
Air Quality Update

Committee: Community and Environment Committee

Date: 17th July 2013

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[N56]

1.0 **ISSUE**

1.1 To update Members on the progress of implementing the Local Air Quality Management Framework, a statutory function, aimed at maintaining or improving local air quality in East Cambridgeshire.

2.0 **RECOMMENDATION**

2.1 That the Committee note the Local Air Quality Progress Report 2013.

2.2 Members are recommended to approve the provisional additional cost of £2175 for the decommissioning of the particulates monitor at Wicken Fen.

3.0 **BACKGROUND/OPTIONS**

3.1 The European Union ('EU') prescribes limit values for air pollutants which member states must comply with. The UK has so far failed to comply with the targets for nitrogen dioxide and will suffer fines as a result. These are likely to equate to £300 million per annum, which the Local Government Association said will add £15 to the average annual council tax bill (The Telegraph, January 2010). London has the worst air quality of any European capital city.

3.2 Environmental Services submit annual reports on the air quality within East Cambridgeshire to the Department for Environment, Food and Rural Affairs ('DEFRA'). The most recent report was submitted in April 2013. Refer to Appendix A.

3.3 Air pollution is recognised by the government as the second-biggest public health threat, after smoking. It costs the UK an estimated £20bn a year - that's more than twice the amount estimated for obesity (BBC, May 2012).

3.4 Environmental Services monitor nitrogen dioxide and particulate (fine dusts) levels within the District. The lower the level of these pollutants the better the air quality and such information is important in developing policies to protect public health, for example it provides assistance in sustainable planning for the future.

3.5 In 2012, Environmental Services were able to monitor nitrogen dioxide through the use of an automatic monitor at Station Road, Ely. This instrument is hired from Leicester City Council and provides very high quality data. Using this data has allowed air quality to have a more substantial role in the planning process,

particularly in relation to the proposed Southern Bypass, as well as the new Tesco's site, Sainsbury's, Aldi, 'North Ely' and 'Highflyer Farm' developments. Without this data, Environmental Services would be reliant on data gathered by the developer, which may be of a lower quality, due to being gathered over a short time period and potentially less independent.

- 3.6 Although air quality is generally good in East Cambridgeshire, higher levels of Nitrogen Dioxide were shown to be occurring at the Station Road and Angel Drove junction, Ely, in 2012. This situation requires ongoing assessment and if raised pollutant levels are shown to be occurring then future air quality management options will need to be considered. The primary source of the higher levels of the pollutant concerned is motor vehicles.
- 3.7 Both the automatic nitrogen dioxide and particulates monitors are funded through outside sources, comprising Section 106 funds from Sainsbury's and Local Transport Plan funding from the County Council. Ongoing costs for the nitrogen dioxide monitor are currently £5,800 per year.
- 3.8 East Cambridgeshire District Council fund the core district-wide non-automatic nitrogen dioxide monitoring network of 14 sites. Haddenham Parish Council fund an additional 3 sites in that village and an additional 11 sites are funded in Ely through Sainsbury's S106 funds and County Council funding. Non-automatic monitoring is much cheaper than automatic monitoring, but the quality is also significantly lower in that it is less accurate and the data is only available as a monthly average figure, not a short term average (1hr).
- 3.9 East Cambridgeshire District Council was unable to continue with funding the particulates monitor at Wicken Fen after Dec 2009. The instrument was reinstated in 2011 and continued to operate throughout 2012 with funding from Cambridgeshire County Council. The instrument will have to be decommissioned in July 2013 as the radioactive source it utilises has decayed beyond its useful life. Environmental Services are currently leading in a partnership project to arrange a disposal service for six similar sources with Huntingdonshire and South Cambs District Councils.

4.0 ARGUMENTS/CONCLUSIONS

- 4.1 The particulate monitor at Wicken Fen must be safely decommissioned. It cannot remain in situ.
- 4.2 The EU annual mean target for nitrogen dioxide was breached in 2012 at Station Road, Ely. It is important that this site can continue to be monitored in 2013-14, as part of a 'Detailed Assessment'. The results of this monitoring will dictate future actions for example the area may need to be declared as an "Air Quality Management Area", as prescribed in DEFRA's technical guidance.
- 4.3 Large developments have the potential to impact on local air quality. It is easier to mitigate potential impacts at the design stage of a development than retrospectively. So it is recommended that air quality be a consideration on any major developments.

5.0 FINANCIAL IMPLICATIONS/EQUALITY IMPACT ASSESSMENT

5.1 The cost of continuing the Nitrogen Dioxide diffusion tube network is being met from the existing Environmental Services budget. External funding sources and partnerships will continue to be sought to enable the continuation or expansion of the automatic air quality monitoring network within the District, from 2014 onwards.

5.2 As detailed in the report there is an additional cost for the decommissioning of the particulate monitor at Wicken Fen, comprising of £1875 estimated cost for radioactive source disposal (including the permit surrender fee of £125) and £300 additional fee to the Environment Agency for the annual permit, for which Member approval is sought.

5.3 An INRA is not required as there is no proposed change to policy or existing services.

6.0 APPENDICES

Appendix A - East Cambridgeshire District Council Progress Report on Local Air Quality, April 2013

Background Documents

1 of 2
East Cambridgeshire District Council Local Air
Quality Updating and Screening Assessment, April
2012

[Also available at]
<http://www.eastcambs.gov.uk/pollution/air-quality>

2 of 2
East Cambridgeshire District Council Progress
Report on Local Air Quality, April 2011

Location

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2013 Air Quality Progress Report for

East Cambridgeshire District Council

In fulfillment of Part IV of the
Environment Act 1995
Local Air Quality Management

April 2013

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Report Reference number	Progress Report 2013 ECDC
Date	April 2013

Executive Summary

East Cambridgeshire District Council remain committed to the process known as Local Air Quality Management and support Government plans to protect and improve ambient air quality. This report sets out the findings of the second stage (Progress Report) of the fifth review and assessment of local air quality in the district of East Cambridgeshire.

This Progress Report has involved analysing the prescribed pollutants to see if they require further detailed assessment. There are currently no Air Quality Management Areas ('AQMA's) in East Cambridgeshire and the 2012 Updating and Screening Assessment did not identify that any further detailed assessments were necessary, this Progress Report finds that this is no longer still the case. The data within this report relates to data gathered between 1st January 2012 and 31st December 2012.

This report forms the basis for consultation with statutory consultees. Representations regarding its content should be made to Environmental Services, East Cambridgeshire District Council ('ECDC'), The Grange, Nutholt Lane, Ely, CB7 4EE. Tel: 01353 665555.

Table 1: Summary findings of the 2013 Progress Report for East Cambridgeshire

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 (NO₂)	Yes	No	No	Yes
Fine Particles (PM₁₀)	No	No	No	No
Sulphur Dioxide	No	No	No	No

Table of Contents

1	Introduction	5
1.1	Description of Local Authority Area	5
1.2	Purpose of Progress Report	7
1.3	Air Quality Objectives	9
1.4	Summary of Previous Review and Assessments	11
2	New Monitoring Data	12
2.1	Summary of Monitoring Undertaken	12
2.2	Comparison of Monitoring Results with Air Quality Objectives	23
3	New Local Developments	34
4	Local / Regional Air Quality Strategy	35
5	Planning Applications	36
6	Air Quality Planning Policies	37
7	Conclusions and Proposed Actions	40
7.1	Conclusions from New Monitoring Data	40
7.2	Conclusions relating to New Local Developments	40
7.3	Proposed Actions	40
8	References	42

List of Tables

- Table 1 Summary findings of the 2013 Progress Report for East Cambridgeshire
- Table 2 Summary of Cambridgeshire County Council population estimates by district
- Table 3 Summary of Cambridgeshire County Council population estimates by parish
- Table 4 Air Quality Objectives included in Regulations for the purpose of LAQM in England
- Table 5 Details of Automatic Monitoring Sites
- Table 6 Details of Non- Automatic Monitoring Sites
- Table 7 Results of Automatic Monitoring for NO₂: Comparison with Annual Mean Objective
- Table 8 Results of Automatic Monitoring for NO₂: Comparison with 1-hour Mean Objective
- Table 9 Results of NO₂ Diffusion Tubes 2012
- Table 10 Results of Nitrogen Dioxide Diffusion Tubes 2006, 2007, 2008, 2010 & 11
- Table 11 PM₁₀ Concentrations Measured at Wicken Fen (Site Type: Rural- No relevant / worst-case exposure- background).
- Table 12 PM₁₀ levels forecasted for future years (2015)
- Table 13 East Cambridgeshire annual NO₂ concentrations forecasted to 2015
- Table 14 Relevant Environmental Permitted Processes

List of Figures

- Figure 1 Map of Automatic Monitoring Sites
- Figure 2 Map of Non-Automatic Monitoring Sites
- Figure 3 Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring Sites

Appendices

- Appendix A: Quality Assurance / Quality Control (QA/QC) Data
- Appendix B: Environmentally Permitted Sites

1 Introduction

1.1 Description of Local Authority Area

Population Growth

Based on the latest population forecasts (mid-2010), since 2001 the population of Cambridgeshire has increased by 9.6% to 605,400. The largest percentage increase was in East Cambridgeshire where the population has increased by 14.1% to 80,900 in mid-2010 (Cambridgeshire County Council, 2010). Data from the 2011 Census is gradually being disseminated from the Office of National Statistics. An updated forecast based on these projections should be available from May 2013.

Cambridgeshire County Council's Research, Performance and Business Intelligence Team produce annual population estimates for parishes, wards and settlements in the administrative area of Cambridgeshire (which, since 1st April 1998, no longer includes Peterborough), together with forecasts of the future population of each District. These are summarised in Tables 2 and 3, whereby population estimates are shown for districts and parishes (in East Cambridgeshire), respectively. Parishes with estimated populations of over 5,000 have been highlighted for clarity.

Table 2: Summary of Cambridgeshire County Council population estimates by district (Cambridgeshire County Council, 2010)

Mid 2010 population estimates for Cambridgeshire districts					
District	Mid-2001 population	Mid-2010 population	% change 2001-2010	change	
Cambridge City	109,900	119,800	9.0%	9,900	
East Cambridgeshire	70,900	80,900	14.1%	10,000	
Fenland	83,700	94,200	12.5%	10,500	
Huntingdonshire	157,200	165,300	5.2%	8,100	
South Cambridgeshire	130,500	145,200	11.3%	14,700	
County	552,200	605,400	9.6%	53,200	

Source: Cambridgeshire County Council Research Group

Table 3: Summary of Cambridgeshire County Council population estimates by parish (Cambridgeshire County Council, 2010)

Parishes	% Change				Area (Hectares)
	1991	2001	2010	2001-10	
Ashley	510	570	610	7.0%	903
Bottisham	1,770	1,920	2,110	9.9%	1,155
Brinkley	380	370	370	0.0%	527
Burrough Green	320	370	360	-2.7%	919
Burwell	4,660	5,650	6,120	8.3%	2,563
Cheveley	1,720	1,850	2,010	8.6%	1,035
Chippenham	400	510	550	7.8%	1,739
Coveney	380	410	390	-4.9%	1,290
Downham	2,210	2,330	2,550	9.4%	4,457
Dullingham	620	700	720	2.9%	1,370
Ely	11,730	14,630	18,820	28.6%	5,921
Fordham	2,220	2,540	2,770	9.1%	1,671
Haddenham	2,770	3,130	3,450	10.2%	3,605
Isleham	1,960	2,270	2,400	5.7%	2,117
Kennett	290	350	370	5.7%	580
Kirtling	330	360	370	2.8%	1,265
Littleport	6,460	7,280	8,380	15.1%	7,400
Lode	840	860	890	3.5%	1,269
Mepal	640	890	900	1.1%	744
Reach	300	350	360	2.9%	459
Snailwell	170	220	230	4.5%	806
Soham	7,770	8,820	10,550	19.6%	5,265
Stetchworth	540	670	760	13.4%	1,170
Stretham	1,480	1,630	1,720	5.5%	1,629
Sutton	3,090	3,260	3,750	15.0%	2,858
Swaffham Bulbeck	770	830	840	1.2%	1,663
Swaffham Prior	770	740	740	0.0%	1,980
Thetford	470	670	680	1.5%	543
Wentworth	190	150	180	20.0%	554
Westley Waterless	120	150	170	13.3%	464
Wicken	700	810	900	11.1%	1,601
Wilburton	1,050	1,190	1,320	10.9%	1,716
Witcham	400	420	460	9.5%	1,061
Witchford	1,440	2,270	2,330	2.6%	939
Woodditton	1,720	1,730	1,770	2.3%	1,929
East Cambridgeshire District	61,200	70,900	80,900	14.1%	64,941
Source: Cambridgeshire County Council Research Group					

Traffic levels/growth

Over the last 15 years there has been considerable traffic growth across Cambridgeshire. However, the latest available traffic flow data* relates to 2011 and shows generally consistent, slight reductions in traffic flows in and around Ely. On the other main roads across the district, there has been largely unchanged recorded traffic levels compared to previous years with both minor increases and decreases in recorded traffic on various roads.

* = The 2011 Traffic Monitoring Report (Cambridgeshire County Council, 2011)

Industrial Processes – Environmental Permitting Regulations 2008

A complete list of processes permitted under the Environmental Permitting Regulations 2008 are presented in Appendix B. Each process has been considered in conjunction with Annex 2 of Technical Guidance LAQM.TG (09) to identify those that 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.

1.2 Purpose of Progress Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the Local Air Quality Management process.

They are not intended to be as detailed as Updating and Screening Assessment reports. However, if the Progress Report identifies the risk of exceedance of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

East Cambridgeshire District Council remain committed to the process known as Local Air Quality Management and support Government plans to protect and improve ambient air quality. This report sets out the findings of the second stage (Progress Report) of the fifth review and assessment of local air quality in the district of East Cambridgeshire.

This Progress Report has involved analysing the prescribed pollutants to see if they require further detailed assessment. There are currently no Air Quality Management Areas ('AQMAs') in East Cambridgeshire and the 2012 Updating and Screening Assessment did not identify that any further detailed assessments were necessary, this Progress Report finds that this is no longer still the case. The data within this report relates to data gathered between 1st January 2012 and 31st December 2012.

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1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in England** are set out in the Air Quality (Standards) Regulations 2010, The National Emissions Ceilings Regulations 2002 and the Air Quality (England) Regulations 2000 (SI 928) inc the Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 4. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 4 Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 µg/m ³	Running annual mean	31.12.2003
	5.00 µg/m ³	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m ³	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m ³	Annual mean	31.12.2004
	0.25 µg/m ³	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀) (gravimetric)	50 µg/m ³ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m ³	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m ³ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m ³ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m ³ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

The first 'round' of Review and Assessment was carried out in Cambridgeshire as a joint exercise 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 ('AQMAs') were necessary in parts of the County outside of East Cambridgeshire, where no AQMAs were deemed necessary.

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. This was also completed jointly across Cambridgeshire and accordingly also concluded that no Air Quality Management Areas were necessary in East Cambridgeshire.

Reporting on the fifth 'round' of review and assessment began in April 2012 with the submission of the Updating and Screening Assessment, which concluded that East Cambridgeshire predicted to comply with air quality objectives by the due dates. Therefore no Detailed Assessments or AQMAs were deemed necessary. This document constitutes the second stage of the fifth round of Review and Assessment and is the Progress Report for the district of East Cambridgeshire 2013.

This Progress Report 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 revised Policy and Technical Guidance documents. Where scenarios are identified as potential problems they would be progressed through to the detailed assessment, to be completed by April 2014.

East Cambridgeshire District Council has identified a breach of the NO₂ annual mean AQS objective at Station Road, Ely and therefore a Detailed Assessment is required. All other data across the district indicates that the air quality objectives are likely (to continue) to be met throughout its area and so will next report findings with its subsequent Air Quality Review and Assessment Progress Report in April 2014, together with the aforementioned Detailed Assessment.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

In 2012, there were two automatic monitoring sites in East Cambridgeshire, as detailed in Table 5.

2.1.2 PM₁₀ - ECDC-AQ1

As stated in the 2012 Updating and Screening Assessment, funding was secured with assistance from Cambridgeshire County Councils Local Transport Plan budget to service, calibrate and bring the previously mothballed PM10 monitor located at Wicken Fen, back online for 2011 and 2012. This is the only PM₁₀ automatic continuous monitoring site in East Cambridgeshire. However, due to funding restrictions the data is not formally ratified or validated.

For PM₁₀, the annual mean objective being 40µgm⁻³ and the 24 hour mean objective being 50µgm⁻³, not to be exceeded more than 35 times a year, however the 90th percentile (of the 24hr mean concentrations) is shown due to data capture limitations (below 90%), as per guidance in LAQM.TG(09). As EU limit values and UK objectives are based on measurements using a gravimetric sampler. The results are multiplied by an interim default adjustment factor of 1.3 in accordance with current UK guidance. The results have been adjusted.

For the beta attenuator located at Wicken Fen, Burwell; data capture at this site was 54% for 2012. The annual mean gravimetric equivalent for PM10 for 2012 was 15.21µg/m³ and the 90th percentile (of the 24hr mean concentrations, shown due to data capture <90%) was 27.3µg/m³, achieving the 24hr mean objective of 50 µg/m³. There was 1 exceedance of the 24-hour mean objective.

The reason for the low data capture was that the instrument malfunctioned in July 2012 and retrieved no further data. The cause of the malfunction was in relation to the age of the radioactive source which is now considered too decayed to provide accurate data, as such the instrument has since been decommissioned.

The Wicken Fen PM10 continuous monitoring site is located within a rural background location. It has been used as a useful source of data in the region in the past. However, in 2008, the funding

for the service and calibration contract was not available. It was 'moth-balled' in January 2009 and as such did not provide any data for the years 2009 and 2010.

The particulate monitor used is an Eberline FH 62-IR Beta-attenuation monitor with a heated inlet manifold, although this is held at 40°C as opposed to 50°C, the standard used in TEOM monitors.

The predicted concentration for 2015 (shown in Table 12) is calculated using the method in LAQM TG (09) Box 2.2 and the new fractions for background and adjustment factors from the www.airquality.co.uk website.

Although it states in LAQM TG (09) that the methodology outlined in Box 2.2 only relates to roadside locations, and the Wicken Fen monitor is in a rural location, following a call made to the Air Quality Review & Assessment Helpdesk on 7/4/09, it was confirmed that unless there is a strong influence from fugitive or industrial emissions, this methodology should still be followed for rural sites.

The Wicken Fen monitor is located at NGR 556400, 269200, the nearest grid square contained within the maps presented on the www.airquality.co.uk website is NGR 556500, 269500 and was used in the calculations.

On the advice of the Air Quality Helpdesk the results were not scaled up from 54% as per Box 5.2 in the technical guidance, LAQM.TG(09), due to the lack of rural monitoring sites measuring PM₁₀, with no rural AUN sites monitoring particulates in East Anglia.

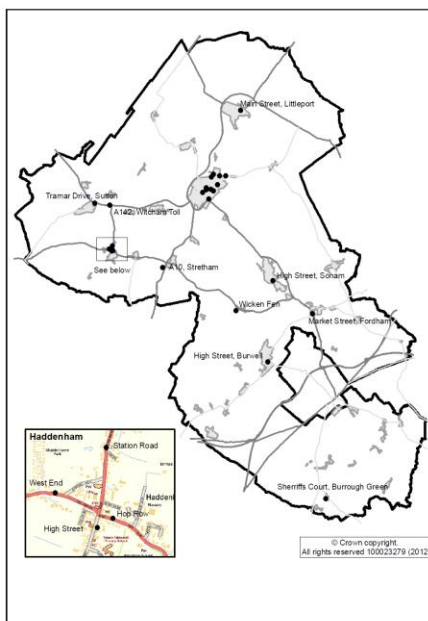
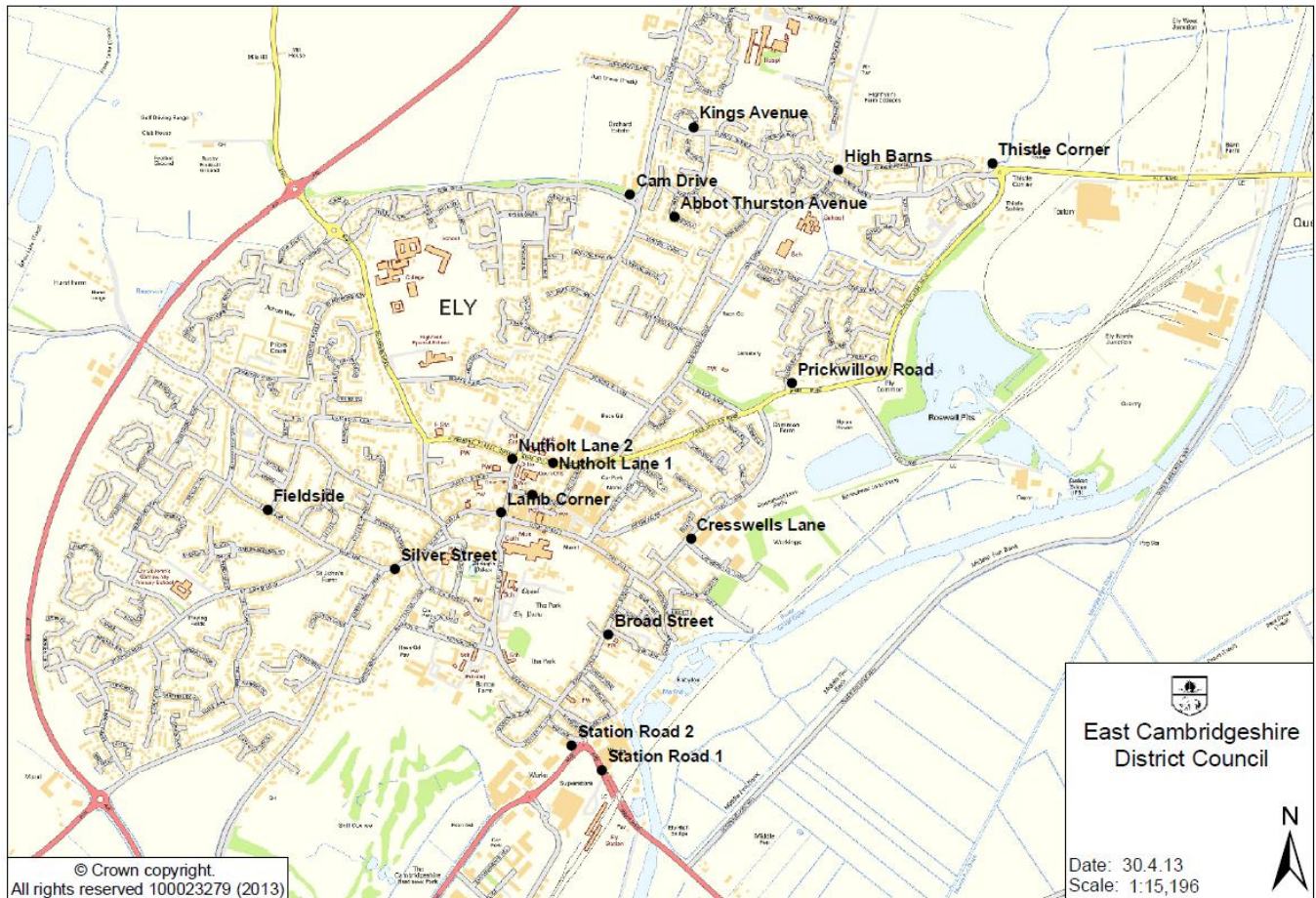
There are no relevant receptors at the monitoring location which is surrounded to the south and east by arable land, to the north lies a wetland nature reserve and to the east the site is bordered by a public foot path, an unmade dust track, with fen drainage channels beyond. The nearest receptor is an isolated farm, some 260m to the east of the site away from the public footpath.

Service, repair and calibration of the Eberline particulate monitor was carried out under an annual contract for 2012 with Supporting U Ltd. The site is serviced and calibration once per year and is checked, as stipulated by the regulatory authority (the Environment Agency), every fortnight due to the presence of a radioactive source.

Compared with the data gathered previously at this site (shown in Table 11) since 2003, the PM₁₀ readings for 2012 are generally lower than previous years. The data gathered in 2012, as in all

previous years, meets the Air Quality Objectives. In 2012, data capture was below 90% (54%) so a 90th percentile of 24hr mean concentrations was recorded which still achieved the air quality objectives. However, minimal reliance should be placed on this data due to the low data capture and lack of quality assurance in the form of ratification or validation.

Figure 1 Map(s) of Automatic Monitoring Sites



Note: Only 'Station Road 2 is both an NO₂ diffusion tube and automatic monitor site. Wicken Fen is an automatic PM₁₀ site.

Table 5 Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Inlet Height (m)	Pollutants Monitored	In AQMA?	Monitoring Technique	Relevant Exposure? (Y/N with distance (m) from monitoring site to relevant exposure)	Distance to Kerb of Nearest Road (m) (N/A if not applicable)	Does this Location Represent Worst-Case Exposure?
ECDC-AQ1	Wicken Fen	Rural background	556400	269,200	3.5m	PM ₁₀	N	BAM Eberline (Heated inlet)	N (260m)	NA	N
ECDC-AQ2	Ely NO2	Roadside	554,263	279,631	2.25m	NO ₂ (NO & NO _x)	N	Illumination of chemiluminescent gas phase reaction of NO and O ₃	Y (25m)	1m	Y

2.1.3 NO₂ – AQ2

Funding to undertake some automatic air quality monitoring in Ely was secured via a Section 106 agreement with Sainsbury's supermarkets for 'Environmental Impacts' of a new supermarket opening in Ely (Sainsbury's – Lisle Lane), together with some assistance from Cambridgeshire County Councils Local Transport Plan budget.

ECDC contacted various authorities and companies to seek an arrangement for the hire/purchase of a Nitrogen Dioxide automatic monitor to be located at a busy junction in Ely, whereby receptors (residential properties) are located very close to the road and the existing diffusion tube in the area highlighted some concerns. The area chosen was the Station Road/Angel Drove/Back Hill junction in Ely. The reasons why this location was chosen summarised by the following points:

- As the S106 funds were sourced from the supermarket, the monitoring needed to relate to an environmental impacts from the increased traffic associated with that store, which would be pertinent to this area.
- Both the district and county council have prioritised the creation of a new southern bypass for Ely. If this were to go ahead, a significant amount of traffic would be removed from this area of Ely.
- Local planning strategies, such as the 'Station Gateway' identify this area for significant development which has already been seen in 2012.
- There are relevant NO₂ diffusion tube sites, receptors and traffic counts in this area.

After considering various options and with the available budget limited, it was decided that a joint partnership with Leicester City Council ('LCC') would be undertaken whereby ECDC pay LCC for the hire, and full quality assurance, ratification of the instrument and dataset. Marcus Bell carried out the fortnightly calibration checks and the instrument was serviced by Enviro Technology, but the service contract resided with LCC. LCC retrieve the data, validate it as necessary, then sent back to ECDC in quarterly blocks of ratified data. LCC have several other monitors which are used in the same way, through their Monet system, and this

provides semi-real time data to view online. The arrangement was very much positive and ECDC have committed to continue working with LCC for 2013 and into 2014.

For NO₂, the annual mean objective being 40µgm⁻³ and the 1-hour mean objective being 200µgm⁻³, not to be exceeded more than 18 times a year. The results identified an annual average exceeding this annual mean objective, see Table 7 for details.

2.1.4 Non-Automatic Monitoring Sites

In East Cambridgeshire, diffusion tube monitoring of Nitrogen Dioxide was the only form of non-automatic monitoring undertaken in 2012. For nitrogen dioxide, the annual mean objective is 40µg/m³ by 31st December 2005. This was achieved in all previous rounds of review and assessment and was again met in 2012. It is predicted that the objective will continue to be met. This objective continues to be the reference objective until it is superseded.

The number of diffusion tube sites located in East Cambridgeshire increased from 14 to 28 in 2011, continuing in 2012 and providing the first complete year of data for the additional sites. The increase in tube sites was partly due to partnership working with Haddenham Parish Council who co-funded the monitoring of three additional tubes (in Haddenham) from January 2011 and the locating of an additional eleven tube sites (in Ely) from October 2011 was the result of an opportunity made available through Section 106 funds secured for 'Environmental Impacts' of a new supermarket opening in Ely (Sainsbury's – Lisle Lane). These additional diffusion tube sites in Ely are located generally in areas likely to be affected by the additional traffic caused by the new supermarket. The locations were also chosen to closely reflect the locations of traffic counts which are being undertaken by the County Council so that a comparison can be made when a sufficient amount of data is available (these sites only provided two months' data in 2011 (November & December)).

This S106 money also created the opportunity for the installation of a continuous Nitrogen Oxide/Dioxide automatic monitor in Ely, which came online in February

2012. This continuous monitoring site is co-located with an NO₂ diffusion tube (ref NDS8), as shown in Table 6.

The 28 NO₂ diffusion tube locations are given in Table 6, most of which are located at the roadside or kerbside along with seven urban background sites.

To account for any short-term data capture in 2012 (below 90%), adjustment factors were determined using Box 3.2 of the Technical Guidance LAQM. TG (09), to allow estimations of annual means to be derived for these sites. The calculations for these adjustment factors are given in Appendix A.

Forecasts of nitrogen dioxide diffusion tube results to 2015 have been made and are presented in Table 13 in Appendix A. They were made using the updated method outlined in Technical Guidance LAQM. TG (09), Box 2.1.

ESG supplied and analysed the nitrogen dioxide tubes for East Cambridgeshire District Council in 2012. The tubes are prepared by spiking acetone: triethanolamine (50:50) onto the grids prior to being assembled. The tubes are desorbed with distilled water and the extract analysed using a segmented flow autoanalyser with ultraviolet detection. The tubes were analysed in accordance with ESG's standard operating procedure HS/WI/1015 issue 14. This method meet the guidelines set out in DEFRA's 'Diffusion Tubes For Ambient NO₂ Monitoring: Practical Guidance'. As set out in the practical guidance, the results were initially calculated assuming an ambient temperature of 11°C, the reported values have been adjusted to 20°C to allow for direct comparison with EU limits.

The laboratory's analysis of the diffusion tube samples to determine the amount of nitrogen dioxide present is within the scope of their UKAS accreditation schedule. In the WASP intercomparison scheme for comparing spiked Nitrogen Dioxide diffusion tubes, ESG are currently ranked as a **Category Good** laboratory.

Exposure periods for the diffusion tubes are those of the UK Nitrogen Dioxide Diffusion Tube Network run by NETCEN, with the tubes being changed every four or

five weeks. QA/QC procedures are as detailed in the UK NO₂ Diffusion Tube Network Instruction Manual, which can be found at:

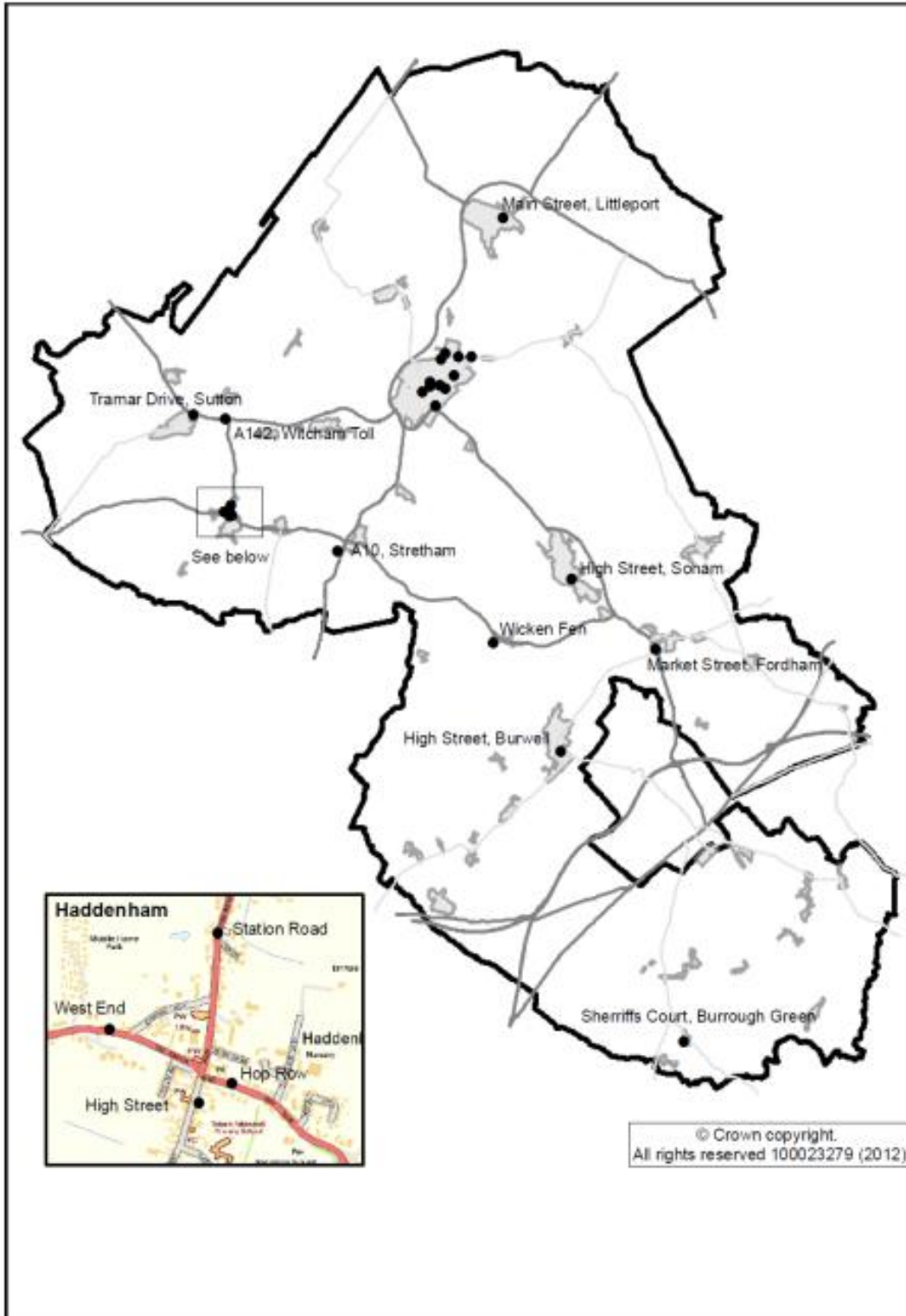
www.airquality.co.uk/archive/reports/cat06/no2instr.pdf

The diffusion tube values have been multiplied by a bias correction factor obtained from the AQR&A support provided by UWE. The bias correction factor was derived from sets of diffusion tubes (for 2012 data), which were collocated with real-time analysers in 2012.

Bias Adjustment Factors used in this report are given in Appendix A.

Figure 2: Map of Non-Automatic Monitoring Sites

Air Quality Monitoring Locations in East Cambridgeshire (all sites are Nitrogen Dioxide diffusion tubes except 'Wicken Fen', which is a automatic PM10 monitor & Station Road #2 (which is the site of a NO₂ diffusion tube as well as an NO/NO₂ automatic monitoring site in 2012).



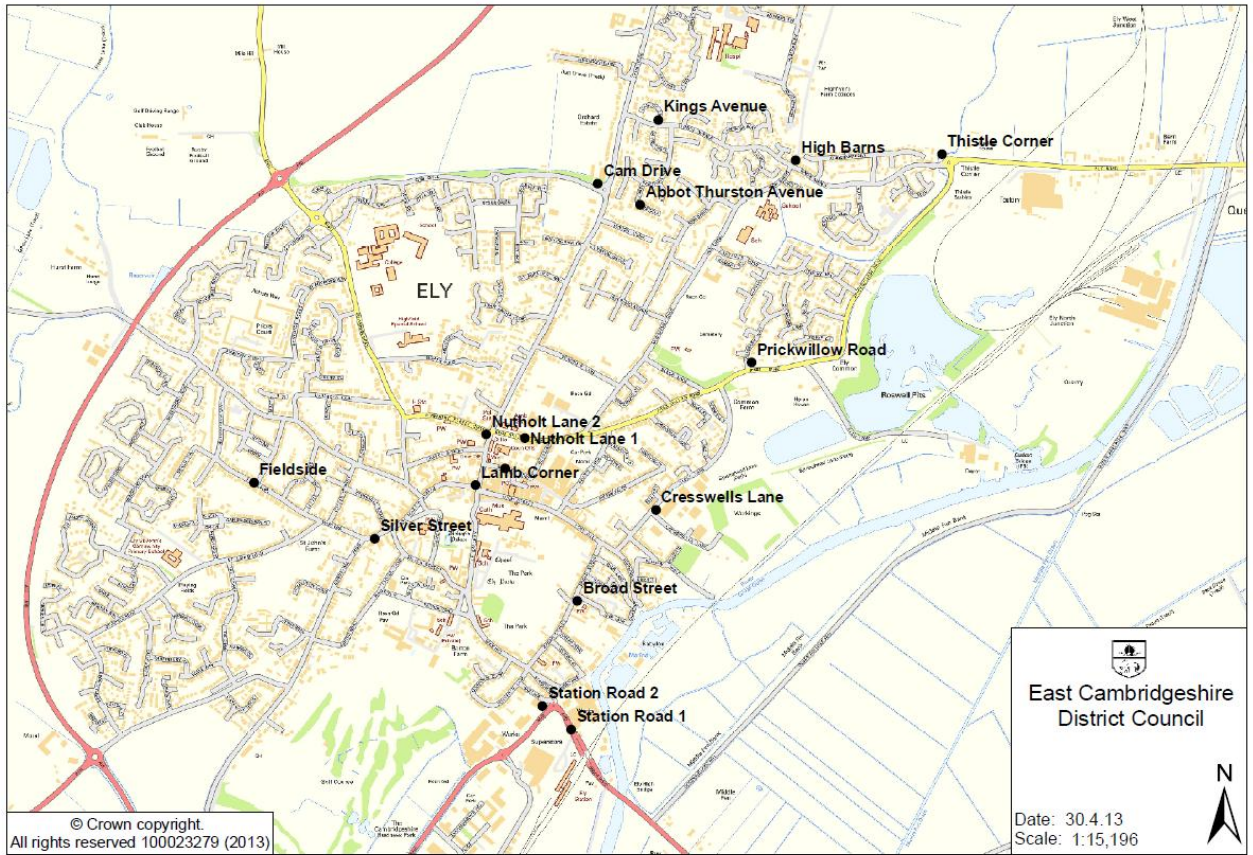


Table 6 Details of Non- Automatic Monitoring Sites

Site ID	Site Name	Site Type	OS Grid Ref	Height	Pollutants Monitored	Is monitoring collocated with a Continuous Analyser (Y/N)	In AQMA?	Relevant Exposure?	Distance to kerb of nearest road	Worst-case location?
NAS1	38 Market St, Ely	Roadside	X: 554154 Y: 280427	2.5m	NO ₂	N	N	Y (1m)	1.5m	Y
NAS2	Abbot Thurston Av, Ely	Urban Background	X: 554616 Y: 281320	2m	NO ₂	N	N	Y (4.5m)	1.5m	N
NAS3	Station Rd, Ely	Roadside	X: 554322 Y: 279566	3.5m	NO ₂	N	N	N (15m)	3.5m	Y
NAS4	Fieldside, Ely	Urban Background	X: 553385 Y: 280309	3.5m	NO ₂	N	N	Y (7m)	3m	Y
NAS5	Main St, Littleport	Roadside	X: 556845 Y: 286801	2.5m	NO ₂	N	N	Y (2.5m)	2m	Y
NAS6	High St, Soham	Roadside	X: 559418 Y: 273089	2.5m	NO ₂	N	N	Y (1.5m)	1.5m	N
NAS7	Market St, Fordham	Roadside	X: 562682 Y: 270294	3m	NO ₂	N	N	Y (1.5m)	1.5m	Y
NAS8	Sheriffs Court, B'Green	Urban Background	X: 563721 Y: 255387	2m	NO ₂	N	N	Y (2m)	1.5m	N
NAS9	Station Road, Haddenham	Roadside	X: 546419 Y: 275628	3.5m	NO ₂	N	N	N (13m)	1m	Y
NAS10	Tramar Drive, Sutton	Urban Background	X: 545012 Y: 279286	2m	NO ₂	N	N	Y (8m)	2m	Y
NAS11	Nutholt Lane, Ely	Roadside	X: 554255 Y: 280536	2.5m	NO ₂	N	N	Y (2.5m)	2.5m	Y
NAS12	A142, Witcham Toll	Roadside	X: 546346 Y: 279106	3.5m	NO ₂	N	N	Y (5m)	1m	Y
NAS13	A10 Stretham	Roadside	X: 550811 Y: 274395	3m	NO ₂	N	N	N (12m)	1.5m	Y
NAS14	High St, Burwell	Roadside	X: 558896 Y: 266364	2m	NO ₂	N	N	Y (4m)	2m	N
NAS15	Hop Row, Haddenham	Roadside	X: 546466 Y: 275463	2.5m	NO ₂	N	N	Y (2m)	1m	Y
NAS16	High St, Haddenham	Roadside	X: 546382 Y: 275411	2.5m	NO ₂	N	N	Y (2m)	1m	Y
NAS17	West End, Haddenham	Roadside	X: 546185 Y: 275594	3.5m	NO ₂	N	N	Y (3m)	1m	Y
NDS1	Cam Drive, Ely	Roadside	X: 554478 Y: 281476	3m	NO ₂	N	N	N (13m)	1m	Y
NDS2	Kings Ave, Ely	Urban Background	X: 554625 Y: 281600	3m	NO ₂	N	N	Y (6m)	1m	N
NDS3	High Barns, Ely	Urban Background	X: 555079 Y: 281472	3m	NO ₂	N	N	Y (7m)	1m	N
NDS4	Thistle Corner, Ely	Urban Background	X: 555586 Y: 281460	3m	NO ₂	N	N	N (20m)	1.5m	N
NDS5	Prickwillow Rd, Ely	Roadside	X: 554896 Y: 280760	3m	NO ₂	N	N	N (24m)	1m	N
NDS6	Cresswells Lane, Ely	Roadside	X: 554622 Y: 280273	3m	NO ₂	N	N	N (25m)	1m	Y
NDS7	Broad St, Ely	Roadside	X: 554420 Y: 280133	3m	NO ₂	N	N	Y (1m)	1m	Y
NDS8	Station Road #2, Ely	Roadside	X: 554264 Y: 279633	3m	NO ₂	Y	N	Y (28m)	2m	Y
NDS9	Silver Street, Ely	Roadside	X: 553700 Y: 280212	3m	NO ₂	N	N	N (5m)	2m	N
NDS10	Lamb Corner, Ely	Roadside	X: 553937 Y: 280390	3m	NO ₂	N	N	Y (10m)	2m	Y
NDS11	Nutholt Lane #2, Ely	Roadside	X: 554074 Y: 280549	3m	NO ₂	N	N	Y (14m)	1m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide (Non-Automatic Monitoring Sites)

Compared with the data gathered in 2011, the corrected diffusion NO₂ diffusion tube readings for 2012 are broadly comparable, and naturally therefore they continue to achieve the National Objectives. Generally the results of NO₂ diffusion tube monitoring since 2006 have remained consistent, with slight increases in some years, notably 2008 and 2010 and decreases in others, notably 2009 and 2011. A map detailing the locations of the diffusion tubes are shown in Figure 1.

The national air quality objective being 40µg/m³ to be achieved by 31st December 2005, as outlined in Table 1, has been achieved at all diffusion tube monitoring locations in 2006-2012, as shown in tables 9 and 10.

For 2012, and in some previous years (2008, 2009, 2011) data capture at certain monitoring locations was below the 90% necessary to have confidence in the standard annual mean, therefore the data was 'annualised' to allow estimations of annual means to be derived for these sites, the relevant calculations are included in Appendix A and cover all annualised data used in this report, from the years 2008, 2009, 2011 and 2012. There were no sites that recorded data capture of less than 90% in 2010.

Forecasts of nitrogen dioxide diffusion tube results to 2015 have been made and are presented in Table 13 in Appendix A. They were made using the updated method outlined in Technical Guidance LAQM. TG (09), Box 2.1. Given the general trend of recorded nitrogen dioxide concentrations in East Cambridgeshire is generally stable, not decreasing, it has to be considered that little reliance can be placed on this forecasted 2015 data as with all previous forecasted results, they have underestimated the recorded result in the past.

2.2.1 Nitrogen Dioxide (Automatic Monitoring Sites)

The continuous Nitrogen Dioxide monitor located on Station Road, Ely, recorded an exceedance of the annual mean objective in 2012. The recorded concentration, as shown in Table 7, of $41.5\mu\text{g}/\text{m}^3$ exceeds the NO_2 annual mean AQS objective of $40\mu\text{g}/\text{m}^3$. The data capture for the site was good, at 96% although as the instrument was only brought online in February 2012, that only relates to a data capture of 84% for 2012. As such, there can be no trends identified and no annualising of the dataset is necessary (>75%).

Table 7 Results of Automatic Monitoring for NO₂: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2012 % ^b	Annual Mean Concentration (µg/m ³)	
					2011* ^c	2012 ^c
ECDC-AQ2	Roadside	N	96%	84%	NA	41.5

Exceedance, shown in bold, of the NO₂ annual mean AQS objective of 40µg/m³

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

^c Means should be “annualised” [as in Box 3.2 of TG\(09\) \(http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38\)](http://laqm.defra.gov.uk/technical-guidance/index.html?d=page=38), if valid data capture is less than 75%

Table 8 Results of Automatic Monitoring for NO₂: Comparison with 1-hour Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period % ^a	Valid Data Capture 2012 % ^b	Number of Hourly Means > 200µg/m ³	
					2011* ^c	2012 ^c
ECDC-AQ2	Roadside	N	96%	84%	NA	0 (143.8)

In bold, exceedance of the NO₂ hourly mean AQS objective (200µg/m³ – not to be exceeded more than 18 times per year)

^a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year

^b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%)

^c If the data capture for full calendar year is less than 90%, include the 99.8th percentile of hourly means in brackets

2.2.2 Diffusion Tube Monitoring Data

There are no co-location sites, triplicate tubes or any multiple tube locations included within East Cambridgeshire's network although for 2012, an NO₂ diffusion tube site (Station Road #2) is co-located with a continuous NO/NO₂ automatic monitoring site.

Table 9 Results of NO₂ Diffusion Tubes 2012

Site ID	Location	Within AQMA?	Data Capture (Full calendar year - 2011)	2012 Annual mean concentrations	Has data been distance corrected (Y/N)
				($\mu\text{g}/\text{m}^3$) Adjusted for bias inc annualised results	
NAS1	38 Market St, Ely*	N	100%	23.8	N
NAS2	Abbot Thurston Av, Ely*	N	100%	14.9	N
NAS3	Station Rd, Ely*	N	92%	20.8	N
NAS4	Fieldside, Ely*	N	92%	15.4	N
NAS5	Main St, Littleport	N	100%	18.0	N
NAS6	High St, Soham	N	83%	24.1**	N
NAS7	Market St, Fordham	N	100%	21.9	N
NAS8	Sheriffs Court, B'Green	N	92%	13.2	N
NAS9	Station Road, Haddenham	N	100%	24.5	N
NAS10	Tramar Drive, Sutton	N	100%	17.9	N
NAS11	Nutholt Lane, Ely	N	100%	23.0	N
NAS12	A142, Witcham Toll	N	100%	29.9	N
NAS13	A10 Stretham	N	100%	23.2	N
NAS14	High St, Burwell	N	83%	25.6**	N
NAS15	Hop Row, Haddenham	N	100%	31.0	N
NAS16	High St, Haddenham	N	92%	23.1	N
NAS17	West End, Haddenham	N	100%	22.8	N
NDS1	Cam Drive, Ely	N	83%	26.21**	N
NDS2	Kings Ave, Ely	N	83%	19.85**	N
NDS3	High Barns, Ely	N	100%	19.2	N
NDS4	Thistle Corner, Ely	N	92%	14.9	N
NDS5	Prickwillow Rd, Ely	N	100%	21.6	N
NDS6	Cresswells Lane, Ely	N	83%	21.0**	N
NDS7	Broad St, Ely	N	92%	27.6	N
NDS8	Station Road, Ely	N	100%	32.8	N
NDS9	Silver Street, Ely	N	92%	24.1	N
NDS10	Lamb Corner, Ely	N	100%	27.3	N
NDS11	Nutholt Lane, Ely	N	100%	26.4	N

*= Site included on national database

**= Adjustment factors used to determine annual mean from short term monitoring data (see Appendix A) due to data capture <90%

Table 10 - Results of Nitrogen Dioxide Diffusion Tubes 2006, 2007, 2008, 2009, 10 & 11

Site ID	Location	Within AQMA?	Annual mean concentrations ($\mu\text{g}/\text{m}^3$) Adjusted for bias***						
			2006	2007	2008	2009	2010	2011	
NAS1*	38 Market St, Ely	N	25.1	25.9	26.0	25.4**	27.0	23.8	
NAS2*	Abbot Thurston Av, Ely	N	15.7	16.3	17.2	14.1	17.1	15.8	
NAS3*	Station Rd, Ely	N	29.2	30.4	28.6	27.7	29.3	24.5	
NAS4*	Fieldside, Ely	N	15.6	18.2	18.1	19.9	17.1	16.6	
NAS5	Main St, Littleport	N	21.3	21.1	21.7	20.0	20.4	18.1	
NAS6	High St, Soham	N	23.3	23.8	24.9	24.3**	24.6	23.4	
NAS7	Market St, Fordham	N	20.8	21.7	22.4	23.3	23.9	21.7	
NAS8	Sheriffs Court, B'Green	N	11.5	12.9	14.1	13.6	13.6	13.2	
NAS9	Station Road, Haddenham	N	25.4	26.6	26.3	26.3	29.4	24.9	
NAS10	Tramar Drive, Sutton	N	18.0	19.6	19.7	20.0	20.9	17.5	
NAS11	Nutholt Lane, Ely	N	26.0	25.4	26.9	23.8	25.5	23.3	
NAS12	A142, Witcham Toll	N	29.2	29.8	32.0	28.6	34.1	26.8**	
NAS13	A10 Stretham	N	N/A - Tube installed in August 2008			20.7**	24.9**	25.9	22.0
NAS14	High St, Burwell	N				29.7**	26.4	29.6	23.0
NAS15	Hop Row, Haddenham	N	N/A Tubes installed Jan 2011						27.7
NAS16	High St, Haddenham	N							21.4**
NAS17	West End, Haddenham	N							20.7**
NDS1	Cam Drive, Ely	N	N/A Tubes Installed Oct 2011						35.8***
NDS2	Kings Ave, Ely	N							22.7***
NDS3	High Barns, Ely	N							25.5***
NDS4	Thistle Corner, Ely	N							15.9***
NDS5	Prickwillow Rd, Ely	N							27.2***
NDS6	Cresswells Lane, Ely	N							24.3***
NDS7	Broad St, Ely	N							31.4***
NDS8	Station Road, Ely	N							32.6***
NDS9	Silver Street, Ely	N							28.8***
NDS10	Lamb Corner, Ely	N							32.8***
NDS11	Nutholt Lane, Ely	N							29.4***

* = Site included on national database

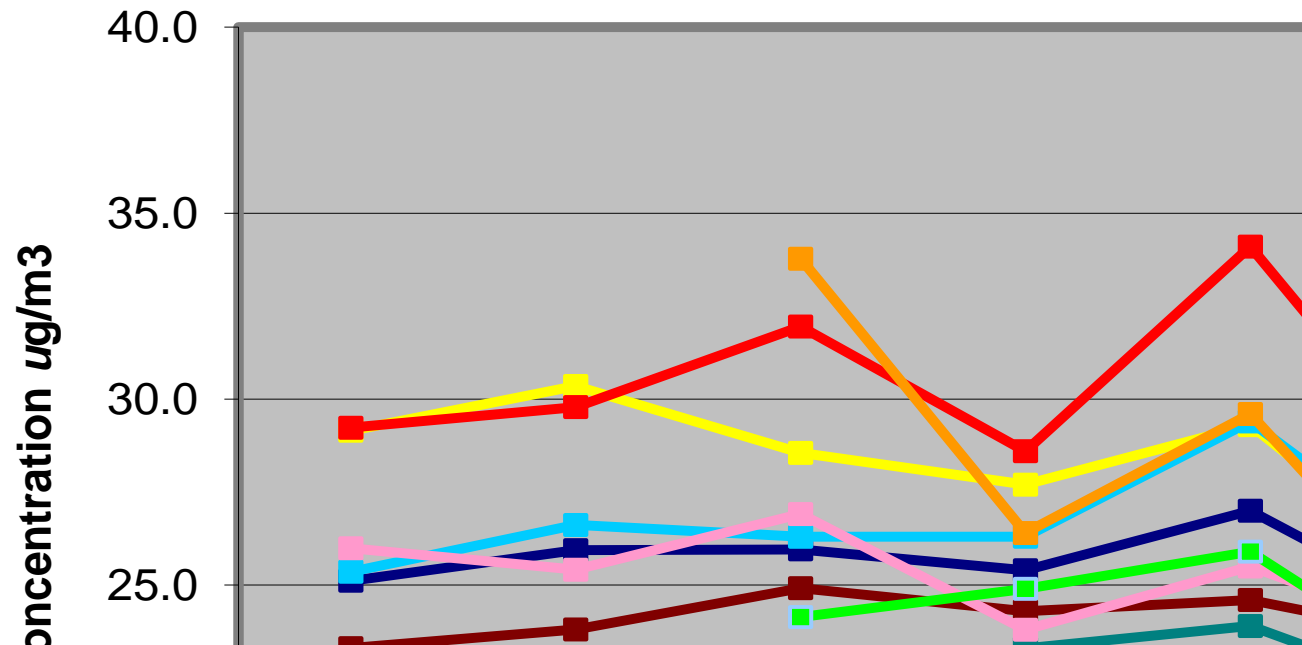
** = Adjustment factors used to determine annual mean from short term monitoring data (see Appendix A) due to data capture <90%

***= Limited data available to new sites brought online in October 2011, therefore annualisation deemed not appropriate.

Bias adjustment factors used for previous years are given in Appendix A

Figure 3 Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring Sites

Annual Mean NO2 concentraions (bias adjusted*) 20



* = Bias adjustment factors used for previous years are given in Appendix A

2.2.3 Particulate Matter (PM₁₀)

Table 11 PM₁₀ Concentrations Measured at Wicken Fen (Site Type: Rural- No relevant / worst-case exposure- background).

PM10	2003	2004	2005	2006	2007	2008	2011	2012	National Air Quality Objectives
Measured Annual Mean without 1.3 interim adjustment factor applied	26.2µg/m ³	15.1µg/m ³	15.7µg/m ³	20µg/m ³	17.9µg/m ³	16.2µg/m ³	19.1µg/m ³	11.7µg/m ³	
Data capture of hourly means	88 %	100 %	100 %	85%	100 %	100%	88%	54%	90 %
Annual Mean with interim adjustment factor of 1.3 applied (gravimetric)	34.1µg/m ³	19.6µg/m ³	20.4µg/m ³	26µg/m ³	23.3µg/m ³	21.1µg/m ³	24.8µg/m ³	15.21µg/m ³	40 µg/m ³
Number of exceedances of 24 hour mean > 50µg/m ³	30	9	16	17	12	11	19	1	35
90 th percentile (gravimetric) of 24hr mean concentrations— reported where data capture is below 90%	62.4µg/m ³	N/A	N/A	36.4µg/m ³	N/A	N/A	30µg/m ³	27.3µg/m ³	50 µg/m ³

Table 12 PM₁₀ levels forecasted for future years (2015)

Parameter	µg/m³
Measured Annual MEAN 2012 (90th Percentile) NGR 556400, 269200	27.3µg/m³
Total Background for square:	15.9
Local Road Concentration	27.3-15.9 = 11.4
Background road contribution 2012 Motorways + Trunk A roads + Primary A roads + Minor Roads + Brake & tyre concentrations	0 + 0.002621 = 0.002621 0 + 0.017221 = 0.017221 0 + 0.015072 = 0.015072 0.004116 + 0.021969 = 0.026085 0.004946 + 0.055426 = 0.060372 Total = 0.121371
Background road contribution 2015 Motorways + Trunk A roads + Primary A roads + Minor Roads + Brake & tyre concentrations	0 + 0.001489 = 0.001489 0 + 0.009788 = 0.009788 0 + 0.009187 = 0.009187 0.002593 + 0.013069 = 0.015662 0.005157 + 0.058346 = 0.063503 Total = 0.099629
Year adjustment factor = background road contribution in 2015 / background road contribution in 2012	0.099629/0.121371 = 0.821
Predicted concentrations from local road sources in 2015	11.4 x 0.821 = 9.36 µg/m ³
Total Background for square 2015	15.43 µg/m ³
Total predicated PM₁₀ annual mean concentration for 2015	9.36 + 15.43 = 24.79 µg/m³

2.2.4 Sulphur Dioxide (SO₂)

No monitoring of this pollutant has been carried out.

2.2.5 Benzene

No monitoring of this pollutant has been carried out.

2.2.6 Other Pollutants Monitored

No monitoring of other pollutants has been carried out.

2.2.7 Summary of Compliance with AQS Objectives

East Cambridgeshire District Council has measured concentrations of Nitrogen Dioxide above the annual mean objective at a relevant location (outside of an AQMA), and **will therefore need to proceed to a Detailed Assessment**. The area is the Station Road/Angel Drove/Back Hill area of Ely.

All other data across the district indicates that the air quality objectives are likely (to continue) to be met throughout its area.

3 New Local Developments

East Cambridgeshire District Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

East Cambridgeshire District Council confirms that all the following have been considered:

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

4 Local / Regional Air Quality Strategy

East Cambridgeshire District Council do not currently have an Air Quality Strategy nor is one currently in development. However, given the NO₂ exceedance identified through the automatic monitor in Ely, it is possible that this strategy will be looked at in the future.

5 Planning Applications

Several developments have been proposed or identified as necessary for the 'Station Gateway' in Ely. This is a planning framework which will influence the nature of the development in the Station Road, Angel Drove areas of Ely. The air quality data gathered in 2012 has already fed into it and will continue to do so in 2013. This has allowed an account to be made for impacts on local air quality at the early design stages of the developments.

6 Air Quality Planning Policies

In addition to national planning policies, the Council has local aims and objectives with regard to air quality and other environmental objectives as set out in its Core Strategy Development Plan Document (2009) as part of its Local Development Framework. On adoption of the Core Strategy, Policy CS6 – Environment, and Policy – EN8 Pollution, make account for Air Quality through the development control process. The Core Strategy is designed to underpin the Council approach to strategic planning until 2025 although a revised Local Plan, which would supersede the Core Strategy, is expected to be adopted in late 2013. The author of this report has worked with Forward Planning to ensure that the future Local Plan policies accurately reflect the nature of objectives associated with the Local Air Quality Management Framework.

Relevant Policy extracts from East Cambridgeshire District Council Core Strategy (2009)**Policy CS 6****Environment**

All new development should contribute to the delivery of sustainable development, by being designed and located to minimise carbon emissions and the use of non-renewable resources, mitigate/adapt to future climate change, provide attractive and safe places for people, and protect and enhance the quality of the natural and built environment.

Opportunities to minimise air, land and water pollution and improve water quality should be taken wherever possible, and development will be encouraged to make maximum use of renewable energy sources. New development will also be expected to minimise the exposure of people and property to flooding.

Open spaces and amenity areas will be protected against loss or harm, and opportunities will be taken to enhance quality, promote access (particularly by non-car modes), and expand to contribute to green networks. New development proposals will be expected to incorporate open space and high quality landscaping to provide attractive environments for people and wildlife.

Support will be given to the protection and enhancement of biodiversity in the district, including designated sites of nature conservation importance. Priority habitats and species will be protected, and development proposals will be expected to maximise the retention of biodiversity and landscape features, and incorporate measures to enhance biodiversity and mitigate against losses.

In the identified Strategic Areas of Greenspace Enhancement, co-ordinated action will be taken with statutory and other agencies to improve their biodiversity and landscape value, and to promote schemes supporting quiet recreational activity. Development proposals in these areas will need to contribute to these objectives, and enhance the biodiversity, landscape and recreational values of these areas.

The quality and distinctiveness of East Cambridgeshire's towns and villages and landscapes will be conserved and enhanced. Historically or architecturally important buildings, areas and landscapes will be protected from loss or harm, and enhanced wherever possible. All development proposals will be encouraged to incorporate innovative and locally distinctive design, and will be expected to provide attractive and safe environments which are accessible to all.

Policy EN 8

Pollution

All development proposals should minimise, and where possible, reduce all emissions and other forms of pollution, including light and noise pollution, and ensure no deterioration in water quality. All applications for development where pollution is suspected must contain sufficient information to enable the Council to make a full assessment of potential hazards.

Proposals will only be permitted:

1. Where, individually or cumulatively, there are no unacceptable impacts on:
 - The natural environment and general amenity
 - Health and safety of the public;
 - Air quality
 - Surface and groundwater quality
 - Land quality and condition
 - The need for compliance with statutory environmental quality standards; or
2. In exceptional cases, where it can be clearly demonstrated that the environmental benefits of the development and the wider social and economic need for the development outweigh any adverse impact in terms of pollution. In such cases, where pollution is unavoidable, mitigation measures to reduce pollution levels will be required in order to meet acceptable limits.

New development will not be permitted where there is a potential to conflict with existing developments that require particular conditions for their operation, or that are authorized or licensed under pollution control or hazardous substances legislation, where it would be likely to impose significant restrictions on the activities of the existing use in the future.

Development proposals on contaminated land (or where there is reason to suspect contamination) must include an assessment of the extent of the contamination and any possible risks. Proposals will only be permitted where the land is, or is made, suitable for the proposed use.

7 Conclusions and Proposed Actions

7.1 Conclusions from New Monitoring Data

There are currently no AQMAs in East Cambridgeshire.

Recorded levels of nitrogen dioxide in 2012 at the automatic monitor located on Station Road, Ely, have shown an exceedance for the annual mean AQS objective, therefore a Detailed Assessment will be required to assess this issue further.

All the other data from the NO₂ diffusion tube sites and the automatic PM₁₀ monitoring did not identified exceedences of the Local Air Quality Management objectives.

With the addition of fourteen nitrogen dioxide diffusion tubes to the monitoring network in 2011, and their first full year of monitoring in 2012 together with the installation of an automatic NO₂ monitor in Ely in February 2012, it is considered that the increased monitoring network provides a more comprehensive tool for screening and assessing air quality in East Cambridgeshire.

7.2 Conclusions relating to New Local Developments

There are no recent local developments that are considered to require more detailed consideration or require a Detailed Assessment.

7.3 Proposed Actions

The monitoring data gathered in 2012 has identified the need for a detailed assessment to further assess the exceedance of the annual mean AQS objective recorded in Station Road, Ely.

Additional monitoring is required for this pollutant in this area and is currently underway in 2013.

There are no AQMAs in East Cambridgeshire and, as yet, there are no associated declarations or revocations intended. The next course of action will be to

- Submit the 2014 Air Quality Progress Report
- and progress to a Detailed Assessment for assessing NO₂ in Ely.

The next report on the air quality in East Cambridgeshire will be the Progress Report, comprising the third part of the fifth round of Review and Assessment which will cover data gathered in the period between 1st January 2013 to 31st December 2013 and will be submitted in April 2014.

8 References

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DEFRA (2012) *'LOCAL AIR QUALITY MANAGEMENT: 2012 UPDATING AND SCREENING ASSESSMENT'* – Appraisal by T Aluko

Appendices

Appendix A: Quality Assurance / Quality Control (QA/QC) Data

Appendix B: Environmentally Permitted Sites

Appendix A: QA:QC Data

NO₂ Diffusion Tube Bias Adjustment Factors

Bias Adjustment Factors used in this report.

***Sourced from AEA Collocation Spreadsheet 03/13 which can be found at:**

<http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>

Factor from National Local Co-location Studies

(No local co-location studies have been undertaken).

Year	Bias correction factor
2006	0.79*
2007	0.82*
2008	0.78*
2009	0.82*
2010	Harwell Scientifics: 0.78*
	Environmental Scientifics Group: 0.94*
2011	0.83*
2012	0.79*

Short-term to Long-term Data adjustment

Diffusion tube sites with a data capture of less than 90% for 2012 included five sites as shown in Table 9. This has previously been undertaken for data with a capture of less than 90%, although it is now recognised that the threshold is 75%.

Short-term to Long-term Data adjustment NO₂ diffusion tube data

-----2012-----

2012 – High St, Soham (83% DC – Annual Mean 23.2 µg/m³ (bias adjusted, non-short term adjusted).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.9	17.6	1.02
Station Road, Haddenham	Roadside	24.5	23.6	1.04
A10, Stretham	Roadside	23.2	22.2	1.05
			Average	1.04

High St, Soham	Roadside	24.13 µg/m ³ (bias & long term adjusted)
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10 Months 2012: Excluding October & November (dataset unavailable).

2012 – High St, Burwell (83% DC – Annual Mean 26.4 µg/m³ (bias adjusted, non-short term adjusted).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.9	19.1	0.94
Station Road, Haddenham	Roadside	24.5	24.5	1
A10, Stretham	Roadside	23.2	23.9	0.97
			Average	0.97

High St, Burwell	Roadside	25.61 µg/m ³ (bias & long term adjusted)
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10 Months 2012: Excluding July & August (dataset unavailable).

2012 – Cam Drive, Ely (83% DC – Annual Mean 25.2 µg/m³ (bias adjusted, non-short term adjusted).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.9	17.6	1.02
Station Road, Haddenham	Roadside	24.5	23.6	1.04
A10, Stretham	Roadside	23.2	22.2	1.05
			Average	1.04

Cam Drive, Ely	Roadside	26.21 µg/m ³ (bias & long term adjusted)
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10 Months 2012: Excluding October & November (dataset unavailable).

2012 – Kings Ave, Ely (83% DC – Annual Mean 18.9 $\mu\text{g}/\text{m}^3$ (bias adjusted, non-short term adjusted)).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.9	16.9	1.06
Station Road, Haddenham	Roadside	24.5	23.2	1.06
A10, Stretham	Roadside	23.2	22.4	1.04
			Average	1.05

Kings Ave, Ely	Roadside	19.85 $\mu\text{g}/\text{m}^3$ (bias & long term adjusted)
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10 Months 2012: Excluding January & March (dataset unavailable).

2012 – Cresswells Lane, Ely (83% DC – Annual Mean 19.8 $\mu\text{g}/\text{m}^3$ (bias adjusted, non-short term adjusted)).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.9	16.6	1.08
Station Road, Haddenham	Roadside	24.5	23.1	1.06
A10, Stretham	Roadside	23.2	22.6	1.03
			Average	1.06

Cresswells Lane, Ely	Roadside	20.99 $\mu\text{g}/\text{m}^3$ (bias & long term adjusted)
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10 Months 2012: Excluding January & February (dataset unavailable).

-----2011-----

2011 - A142 Witcham Toll (83% DC – Annual Mean 30.1 $\mu\text{g}/\text{m}^3$ (bias adjusted, non-short term adjusted)).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.5	19.8	0.88
Station Road, Haddenham	Roadside	24.9	29.55	0.84
A10, Stretham	Roadside	22.0	23.4	0.94
			Average	0.89

A142 Witcham Toll	Roadside	26.8 $\mu\text{g}/\text{m}^3$ (bias & long term adjusted)
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10 Months 2011: Excluding February & March (dataset unavailable).

2011 - High Street Haddenham (87% DC – Annual Mean 24.0 µg/m³ (bias adjusted, non-short term adjusted).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.5	19.8	0.88
Station Road, Haddenham	Roadside	24.9	29.55	0.84
A10, Stretham	Roadside	22.0	23.4	0.94
			Average	0.89

High St, Haddenham	Roadside	21.4 µg/m ³ (bias & long term adjusted)
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10 Months 2011: Excluding January & December (dataset unavailable).

2011 - West End Haddenham (67% DC – Annual Mean 23.3 µg/m³ (bias adjusted, non-short term adjusted).

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio (AM/PM)
Tramar Drive, Sutton	Urban Background	17.5	19.8	0.88
Station Road, Haddenham	Roadside	24.9	29.55	0.84
A10, Stretham	Roadside	22.0	23.4	0.94
			Average	0.89

West End, Haddenham,	Roadside	20.7 µg/m ³ (bias & long term adjusted)
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8 Months 2011: Excluding January, March, April & May (dataset unavailable).

-----2010-----

All data capture above 90%, no short-term correction necessary.

-----2009-----

2009 - Short-term to Long-term Data adjustment: 38 Market St, Ely

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio
Abbot Thurston Av, Ely	Urban Background	14.1	12.6	1.12
Station Road, Ely	Roadside	27.7	27.5	1.01
Fieldside Ely	Urban Background	19.9	19.3	1.03
			Average	1.05

38 Market Street Ely	Roadside	25.4 (bias & long term adjusted)
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9 Months 2009: Excluding April, December & July (dataset unavailable).

2009 - Short-term to Long-term Data adjustment: High St, Soham

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio
Sheriffs Court, Burrough Green	Urban Background	13.6	13.5	1.01
High St, Burwell	Roadside	26.4	26.1	1.01
			Average	1.01

High St, Soham	Roadside	24.3 (bias & long term adjusted)
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9 Months 2009: Excluding March, April & July (dataset unavailable).

2009 - Short-term to Long-term Data adjustment: A10, Stretham

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio
Station Road, Haddenham	Roadside	26.3	26.0	1.01
A 142, Witcham Toll	Roadside	28.6	28.3	1.01
High St, Burwell	Roadside	26.4	26.3	1.00
			Average	1.01

A10 Stretham	Roadside	24.9 (bias & long term adjusted)
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10 Months 2009: Excluding March & July (dataset unavailable).

-----2008-----

2008 - Short-term to Long-term Data adjustment: A10, Stretham

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio
Station Rd, Haddenham	Roadside	26.3	30.2	0.87
High Street, Soham	Roadside	24.9	28.9	0.86
A142, Witcham Toll	Roadside	32.0	37.5	0.85
			Average	0.86

A10 Stretham	Roadside	20.7 (bias & long term adjusted)
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4 Months 2008: September, October, November, December.

2008 - Short-term to Long-term Data adjustment: High St, Burwell

Site	Site Type	Annual Mean (bias adjusted)	Period Mean (bias adjusted)	Ratio
High Street, Soham	Roadside	24.9	27.2	0.92
Market Street, Fordham	Roadside	22.4	27.3	0.82
Station Road, Ely	Roadside	28.6	31.6	0.91
			Average	0.88

High St, Burwell	Roadside	29.7 (bias & long term adjusted)
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3 Months 2008: September, October, November.

Table 13 East Cambridgeshire annual NO₂ concentrations forecasted to 2015

Location	Annual NO ₂ concentration 2012 ($\mu\text{g}/\text{m}^3$)	Annual NO ₂ concentration 2011 ($\mu\text{g}/\text{m}^3$) Forecast to 2015
38 Market St, Ely*	23.8	20.9
Abbot Thurston Av, Ely*	14.9	13.1
Station Rd, Ely*	20.8	18.3
Fieldside, Ely*	15.4	13.6
Main St, Littleport	18.0	15.8
High St, Soham	24.1**	21.21
Market St, Fordham	21.9	19.3
Sheriffs Court, B'Green	13.2	11.6
Station Road, Haddenham	24.5	21.5
Tramar Drive, Sutton	17.9	15.8
Nutholt Lane, Ely	23.0	20.2
A142, Witcham Toll	29.9	26.3
A10 Stretham	23.2	20.4
High St, Burwell	25.6**	22.5
Hop Row, Haddenham	31.0	27.3
High St, Haddenham	23.1	20.4
West End, Haddenham	22.8	20.0
Cam Drive, Ely	26.2**	23.1
Kings Ave, Ely	19.9**	17.5
High Barns, Ely	19.2	16.9
Thistle Corner, Ely	14.9	13.1
Prickwillow Rd, Ely	21.6	19.0
Cresswells Lane, Ely	21.0**	18.5
Broad St, Ely	27.6	24.3
Station Road, Ely	32.8	28.9
Silver Street, Ely	24.1	21.2
Lamb Corner, Ely	27.3	24.0
Nutholt Lane, Ely	26.4	23.3

*= Site included on national database

**= Adjustment factors used to determine annual mean from short term monitoring data (see Appendix A) due to data capture <90%

Appendix B: Environmentally Permitted Sites & ECDC Air Quality Planning Policies

Table 14 Relevant Environmental Permitted Processes

Name & Address	Process Description	Grid Reference
Favor Parker Ltd Chettisham Site Part A(1) Process	Animal Feed Production	555065 283297
EPR Ltd Ely Elean Business Park Sutton Part A(1) Process	Straw Fired Power Station	545166 279960
EMR Ltd Snailwell Part A(1) Process	Metal Recycling	543645 268063