



# 2011 Air Quality Progress Report

***East Cambridgeshire District Council***

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

March 2011

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<b>Report Reference number</b>	Progress Report 2011 ECDC
<b>Date</b>	March 2011

## 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 third stage (Progress Report) of the fourth review and assessment of local air quality in the district of East Cambridgeshire.

Previous review and assessment reports have been reported as a single County-wide report for all the districts in Cambridgeshire. Due to changes in the method of report submission it was agreed that individual district reports would be more appropriate from 2009 onwards.

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 2010 Progress Report did not identify that any further detailed assessments were necessary, this Progress Report finds that this is still the case. The data within this report relates to data gathered between 1st January 2010 and 31st December 2010.

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 4PL. Tel: 01353 665555.

**Table 1: Summary findings of the 2011 Progress Report for East Cambridgeshire**

<b>Pollutant</b>	<b>Exceedence observed/predicted</b>	<b>Existing AQMA</b>	<b>Proposed AQMA</b>	<b>Proposed DA</b>
<b>Benzene</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>1,3 Butadiene</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Carbon Monoxide</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Lead</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Nitrogen Dioxide (NO<sub>2</sub>)</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Fine Particles (PM<sub>10</sub>)</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Sulphur Dioxide</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

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# 1 Introduction

## 1.1 Description of Local Authority Area

### Population Growth

Based on the latest population data (2008), since 2001 the population of Cambridgeshire has increased by 6.4% to 595,500. The largest percentage increase was in East Cambridgeshire where the population has increased by 9.9% to 77,900 between 2001 and 2007 (Cambridgeshire County Council, 2008a).

**Table 2: Summary of Cambridgeshire County Council population estimates by district**  
(Cambridgeshire County Council, 2008a)

<b>District</b>	<b>Mid-2001 population</b>	<b>Mid-2007 population</b>	<b>% change 2001-2007</b>
Cambridge City	109,900	115,200	4.8%
East Cambridgeshire	70,900	77,900	9.9%
Fenland	83,700	91,300	9.1%
Huntingdonshire	157,200	162,000	3.1%
South Cambridgeshire	130,500	140,500	7.7%
<b>County</b>	<b>552,200</b>	<b>586,900</b>	<b>6.3%</b>

The following are the cities or parishes in East Cambridgeshire with populations of 5,000 or more with population estimates for mid 2007 shown:

- Ely                                17,960
- Soham                             9,440
- Burwell                          6,070
- Littleport                        7,940

(Cambridgeshire County Council, 2008a)

### Traffic levels/growth

Over the last 15 years there has been considerable traffic growth across Cambridgeshire. The latest available traffic flow data\* relates to 2010 and shows consistent, largely unchanged, traffic flows across the district compared to 2009 although there has been both increases and decreases in recorded traffic on certain roads. Of the traffic flow monitoring locations in East Cambridgeshire, recorded increases in total vehicles generally ranged from marginal up to +5.8% (12-Hour Flows, A142) from 2009 data (Cambridgeshire County Council, 2008b) but other traffic monitoring sites recorded notable decreases of up to 30.8% (12-Hour Flows, C315, Chettisham).

\* = The 2011 Traffic Monitoring Report (Cambridgeshire County Council, 2011c), as yet unpublished, but data was helpfully provided by Cambridgeshire County Council in advance of its publication.

### **Industrial Processes – Environmental Permitting Regulations 2008**

A complete list of processes permitted under the Environmental Permitting Regulations 2008 are presented in Appendix A. 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 ('LAQM') 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 (Policy Guidance PG09 (2009) & Technical Guidance LAQM. TG (09) (2009). 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.

East Cambridgeshire is a relatively low-lying district located towards the north of East Anglia. It is bordered by the Cambridgeshire districts of South Cambridgeshire, Huntingdonshire, Fenland and the Norfolk districts of King Lynn, West Norfolk as well as the Suffolk districts of Forest Heath and St Edmundsbury. It comprises approximately 650 square kilometres and the main population centres are Ely, Soham, Littleport and Burwell. There are no major industrial sources of air pollution, with agriculture being the predominant landuse. There are no motorways in the district and the main roads are the A142 crossing the district in a roughly NW-SE orientation and the A10 linking Cambridge to Ely in a north-south orientation. Both of these roads are single carriageways but do carry freight due to the presence of the A14, which borders the district to the south, linking major docks such as Felixstowe to the Midlands.

## **1.3 Air Quality Objectives**

The air quality objectives applicable to Local Air Quality Management (LAQM) in England are set out in the Air Quality (England) Regulations 2000 (SI 928), and the Air Quality (England) (Amendment) Regulations 2002 (SI 3043). They are shown in Table 3. This table shows the objectives in units of microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  (for carbon monoxide the units used are milligrammes per cubic metre,  $\text{mg}/\text{m}^3$ ).

**Table 3 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England**

<b>Pollutant</b>	<b>Concentration</b>	<b>Measured as</b>	<b>Date to be achieved by</b>
<b>Benzene</b>	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
<b>1,3-Butadiene</b>	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
<b>Carbon monoxide</b>	10.0 $\text{mg}/\text{m}^3$	Running 8-hour mean	31.12.2003
<b>Lead</b>	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
<b>Nitrogen dioxide</b>	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
<b>Particles (PM<sub>10</sub>) (gravimetric)</b>	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
<b>Sulphur dioxide</b>	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 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 fourth 'round' of review and assessment began in April 2009 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 third stage of the fourth round of Review and Assessment and is the Progress Report for the district of East Cambridgeshire 2011. This report has benefited from the release of revised Policy and Technical Guidance documents (Policy Guidance PG09 (2009) & Technical Guidance LAQM. TG (09) (2009), both released by DEFRA in February 2009.

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 2012.

East Cambridgeshire District Council has found that 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 Updating and Screening Assessment in April 2012.

## **2 New Monitoring Data**

### **2.1 Summary of Monitoring Undertaken**

Air Quality Monitoring Locations in East Cambridgeshire (all sites are Nitrogen Dioxide diffusion tubes) are given in Figure 1.

#### **2.1.1 Automatic Monitoring Sites**

For data relating to 2010, there were no real-time/continuous monitoring sites in East Cambridgeshire. Previously a real-time continuous PM10 monitor was utilised, located at Wicken Fen. Due to funding restrictions, this monitor was mothballed and generated no data in 2009 or 2010. However, funding was secured with assistance from Cambridgeshire County Councils Local Transport Plan budgets to service, calibrate and bring the monitor back online for 2011 and 2012. At the end of 2012, it is expected that the radioactive source (alpha emitting) will have decayed too much to allow the instrument to generate accurate data and therefore will need to be decommissioned. The cost of disposing of the radioactive source is likely to be such that the wholesale replacement of the instrument rather than just the source would be more cost-effective, should further monitoring be required.

#### **2.1.2 Non-Automatic Monitoring**

In East Cambridgeshire, diffusion tube monitoring (in 14 locations) of Nitrogen Dioxide is the only form of non-automatic monitoring undertaken in 2010. For nitrogen dioxide, the annual mean objective is  $40\mu\text{g}/\text{m}^3$  by 31<sup>st</sup> December 2005. This was achieved in all previous rounds of review and assessment and was again met in 2010. It is predicted that the objective will continue to be met. This objective continues to be the reference objective until it is superseded.

**Table 4 Details of Non- Automatic Monitoring Sites: Nitrogen Dioxide diffusion tubes**

Site Name	Site Type	OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure ?	Distance to kerb of nearest road	Worst-case Location?
38 Market St, Ely	Roadside	X: 554154 Y: 280427	NO <sub>2</sub>	N	Y (1m)	1.5m	Y
Abbot Thurston Av, Ely	Urban Background	X: 554616 Y: 281320	NO <sub>2</sub>	N	Y (4.5m)	1.5m	N
Station Rd, Ely	Roadside	X: 554322 Y: 279566	NO <sub>2</sub>	N	N (15m)	3.5m	Y
Fieldside, Ely	Urban Background	X: 553385 Y: 280309	NO <sub>2</sub>	N	Y (7m)	3m	Y
Main St, Littleport	Roadside	X: 556845 Y: 286801	NO <sub>2</sub>	N	Y (2.5m)	2m	Y
High St, Soham	Roadside	X: 559418 Y: 273089	NO <sub>2</sub>	N	Y (1.5m)	1.5m	N
Market St, Fordham	Roadside	X: 562682 Y: 270294	NO <sub>2</sub>	N	Y (1.5m)	1.5m	Y
Sheriffs Court, B'Green	Urban Background	X: 563721 Y: 255387	NO <sub>2</sub>	N	Y (2m)	1.5m	N
Station Road, Haddenham	Roadside	X: 546419 Y: 275628	NO <sub>2</sub>	N	N (13m)	1m	Y
Tramar Drive, Sutton	Urban Background	X: 545012 Y: 279286	NO <sub>2</sub>	N	Y (8m)	2m	Y
Nutholt Lane, Ely	Roadside	X: 554255 Y: 280536	NO <sub>2</sub>	N	Y (2.5m)	2.5m	Y
A142, Witcham Toll	Roadside	X: 546346 Y: 279106	NO <sub>2</sub>	N	Y (5m)	1m	Y
A10 Stretham	Roadside	X: 550811 Y: 274395	NO <sub>2</sub>	N	N (12m)	1.5m	Y
High St, Burwell	Roadside	X: 558896 Y: 266364	NO <sub>2</sub>	N	Y (4m)	2m	N

The 14 Diffusion Tube locations are given in Table 4, most of which are located at the roadside or kerbside along with four urban background sites. Two new tubes were added to the network in August 2008, located on the A10 at Stretham and High Street, Burwell. Therefore only three and four months of data were collected for these roadside tubes in 2008, with their first full year of data captured in 2009. In addition, some diffusion tube sites suffered a reduced data capture in 2009 due to tubes being lost or stolen. This continued to a lesser degree in 2010. In addition to some tubes being lost, others were contaminated by spiders nesting in the tubes (in which case the laboratory do not analyse them), which can also cause a loss of data. To account for the short-term data capture in 2009 (it was not below 90% in 2010), 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 two 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 14 in Appendix A. They were made using the updated method outlined in Technical Guidance LAQM. TG (09), Box 2.1.

For seven months of 2010, Harwell Scientifics (“Scientifics”) supplied and analysed the nitrogen dioxide tubes for East Cambridgeshire District Council and Environmental Scientifics Group (“ESG”) provided this service for the remaining five months. The reason for the change of labs initially was cost driven, with Environmental Scientifics Group providing better value for the Council’s pressured budgets. Then after five months into the new service contract the labs merged with the testing transferred back to Scientifics. The tubes are prepared by spiking acetone: triethanolamine (50:50 - Scientifics, 80:20 - ESG) 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 Harwell Scientifics standard operating procedure HS/WI/1015 issue 14 and Environmental Scientifics Groups Method Code AQ02. These methods meet the guidelines set out in DEFRA’s ‘Diffusion Tubes For Ambient NO<sub>2</sub> 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.

Both of 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, both Harwell Scientifics and Environmental Scientifics Group are currently ranked as a **Category Good** laboratories.

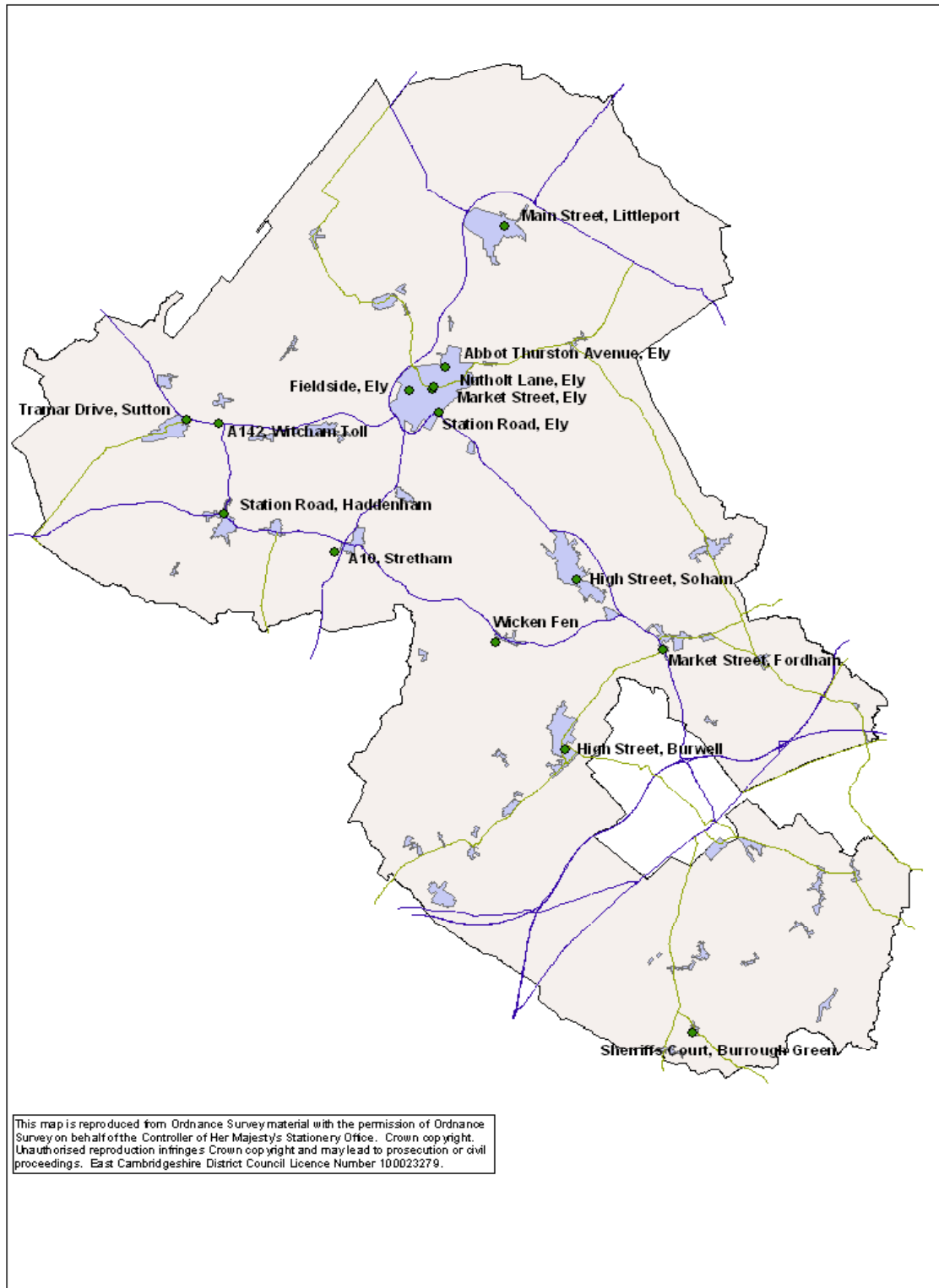
Exposure periods for the diffusion tubes are those of the UK Nitrogen Dioxide Diffusion Tube Network run by NETCEN, with the tubes being changed every four or five weeks. QA/QC procedures are as detailed in the UK NO<sub>2</sub> Diffusion Tube Network Instruction Manual, which can be found at [www.airquality.co.uk/archive/reports/cat06/no2instr.pdf](http://www.airquality.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 three sets (Scientifics) and one set (ESG) of diffusion tubes (for 2010 data), which were collocated with real-time analysers in 2010.

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

**Figure 1: 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 real-time continuous PM10 monitor – currently mothballed)



## 2.2 Comparison of Monitoring Results with Air Quality Objectives

### Nitrogen Dioxide

Compared with the data gathered in 2009, the corrected diffusion tube readings for 2010 are consistently higher, although they continue to achieve the National Objectives. The data for 2009 showed a general reduction in recorded concentrations compared with 2008, and was comparable to the data gathered in 2007. A map detailing the locations of the diffusion tubes are shown in Figure 1.

The national air quality objective being  $40\mu\text{g}/\text{m}^3$  to be achieved by 31<sup>st</sup> December 2005, as outlined in Table 1, has been achieved at all diffusion tube monitoring locations in 2006-2010, as shown in tables 5 and 6.

For 2010, all data capture levels were above 90%, indicating that no adjustments had to be made to 'annualise' reduced datasets.

In 2009, data capture at three 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 three sites, the relevant calculations are included in Appendix A.

Forecasts of nitrogen dioxide diffusion tube results to 2015 have been made and are presented in Table 14 in Appendix A. They were made using the updated method outlined in Technical Guidance LAQM. TG (09), Box 2.1. The forecasted data for 2015 in Table 14 is shown alongside the forecasted data to 2010 (based on 2009 monitoring data) and the actual data for 2010. Given the consistently underestimated concentrations shown utilising this method of forecasting future years, and that (as shown in Figure 2) the general trend of recorded nitrogen dioxide concentrations in East Cambridgeshire is actually increasing, not decreasing, it has to be considered that little reliance can be placed on this forecasted 2015 data.

**Table 5 Results of Nitrogen Dioxide Diffusion Tubes for 2010**

Site ID	Location	Within AQMA?	Data Capture (full calendar year - 2010)	Annual mean concentrations
				2010 ( $\mu\text{g}/\text{m}^3$ ) Adjusted for bias
NAS1*	38 Market St, Ely	N	92%	27.0
NAS2*	Abbot Thurston Av, Ely	N	100%	17.1
NAS3*	Station Rd, Ely	N	100%	29.3
NAS4*	Fieldside, Ely	N	100%	17.1
NAS5	Main St, Littleport	N	100%	20.4
NAS6	High St, Soham	N	100%	24.6
NAS7	Market St, Fordham	N	100%	23.9
NAS8	Sheriffs Court, B'Green	N	100%	13.6
NAS9	Station Road, Haddenham	N	92%	29.4
NAS10	Tramar Drive, Sutton	N	92%	20.9
NAS11	Nutholt Lane, Ely	N	100%	25.5
NAS12	A142, Witcham Toll	N	100%	34.1
NBS1	A10 Stretham	N	100%	25.9
NBS2	High St, Burwell	N	100%	29.6

\* = Site included on national database

**Table 6 Results of Nitrogen Dioxide Diffusion Tubes 2006, 2007, 2008 & 2009**

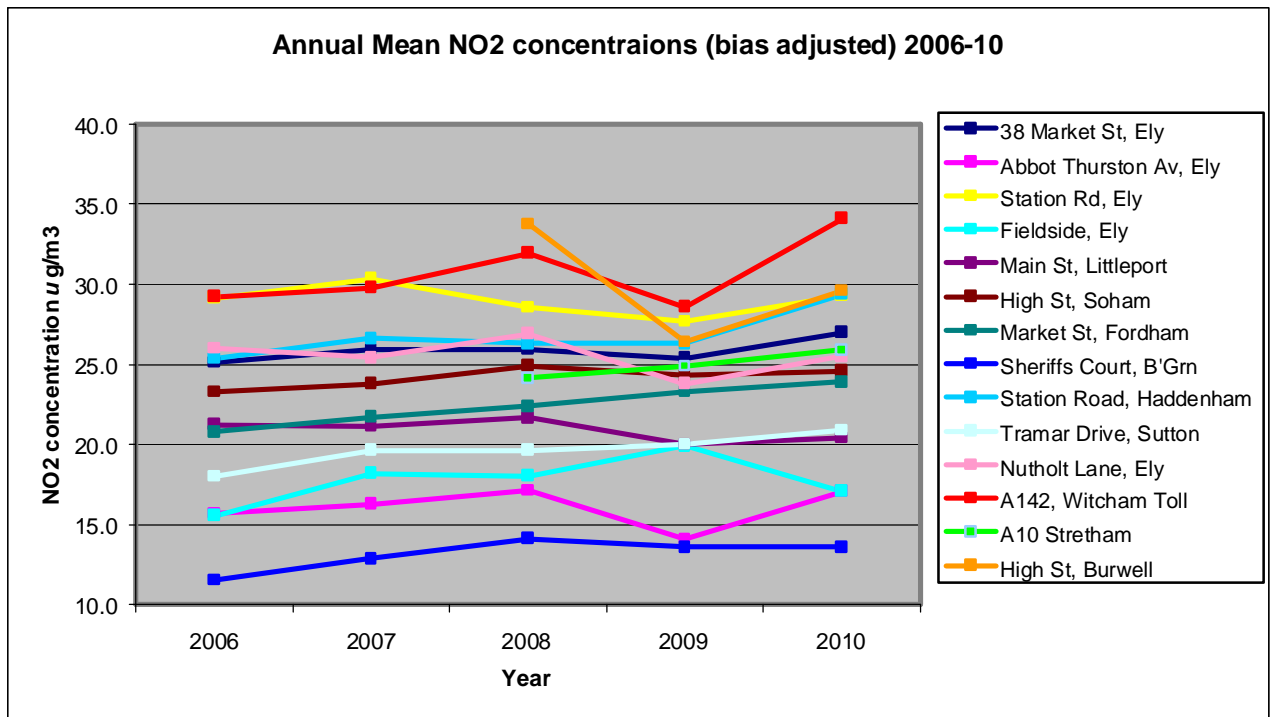
Site ID	Location	Within AQMA?	Annual mean concentrations ( $\mu\text{g}/\text{m}^3$ ) Adjusted for bias			
			2006	2007	2008	2009
NAS1*	38 Market St, Ely	N	25.1	25.9	26.0	25.4**
NAS2*	Abbot Thurston Av, Ely	N	15.7	16.3	17.2	14.1
NAS3*	Station Rd, Ely	N	29.2	30.4	28.6	27.7
NAS4*	Fieldside, Ely	N	15.6	18.2	18.1	19.9
NAS5	Main St, Littleport	N	21.3	21.1	21.7	20.0
NAS6	High St, Soham	N	23.3	23.8	24.9	24.3**
NAS7	Market St, Fordham	N	20.8	21.7	22.4	23.3
NAS8	Sheriffs Court, B'Green	N	11.5	12.9	14.1	13.6
NAS9	Station Road, Haddenham	N	25.4	26.6	26.3	26.3
NAS10	Tramar Drive, Sutton	N	18.0	19.6	19.7	20.0
NAS11	Nutholt Lane, Ely	N	26.0	25.4	26.9	23.8
NAS12	A142, Witcham Toll	N	29.2	29.8	32.0	28.6
NBS1	A10 Stretham	N	N/A - Tube installed in August 2008		20.7**	24.9**
NBS2	High St, Burwell	N			29.7**	26.4

\* = Site included on national database

\*\* = Adjustment factors used to determine annual mean from short term monitoring data (see Tables 9-13, Appendix A) due to data capture <90%

There are no co-location sites, triplicate tubes or any multiple tube locations included within East Cambridgeshire's network.

**Figure 2: Trends in Annual Mean Nitrogen Dioxide Concentration Measured at Diffusion Tube Monitoring Sites**



**2.2.1 Sulphur Dioxide**

No monitoring of this pollutant has been carried out.

**2.2.2 Benzene**

No monitoring of this pollutant has been carried out.

**2.2.3 Other pollutants monitored**

None.

**2.2.4 No monitoring of other pollutants has been carried out**

**2.2.5 Summary of Compliance with AQS Objectives**

East Cambridgeshire District Council has examined the results from monitoring in the district. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

## **3 New Local Developments**

There were no new developments (or subsequent air quality impact assessments) in East Cambridgeshire in 2010 that may significantly worsen local air quality.

### **3.1 Road Traffic Sources**

East Cambridgeshire District Council confirms that there are no new or newly identified road traffic sources, which may have an impact on air quality within the district.

### **3.2 Narrow Congested Streets with Residential Properties Close to the Kerb**

East Cambridgeshire District Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

### **3.3 Busy Streets Where People May Spend 1-hour or More Close to Traffic**

East Cambridgeshire District Council confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

### **3.4 Roads with a High Flow of Buses and/or HGVs**

East Cambridgeshire District Council confirms that there are no new/newly identified roads with high flows of buses/HDVs.

### **3.5 Junctions**

There is one busy junction (with more than 10,000vpd) that is relevant, located at the A142, Witcham Toll. In previous Updating and Screening Assessments and Progress Reports, another location was also assessed which was Market Street, Fordham, although, as stated in the 2006 Updating and Screening Assessment, this location has since been by-passed and is no longer a concern.

However, for the junction located at the A142, Witcham Toll, following consultation with the Air Quality Review & Assessment Helpdesk on 17/4/09 in support of the 2009 Updating and Screening Assessment, it was decided that although traffic flows have increased slightly on the A142 a few miles to the west of Witcham Toll (Chatteris – Mepal), because the position of the diffusion tube is a worst-case location at Witcham Toll, and the annual mean adjusted average for 2008 was still acceptable at  $32\mu\text{g}/\text{m}^3$  (which has since increased in 2010 to  $34.1\mu\text{g}/\text{m}^3$ ), this is not considered a potential concern and therefore no DMRB assessment was deemed necessary.

East Cambridgeshire District Council confirms that there are no new/newly identified busy junctions/busy roads.

## **3.6 Other Transport Sources**

### **3.6.1 Airports**

East Cambridgeshire District Council confirms that there are no airports in the Local Authority area.

## **3.7 Railways (Diesel and Steam Trains)**

### **3.7.1 Stationary Trains**

East Cambridgeshire District Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

### **3.7.2 Moving Trains**

East Cambridgeshire District Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

## **3.8 Ports (Shipping)**

East Cambridgeshire District Council confirms that there are no ports or shipping that meet the specified criteria within the district.

## **3.9 Industrial Sources**

East Cambridgeshire District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

East Cambridgeshire District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

East Cambridgeshire District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority

There are no major fuel (petrol) storage depots within the Local Authority area.

East Cambridgeshire District Council confirms that there are no petrol stations meeting the specified criteria.

East Cambridgeshire District Council confirms that there are no poultry farms meeting the specified criteria.

## **3.10 Commercial and Domestic Sources**

East Cambridgeshire District Council confirms that there are no new commercial installations permitted within the district in 2010.

### **3.10.1 New Developments with Fugitive or Uncontrolled Sources**

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 district.

## 4 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.

**Figure 3: 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.

## **5 Conclusions and Proposed Actions**

### **5.1 Conclusions from New Monitoring Data**

There are currently no AQMAs in East Cambridgeshire. In addition, there are currently no identified exceedences of the Local Air Quality Management annual mean objectives at relevant locations to require a detailed assessment to be undertaken.

Recorded levels of nitrogen dioxide in 2010 have increased, quite notably, since the previous Progress Report, although they are still acceptable.

With the addition of two nitrogen dioxide diffusion tubes to the monitoring network in 2008, and their first full year of monitoring in 2009, it is considered that the increased diffusion tube network provides a more comprehensive tool for screening air quality in East Cambridgeshire.

### **5.2 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.

### **5.3 Other Conclusions**

In the year of 2009 and 2010, pre-application discussions and assessments were undertaken for future planning applications at two sites, whereby air quality was cited as a concern and would need further consideration. These planning applications related to proposed developments and the subsequent air quality impacts, resulting from a new Supermarket on Lisle Lane, Ely and a Waste Facility, in Fordham. Air Quality Impact Assessments were carried out for these sites, by consultants acting on behalf of the developer, which were to the Councils satisfaction.

### **5.4 Proposed Actions**

As outlined in the Executive Summary, the 2011 Progress Report has not identified the need to proceed to a Detailed Assessment for any pollutants in East Cambridgeshire. The next report on the air quality in East Cambridgeshire will be the Updating and Screening Assessment initiating the fifth round of Review and Assessment which will cover data gathered in the period between 1<sup>st</sup> January 2011 to 31<sup>st</sup> December 2011 and will be submitted in April 2012.

## 6 References

Cambridgeshire County Council (2008a) '*Cambridgeshire Population and Dwelling Stock Estimates*'

Available from

<http://www.cambridgeshire.gov.uk/NR/rdonlyres/B4FC6DE4-92F3-447F-8F84-D4689D84BEBB/0/Text07Bk.pdf>

[Accessed 3<sup>rd</sup> March 2010]

Cambridgeshire County Council (2008b) '*Traffic Monitoring Report 2009*'

Available from

<http://www.cambridgeshire.gov.uk/transport/monitoring/network/traffic+monitoring+report.htm>

[Accessed 3<sup>rd</sup> March 2010]

Cambridgeshire County Council (2011c) '*Traffic Monitoring Report 2011*'

(Unpublished)

DEFRA (2009a) '*Local Air Quality Management*' Technical Guidance LAQM. TG (09)

DEFRA (2009b) '*Local Air Quality Management*' Policy Guidance PG (09)

Hughes, G (2008) Planning Context: '*Ely Masterplan: devising a city for everyone*', East Cambridgeshire District Council

Available from

<http://www.eastcambs.gov.uk/docs/publications/devservices/empecdcplan.pdf>

[Accessed 3<sup>rd</sup> March 2010]

## Appendices

### Appendix A: Environmentally Permitted Sites & QA:QC Data

## Appendix A: QA:QC Data

**Table 7: Relevant Environmentally 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
BRS TRAINING Ltd Newmarket Part B Process	Biomass Burner (straw fired)	564831 266044

## Diffusion Tube Bias Adjustment Factors

Bias Adjustment Factors used in this report.

\*Sourced from AEA Collocation Spreadsheet 03/11 which can be found at:

<http://www.uwe.ac.uk/aqm/review/R&Asupport/diffusiontube310310.xls>

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*

### Factor from Local Co-location Studies (if available)

No co-location studies have been undertaken.

**Table 8: East Cambridgeshire monthly NO<sub>2</sub> Tube Results 2010**

NO <sub>2</sub>	2010		ugm3												RAW	Bias Adj
	Exposure Period	10	11	12	1	2	3	4	5	6	7	8	9			
SITE NAME	SITE TYPE	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	AVG	AVG	
38 Market St, Ely*	Roadside	40.9	42.9	36.3	43.9	27.2	27.5	20	23.7	28.2	31.9	29.2	NA	32.0	27.0	
Abbot Thurston Av, Ely*	Urban Background	31	28.8	21	17.6	13.2	8.5	14.8	12.3	16.8	22.6	18.8	33.8	19.9	17.1	
Station Rd, Ely*	Roadside	45.7	50.6	43.9	39.6	28.7	28.5	25.3	20.5	30.5	30.3	36.1	33	34.4	29.3	
Fieldside, Ely*	Urban Background	1.2	32.6	25.8	20.6	16.3	11.9	15.6	13.5	17.3	21.9	25.9	34.4	19.8	17.1	
Main St, Littleport	Roadside	35.7	33.5	27.4	23.6	15.7	16.9	17.1	16.6	17.8	25.1	19.8	36.6	23.8	20.4	
High St, Soham	Roadside	40	45.4	36.7	37.9	4.5	27.3	23.24	18.5	23.4	26	23.4	38	28.7	24.6	
Market St, Fordham	Roadside	37.7	37.5	28.9	33.5	17.9	19.6	22	20.5	24.2	23.8	31.5	36.8	27.8	23.9	
Sheriffs Court, B'Green	Urban Background	23.2	18.2	20	21.3	5.7	8.8	10.7	10.1	11.5	17.7	20.9	23.4	16.0	13.6	
Station Road, Haddenham	Roadside	43.7	45.5	34.7	29.9	20.4	28.2	38.5	29.2	NA	30	33.3	39.8	33.9	29.4	
Tramar Drive, Sutton	Urban Background	35.4	32	27.5	27.2	16.6	14.8	NA	15.2	19	21.1	26.9	33.8	24.5	20.9	
Nutholt Lane, Ely	Roadside	41.6	42	29.7	30.7	24.8	22.5	26.1	20.8	26.2	26.8	32.2	34.3	29.8	25.5	
A142, Witcham Toll	Roadside	55.2	49.7	43.5	43.5	32.8	38.8	32.1	30.1	37.4	37.2	24	49.5	39.5	34.1	
A10 Strettham	Roadside	42.9	43	32.7	36.5	30.6	33.1	22.7	19.8	25.4	30.2	33.9	14.6	30.5	25.9	
High St, Burwell	Roadside	48.5	45.2	36.5	35.2	27.1	28.7	28	22	30	31.7	36.2	44.7	34.5	29.6	
Laboratory		Harwell Scientifics			Environmental Services Group					Harwell Scientifics						

\* = Site included on national database

## QA/QC of automatic monitoring

N/A (no automatic monitoring sites)

## QA/QC of diffusion tube monitoring

For seven months of 2010, Harwell Scientifics (“Scientifics”) supplied and analysed the nitrogen dioxide tubes for East Cambridgeshire District Council and Environmental Scientifics Group (“ESG”) provided this service for the remaining five months. The reason for the change of labs initially was cost driven, with Environmental Scientifics Group providing better value for the Council’s pressured budgets. Then after five months into the new service contract the labs merged with the testing transferred back to Scientifics. The tubes are prepared by spiking acetone: triethanolamine (50:50 - Scientifics, 80:20 - ESG) 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 Harwell Scientifics standard operating procedure HS/WI/1015 issue 14 and Environmental Scientifics Groups Method Code AQ02. These methods meet the guidelines set out in DEFRA’s ‘Diffusion Tubes For Ambient NO<sub>2</sub> 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.

Both of 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, both Harwell Scientifics and Environmental Scientifics Group are currently ranked as a **Category Good** laboratories.

## Short-term to Long-term Data adjustment

-----2009-----

**Table 9: 2009 data: 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).

**Table 10: 2009 data: 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).

**Table 11: 2009 data: 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-----

**Table 12: 2008 data: 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.

**Table 13: 2008 data: 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 14: East Cambridgeshire annual NO<sub>2</sub> concentrations forecasted to 2010 and 2015**

Site	Annual NO <sub>2</sub> concentration 2010 ( $\mu\text{g}/\text{m}^3$ )*	Forecasted 2010**	Forecast to 2015***
38 Market St, Ely	27.0	24.0	21.9
Abbot Thurston Av, Ely	17.1	13.3	13.9
Station Rd, Ely	29.3	26.2	23.7
Fieldside, Ely	17.1	18.8	13.9
Main St, Littleport	20.4	18.9	16.5
High St, Soham	24.6	22.9	19.9
Market St, Fordham	23.9	22.0	19.4
Sheriffs Court, B'Green	13.6	12.8	11.0
Station Road, Haddenham	29.4	24.8	23.8
Tramar Drive, Sutton	20.9	18.8	16.9
Nutholt Lane, Ely	25.5	22.4	20.7
A142, Witcham Toll	34.1	27.0	27.6
A10 Stretham	25.9	23.5	21.0
High St, Burwell	29.6	24.9	24.0

\*Bias adjusted data

\*\* Based on 2009 data (bias adjusted)

\*\*\*Based on 2010 data (bias adjusted)