Air Quality Progress Report 2013

In fulfillment of Part IV of the Environment Act1995 Local Air Quality Management

June 2013

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Executive Summary

Part IV of the Environment Act 1995 places a statutory duty on local authorities to review and assess the Air Quality within their area and take account of government guidance when undertaking such work.

The fifth round of Review and Assessment began with the Updating and Screening Assessment, which was completed in May 2012.

The 2013 Progress Report of new monitoring data has shown that exceedances of the Nitrogen Dioxide annual mean objective from data collected by Diffusion Tubes occurred at three locations in the district in 2012.

However, all three monitoring locations are within the current AQMA and hence no further action is required.

Hence, the Progress Report 2013 concludes that Uttlesford District Council's next course of action will be to :

- Submit Progress Report by end of April 2014
- Carry out a review of diffusion tube locations and relocate the tubes to receptors where possible.

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1 Introduction

1.1 Description of Local Authority Area

The district of Uttlesford is predominantly rural in nature and has the principal town of Saffron Walden as its administrative centre. Uttlesford is dissected by the M11 motorway and A120 trunk road which support Stansted International Airport in the south of the district.

1.2 Purpose of Progress Report

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

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

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 1.1.

Table 1.1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	16.25 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen Dioxide	200 $\mu g/m^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu g/m^3$	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 $\mu g/m^3$, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu g/m^3$	Annual mean	31.12.2004
Sulphur dioxide	350 $\mu g/m^3$, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu g/m^3$, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu g/m^3$, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

Table 1.2 Summary of Previous Review and Assessments

Round	Date(s)	Summary
1	1998-2002	Concluded that all Air Quality Objectives would be met for all pollutants. No AQMAs declared. The main sources of emissions of Nitrogen Dioxide and PM_{10} in the District were found to be vehicles on the M11 and A120.
2	2003-2005	The USA concluded that Air Quality Objectives would be met for all pollutants. No AQMAs declared. Progress Reports in 2004 and 2005 confirmed this conclusion.
3	2006	The USA concluded that the annual mean Nitrogen Dioxide Air Quality Objectives would be exceeded at three junctions in Saffron Walden and a Detailed Assessment would be required.
	2007	The Detailed Assessment confirmed the findings of the USA and three AQMAs were declared for the three junctions for annual mean Nitrogen Dioxide exceedances.
	2008	The Progress Report for 2008 concluded that the Air Quality Objectives for all pollutants would be met outside of the newly declared AQMAs.
4	2009	The USA concluded that the Air Quality Objectives for all pollutants would be met outside of the newly declared AQMAs.
	2010	The Progress Report concluded that exceedances of annual mean Nitrogen Dioxide Air Quality Objectives had occurred at five monitoring locations in 2009. Two locations (Debden Road and Burton End) were located outside of the AQMAs. Additional monitoring was undertaken to confirm the extent of the exceedances outside the AQMAs.
	2011	The Progress Report concluded that Air Quality Objectives would be met for all pollutants outside of the AQMAs except at the location of the additional tubes on Debden Road and Burton End. The additional tubes had confirmed that there were exceedances of the annual mean Nitrogen Dioxide Air Quality Objectives and a Detailed Assessment was recommended to be undertaken for London Road / Burton End.
5	2012	The USA for Uttlesford District Council concluded that a Detailed Assessment or any additional monitoring is not required for any pollutant. Exceedances of the annual mean Nitrogen Dioxide Air Quality Objectives occurred at two non-automatic monitoring sites within the District but both of these sites are located within an existing AQMA. The monitoring undertaken within the District has shown that there were no other exceedances of the Air Quality Objectives.

Due to the exceedances of the Nitrogen Dioxide annual mean Air Quality Objectives recorded in 2010, an AQMA was approved at a UDC Cabinet Meeting[1] and subsequently declared in May 2012. The AQMA replaced the three existing AQMAs in the District and encompasses the areas where exceedances were recorded in 2010. A map showing the location of the AQMA is shown in Figure 1.1.

Figure 1.1 Map of AQMA Boundary

[1] http://ggpweb.uttlesford.gov.uk/CmiswebPublic/Meeting.aspx?meetingID=9258

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

There is currently automatic Air Quality monitoring undertaken by Uttlesford District Council at three locations. Saffron Walden is an 'urban centre' site and Takeley is an 'urban background' site. The mobile automatic monitoring site is now located at Stansted Hall which is a 'rural 'site.

Table 2.3 presents the results of the Nitrogen Dioxide automatic monitoring undertaken in the District in 2012, as well as the results of monitoring in the four previous years. The results show that there have been no exceedances of the annual mean Nitrogen Dioxide Air Quality Objectives or the hourly mean Nitrogen Dioxide Air Quality Objectives during 2012.

Table 2.1 Details of Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*	Does this location represent worst-case exposure?
Saffron Walden	Urban Centre	553823	238408	NO_2, PM_{10}	Y	Y (25)	5	N
Takeley	Urban Background	556234	221496	NO_2, $PM_{2.5}$, O_3	N	Y (15)	50	N
Stansted Hall	Rural	552346	224049	NO_2, PM_{10}	N	N	60	N

Figure 2.1 Map of Automatic Monitoring Sites and Diffusion Tubes near Stansted Airport in Uttlesford District

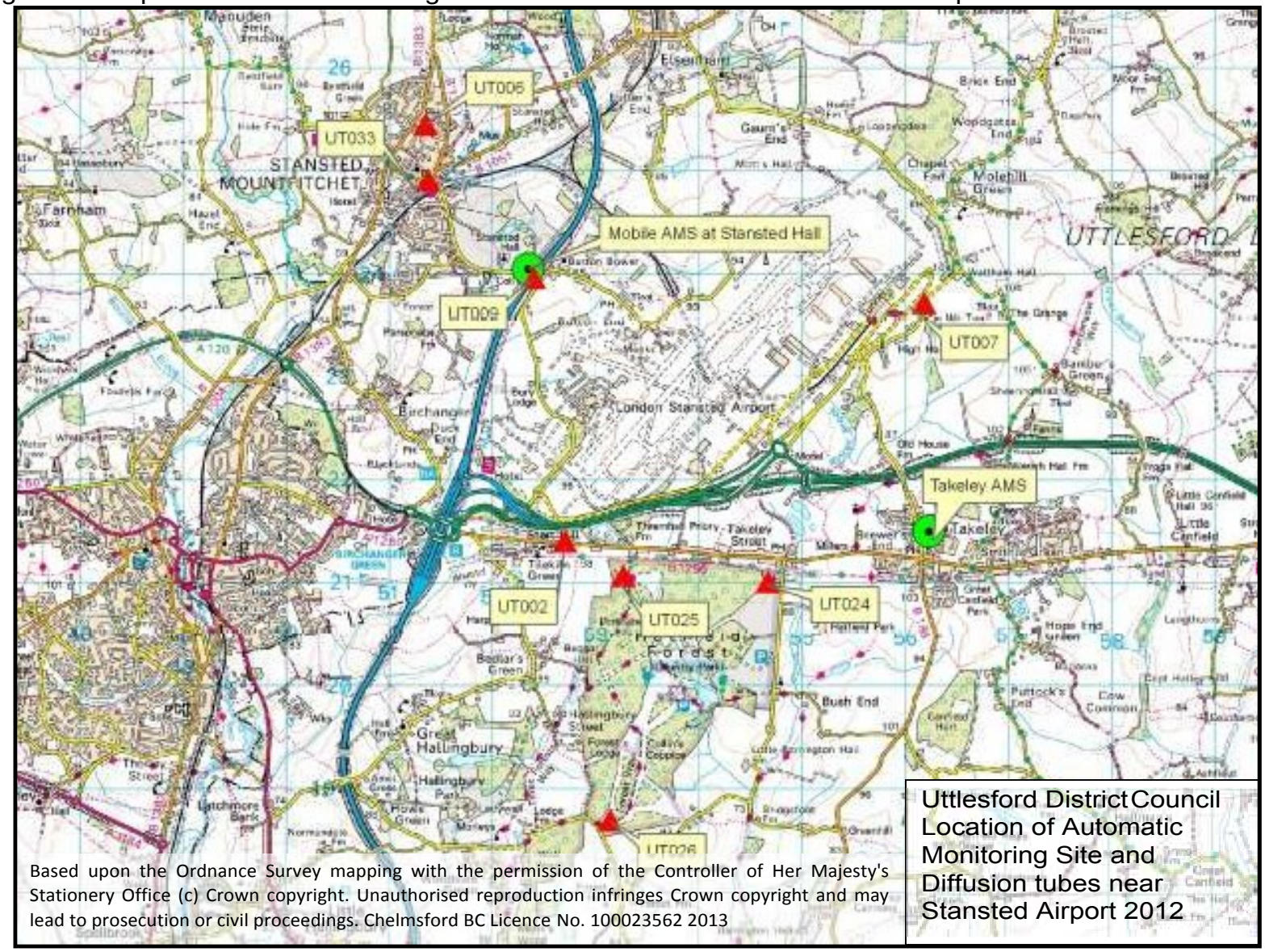


Figure 2.2 Map of Automatic Monitoring Site and Diffusion Tubes near Saffron Walden in Uttlesford District

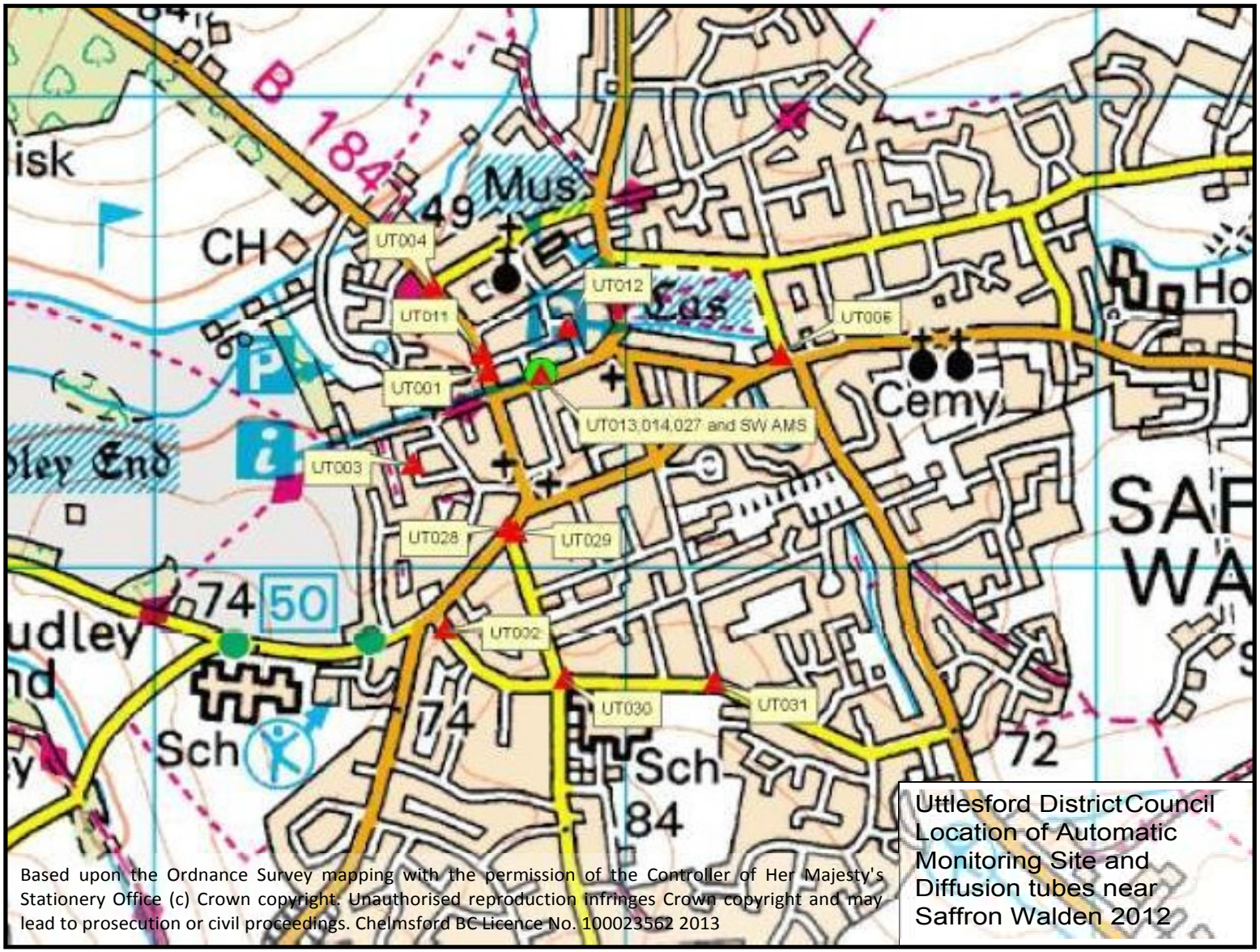


Figure 2.3 Map of Diffusion Tubes near Great Dunmow in Uttlesford District

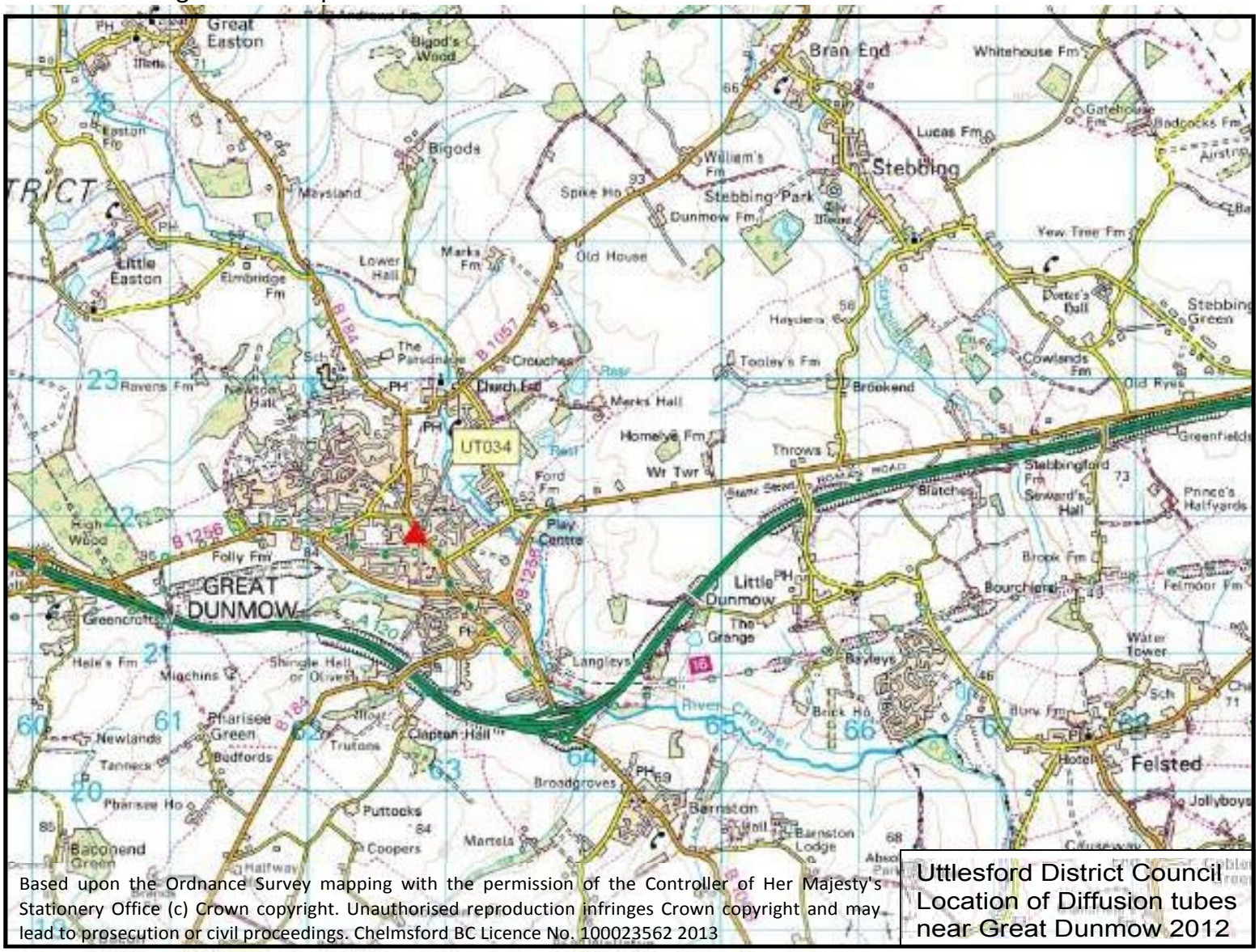
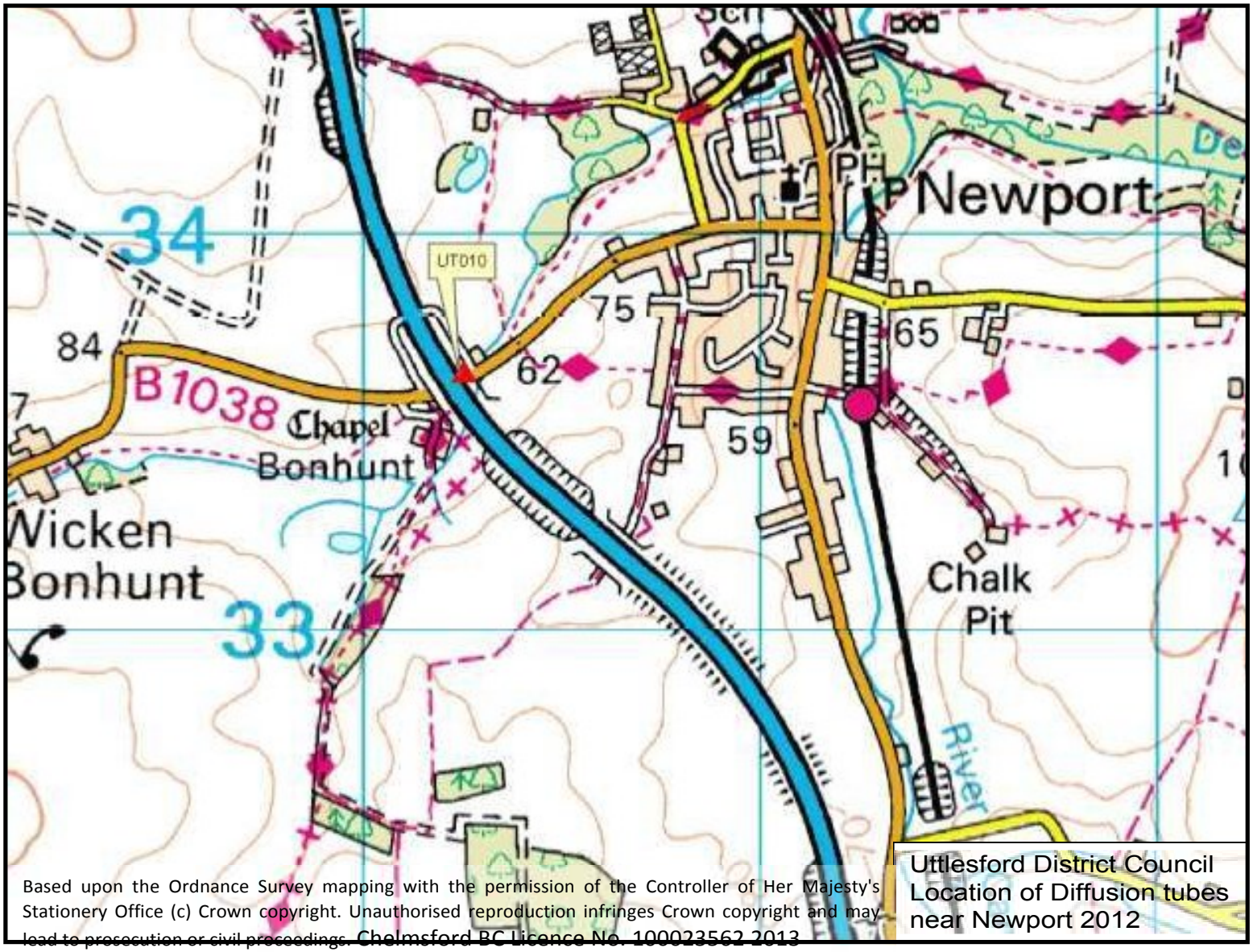


Figure 2.4 Map of Diffusion Tubes near Newport in Uttlesford District



2.1.2 Non-Automatic Monitoring

In addition to three automatic monitoring stations, Uttlesford District Council undertook monitoring at 22 Nitrogen Dioxide diffusion tubes sites (Figs 2.1 to 2.4) in 2012.

- The diffusion tubes are supplied and analysed by Environmental Services Group for January, February and March before the change of supplier to Gradko International. Monitoring undertaken between April and December 2012 is reported in this Progress Report.
- Preparation method: 20% TEA in Water for tubes supplied by Gradko.
- United Kingdom Accreditation Services (Testing Laboratory number 2187).
- WASP scheme for analysis of Nitrogen Dioxide diffusion tubes, January 2012– September 2012 gave Gradko Environmental a 100% performance on basis of rounds 116-118.
- The local bias-adjustment factor used is calculated from the co-located site within the district and is summarised in appendix 1.

Table 2.2 Details of Non- Automatic Monitoring Sites

Site ID	Site Name	X	Y	Pollutants Monitored	In AQMA?	Relevant Exposure? (distance to relevant exposure (m))	Distance to kerb of nearest road (m)	Worst case?
UT001	Walden 1 PO High Street	553710	238415	NO_2	Y	N	1.5	Y
UT003	Walden 3 GibsonGardens	553552	238219	NO_2	Y	Y (5.1)	1.5	Y
UT004	Walden 4 YHA	553594	238599	NO_2	Y	Y (0.8)	1.4	Y
UT005	Walden 5 Thaxted Road	554332	238450	NO_2	Y	Y (2.4)	0.5	Y
UT011	Walden 11 33 High Street	553697	238452	NO_2	Y	Y (0)	2.7	Y
UT012	Walden 12 Town Hall	553878	238509	NO_2	Y	N	0.2	Y
UT013/14/27*	Fire Station Co-located	553823	238408	NO_2	Y	N	4.1	Y
UT028	Walden 16 London Road	553751	238086	NO_2	Y	Y (0.8)	2	Y
UT029	Walden 17 Debden Road	553770	238076	NO_2	Y	Y (0.8)	2	Y
UT030	Walden 18 FriendsSchool	553875	237763	NO_2	Y	Y (15)	3	Y
UT002	Airport 1 Thatched Cottage	552706	221403	NO_2	N	Y (1)	10	Y
UT007	Airport 2 Rose Cottage	556186	223724	NO_2	N	Y (0)	7.5	Y
UT006	Stansted	551358	225452	NO_2	N	Y (0)	3.9	Y
UT008	Hallingbury	551189	217438	NO_2	N	N	29.1	Y
UT009	Burton End	552403	223965	NO_2	N	N	9.3	Y
UT010	Newport	551255	233649	NO_2	N	Y (34.2)	0	Y
UT024	TakeleyHillHatfieldForest	554671	221010	NO_2	N	N	117.5	N
UT025	Elman's GreenHatfieldForest	553271	221072	NO_2	N	N	183.1	N
UT026	South GateHatfieldForest	553141	218694	NO_2	N	N	138	N
UT031	Walden Peaslands Rd	554193	237756	NO_2	Y	Y(2)	1.5	Y
UT032	Walden Borough Lane	553619	237869	NO_2	Y	Y(0)	7	Y
UT033	Stansted Chapel Hill	551377	224913	NO_2	N	Y(0)	1.5	Y
UT034	High St GD	562787	221883	NO_2	N	Y(2)	1.5	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

The 2012 data shows no exceedance of the annual mean Nitrogen Dioxide objective at the automatic monitoring sites.

Table 2.3 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with Annual Mean Objective

Location	Within AQMA?	Data Capture 2012 %	Descriptor	2008	2009	2010	2011	2012
Saffron Walden	Y	95.11	Annual mean, μgm^{-3}	27.7	24.68	30.07	22.29	22.86
			Number of Exceedences of Hourly Mean (200 μgm^{-3})	2	0	13	0	0
Takeley	N	85.7	Annual mean, μgm^{-3}	18.6	17.64	18.98	19.64	18.96
			Number of Exceedences of Hourly Mean (μgm^{-3})	0	0	0	0	0
Stansted Hall	N	84.51	Annual mean, μgm^{-3}	n/a	n/a	27.7	29.22	26.66
			Number of Exceedences of Hourly Mean (200 μgm^{-3})	n/a	n/a	0	1	0

*Annualised using Rainsford, Thurrock and Stanford-le-Hope automatic stations, see appendix 2.

Figure 2.5 Trends in Hourly Mean Nitrogen Dioxide Concentration at Saffron Walden

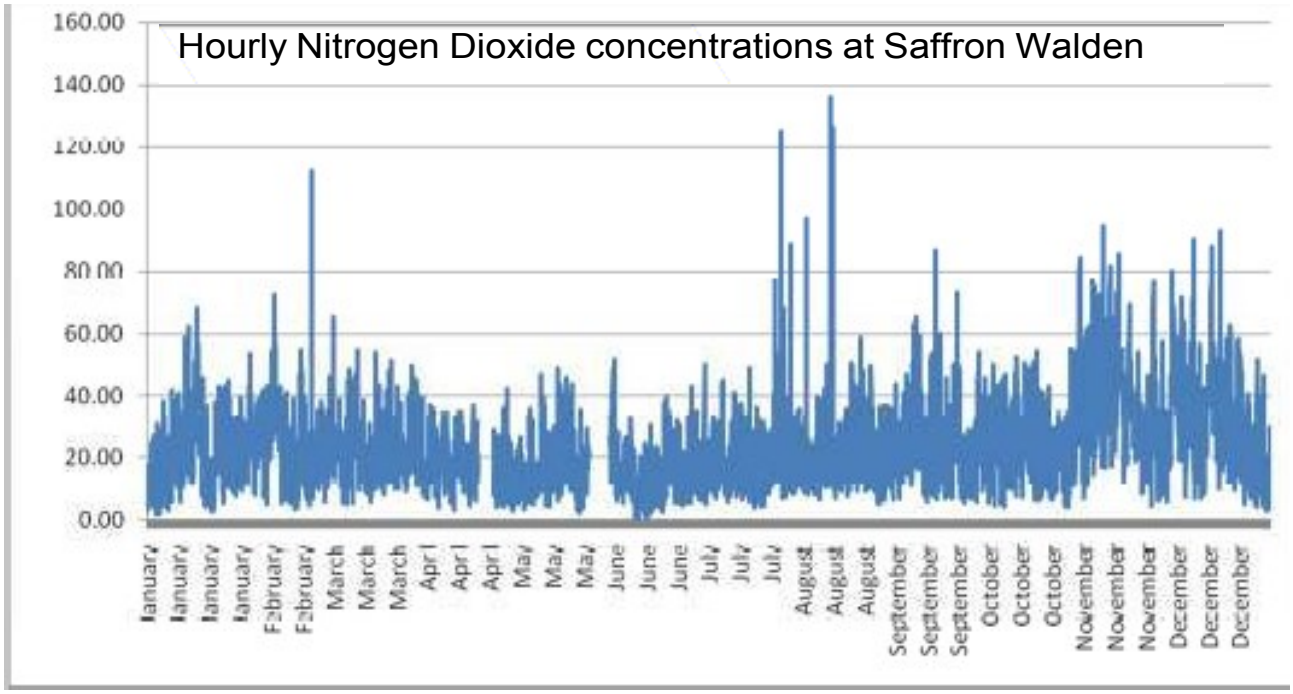


Figure 2.6 Trends in Hourly Mean Nitrogen Dioxide Concentration at Stansted Hall (Mobile)

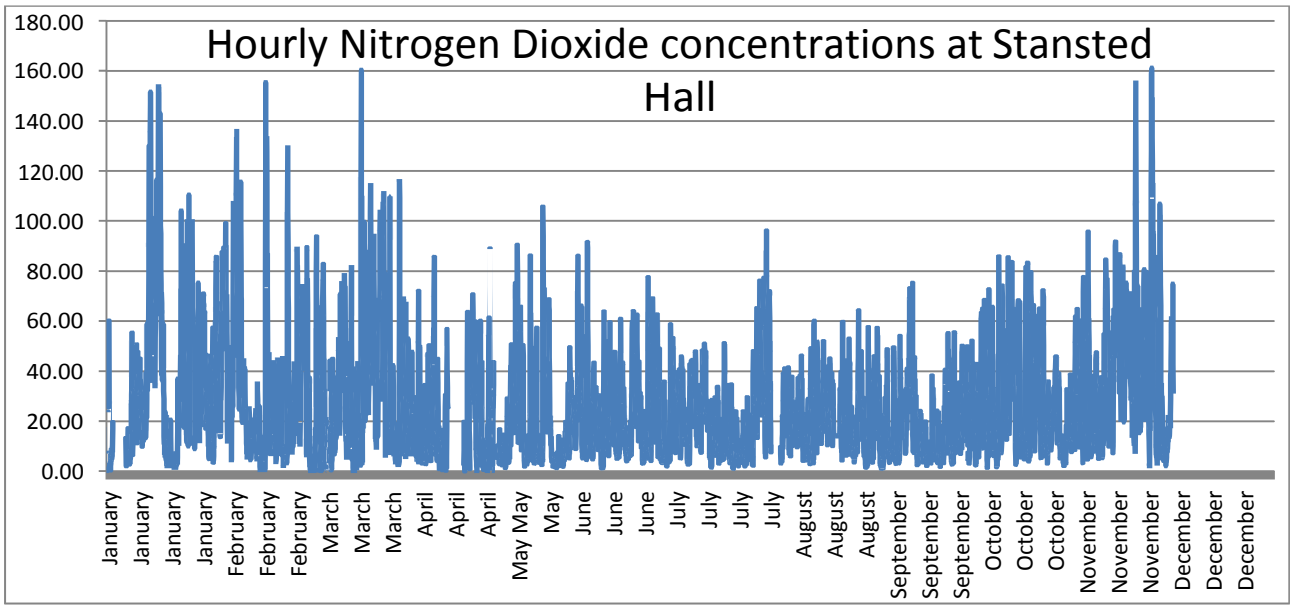
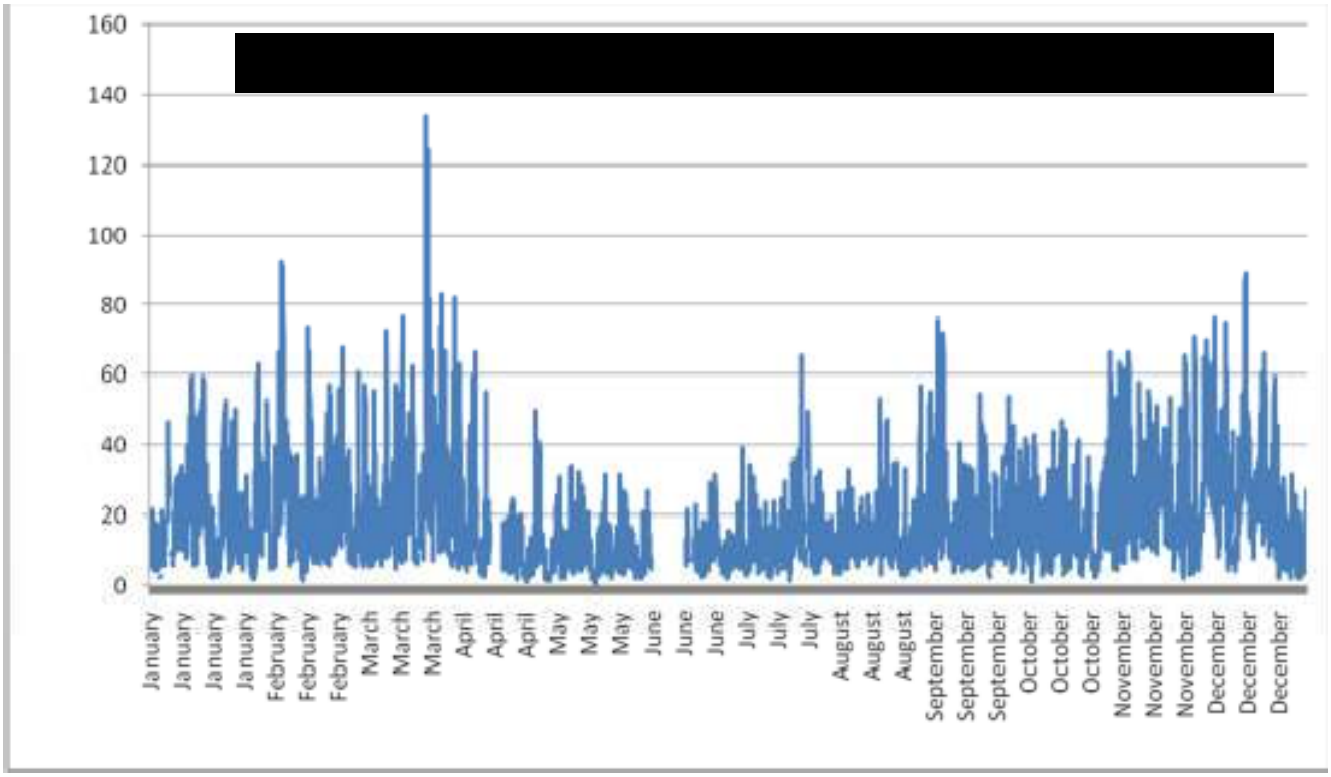


Figure 2.7 Trends in Hourly Mean Nitrogen Dioxide Concentration at Takeley



Diffusion Tube Monitoring Data

The results of the diffusion tube monitoring from 2012 are tabulated below. The bias adjustment means from 2007 are also included to provide an indication of any trends in the monitored results.

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes

Site ID	Location	In AQMA?	Data capture 2012 (%)	Annual Mean Concentrations ($\mu g\,m^{-3}$) Adjusted for Bias					
				2007 (Bias Factor 0.89)	2008 (Bias Factor 1.36)	2009 (Bias Factor 0.92)	2010 (Bias Factor 0.95)	2011 (Bias Factor 0.80)	2012 (Bias Factor 0.90)
UT001	Walden 1 PO High Street	Y	75.00	37.1	42.9	40	47.22	36.6	38.67
UT003	Walden 3 GibsonGardens	Y	75.00	16.0	17.9	18	20.29	14.1	15.74
UT004	Walden 4 YHA	Y	66.67	36.2	45.2	44	48.61	38.4	47.51*
UT005	Walden 5 Thaxted Road	Y	75.00	42.9	53.4	50	57.66	43.1	46.08
UT011	Walden 11 33 High Street	Y	75.00	34.6	37.1	37	41.53	30.7	33.57
UT012	Walden 12 Town Hall	Y	75.00	27.6	25.0	22	25.41	18.2	21.14
UT013/14/27*	Fire Station	Y	75.00	-	-	25	29.10	21.2	22.68
UT028	Walden 16 London Road	Y	66.67	-	47.7	43	50.00	40.7	45.87
UT029	Walden 17 Debden Road	Y	66.67	-	-	-	32.75	23.0	30.02*
UT030	Walden 18 FriendsSchool	Y	75.00	-	-	-	36.95	25.3	26.91
UT002	Airport 1 Thatched Cottage	N	66.67	25.5	28.4	27	30.05	19.8	27.32*
UT007	Airport 2 Rose Cottage	N	75.00	25.8	31.1	26	28.10	21.2	23.50
UT006	Stansted	N	75.00	16.5	19.3	18	19.34	15.3	16.32
UT008	Hallingbury	N	75.00	28.1	35.7	31	36.21	26.9	27.80
U009	Burton End	N	75.00	40.1	45.4	41	47.23	36.9	38.90
UT010	Newport	N	75.00	26.9	31.8	29	32.07	25.4	26.98
UT024	TakeleyHillHatfieldForest	N	75.00	16.3	18.2	16	17.95	13.6	14.46
UT025	Elman's GreenHatfieldForest	N	75.00	16.9	17.5	16	21.51	13.8	15.58
UT026	South GateHatfieldForest	N	75.00	14.9	16.3	14	15.94	12.6	13.66
UT031	Walden Peaslands Rd	Y	75.00	N/A	N/A	N/A	N/A	N/A	19.78
UT032	Walden Borough Lane	Y	50.00	N/A	N/A	N/A	N/A	N/A	20.52*
UT033	Stansted Chapel Hill	N	75.00	N/A	N/A	N/A	N/A	N/A	25.72
UT034	High St GD	N	16.67	N/A	N/A	N/A	N/A	N/A	33.85*

* - Annualised using data from Southend and Thurrock

2.2.2 PM10

There is currently continuous monitoring of PM_{10} undertaken by Uttlesford District Council at two locations in their local authority area, Saffron Walden and Stansted Hall. Monitoring is undertaken using Beta Attenuation Mass (BAM) analysers. BAM results for 2012 have been corrected using the default BAM correction factor of 0.826

The results displayed in Table 2.5 and 2.6 indicate that the annual mean and 24-hour mean PM_{10} objectives are being met at two monitoring sites.

Table 2.5 Results of PM10 Automatic Monitoring: Comparison with Annual Mean Objective

Location	Within AQMA?	Data Capture 2012 %	Descriptor	2008	2009	2010	2011	2012
Saffron Walden	Y	98.36	Annual mean, μgm^{-3}	18.8	15.59	19.03*	25.31	24.73
			Number of Exceedences of 24-Hour Mean (50 μgm^{-3})	5	1 (28.59 μgm^{-3})	4 (45.87 μgm^{-3})	19	7
Stansted Hall	N	95.89	Annual mean, μgm^{-3}	N/A	N/A	20.99	25.68	25.17
			Number of Exceedences of 24-Hour Mean (50 μgm^{-3})	N/A	N/A	4 (45.74 μgm^{-3})	20	12

*Annualised using Rainsford, Thurrock and Stanford-le-Hope automatic stations, see appendix 2.

Figure 2.8Trends in Daily PM_{10} concentrations at Saffron Walden

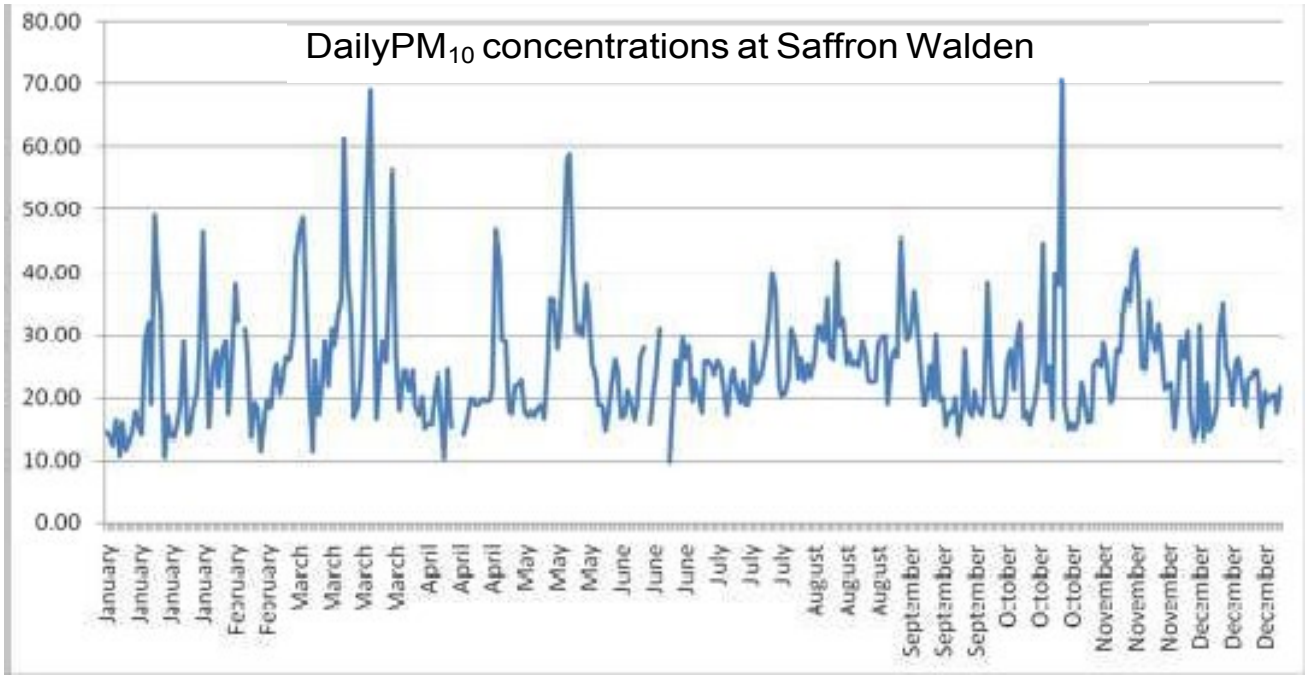
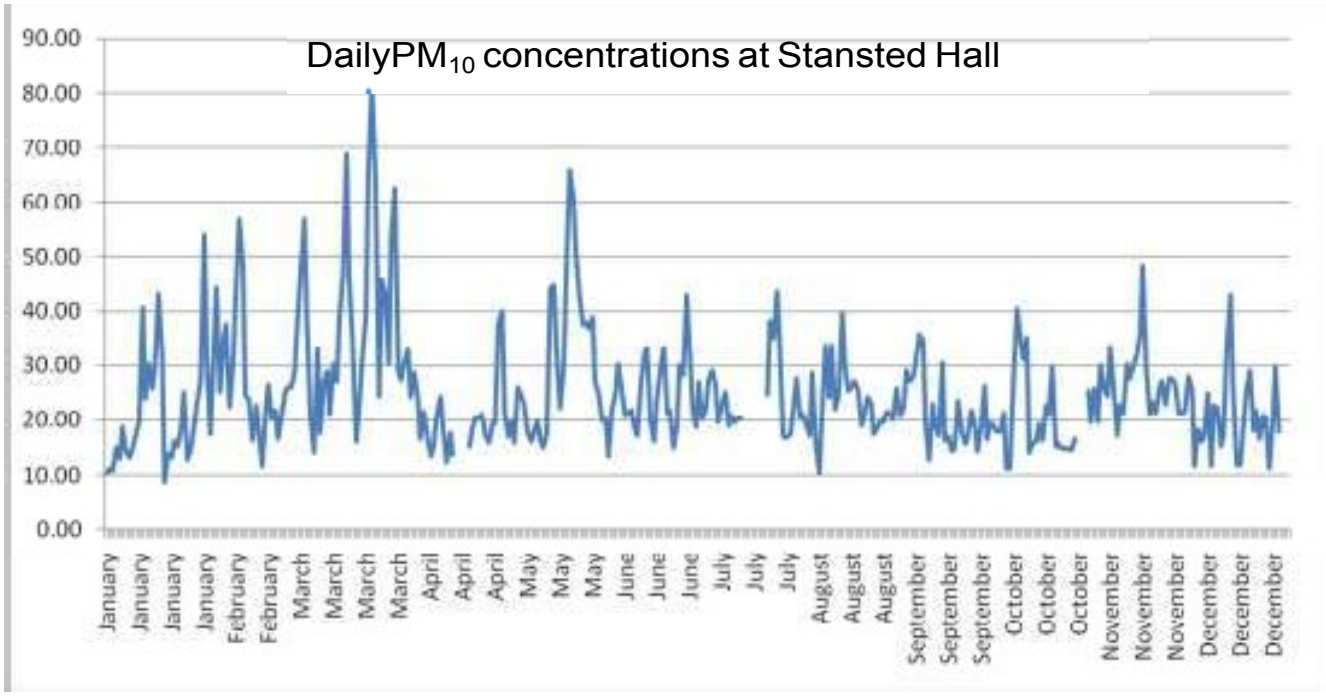


Figure 2.9 Trends in Daily PM10 concentrations at Stansted Hall



2.2.3 Sulphur Dioxide

Uttlesford District Council does not currently monitor for Sulphur Dioxide.

2.2.4 Benzene

Uttlesford District Council does not currently monitor for Benzene.

2.2.5 Other pollutants monitored

Ozone and PM 2.5 are monitored at the Takeley continuous monitoring site. The results are presented below in Table 2.6 and 2.7.

Table 2.6 Results of Automatic Monitoring for Ozone

Location	Within AQMA?	Valid Data Capture 2012 %	Annual mean concentration (µg m^{-3}) 2012
Takeley	N	93.07	46.38

Figure 2.10 Daily trends in O3 concentrations at Takeley

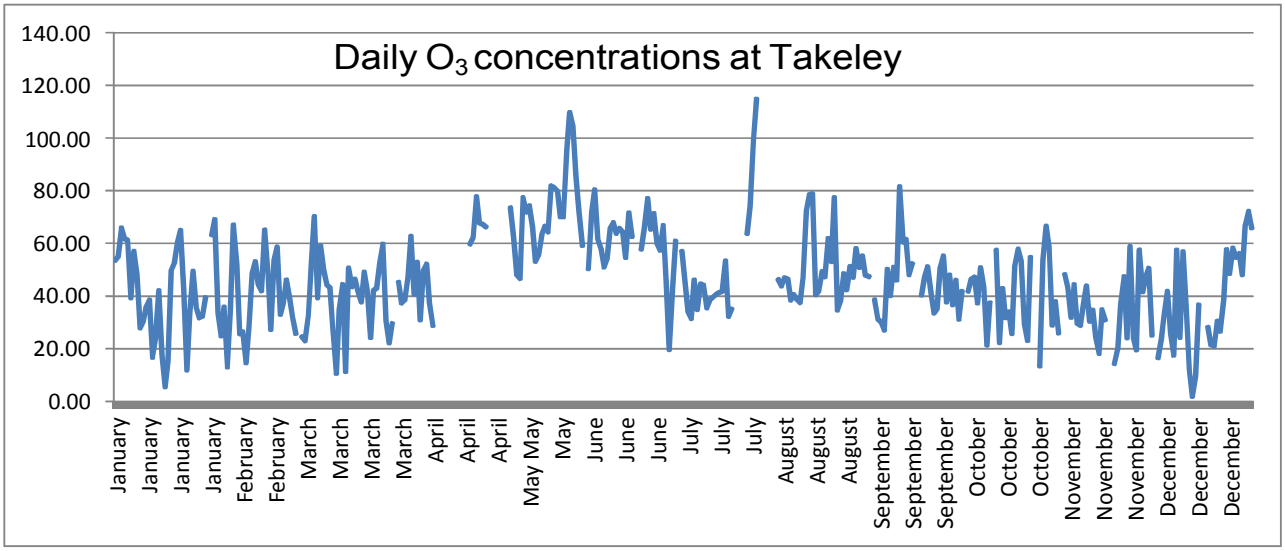
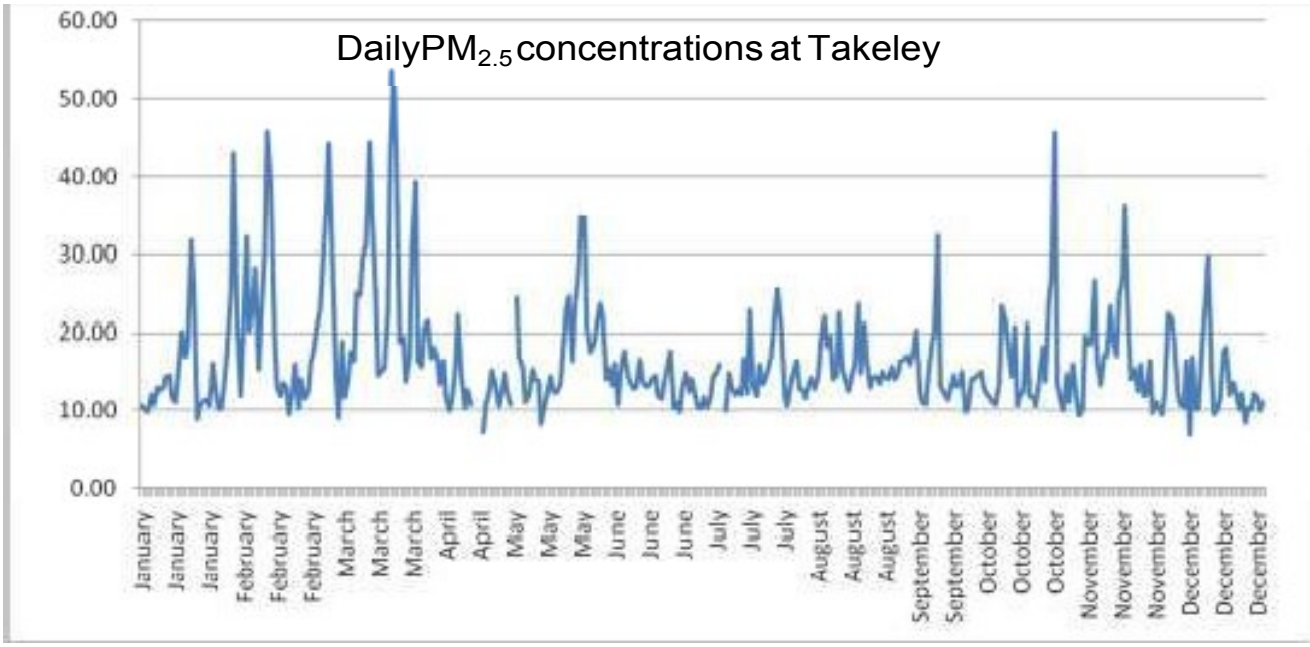


Table 2.7 Results of Automatic Monitoring for PM2.5

Location	Within AQMA?	Valid Data Capture 2012 %	Annual mean concentration ($\mu g\ m^{-3}$) 2012
Takeley	N	97.11	16.54

Figure 2.11 Trends in Daily PM2.5 concentrations at Takeley



2.2.6 Summary of Compliance with AQS Objectives

Uttlesford District Council has measured concentrations of Nitrogen Dioxide above the annual mean at three relevant locations, however all three locations are within the boundaries of the existing AQMA.

3 New Local Developments

Uttlesford 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.

3.1 Road Traffic Sources

Uttlesford District Council confirms that there are no new or newly identified road traffic sources which may have an impact on Air Quality within the Local Authority area.

3.2 Other Transport Sources

London Stansted Airport lies within Uttlesford District Council's local authority area and therefore requires assessment. Uttlesford District Council currently operates two Nitrogen Dioxide diffusion tube monitoring sites at relevant receptors close to the airport (Airport 1, Thatched Cottage and Airport 2, Rose Cottage).

The results of this monitoring indicate that the annual mean Nitrogen Dioxide Air Quality objective is being met at these sites. Additionally, STAL operate two continuous Nitrogen Dioxide analysers and 4 Nitrogen Dioxide diffusion tube sites around the perimeter of Stansted airport. STAL's Nitrogen Dioxide monitoring data is made available to Uttlesford District Council.

In June 2010 STAL published its Air Quality Strategy 2010–2015 'Creating an Atmosphere for Change' which includes a number of Air Quality key performance indicators including increasing the number of low emission vehicles in its own fleet from 0% to 50%, and in all the vehicles used airside from 9% to 20%, reducing taxi delays and increasing the use of fixed electrical ground power from 26% to 90% by 2015.

Current Nitrogen Dioxide monitoring suggests that the annual mean Air Quality objective will be met at relevant receptors close to Stansted airport therefore there is no need to proceed to a Detailed Assessment.

3.3 Industrial Sources

Uttlesford District Council confirms that there are no new or newly identified industrial sources which may have an impact on Air Quality within the Local Authority area.

3.4 Commercial and Domestic Sources

Uttlesford District Council confirms that there are no new or newly identified commercial and domestic sources which may have an impact on Air Quality within the Local Authority area.

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3.5 New Developments with Fugitive or Uncontrolled Sources

Uttlesford District Council confirms that there are no new developments with fugitive or uncontrolled sources which may have an impact on Air Quality within the Local Authority area.

4 Local / Regional Air Quality Strategy

The East of England Plan (adopted in May 2008)

Policy ENV7 – Quality in the Built Environment states:

'Local Development Documents should require new development to be of high quality which complements the distinctive character and best qualities of the local area and promotes urban renaissance and regeneration. New development should: reduce pollution, including emissions, noise and light pollution.'

Local Planning Policy – Uttlesford Adopted Local Plan (2005)

Policy ENVI3 Exposure to Poor Air Quality states that:

'Development that would involve users being exposed on an extended long-term basis to poor Air Quality outdoors near ground level will not be permitted. A zone 100 metres on either side of the central reservation of the M11 and a zone 35 metres either side of the centre of the new A120 have been identified on the proposals map as particular areas to which this policy applies.'

5 Planning Applications

The following are the planning applications which may have the potential to affect the AQMAs in Saffron Walden:

Name of the development	Details	Planning reference	Air Quality Impact Assessment	Status of the Application
Tesco Radwinter Road	Extension to existing store	UTT/1323/09/FUL	Slight adverse effect on Thaxted Rd/Radwinter Rd junction	Committed
Ashdon Road	130 residential units & B1 employment	UTT/1572/12/FUL	Slight adverse effect on Thaxted Rd/ Radwinter Rd junction	Committed
Little Walden Road	15 residential units	UTT/1576/12/FUL	Slight adverse effect on Thaxted Rd/Radwinter Rd junction	Committed
Debden Road	76 residential units and junior school	UTT/0188/10/FUL	Slight adverse effect on Debden Road/Mount Pleasant Road junction	Committed
Thaxted Road	Class A1 retail odevelopment	UTT/13/0268/FUL	Negligible effect on Thaxted Rd/Radwinetr Rd junction	Committed
Radwinter Road	9 residential units	UTT/0123/09/FUL	Negligible effect on Radwinter Rd/Thaxted Rd junction	Committed
Radwinter Road	31 sheltered apartments	UTT/12/5226/FUL	Insignificant effect on Radwinter Rd/Thaxted Rd junction	Committed
Thaxted Road	55 residential units	UTT/13/0750/OP	AQ assessment awaited	Application not yet determined
Thaxted Road	300 residential units	UTT/13/0608/SCO		Screening opinions provided
Ashdon Road	170 residential units and commercial development	UTT/13/1044/SCO		Screening opinions provided

6 Air Quality Planning Policies

UDC is currently developing a new Local Plan which will include references to areas of poor air quality. The plan is due for consultation towards the end of 2013 and will set out the Council's strategy for development until 2026.

7 Local Transport Plans and Strategies

Uttlesford is covered by the Essex County Council Local Transport Plan. There are a number of general measures in the Essex LTP which are aimed at reducing the impact of road transport on Air Quality.

The Council is working in partnership with the Development, Highways and Transportation department of Essex County Council to ensure that new traffic management schemes consider the potential impact on Air Quality, with particular emphasis on the declared AQMA. Additional Air Quality monitoring programmes are being introduced as part of the monitoring requirements of the LTP.

8 Climate Change Strategies

Uttlesford District Council's Climate Change strategy has been superseded by a Natural Resource Management Strategy. This will be soon available on the Climate Change pages of the Uttlesford Council's website.

9 Implementation of Action Plans

Table 9.1 Saffron Walden AQMAs Action Plan Progress Report March 2013

Action	Who	When	Progress
Traffic Management Plan	Essex County Council	2013 onwards	A number of junction improvements to reduce congestion are under consideration
Business Travel Plans	Uttlesford District Council	2013	Measures to encourage reduction in car use have been implemented including a car share scheme for UDC and ECC staff, a staff cycle shelter. Provision of cycle racks in the Town Centre has been agreed.
Public Transport Improvements	Essex County Council and Private Operators	Ongoing	A shared pedestrian and cycle path to Audley End station is under design by Essex CC
Car parking signage	Essex County Council	2013	New and reinstated signage to be provided

10 Conclusions and Proposed Actions

10.1 Conclusions from New Monitoring Data

The 2013 Progress Report of new monitoring data has shown that exceedances of the Nitrogen Dioxide annual mean objective from data collected by Diffusion Tube occurred at three locations in Uttlesford in 2012. All three locations are within the boundaries of the AQMA and hence no further action is required.

10.2 Proposed Actions

Uttlesford District Council's next course of action is to :

- Submit 2014 Progress Report by end of April 2014

11 References

1. Uttlesford District Council 2010 Local Air Quality Management Annual Progress Report.
2. Uttlesford District Council 2009 Local Air Quality Management Updating and Screening Assessment.
3. Uttlesford District Council 2008 Local Air Quality Management Annual Progress Report.
4. Uttlesford District Council 2006 Local Air Quality Management Updating and Screening Assessment.
5. Local Air Quality Management Technical Guidance LAQM.TG(09). February 2009. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
6. WASP – Annual Performance Criteria for Nitrogen Dioxide Diffusion Tubes used in Local Air Quality Management (LAQM), 2008 onwards, and Summary of Laboratory Performance in Rounds 105-109. Prepared by AEA on behalf of Defra and the Devolved Administrations, Dated 17th Sep 2010.

Appendices

Appendix 1: QA: QC Data

Factor from Local Co-location Studies

Uttlesford DC has a triplicate co-location site at its Fire Station continuous monitoring site; during 2012 the average annual mean value at this Urban Centre site was 25µg/m^3 and the Nitrogen Dioxide levels measured by the M200a continuous monitor was 23µg/m^3 and using the AEA spreadsheet a bias adjustment figure of 0.90 (0.8 to 1.03 with 95% confidence interval) was calculated.

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	04/01/2012	01/02/2012	31.3	34.7	35.6	34	2.3	7	5.6	22.15	99.70	Good	Good
2	01/02/2012	29/02/2012	33.3	34.3	31.4	33	1.5	4	3.7	24.50	98.96	Good	Good
3	29/02/2012	28/03/2012	29.0	32.2	35.2	32	3.1	10	7.7	22.79	100.00	Good	Good
4	28/03/2012	25/04/2012	25.0	23.9	21.2	23	2.0	8	4.9	17.63	82.29	Good	Good
5	25/04/2012	30/05/2012	17.0	16.5	16.8	17	0.3	2	0.6	16.86	78.10	Good	Good
6	30/05/2012	27/06/2012	14.9	16.6	15.5	16	0.8	5	2.1	14.54	98.36	Good	Good
7	27/06/2012	01/08/2012	18.9	19.2	18.1	19	0.5	3	1.3	18.79	99.88	Good	Good
8	01/08/2012	29/08/2012	18.5	20.2	21.2	20	1.4	7	3.4	20.68	100.00	Good	Good
9	29/08/2012	26/09/2012	20.7	21.3	22.5	22	0.9	4	2.3	23.33	100.00	Good	Good
10	26/09/2012	31/10/2012	26.7	25.6	25.5	26	0.7	3	1.7	25.02	99.88	Good	Good
11	31/10/2012	28/11/2012	33.2	34.4	33.6	34	0.6	2	1.5	35.16	94.64	Good	Good
12	28/11/2012	02/01/2013	29.2	28.6	27.8	29	0.7	2	1.8	31.08	95.60	Good	Good
13													
										Overall survey -->		Good	Good

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

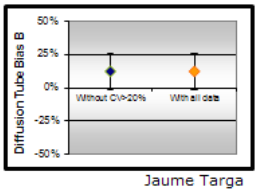
(Check average CV & DC from Accuracy calculations)

Site Name/ ID: Fire Station Saffron Walden

Precision: 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 12 periods of data	
Bias factor A	0.9 (0.8 - 1.03)
Bias B	11% (-3% - 25%)
Diffusion Tubes Mean:	25 µgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	23 µgm^{-3}
Data Capture for periods used:	96%
Adjusted Tubes Mean:	23 (20 - 26) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 12 periods of data	
Bias factor A	0.9 (0.8 - 1.03)
Bias B	11% (-3% - 25%)
Diffusion Tubes Mean:	25 µgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	23 µgm^{-3}
Data Capture for periods used:	96%
Adjusted Tubes Mean:	23 (20 - 26) µgm^{-3}



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Version 03 - November 2006

QA/QC of diffusion tube monitoring

Laboratory	Performance on basis of HSL WASP NO2 PT ,best 7 out of the 8 rounds 111 – 118
Gradko Environmental	Satisfactory

Prepared by AEA on behalf of Defra and the Devolved Administrations.

Nitrogen Dioxide Short Term to Long Term Adjustments

	Automatic monitoring station	Period Mean	Annual Mean	Ratio	Raw mean	Annualised mean
UT002 - Airport 1 Thatched Cottage						
	Southend-on-Sea AURN	19.45	23.39	1.20	23.19	27.32
	Thurrock AURN	24.85	28.67	1.15		
			Ratio used	1.18		
UT004 - Walden 4 YHA						
	Southend-on-Sea AURN	21.03	23.39	1.11	42.61	47.51
	Thurrock AURN	25.66	28.67	1.12		
			Ratio used	1.11		
UT028 - Walden 16 London Road						
	Southend-on-Sea AURN	21.43	23.39	1.09	41.84	45.87
	Thurrock AURN	26.04	28.67	1.10		
			Ratio used	1.10		
UT029 - Walden 17 Debden Road						
	Southend-on-Sea AURN	21.43	23.39	1.09	27.38	30.02
	Thurrock AURN	26.04	28.67	1.10		
			Ratio used	1.10		
UT032 - Walden Borough Lane						
	Southend-on-Sea AURN	21.03	23.39	1.11	18.60	20.52
	Thurrock AURN	26.20	28.67	1.09		
			Ratio used	1.10		
UT034 - High St GD						
	Thurrock AURN	24.01	28.67	1.19	28.35	33.85
			Ratio used	1.19		

Appendix 2: Uttlesford DC Diffusion Tube Data 2012

UDC Code	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12
UT001	50.20	48.90	55.20	42.30	32.5	32.2	31.72	41.03	43.77	41.99	53.02	42.77
UT002	34.10	35.40	35.40	26.00	21.7	16.2	17.45	20.49	24.56	Missing	28.29	30.86
UT003	25.40	24.00	25.40	14.80	9.2	9.0	11.09	11.86	13.77	16.49	24.77	24.04
UT004	57.30	44.90	58.50	44.20	32.7	31.7	Missing	43.66	41.00	48.80	51.84	47.00
UT005	70.90	66.60	65.70	46.20	44.9	39.7	41.00	41.13	45.56	53.29	53.20	46.23
UT006	25.00	22.70	24.20	14.90	10.8	10.8	14.01	16.41	15.46	17.04	25.65	20.60
UT007	38.30	35.50	Missing	24.80	18.4	14.7	19.60	18.69	27.16	25.20	32.21	32.59
UT008	35.00	36.70	43.80	28.80	28.9	24.0	23.21	29.36	24.15	31.33	35.61	29.84
UT009	56.20	50.00	52.00	48.50	38.1	32.7	34.97	37.19	41.51	42.34	42.58	42.54
UT010	36.90	36.30	35.90	27.40	19.9	21.3	27.34	30.05	27.21	30.20	35.80	31.33
UT011	45.50	48.10	44.00	37.10	28.5	28.4	30.10	32.10	34.30	37.05	42.03	40.44
UT012	29.00	26.90	31.30	20.60	16.4	16.0	18.88	19.94	19.71	24.51	31.06	27.52
UT013	31.30	33.30	29.00	25.00	17	14.9	18.85	18.46	20.71	26.72	33.23	29.17
UT014	34.70	34.30	32.20	23.90	16.5	16.6	19.18	20.21	21.31	25.63	34.37	28.61
UT024	22.90	20.30	20.30	13.50	11.2	8.8	10.20	12.48	14.24	14.98	21.07	22.84
UT025	23.20	24.70	26.00	16.90	9.9	8.9	11.50	12.45	15.95	15.88	21.32	21.03
UT026	18.80	20.90	20.80	12.40	8.8	7.3	9.71	11.99	12.95	15.56	21.88	20.99
UT027	35.60	31.40	35.20	21.20	16.8	15.5	18.13	21.17	22.53	25.49	33.55	27.76
UT028	62.30	55.70	55.50	43.80	33.9	Missing	40.91	38.10	36.14	45.89	51.17	44.81
UT029	37.00	35.50	37.80	26.30	17.8	Missing	23.81	26.79	23.96	28.79	38.64	32.95
UT030	39.30	32.60	43.30	30.00	25	21.3	23.59	19.90	24.72	31.29	37.68	30.15
UT031				22.30	15.5	14.4	19.75	19.15	20.45	26.13	34.23	25.90
UT032						14.9	Missing	13.36	16.48	19.01	25.07	22.76
UT033				32.80	24.8	24.2	24.20	25.00	24.25	31.80	35.70	34.51
UT034				29.70	27							

Appendix 3: List of Prescribed Processes in Uttlesford District Council

UDC Ref	Process Name	Process Address	Process	Risk
PART B Processes				
B/3/1/01	Cemex	Stansted Airport	Concrete Batching	Low
B/VF/01	Station Coachworks	Flitch Ind, Est, GtDunmow	Vehicle Respraying	Low
B/MW/01	E Corr	Loppingdales, Gaunts End, Elsenham	Concrete Crushing	Low
B/MW/02	E Corr	Loppingdales, Gaunts End, Elsenham	Concrete Crushing	Low
B/MW/03	R B Haigh	Armigers Farm Thaxted	Concrete Crushing	Low
B/PVII/02	Tesco	Radwinter Road, Saffron Walden	Petrol Vapour II	Medium
B/PV/II/03	Tesco	Stortford Road Great Dunmow	Petrol Vapour II	Medium
B/PVI/04	Central Garage	London Road, Newport	Petrol Vapour	Low
B/PVI/01	Jet	82 Cambridge Rd Stansted	Petrol Vapour	Low
B/PVII/04	Welcome Break	Birchanger Services Birchanger Bishops Stortfrd	Petrol Vapour II	Low
B/PVI/05	Starthill Service St	Dunmow Rd Starthill Bishops Stortford	Petrol Vapour	Low
B/PVI/07	Saracens Filling St	Dunmow Road Thaxted	Petrol Vapour	Low
B/PVI/09	Rontec	1 Cambridge Rd Stansted	Petrol Vapour	Low
B/PVI/10	Airport Energy	First Avenue Stansted Airport	Petrol Vapour	Low
B/PVII/02	BP Service Station	Southgate, Stansted Airport	Petrol Vapour II	Medium
B/PVI/02	Dunmow Convenience Store	Chelmsford Road, Dunmow	Petrol Vapour	Low
B/PVI/03	Avis Rent a Car Ltd	Coopers End Road Stansted	Petrol Vapour	Low
B/PVI/06	Hertz (UK) Ltd	Coopers End Road Stansted	Petrol Vapour	Low
B/PVI/08	Europcar Ltd	Coopers End Road Stansted	Petrol Vapour	Low
B/DC/01	Airline Services Ltd	Unit 6007, Taylors End Stansted	Dry Cleaners	Low
B/DC/02	Barkers of Dunmow	8 Market Place Great Dunmow	Dry Cleaners	Low
B/DC/03	Saffron Walden Laundry Co Ltd	13-17 Gold Street Saffron Walden	Dry Cleaners	Low
B/DC/04	Suit-Ability	8-9 Central Arcade Saffron Walden	Dry Cleaners	Low
B/WOB/02	Roding Motor Services	Aythorpe Roding	Waste Oil Burner	Low
B/WOB/03	Carros automotive	London Rd Newport	Waste Oil Burner	Low
B/WOB/04	Premier Garage	London Rd Newport	Waste Oil Burner	Low
B/WOB/05	Belle Trailers	Hoblongs IE Dunmow	Waste Oil Burner	Low
B/WOB/06	Fiern Engines	Chelmsford Rd IE Dunmow	Waste Oil Burner	Low
B/WOB/07	Chesterford Engineering	London Rd Gt Chesterford	Waste Oil Burner	Low
B/WOB/01	Tyremart Services	Unit 16 Oak Ind. Est	Waste Oil Burner	Low
B/4/01(04)1	SGA Technologies	Shire Hill Saffron Walden	Surface treatmant	Low
PART A Processes				
A2/2.3/05/01	Acrow Galvanising	Ashdon Rd, Saffron Walden	Hot Dip Galvanising	Low
A2/6.4/06/01	Printpack Europe	Radwinter Rd, Saffron Walden	Printing of flexible packaging	Low