

# 2014 Air Quality Progress Report for South Cambridgeshire District Council

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

April 2014

**South Cambridgeshire District Council**

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## **Executive Summary**

This Report constitutes the 2014 Air Quality Review and Assessment Progress Report for South Cambridgeshire District Council. The Report includes air quality monitoring data from 2013. It also covers other issues and developments that have occurred in the last twelve months, since the Progress Report of 2013 that may have an impact on the local air quality.

The objectives for nitrogen dioxide were met at all the monitoring locations (continuous and passive monitoring) apart from the Hackers Fruit Farm Cottage (passive monitoring) where the air – quality objectives was slightly exceeded. The daily and annual mean objective for PM<sub>10</sub> was achieved at Orchard Park School and Girton continuous monitoring stations but was exceeded at Impington site. However, as Impington PM<sub>10</sub> result was a snapshot monitoring for the whole year due to the temporary site decommissioning, the data is not sufficient enough for comparison against the AQ objectives within this report and was not used.

In 2013, South Cambridgeshire District Council submitted its 2013 Progress Report where it was reported that the report has not identified any locations where a Detailed Assessment for any source or pollutants should be conducted. However, it was stated that SCDC will continue to monitor all its existing sites at Impington, Orchard Park and Girton with the implementation of the measures outlined in the authority Action Plan for the existing AQMA.

Therefore, with the exception of the delay to the A14 upgrading and improvements work that is now about to commenced, there is no other major infrastructural project or development that may have significantly changed the conclusions of the last Progress Report or the status of the Council current Air Quality Management Area.

The next air quality review and assessment report will be the 2015 Updating and Screening Assessment Report.

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# **1 Introduction**

## **1.1 Description of Local Authority Area**

South Cambridgeshire is a rural district in East Anglia, which entirely surrounds but does not include the city of Cambridge. It is the southernmost district of the county of Cambridgeshire and borders Bedfordshire to the west, Hertfordshire to the south, Essex to the southeast and Suffolk to the east. The district is comprised of 102 parishes with all settlements classified as villages. The landscape and villages are equally varied.

The area has good road and rail links with London and the South-East. The M11/A11 and A14 corridors pass through the District to the west/south and north of Cambridge respectively. To date, air quality issues within the District of South Cambridgeshire have been linked directly to the volume of traffic that runs through the District, specifically along the A14. The A14 is congested on a regular basis between Bar Hill (to the West of Cambridge) and Milton (to the North North-East of Cambridge). This has resulted in the declaration of an Air Quality Management Area for nitrogen dioxide (NO<sub>2</sub>) and PM<sub>10</sub> along the stretch of the A14 between Bar Hill and Milton. Traffic levels have continued to grow along the A14 through the District so that the road is now almost at its maximum capacity.

## **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. 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 LAQM process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence 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.

### **1.3 Air Quality Objectives**

The air quality objectives applicable to LAQM in **England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  (milligrammes per cubic metre,  $\text{mg}/\text{m}^3$  for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

**Table 1.1 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 <sup>3</sup>	Running annual mean	31.12.2003
	5.00 µg/m <sup>3</sup>	Annual mean	31.12.2010
1,3-Butadiene	2.25 µg/m <sup>3</sup>	Running annual mean	31.12.2003
Carbon monoxide	10 mg/m <sup>3</sup>	Running 8-hour mean	31.12.2003
Lead	0.50 µg/m <sup>3</sup>	Annual mean	31.12.2004
	0.25 µg/m <sup>3</sup>	Annual mean	31.12.2008
Nitrogen dioxide	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m <sup>3</sup>	Annual mean	31.12.2005
Particulate Matter (PM <sub>10</sub> ) (gravimetric)	50 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m <sup>3</sup>	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005



## 1.4 Summary of Previous Review and Assessments

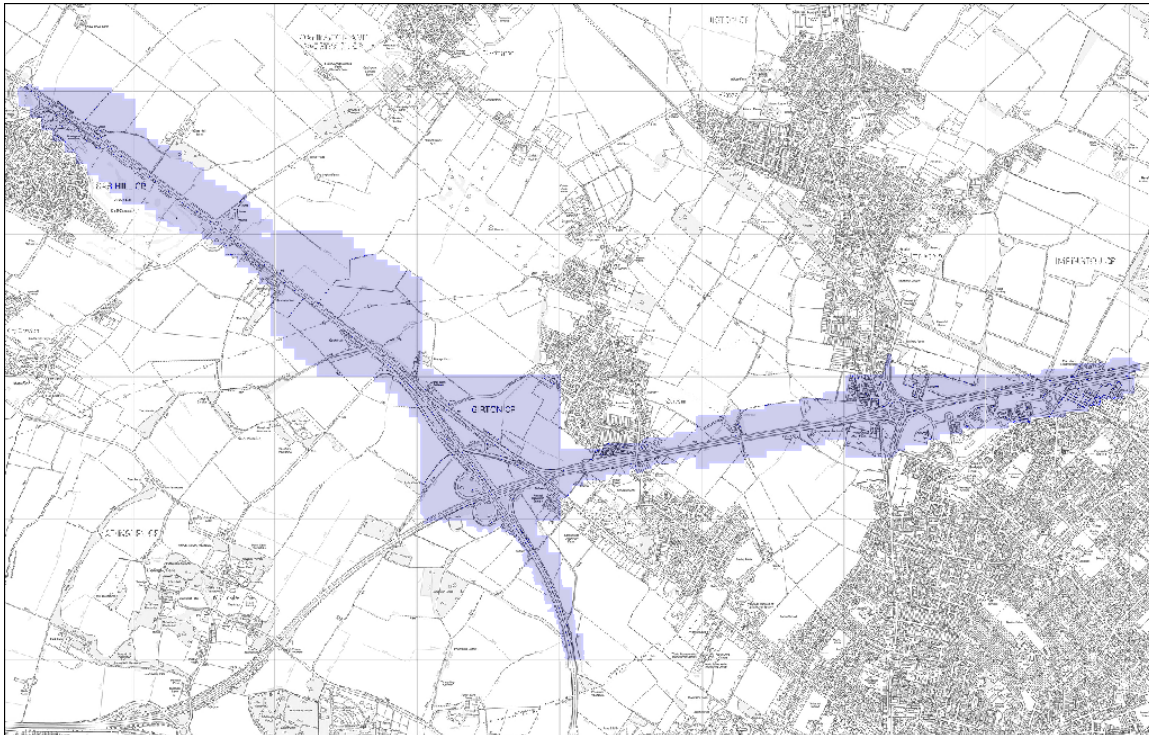
### Timeline of Significant Reports Prepared and Submitted by South Cambridgeshire District Council

Report	Year	Conclusion
Review and Assessment	1998	The report progress benzene, 1-3 butadiene, lead, carbon monoxide, PM <sub>10</sub> and nitrogen dioxide to a Stage 2 assessment. The overall conclusion was that all objectives were likely to be met.
Review and Assessment	2000	All objectives likely to be met, however, given the increasing traffic on the A14 and the introduction of new industrial sources, it was concluded that detailed monitoring would be required for nitrogen dioxide, PM <sub>10</sub> and sulphur dioxide.
Updating and Screening Assessment	2003	Based on monitoring results, it was concluded that all objectives were likely to be met.
Progress Report	2004	Monitoring results were showing exceedences of the annual mean for nitrogen dioxide along a stretch of the A14, therefore a Detailed Assessment was required for NO <sub>2</sub> . All other objectives were predicted as likely to be met.
Detailed Assessment of Nitrogen Dioxide Along the A14 Corridor	2006	The annual mean objective for nitrogen dioxide was not likely to be met along the A14 between Bar Hill and Milton; therefore, it was necessary to declare an Air Quality Management Area.
Progress Report	2007	Monitoring results were showing exceedences of the daily mean for PM <sub>10</sub> along a stretch of the A14, therefore a Detailed Assessment was required for PM <sub>10</sub> . Monitoring of NO <sub>2</sub> along the A14 continued to show exceedences of the annual mean objective. All other objectives were predicted as likely to be met.
Detailed Assessment of PM <sub>10</sub> Along the A14 Corridor	2008	The daily mean objective for PM <sub>10</sub> was not likely to be met along the A14 between Bar Hill and Milton; therefore, it was necessary to declare an Air Quality Management Area.
Progress Report	2008	A Further Assessment of NO <sub>2</sub> and PM <sub>10</sub> were required. Objectives for all other pollutants were predicted as likely to be met.
Further Assessment of nitrogen dioxide and PM <sub>10</sub> Along the A14 Corridor	2008	The AQMA for NO <sub>2</sub> and PM <sub>10</sub> was declared. An Air Quality Action Plan (AQAP) is required and consultation is underway for its development.
Updating and Screening Assessment	2009	Based on the monitoring results from the previous year, it was concluded that levels of NO <sub>2</sub> and PM <sub>10</sub> along the A14 between Bar Hill and Milton would remain above the national objective. No other significant developments or increases in traffic or industrial emissions were identified.
Air Quality Action Plan	2010	Acceptance of Air Quality Action Plan by Defra. Detailed priority actions to be worked on over the coming years.
Progress Report	2010	Progress made towards improving air quality with

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		improvements to local policy and strategy. No significant local / infrastructure changes.
Progress Report	2011	During 2010, the objectives for nitrogen dioxide were met at all monitoring locations. However, the daily PM <sub>10</sub> objective was exceeded at the Bar Hill and Impington continuous monitoring stations and the annual mean PM <sub>10</sub> objective was exceeded at Impington.
Modelling Assessment (not submitted as review and assessment report)	2011	As a result of recent monitoring results and review of the Air Quality Management Area, an air quality assessment was conducted using ADMS-Urban model the air quality along A14. In summary: <ul style="list-style-type: none"> <li>• The modelling study concluded that there continues to be exceedences of air quality objectives for NO<sub>2</sub> (annual mean) and PM<sub>10</sub> (daily mean) on both the north and south sides of the A14.</li> <li>• The modelling study shows that, despite current exceedences, all locations will achieve national objectives by 2016.</li> <li>• Depending on future monitoring, it is possible that the AQMA may have to be expanded on the north side of the A14 to incorporate Hill Farm Cottages at Swavesey</li> <li>• If monitoring at all locations on the south side of the A14 continue to indicate that national objectives are being achieved at those locations, the AQMA may be modified so that it only incorporates the north side of the A14 (no exceedences, no need for an AQMA).</li> </ul>
Updating and Screening Assessment	2012	No new sources identified for any Detailed Assessment to have been required. However, an NO <sub>2</sub> (annual mean) in excess of the 40 µg/m <sup>3</sup> objectives was measured at one of the automatic monitoring sites in Bar Hill. There is no exceedance of the NO <sub>2</sub> 1-hour mean objective at any of the automatic monitoring stations but an annual mean PM <sub>10</sub> concentration in excess of the 40 µg/m <sup>3</sup> objective was measured at the Impington automatic monitoring site. The 50 µg/m <sup>3</sup> 24-hr mean objective was exceeded 119 times at the same site whilst all the air quality objectives were achieved at other monitoring locations of relevant exposure outside the existing AQMA.
Progress Report	2013	Whilst there are no new sources identified for detailed assessment to be carried out, monitoring data showed exceedences of the daily and annual mean objective for PM <sub>10</sub> at the Impington monitoring station but this with Nitrogen Dioxide was achieved at the Orchard Park and Girton monitoring stations whilst the NO <sub>2</sub> objectives was also achieved at the Impington site.

**Figure 1.1 Map(s) of AQMA Boundaries (if applicable)**



The Air Quality Management Area (as pictured in Figure 1.1, above) was initially declared in July 2007 following measured and modelled exceedences of the annual mean objective for nitrogen dioxide. The following year, exceedences of the daily mean objective for PM<sub>10</sub> were identified at the Bar Hill and Impington continuous monitoring stations. As a result of this, a Detailed Assessment of PM<sub>10</sub> was carried out. This led to the revocation of the original AQMA and the designation of a 2nd AQMA to include PM<sub>10</sub> in July 2008. After discussions with Defra, it was decided that the boundary for the PM<sub>10</sub> (which was originally slightly smaller than that of the NO<sub>2</sub> AQMA) would be the same as the original boundary for nitrogen dioxide.

## **2 New Monitoring Data**

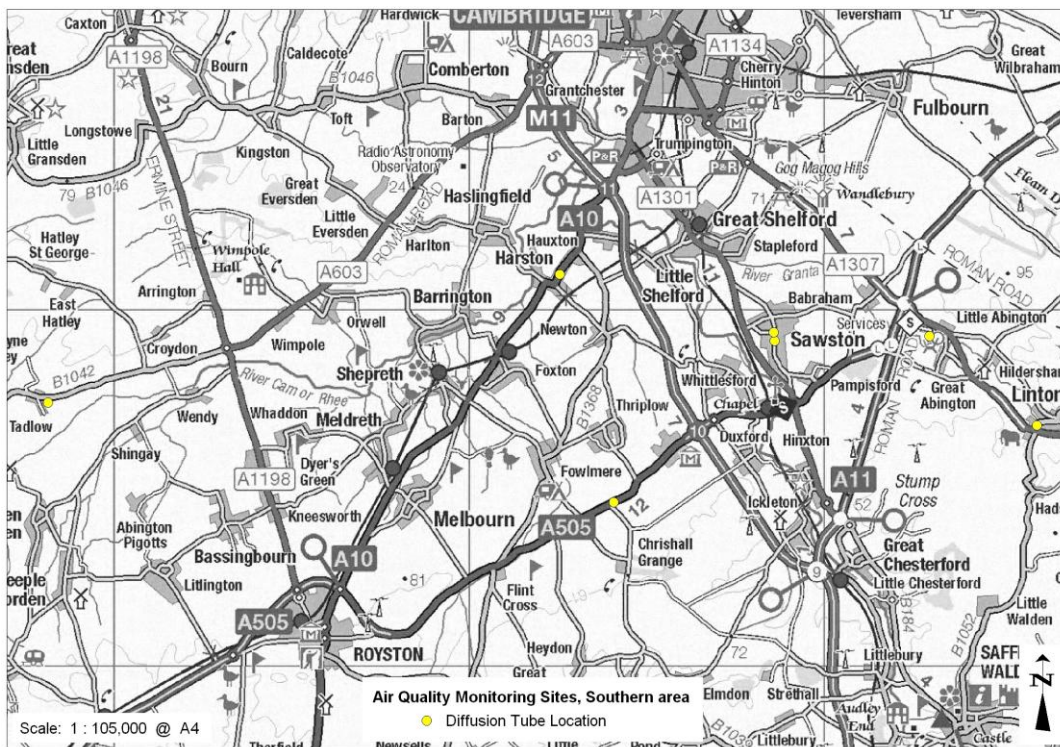
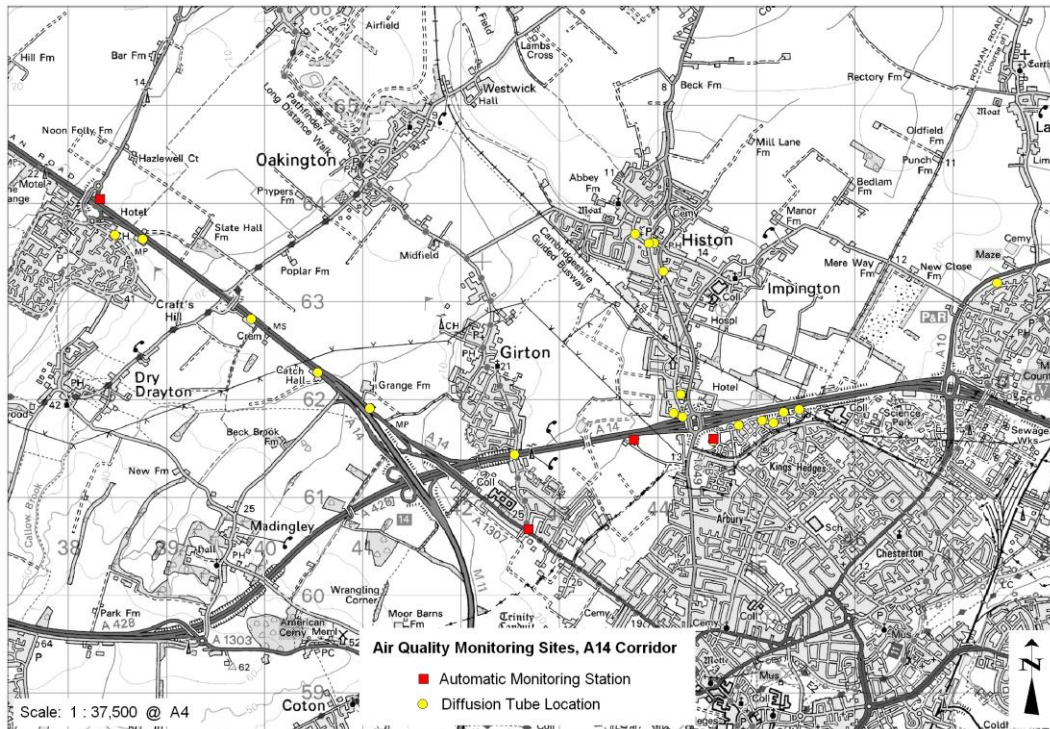
### **2.1 Summary of Monitoring Undertaken**



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

South Cambridgeshire District Council operated automatic monitoring stations at 3 different sites within the District in the year 2013. These are the Orchard Park, Girton and Impington monitoring sites for measuring PM<sub>10</sub> and NO<sub>2</sub> apart from the Girton monitoring site that also measures PM<sub>2.5</sub>. The particulate matter analyser at the Impington monitoring site was temporarily discontinued from the middle of February, 2013 – December, 2013 due to the statutory obligations of the council to replace all the analysers in its monitoring sites with radioactive materials. Details of these sites are provided in Table 2.1.

- Ratification and QA/QC of automatic monitoring data is carried out by AEA Technology (<http://www.aeat.co.uk>) now Ricardo – AEA.
- Bi-annual audits of the monitoring stations are carried out by AEA Technology.
- Services are carried out bi-annually by the equipment suppliers for Impington site which is Air Monitors Ltd whilst the site at Girton and Orchard Park School is serviced by Enviro - Technology.
- The sites are manually calibrated on a monthly basis by the Local Site Operative. The output from the calibrations is forwarded to AEAT now Ricardo – AEA for QA/QC and ratification purposes.
- South Cambridgeshire District Council is a member of the Calibration Club, operated by AEAT now Ricardo – AEA.
- All NO<sub>x</sub> analysers are chemiluminescence analysers.
- All particulate matter analysers are BAMs. In line with current guidance, BAM data is multiplied by 1.3 to give the gravimetric equivalent.

Figure 2.1 Map of Automatic and Non-automatic Monitoring Sites



-  = Diffusion tube location
-  = Automatic monitoring station

**Table 2.1 Details of Automatic Monitoring Sites**

Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	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?
Impington (A14)	Roadside	543739	261625	NO <sub>x</sub> (NO <sub>2</sub> ) PM <sub>10</sub>	Y	Thermo 42C Eberline BAM (FH62)	Y (12m)	N/A	Y
Orchard Park Primary School (A14)	Urban background	544558	261579	NO <sub>x</sub> (NO <sub>2</sub> ) PM <sub>10</sub>	Y	ET M200E ET BAM1020	Y (1m)	N/A	Y
Girton	Roadside	542676	260667	NO <sub>x</sub> (NO <sub>2</sub> ) PM <sub>10</sub> ,PM <sub>2.5</sub>	N	ET M200E ET BAM1020	Y (5m)	5	Y

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

The monitoring of nitrogen dioxide by diffusion tube has been an on-going project since 1995. There are currently 27 sites within the District as detailed in Figure 2.1 with the locations including a kerbside, intermediate as well as urban background sites.

During 2013, NO<sub>2</sub> monitoring was undertaken at 27 sites within the district using passive diffusion tubes. However, the Orchard Park School monitoring site was used as a co-location with triplicate tubes at the site.

The tubes are supplied and analysed by Environmental Scientifics Group (ESG - formerly Harwell Scientifics), a UKAS accredited laboratory (0322). The tube preparation method is 50% TEA in Acetone and analysis is by desorption with distilled water, with the extract analysed using a segmented flow auto analyser with ultraviolet detection. The exposure periods for the diffusion tubes are those of the UK Nitrogen Dioxide Diffusion Tube Network run by NETCEN which effectively is a four or five week duration. 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)

A laboratory bias adjustment factor of 0.79 (taken from the 2013 national database of diffusion tube adjustment factors) has been applied to the 2013 diffusion tube results. Full details of the diffusion tube QA/QC are presented in Appendix 1.

#### **Summary of tube details:**

- Analysing lab: Environmental Scientifics Group (ESG) Ltd  
(Formerly Harwell Scientifics Ltd)  
12 Moorbrook  
Southmead Industrial Park  
Didcot  
Oxon  
OX11 7HP
- Diffusion tube preparation method used: 50:50 (acetone:triethanolamine)
- ESG Ltd confirms that the methods and procedures they follow meet the guidelines set out in Defras' "Diffusion Tubes for Ambient Monitoring: Practical Guidance". A copy of the confirmation is provided in Appendix 1.

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- Whilst, South Cambridgeshire District Council has relied on the national database bias adjustment factors for this report diffusion tube calculation, however, from a co-location study which began at Orchard Park Primary School (grid reference 544557, 261571) in April 2009 a factor of 0.88 was obtained from the local study calculation for 2013.
- ESG takes part in the WASP Proficiency Scheme. The laboratory performance is rated at the highest level of “good”. Full details of the ESG diffusion tube performance and WASP scores are provided in Appendix 1.



**Table 2.2 Details of Non- Automatic Monitoring Sites**

Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	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?
1 Coppice, Histon	Urban background	544230	262048	NO <sub>2</sub>	N	N	Y (7m)	0.5m	Y
The Gables, High Street, Histon	Roadside	543770	263678	NO <sub>2</sub>	N	N	Y (5m)	1m	Y
Hill Farm Cottages, Lolworth	Roadside	536926	264956	NO <sub>2</sub>	Y	N	N	4m	Y
White Lion, 96 High St., Sawston	Urban background	548600	249136	NO <sub>2</sub>	N	N	Y (5m)	1m	Y
Rhadegund Farm Co. Lolworth	Roadside	538744	263640	NO <sub>2</sub>	Y	N	Y	33m	N
64 High St., Linton	Roadside	556179	246815	NO <sub>2</sub>	N	N	Y (7m)	0.5m	Y
20 High St., Tadlow	Roadside	528131	247399	NO <sub>2</sub>	N	N	Y (10m)	2m	N
47 High Street, Harston	Urban background	542554	251002	NO <sub>2</sub>	N	N	Y(5m)	1m	Y
3 Garner Close, Milton	Urban background	547452	263175	NO <sub>2</sub>	N	N	Y(5m)	1m	N
1A Weavers Field, Girton	Urban background	542537	261467	NO <sub>2</sub>	Y	N	Y(15m)	1m	Y
Heath Hse., A505, Thriplow	Urban background	544034	244585	NO <sub>2</sub>	N	N	Y (10m)	1m	Y
19 Lonetree Av., Impington	Roadside	544119	261862	NO <sub>2</sub>	Y	N	Y (7m)	0.5m	Y
1 Brook Close, Histon	Urban Background	543955	263588	NO <sub>2</sub>	N	N	Y (2m)	1m	Y
22 Water Lane, Histon	Roadside	544050	263306	NO <sub>2</sub>	N	N	Y (2m)	0.5m	Y

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Site Name	Site Type	X OS Grid Reference	Y OS Grid Reference	Pollutants Monitored	In AQMA?	Is Monitoring Co-located with a Continuous Analyser (Y/N)	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?
72 Cambridge Rd, Impington	Urban background	544243	261819	NO <sub>2</sub>	Y	N	Y (7m)	0.5m	Y
Hackers Fruit Farm, Lolworth	Roadside	539846	262826	NO <sub>2</sub>	Y	N	Y	12m	N
5 Mill Lane, Sawston	Roadside	548545	249366	NO <sub>2</sub>	N	N	Y (15m)	1m	N
1 Catchall Farm Cottages	Roadside	540509	262290	NO <sub>2</sub>	Y	N	Y (1m)	10m	Y
Crafts Way, Bar Hill	Roadside	538472	263675	NO <sub>2</sub>	N	N	Y (15m)	1m	N
Chieftain Way, Arbury Park	Roadside	544828	261738	NO <sub>2</sub>	Y	N	Y (1m)	0.5m	Y
Topper Street, Arbury Park	Roadside	545056	261784	NO <sub>2</sub>	Y	N	Y (1m)	0.5m	Y
Flack End, Arbury Park	Roadside	545435	261906	NO <sub>2</sub>	Y	N	Y (2m)	35m (from A14 WB)	Y
Orchard Park School	Urban background	544557	261571	NO <sub>2</sub>	Y	Y	Y (1m)	50m	Y
Orchard Park School	Urban background	544557	261571	NO <sub>2</sub>	Y	Y	Y (1m)	50m	Y
Orchard Park School	Urban background	544557	261571	NO <sub>2</sub>	Y	Y	Y (1m)	50m	Y
Co-op, High Street, Histon	Roadside	543768	263708	NO <sub>2</sub>	Y	N	Y (1.5m)	2.6m	Y
13 Engledow Drive, Orch. Park	Urban background	545259	261873	NO <sub>2</sub>	Y	N	Y (5m)	4.5m	Y
22 Topper Street, Arbury Park	Roadside	545169	261764	NO <sub>2</sub>	Y	N	Y (4.2m)	0.2m	Y
Church Lane, Little Abington	Urban background	552961	249251	NO <sub>2</sub>	Y	N	Y (14m)	2.0m	N

## **2.2 Comparison of Monitoring Results with Air Quality Objectives**

The monitoring stations at Girton and Impington are considered to be sites representative of nearby receptors situated alongside the A14, whilst the Orchard Park monitor is located within the grounds of a school. All the three monitoring sites with the exception of Girton are located within the existing Air Quality Management Area for NO<sub>2</sub> and PM<sub>10</sub>.

The data capture during 2013 for NO<sub>2</sub> was above the required 90% at Girton and Impington monitoring stations whilst 78.1% data was captured at Orchard Park for NO<sub>2</sub> due to the mechanical breakdown of the monitoring equipment between the ends of July, 2013 to the end of September, 2013. The PM<sub>10</sub> data captured at Girton and Orchard Park were above the required 90% but only 12.3% data was captured at Impington due to the temporary suspensions of its particulate matter analyser at the beginning of the year because it is composed of radioactive material and has to be replaced following the Environment Agency visit and directives.

Although, the PM10 data from the Impington site has been reported in the relevant tables of this report, this has not been commented on in details in terms of the air quality objectives. Moreover, where possible this has not been included on representative graphs and charts in the report.

Following the bias adjustment, all the nitrogen dioxide diffusion tubes showed compliance with the annual mean objective for nitrogen dioxide apart from the Hackers Fruit Farm location in Lolworth which slightly exceeded the annual mean objective. Moreover, the current monitoring result compare to the diffusion tube result of 2012, shows a slight improvement on the annual mean result for many of the tube locations with an improved data capture percentage over a similar period in 2012.

21 compared to 18 of the 27 diffusion tube locations in 2013 show a reduced annual mean concentration to what was obtained for a similar site in 2012. This indicates that, there have been overall improvements in the level of air quality concentrations within the district compared to the previous year.

**Automatic Monitoring Data**

- At Impington, the annual and daily mean objectives for NO<sub>2</sub> were achieved but its PM<sub>10</sub> result has not been commented on due to the low data capture.
- At the Orchard Park School and Girton Road monitoring stations, both the NO<sub>2</sub> and PM<sub>10</sub> air quality annual mean objectives were achieved in 2013. The daily mean objectives i.e. (days where concentrations were calculated to be >50µg/m<sup>3</sup>) and hourly mean objectives i.e. (hours where concentrations were calculated to be >200µg/m<sup>3</sup>) for PM<sub>10</sub> and NO<sub>2</sub> respectively at both monitoring sites were also achieved.
- Results are given in Tables 2.3 and 2.4, below.

## **2.2.1 Nitrogen Dioxide (NO<sub>2</sub>)**

### **Automatic Monitoring Data**

The monitoring stations at Girton Road and Impington are considered to be sites representative of nearby receptors situated alongside the A14, whilst the Orchard Park monitor is located within the grounds of a school. All of the monitoring stations with the exception of the Girton monitoring site are located within the existing Air Quality Management Area for NO<sub>2</sub> and PM<sub>10</sub>. A brief summary of performance at each monitoring station is given below:

- At Impington, all objectives were met for NO<sub>2</sub>. The result was an improvement to the value achieved in 2012.
- At the Orchard Park monitoring station, all objectives for NO<sub>2</sub> were met.
- At Girton Road monitoring station which was commissioned December 2011, all objectives for NO<sub>2</sub> were also met.
- Results are given in Tables 2.3 below.

**Table 2.3 Results of Automatic Monitoring for NO<sub>2</sub>: Comparison with Annual Mean Objective**

Location	Within AQMA?	Data Capture 2013 %	Annual mean concentrations (µg/m <sup>3</sup> )						
			2007	2008	2009	2010	2011	2012	2013
Impington	Y	98.7	41	35	33	30*	31	31	27
Orchard Park	Y	78.1	N/A	N/A	20	28	25	21	22
Girton	N	93.1	N/A	N/A	N/A	N/A	N/A	27	26

**Table 2.4 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1 – hour Mean Objective**

Location	Within AQMA?	Data Capture 2013 %	Number of Exceedences of hourly mean (200 µg/m <sup>3</sup> ) Where valid data is less than 90% of a full year, the 99.8%ile of hourly means is provided in brackets						
			2007	2008	2009	2010	2011	2012	2013
Impington	Y	98.7	0	0	0	0 (115)	0	0	1
Orchard Park	Y	78.1	N/A	N/A	0	0 (103)	0	0	0(86)
Girton	N	93.1	N/A	N/A	N/A	N/A	N/A	0	0

Figure 2.3a Trends in Annual Mean NO<sub>2</sub> Concentrations Measured at Automatic Monitoring Site at Impington from 2007 -2013

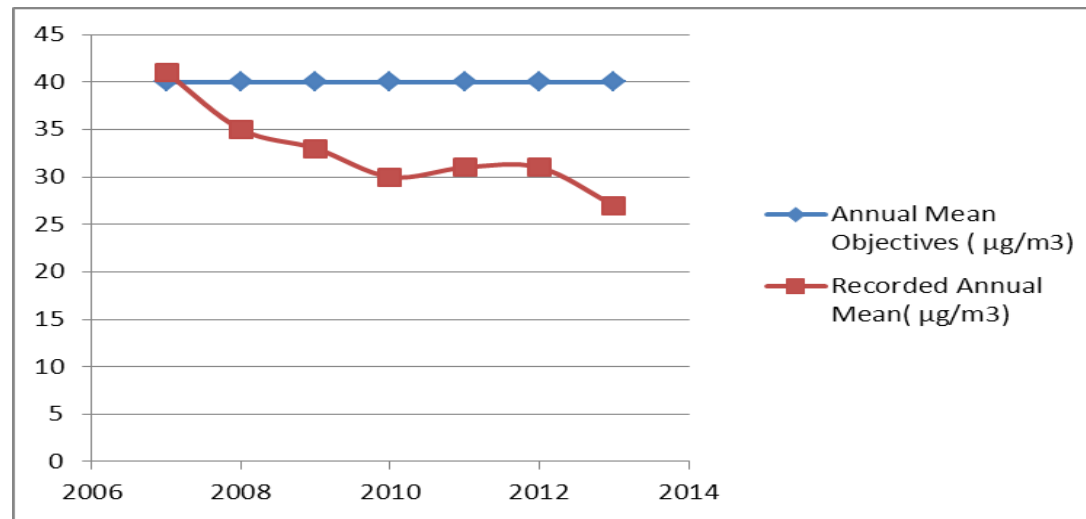
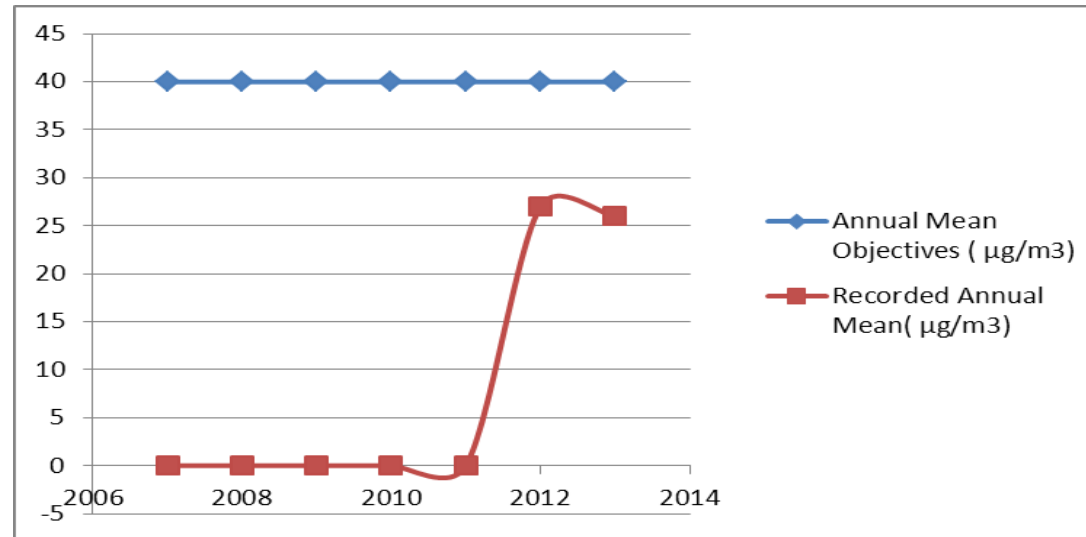


Figure 2.3b Trends in Annual Mean NO<sub>2</sub> Concentrations Measured at Automatic Monitoring Site at Orchard Park from 2007 -2013



Figure 2.3c Trends in Annual Mean NO<sub>2</sub> Concentrations Measured at Automatic Monitoring Site at Girton from 2007 -2013





### **Diffusion Tube Monitoring Data**

Details of the bias adjusted annual mean NO<sub>2</sub> concentrations measured at the diffusion tube sites (using the National Bias Adjustment Factor obtained from the national database of bias adjustment factor) during 2013 are presented in Table 2.5. Trends of results obtained from 2008 to 2013 are presented in Table 2.6 whilst the Bar chart showing the recent trends in NO<sub>2</sub> annual mean NO<sub>2</sub> concentrations measured with diffusion tubes are presented in Figure 2.4

Apart from the Hackers Fruit Farm, Lolworth, none of the remaining diffusion tubes location annual mean NO<sub>2</sub> concentration is in excess of the 40µg/m<sup>3</sup> during the year 2013. Therefore, all the remaining sites achieved the National Annual Mean Objectives of 40µg/m<sup>3</sup> whilst the exceeded location is just outside the existing AQMA.

Table 2.5 Results of NO<sub>2</sub> Diffusion Tubes 2013

Locations	Site Type	Within AQMA?	Triplicate or Co-located Tube (Y/N)	Full Calendar Year Data Capture 2013 (%)	Confirm if data has been distance corrected (Y/N)	2013 Annual Mean Concentration (µg/m <sup>3</sup> ) (Bias Adj. factor = 0.80)
1 The Coppice, Histon	UB	N	N	91.7	N	15.3
The Gables, High Street, Histon	R	N	N	91.7	N	28.2
Hill Farm Cottages, Lolworth	R	Y	N	100.0	N	27.5
White Lion, 96 High Street, Sawston	UB	N	N	75.0	N	28.0
Rhadegund Farm Cottages, Lolworth	R	Y	N	100.0	N	26.0
64 High Street, Linton	R	N	N	91.7	N	28.2
20 High Street, Tadlow	R	N	N	100.0	N	14.1
47 High Street, Harston	UB	N	N	91.7	N	25.7
3 Garner Close, Milton	UB	N	N	91.7	N	19.9
1A Weavers Field, Girton	UB	Y	N	91.7	N	26.8
Heath House, A505, Thriplow	UB	N	N	100.0	N	25.9
19 Lonetree Avenue, Impington	R	Y	N	91.7	N	20.2
1 Brook Close, Histon	UB	N	N	100.0	N	19.0
22 Water Lane, Histon	R	N	N	91.7	N	25.2
72 Cambridge Road, Impington	UB	Y	N	100.0	N	25.1
Hackers Fruit Farm, Lolworth	R	Y	N	91.7	N	<b>42.9</b>
5 Mill Lane, Sawston	R	N	N	91.7	N	17.8
1 Catchhall Farm Cottages	R	Y	N	100.0	N	26.4
Crafts Way, Bar Hill	R	N	N	100.0	N	23.7
Chieftain Way, Arbury Park	R	Y	N	100.0	N	21.2
Topper Street, Arbury Park	R	Y	N	100.0	N	22.0
Flack End, Arbury Park	R	Y	N	91.7	N	24.8
Orchard Park School, Arbury Park	UB	Y	Y	100.0	N	19.4
Orchard Park School, Arbury Park	UB	Y	Y	100.0	N	19.2
Orchard Park School, Arbury Park	UB	Y	Y	100.0	N	19.6
Co-Op, High Street, Histon	R	Y	N	100.0	N	21.1
13 Engledow Drive, Arbury Park	R	Y	N	100.0	N	24.6
22 Topper Street, Arbury Park	R	Y	N	100.0	N	21.6
Church Lane, Little Abington	UB	Y	N	100.0	N	15.2

Table 2.6 Results of NO<sub>2</sub> Diffusion Tubes (2009 to 2013)

Locations	Site Type	Within AQMA?	Annual Mean Concentration (adjusted for bias) µg/m <sup>3</sup>					2013 (Bias Adj. Factor = 0.80)
			2008 (Bias Adj. Factor = 0.8)	2009 (Bias Adj. Factor = 0.8)	2010 (Bias Adj. Factor = 0.85)	2011 (Bias Adj. Factor = 0.84)	2012 (Bias Adj. Factor = 0.79)	
1 The Coppice, Histon	UB	N	21.8	24.5	22.8	20.6	19.8	15.3
The Gables, High Street, Histon	R	N	37.9	39.5	37.6	36.3	33.8	28.2
Hill Farm Cottages, Lolworth	R	Y	-	-	-	39.1	36.7	27.5
White Lion, 96 High Street, Sawston	UB	N	33.6	33.1	32.9	27.8	29.2	28.0
Rhadegund Farm Cottages, Lolworth	R	Y	-	-	-	15.7	22.0	26.0
64 High Street, Linton	R	N	33.7	33.4	33.6	30.7	32.4	28.2
20 High Street, Tadlow	R	N	14.6	15.3	14.5	13	12.4	14.1
47 High Street, Harston	UB	N	27.0	28.1	29.6	23.7	25.6	25.7
3 Garner Close, Milton	UB	N	22.8	24.6	22.6	20.8	20.2	19.9
1A Weavers Field, Girton	UB	Y	34.0	35.6	32.4	32.6	29.5	26.8
Heath House, A505, Thriplow	UB	N	31.5	29.2	29.2	29.1	27.2	25.9
19 Lonetree Avenue, Impington	R	Y	25.0	26.2	25.7	23.7	21.8	20.2
1 Brook Close, Histon	UB	N	26.5	26.0	24.8	21.1	19.5	19.0
22 Water Lane, Histon	R	N	34.7	33.2	35.5	31.2	29.1	25.2
72 Cambridge Road, Impington	UB	Y	27.8	35.9	28.2	25.3	23.1	25.1
Hackers Fruit Farm, Lolworth	R	Y	-	-	-	28.5	<b>41.5</b>	<b>42.9</b>
5 Mill Lane, Sawston	R	N	19.1	19.4	20.1	17.2	17.9	17.8
1 Catchhall Farm Cottages	R	Y	30.1	27.6	36.2	25.6	24.4	26.4
Crafts Way, Bar Hill	R	N	27.0	24.6	30.1	21.4	23.9	23.7
Chieftain Way, Arbury Park	R	Y	30.3	24.6	26.9	22.9	21.7	21.2
Topper Street, Arbury Park	R	Y	28.9	26.0	26.2	22.5	21.7	22.0
Flack End, Arbury Park	R	Y	-	-	30.7	26.3	25.8	24.8
Orchard Park School, Arbury Park	UB	Y	23.4	22.9	23.6	21.0	19.9	19.4
Orchard Park School, Arbury Park	UB	Y	24.5	22.5	23.7	21.0	18.9	19.2
Orchard Park School, Arbury Park	UB	Y	25.0	23.6	24.8	21.0	21.5	19.6
Co-Op, High Street, Histon	R	Y	-	-	26.6	22.9	22.2	21.1
13 Engledow Drive, Arbury Park	R	Y	-	-	33.3	25.0	25.9	24.6
22 Topper Street, Arbury Park	R	Y	-	-	32.5	23.6	24.0	21.6
Church Lane, Little Abington	UB	Y	-	-	16.5	13.5	12.7	15.2

Figure 2.4a Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

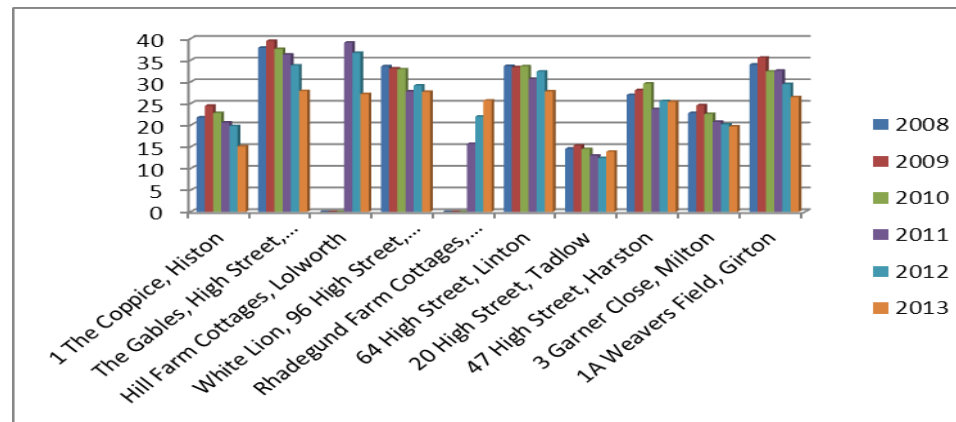


Figure 2.4b Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites

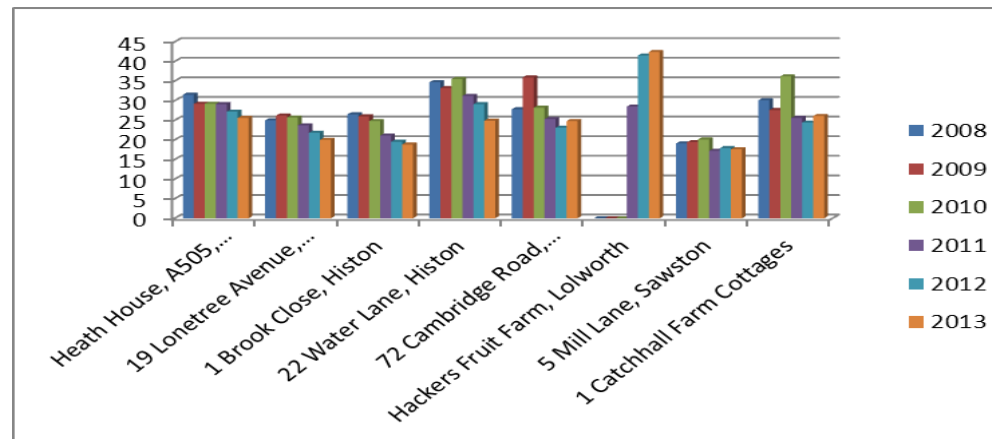
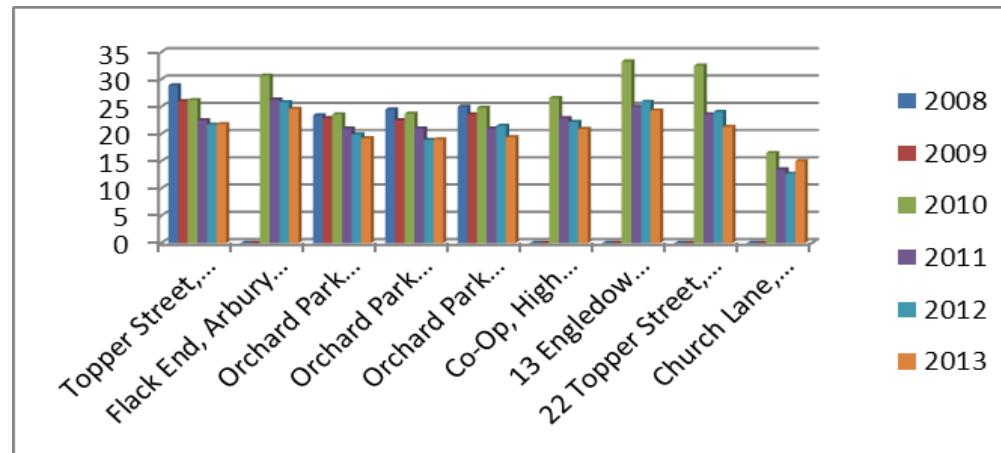


Figure 2.4c Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites



Examination of the trend in NO<sub>2</sub> annual means measured across the network of diffusion tubes indicates the concentrations have in general be on decrease since 2010 apart from the measurement taken from Rhadegund Farm Cottage, Lolworth, High Street, Tadlow, Abingdon and Catchall Farm Cottages which slightly exceed that of the preceding years. The Hackers Fruit Farm, Lolworth did not only exceed the NO<sub>2</sub> concentration of the previous year but also breach the Air Quality objectives. However, the trend shows a steady improvement on meeting the Air-Quality objectives for the district.

### **2.2.2 Particulate Matter (PM<sub>10</sub>)**

In 2013, fine particles were monitored at two different locations within the South Cambridgeshire District Council because the PM<sub>10</sub> analyser at Impington site was temporarily suspended for the most part of the year. The annual mean PM<sub>10</sub> concentrations measured from 2008 – 2012 are presented in Table 2.7 and Figure 2.5.

Although an annual mean PM<sub>10</sub> concentration in excess of 40  $\mu\text{g}/\text{m}^3$  and the 24-hours PM<sub>10</sub> concentrations in excess of the 50  $\mu\text{g}/\text{m}^3$  short-term objective was measured at the Impington automatic monitoring site in 2013 however, as this monitoring site is located by a major roadside and the data capture was for less than two months of the year, the data cannot be said to be a full representative of relevant human exposure and the data was not fully utilised or commented on in details in terms of the air quality objectives. However, the site has always been in excess of the annual mean objective for the last 4 years and it's currently within the existing designated AQMA for both NO<sub>2</sub> and PM<sub>10</sub>. The number of 24-hour mean PM<sub>10</sub> concentrations in excess of the 50  $\mu\text{g}/\text{m}^3$  short-term objective; measured from 2008 – 2013 are presented in Table 2.8.

The annual and daily mean objectives were achieved at the other monitoring sites at Girton and Orchard Park.

**Table 2.7 Results of Automatic Monitoring for PM<sub>10</sub>: Comparison with Annual Mean Objective**

Site Name	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period %	Valid Data Capture 2013 %	Confirm Gravimetric Equivalent (Y or N/A)	Annual Mean Concentration (µg/m <sup>3</sup> )					
						2008	2009	2010	2011	2012	2013
Impington	Roadside	Y	12.3	12.3	Y	33	41	42	54	58	55
Orchard Park	Urban Background	Y	91.9	91.9	Y	N/A	16	17	23	21	22
Girton	Roadside	N	92.8	92.8	Y	N/A	N/A	N/A	N/A	26	30

**Figure 2.5a Trends in Annual Mean PM<sub>10</sub> Concentrations in µg/m<sup>3</sup> from 2008 - 2013**

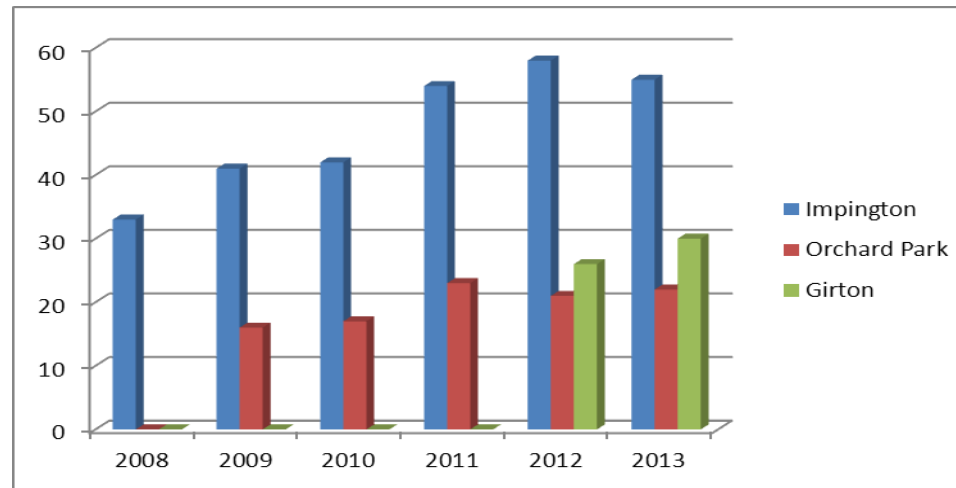
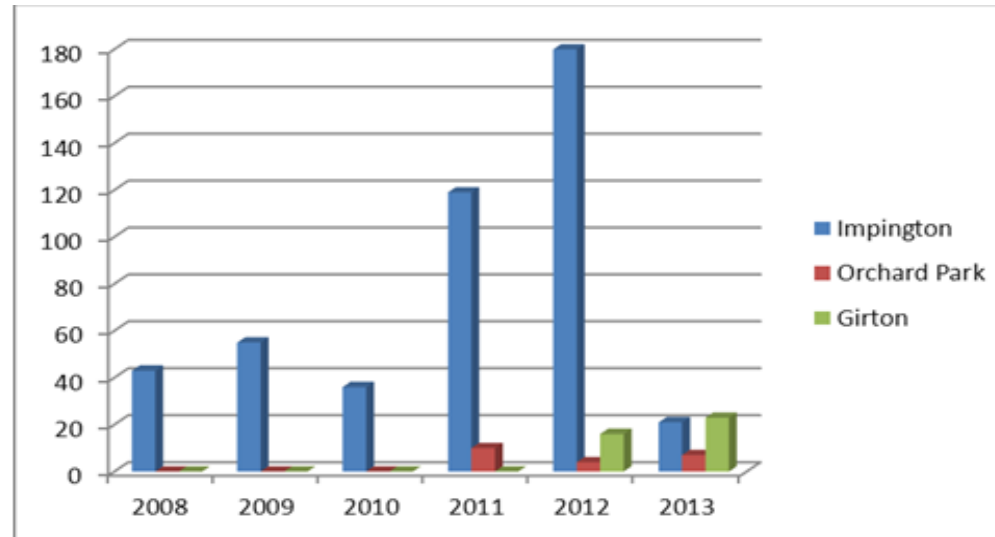


Table 2.8 Results of Automatic Monitoring for PM<sub>10</sub>: Comparison with 24-hour Mean Objective

Site Name	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period %	Valid Data Capture 2013 %	Confirm Gravimetric Equivalent (Y or N/A)	Number of Daily Means > 50µg/m <sup>3</sup> Where data capture <90%, the 90 <sup>th</sup> %ile of daily means has been provided in brackets					
						2008	2009	2010	2011	2012	2013
Impington	Roadside	Y	12.3	12.3	Y	43	55	36 (70)	119(70.6)	180	21
Orchard Park	Urban Background	Y	91.9	91.9	Y	N/A	0	0 (26)	10	4	7
Girton	Roadside	N	92.8	92.8	Y	N/A	N/A	N/A	N/A	16	23

Figure 2.5b Trends in Annual Mean PM<sub>10</sub> in Comparison with the Daily Mean Objectives in (µg/m<sup>3</sup>)





### **2.2.3 Sulphur Dioxide (SO<sub>2</sub>)**

South Cambridgeshire District Council does not currently monitored sulphur dioxide concentrations.

### **2.2.4 Benzene**

South Cambridgeshire District Council does not currently monitored benzene concentrations.

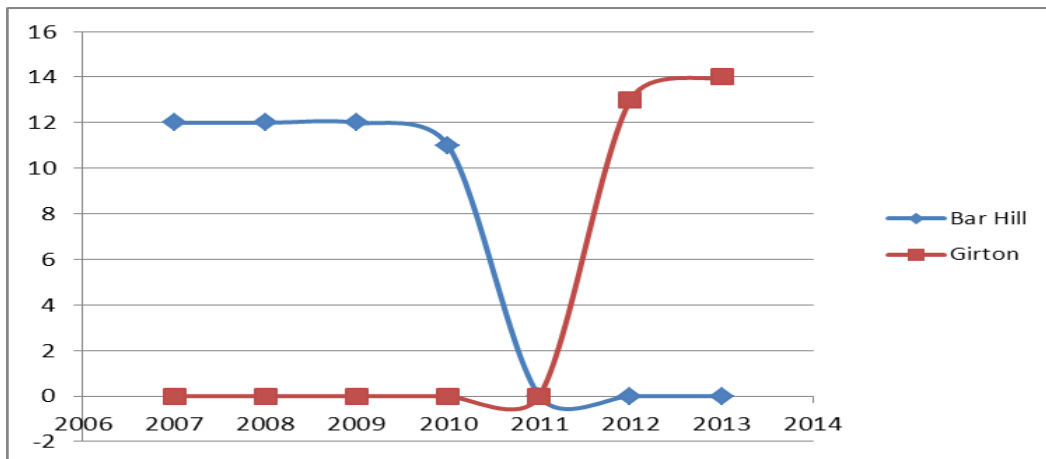
### **2.2.5 Other Pollutants Monitored**

South Cambridgeshire District Council monitors PM<sub>2.5</sub> at the continuous monitoring station in Bar Hill prior to the eventual closure of the site. However, a new monitoring site for PM<sub>2.5</sub> was commissioned December, 2011 at Girton. The concentrations at both the previous and new site have remained fairly stable throughout the monitoring periods. The highest level recorded was 14µg/m<sup>3</sup> measured in 2013 at the new location. The annual mean concentrations have stabilised at 11 - 14µg/m<sup>3</sup>. Table 2.9 shows the latest datasets whilst Figure 2.6 shows the annual trends in concentrations.

Table 2.9 Results of Automatic Monitoring of PM<sub>2.5</sub>

Location	Within AQMA?	Proportion of year with valid data 2013 %	Annual mean concentrations (µg/m <sup>3</sup> )						
			2007	2008	2009	2010	2011	2012	2013
Bar Hill	Y	N/A	12	12	12	11	N/A	N/A	N/A
Girton	N	95.4	N/A	N/A	N/A	N/A	N/A	13	14

Figure 2.6: Trends in Annual Mean PM<sub>2.5</sub> Measured in (µg/m<sup>3</sup>) at Bar Hill and Girton between 2007 - 2013



**2.2.6 Summary of Compliance with AQS Objectives**

South Cambridgeshire District Council has examined the results from monitoring in the district. Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

## **3 New Local Developments**

### **3.1 Road Traffic Sources**

The number of motor vehicles recorded crossing the County screen line in 2013 was 5% higher than that of 2012. Over the past ten years, the number of traffic crossing the screen line has been growing by an average of 5% although the recent trend has been fairly flat. Whilst there is a consistent effort by the County and District Councils to improve both the public transport systems and cycle ways, the A14 still remains the busiest road in the county, with an average annual daily flow of over 85,000 vehicles between Dry Drayton and Cambridge. On the County's principal road network, the greatest growth in traffic over the past ten years has occurred on the A10 (22%) whilst the highest growth since 2002 on the trunk roads within the county has occurred on the A428 (22%) which might be traceable to the rate of development in Cambourne

The traffic density on Cambridgeshire's rural trunk 'A' road is almost twice the national average which is 41% above average on the other rural 'A' roads. The density of HGV traffic on Cambridgeshire's trunk 'A' roads is almost three times the national average whilst the non-trunk main roads are 78% above the national average.

There was an increase of 1.2% in the number of motor vehicles entering and leaving Cambridge in 2013 compared to 2012.

During the year 2013, 3.24 million passenger journeys were made on the Cambridgeshire Guided Busway improving access into Cambridge and help to reduce rush hour congestion on the A14 compared to 2.75 million passenger journeys for similar period in 2012.

The six previous major on-going projects of which new road infrastructures, including local access roads and upgrades to existing infrastructure are required continued to the 2013.

These are:

- 1) North West Cambridge (University Site)
- 2) Orchard Park
- 3) Bayer Crop Science Site
- 4) Trumpington Meadows
- 5) Windmill Estate, Fulbourn
- 6) Cambourne

Prior to the South Cambridgeshire District Council granting planning permission for these projects, the issue of air quality has already been discussed during the Pre- application stage and where necessary, study had been requested by the Council of any impact as it regards

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air quality such development might generate. These reports were considered with the conclusion that none of such development will bring about any negative air quality impact in spite of the fact that each of the above developments will contain new road structures with the potential to significantly increase road traffic and domestic emissions. Where necessary, air quality monitoring for such development had been recommended by the Council with further mitigation method such as developing a Low Emission Strategy in the hope of not only improving the quality of air within and around such development site but also to enhance the quality of air within the District.

In addition to the above, the major schedule of upgrades for the A14 with South Cambridgeshire as part of this extensive upgrade that also includes Huntingdonshire is now about to commenced. It is understood this upgrade will help to ease congestion through the Districts' AQMA and the upgrade include;

- Widening of the A14 carriageway between Fen Drayton and Histon by increasing the number of lanes from 2 to 3 on both Eastbound and Westbound carriageways should help to alleviate congestion and speed traffic through-flow.
- Widening of the A14 carriageway between Histon and Fen Ditton

A detailed air quality assessment was submitted in draft by the Highways Agency in 2010 for which comments were returned by the Council. Further reports are still expected by the council from the Highway Agency on the relevant comments made on its latest draft EIA of the project.

The improvement to the A14 form part of the Councils' Priority Actions within the AQAP, and are deemed to be an essential works in improving the air quality along the A14. This is believe will lead to reduction in pollutant concentrations in and around the existing AQMA declared by the Council.

Whilst the A14 improvement project which forms the core action plan by the council in the last Progress Report in 2012 is now about to start, the Council is considering how additional Action Plans can be develop to enhance the quality of air in and around the district.

South Cambridgeshire District Council confirms that there are no new or newly identified sources of pollution from road traffic sources which have the potential to increase vehicle emissions. Each development proposal had been subject to an extensive and detailed air quality impact assessment prior to approving such application with none having potential to impact the District Air Quality negatively. The discussion regarding the commencement of the A14 is still on-going but from all indication the work should be starting by the beginning of 2014.

### **3.2 Other Transport Sources**

South Cambridgeshire District Council confirms that there are no new or newly identified sources of pollution from road traffic sources although; there are major developments on-going for the District which has the potential to increase vehicle emissions. Albeit, review of monitoring records around such development sites shows no negative sign whilst the areas are still subject of an on-going extensive and detailed air quality impact assessment. Discussion regarding the proposals for upgrading A14 is still on-going.

### **3.3 Industrial Sources**

South Cambridgeshire District Council confirms that there are no new or newly identified sources of pollution from industry which may have an impact on air quality within the Local Authority area.

### **3.4 Commercial and Domestic Sources**

South Cambridgeshire District Council confirms that there are no new or newly identified sources of pollution from commercial and domestic premises which may have an impact on air quality within the Local Authority area.

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

South 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.

## **4 Local / Regional Air Quality Strategy**

As noted in the last Progress Report, South Cambridgeshire District Council adopted a Local Air Quality Strategy in September 2008. The Local Air Quality Strategy has been produced in order to give a platform upon which the local air quality within the District can be improved by bringing together all those with an interest or responsibility for air quality.

The Local Air Quality Strategy aims:

- To achieve National Air Quality Standards
- To improve local air quality
- To carry out the above using cost effective and sustainable methods
- Raise awareness of and promote air quality issues and sustainable environments
- To emphasize the role South Cambridgeshire District Council has in improving air quality within the District
- To work together to achieve our goals
- To encourage partnerships between local industry, businesses and residents
- To raise the profile of air quality amongst the wider community and
- Where possible, to suggest objectives for continued good working practices and link the varying appropriate Council Policies, Plans and Strategies to the Air Quality Strategy

However, as part of the overall quality management of the Strategy work, it is important to consider the need to review it from time to time. Therefore, given the speed of change of Planning Policy relating to emissions, the current strategy (which was relevant for 5 years - 2009 to 2014) is currently under review to incorporate recent updates and changes. Whilst, a full review of all aspects of the Strategy will take place in 2014, relevant updates will take place regularly where there are:

- Changes to existing legislation, Regulations or the National Air Quality Strategy,
- Introduction of new legislation or Regulations,
- Changes in local circumstances (for example, revocation of an AQMA),
- Introduction of new sources of industrial emissions
- Updates or changes to existing Council policy and/or guidance (including Cambridgeshire County Council)
- Introduction of new, relevant Council policies and/or guidance (including Cambridgeshire County Council)

The Strategy is available to view online at:

<http://www.scamb.gov.uk/sites/www.scamb.gov.uk/files/documents/Air%20Quality%20Strategy.pdf>

## 5 Planning Applications

In addition to the six major previously identified on – going projects within the South Cambridgeshire District Council in this report, there are few other sites of which the Council has received planning applications for major development which might have an impact on the local air quality within the district.

### 1. Cambridge East

This is an allocated major mixed – use development on the edge of Cambridge including the land within South Cambridgeshire District and Cambridge City Council. The two Councils jointly adopted the Cambridge East Area Action Plan in February 2008 which planned for a new urban quarter to Cambridge with early phase of development North of Newmarket Road. The whole site has a capacity of 10,000 to 12,000 dwellings with the preparation for planning application announced by 2012.

### 2. Northstowe

Northstowe, in its current form, is a proposed new town comprising 9,500 new homes (and a wide range of facilities), which will become a community of up to 24,000 people. The site covers 427 hectares, and is located near Longstanton and Oakington. It lies approximately 3km north of the A14 and the existing Air Quality Management Area. At present, the full development is still proposed although it will be impacted by the lack of important infrastructure improvements that it is reliant upon, specifically upgrades to the A14, which is currently under consideration.

The development will cover an area of approximately 605 Hectares with 22,800m<sup>2</sup> floor space set aside for hotels and indoor leisure facilities, 49,500m<sup>2</sup> floor space for A1, A2, A3, A4 and A5 retail use with 156,000 m<sup>2</sup> floor spaces set aside for B1, B2, B8 and *sui generis* industrial and commercial uses.

Northstowe has been granted Government approval as an eco-town, therefore, all measures to mitigate impacts on air quality must be considered. It is envisaged that the town will obtain a substantial amount of renewable energy from a community-wide biomass Combined Cooling, Heat and Power (CCHP) plant although a range of renewable sources will be considered.

The existing Local Development Framework, Core Strategy and Area Action Plan all put Northstowe at the centre of the development strategy for the area, and all confirm that the new development will have enhanced environmental standards. The Area Action Plan in particular contains Policy NS/23 – “An Exemplar in Sustainability” which states that:



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*“Northstowe will include within the development exemplar projects in sustainable development, including energy efficient measures. This could be achieved by:*

- a. Providing an increased level of sustainability across the development as a whole above current requirements to a material extent;*
- b. Building a proportion of the development to advanced practice which fully addresses sustainability issues and minimises any environmental impact by pushing at the boundaries of the proven technology available at the time of the development.”*

This Policy, along with the Councils' SPD for Low Emissions Strategies will ensure that the development will take place with the highest regard to environmental issues, including air quality and emissions.

The policy framework that the future applications will be assessed against is contained within the Northstowe Area Action Plan, Development Control Policies adopted July 2007 and the Core Strategy adopted January 2007. The Northstowe planning applications will be assessed against these policies and other Government circulars and guidance.

### **3. Fulbourn & Ida Darwin Hospitals**

This is going to be a major development in the Green Belt allocated in the Site Specific Policies DPD (adopted in January 2010) for redevelopment for housing. When completed, the site could provide up to 275 dwellings and will be developed in phases. Discussions relating to the master planning of the site are in progress with development likely to commence by 2014.

## 6 Air Quality Planning Policies

South Cambridgeshire District Council has been working on a Supplementary Planning Document (SPD), forming part of the Local Development Framework (LDF). One Section of this relates specifically to air quality and low emissions, specifically, the requirement for new developers to consider and produce a Low Emissions Strategy (LES) for their project. It is intended to bring together the Council, the County Council, the Highways Agency through the improved use of s106 agreements for developers in working towards improving the local air quality and reducing emissions. In addition, it will help towards achieving the target within the new National Indicator NI194 as stated in the last Progress Report.

The South Cambridgeshire Local Development Framework contains Policy NE/16, relating to emissions and air quality. The policy reads:

*“1. Development proposals will need to have regard to any emissions arising from the proposed use and seek to minimise those emissions to control any risks arising and prevent any detriment to the local amenity by locating such development appropriately.*

*2. Where significant increases in emissions covered by nationally prescribed air quality objectives are proposed, the applicant will need to assess the impact on local air quality by undertaking an appropriate modelling exercise to show that the national objectives will still be achieved. Development will not be permitted where it would adversely affect air quality in an Air Quality Management Area.”*

Emissions will be considered where:

- The Council identify any developments that have the potential to contribute significant emissions to the local area
- Any developments is within or adjacent to an AQMA boundary
- Proposals are that will result in increased congestion, a change in traffic volumes – an AADT or peak traffic flow, which increases by more than 5% for roads with more than 10,000 AADT.
- Proposals which change the traffic composition (i.e. increase the proportion of HGV's)
- Proposals that include car parking or the increase in provision for more than 300 spaces
- Developments that could give rise to significant dust emissions in areas where people and/or commercial activities could be exposed.

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- Pre-application discussions with the developer to exchange ideas and determine the extent of the LES and possible contributions towards air quality improvements using S.106 agreements
- Low Emissions Strategy to be submitted with Planning Applications.

## **7 Local Transport Plans and Strategies**

Where road traffic is the primary source of pollution leading to declaration of an AQMA, Defra and Department for Transport (DfT) recommend that Action Plans are integrated into Local Transport Plans (LTP) so that as much synergy as possible is achieved between transport planning and air quality management at a local level, such that air quality is dealt with in a more corporate and multi-disciplinary way.

As stated in 2012 Progress Report, Cambridgeshire County Council adopted Transport Plan (LTP3) in March 2011 after a long consultative process, which involved South Cambridgeshire District Council and the District Authorities of Huntingdonshire, Cambridge City, East Cambridgeshire and Fenland. The new Plan, covering the period 2011 – 2026 replaces LTP2, which covered the period 2006 – 2011. It is one of a number of planning and transport plans and strategies for Cambridgeshire and the East of England aimed at ensuring that large-scale development can take place in the county in a sustainable way.

The LTP seeks to encourage all areas where air quality improvements can be made such as Travel for Work Partnerships, increase in passenger numbers on public transport services and improve to public transport infrastructure. The document also identify areas where particular benefits might be gained in Cambridgeshire, and where these will or could fall under the remit of our Full LTP programme for delivery or facilitation. However, many of the engineering and enforcement options available for the A14 fall under the jurisdiction of the Highways Agency.

The main aims of the LTP3 is to “create a communities where people want to live and work, now and in the future” in innovative ways whilst understanding and tackling the challenges of the current economic climate.

The Plan contains a number of challenges and objectives. Air quality becomes the focus of Objective / Challenge 7: “Protecting and enhancing the natural environment by minimising the environmental impact of transport”. This provides a strategy to protect and enhance the environment but focuses primarily on working with local District Councils to improve air quality and take actions that will help to achieve the national air quality objectives. This is to be achieved by:

- Managing and reducing vehicle emissions and encouraging the uptake of sustainable modes of transport,

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- Investigation into the use and uptake of new vehicle technologies as and when they become available,
- Managing demand (including private and public vehicle journeys),
- Carbon reduction programmes, including:
  - Implementation, review and upgrades to policies and strategies,
  - Improving and expanding smarter choices with regards to transport,
  - Improvements to sustainable travel options and
  - Management of private vehicle use.

South Cambridgeshire District Council recognizes the importance of the LTP document as a tool to help improve air quality and quality of life for local communities. The Council will continue to work closely with Cambridgeshire County Council in order that the visions, objectives and challenges set out within LTP3 can be achieved in partnership. There has been no further update since the adopted Transport Plan (LTP3) in March 2011.

## **8 Climate Change Strategies**

### **8.1 Climate Change Action Plan**

As stated in the 2013 Progress Report, SCDC signed the Nottingham Declaration in 2002 whilst its Climate Plan was published in 2005. However, there has been series of changes especially in terms of the required extent and urgency of response to reducing greenhouse gas emissions and preparation for the effects of climate change. We have seen a very significant shift in national policy and developments since the Climate Change Act 2008 was published in the statute books with its legally binding UK target of an 80% reduction in CO<sub>2</sub> emissions by 2050.

The new local government performance framework (first reported in 2008/09) introduced three very specific climate change national indicators: NI 186 - per capita CO<sub>2</sub> emissions for the local authority area; NI 188 - extent of preparedness to respond to the impacts of climate change, and; NI185 - direct CO<sub>2</sub> emissions from local authority operations.

As a result of this, the Councils' Climate Change Action Plan (CCAP) was adopted in the autumn of 2010, replacing the 2005 Climate Plan. Its primary objectives are to:

- Reduce per capita greenhouse gas emissions by 34% by 2020 and by 80% by 2050 (from a 1990 baseline), as legislated within the delivery of the Climate Change Act 2008 and;
- Build the required preparedness and resilience to the levels of climate change that the Council are already committed to from excess atmospheric carbon emissions to date.

The Plan incorporates an approach and a set of actions that aim to reduce carbon emissions and improve resilience to climate change across South Cambridgeshire in an increasingly climate-stressed world. The approach provides the practical framework for decision-making as the pressures to manage a successful transition to low-carbon living in a low-carbon economy continue to escalate. The actions provide an outline work schedule of what will be delivered over the three year period of the plan. The areas targeted are detailed in sections 8.1.1 to 8.1.5, below:

#### **8.1.1 Waste Management and Recycling**

In 2012/2013 the district was one of the highest performing authorities in England for percentage of household waste used/recycled/composted at 55.86%. However, the Council will continue to look for way of improving the service and has recently rolled out the kerbside

plastic recycling for which new wheelie-bins have been provided, following a strong community engagement and consultation.

### **8.1.2 Fuel Poverty**

Fuel poverty can lead to increased risks of ill health and a poorer quality of life. It is essential that any property is kept free from the cold and damp. Fuel poverty in England is measured by the Low Income High Costs definition, which considers a household to be in fuel poverty if; they have required fuel costs that are above (the national median level) or if they were to spend that amount; they would be left with a residual income below the official poverty line. Under the Housing Health and Safety Rating System (HHSRS), category 1 hazards (including cold and damp housing) are identified and remedied with the availability of a capital grant fund.

In addition, the Council has been taking steps to tackle fuel poverty within its housing stock as a result of the Home Energy Conservation Act (HECA) 1995. Where possible, grant support is offered and work continues with the Energy Saving Trust to promote and achieve carbon reduction targets.

### **8.1.3 Energy Efficiency in the Council's and Private housing stock**

Works have been carried out on Council stock in order to improve the SAP ratings and generate CO<sub>2</sub> savings. These works have included (where possible):

- double glazing to all properties,
- replacement of boilers over 5 years old,
- cavity wall and loft insulation

There is also an on-going promotion of renewable energy heating technologies with a growing uptake such as solar hot water heating systems and air-to-water air source heating systems.

However, continued expansion of the above measures is likely to be constrained by the current budgetary climate although, a new scheme introduced by the Government (Clean Energy Cash back) may provide some extra incentive for switching to cleaner fuel technologies.

### **Improving the Energy Performance of private housing stock**

In order to encourage and facilitate improvement in the energy performance of private sector housing, SCDC, together with the other Cambridgeshire local authorities, has set up a scheme to provide advice, home assessments and installation of home energy improvements. The scheme is called Action on Energy and is delivered by Green Deal Provider, Climate Energy Ltd. The scheme provides access to Green Deal finance and also funding from the Energy Company Obligation, the Green Deal Home Improvement Fund and other financial incentives as available.

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The partnership of Cambridgeshire local authorities has secured funding of £7.8 M from the DECC Green Deal Communities Fund to support the installation of solid wall insulation in up to 1500 properties throughout the county (up to 300 in South Cambridgeshire) and a range of home energy improvements in up to 800 properties in Cambridgeshire in the private rental sector. This work will be delivered by Climate Energy Ltd through the Action on Energy scheme, and other Green Deal Providers as and when they register with the scheme.

### **8.1.4 Land-use planning**

South Cambridgeshire District Council adopted a District Design Guide SPD in March 2010. It includes a section on reducing carbon dioxide emissions, setting out the relevant strategy and policy that will be used to combat climate change from new developments. Applicants should demonstrate how their proposals will maximise the incorporation of energy conservation and efficiency measures – aiming for a minimum 10% reduction in CO<sub>2</sub>/m<sup>2</sup>/year compared to the current 2006 Building Regulations target. Applicants are also encouraged to show as high a level of the Code for Sustainable Buildings as possible.

All applicants will be expected to carry out calculations of energy consumption using SAP or SBAM methodologies and incorporate designs to make use of energy efficiency measures and heat conservation.

In addition, the SPD covers renewable energy sources and makes reference to LDF Policy NE/3 within which all proposals with an area greater than 1000m<sup>2</sup> or to include >10 dwellings are required to ensure that a minimum of 10% of the energy requirements are met through renewable technologies. Applicants are also encouraged to consider site-wide renewable energy technologies. The SPD also promotes the installation of CHP and CCHP power plants in a drive towards zero carbon developments.

### **8.1.5 South Cambridgeshire Sustainable Parish Energy Partnership (SPEP)**

The partnership established in February, 2009 actively consists of groups and individuals in 40 or the district's 104 parishes involves in engaging the local communities, tackling the issues of climate change as well as dealing with sustainability and reducing fuel bills. Whilst the initial funding for this project has been withdrawn, the District Council has continued to undertake the task which was separated into 2 phases at the beginning. However, the partnership is now more focused on home energy services which offer assessment, Energy Company Obligation (ECO) grant and Green Deal with the green deal provider. The partnership is supported by a project officer with regular newsletters, workshops and project support. The groups run a variety of projects; especially thermal



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imaging in homes to draw attention to areas needing insulation and draught proofing as well as awareness raises events such as Village Energy Days.

## **9 Implementation of Action Plans**

Air quality within AQMAs is likely to be influenced by factors beyond local authority boundaries. Air Quality Action Plans may often need to complement those of adjoining authorities. Defra recommend that local authorities consider drawing up regional air quality action plans, where appropriate, and have endorsed preparation of a Joint Air Quality Action Plan for the AQMAs within Cambridge City, Huntingdonshire District Council and South Cambridgeshire District Council.

The Districts have completed a table comprising of approximately 80 actions that will have a positive impact upon air quality. These are currently in place or planned for the near future by the County and all District Councils. Some actions are specifically designed to improve air quality, but many of the actions have been initiated to tackle other areas, for example climate change or reducing congestion. They have been arranged into the following themes:

- Managing the network
- Lowering emissions
- Strategic Planning
- Development Control
- Smarter Travel Choices
- Raising Awareness

Each District produced a list of five or more individual actions, or packages of measures that will in their opinion have the most beneficial impact on air quality within their area. This list is not exhaustive as there are many other options put forward within the AQAP that may be implemented. For South Cambridgeshire District Council, the 5 priority actions identified include:

- Completion and opening of the Cambridgeshire Guided Bus way. This has reduced the amount of the rush hour congestion which usually gives rise to the emission level into the district along the A14 by 18% as 3.24 million passengers made their journey through it in 2013 compared to 2.75 million for the same period in 2012.
- Widening of the A14 carriageway between Fen Drayton and Histon – increasing the number of lanes from 2 to 3 on both Eastbound and Westbound carriageways should help to alleviate congestion and speed traffic through-flow.

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- Re-alignment of the A14 and the construction of a local road, between the M11 and Bar Hill junctions as part of the A14 Improvement Scheme.
- Establish a Freight Quality Partnership – the South Cambridgeshire District Council's Further Assessment of air quality along the A14 has identified HGVs as having the greatest impact on air quality in the District. If improvements in air quality are to be achieved on the A14 between Bar Hill and Milton, it is vital that the Council seeks to give an understanding of local air quality issues to freight operators who may in turn be able to offer invaluable input into reducing emissions from their fleet.
- Embedding the LDF Air Quality Policy in Local Development Documents – this will ensure that air quality is considered at the planning stage and therefore not adversely impacted by new development.

Whilst, the Cambridgeshire Guided bus way has since been completed, the Council is now at the advance stage of taking up a new action plans to the one set during the last progress report in 2012 in other to further improve and enhance the quality of air within the District.

Although there has been a temporary delay in the planned improvements to the A14, necessary arrangement is now in place by the government and Highway Agency to commence the work. The South Cambridgeshire District Council will continue to work with the Highways Agency, who has the overall control of the A14, in order to identify any other feasible actions that will help to improve the air quality within the AQMA. In the meantime, the Council is reviewing the joint Air Quality Action Plan in other to identify any other actions that can be brought forward as priority actions in other to improve the quality of air in the district.

The **Anglian Regions' Freight Quality Partnership (FQP)** meets every 2 months and South Cambridgeshire District Council is now dedicated to attending the meetings. Prior to the Councils' involvement, air quality had not been given much of a voice at the FQP and so it is hoped that the Council involvement will increase awareness, interest and commitment to reducing emissions as well as aiding the reduction of pollution along the A14.

The Councils' Air Quality Policy is embedded within the Local Development Framework with an additional Supplementary Planning Document targeting Low Emissions Strategies also adopted. These Policies will be regularly reviewed and strengthened where necessary.

Table 9.1 shows progress (where applicable) on the 5 main priorities.

**Table 9.1 Action Plan Progress**

<b>No.</b>	<b>Measure</b>	<b>Focus</b>	<b>Lead authority</b>	<b>Planning phase</b>	<b>Implementation phase</b>	<b>Indicator</b>	<b>Target annual emission reduction in the AQMA</b>	<b>Progress to date</b>	<b>Progress in last 12 months</b>	<b>Estimated completion date</b>	<b>Comments relating to emission reductions</b>
<b>1</b>	Completion and opening of the Cambridgeshire Guided Bus way.	Reduce unit emissions in the AQMA by reducing private vehicle mileage on the A14	Cambridgeshire County Council	2009 - 2010	2011	N/A	No target emissions set	Construction of bus stops and route now completed	Construction of bus stops and route now completed	2011	Improvement on Air Quality Objective Pollutants within the District by reducing the rush hour emission by 18% compared to 2012 report
<b>2</b>	Widening of the A14 carriageway between Fen Drayton and Histon – increasing the number of lanes from 2 to 3 on both Eastbound and Westbound carriageways should help to alleviate congestion and speed traffic through-flow.	Reduce unit emissions in the AQMA by alleviating congestion on the A14 around Cambridge	Cambridgeshire County Council	N/A	N/A	Approval of planning application	No target emissions set	Plans delayed under the Spending Review of 2010	Plans delayed under the Spending Review of 2010 but plan to kick start the project again put in place in the last three months	N/A	The draft Environmental Statement submitted in 2010 showed that, as a result of the scheme, air quality will improve in much of the AQMA but may worsen slightly in other areas. However, modelling shows that all Objectives will be met by 2015 at relevant locations within the AQMA
<b>3</b>	Re-alignment of the A14 and the construction of a local road, between the M11 and Bar Hill junctions as part of the A14	Reduce unit emissions in the AQMA by alleviating congestion on the A14 around Cambridge	Cambridgeshire County Council	N/A	N/A	Approval of planning application	No target emissions set	Plans delayed under the Spending Review of 2010	Plans delayed under the Spending Review of 2010 but set to commence shortly	N/A	The draft Environmental Statement submitted in 2010 showed that, as a result of the scheme,

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No.	Measure	Focus	Lead authority	Planning phase	Implementation phase	Indicator	Target annual emission reduction in the AQMA	Progress to date	Progress in last 12 months	Estimated completion date	Comments relating to emission reductions
	Improvement Scheme.										air quality will improve in much of the AQMA but may worsen slightly in other areas. However, modelling shows that all Objectives will be met by 2015 at relevant locations within the AQMA
4	Establish a Freight Quality Partnership	Reduce unit emissions by working with freight operators, Highways Agency and County Council	South Cambridgeshire District Council	2009 - 2010	2010	Member commitment by 2009, partnership Established by 2012	No target emissions set	Identification of existing FQP and regular attendance at meetings	Regular attendance at meetings	On-going	Improvement in vehicle technology and driver behaviour within the AQMA
5	Embedding the LDF Air Quality Policy in Local Development Documents	Reduce unit emissions by improving emissions from local developments	South Cambridgeshire District Council	2009 - 2010	2010	LDF Policy NE/16, use of Low Emission Strategy SPD	No target emissions set	SPD for Low Emissions Strategy developed and adopted.	SPD for Low Emissions Strategy developed and adopted.	On-going – SCDC will continually review use of the SPD and LDF Policy NE/16	Major development is proposed for the District. Use of the SPD and LDF Policy NE/16 will minimise the impact of the developments on local emissions

## 10 Conclusions and Proposed Actions

### 10.1 Conclusions from New Monitoring Data

Although, the 2013 monitoring data shows exceedences of the daily mean objective for PM<sub>10</sub> at Impington monitoring station (within the Air Quality Management Area), this result has not been commented on due to the low data capture and little attention should be paid into the reported value. However, as at the time of written this report, the Impington site is now fully operational having installed a new PM<sub>10</sub> analyser to the site and we hope for an improved data capture from the subsequent years.

Whilst the 2013 monitoring data for the rest of the automatic monitoring sites shows some level of improvement for the AQ objectives pollutants compared to the 2012, monitoring work will continue within the AQMA with the possibility to expand the monitoring network at every opportunity if the need arises.

Monitoring and assessment of areas within the District and outside the AQMA has shown there are currently no other areas of concern and no reason to carry out further or detailed assessment. The results are summarised below:

- At Impington, the annual and daily mean objectives for NO<sub>2</sub> were achieved but its PM<sub>10</sub> result has not been commented on due to the low data capture.
- At the Orchard Park School and Girton Road monitoring stations, both the NO<sub>2</sub> and PM<sub>10</sub> air quality annual mean objectives were achieved in 2013. The daily mean objectives i.e. (days where concentrations were calculated to be >50µg/m<sup>3</sup>) and hourly mean objectives i.e. (hours where concentrations were calculated to be >200µg/m<sup>3</sup>) for PM<sub>10</sub> and NO<sub>2</sub> respectively at both monitoring sites were also achieved.
- Data capture for 2013 also compared favourably with that of 2012 which are pretty good and encouraging compared to the 2011 passive and automatic monitoring data.

### 10.2 Conclusions relating to New Local Developments

Since the last Progress Report of 2013, there have been no new local developments that have had a significant impact on the local air quality. However, there are on-going major developments for SCDC with various other planning applications for major projects under consideration. These developments are subjected to full and detailed air quality assessments prior issuing any planning permission.

The Supplementary Planning Document (SPD) “High Quality and Sustainable Development in South Cambridgeshire” was adopted in March 2010 and contains a chapter dedicated to air quality. All new major developments will be required to satisfy the expectations of the SPD, which includes local planning policy and the requirements for the developers to take part in and submit a Low Emissions Strategy for their developments. This will ensure that sustainable development within the District is approached in a consistent manner with maximum value placed on mitigation measures and innovative steps to reduce emissions from new developments.

### **10.3 Other Conclusions**

This review and assessment process has not identified any new sources of pollution that need further assessment. However, the air quality in and around the A14 between Bar Hill and Milton still requires improvement to achieve the national air quality objectives. The designation of the Air Quality Management Area along this stretch of the A14 has led to the development of an Air Quality Action Plan (AQAP).

Progress towards achieving targets set within the AQAP has been slower than expected due to the initial set back to the proposed improvements to the A14 and impacts of the Spending Review. However, 1 of the 5 priority action plans has been achieved with an on-going commitment to the rest of which two of them is constantly within achievement through our planning and freight quality partnership. The improvement measures detailed within the AQAP is now at the advance stage of its review with new set of priority targets identified and will be incorporated to the Council Action Plan for improving the Quality of Air within the District. Although, the council is also mindful of the positive impact of the A14 improvement project which was the core AQAP for the district and due to commence shortly.

### **10.4 Proposed Actions**

The existing Air Quality Management Area (AQMA) is for NO<sub>2</sub> and PM<sub>10</sub>. This report has not identified any need for the AQMA to be updated, modified or revoked. However, the continuous exceedence of the annual and daily mean for PM<sub>10</sub> at Impington will continue to be under investigation. Effort on what additional measures can be taken to improve the level of PM<sub>10</sub> in the area is on-going but with the proposed A14 road improvement soon to be started, it's believe, this will bring a further improvement to this area and it might be reasonable to wait and see how the improvement work will contribute positively to the quality of air in the district.

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One priority action for 2014 is to continue improving the data capture at each automatic monitoring station. This will be carried out in liaison with the overseeing equipment service contractors. Equipment will continue to be serviced, maintained, inspected and cleaned as per the manufacturer's instructions. However, where equipment is in need of repair and may be out long-term, replacement analysers will be required. Moreover, equipment that passes its lifetime will be decommissioned and funding for new equipment will be sought.

Monitoring within the AQMA will continue with possible extensions to the monitoring network. Replacement equipment proposed for the out of date particulate matter analyser in the last Progress Report for Impington has now been replaced. Moreover, in and around the proposed new major development site, additional monitoring stations are been recommended and will be settled through a S.106 Agreement when the proposals are decided and agreed. This will also include an NO<sub>2</sub> diffusion tube network within and around such developments.

For all development proposals, South Cambridgeshire District Council will continue to improve, strengthen and utilise all the existing policy on emissions. For major developments, the requirement for individual air quality impact assessments will continue with the requirement that the developer recognises the potential for infrastructure changes beyond their boundaries and the potential for cumulative impacts on a local area.

It is recognised that our partnership working with the Highways Agency is vital for the progress towards achieving the targets set within the AQAP. Therefore, our participation with the Agency on any of the immediate and future air quality monitoring and assessment will continue to be enhanced and developed.

The AQAP is under review and will be update before the end of 2014 so that; further priority actions which are been considered can be taken forward whilst work towards their implementation can be progressed. This will prevent the progress of the Action Plan from stagnating as we await the commencement of the planned improvements work to the A14.

**This Progress Report has not identified any changes in circumstances that require further work that is not currently in progress.**



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## **Appendices**

Appendix 1: QA/QC Data

Appendix 2: Map of AQMA

Appendix 3: NO<sub>2</sub> monthly mean measured at diffusion tubes sites 2013

## **Appendix 1: QA: QC Data**

### **Diffusion Tube Monitoring**

- Suppliers and Analysing lab: Environmental Scientifics Group (ESG)  
Unit 12, Moorbrook  
Southmead Industrial Estate  
Didcot  
Oxfordshire  
OX11 7HP
- Diffusion tube preparation method used: 50:50 (acetone:triethanolamine)
- Scientifics Ltd confirm that the methods and procedures they follow meet the guidelines set out in Defras' "Diffusion Tubes for Ambient Monitoring: Practical Guidance". A copy of the confirmation is provided in Appendix 1.
- From the "Summary of Laboratory Performance in WASP R98-102" (prepared by AEA on behalf of Defra, 2008), the performance of Scientifics Ltd against both the old and new criteria was rated as "good".

### **Diffusion tube bias adjustment factors:**

#### **National bias adjustment factor**

- South Cambridgeshire District Council uses the bias adjustment factor provided on the Air Quality Archive web database. The factor used for 2013 is 0.80. This is quoted as the national average for the year issued in March, 2014.

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

- One triplicate co-location study was conducted within the district during 2013 at Orchard Park School. A co-location factor of 0.90 was calculated from this study. This is relatively closer to the bias adjustment factor reported in the national database of co-location factor for ESG during 2013.

#### **Discussion of Choice of Factor to use**

- The adjustment factor from the national database of co-location studies has been used to bias adjust the 2013 diffusion tube results. This is consistent with the approach used to adjust South Cambridgeshire District Council's diffusion tube results in previous years.

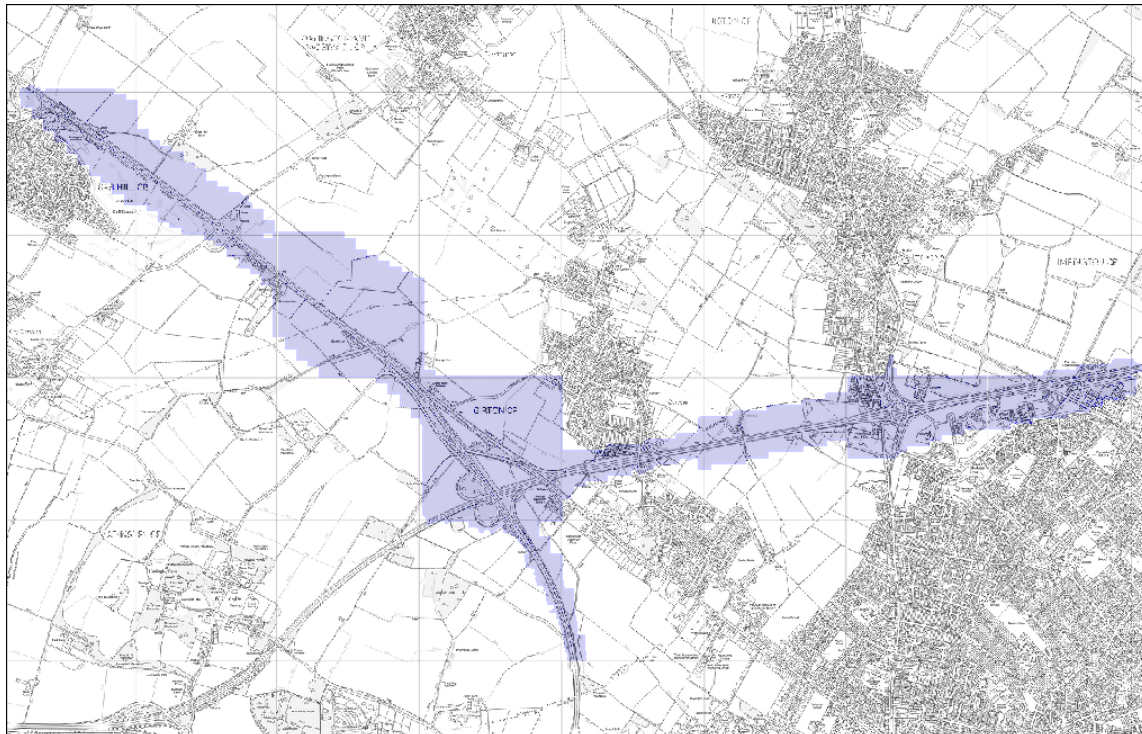
### **PM Monitoring Adjustment**

The BAMs in use in South Cambridgeshire are non-gravimetric with heated inlets. In order that PM<sub>10</sub> data is supplied as gravimetric equivalent, all PM<sub>10</sub> data has been multiplied by a factor of 1.3.

### **QA/QC of automatic monitoring**

- QA/QC of automatic monitoring data is carried out by AEA Technology (<http://www.aeat.co.uk>).
- An annual audit of the monitoring stations is carried out by AEA Technology.
- The equipment suppliers carry services out bi-annually. In the case of Bar Hill and Impington, this is Air Monitors Ltd whilst the site at Orchard Park School and Impington is serviced by Enviro-Technology.
- The sites are manually calibrated on a bi-monthly basis by the Local Site Operative. The output from the calibrations is forwarded to AEAT.
- South Cambridgeshire District Council is a member of the Calibration Club, operated by AEAT.
- All NO<sub>x</sub> analysers are chemiluminescence analysers
- All particulate matter analysers are BAMs. In line with current guidance, BAM data is multiplied by 1.3 to give the gravimetric equivalent.

## Appendix 2: Map of AQMA



Appendix 3: NO<sub>2</sub> monthly mean measured at diffusion tubes sites 2013

2013	January	February	March	April	May	June	July	August	September	October	November	December	MEAN	x Bias	Adj. M	% data capture
The Coppice	30.1	24.0	21.9	18.0	16.6	14.0	12.0	16.3	25.0	Missing	7.4	24.9	19.1	0.8	15.3	91.7
The Gables, Histon	51.0	34.6	36.2	34.8	36.6	31.0	0.8	36.8	48.6	41.3	Missing	36.3	35.3	0.8	28.2	91.7
Hill Farm Cot., Lolworth	35.5	29.5	22.0	28.1	39.6	26.3	31.0	34.6	42.5	49.1	30.7	44.2	34.4	0.8	27.5	100.0
High St Sawston	47.6	30.7	36.6	Missing	Missing	28.2	25.4	27.5	35.9	Missing	43.4	39.5	35.0	0.8	28.0	75.0
Rhadegund farm Cot,L	45.1	34.2	45.8	38.9	25.4	32.4	29.8	18.9	28.3	18.8	55.3	16.9	32.5	0.8	26.0	100.0
Linton	43.5	38.0	34.6	Missing	34.9	28.9	30.1	30.7	36.6	37.1	38.5	34.8	35.2	0.8	28.2	91.7
Tadlow	26.9	21.0	15.7	14.0	10.6	8.0	7.0	10.0	15.5	14.7	49.7	18.3	17.6	0.8	14.1	100.0
Harston	46.3	35.0	45.1	30.8	25.3	27.5	13.9	Missing	31.5	32.2	30.1	35.8	32.1	0.8	25.7	91.7
Milton	36.7	24.2	20.5	15.9	16.5	Missing	28.4	15.0	22.9	25.1	43.0	25.6	24.9	0.8	19.9	91.7
Girton	54.0	34.7	33.5	34.7	29.9	23.0	11.0	30.1	37.4	38.0	Missing	43.7	33.6	0.8	26.8	91.7
Thriplow	51.0	26.9	39.0	35.4	27.8	24.1	23.3	25.9	36.0	27.8	34.2	37.1	32.4	0.8	25.9	100.0
Lone Tree Av	38.6	22.3	24.4	19.7	18.5	15.6	25.8	18.5	29.6	Missing	42.5	23.1	25.3	0.8	20.2	91.7
Brook Close Histon	35.4	26.4	25.1	21.3	17.2	16.4	16.9	16.7	26.3	24.9	32.9	26.2	23.8	0.8	19.0	100.0
Water Lane	48.6	36.8	29.5	24.6	27.2	22.5	20.4	26.0	35.2	Missing	36.6	39.3	31.5	0.8	25.2	91.7
Cambridge Rd	36.0	28.9	24.5	58.7	20.9	17.4	17.1	17.2	28.7	30.9	61.4	34.8	31.4	0.8	25.1	100.0
Hackers Fruit farm, L.	63.8	67.0	91.2	Missing	53.1	60.5	63.2	36.7	65.2	32.6	32.9	24.5	53.7	0.8	42.9	91.7
Mill Lane	27.3	23.2	19.8	21.4	14.4	16.4	11.7	13.3	Missing	19.5	52.9	25.3	22.3	0.8	17.8	91.7
1 Catchall Farm Cottis	36.8	36.0	50.6	17.9	35.3	47.7	42.8	26.4	33.4	21.6	30.0	17.5	33.0	0.8	26.4	100.0
Crafts Way, Bar Hill	7.3	43.7	42.5	41.7	29.1	27.9	25.9	20.3	30.8	25.6	36.6	25.5	29.7	0.8	23.7	100.0
Chieftain Way	29.8	34.9	32.4	33.5	17.9	20.5	17.5	19.4	28.7	21.1	36.0	27.7	26.6	0.8	21.2	100.0
Topper Street	42.6	34.9	35.5	26.3	19.3	18.9	15.1	18.2	30.5	21.5	39.0	29.1	27.6	0.8	22.0	100.0
Flack End	46.6	Missing	40.0	24.9	23.9	27.6	21.5	21.0	31.0	32.4	39.7	33.0	31.1	0.8	24.8	91.7
Orchard Pk School	31.1	26.2	20.3	27.4	17.9	16.9	15.6	17.3	25.6	22.9	41.9	28.1	24.3	0.8	19.4	100.0
Orchard Pk School	27.1	29.9	27.0	20.6	20.0	18.2	16.6	13.9	26.0	25.0	37.0	25.9	24.0	0.8	19.2	100.0
Orchard Pk School	36.3	30.6	26.6	21.6	20.2	18.3	15.9	17.6	25.5	17.5	37.4	26.5	24.5	0.8	19.6	100.0
Co-op Histon	38.5	26.4	28.0	19.5	21.2	18.4	18.8	19.0	27.5	28.5	38.9	32.4	26.4	0.8	21.1	100.0
Engledow Drive	40.7	41.6	39.0	22.4	24.8	24.6	22.1	24.3	33.7	27.4	36.9	31.2	30.7	0.8	24.6	100.0
Topper Street o/s 22	41.6	31.0	25.3	26.9	21.7	19.8	18.4	19.6	31.3	26.9	44.6	16.7	27.0	0.8	21.6	100.0
Abingdon	26.8	32.0	19.5	23.1	12.1	10.5	9.4	9.8	16.9	13.3	36.8	18.2	19.0	0.8	15.2	100.0