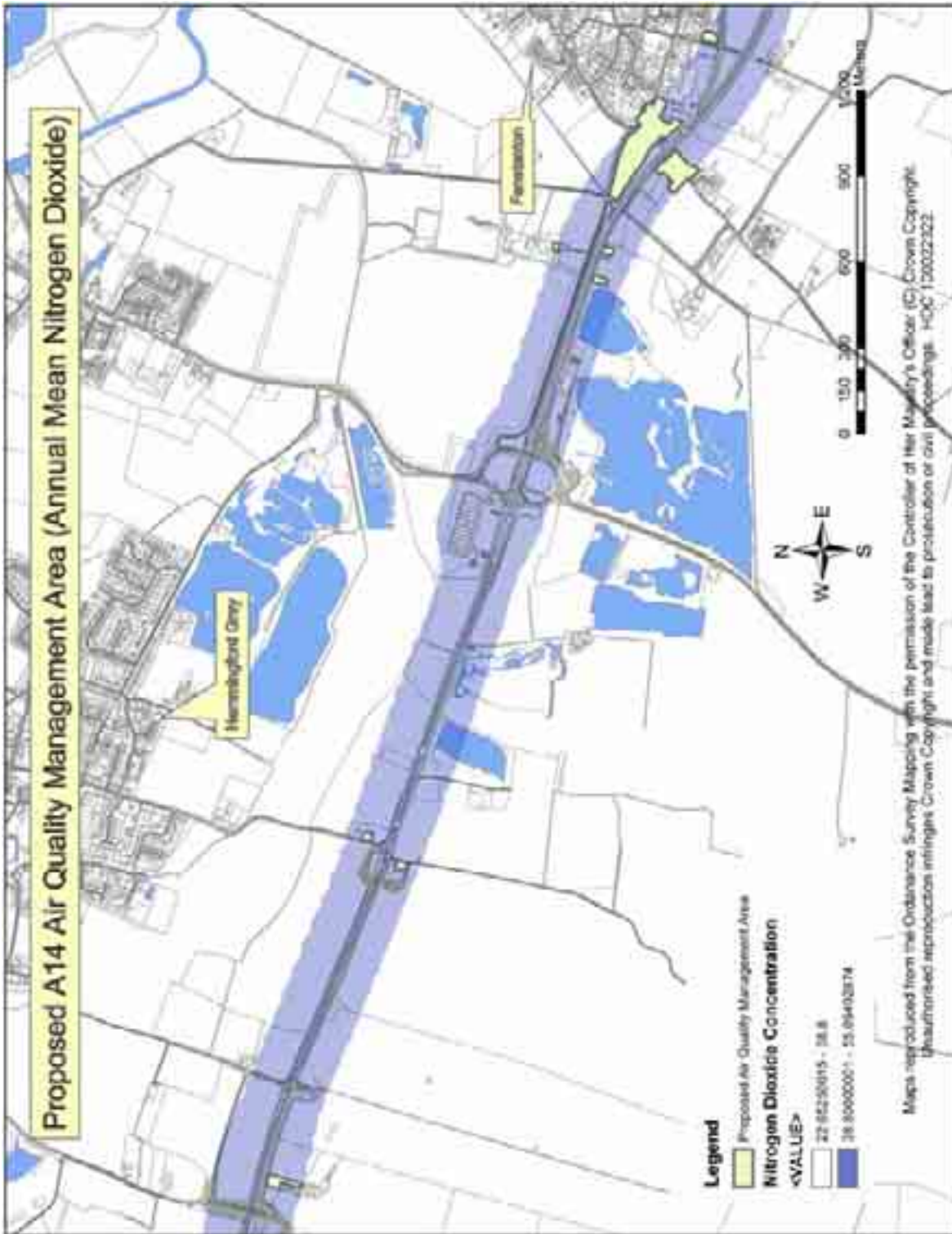
The 2005 run included both point and grid outputs. The point outputs included the most vulnerable relevant locations and additional points close to these locations designed to increase the accuracy of predictions at these points. The point output is shown below.

Table 5.6 Model Point Outputs

Receptor Name	Receptor Type	Distance from the A1 in metres	Modelled annual mean conc $\mu\text{g}/\text{m}^3$
Harcourt Farm	Dwelling	17	49
Rectory Farm Cottage	Dwelling	8	48
Gore Tree Farm	Dwelling	34	42
Woolpack Cottages	Dwelling	13	46
1 Ross Bungalow	Dwelling	15	49
Windrush	Dwelling	12	45
8 Hilton Road	Dwelling	13	39
6A Hilton Road	Dwelling	17	45

As all of the most vulnerable receptors are predicted to exceed the annual mean NO_2 objective the 2005 model was run with a gridded output to enable a plot of the area of predicted exceedence. This plot is shown below and it is recommended that an Air Quality Management Area is declared to encompass at least the area shown overleaf.

Fig 5.2 Area of Exceedence and Proposed Air Quality Management Area



6.0 Conclusion.

It is concluded that emissions from the A1 and A1(M) in Huntingdonshire District Council are not currently such as to result in exceedences of the nitrogen dioxide annual mean objective at relevant locations.

It is concluded that emissions from the A14 are such that it is likely that the nitrogen dioxide annual mean objective will be exceeded at relevant locations. The model outputs shown above for Brampton and Fenstanton show the modelled areas of exceedence. Where there are relevant locations in those areas of predicted exceedence it is proposed to declare Air Quality Management Areas.

Appendix 7

Pollution Prevention and Control Permitted Processes in Cambridgeshire

Cambridge City Council

LA-PPC Processes

Name & Address	Process Description	Grid Reference
LaFarge Redland Aggregates 15 Cowley Road, Cambridge CB4 4D	Cement Batching	547445, 261121
Hanson Quarry Products 16 Coldhams Lane Cambridge CB1 3HS	Cement Batching	547757, 257878
Marshall Motor Group Cherry Hinton Road Cambridge CB1 4AA	Vehicle Respraying	546163, 256656
P & R Coachworks Gog Magog Garage Babraham Road Cambridge	Vehicle Respraying	547639, 254434
Travis Perkins Devonshire Road Cambridge CB1 2BJ	Timber Manufacturing	546351, 257710
Wellington Garage Coldhams Lane Cambridge CB1 3EW	Waste Oil Burner	547000, 259031
Clark Cars 208 Victoria Road Cambridge CB4 3LG	Waste Oil Burner	544407, 259001
Priory Motor Group Cheddars Lane Cambridge CB5 8JJ	Vehicle Respraying	546733, 259180
F Vindis & Sons 383 Milton Road Cambridge CB4 1SR	Vehicle Respraying	546760, 261220
Marshall Aerospace The Airport CB5 8RX	Aircraft Respraying	548293, 259030
Gladwins Unit 12 Nuffield Road Cambridge CB4 1TF	Vehicle Respraying	547130, 260932

Sainsbury's Brooks Road Cambridge CB1 3HP	Unloading of Petrol	
Q8 Cambridge 2 Elizabeth Way Cambridg CB4 1DF	Unloading of Petrol	
Buckingham and Stanley 158 Shelford Road Trumpington Cambridge CB2 2NE	Unloading of Petrol	
Esso City Service Station Histon Road Cambridge CB4 3JD	Unloading of Petrol	
Esso Villa Service Station 57 High Street Trumpington Cambridge CB2 2LS	Unloading of Petrol	
Shell Trumpington 58 High Street Trumpington Cambridge CB2 2L	Unloading of Petrol	
Shell Camboritum 149 Hills Road Cambridge CB2 2RQ	Unloading of Petrol	
Shell Newnham Newnham Road Cambridge CB3 9EY	Unloading of Petrol	
Malthouse Orchard Cherry Hinton Road Cambridge CB1 4AE	Unloading of Petrol	
Buckingham and Stanley 158 Shelford Road Trumpington Cambridge CB2 2NE	Unloading of Petrol	
Esso City Service Station Histon Road Cambridge CB4 3JD	Unloading of Petrol	
Esso Villa Service Station 57 High Street Trumpington Cambridge CB2 2LS	Unloading of Petrol	

Shell Trumpington 58 High Street Trumpington Cambridge CB2 2LS	Unloading of Petrol	
Shell Camboritum 149 Hills Road Cambridge CB2 2RQ	Unloading of Petrol	
Shell Newnham Newnham Road Cambridge CB3 9EY	Unloading of Petrol	
Malthouse Orchard Cherry Hinton Road Cambridge CB1 4AE	Unloading of Petrol	

East Cambridgeshire District Council

LA-PPC Processes

Name & Address	Process Description	Grid Reference
Hanson Angel Drove Ely	Concrete batching	554182 279587
RMC Readycrete Fordham Road Snailwell	Concrete batching	563646 268059
Hanson Station Road Kennet	Roadstone coating	569970 267358
CEMEX Potter Depot, Queen Adelaide	Roadstone coating	555895 281391
Francis Flower Dimmocks Cote Wicken	Limestone Products	554265 272359
Ely Chemical Co Lisle Lane Ely	Coating manufacture	554673 280316
Barber-Butler Isleham Road Fordham	Waste Oil Burner	563860 270894
Jet Petroleum A142 Witcham Toll	Unloading of petrol	546560 279081
Tesco Angel Drove	Unloading of petrol	554114 278412

Manchetts (Jet) Ness Rd Burwell	Unloading of petrol	558918 266890
BP Downfields Soham	Unloading of petrol	559168 274124
Jet Petroleum A10 Ely	Unloading of petrol	550803 274251
Shropshire Group Barway Ely	Combustion process	555381 275546
Thorlabs Angel Drove Ely	Metal, Plastic coating	553782 279054
The Concrete Co Henry Crabb Rd Littleport	Concrete batching	555322 287615
Carter Street Garage Carter S Fordham	Unloading of petrol	562664 270897
Borlands Garage Cambridge Rd Ely	Unloading of petrol	553407 279771
James Craven BP Witcham Rd roundabout	Unloading of petrol	552630 279453
Lancaster Earth Moving Dane Hill Farm Dane Hill Rd Kennett	Mobile crushing and screening	568897 268180
D Haird & Co Dane Hill Farm, 0 Dane Hill Rd Kennett	Mobile crushing and screening	568738 268426
Eastern Recycling Ltd Padnal Sidings Prickwillow	Mobile crushing and screening	558186 283537
Shearline Angel Drove Ely	Surface cleaning	553998 279132
Histon Concrete Co Wisbech Rd	Concrete batching	

East Cambridgeshire District Council

IPPC Processes

Name & Address	Process Description	Grid Reference
Favor Parker Ltd Chettisham site	Animal feed production	555065 283297
EPR Ltd Ely Elean Business Park, Sutton	Straw fired power station	545166 279960
EMR Ltd Snailwell	Metal recycling	543645 268063
Grunty Fen Landfill Witchford	Landfill site	547646 277375

Fenland District Council

LA-PPC Processes

Name & Address	Process Description	Grid Reference
Shire Garden Products Ltd and Nene Milling Brigstock Road Wisbech	Timber	TF458106
Hanson Premix Boots Bridge Wimblington March	Cement Batching	TF435095
Lafarge Premix Oldfield Lane Wisbech	Cement Batching	TF459086
Lafarge Premix Marwick Road March	Cement Batching	TF459086
RMC Readimix (Cemex) Bolness Road Wisbech	Cement Batching	TF460081
Milner Delvaux Eastrea Road Whittlesey	Cement Batching	TL287971
Crown Cork and Seal Weasenham Lane Wisbech	Metal Coating	TF460085
Oil-Dri (UK) Ltd Bannisters Row Wisbech	Plaster Process	TF457108
PJ Thory Ltd Whitewalls Eldernell Whittlesey	Mobile Crusher	TL317984

Alexander Works Creek Road March	Respraying of Road Vehicles	TL421979
Ringway 239 Station Road Aron Industrial Estate Whittlesey	Roadstone Coating	TL266965
Gem Mix Whitewalls Eldernell Whittlesey	Cement Batching	TL317984
GRS Environmental Lodge Farm Floods Ferry March	Mobile Crusher	
Flintstones 9 Hillside Whittlesey Road March	Mobile Crusher	
Wisbech Vehicle Exchange Lynn Road Wisbech	Waste Oil Burner Less than 0.4 MW	
Pace March Dartford Road March	Unloading of Petrol at Service Stations	
Tesco PFS Sandown Road Wisbech	Unloading of Petrol at Service Stations	
Tesco PFS March Trading Park March	Unloading of Petrol at Service Stations	
Nene Filling Station Lynn Road, Wisbech	Unloading of Petrol at Service Stations	
Station Rd Service Station Station Road March	Unloading of Petrol at Service Stations	
Robin Hood Service Station Wimblington Road March	Unloading of Petrol at Service Stations	
Mill Hill Garage Wimblington Road March	Unloading of Petrol at Service Stations	
West Park St Service Station West Park Street Chatteris	Unloading of Petrol at Service Stations	
Slade End Service Station Bridge Street Chatteris	Unloading of Petrol at Service Stations	
Saxon Autopoint Peterborough Road Whittlesey	Unloading of Petrol at Service Stations	

Delph Service Station West Delph Whittlesey	Unloading of Petrol at Service Stations	
Newtoll Service Station Thorney Toll	Unloading of Petrol at Service Stations	
Thorney Toll Service Station Thorney Toll	Unloading of Petrol at Service Stations	
Sisco Service Station Doddington Road Wimblington	Unloading of Petrol at Service Stations	

Fenland District Council

IPPC Processes

Name & Address	Process Description	Grid Reference
Hanson Building Products Ltd Kings Dyke Whittlesey	Ceramics (Brickmaking)	
Transco Ltd Gas Compressor Station Tydd St. Giles	Combustion (Gas Turbine >50MW)	
Nestlé Purina Petcare (UK) Ltd Cromwell Road Wisbech	Food/Drink	TF457094
McCain Foods (GB) Ltd Funthams Lane Kings Delph Whittlesey	Food/Drink	
H.L. Foods Ltd Lynn Road Wisbech	Food/Drink	
Mick George (Haulage) Ltd Block Fen Drove Mepal Ely	Landfill	
East Waste Ltd Hundred Road March	Landfill	

Huntingdonshire District Council

LA-PPC Processes

Name & Address	Process Description	Grid Reference
Listers (Sussex) Ltd Valley Farm Winwick Huntingdon PE28 5PU	Animal Feed/Straw drying	TL E1013 N8094
Hanson Concrete Products Meadow Lane St Ives PE27 4LG	Concrete Process	TL E3231 N7077
Marshalls Mono Meadow Lane St Ives PE27 4LG	Concrete Process	TL E3242 N7077
Burton Car Disposal Cockbrook Lane Old Western PE285LN	Waste Oil Burner	TL E0835 N7833
K Cooper Motors 68 Green End Road Sawtry PE28 5UY	Waste Oil Burner	TL E1694 N8320
Hanson Quarry Products Premix Plant Meadow Lane St Ives PE27 4LG	Concrete Process	TL E3262 N7067
LeFarge Aggregates Ltd (Redland Readymix) Alms Close Stukley Meadows Ind Est Huntingdon PE19 6BQ	Concrete Process	TL E2345 N7327
Tarmac Southern Ltd Knobbs Farm Long Drove Somersham PE28 3HU	Concrete Process	TL E3735 N7945
LeFarge Aggregates Ltd (Redland) High Street Little Paxton St Neots PE19 6HE	Roadstone Coating Process	TL E1970 N6291
Mick George Haulage Second Drove Meadow Lane St Ives PE27 4YQ	Three mobile crushing plants	TL E3246 N7083

Notley & Co Stukley Road Huntingdon PE29 6HQ	Vehicle Re-spraying	TL E2336 N7265
Eaton Tractors Pitt Farm Little Paxton St Neots PE19 6HD	Mobile crushing process	TL E1866 N6330
TC Harrison Ford 26 Cambridge Street St Neots PE19 1JL	Vehicle Re-spraying	TL E1862 N6028
Darex ® Container Products Cromwell Road St Neots PE19 2ER	Coating process manufacturing	TL E1936 N5975
Exel Automotive Management Unit 94 Alconbury Airfield Alconbury Huntingdon PE28 4WX	Vehicle Re-spraying	TL E2050 N7730
Glynwed Pipe Systems St Peters Road Huntingdon PE18 7DJ	Metal Decontamination	TL E2370 N7318
D Gladwin Church Road Warboys PE17 2RL	Vehicle Re-spraying	TL E3029 N7952
Collins and Aikman Automotive Systems Cromwell Road St Neots PE19 2ER	Di-isocyanate and Bitumen	TL E1927 N5966
Sundown Straw Products Ltd Station Road Tilbrook Huntingdon PE18 6JY	Veg. Matter Drying	TL E0863 N7112
Linx Printing Technologies Ltd Burrell Road St Ives PE17 4LE	Manufacture of Printing ink	TL E3197 N7310

Huntingdonshire District Council

LA-IPPC Processes

Name & Address	Process Description	Grid Reference
Clarkdrain Ltd Station Road Yaxley Peterborough PE7 3EG	Hot dip galvanising	TL E1936 N9299

Huntingdonshire District Council

IPPC Processes

Name & Address	Process Description	Grid Reference
Burgess & Walker Old Railway Line Ind.Est Needingworth Road St Ives PE2 5NB	Waste Oil Burner	TL E3251 N7205
Crofton Pallets Limited Glebe Road Huntingdon PE29 7DX	Timber Pallet Production	TL E2398 N7369
Boardcraft Ltd Howard Road Eaton Socon St Neots PE19 8ET	Timber Process	TL E1718 N5852
Pepper Kitchens Limited (Roverex) Station Road, Warboys Huntingdon PE28 2TH	Timber Process	TL E3108 N8078
Horatio Myers & Co.Ltd Windover Road Huntingdon PE29 7EF	Timber Process And Wood Coating Process	TL E2372 N7377

South Cambridgeshire District Council

Part B Processes

Name & Address	Process Description	Grid Reference
W J Nightingale Nightingale's Garage London Road Sawston Cambridge CB2 4EF	Waste Oil Burner	TL4883 4827
Ouse Valley Bait Co Ltd Gransden Lodge Little Gransden Sandy SG19 3EB	Maggot Breeding	TL2885 5356
Cambridge City Crematorium Huntingdon Road Cambridge CB3 0JJ	Crematorium	TL3998 6256
Cemex UK Materials Winship Industrial Estate Milton Cambridgeshire CB4 4BQ	Ready Mixed Concrete	TL4757 6222
Cemex UK Materials The Grip Hardstock Road Linton Cambridgeshire CB1 6NT	Ready Mixed Concrete	TL5572 4641
Tarmac Southern Ltd Dales Manor Business Park Grove Road Sawston Cambridgeshire CB2 4LH	Ready Mixed Concrete	TL4906 5044
Tarmac Ltd Tarmac Topfloor and Topblock Dales Manor Business Park Grove Road Sawston Cambridgeshire CB2 4LJ	Concrete Products Manufacture	TL4925 5033
Marley Eternit Ltd Dales Manor Business Park Babraham Road Sawston Cambridge CB2 4DB	Concrete Products Manufacture	TL4900 5038

Omya UK Ltd Admin. Manager 75 Station Road Steeple Morden Nr. Royston Herts SG8 0NZ	Production of Dry Chalk Powder	TL2957 4015
Hutchings & Harding Ltd 161/163 High Street Sawston Cambridge CB2 4HN	Hide and Skin Processing	TL4867 4888
Sealed Air Ltd Saxon Way Melbourn Royston Herts SG8 6DN	Printing of Flexible Packaging	TL3813 4384
John Dickinson Stationery Ltd Sawston Cambridge CB2 4XD	Printing	TL4725 4993
Austins Lesanna Farm Cantelupe Road Haslingfield	Mobile Concrete Crusher	TL4112 5270
M Dickersons Ltd Ely Road Waterbeach Cambridge	Mobile Concrete Crusher	TL4830 6833
Advantage Contracts Ltd T/A Commercial Bodyworks Toseland Road Graveley PE18 9PS	Vehicle Respraying	TL2447 6372
John Newman Bodyworks Ltd 8 Mill Hill Gamlingay Sandy SG19 3LW	Vehicle Respraying	TL2365 5127
National Grid Gas	Odourising Natural Gas	Restricted
Eternit UK Ltd Whaddon Road Meldreth Royston SG8 5RL	Manufacture of fibre reinforced plastics	TL3640 4657
Eternit UK Ltd Whaddon Road Meldreth Royston SG8 5RL	Concrete Products Manufacture	TL3640 4657

Thyssenkrupp Auto Motive Bourn Airfield St. Neots Road Bourn Cambridge CB3 7TQ	Coatings of Metals & Plastics	TL3497 5939
Vindis Group Bodyshop Buckingway Business Park Rowles Way Box End Swavesey Cambridge CB4 5UG	Vehicle Respraying	TL3583 6591
P J Boreham & Son Ltd Webb's Yard Six Mile Bottom Road West Wrattling Cambridge CB1 6NE	Mobile Concrete Crusher	TL5601 2522
Allen Newport Ltd Cambridge Centre for Recycling Ely Road Waterbeach Cambridge CB5 9PG	Ready Mixed Concrete	TL4817 6844
Limpet Printed Tapes 127/129 The Causeway Bassingbourn Royston Herts SG8 5JB	Printing	TL3412 4443
Lafarge Aggregates Ltd Cambridge Coating Plant Chesterton Junction Cowley Road Cambridge CB4 4DL	Coated Roadstone	TL4742 6105
Marshall Specialist Vehicles The Airport Cambridge CB5 8RX	Vehicle Respraying	TL4872 5953
Seearo Group Grange Farm Newmarket Road Flint Cross Nr Royston Herts SG8 7PR	Mobile Concrete Crusher	TL5404 2431
David Ball Group Huntingdon Road Bar Hill Cambridgeshire CB3 8HN	Bulk Cement	TL3873 6375

Aim Composites Ltd Pembroke Avenue Waterbeach Cambridgeshire CB5 9QR	Coating	TL4880 6590
Over Garage 27 High Street Over Cambridgeshire CB4 5ND	Waste Oil Burner	TL3757 7058

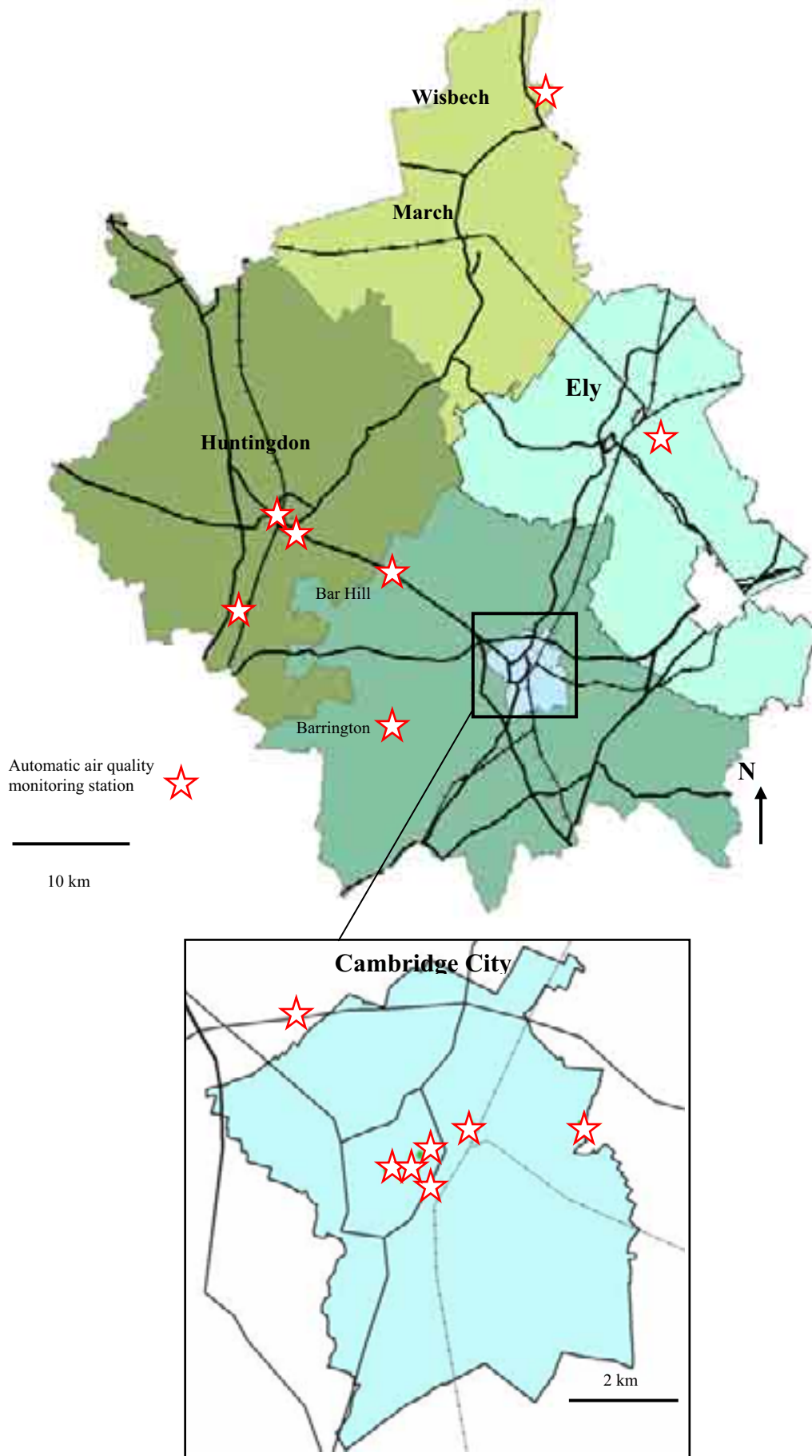
South Cambridgeshire District Council

Part A1 Processes

Cemex UK Cement Ltd Haslingfield Road Barrington Cambridgeshire CB2 5RG	Cement Manufacture	TL3642 4668
Huntsman Advanced Technology Ltd Ickleton Road Duxford Cambridgeshire CB2 4QA		TL4833 4555
Marshalls of Cambridge Aerospace Ltd The Airport Cambridgeshire CB5 8RX	Cadmium Plating	TL4830 5891
Vetspeed Ltd A505 Thriplow Heath Royston Herts SG8 7RR	Animal Processing	TL4439 4472

Appendix 8

Real-time Monitoring Locations in Cambridgeshire



Appendix 9

**Defra commentary on draft report and
responses by author authorities**

Contents

Defra commentary on report by Cambridge City Council
Response from Cambridge City Council

Defra commentary on report by East Cambridgeshire District Council
Response from Cambridge Cambridgeshire District Council

Defra commentary on report by Fenland District Council
Response from Fenland District Council

Defra commentary on report by Huntingdonshire District Council
Response from Huntingdonshire District Council

Defra commentary on report by South Cambridgeshire District Council
Response from South Cambridgeshire District Council

Cambridge City Council

TW

Zone 7/D13
Ashdown House
123 Victoria Street
London SW1E 6DE

Telephone 020 7082 8871
Website www.defra.gov.uk
Email tutu.aluko@defra.gsi.gov.uk

Mr Jo Dicks
Principal Scientific Officer
Cambridge City Council
Mandela House
4 Regent Street
Cambridge
CB2 1BY

Jo/Aluko



defra

Department for Environment
Food and Rural Affairs



Date 13 June 2006

Dear Mr Dicks

LOCAL AIR QUALITY MANAGEMENT: 2006 UPDATING AND SCREENING ASSESSMENT

Thank you for consulting the Secretary of State for Environment, Food and Rural Affairs on your air quality Updating and Screening Assessment. Please find comments on the report attached.

On the basis of the evidence provided in the report, the conclusions reached are accepted for all pollutants. There is no requirement to proceed to a detailed assessment for any of the pollutants.

If you have any specific queries about the comments contained in the appraisal report, we would advise that you initially contact the help desk funded by the Department and operated by Air Quality Consultants and the University of the West of England. Details on how to contact the help desk can be found in the appraisal report.

Yours sincerely

Tutu

Tutu Aluko
AIR AND ENVIRONMENT QUALITY DIVISION



Ref: USA3-078a

Review & Assessment Appraisal Report

Report Prepared by: Cambridge City Council

Date Review & Assessment Report issued: 2nd May 2006

The Report sets out the Updating and Screening Assessment, which forms part of the Review & Assessment process required under the Environment Act 1995 and subsequent Regulations.

It covers carbon monoxide, benzene, 1,3-butadiene, lead, nitrogen dioxide, PM₁₀ and sulphur dioxide, and concludes that there is no requirement to proceed to a Detailed Assessment for any of the pollutants.

On the basis of the evidence provided by the local authority, the conclusions reached are **accepted for all pollutants**.

Ref: USA3-078a

Commentary

The report is well structured and provides most of the information specified in the Guidance.

The following specific items are drawn to the local authority's attention to help inform future work:

1. Cambridge City Council should consider in future, where practicable, to locate their diffusion tubes at sites of relevant exposure (i.e. on the facades of residential buildings).
2. It should be noted that some of the locations (eg Milton Road which is currently $50 \mu\text{g}/\text{m}^3$) may still be exceeding some way back from the carriageway. The report is unclear how far relevant exposure exists from these sites. Future reports should treat this issue more thoroughly.
3. For the new road planned (Addenbrookes Access Road) the report states that an environmental statement has been done including an air quality assessment. The report does not include the outcomes of this assessment. Your Progress Report due in 2007 should include whether there is likely to be a significant impact or not – if so, a detailed assessment may be required.
4. For PM_{10} , it is unclear whether the BAM data has been adjusted. The report says that all PM_{10} data has been factored by 1.3. This may be incorrect for the BAM unless it has a heated manifold. For the latest advice on BAMs see <http://www.uwe.ac.uk/aqm/review/mfaqpm.html#PM10>. This issue has been accepted as the resulting concentration will be more pessimistic than without the correction.

This commentary is not designed to deal with every aspect of the report. It highlights a number of issues that should help the local authority in carrying out further Review & Assessment work.

Issues can be followed up through the Review and Assessment helpdesk as follows:

Help desk telephone: 0117 328 3668
Help desk email: aqm-review@uwe.ac.uk
Web site: www.uwe.ac.uk/aqm/review

East Cambridgeshire District Council

Air and Environment Quality Division
Zone 7/D13 Ashdown House
123 Victoria Street
London SW1E 6DE

Telephone 020 7082 8871
Website www.defra.gov.uk
Email tutu.aluko@defra.gsi.gov.uk

Mr Phillip Wright
Environmental Health Department
East Cambridgeshire District Council
The Grange
Nutholt Lane
Ely
Cambridgeshire CB7 4PL

Appendix 9

*Please see
07.020*

defra

Department for Environment
Food and Rural Affairs



EAST CAMBRIDGESHIRE

15 JUN 2006

DISTRICT COUNCIL

Date 13 June 2006

Dear Mr Wright

**LOCAL AIR QUALITY MANAGEMENT: 2006 UPDATING AND SCREENING
ASSESSMENT**

Thank you for consulting the Secretary of State for Environment, Food and Rural Affairs on your air quality Updating and Screening Assessment. Please find comments on the report attached.

On the basis of the evidence provided in the report, the conclusions reached are accepted for all pollutants. There is no requirement to proceed to a detailed assessment for any of the pollutants.

If you have any specific queries about the comments contained in the appraisal report, we would advise that you initially contact the help desk funded by the Department and operated by Air Quality Consultants and the University of the West of England. Details of how to contact the help desk can be found in the appraisal report.

Yours sincerely

Tutu

Tutu Aluko
AIR AND ENVIRONMENT QUALITY DIVISION



Ref: USA3-07Bb

Review & Assessment Appraisal Report

Report Prepared by: East Cambridgeshire Council

Date Review & Assessment Report Issued: 2nd May 2006

The Report sets out the Updating and Screening Assessment, which forms part of the Review & Assessment process required under the Environment Act 1995 and subsequent Regulations.

It covers carbon monoxide, benzene, 1,3-butadiene, lead, nitrogen dioxide, PM₁₀ and sulphur dioxide, and concludes that there is no requirement to proceed to a Detailed Assessment for any of the pollutants.

On the basis of the evidence provided by the local authority, the conclusions reached are accepted for all pollutants.

Ref: USA3-078b

Commentary

The report is well structured and provides most of the information specified in the Guidance.

The following specific items are drawn to the local authority's attention to help inform future work:

1. It would be helpful if future reports included slightly more detail on some issues. For example it is difficult to tell whether the nitrogen dioxide diffusion tube sites are situated at worst case locations (and therefore cover the rest of the checklist). Another example is on p26 where a busy junction which has been bypassed is discussed. It is unclear whether the diffusion tube location is the same (but the road has changed number).
2. For PM_{10} , it is unclear whether the BAM data has been adjusted. For latest advice on BAMs, please see <http://www.uwe.ac.uk/aqm/review/mfaqpm.html#PM6>.

This commentary is not designed to deal with every aspect of the report. It highlights a number of issues that should help the local authority in carrying out further Review & Assessment work.

Issues can be followed up through the Review and Assessment helpdesk as follows:

Help desk telephone:	0117 328 3668
Help desk email:	aqm-review@uwe.ac.uk
Web site:	www.uwe.ac.uk/aqmireview

Fenland District Council

Air and Environment Quality Division
Zone 7/D13 Ashdown House
123 Victoria Street
London SW1E 6DE

Telephone 020 7082 8871
Email tutu.aluko@defra.gov.uk
Website www.defra.gov.uk

Mr Graeme Carson
Environmental Protection Manager
Fenland District Council
Fenland Hall
County Road
March
Cambs PE15 6NQ



Dear Mr Carson

① **LOCAL AIR QUALITY MANAGEMENT: 2006 UPDATING AND SCREENING ASSESSMENT**

Thank you for consulting the Secretary of State for Environment, Food and Rural Affairs on your air quality Updating and Screening Assessment (USA) incorporating your Action Plan Progress Report for Fenland AQMA. Please find comments on the USA attached. We hope to send you our comments on the action plan element of the report soon.

On the basis of the evidence provided in the report, the conclusions reached are accepted for all pollutants including the decision to proceed to a detailed assessment for nitrogen dioxide and PM10. We ask that you write to us in due course providing timescales for completion of the Detailed Assessment.

If you have any specific queries about the comments contained in the appraisal report, we would advise that you initially contact the help desk funded by the Department and operated by Air Quality Consultants and the University of the West of England. Details on how to contact the help desk can be found in the appraisal report.



Yours sincerely

Tutu Aluko
AIR AND ENVIRONMENT QUALITY DIVISION

Giles Hine
Tel 01354 622434
Fax 01354 606911
email: ghine@fenland.gov.uk

Tutu Aluko
Air and Environment Quality Division
Zone 7/D13 Ashdown House
123 Victoria Street
London SW1E 6DE

5 July 2006

Dear Mrs Aluko

Local Air Quality Management:2006 Updating and Screening Assessment.

Thank you for accepting the findings in the 2006 USA report for Fenland District Council.

I would like to take this opportunity to address the comments provided in the Appraisal Report Ref: USA3-078c.

1. The permit application has now been duly made. The burners are Low-NOx and modelled emissions strongly indicate that the operation of the furnace will have a maximum short-term process contribution of $121\mu\text{g}/\text{m}^3$ and a long-term process contribution of $3\mu\text{g}/\text{m}^3$, using a worst-case situation. The maximum ground-level concentration will not contribute to a breach of the objectives at relevant locations.
2. The BAM data presented has not been adjusted. This will be done in future assessments
3. Due to the emission source applying for an IPPC permit, the data was presented as raw data, rather than a percentile in order that their application was not prejudiced from an over-estimation of 24-hour exceedances.
4. There is a tube at a relevant location in Thorney Toll. This cannot be placed adjacent to the Thorney Bypass, as this is not within Fenland District.

Yours sincerely



Giles Hine
Environmental Protection Officer

Ref: USA3-078c

Commentary

The report is well structured and provides most of the information specified in the Guidance.

The following specific items are drawn to the local authority's attention to help inform future work:

1. For nitrogen dioxide, a new industrial process has been identified (Garden Isle). It is unclear from the report whether this will have any impact on the nitrogen dioxide objectives or not.
2. For PM₁₀, BAM data is presented but it is unclear whether this is adjusted or not. For the latest advice on BAMs see <http://www.uwe.ac.uk/aqm/review/mfaqpm.html#PM6>.
3. For monitoring which has a low data capture, data should be presented as a percentile in order to directly compare with the 24 hour objective. This has not been done.
4. It is suggested that diffusion tubes are located along the A47 bypass at locations with relevant exposure nearest the carriageway. This will provide more evidence as to the need for a Detailed Assessment, and will provide evidence if a Detailed Assessment is required.

This commentary is not designed to deal with every aspect of the report. It highlights a number of issues that should help the local authority in carrying out further Review & Assessment work.

Issues can be followed up through the Review and Assessment helpdesk as follows:

Help desk telephone:	0117 328 3668
Help desk email:	aqm-review@uwe.ac.uk
Web site:	www.uwe.ac.uk/aqm/review

Huntingdonshire District Council

Zone 7/D13
Ashdown House
123 Victoria Street
London, SW1E 6DE

Telephone 020 7082 8871
Website www.defra.gov.uk
Fax 020 7082 8385
Email tutu.aluko@defra.gsi.gov.uk

Mr Toby Lewis
Huntingdonshire DC
Pathfinder House
St Marys Street
Huntingdon
PE29 3TN

Appendix 9

TL
Please discuss
DA
defra
Department for Environment
Food and Rural Affairs

Environment & Planning Services
DA
15 JUN 2006

Date 13 June 2006

Dear Mr Lewis

LOCAL AIR QUALITY MANAGEMENT: 2006 UPDATING AND SCREENING ASSESSMENT AND DETAILED ASSESSMENT OF AIR QUALITY

Thank you for consulting the Secretary of State for Environment, Food and Rural Affairs on your air quality Updating and Screening Assessment, and Detailed Assessment for Nitrogen Dioxide. Please find comments on the reports attached.

3/25 ✓ On the basis of the evidence provided in the reports, the conclusions reached are accepted. The USA concludes that there is no requirement to proceed to a detailed assessment for any of the pollutants, and the DA has identified that Air Quality Management Areas will be required for Nitrogen Dioxide. I would remind you that Defra expects AQMAs to be declared within four months of identification of the requirement for declaration. Please send us copies of the AQMA order when it becomes available.

If you have any specific queries about the comments contained in the appraisal report, we would advise that you initially contact the help desk funded by the Department and operated by Air Quality Consultants and the University of the West of England. Details on how to contact the help desk can be found in the appraisal report.

Yours sincerely

Tutu Aluko
AIR, ENVIRONMENT QUALITY DIVISION

Ref:USA3-078d

Review & Assessment Appraisal Report

Report Prepared by: **Huntingdonshire District Council**

Date Review & Assessment Report Issued: **2nd May 2006**

The Report sets out the Updating and Screening Assessment, which forms part of the Review & Assessment process required under the Environment Act 1995 and subsequent Regulations.

It covers carbon monoxide, benzene, 1,3-butadiene, lead, nitrogen dioxide, PM₁₀ and sulphur dioxide, and concludes that there is no requirement to proceed to a Detailed Assessment for any of the pollutants.

On the basis of the evidence provided by the local authority the conclusions reached are **accepted for all pollutants**.

Ref:USA3-078d

Commentary

The report is well structured and provides most of the information specified in the Guidance.

The following specific item is drawn to the local authority's attention to help inform future work:

1. For the DMRB calculations undertaken for narrow congested streets (p51) it is unclear whether the 'canyon' factor has been applied to results. If the data are not adjusted, the results are sufficiently below the annual mean objective for nitrogen dioxide for it not to affect the outcomes of the report.

X

This commentary is not designed to deal with every aspect of the report. It highlights a number of issues that should help the local authority in carrying out further Review & Assessment work.

Issues can be followed up through the Review and Assessment helpdesk as follows:

Help desk telephone:	0117 328 3688
Help desk email:	sqm-review@uwe.ac.uk
Web site:	www.uwe.ac.uk/sqm/review

Ref: DA-256

Review & Assessment Appraisal Report

Report Prepared by: **Huntingdonshire District Council**

Date Review & Assessment Report Issued: **2nd May 2006**

The Report sets out the Detailed Assessment, which forms part of the Review & Assessment process required under the Environment Act 1995 and subsequent Regulations.

It covers nitrogen dioxide and concludes that Air Quality Management Areas will be required for nitrogen dioxide (annual mean objective)

On the basis of the evidence provided by the local authority, the conclusions reached are **accepted for nitrogen dioxide**.

Ref: DA-256

Commentary

The report is well structured and provides most of the information specified in the Guidance.

The following specific item is drawn to the local authority's attention to help inform future work:

1. The Detailed Assessment should contain information on QA/QC of monitoring (i.e. laboratory and preparation method used, details of bias adjustment etc). It is assumed that as this information is in your Updating and Screening Assessment, where all the data presented are bias adjusted and have reasonable data capture etc.

This commentary is not designed to deal with every aspect of the report. It highlights a number of issues that should help the local authority in carrying out further Review & Assessment work.

Issues can be followed up through the Review and Assessment helpdesk as follows:

Help desk telephone:	0117 328 3668
Help desk email:	aqm-review@uwe.ac.uk
Web site:	www.uwe.ac.uk/aqm/review

Mrs Tuto Aluko
Air, Environment Quality Division
Zone 7/D13
Ashdown House
123 Victoria Street
LONDON
SW1E 6DE

Our Ref: DOS/TWL/SM/EH15/1/13

7 July 2006

Dear Mrs Aluko

Local Air Quality Management: 2006 USA and DA of NO₂

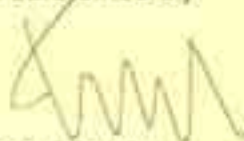
Thank you for your letter of the 13 June and the attached commentaries on our recently submitted work.

With regards to your comment about the USA; neither of the 'narrow congested streets' assessed using DMRB are true 'canyon streets' and the canyon factor was not applied in these scenarios.

Concerning the DA; the information you refer to is included in the USA which forms an earlier section of the combined report. It was not thought necessary to replicate the information. Where the Council submit combined reports in the future this information will be provided in every report for the convenience of those reading the individual parts in isolation.

The Council will be proceeding to declare AQMAs for the two additional areas of exceedence identified in the DA by the end of August 2006 and I shall forward you copies at that time.

Yours Sincerely



Toby Lewis
Environmental Protection Officer
Environmental and Community Health Services Division

☎: 01480 388365
Fax: 01480 388361

If you would like a translation of this letter, or would like a large text version or an audio version, please contact the Environmental Health Admin Team on 01480 388302 and we will try to accommodate your needs.

South Cambridgeshire District Council

Zone 7/D13
Ashdown House
123 Victoria Street
London, SW1E 6DE

Telephone 020 7082 8871
Website www.defra.gov.uk
Fax 020 7082 8385
Email tutu.aluko@defra.gsi.gov.uk

Ms Susan Walford
Environmental Services
South Cambridgeshire DC
South Cambridgeshire Hall
9 - 11 Hills Road
Cambridge
CB2 1PB

Appendix 9



Date 13 June 2006

Dear Ms Walford

LOCAL AIR QUALITY MANAGEMENT: 2006 UPDATING AND SCREENING ASSESSMENT

Thank you for consulting the Secretary of State for Environment, Food and Rural Affairs on your air quality Updating and Screening Assessment. Please find comments on the report attached.

On the basis of the evidence provided in the report, the conclusions reached are accepted for all pollutants. It includes the decision to proceed to a Detailed Assessment for nitrogen dioxide and PM10. However it is unclear whether the proposed work is in addition to that already underway, and if the site at Bar Hill represents relevant exposure or is part of the ongoing DA. We therefore ask that you write to us and clarify this issue by 4 July 2006. In addition we ask that you provide timescales for completion of the Detailed Assessment.

If you have any specific queries about the comments contained in the appraisal report, we would advise that you initially contact the help desk funded by the Department and operated by Air Quality Consultants and the University of the West of England. Details on how to contact the help desk can be found in the appraisal report.

Yours sincerely

Tutu Aluko
AIR, ENVIRONMENT QUALITY DIVISION

JA3-078a

Review & Assessment Appraisal Report

Report Prepared by: **South Cambridgeshire District Council**

Date Review & Assessment Report Issued: **2nd May 2006**

The Report sets out the Updating and Screening Assessment, which forms part of the Review & Assessment process required under the Environment Act 1995 and subsequent Regulations.

It covers carbon monoxide, benzene, 1,3-butadiene, lead, nitrogen dioxide, PM₁₀ and sulphur dioxide, and concludes that a Detailed Assessment will be required for nitrogen dioxide and PM₁₀. It is unclear whether this Detailed Assessment is in addition to that already underway.

On the basis of the evidence provided by the local authority, the conclusions reached are **accepted for all pollutants**. For the monitoring site at Bar Hill on the A14 which is currently exceeding the annual mean nitrogen dioxide objective, it is unclear whether this site represents relevant exposure or is the subject of a current Detailed Assessment. Assuming it does represent exposure, it should be included in the Detailed Assessment.

SA3-078e

Commentary

The report is well structured and provides most of the information specified in the Guidance.

The following specific items are drawn to the local authority's attention to help inform future work:

1. For PM₁₀, it is unclear how the BAM data have been adjusted. For the latest advice on BAMs see <http://www.uwe.ac.uk/aqm/review/mfaqpm.html#PM6>.
2. It would be helpful if future reports could more adequately describe monitoring locations, particularly in relation to whether they represent relevant exposure (or how far relevant exposure is from the site).
3. For sulphur dioxide monitoring with low data capture (p83) a percentile approach should be used for direct comparison with objectives.

This commentary is not designed to deal with every aspect of the report. It highlights a number of issues that should help the local authority in carrying out further Review & Assessment work.

Issues can be followed up through the Review and Assessment helpdesk as follows:

Help desk telephone: 0117 328 3668
Help desk email: aqm-review@uwe.ac.uk
Web site: www.uwe.ac.uk/aqm/review

South Cambridgeshire Hall
Combourne Business Park
Combourne
Cambridge
CB3 6EA

t: 08450 450 500
t: 01954 713149
dx: DX 729500 Cambridge 15
minicom: 01480 376743
www.scambs.gov.uk

Appendix 9



Mrs Tuto Aluko
Air, Environment Quality Division
Zone 7/D13
Ashdown House
123 Victoria Street
London
SW1E 6DE

Our ref: SW1AQM1/2006
Your ref:
Date: June 2006

Environmental Health
Contact: Susan Walford
Direct dial: 01954 713124
Direct email: susan.walford@scambs.gov.uk

Dear Mrs Aluko

LOCAL AIR QUALITY MANAGEMENT: 2006 UPDATING AND SCREENING ASSESSMENT

Thank you for forwarding your comments on our recently submitted Updating and Screening Assessment.

The ongoing Detailed Assessment for nitrogen dioxide and PM10 will extend along the A14 corridor from the Bar Hill junction to the Milton interchange, I attach a map for clarification purposes. The actual location of the Bar Hill monitor is not a relevant location as it is installed in the grounds of a commercial premise, however it is potentially representative of a relevant location in that it is the same distance from the carriageway as the façades of several properties at locations along the length of the A14. This monitor is being used as a verification point to calibrate the model and is therefore an integral part of the detailed assessment.

In undertaking the detailed assessment we have experienced problems with the run time of the model and also interruptions of the IT service which have caused severe delays. There are also issues with the verification of the PM10 model run which are still to be resolved. It is hoped however that the report will be complete and ready for submission by September 2006.

Yours sincerely

Susan Walford
Health Protection Team Leader

